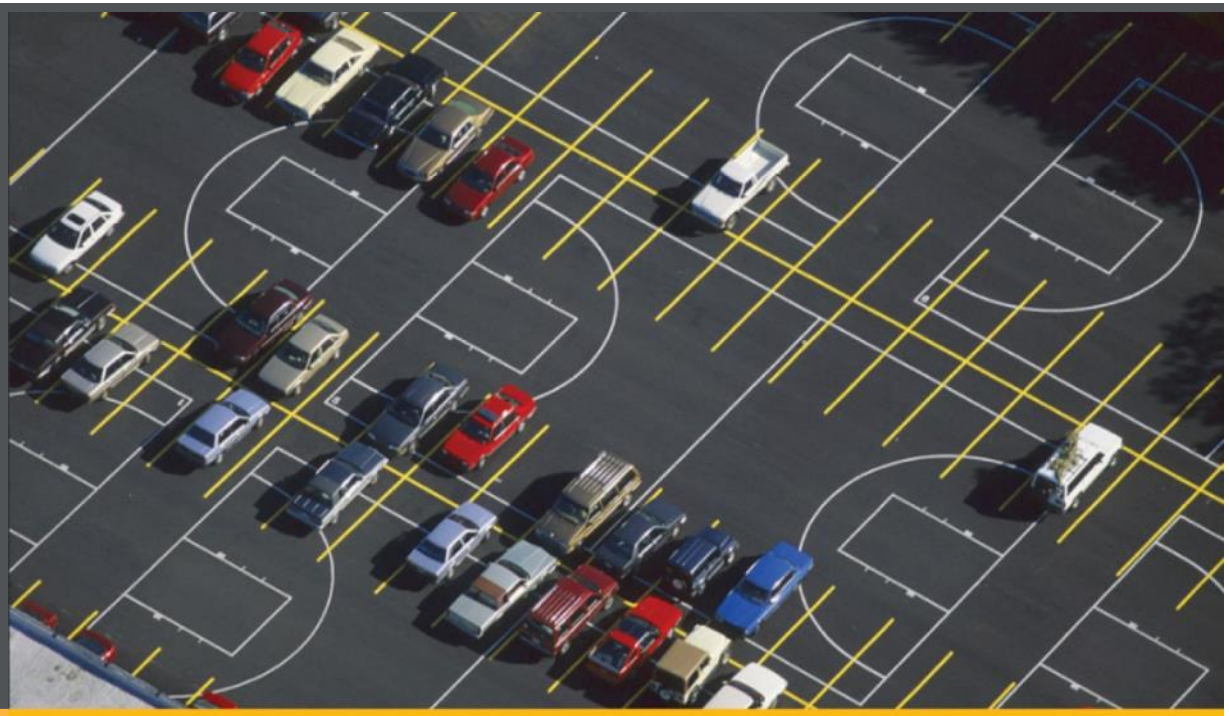
University
Transportation
Research Center

City College of New York



November 8, 2013

FOREWORD BY DONALD C. SHOUP

PARKING REFORM *Made Easy*

RICHARD W. WILLSON


Single site, peak use parking…
Walkability and land use challenges…
© 2012 Google
Google earth

