

Strategic Parking Management



Community Builders Webinar Series
Sonoran Institute
September 18, 2013

Sonoran Institute

Transportation Webinar Series

completed:

- ✓ Not Your Father's Transportation System
- ✓ Transportation Performance Measures

today:

- Strategic Parking Management

coming up:

- When Main Street is a State Highway
- Opportunities in Transportation Funding

Today's Agenda

General Transportation Frame

Strategic Parking Management

Best Practices

Conducting a Parking Audit

Questions We Are Asked

Do we need more parking to support our downtown businesses?

Questions We Are Asked

Do our parking regulations and ordinances
discourage infill and redevelopment?

Questions We Are Asked

Should we build a new parking garage?

Questions We Are Asked

Should we eliminate free parking by charging
for use of public parking?

Questions We Are Asked

How much parking should be provided with
new development? Where?

Questions We Are Asked

How can we manage parking overflow from _____?
(university, concert venue, fairgrounds, etc.)

A dense grid of numerous cars, serving as a background for the title.

A.

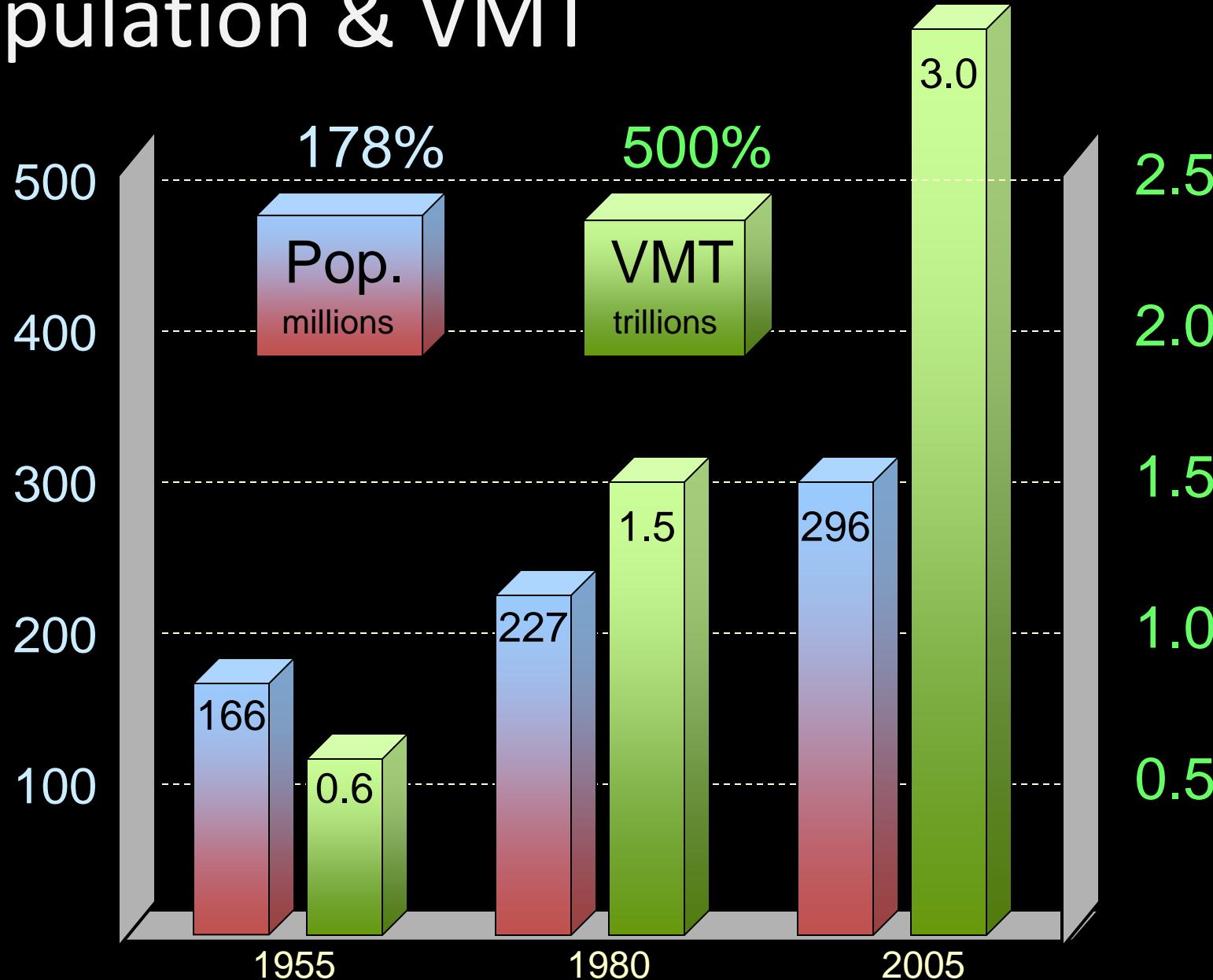
General Transportation Frame



times are a changin'

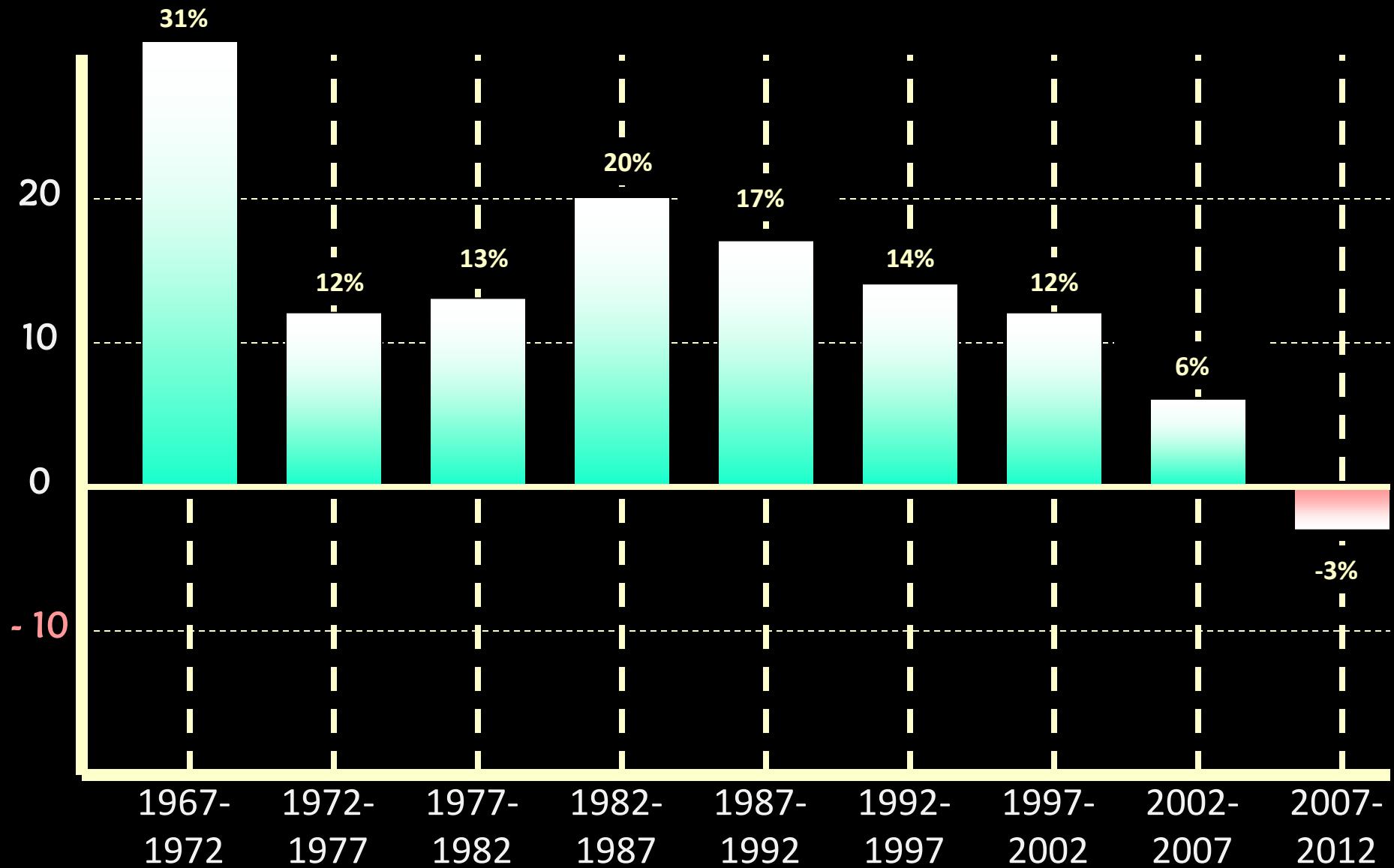
United States

Population & VMT



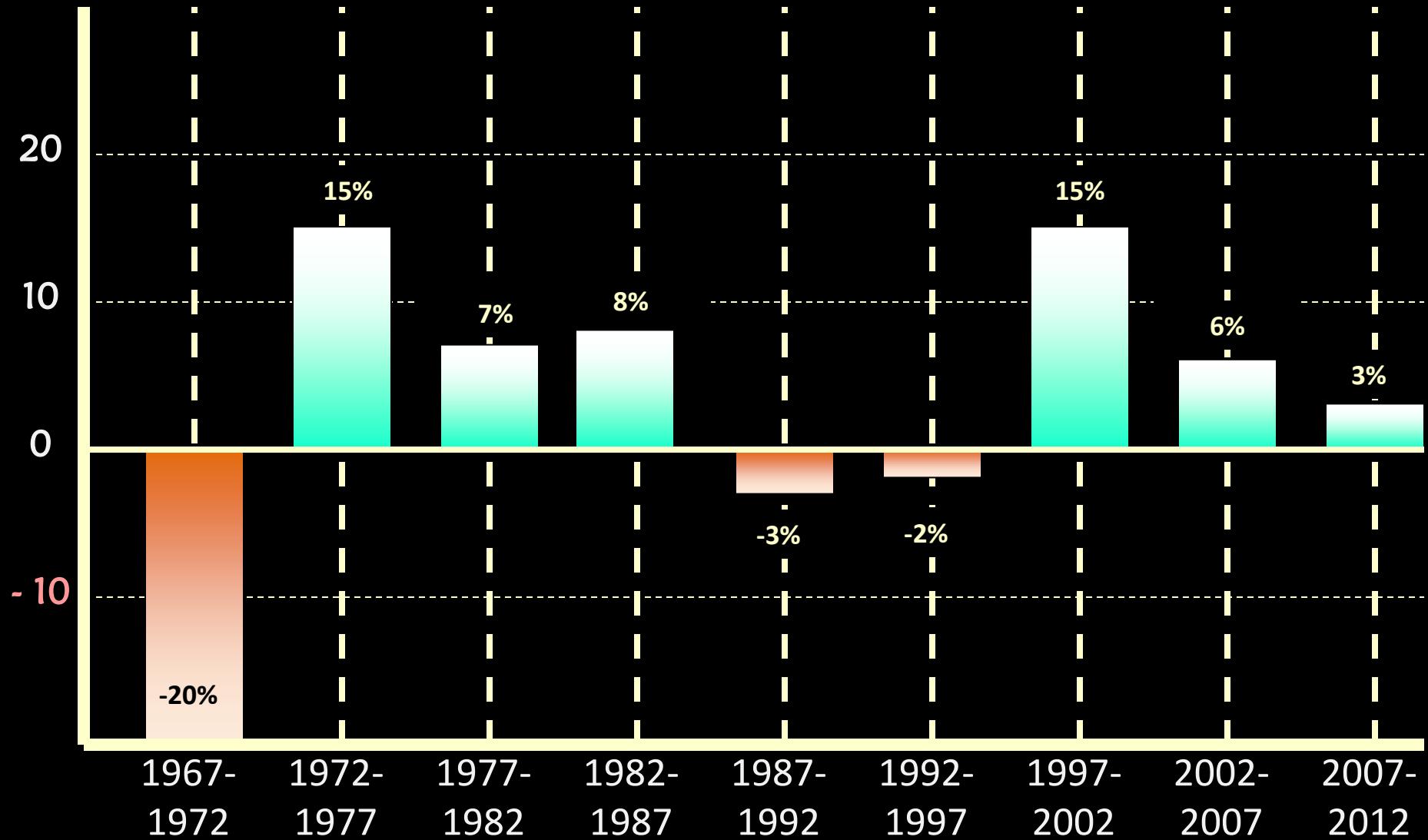
United States

VMT Growth – 5 Year Increments

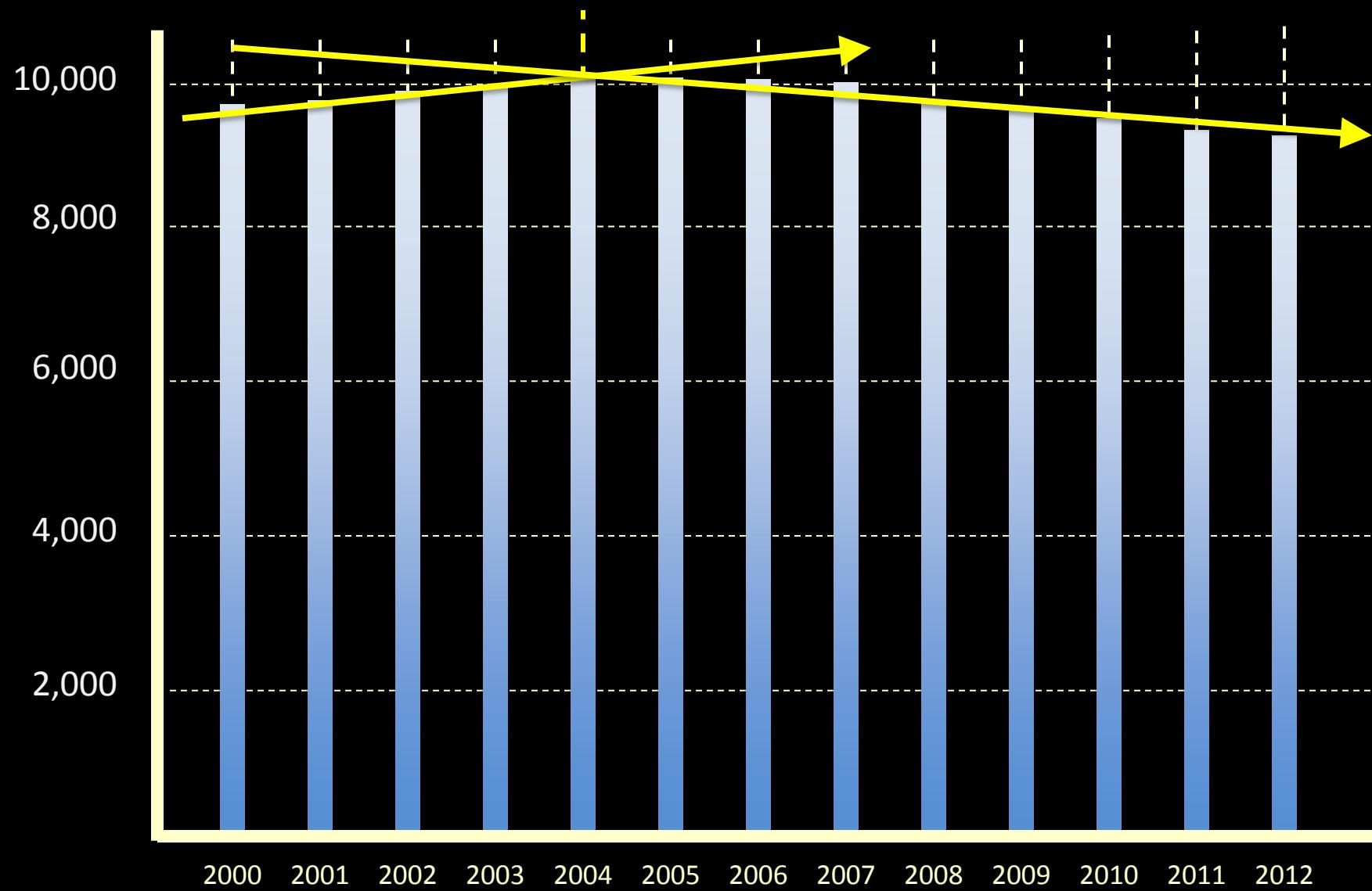


United States

Transit Ridership Growth – 5 Year Increments



Per Capita VMT 2004 Pivot



the
push

What Drives VMT?

the
pull

Demographics & Economics

Traffic Enablers

Labor Force
Participation Rate

Miles of Roadways

Household Income

Energy Cost Subsidy

Driver License Rate

Road Subsidy

Vehicle Ownership

Sprawl

Population

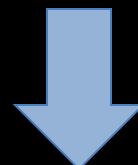
Auto Dependency

What's the Trend?

