# Transportation, Mobility and Sustainability



**Sustainable Design Assessment Team** 

### Transportation, Mobility, Sustainability

- Assets
- Opportunities
- Priorities



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- Narrow Residential Streets
- Small Lot Density
- Riparian Corridors, Green Space
- Tree Canopy
- Sidewalk Network
- Residual Roadway Capacity
- Location, Location, Location



### **Narrow Streets**





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### Small Lot Density





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### Riparian Corridors, Green Space





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### Tree Canopy





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### Sidewalk Network





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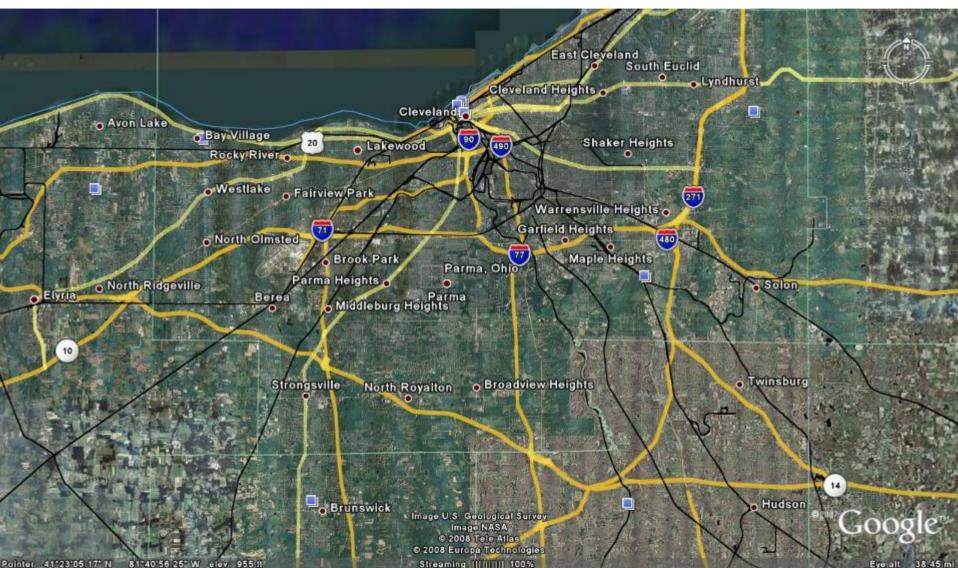
### **Residual Roadway Capacity**





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### Location, Location, Location



# Opportunities



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# Opportunities

- Reallocation of Street Space
- Burying Utilities
- Protecting Commercial Alleys
- Encouraging Pedestrians
- Developing Networks
- Encouraging Green Density
- Neighborhood Commercial Centers
- Setting the Stage for Transit

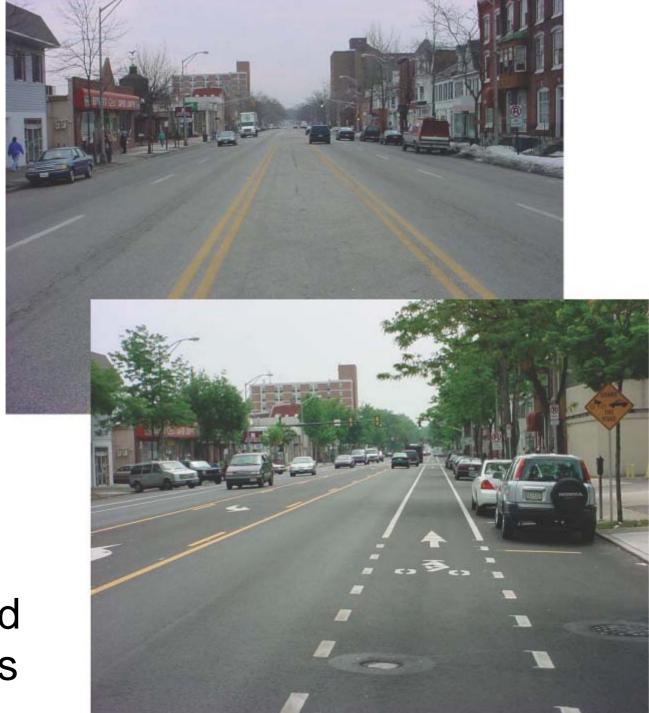


Sustainable Design Assessment Team Center for Communities by Design

### **Reallocation of Street Space**



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Road Diets

# **Road Diet Objectives**

- Improved safety
  - Traffic
  - Pedestrians
  - Bicycles
- Space
  - On-street parking
  - Bicycle lanes