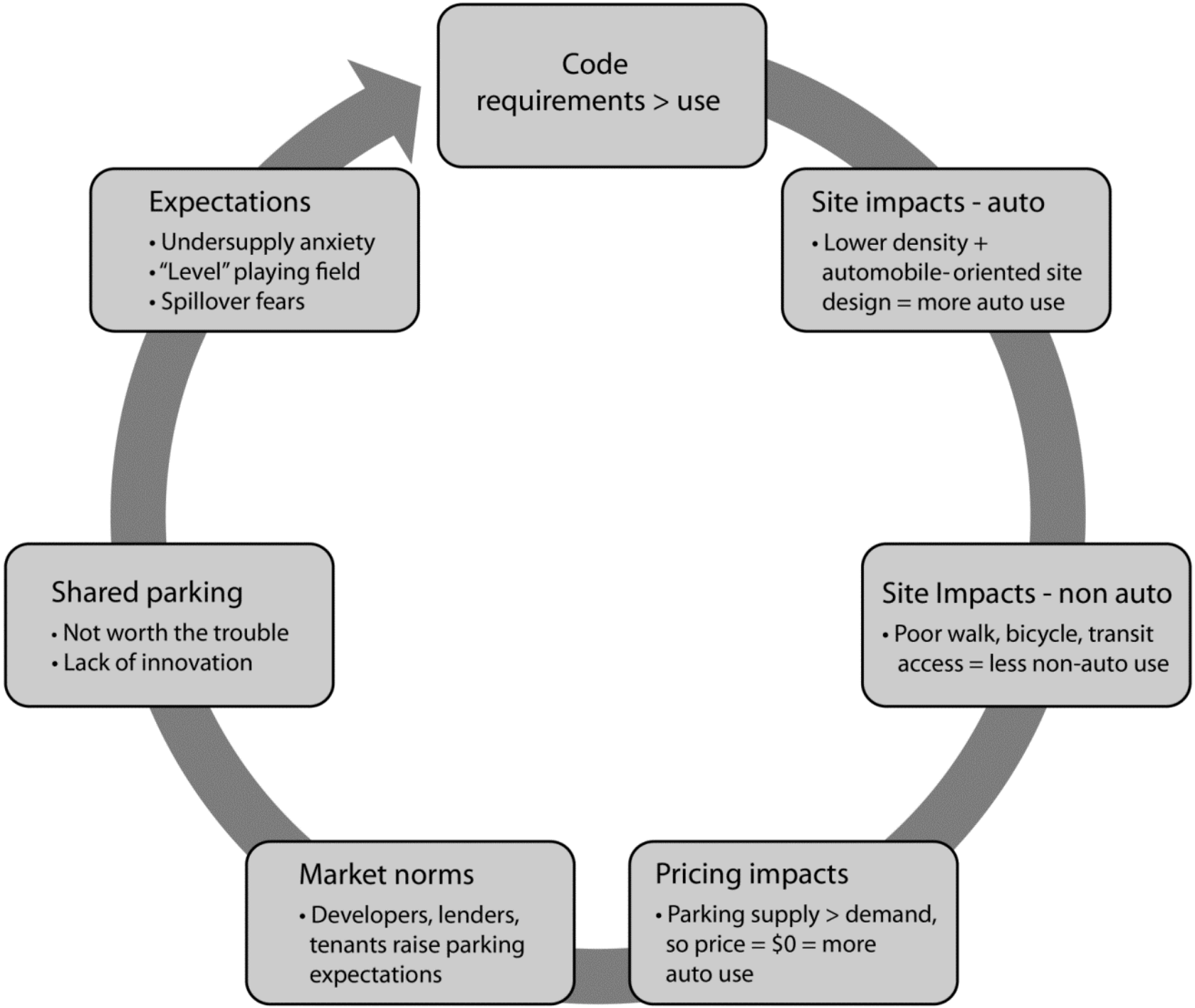

Fine grained livability…
Roadblocks to revitalization…
Google earth


Built out, small parcels…
Florence Ave
Malabar St
Rugby Ave
Rita Ave
Walnut St
California St
Live Oak St
..people density = parking anxiety