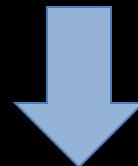
Demographics & Economics

Traffic Enablers

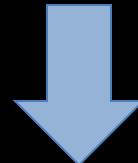
Labor Force
Participation Rate



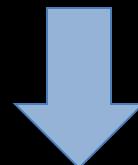
Household Income



Driver License Rate



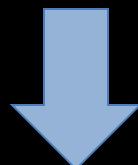
Vehicle Ownership



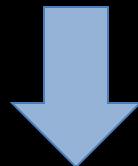
Population



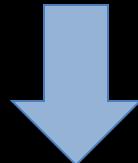
Miles of Roadways



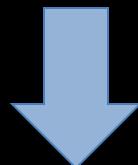
Energy Cost Subsidy



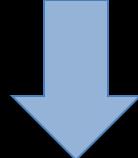
Road Subsidy

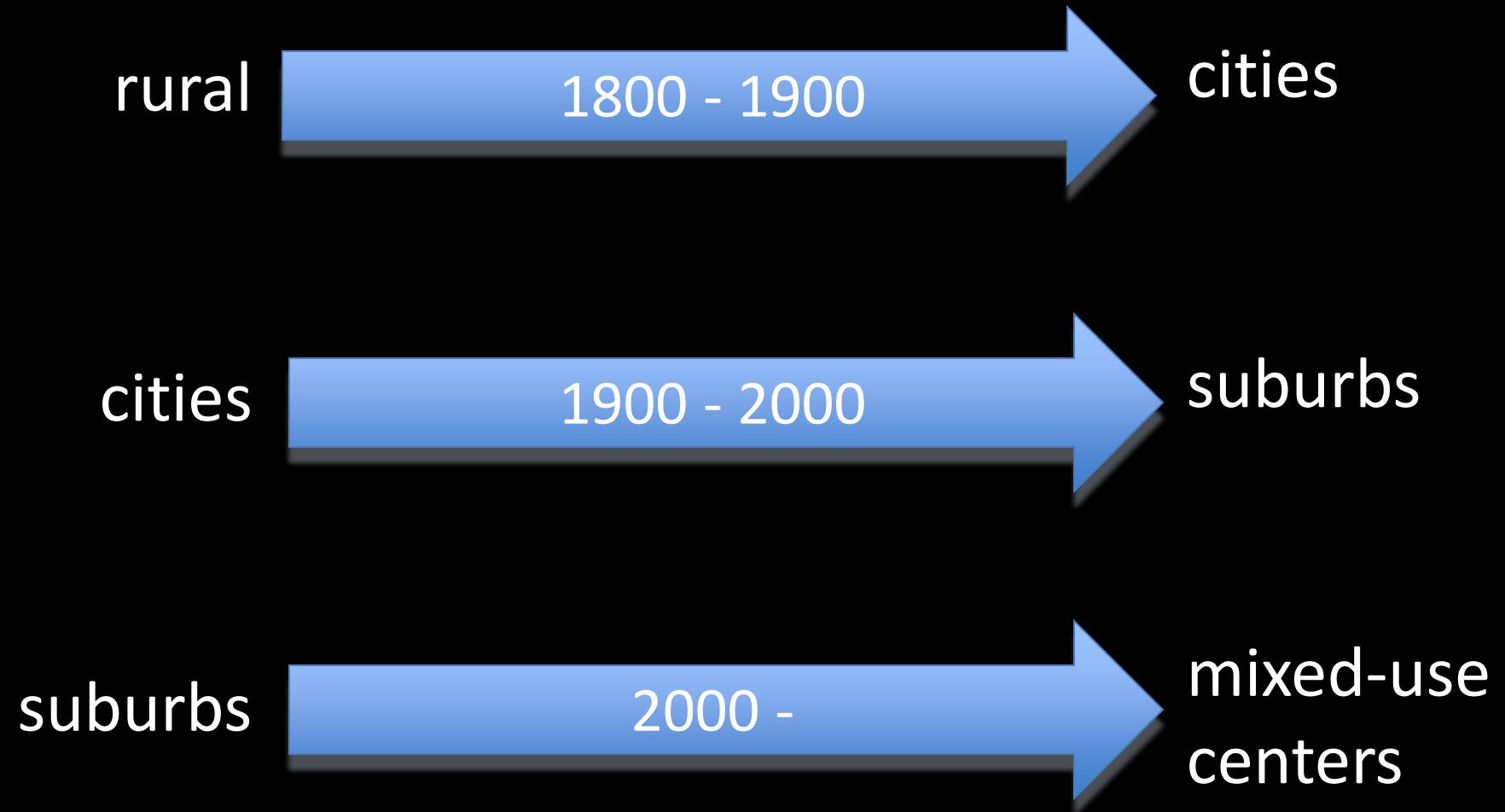


Sprawl



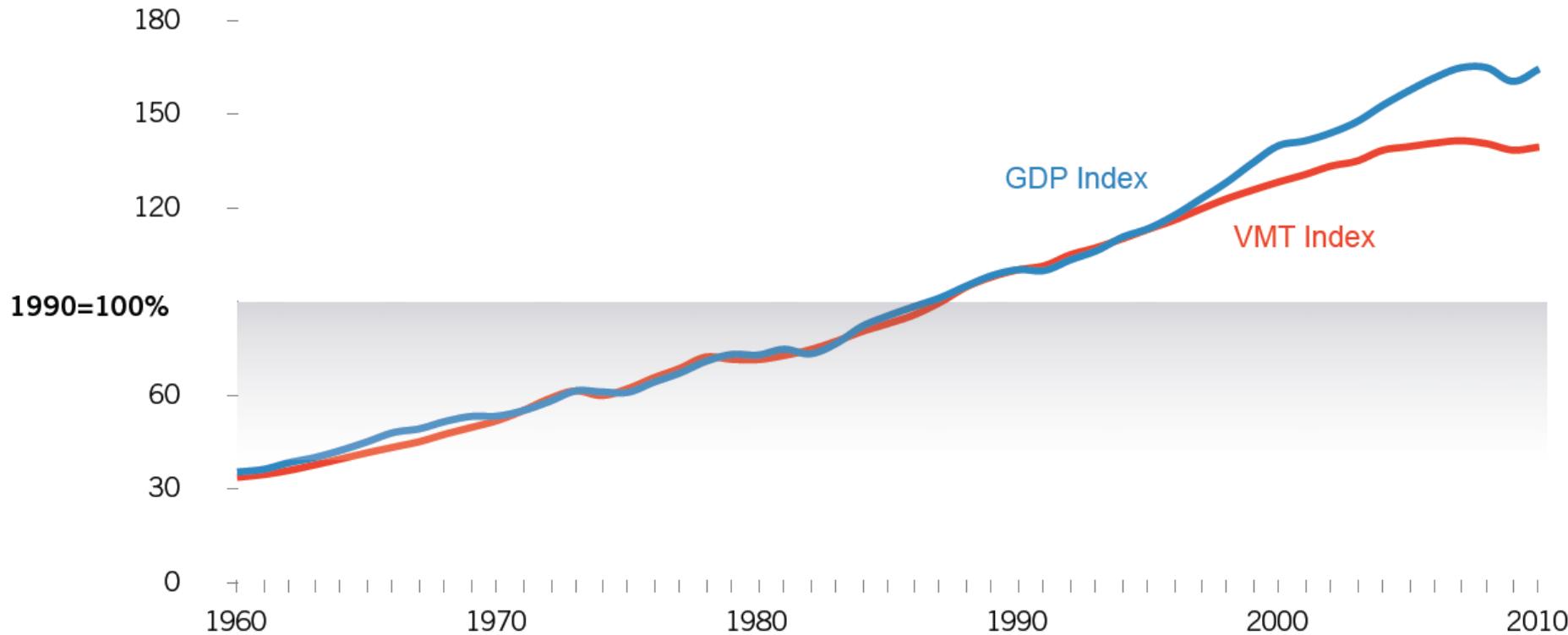
Auto Dependency





development patterns in US history

VMT and GDP



Data Sources: VMT: US DOT, BTS, Table 1-32: US Vehicle Miles, FHWA Traffic Volume Trends August 2010. GDP: BEA National Income and Product Account Table, Table 1.1.6 Real GDP, Chained (2005) Dollars

Source: "Growing Wealthier – Smart Growth, Climate Change and Prosperity"
January 2011 Center for Clean Air Policy



not your father's transportation program



B.

Strategic Parking Management

4 : 1

For every car in U.S.
cities, there are at least
four parking spaces.

23 : 1

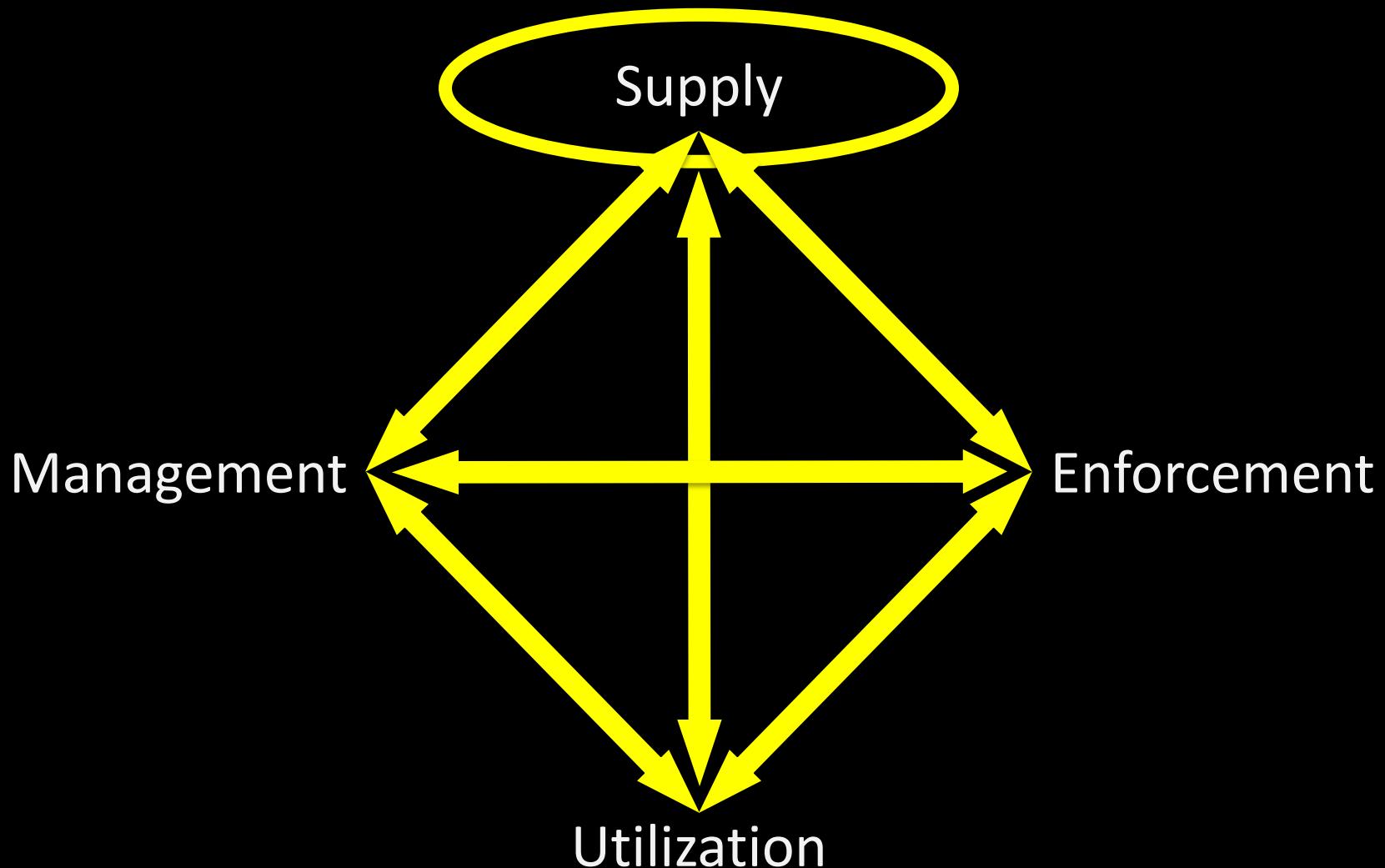
Average car in the U.S.
is parked 23 hours for
every hour it is in use.





Give me control of
parking and I will
rule the world!

