

Transportation, Mobility and Sustainability



Sustainable Design Assessment Team
Center for Communities by Design

Transportation, Mobility, Sustainability

- Assets
- Opportunities
- Priorities



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Assets



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Assets

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



Narrow Streets



Small Lot Density



Riparian Corridors, Green Space



Tree Canopy



Sidewalk Network

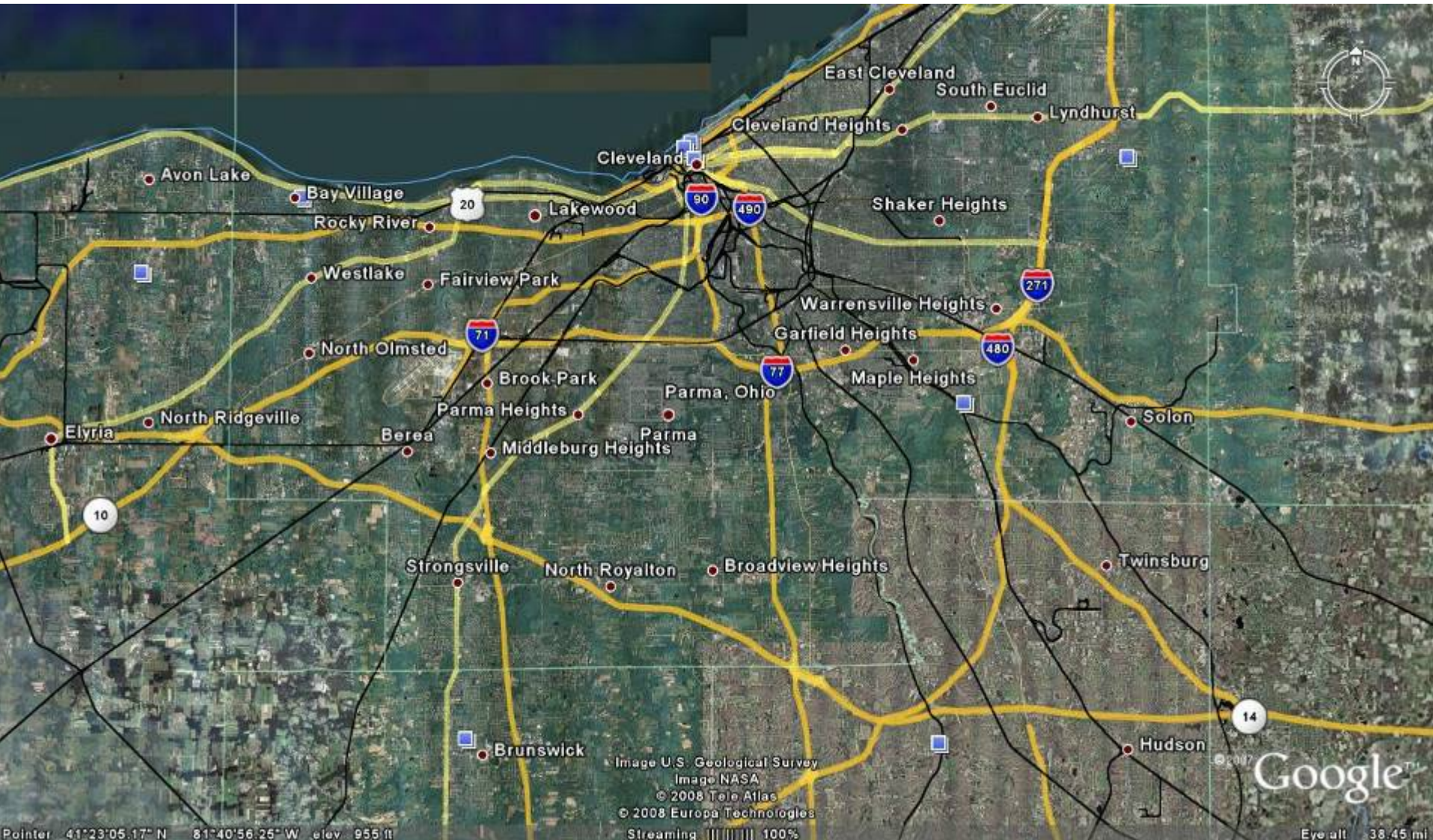


Residual Roadway Capacity



Assets

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



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Reallocation of Street Space



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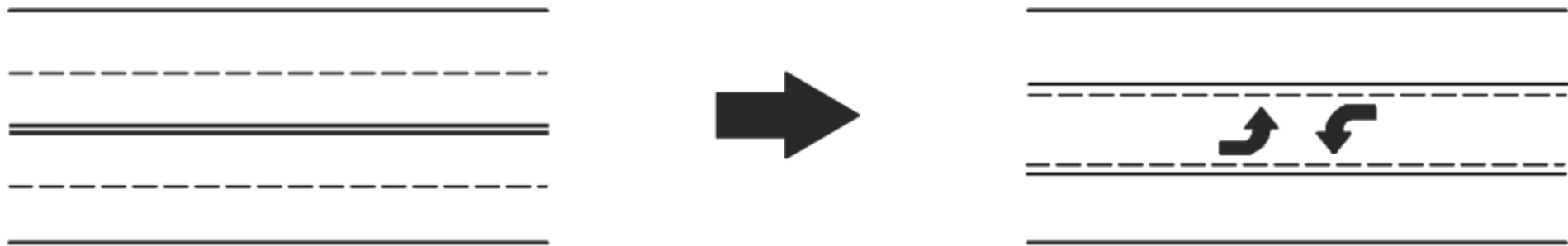
Road
Diets