MARINER

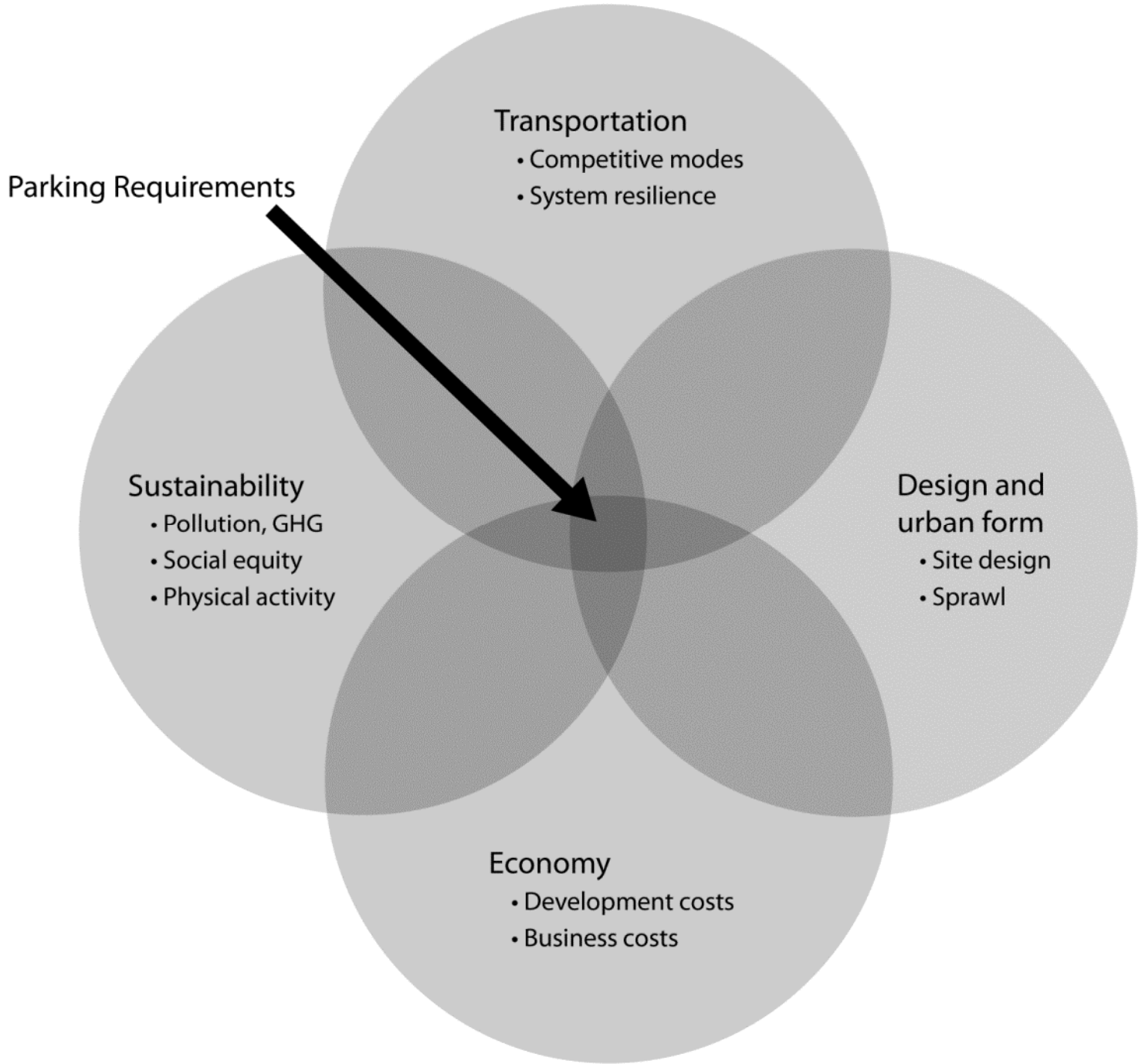

DIET CLINIC

The circle of vice

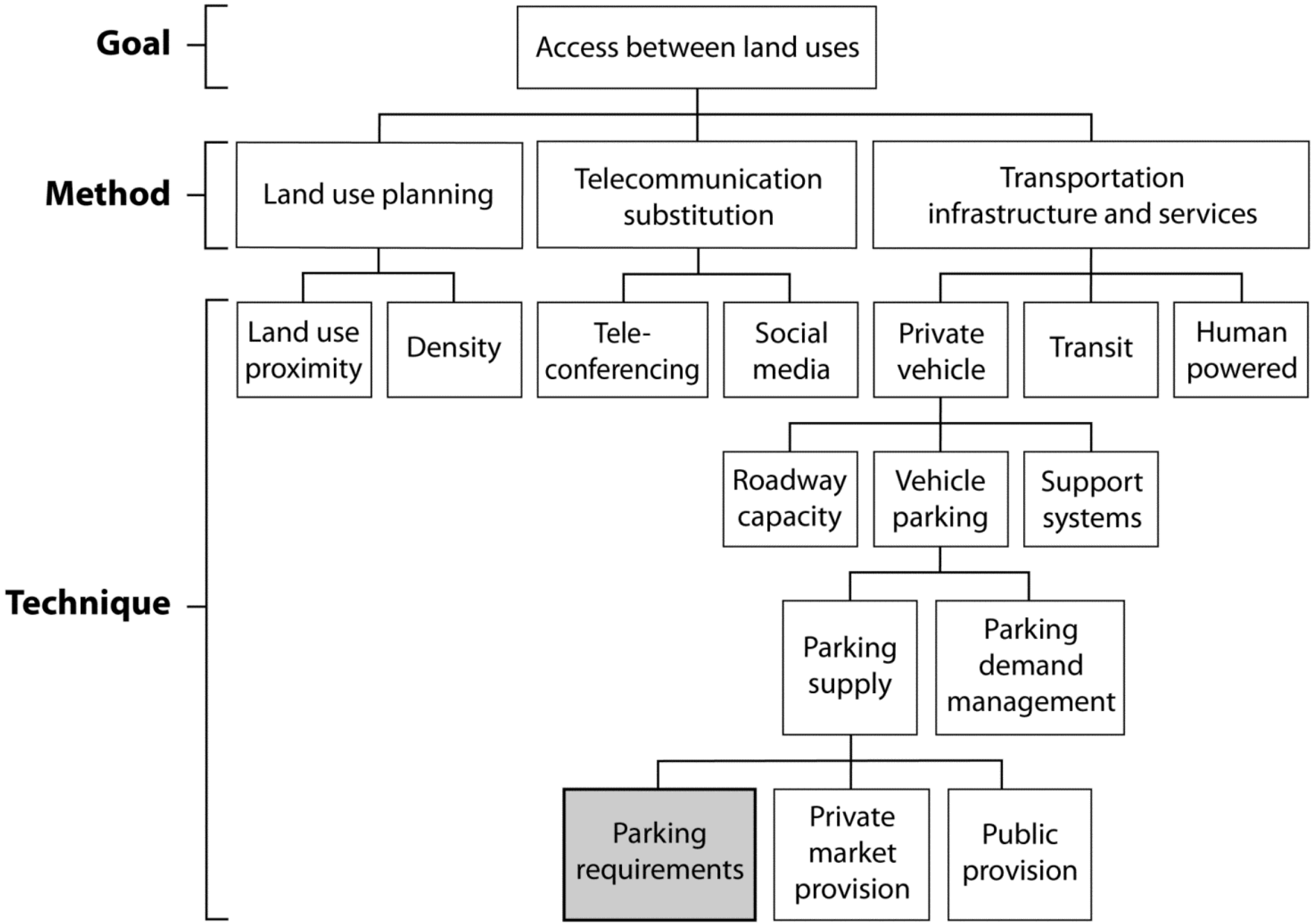

Code
requirements > use
Site impacts - auto
• Lower density + automobile-oriented site design = more auto use
Site Impacts - non auto
• Poor walk, bicycle, transit access = less non-auto use
Pricing impacts
• Parking supply > demand, so price = $0 = more auto use
Market norms
• Developers, lenders, tenants raise parking expectations
Shared parking
• Not worth the trouble
• Lack of innovation
Expectations
• Undersupply anxiety
• "Level" playing field
• Spillover fears


TO
10

Parking *is* policy


Parking Requirements
Transportation
• Competitive modes
• System resilience
Sustainability
• Pollution, GHG
• Social equity
• Physical activity
Design and urban form
• Site design
• Sprawl
Economy
• Development costs
• Business costs

Putting parking requirements “in their place”


Goal
Access between land uses
Method
Land use planning
Telecommunication substitution
Transportation infrastructure and services
Technique
Land use proximity
Density
Tele-conferencing
Social media
Private vehicle
Transit
Human powered
Roadway capacity
Vehicle parking
Support systems
Parking supply
Parking demand management
Parking requirements
Private market provision
Public provision