Integrated & Strategic



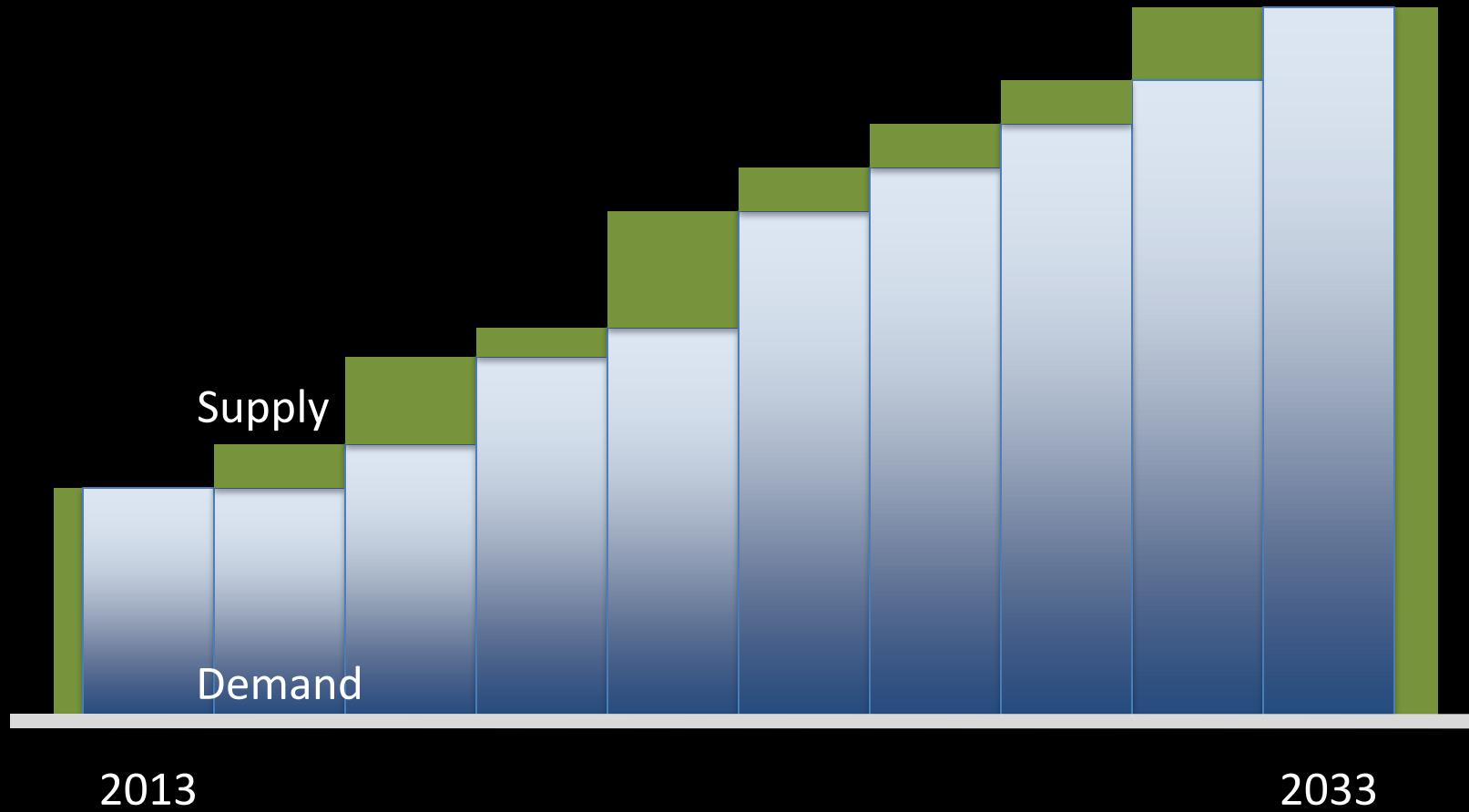
Parking Supply



Strategic, Plan-Based Approach



Strategic, Plan-Based Approach



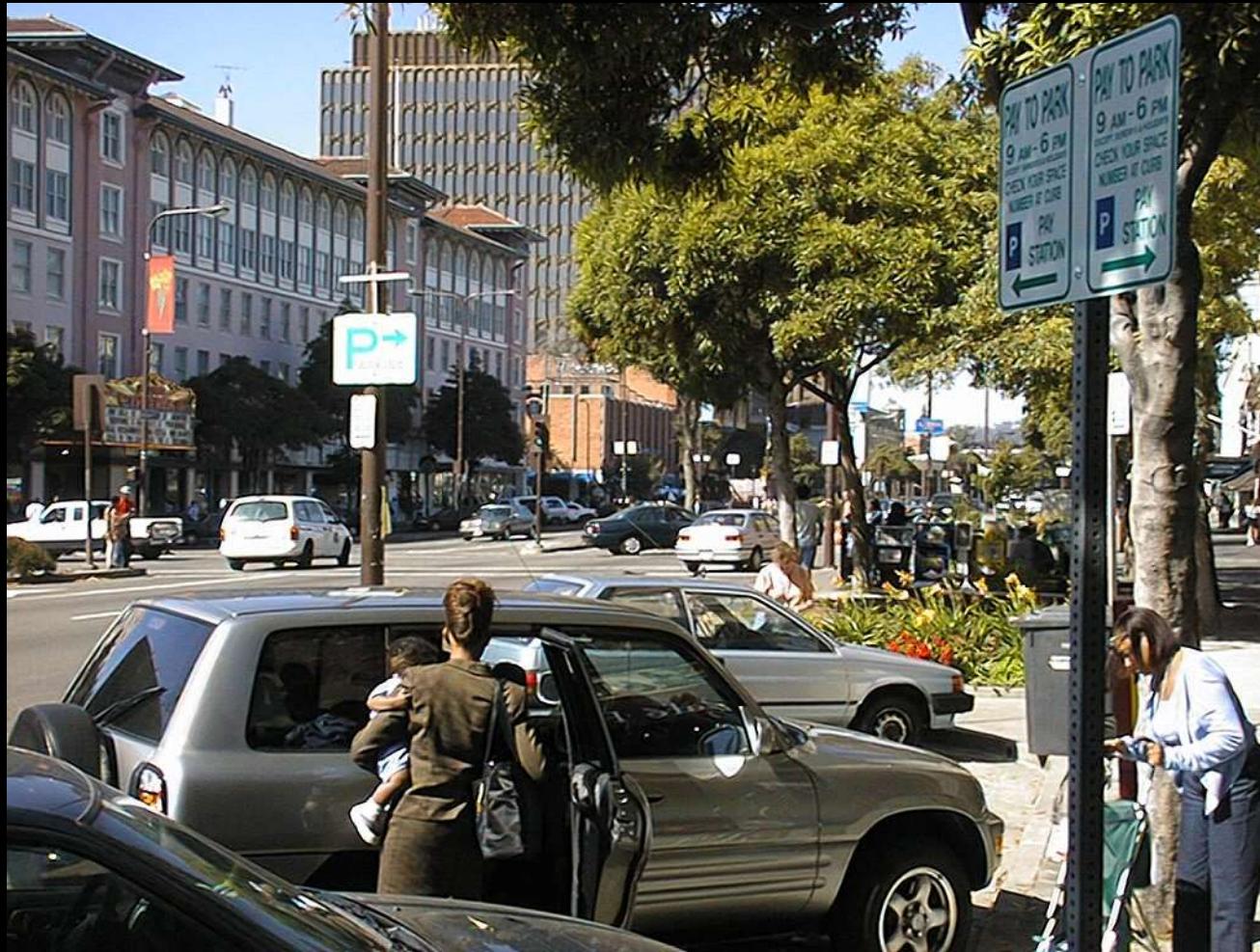
Different types of parking serve
different functions...

Storefront On-Street Parking



Function: support storefront retail

Other On-Street Parking



Function: shopper overflow, general business

Off-Street Surface Parking



Function: commuter parking, shopper overflow, land banking

Off-Street Structure Parking

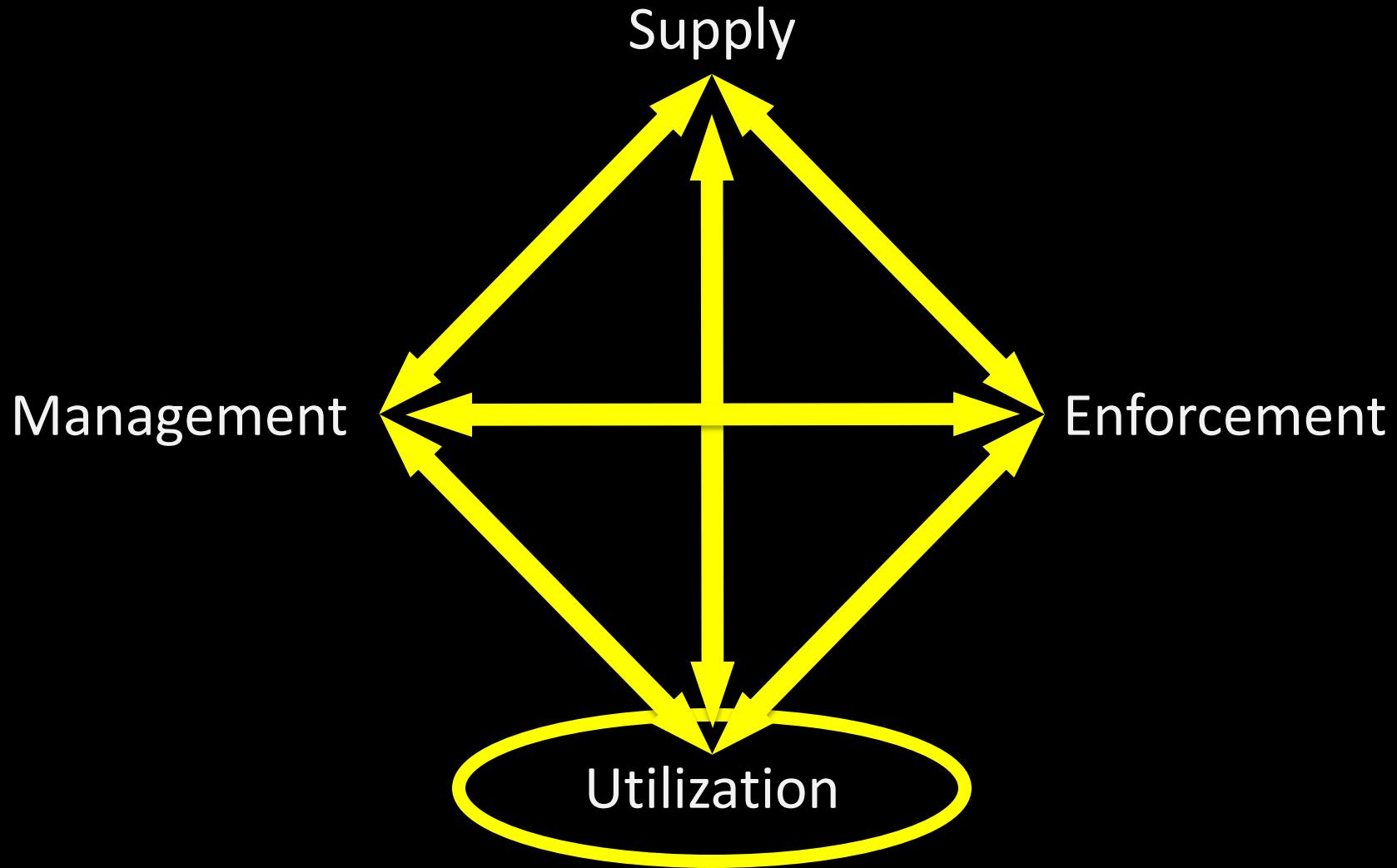


Function: commuter parking, other business parking, residential parking

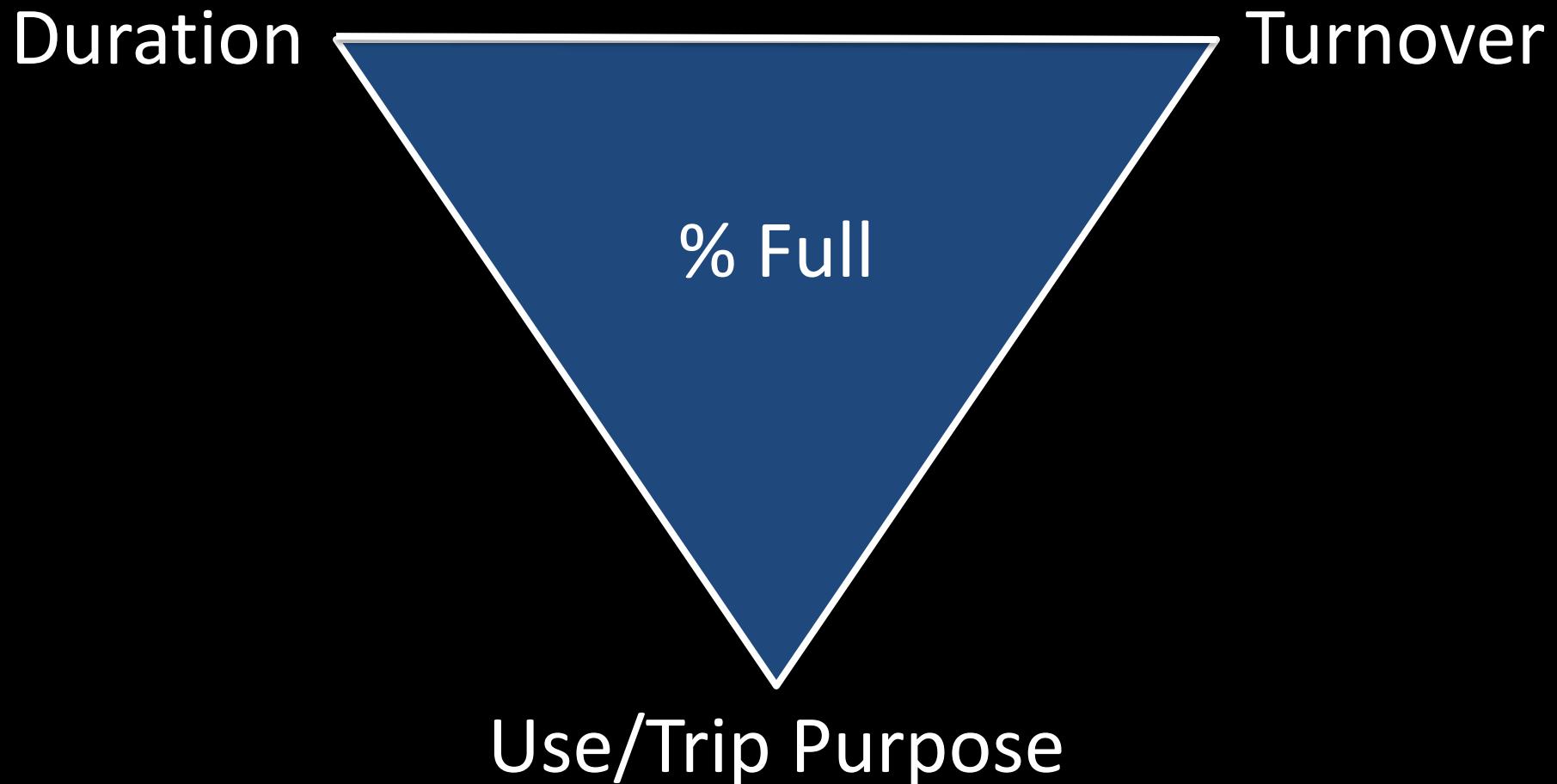
Deliveries & Alleys



Integrated & Strategic



Measuring Parking Utilization



Trip Purpose and Duration

- Commuter/Employee..... 8 hours, 8 minutes
 - Personal Business..... 1 hour, 5 minutes
 - Other Business (sales, etc.).. 3 hours, 32 minutes
 - Shopping..... 1 hour, 29 minutes
 - Other/Recreational..... 4 hours, 17 minutes
-
- Overall Average..... 1 hour, 41 minutes

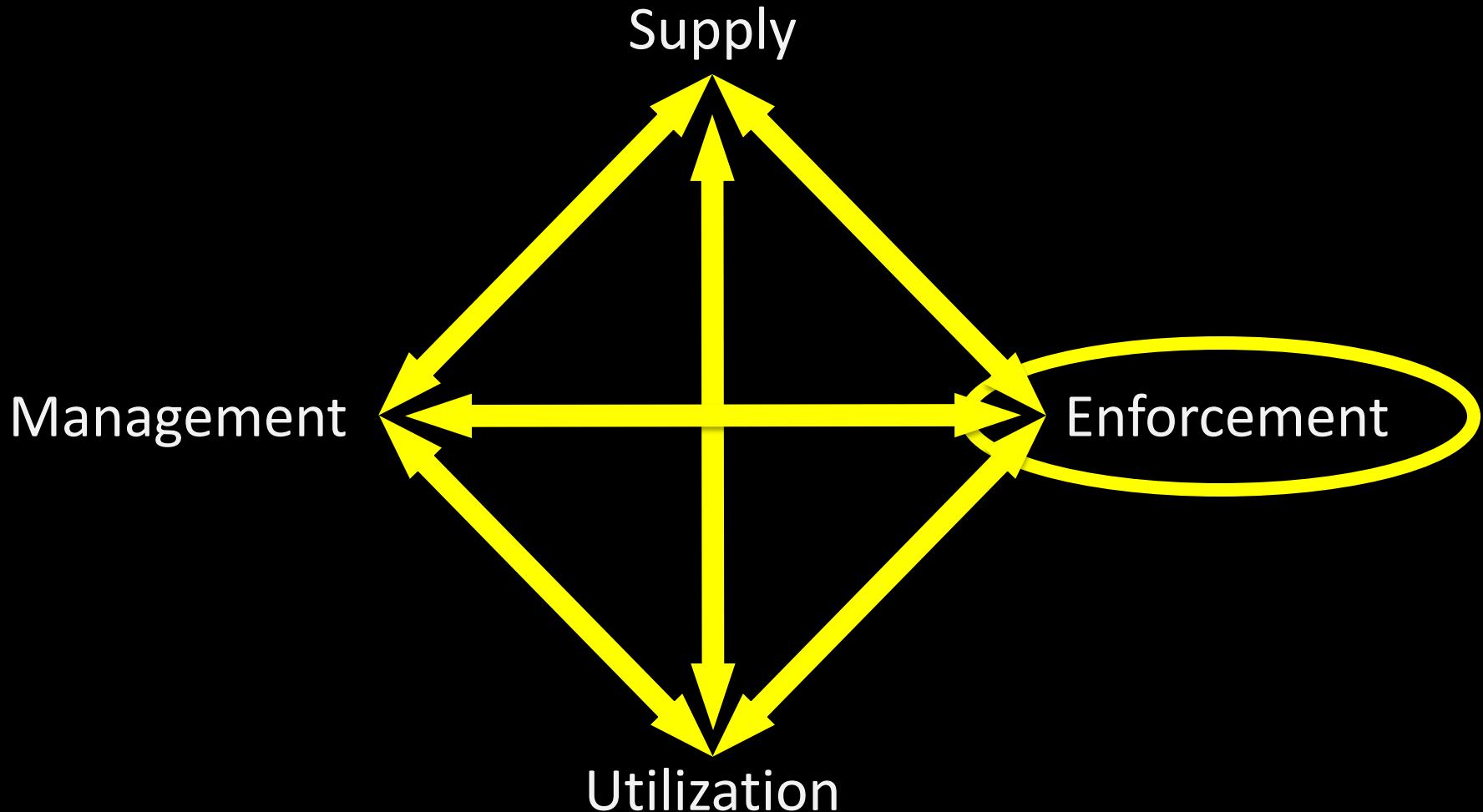
Measuring Parking Utilization



“Shared Parking”