### 4-Lane to 3-Lane Conversion







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### THE EFFECT OF FOUR-LANE TO THREE-LANE CONVERSION ON THE NUMBER OF CRASHES AND CRASH RATES IN IOWA ROADS

### Iowa DOT Road Diet Safety Study 2005

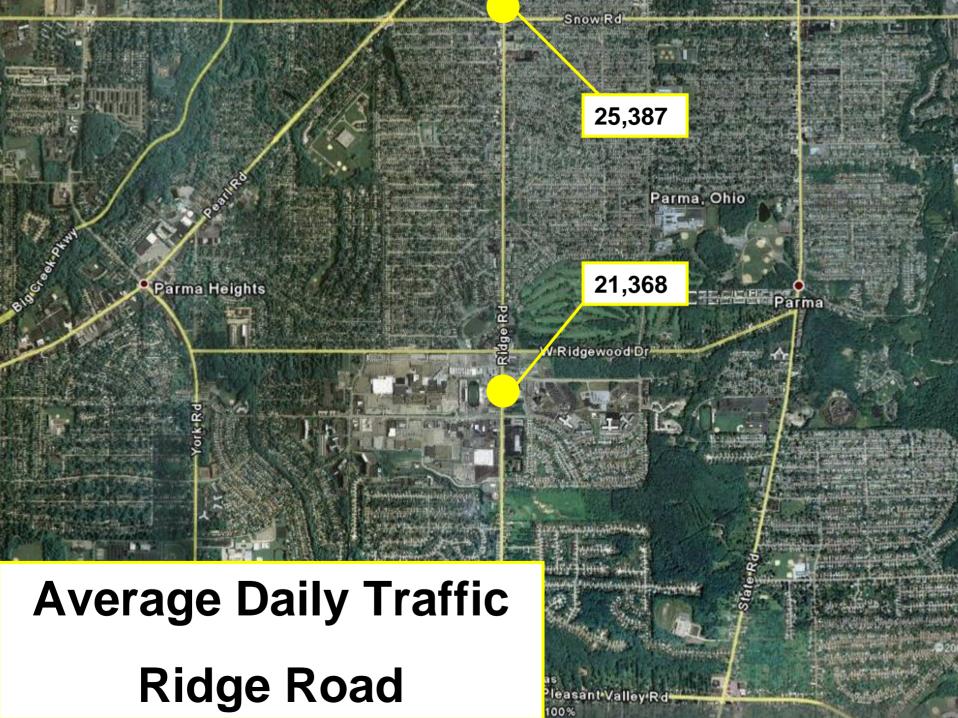
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ALICIA CARRIQUIRY DEPARTMENT OF STATISTICS IOWA STATE UNIVERSITY

A research report prepared for the Iowa Department of Transportation, June, 2005

### 6,000 – 36,000 vpd

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1		190000		3.10 (2.90,3.30)	18	168000	2.15 (1.93,2.38)
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3		194000		0.26 (0.22,0.30)	20	76000	0.21 (0.17,0.26)
4		221000		1.33 (1.23,1.45)	21	154000	0.62 (0.55,0.68)
5		304000		1.76 (1.52,2.04)	22	188000	1.20 (1.06,1.34)
6		290000		1.55 (1.40,1.71)	23	212000	0.48 (0.39,0.58)
7		130000		0.54 (0.40,0.70)	24	102000	0.50 (0.42,0.59)
8		175000		1.51 (1.37,1.64)	25	191000	1.36 (1.22,1.50)
9		381000		3.60 (3.37,3.85)	26	389000	3.10 (2.90,3.31)
10		298000		1.87 (1.57,2.20)	27	298000	0.53 (0.43,0.63)
11		62000		0.32 (0.28,0.37)	28	82000	0.76 (0.65,0.89)
12		242000		2.18 (2.03,2.35)	29	196000	1.52 (1.41,1.63)
13		361000		1.54 (1.41,1.68)	30	302000	2.99 (2.82,3.17)
14		266000		0.38 (0.30,0.47)	31	257000	0.58 (0.46,0.72)
15		267000		0.48 (0.39,0.57)	32	249000	1.53 (1.41,1.67)
	_						



Boulder, CO

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# **Burying Utilities**



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### **Commercial Alleys**



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### **Encouraging Pedestrians**



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### Winter Park, FL

### **Encouraging Pedestrians**

- What is required by pedestrians?
- What are highest value investments?