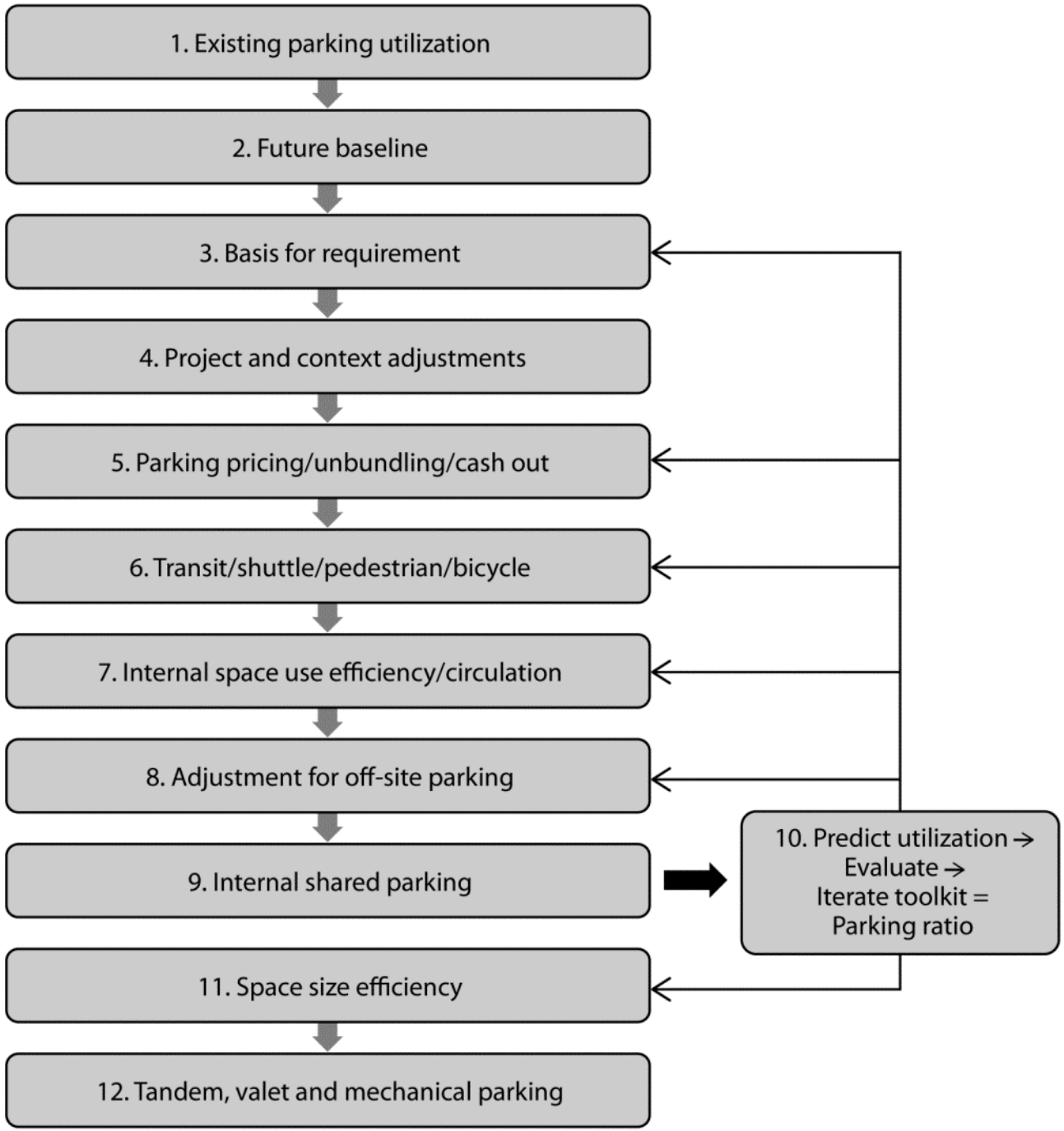

WHERE DID
YOU PARK?

Inertia, hand wringing, resistance, fear, foot dragging, avoidance…

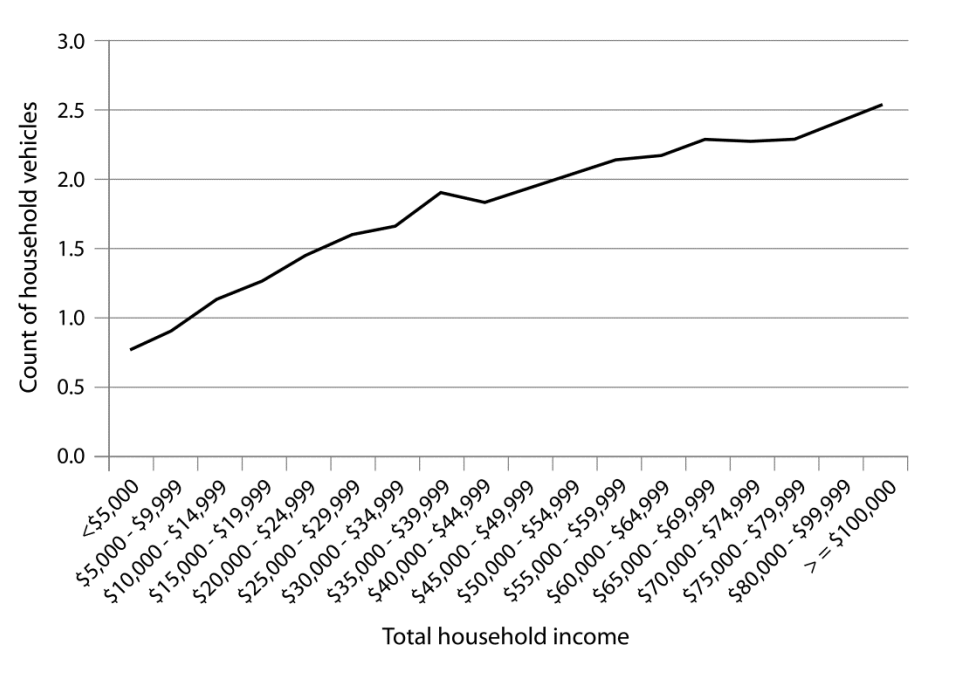
Stakeholder	Motivation
Individuals who park	Territoriality Maintain free parking privileges;
Local planners	Leverage requirements for other public benefits Keep it simple; reduce exposure to error
Public works/police	Less on-street parking management and enforcement Traffic flow
Developers	Safety in equal treatment
NIMBY groups	Stop/slow/burden development projects

Habit, strategy, addiction, or what?

A twelve-step reform method…


1. Existing parking utilization
2. Future baseline
3. Basis for requirement
4. Project and context adjustments
5. Parking pricing/unbundling/cash out
6. Transit/shuttle/pedestrian/bicycle
7. Internal space use efficiency/circulation
8. Adjustment for off-site parking
9. Internal shared parking
10. Predict utilization → Evaluate → Iterate toolkit = Parking ratio
11. Space size efficiency
12. Tandem, valet and mechanical parking

Step 1	Method	Comments
Existing utilization	Measure local utilization using counts, air photo interpretation, census data	Existing rates often reflect past practice of free parking, separated land uses