% reduction in total parking demand
based on accumulation curves

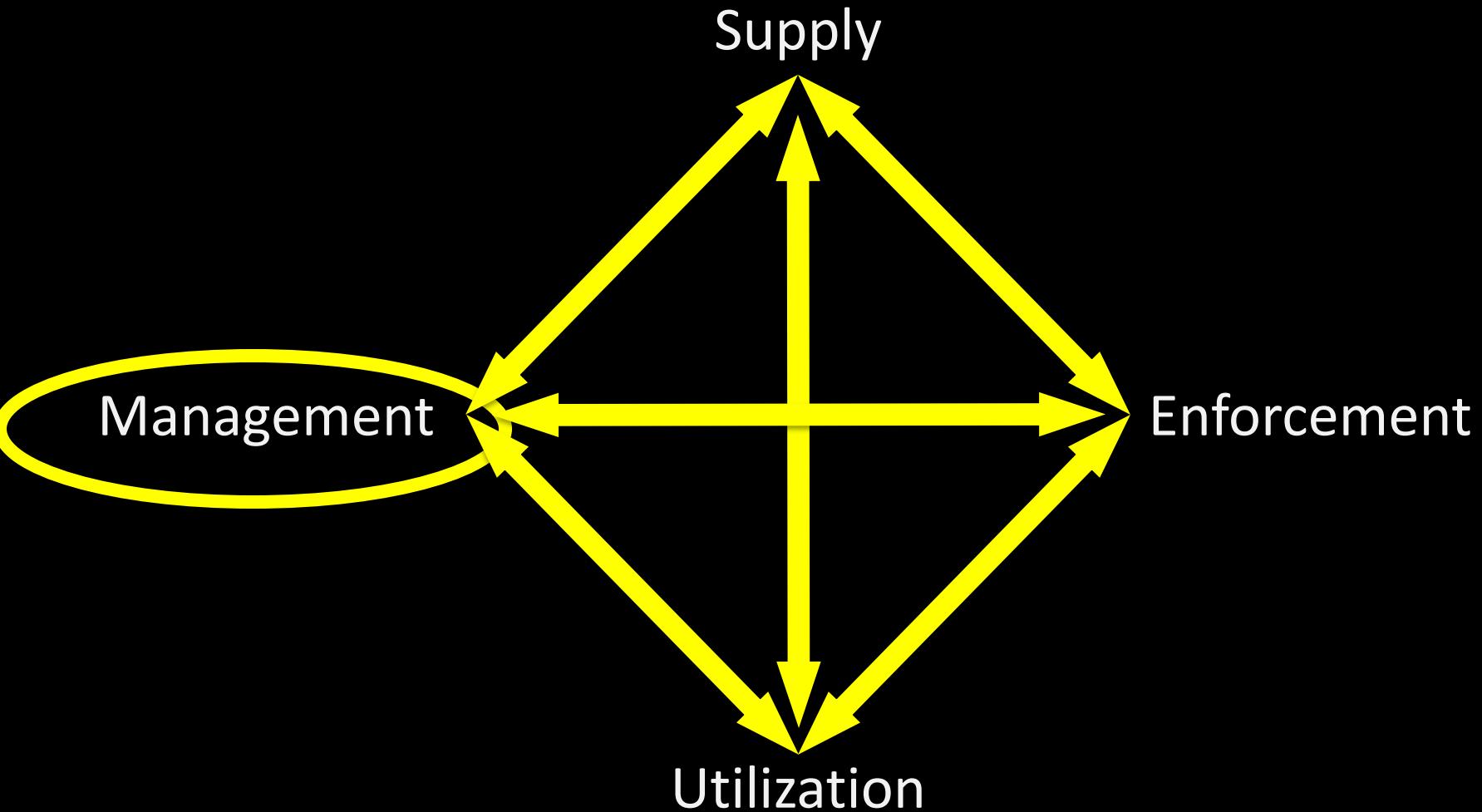
Integrated & Strategic



Parking Enforcement Basics

- Fair but inevitable
- Ambassadors or armed law officers?
- Go light on first time offenders
- Go hard on scofflaws (escalating fine schedules)
- Move beyond chalking tires
- Hand-held ticketing machines (real-time data)

Integrated & Strategic



Management Concepts

- Strategic planning
- Performance measurement & reporting
- Intermodal balance
- Districts
- Managing parking as a utility

Districts can manage
parking as a local utility

(like stormwater)



C.

Best Practices

Best Practices

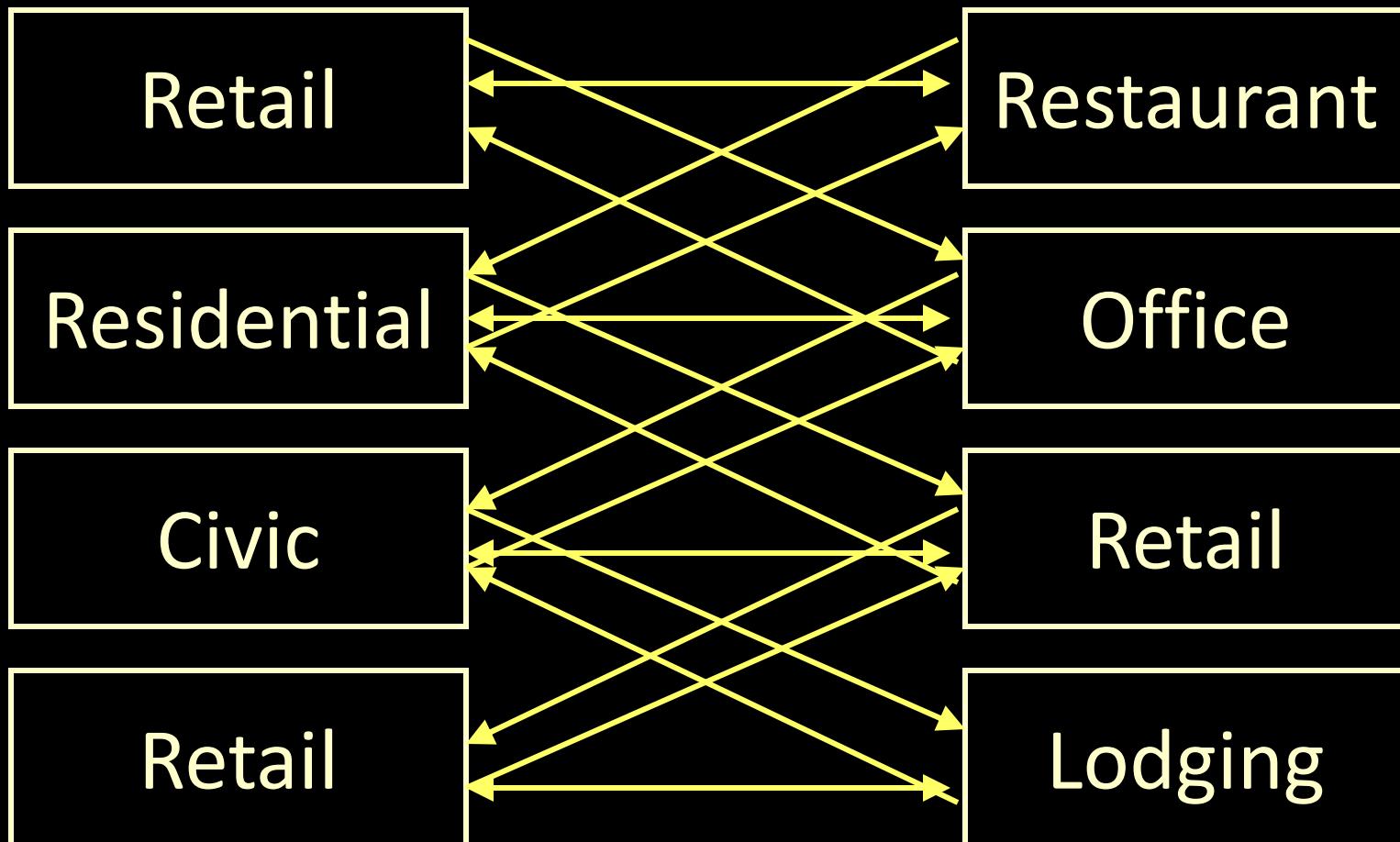
1. Walkable, mixed-use infill & redevelopment
2. Parking districts
3. Time Limits, pricing and enforcement
4. Multimodal integration
5. Shared & off-site parking
6. Remote parking, shuttles
7. On-street parking
8. Monitor, measure, report

1. Walkable, Mixed-use Infill & Redevelopment

- Keys:
 - mix of uses
 - pedestrian environment/urban form
 - street connectivity
 - wayfinding
 - enable “park once” access

place

Mixed-Use: “park once”

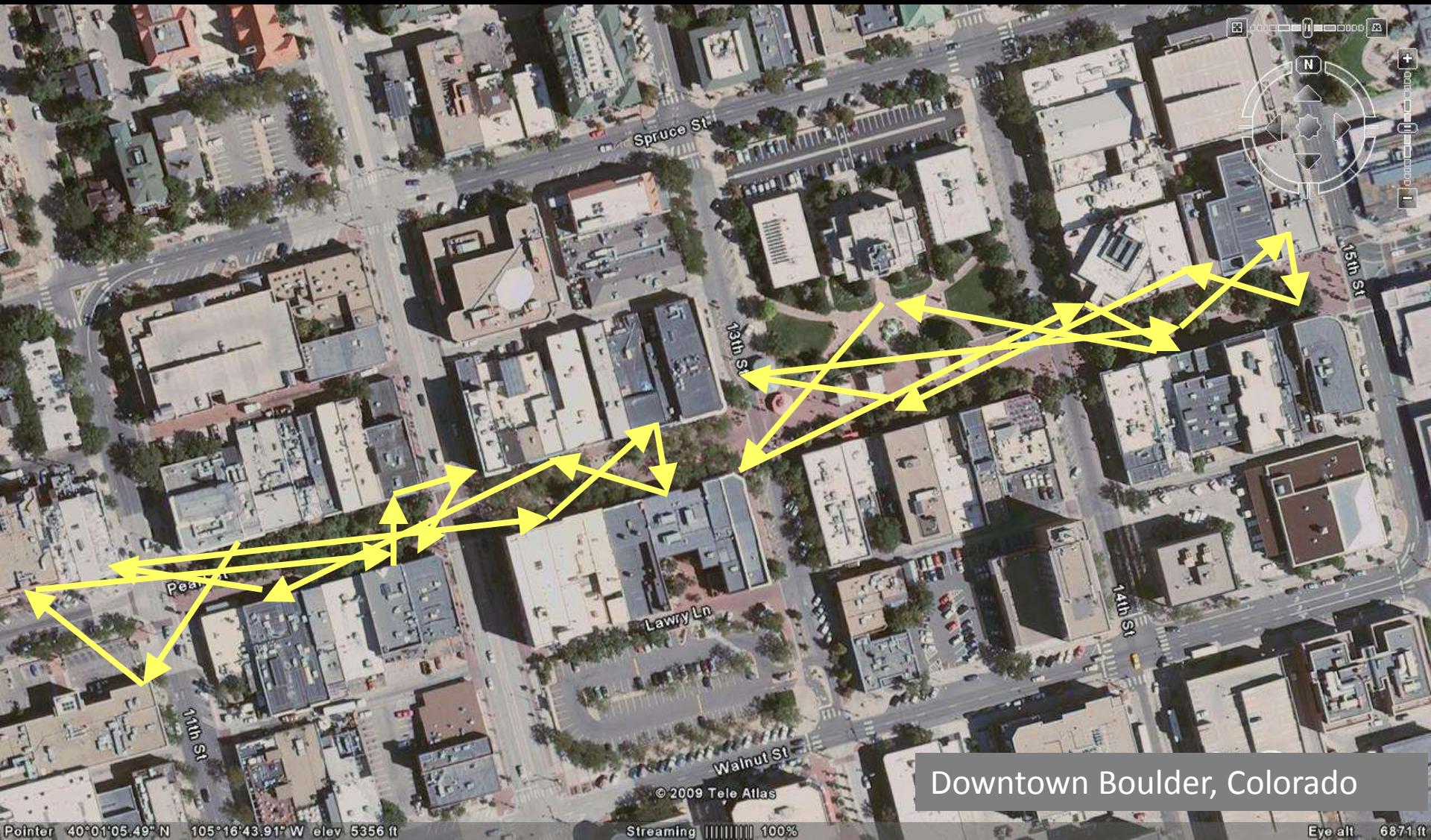


Pedestrian Environment, Urban Form



East Pearl, Boulder, CO

Land use mix encourages pedestrians



Lots of people lead to...



...more people

Importance of Good Urban Design

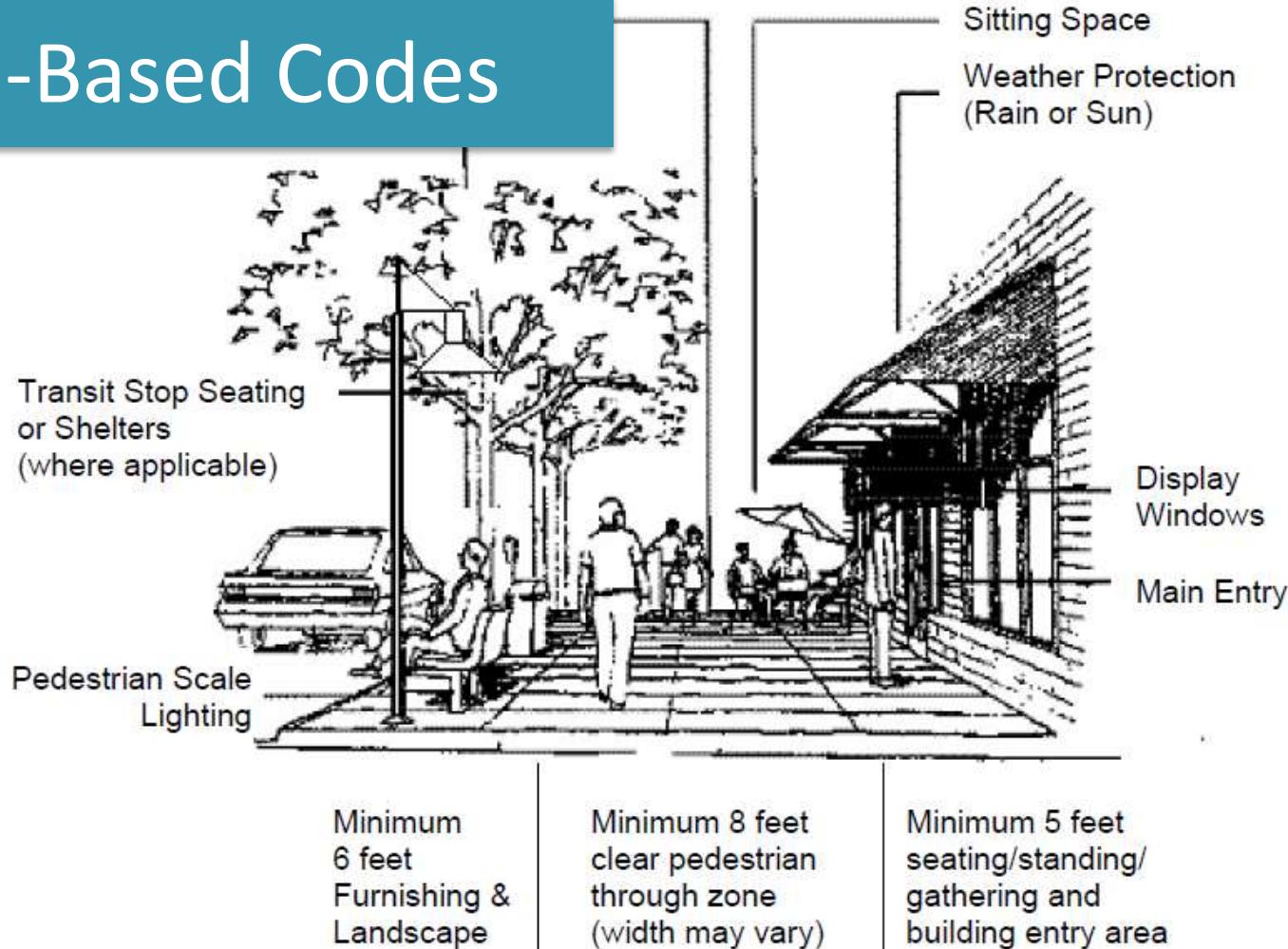


Park Ave., Winter Park, FL

Pedestrian Environment, Urban Form

Figure 5-612F. The Complete Pedestrian Environment

Form-Based Codes



2. Parking Districts

- Keys:
 - manage parking as a local utility
 - implement over time (phasing)
 - re-invest revenues
 - take on multimodal mission