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### Pedestrians don't choose to walk based on facilities; they choose to walk based on environments.





### Pedestrians

### What Pedestrians Require

- Security lighting, activity, law presence
- Safety street crossings, sidewalks
- Destinations places, identity
- People people watching



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Pedestrians

### **Highest Value Investments**

- Crosswalks
- On-street parking
- Narrow streets



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### Networks



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### **Network Characteristics**

- All modes: bike, motor vehicle, transit
- Connectivity
- Redundancy
- Capacity



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## **Network Benefits**

- Encourage redevelopment
- Circulation, access
- Public safety, emergency response
- Walkability



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#### Tribune

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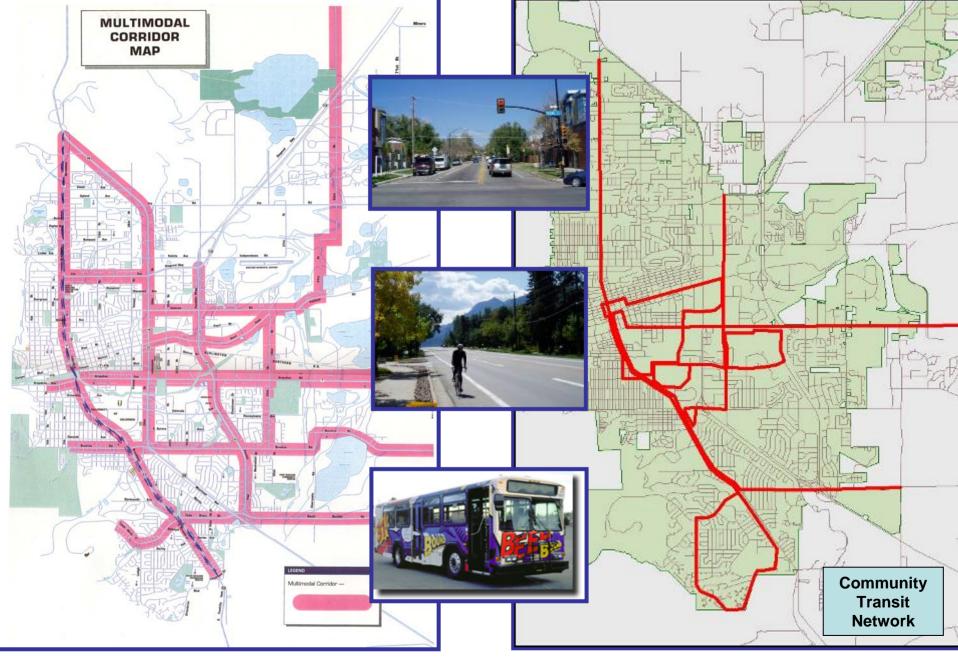
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## **Boulder Multimodal Corridors**

## Boulder, CO

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- Simple routes
- High frequency service

**BLEANER** 

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• Neighborhood scale vehicles











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### CUYAHOGA COUNTY GREENSPACE PLAN