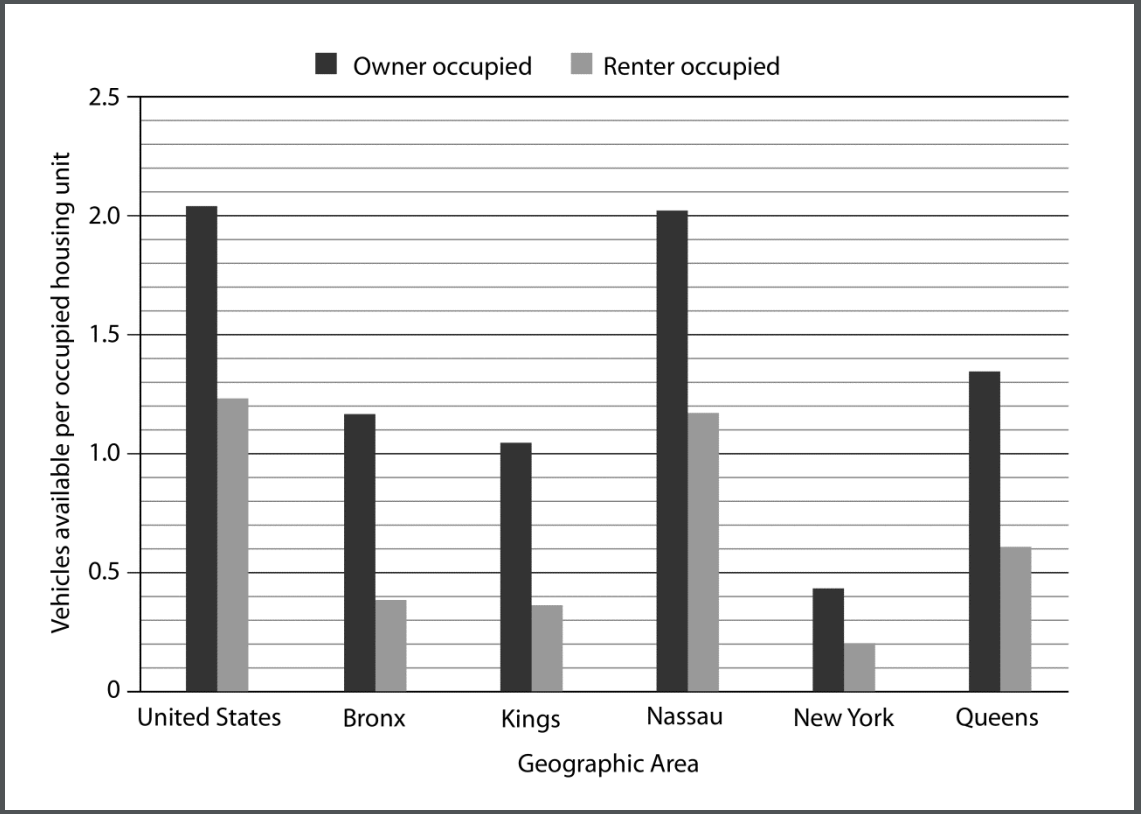
Step 2	Method	Comments
Future baseline	Identify 20 year trends in demographics, economics, culture	Most trends suggest declining parking utilization rates

Factor	Effect
Local and regional land use and transportation plans	-
Demographic changes, aging population	-
Dense, mixed-use development	-
Changes in intensity of occupancy	+
Transit development and non-motorized transportation	-
Energy prices	-
Congestion as a travel disincentive	-
Changes in personal vehicles and carsharing	-
Telecommunication substitution of travel	~
Cultural preferences	-
Parking management, shared parking, and pricing	-

Step 3	Method	Comments
Basis for the rate	Should requirements be based on average or percentile rates?	Higher percentiles (e.g., 85th) are wasteful Shared parking reduces risk of using average rate

	Minimum	33rd %	Average	85th %	Maximum
Adjustment	0.3	.9	1.0	1.21	1.96
Rate	0.9	2.7	3.0	3.63	5.88

Step 4	Method	Comments
Project and context	Adjust for special characteristics of the land use and/or subarea	Leads to differentiated rates in land use categories, e.g., affordable housing

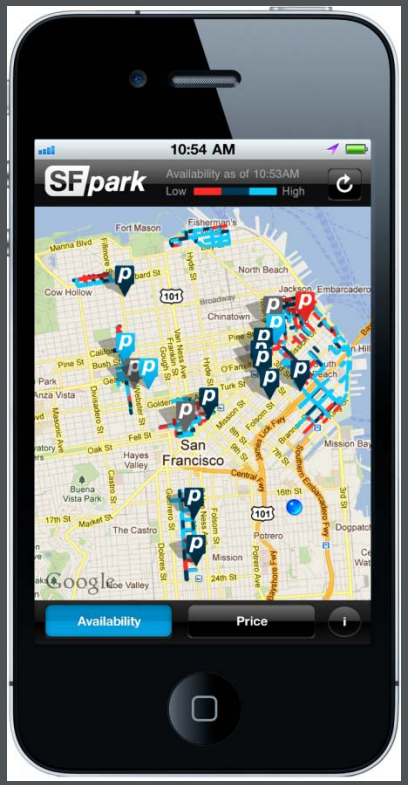


Step 5	Method	Comments
Pricing/un-bundling/ cashout	Adjust for impact of pricing policies	Parking demand is responsive to price

-0.3 +/-

Step 6	Method	Comments
Transit/ pedestrian/ bicycle/ carshare	Adjust for alternative access	Affects travel mode choice for all land uses and household vehicle ownership