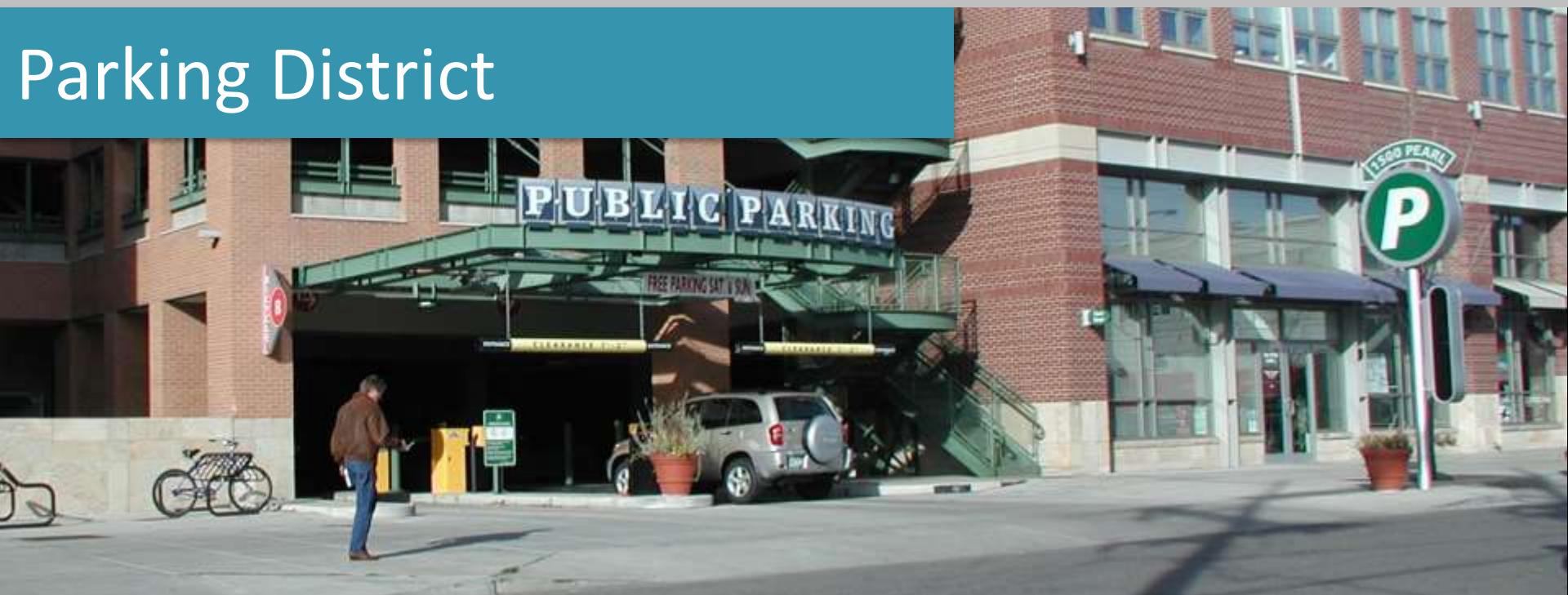
access

Example: CAGID, Boulder, CO

Central Area General Improvement District:

- 35 blocks of on-street & off-street parking
- no parking requirements for development
- 5 mil property tax
- \$5m in annual parking revenues
- buys EcoPasses for all 6,362 downtown employees (\$795,000 in 2013)
- makes bicycle & pedestrian improvements

Parking District



Phoenix Gateway/TOD Area (draft)

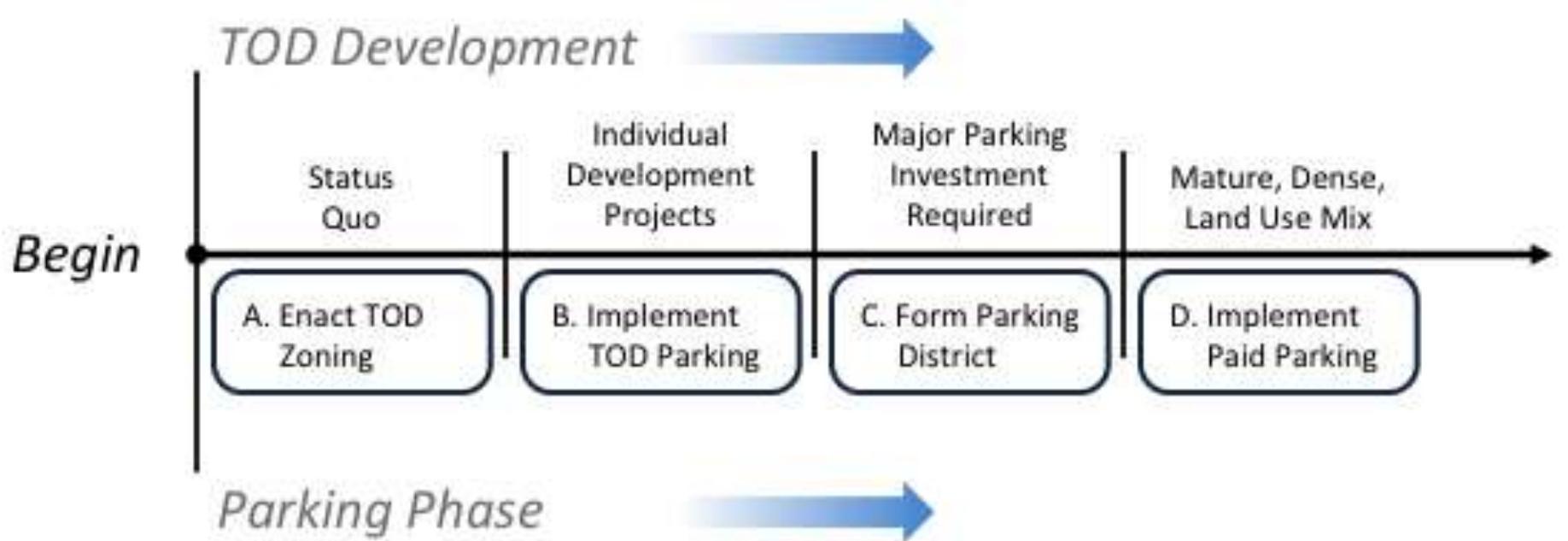


Parking Districts - Timing

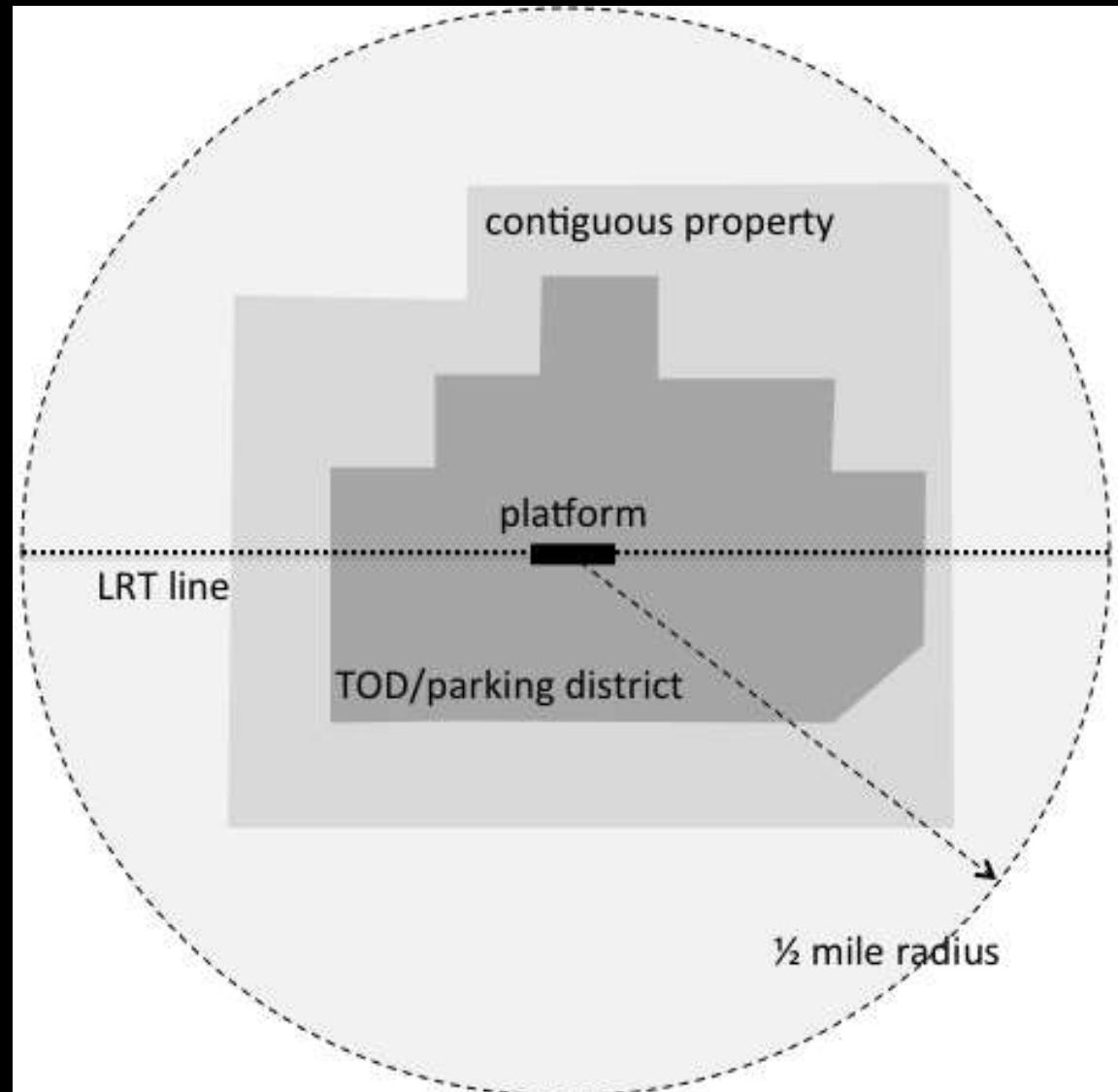


* TOD = transit oriented development

Phasing Into a Parking District



Parking Districts for TOD Areas



* Draft “Reinventing Phoenix” Parking Program

3. Time Limits, Pricing and Enforcement

- Strategic Keys:
 - Manage demand to meet objectives
 - Increase turnover in on-street, storefront parking
 - Target parking supplies for desired users through time limits and pricing strategies
 - Short-term, close-in for customers
 - Long-term, farther-out for employees
 - Appropriate residential parking on-site or in RPP districts

Enforcement



- friendly enforcers (not law officers)
- first time offenders – gentle notice
- scofflaws – escalating fines
- technology: hand held/on-board data
- chalking tires favors regular parkers over visitors

fair + inevitable

Example: Redwood City, California

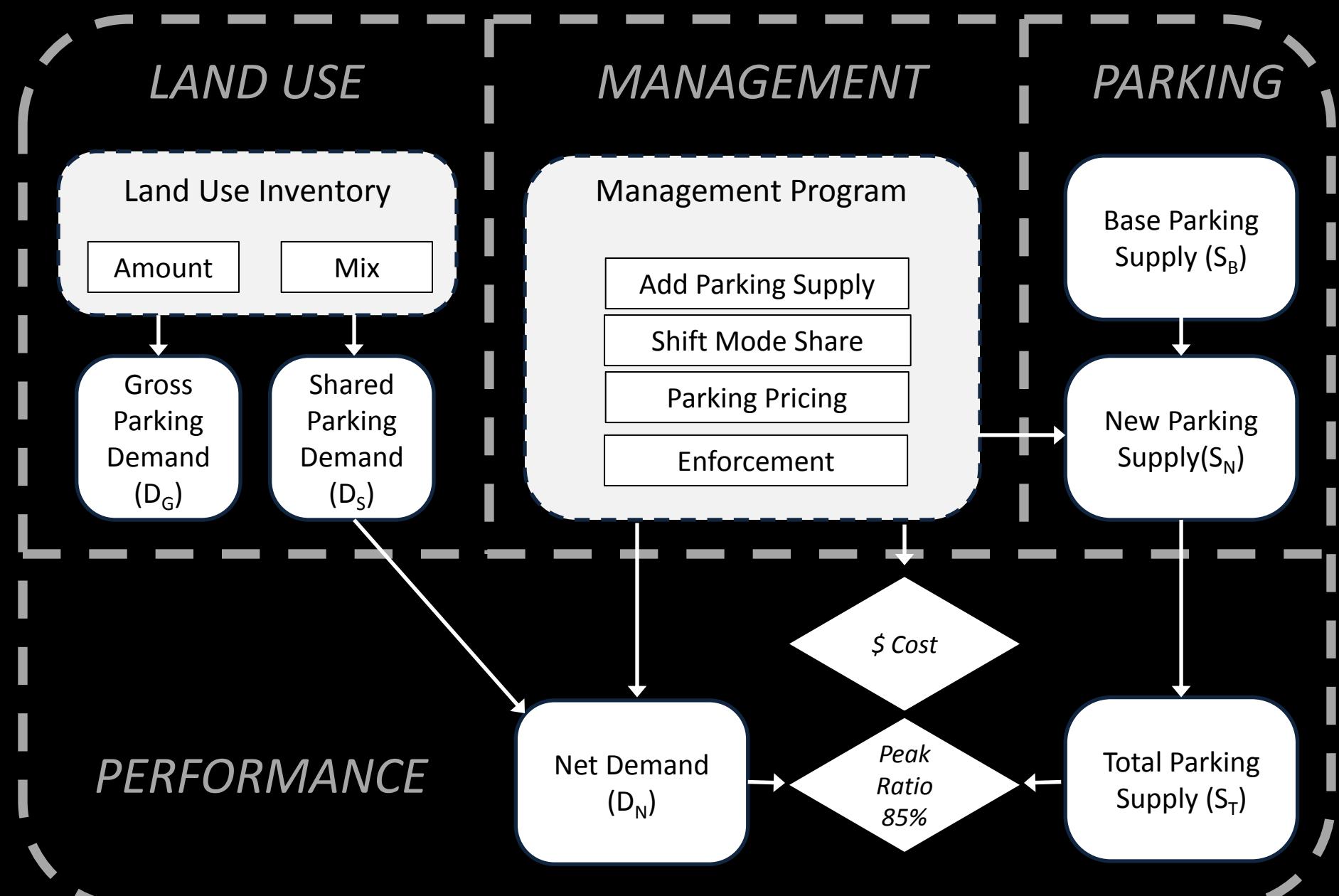


4. Multimodal Integration

- Keys:
 - look for lowest cost solutions
 - leverage investment in transit
 - leverage investment in pedestrian facilities
 - leverage investment in bicycling facilities
 - invest in parking when appropriate