### LEGEND

EXISTING PARKS & PROTECTED AREAS

### GREENSPACE CORRIDORS

RIVER, LAKEFRONT & CONSERVATION AREAS
 OTHER GREENSPACE CORRIDORS
 OUTSIDE CUYAHOGA COUNTY

#### GREENED CONNECTORS

EXISTING BOULEVARDS POTENTIAL GREENED CONNECTOR LAKE ERIE CIRCLE TOUR ROUTE CANALWAY OHIO SCENIC BYWAY

#### ACTIVITY NODES

CIVIC/RETAIL COLLEGE

#### TRAILS

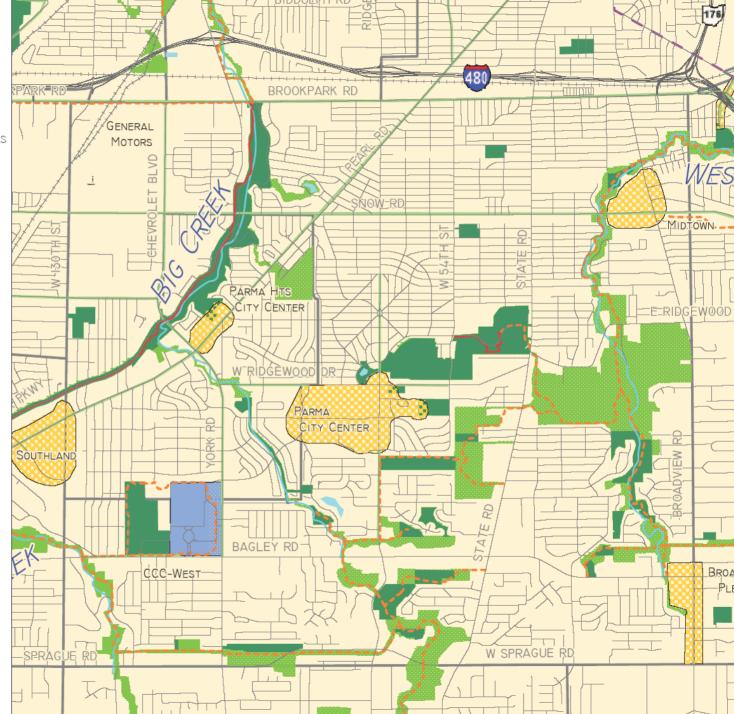
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CUVAHOGA COUNTY PLANNING COMMISSION 2002



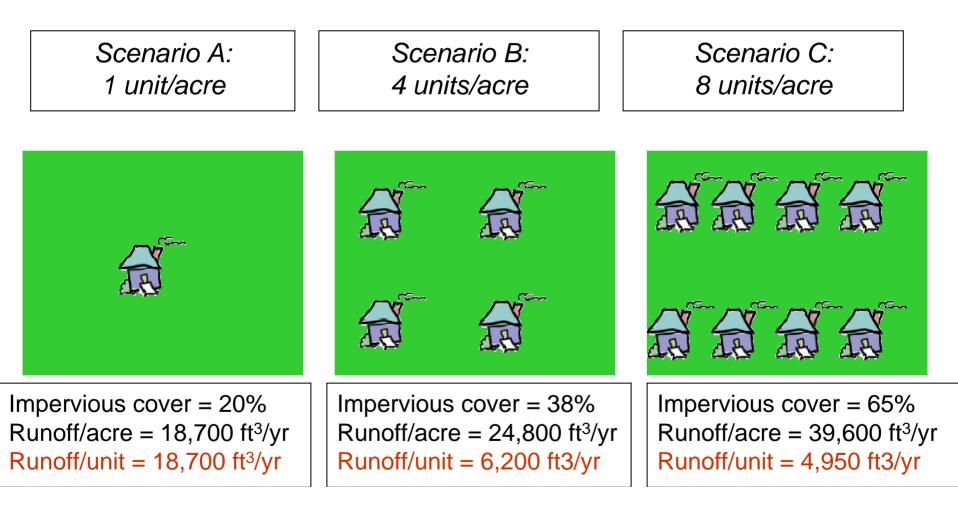


## **Green Density**

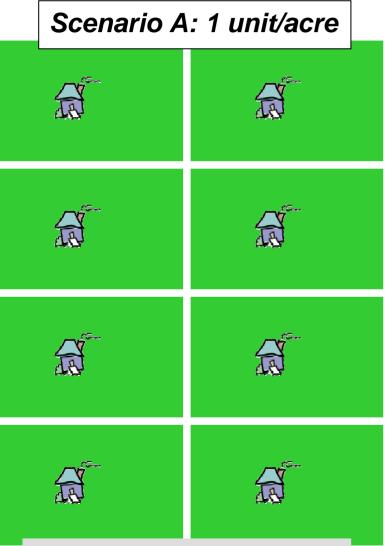


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## EPA Research on Smart Growth & Water

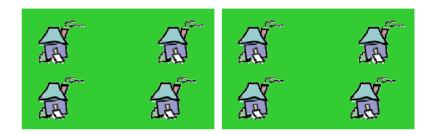


### Accommodating the eight houses at varying densities



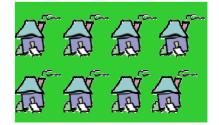
Impervious cover = 20% Total runoff = 149,600 ft<sup>3</sup>/yr Runoff/house = 18,700 ft<sup>3</sup>/yr

### Scenario B: 4 units/acre



Impervious cover = **38%** Total runoff = **49,600** ft<sup>3</sup>/yr Runoff/house = **6,200** ft<sup>3</sup>/yr