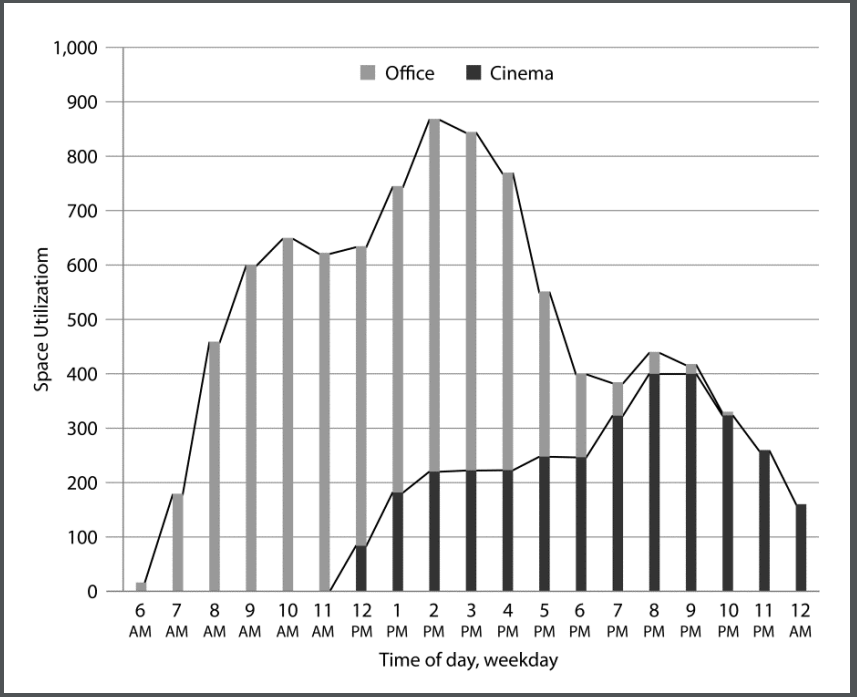
Step 7	Method	Comments
Space use efficiency	Adjust for assigned versus pooled spaces, circulation factor	Parking information and guidance systems reduce need for circulation factor



Step 8	Method	Comments
Off-site parking	Reduce on-site requirement to account for off-site parking	Many districts oversupplied with parking in the aggregate

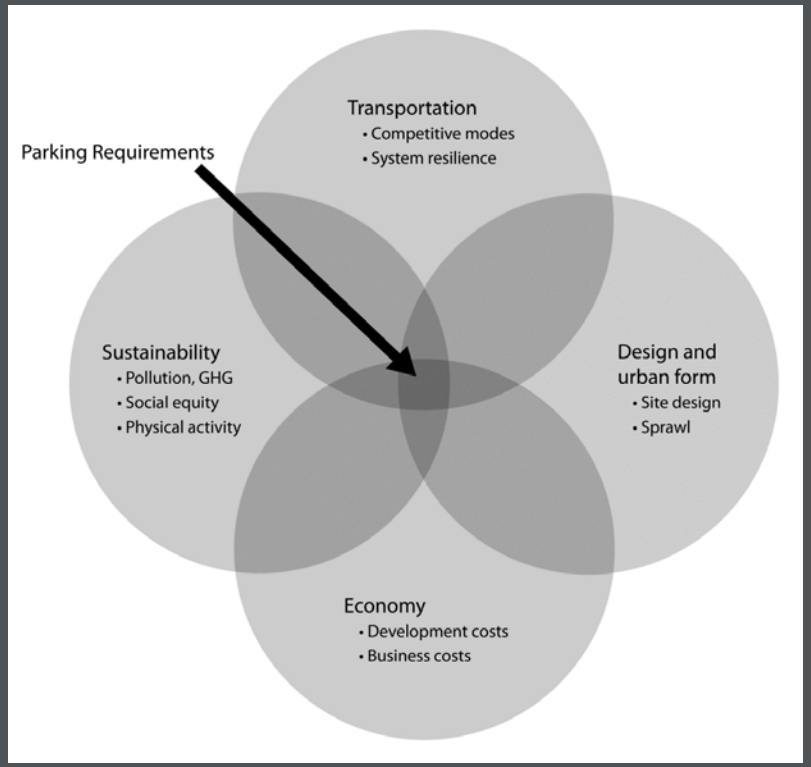
Step 9	Method	Comments
Internal shared parking	For multi-use sites, reduce overall rate to account for different peak use periods	Land uses can be strategically selected to maximize shared parking potential

Use Urban Land Institute *Shared Parking* or free models, e.g., Metropolitan Transportation Commission



Step 10	Method	Comments
Evaluate and iterate	Does the prospective rate support community goals?	Consider transportation, urban form, economic development, sustainability, and regulatory practicality

Administrative feasibility +



Step 11	Method	Comments
Space size	Decide on minimum size, compact spaces	Average vehicle size is declining Smaller “unispace”

Step 12	Method	Comments
Tandem, valet, mechanical	Increase the yield of cars parked per square foot of land or building area	Potential varies by land use, district context, and market

Suburban office use

Step	Factor	Values and Results
	Existing rate ranges (spaces per unit)	*2.6 - 3.0* | *3.1 - 3.5* | *3.6 - 4.0* | *4.1 - 4.5* | *4.6 - 5.0*
1	Estimated existing rate	3.25
	Ten-year future adjustment ranges	*< .79* | *.80 - .89* | *.90 - .99* | *1.00* | *> 1.0*
	Adjustment for future year	1.1
2	Estimated future rate	3.58
	Basis for rate (average versus other)	*Minimum* | *33rd pctl.* | *Average* | *85th pctl.* | *Maximum*
	Adjustment factors based on ITE Land Use 701	0.30 | 0.90 | 1.00 | 1.21 | 1.96
3	Base rate	3.58
	Adjustment ranges for steps 4 - 9	*< .70 - .79* | *.80 - .89* | *.90 - .99* | *1.00* | *> 1.0*
4	Future use and context conditions, transit	0.95
5	Project parking pricing/unbundling	0.90
6	Project transit, alternative transportation	1.0
7	On-site space efficiency factors	1.0
8	Off-site parking accommodation	1.0
9	Internal shared parking	1.0
	Product of steps 4 - 9	0.855
10	**On-site space utilization**	**3.06**