efficiency

Boulder PSE Approach



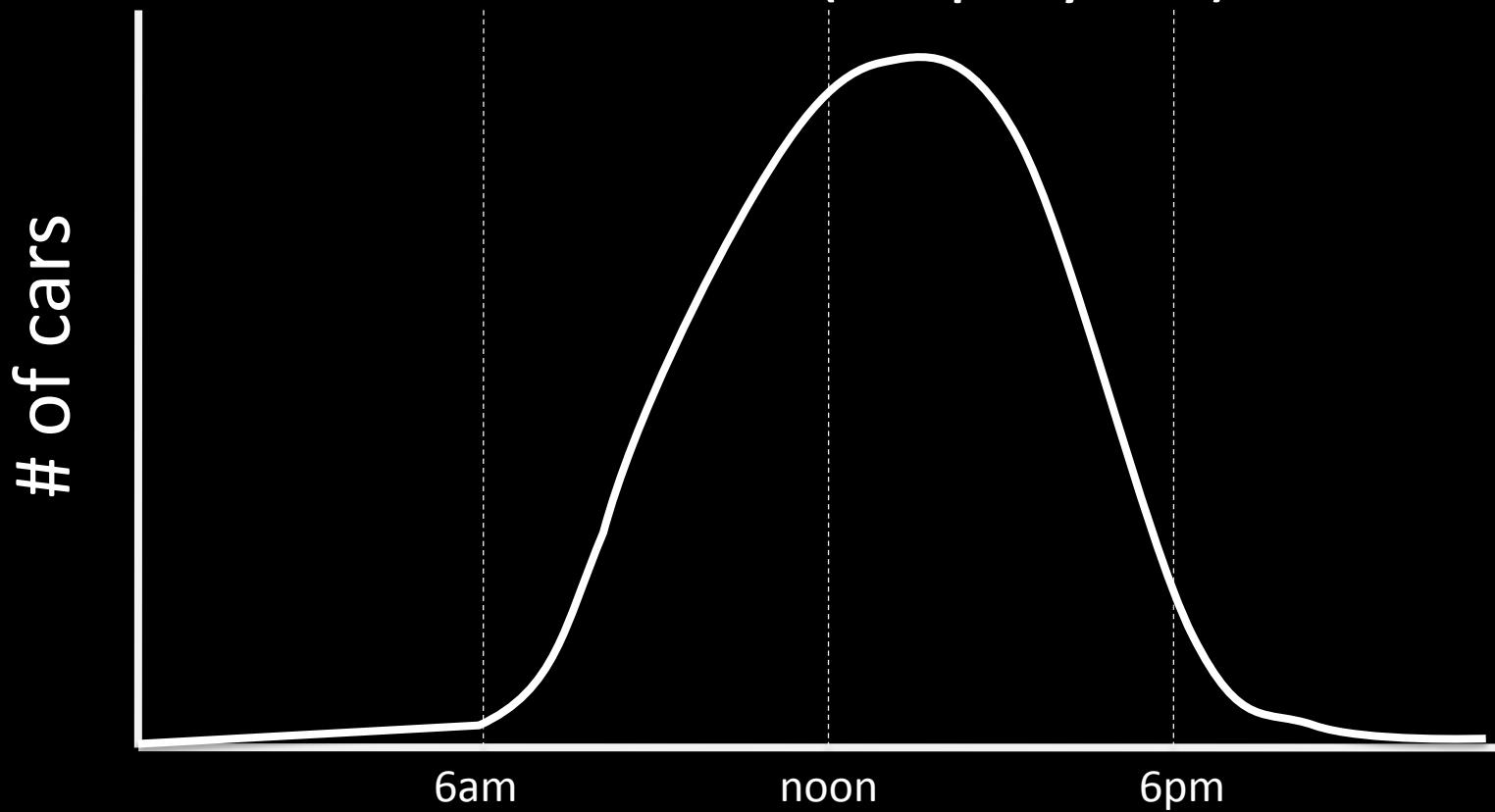
5. Shared & Off-Site Parking

- Keys:
 - manage parking as a local utility
 - not an on-site use
 - implement shared parking
 - allow off-site parking

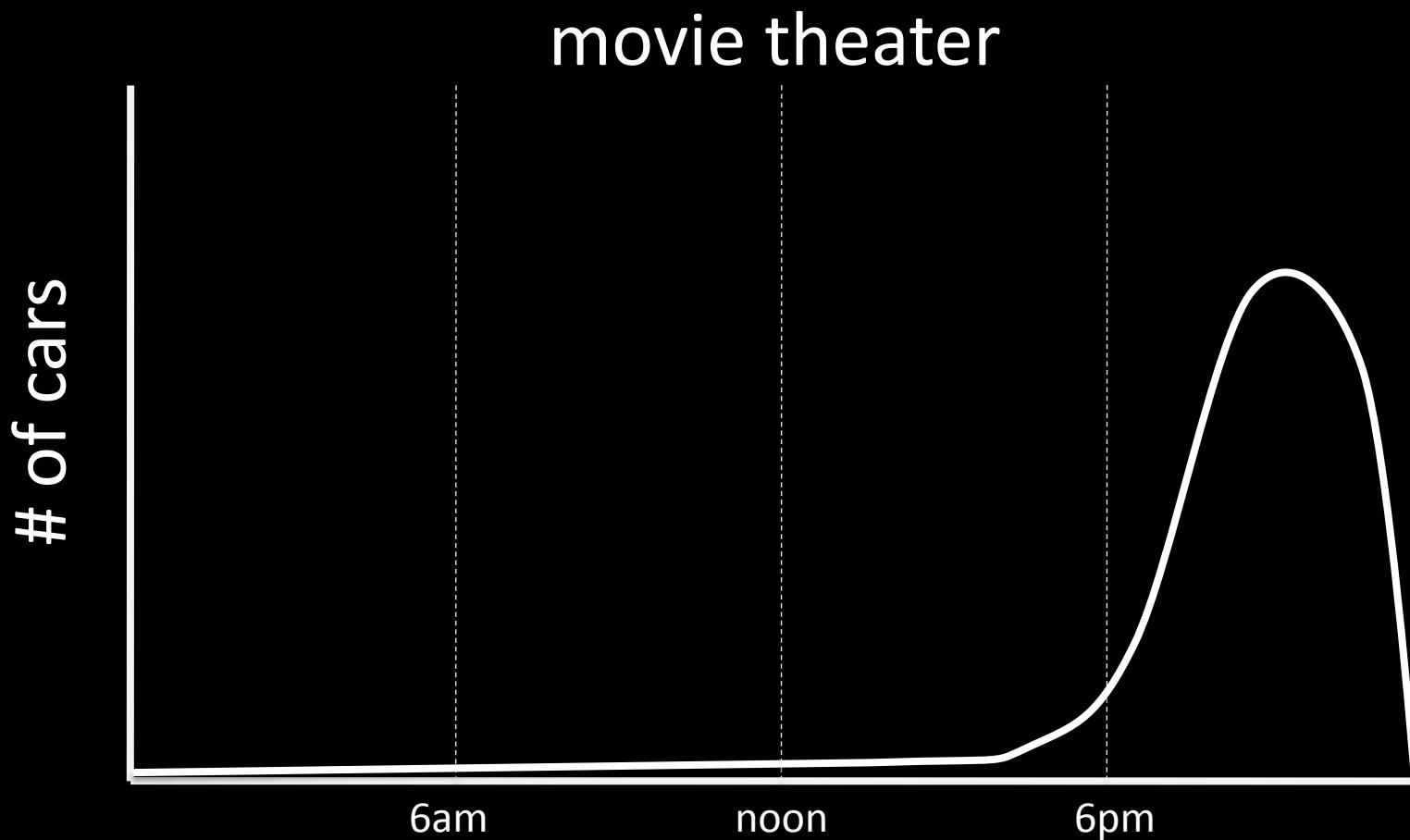
efficiency

Parking Accumulation (weekday)

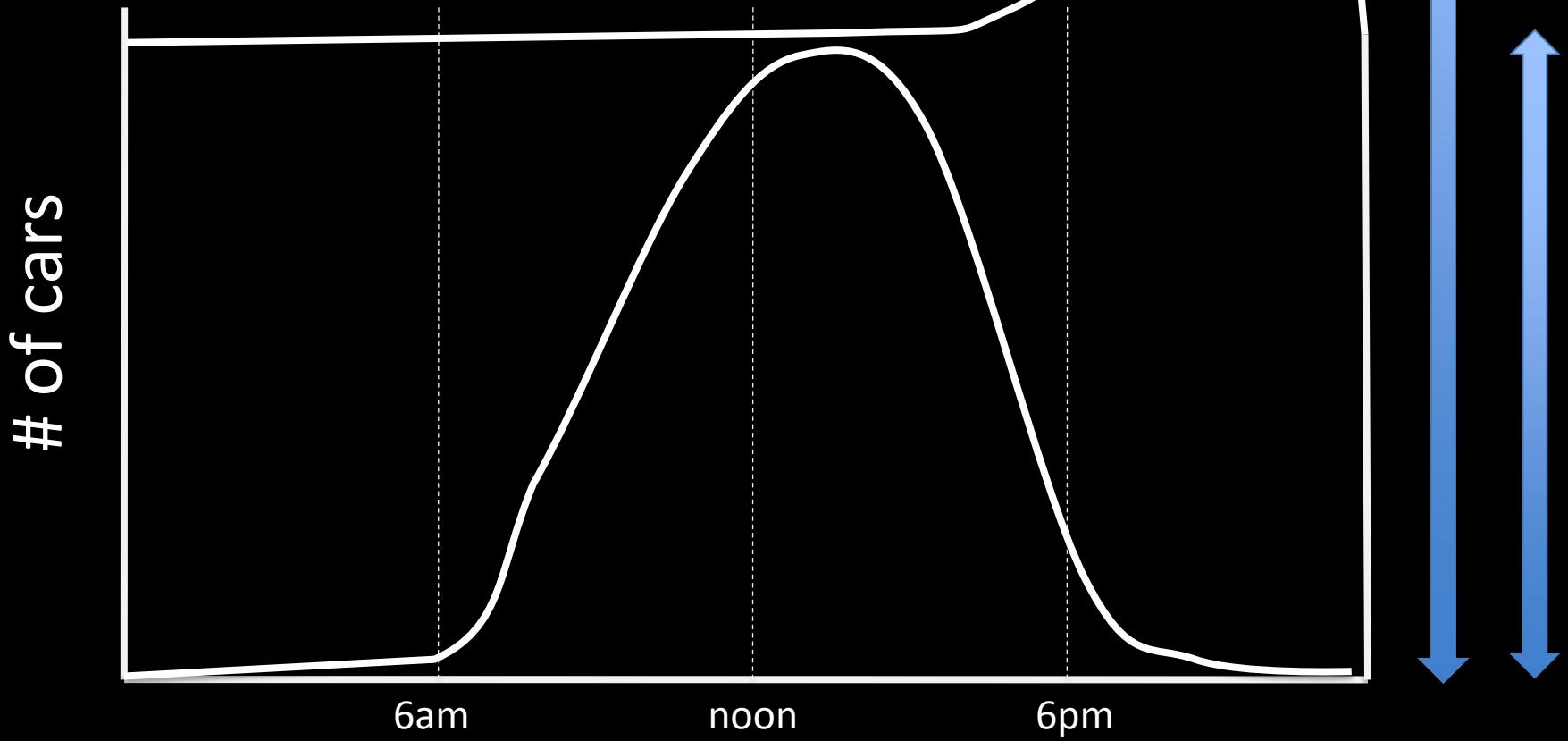
commuters (employees)



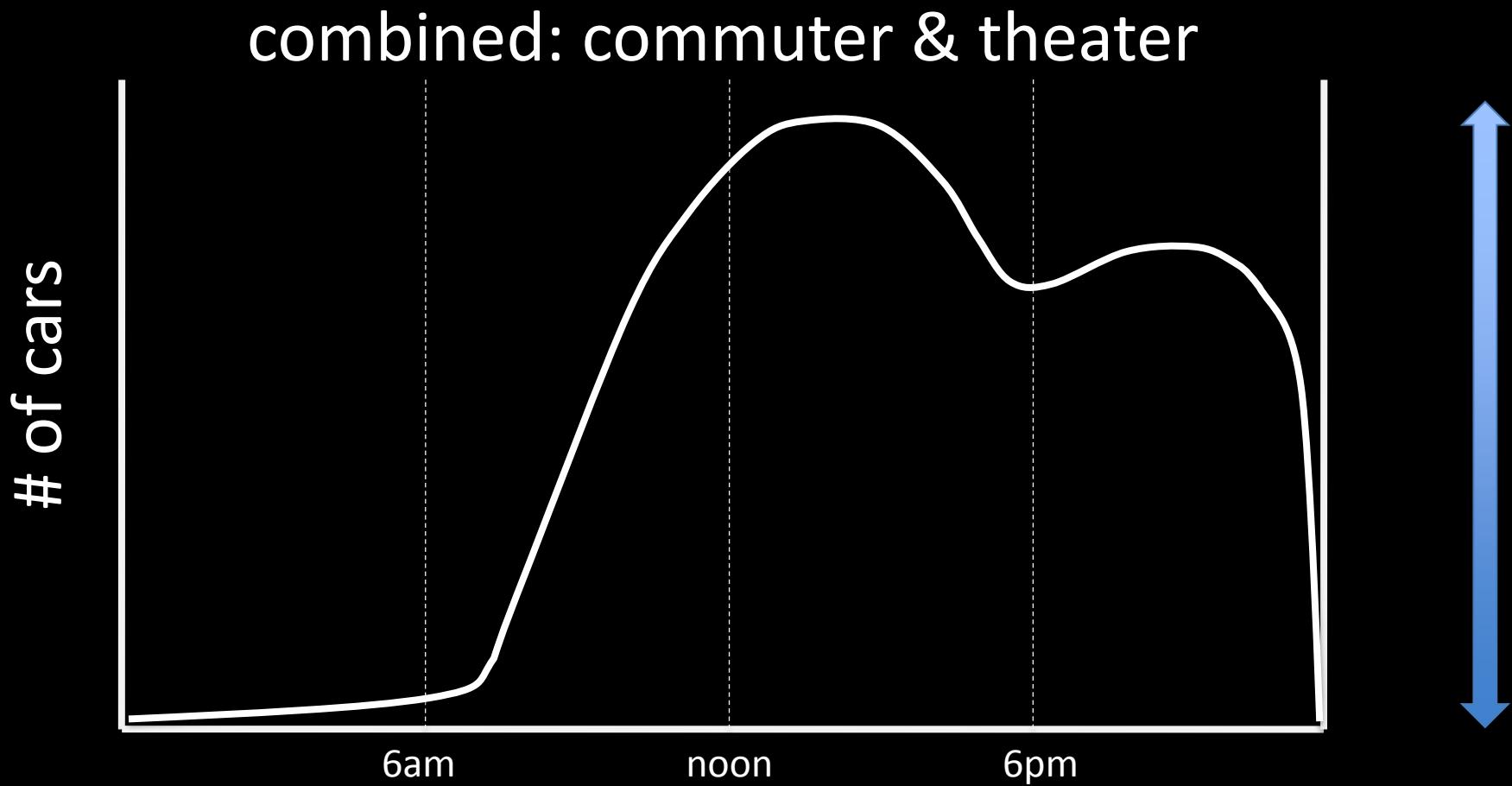
Parking Accumulation (weekday)



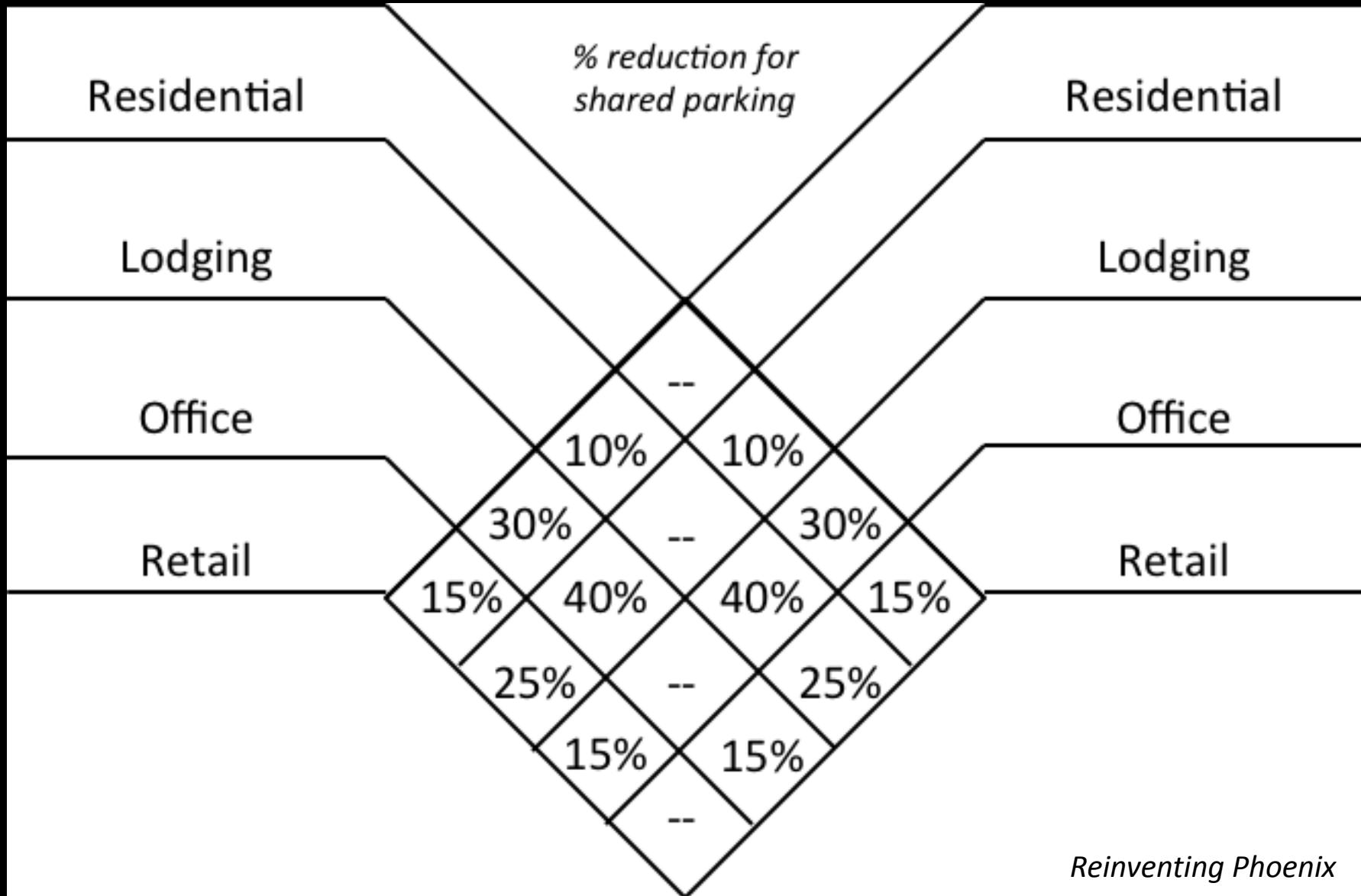
simple addition (wrong)