### Scenario C: 8 units/acre



Impervious cover = 65% Total runoff = 39,600 ft<sup>3</sup>/yr Runoff/house = 4,950 ft<sup>3</sup>/yr

Chico, CA

Brooklyn, NY

Boston, MA

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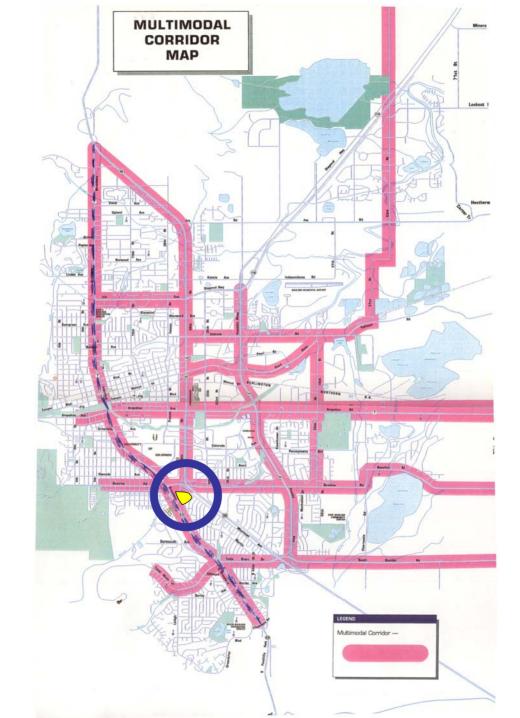
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## Neighborhood Commercial Centers



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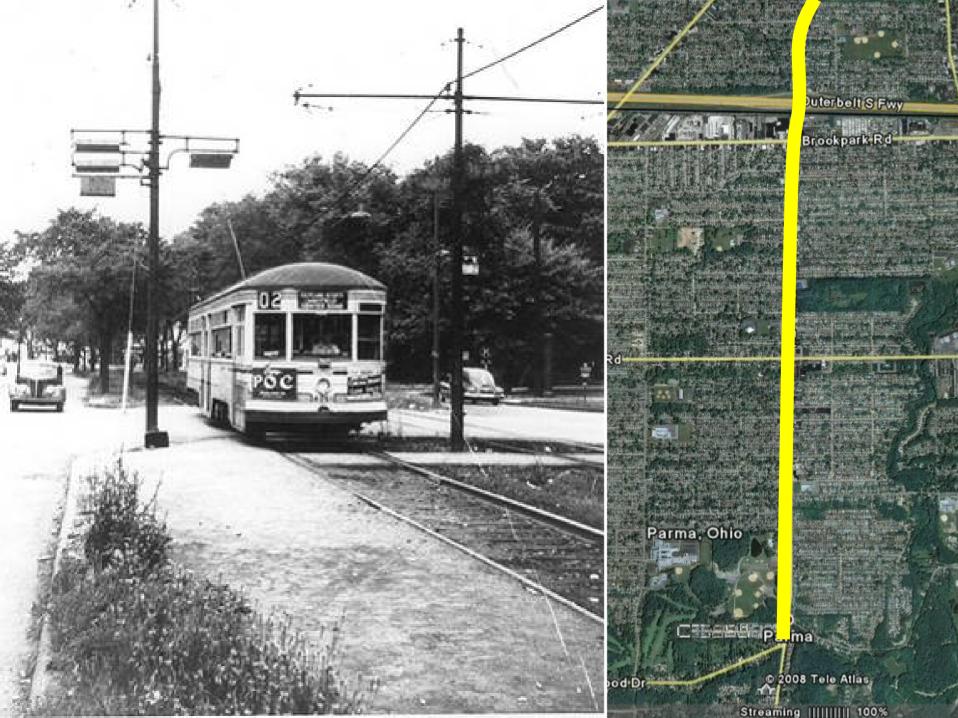




# Setting Stage for Transit



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## **Required for Transit Corridors**

- Dense, mixed-use nodes
- Walkable environments within 1/2 mile
- Ability to manage parking



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# **Suggested Priorities**



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# Suggested Priorities: Don't

- Lose commercial alleys
- Close streets, lose connectivity
- Lose density
- Lose street trees



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# Suggested Priorities: Do

- Identify small number of neighborhood commercial centers:
  - Create ¼-mile pedestrian districts
  - Create on-street parking
- Develop a bicycle system plan to leverage your trail network



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