Suburban multifamily housing

Step	Factor	Values and Results
	Existing rate ranges (spaces per unit)	*0* | *0.1 - 1.0* | *1.1 - 1.5* | *1.6 - 2.0* | *2.1 - 2.5*
1	Estimated existing rate	1.65
	Ten-year future adjustment ranges	*< .79* | *.80 - .89* | *.90 - .99* | *1.00* | *> 1.0*
	Adjustment for future year	0.95
2	Estimated future rate	1.57
	Basis for rate (average versus other)	*Minimum* | *33rd pctl.* | *Average* | *85th pctl.* | *Maximum*
	Adjustment factors based on ITE Land Use 221	0.48 | 0.55 | 1.00 | 1.58 | 1.58
3	Base rate	1.57
	Adjustment ranges for steps 4 - 9	*< .70 - .79* | *.80 - .89* | *.90 - .99* | *1.00* | *> 1.0*
4	Future use and context conditions, transit	0.9
5	Project parking pricing/unbundling	1.0
6	Project transit, alternative transportation	1.0
7	On-site space efficiency factors	1.2
8	Off-site parking accommodation	1.0
9	Internal shared parking	1.0
	Product of steps 4 - 9	1.08
10	**On-site space utilization**	**1.70**


STOP
STOP

Requirement options…and developer responses

Approach	Requirement	Developer response
Traditional	Minimum > utilization No maximum	Rarely build more than requirement
Moderate reform	Minimum = utilization No maximum	Assess market for project, may exceed minimum
Big city approach	Minimum = % of utilization Maximum = ratio or % of minimum	Market decision whether to supply minimum or build to maximum
Partial deregulation	No minimum Maximum = ratio or % of minimum	Market decision whether to supply parking or build to maximum
Deregulation	No minimum or maximum Performance measures	Market decision on whether/how much

Bells and whistles…

"Taming" Parking

- Driveway regulations
- Prohibit surface
- Ground floor retail
- Height restrictions
- % of block facades for garage doors
- Discretionary design review
- Shading
- Permeable pavement
- Solar
- Real-time information
- Guidance systems

Supply Regulations

- Eliminate minimums
- Maximums
- Discretionary determination
- Tandem
- Re-use projects
- Overlays zones
- On-street credit
- Performance-based
- In lieu/access fees
- Carsharing
- Off-site parking
- Pricing, unbundling, cash-out
- TDM
- Bike parking
- Electric vehicle parking

Parking management

In Donald Shoup's own backyard!

UCLA Grand Challenges is a campuswide commitment to address the most significant problems confronting society. To achieve these ambitious and inspiring goals, UCLA will work with government, industry, university and philanthropic partners to redefine what is possible.

On Friday, November 15, 2013, UCLA will reveal the first Grand Challenge Project: a transformative effort to solve one of the greatest challenges within the area of **environment and sustainability**.

UCLA Grand Challenge Project Reveal
Friday, November 15, 2013
10:30 a.m.
Royce Hall, UCLA

Please respond by Friday, November 8, 2013
RSVP online or call (310) 794-6241
Seating is limited

Complimentary parking will be available in Parking Structure 5

Approach	Strategy
On-street parking in commercial districts	Time limits, space designations Pricing; dynamic pricing Parking benefit districts
On-street parking in residential neighborhoods	Residential permits Priced residential permits Parking benefit districts
Off-street parking, private	Access control Pricing Shared parking arrangements
Off-street parking, public	Time limits, space designations Cost recovery pricing Prioritize use through pricing

Politics and participation


MOST INTERESTING

Approach	Strategy
Link reform to community plans	Tie to urban design, economic development, transportation, or environmental goals
Educate	Costs of status quo – wasted land, livability Fairness to non-drivers Practice in successful, admired places
Appeal to self interest	Tax revenue potential Owners of existing parking and parking operators Revenue return to district or neighborhood Developers/property owners Compensate those disadvantaged by change
Attract allies	Transit operators, cyclists Infill developers, affordable housing developers Small business Historic preservation

Is parking a regional planning issue?