Parking Accumulation (weekday)



Example: Smart Code Approach



Shared Parking Code



Berkeley, California

Photo: Dover, Kohl and Partners

6. Remote Parking & Shuttles

- Keys:
 - integrate into existing transit system
 - market, market, market
 - incorporate into event pricing

information

Example: HOP to Chautauqua, Boulder, CO

Remote Parking + Shuttle



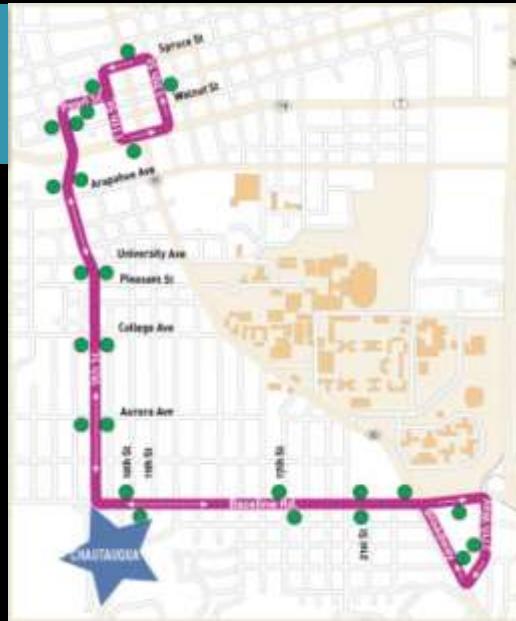
HOME > EXPLORE > HOP 2 CHAUTAUQUA

HOP 2 Chautauqua



The "HOP 2 Chautauqua" (H2C) will again serve Chautauqua Park this summer. This free service will be available on all Chautauqua concert nights from 5:30 p.m. to the end of the show. Passengers can board at any stop along 9th Street from Downtown Boulder (13th and Pearl) or along Baseline from 27th Way park-n-Ride (Broadway and 27th Way).

The H2C will arrive every 15 minutes.
For more information visit [GoBoulder.net](#) or call 303.447.8282.



Ride the FREE HOP 2 Chautauqua - The Ultimate Carpool!

Leave the hassle of parking at home and catch a ride from any one of the convenient Boulder stops and enjoy a stress-free evening!

7. On-street Parking

- Keys:
 - preserve & maximize on-street supply
 - support storefront streets
 - count as part of total supply

context

Example: Aspen, Colorado

Maximizing On-Street Parking



Photo: Charlier Associates, Inc.

8. Monitor, Measure, Report

- Keys:
 - set goals, objectives, performance measures & targets
 - make information accessible to the public
 - allow adaptation – mid-course corrections

accountability

Example: District of Columbia

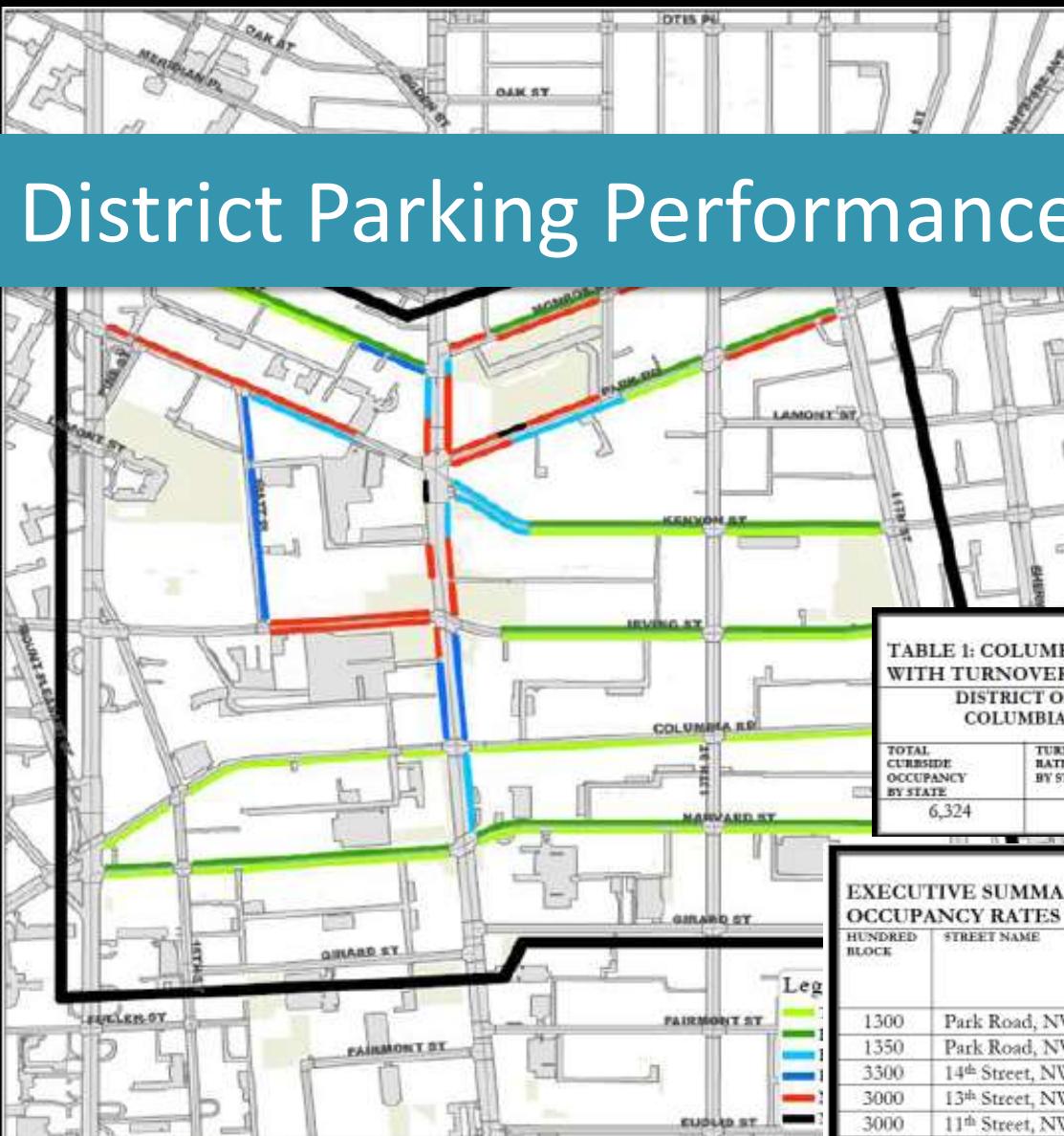
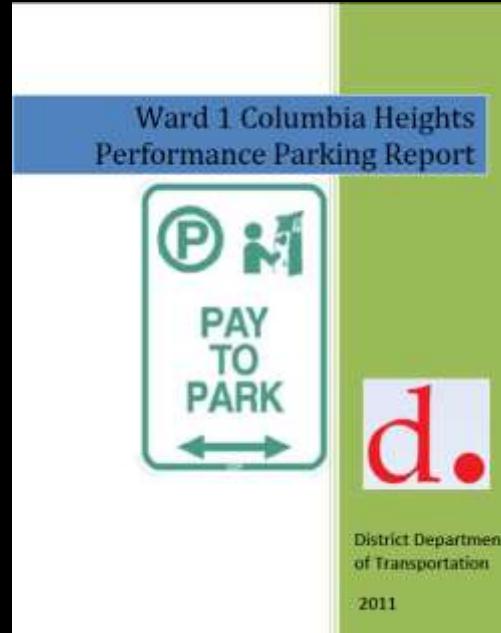


TABLE 1: COLUMBIA HEIGHTS TOTAL CURBSIDE OCCUPANCY BY STATE WITH TURNOVER RATES ON ALL BLOCKS (with duplicate registration numbers not removed)							
DISTRICT OF COLUMBIA		MARYLAND		VIRGINIA		OTHER OR UNKNOWN STATE	
TOTAL CURBSIDE OCCUPANCY BY STATE	TURNOVER RATE BY STATE	TOTAL CURBSIDE OCCUPANCY BY STATE	TURNOVER RATE BY STATE	TOTAL CURBSIDE OCCUPANCY BY STATE	TURNOVER RATE BY STATE	TOTAL CURBSIDE OCCUPANCY BY STATE	TURNOVER RATE BY STATE
6,324	53%	1,142	9%	728	6%	3,864	32%

EXECUTIVE SUMMARY: 2010 COLUMBIA HEIGHTS TOP TEN HIGHEST CURBSIDE OCCUPANCY RATES BY HUNDRED BLOCK

HUNDRED BLOCK	STREET NAME	PARKING SPACES PER BLOCK SEGMENT	AVERAGE OCCUPANCY		MAXIMUM OCCUPANCY		TURNOVER RATE
			NUMBER OF VEHICLES	OCCUPANCY PERCENTAGE	NUMBER OF VEHICLES	OCCUPANCY PERCENTAGE	
1300	Park Road, NW	6	14	233%	45	750%	2:25
1350	Park Road, NW	9	13	144%	58	644%	1:42
3300	14 th Street, NW	16	10	63%	49	306%	1:49
3000	13 th Street, NW	15	17	113%	20	133%	3:53
3000	11 th Street, NW	20	16	80%	25	125%	3:30
2700	14 th Street, NW	17	8	47%	32	188%	2:04





D.
Parking Audits

What is a Parking Audit? Why Do One?

- Process that records parking utilization or occupancy at a given point in time
- Can be expanded in scope/repeated to document turnover (and duration of parking)
- De-couples truth from perception
- Helps frame discussion with data for future decisions

1. Select Audit Area

- Area with ‘issues’ (real or perceived);
- Functional boundary of a downtown district or neighborhood with buffer;
- ~1/2 mile across (1 mile max);
- Include areas experiencing spill-over;
- Include areas that may include additional supply;
- Include a major trip generator at the periphery.



Snapshot: Carpinteria, CA

- **Downtown Commercial Core Audit**
 - Address the existing (and desired) mix of uses
 - Small businesses
 - Flag factory, job centers
 - Residential uses (vacation condos)
 - Beach access
 - Constraints of coastal zone
 - Support tourism and economic success
 - Maintain identity

2. Design & Schedule the Audit



When to Audit?

- Typical conditions
- Peak counts are helpful when paired with non-peak and typical (not for decision-making)
- Seasonal variations
- 3-4 counts during a one-week audit is a good start (the more the better)
- Timing of counts (weekday/weekend, time)

- Think forward to what results will show
- Plan on multiple audits to get the whole picture

Snapshot: Lawrence, KS

- Residential neighborhood adjacent to KU
- “Not enough parking”
- Audit designed to help isolate the problem
 - Under-parked multi-family residential?
 - Spill-over demand from KU?
- Occupancy counts timed to capture:
 - Peak class attendance (Tues at noon)
 - Typical residential use (weekend at noon)

3. Collect the Data



Spreadsheets

Example of a Spreadsheet for an Audit.xlsx - Microsoft Excel

	A	B	C	D	E	F
1	Street Name	From	To	Side (N,S,E,W)	Approx # of Spaces	Regulations in effect (timed restrictions, disability), including price
2	Main Street	1st	2nd	N	20	No parking 7pm to 7am; 2 hour limit M-Sa, \$1/hour, 2 spots for disability
3	Main Street	2nd	3rd	N	15	No parking 7pm to 7am; 2 hour limit M-Sa, \$1/hour
4	Main Street	3rd	4th	N	20	2 hour limit M-Sa, \$1/hour
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						

- Organize data geographically
 - Block face, direction
 - Be sure to record:
 - Signed regulations
 - Off-street spaces (Lots, garages)
 - Public or private
 - Paid or unpaid

Auditors



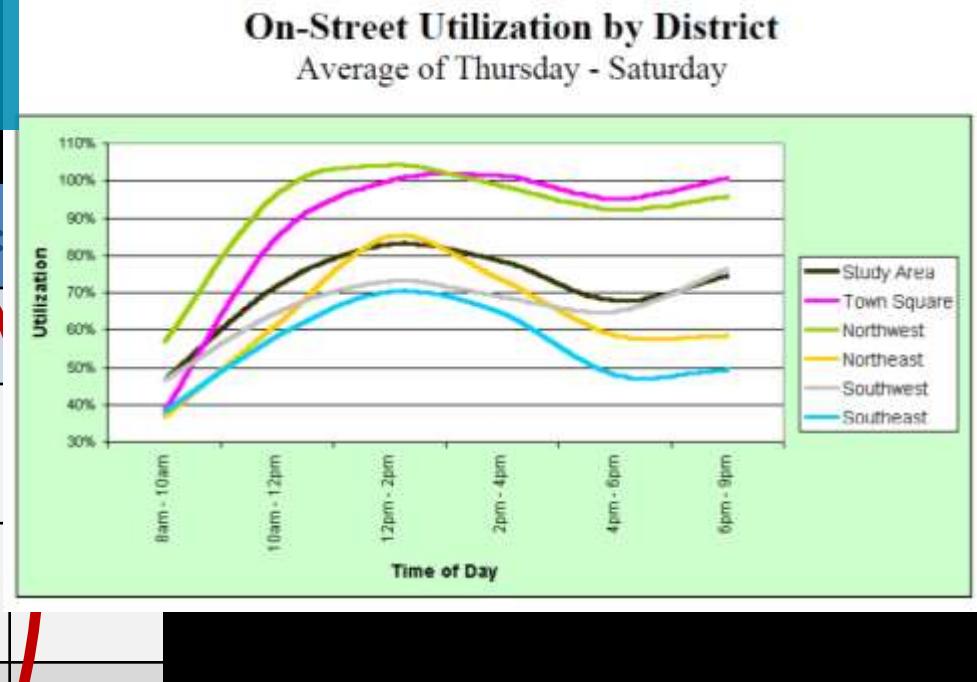
4. Interpret the Results

Excel ribbon showing formulas, data, review, view, and acrobat tabs. The formula bar shows =AVERAGE(F8:F9). The ribbon also includes font, alignment, number, conditional formatting, and normal buttons.