SCAG RTP goals that apply to parking, but no action items

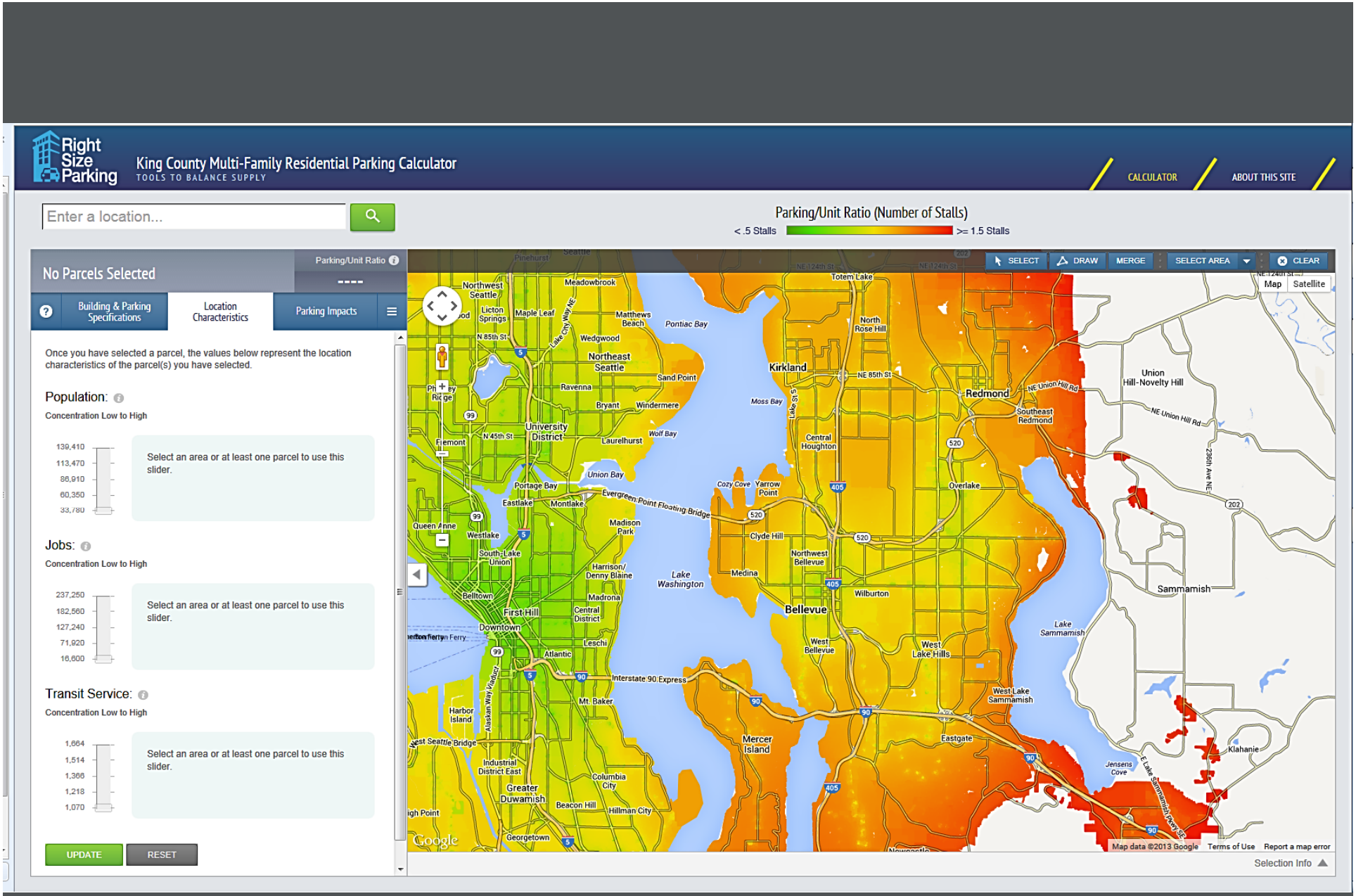
- Encourage land use and growth patterns that facilitate transit and non-motorized transportation
- Actively encourage and create incentives for energy efficiency, where possible
- Align the plan investments and policies with improving regional economic development and competitiveness
- Maximize mobility and accessibility for all people and goods in the region
- Preserve and ensure a sustainable regional transportation system
- Protect the environment and health of our residents by improving air quality and encouraging active transportation

Roles for MPOs and states…

Task	MPO	State
Build support for reform	RTP/SCS policy Incentives Model ordinances	Incentives Model ordinances
Data and forecasts	Translate regional model forecasts into parking	Sponsor data collection and modeling
Intervene/ override	Establish criteria for funding	CA's AB 710/AB 904 requirement override in transit-rich areas

Related research, model, and examples…

Approach	Strategy
Context sensitive trip generation studies	ITE inclusion of urban and suburban context UC Davis trip generation for Smart Growth areas Portland State trip generation context study
Parking data/models	Metro King County multifamily residential (Seattle Region) Transform MFD model and data collection (Bay Area) MTC data collection (Bay Area) Residential Transp. Performance Monitoring Study (Arlington VA)
Parking benefit districts	Willingness to pay study in New York (Guo and McDonnell) Boulder (neighborhood) Old Pasadena (commercial) Houston's Washington Avenue (commercial) St. Louis Mo (commercial, increment only)
Variable pricing	SF*park* LA Express Park Seattle SeaPark


Right Size Parking
King County Multi-Family Residential Parking Calculator
TOOLS TO BALANCE SUPPLY
CALCULATOR
ABOUT THIS SITE
Enter a location...
Parking/Unit Ratio (Number of Stalls)
< .5 Stalls
>= 1.5 Stalls
No Parcels Selected
Parking/Unit Ratio

Building & Parking Specifications
Location Characteristics
Parking Impacts
Once you have selected a parcel, the values below represent the location characteristics of the parcel(s) you have selected.
Population:
Concentration Low to High
139,410
113,470
86,910
60,350
33,780
Select an area or at least one parcel to use this slider.
Jobs:
Concentration Low to High
237,250
182,560
127,240
71,920
16,600
Select an area or at least one parcel to use this slider.
Transit Service:
Concentration Low to High
1,664
1,514
1,366
1,218
1,070
Select an area or at least one parcel to use this slider.
UPDATE
RESET
SELECT
DRAW
MERGE
SELECT AREA
CLEAR
Map
Satellite
Seattle
Northwest Seattle
Meadowbrook
Licton Springs
Maple Leaf
Matthews Beach
Pontiac Bay
Wedgwood
Northeast Seattle
Sand Point
Ravenna
Bryant
Windermere
University District
Laurelhurst
Wolf Bay
Fremont
Union Bay
Portage Bay
Eastlake
Montlake
Evergreen Point Floating Bridge
Queen Anne
Westlake
Madison Park
South Lake Union
Harrison/ Denny Blaine
Belltown
First Hill
Madrona
Central District
Downtown
Leschi
Atlantic
Interstate 90 Express
Mt. Baker
Harbor Island
Alaskan Way Viaduct
West Seattle Bridge
Industrial District East
Greater Duwamish
Columbia City
Beacon Hill
Hillman City
Georgetown
Totem Lake
North Rose Hill
Kirkland
NE 85th St
Redmond
Moss Bay
Lake St S
Southeast Redmond
NE Union Hill Rd
Union Hill-Novelty Hill
Central Houghton
Cozy Cove
Yarrow Point
Overlake
Clyde Hill
Northwest Bellevue
Medina
Lake Washington
Wilburton
Bellevue
West Bellevue
West Lake Hills
Lake Sammamish
Sammamish
West Lake Sammamish
Eastgate
Mercer Island
Jensens Cove
Klahanie
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Selection Info

If Joni Mitchell and Bob Dylan wrote a song together…

…it would be entitled…

Paved Paradise Revisited

It's time to reform parking requirements!

Questions and comments…

Parking Reform Made Easy is available from Island Press, Amazon, and other retailers in print and ebook format

Contact information: rwwillson@csupomona.edu; (909) 869 2701