All Days - Visitor															
	Thursday (8am-9pm)					Friday (8am-9pm)					Saturday (8am-9pm)				
	Hours	Total Vehicles	Parked Hours	Avg. Duration	Avg. Turnover	Hours	Total Vehicles	Parked Hours	Avg. Duration	Avg. Turnover	Hours	Total Vehicles	Parked Hours	Avg. Duration	Avg. Turnover
A3.E1	13	4	7.50	2	0.31	13	5	8	13/4	0.38	13	4	6	1 1/2	0.31
Space 1		5	7.00	1 2/3	0.38		4	10	2 3/8	0.31		3	3	1 1/2	0.23
Space 2		3	8.00	2 2/3	0.23		6	7	1	0.46		5	8	1 1/2	0.38
A3.N1	13	1	0 1/2	3/4	0.04	13	2	9 3/4	7 1/2	0.12	13	1	5 3/4	2 7/8	0.08
Space 1		1	1.50	1 1/2	0.08		2	9	4 1/2	0.15		2	12	5 3/4	0.15
Space 2		0	0.00	0	0.00		1	11	10 1/2	0.08		0	0	0	0.00
A2.N1	13	5	5.50	1 1/5	0.35	13	2	6	5 5/8	0.12	13	4	11 1/2	7 2/9	0.31
Space 1		6	7.50	1 1/4	0.46		2	2	3/4	0.15		7	10	1 3/7	0.54
Space 2		3	3.50	1 1/6	0.23		1	11	10 1/2	0.08		1	13	1 3/7	0.08
A1.S1	13	2	7.50	5 5/6	0.15	13	1	2 1/2	2 1/2	0.08	13	2	7 1/4	3 5/8	0.15
Space 1		3	5.00	1 2/3	0.23		1	4	4	0.08		2	12	5 3/4	0.15
Space 2		1	10.00	10	0.08		1	1	1	0.08		2	3	1 1/2	0.15
A1.S2															
A1.E1	13	3	1.75	5/8	0.23	13	1	6 1/4	6 1/4	0.08	13	1	1/2	1/2	0.04
Space 1		4	2.00	1/2	0.31		1	11	10 1/2	0.08		1	1	1	0.08
Space 2		2	1.50	3/4	0.15		1	2	2	0.08		0	0	0	0.00
A1.E2															
A1.W1	13	2	1.00	1/2	0.15	13	0	0	0	0.00	13	1	1/2	1/2	0.08
Space 1		2	1.00	1/2	0.15		0	0	0	0.00		1	1	1/2	0.08
A1.E6	13	3	6.25	4 4/7	0.19	13	1	6	6	0.04	13	2	8 1/4	7 3/8	0.12
Space 1		1	8.00	8	0.08		0	0	0	0.00		2	4	1 3/4	0.15
Space 2		4	4.50	1 1/8	0.31		1	12	12	0.08		1	13	1 3/7	0.08
A3.W1	13	5	4.33	8/9	0.36	13	4	3 1/6	11/4	0.33	13	4	4	8 9/	0.33
Space 1		8	7.50	1	0.62		3	3	1 1/2	0.23		5	5	8 9/	0.38
Space 2		2	1.50	3/4	0.15		4	6	13 8/	0.31		3	2	2 1/4	0.23
Space 3		4	4.00	1	0.31		6	6	1	0.46		5	6	11 9/	0.38
A2.E1	13	4	3.00	3/4	0.31	13	4	4 3/4	12/5	0.27	13	8	8	1 1/7	0.38
Space 1		5	3.50	2/3	0.38		3	5	12 3/	0.23		6	9	1 1/2	0.46
Space 2		3	2.50	5/6	0.23		4	5	11 8/	0.31		9	7	7 9/	0.69
A1.W1															
A2.S1	13	3	3.75	4/5	0.23	13	3	4 1/2	1	0.35	13	3	7	2 1/3	0.23
Space 1		4	4.50	1 1/8	0.31		4	5	11 4/	0.31		3	6	1 5/6	0.23
Space 2		2	1.00	1/2	0.15		5	4	4/5	0.38		3	9	2 5/6	0.23
A3.S1	13	4	3.50	5/6	0.31	13	3	3	3/5	0.19	13	4	5 1/2	1 2/3	0.31
Space 1		2	1.50	3/4	0.15		0	0	0	0.00		2	5	2 1/4	0.15
Space 2		6	5.50	1	0.46		5	6	1 1/5	0.38		6	7	1	0.46
A6.E1	13	5	5.25	1	0.38	13	4	5 1/2	1 5/8	0.27	13	7	7 1/4	1	0.54
Space 1		6	6.50	1	0.46		2	4	13/4	0.15		3	3	1	0.23
Space 2		4	4.00	1	0.31		5	8	11 2/	0.38		11	12	1	0.85
A6.N1	13	2	1.50	3/4	0.15	13	4	5 3/4	13/5	0.27	13	5	5 1/2	1 2/9	0.38
Space 1		2	1.50	3/4	0.15		5	9	12/3	0.38		3	5	1 1/2	0.23

Tables, Graphs, Charts

Type of Parking	Supply	Remaining Capacity		
		Wednesday 12pm	Thursday 1pm	Friday 7pm
Public	982	45%	39%	53%
Private	1664	48%	46%	65%
Combined	2646			



1	A	B	Utilization			
			Survey 1	Survey 2	Survey 3	Survey 4
2	Type of Parking	Supply				
3	On-Street		51	86%	71%	90%
4	Off-Street		220	87%	60%	79%
5	Combined		271	87%	62%	81%
6						

Maps

Where/when is parking utilization high/low?

How does this change with each count time?



Maps

What destinations/users might be creating high rate of utilization?

What are the possible impacts of the high utilization? What users groups are likely to be affected?

What kinds (if any) regulations are in effect in each of these areas?

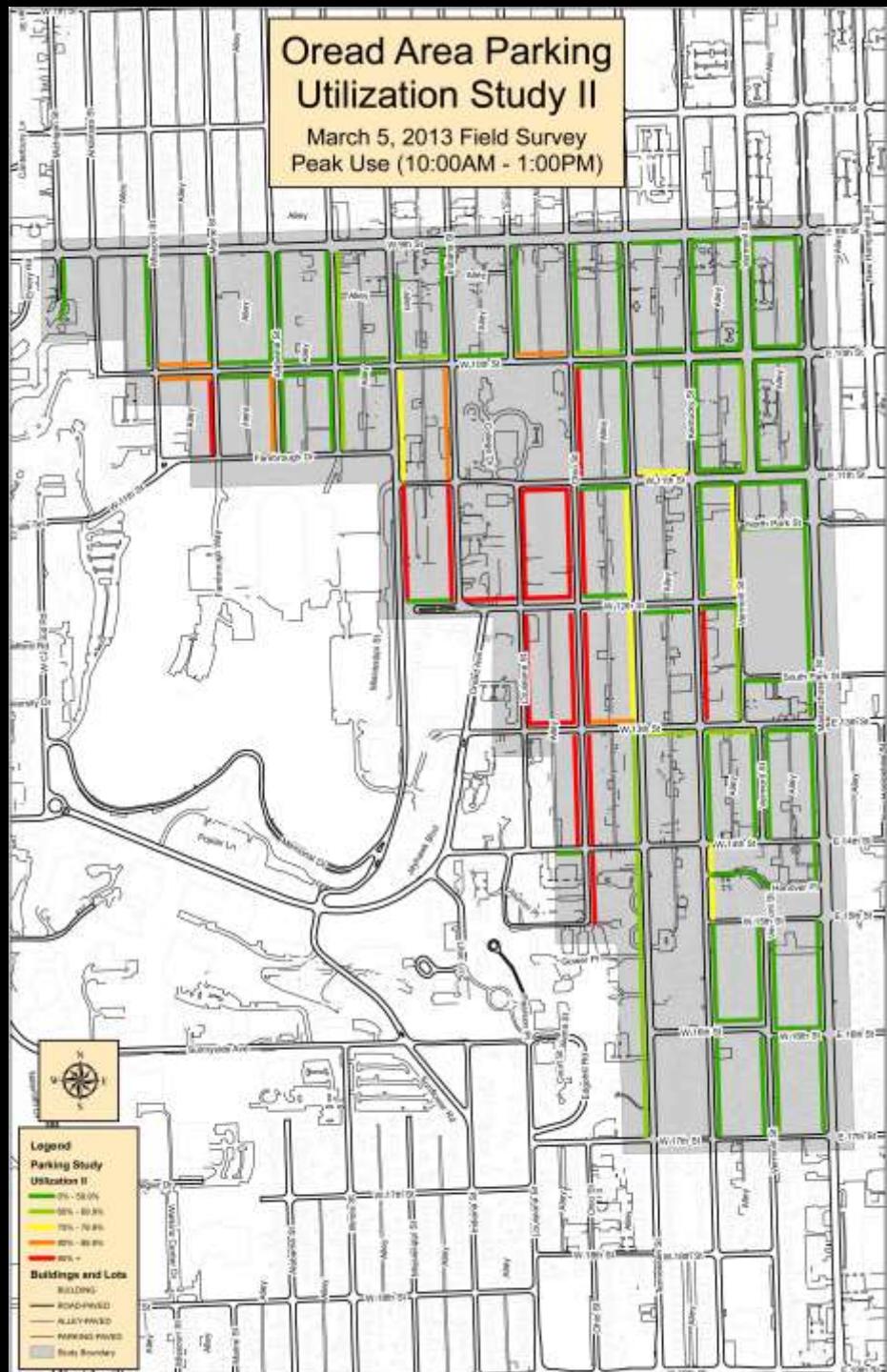


Maps

Are the high utilization areas localized or spread across a larger area?

Is there supply near the high utilization areas? Is it available for use? (Not private/reserved.)

Are there opportunities for areas with low utilization? If so, what times of day?



5. Share and Discuss the Results

PARKING AUDIT WORKSHOP

Lawrence, KS

April 17, 2013

Vickie Jacobsen, Charlier Associates, Inc.



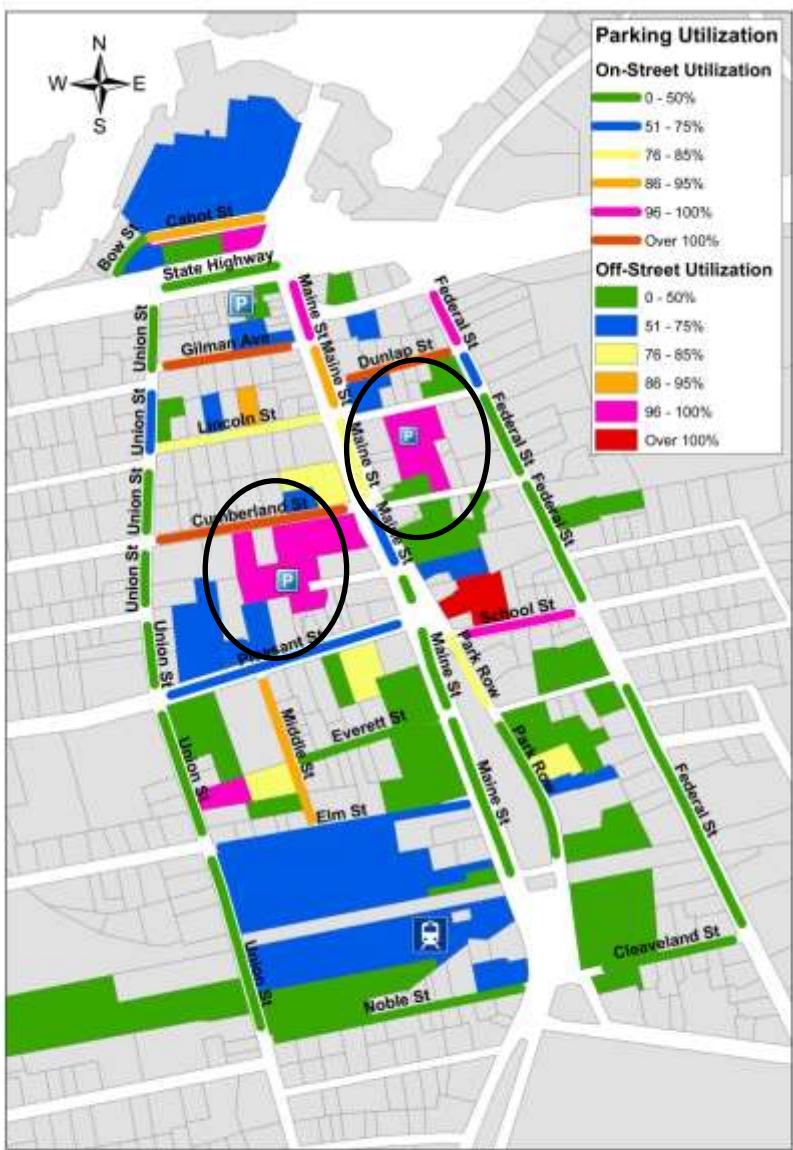
Parking Partnerships

- Local Staff
 - Planning, public works, economic development, transportation (bicycle/ped/AT), enforcement, IT, public safety, etc.
- Business Representatives
- Transit Service Providers
- Neighbors & Property/Business Owners
- Institutional Representatives (schools, gov't, etc.)
- Elected Officials

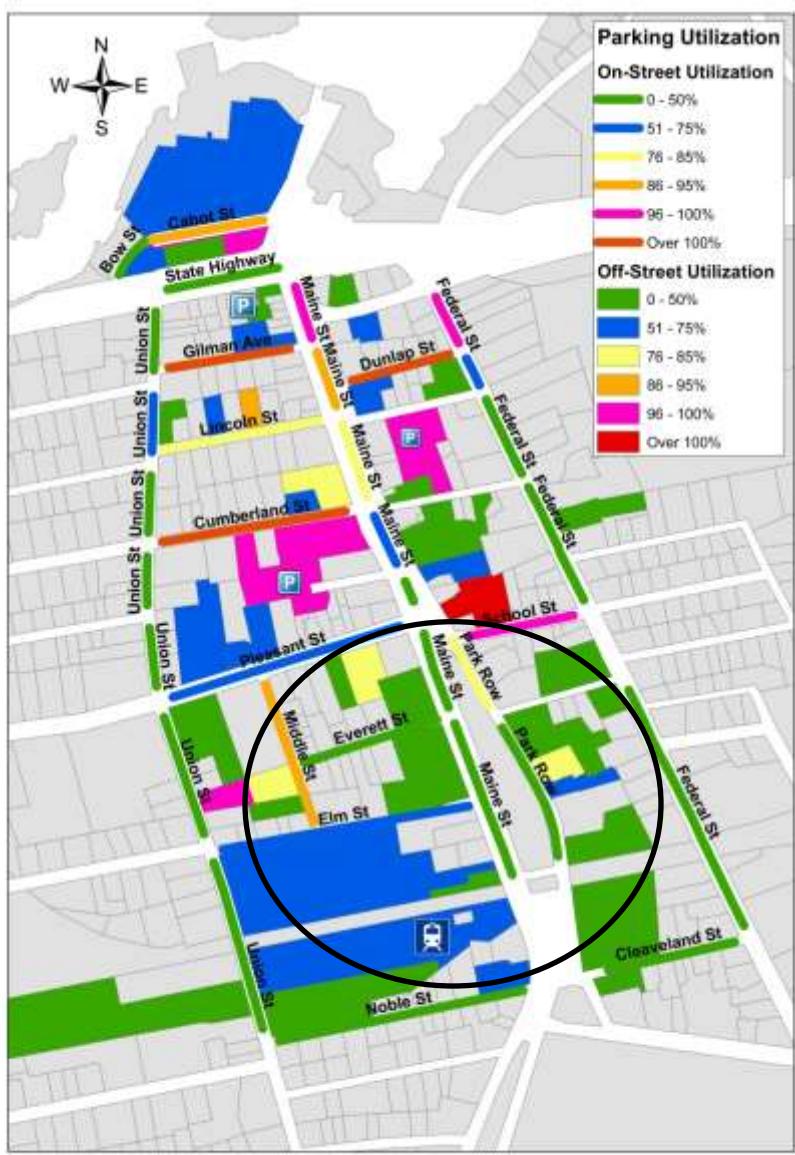
Discussion Topics

- Can we improve the balance of parking utilization across the audit area? How?
 - Shared parking
 - Balance of uses
 - Regulations, pricing
- Is the current supply serving the range of users?
 - Look at occurrence of violations
 - Employees, business owners
 - Customers
- Do we have a stable and flexible long-term parking supply? Do we have interim strategies?
- Are our policies supporting our goals? (parking requirements)

Example: Brunswick, ME



Example: Brunswick, ME



Brunswick Downtown Parking Utilization
Thursday 1 PM

0 250 500
Feet



Wrap Up

Review: Today's Agenda

General Transportation Frame

Strategic Parking Management

Best Practices

Conducting a Parking Audit

Sonoran Institute

Transportation Webinar Series

completed

- ✓ Not Your Father's Transportation System
- ✓ Transportation Performance Measures

today

- Strategic Parking Management

coming up

- ❑ When Main Street is a State Highway
- ❑ Opportunities in Transportation Funding



Thank You

Jim Charlier and Vickie Jacobsen



Charlier Associates, Inc.

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