Road Diet Objectives

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



4-Lane to 3-Lane Conversion





Iowa DOT Road Diet Safety Study 2005

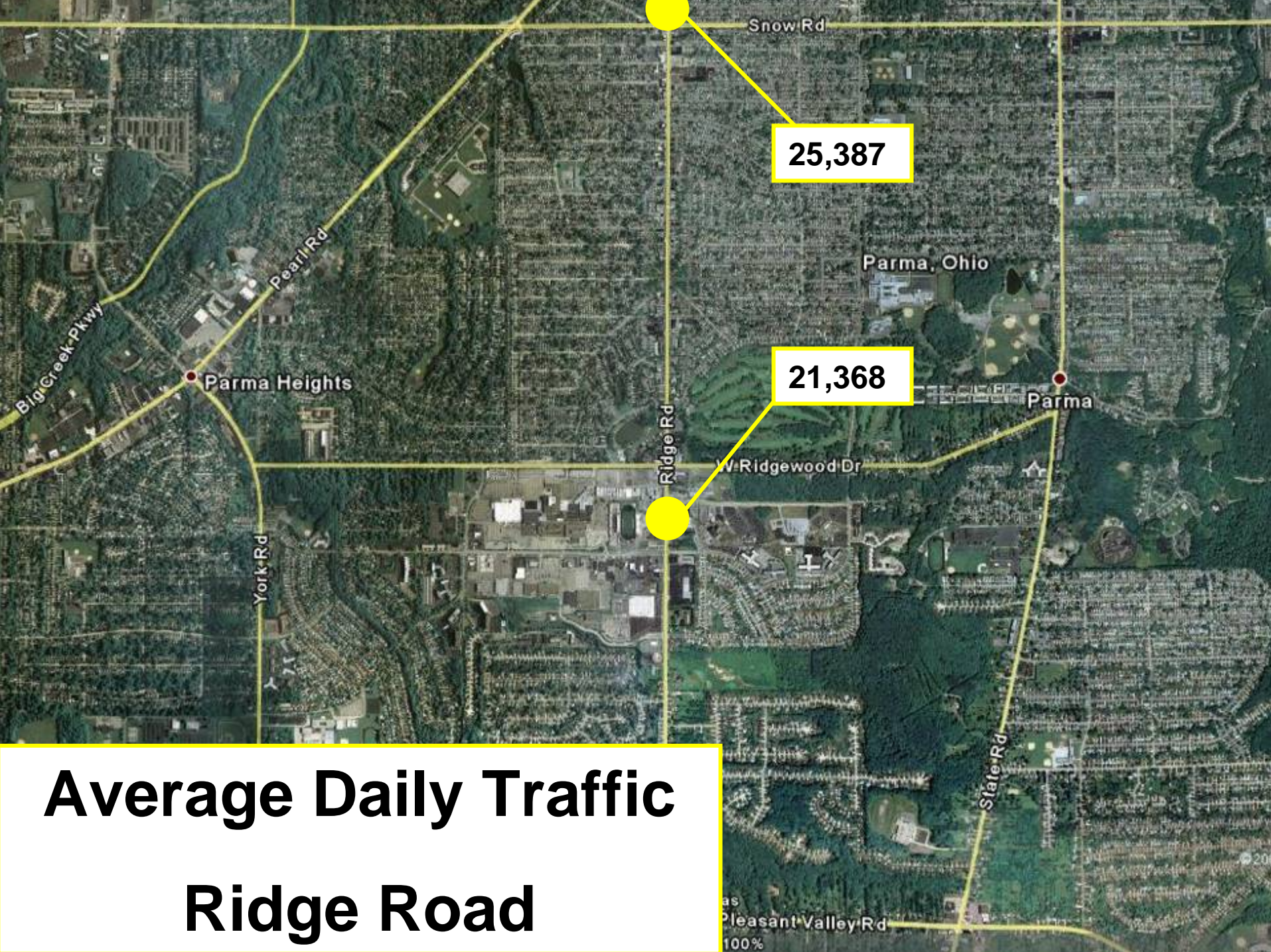
THE EFFECT OF FOUR-LANE TO THREE-LANE
CONVERSION ON THE NUMBER OF CRASHES
AND CRASH RATES IN IOWA ROADS

WEN LI
ALICIA CARRIQUITY
DEPARTMENT OF STATISTICS
IOWA STATE UNIVERSITY

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

**6,000 – 36,000
vpd**

Road	Traffic Volume (MADT)	Mean (0.025, 0.975)	Road	Traffic Volume (MADT)	Mean (0.025, 0.975)
1	190000	3.10 (2.90,3.30)	18	168000	2.15 (1.93,2.38)
2	328000	1.46 (1.34,1.59)	19	363000	2.20 (2.04,2.37)
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)



Snow Rd

25,387

Parma, Ohio

Parma Heights

21,368

Parma

W Ridgewood Dr

**Average Daily Traffic
Ridge Road**



Boulder, CO

Burying Utilities



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Parma, OH



Boulder, CO

Commercial Alleys



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Parma, OH



Boulder, CO



Bainbridge Is, WA

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.



What Pedestrians Require

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

Highest Value Investments

- Crosswalks
- On-street parking
- Narrow streets



Networks



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Network Characteristics

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



Network Benefits

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



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**MULTIMODAL
CORRIDOR
MAP**



LEGEND

Multimodal Corridor —



**Community
Transit
Network**

Boulder Multimodal Corridors



- Simple routes
- High frequency service
- Neighborhood scale vehicles

Boulder, CO



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RTA System Map 2007



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

RAPID STATION

TRAILS

EXISTING MULTI-PURPOSE

POTENTIAL TRAILS

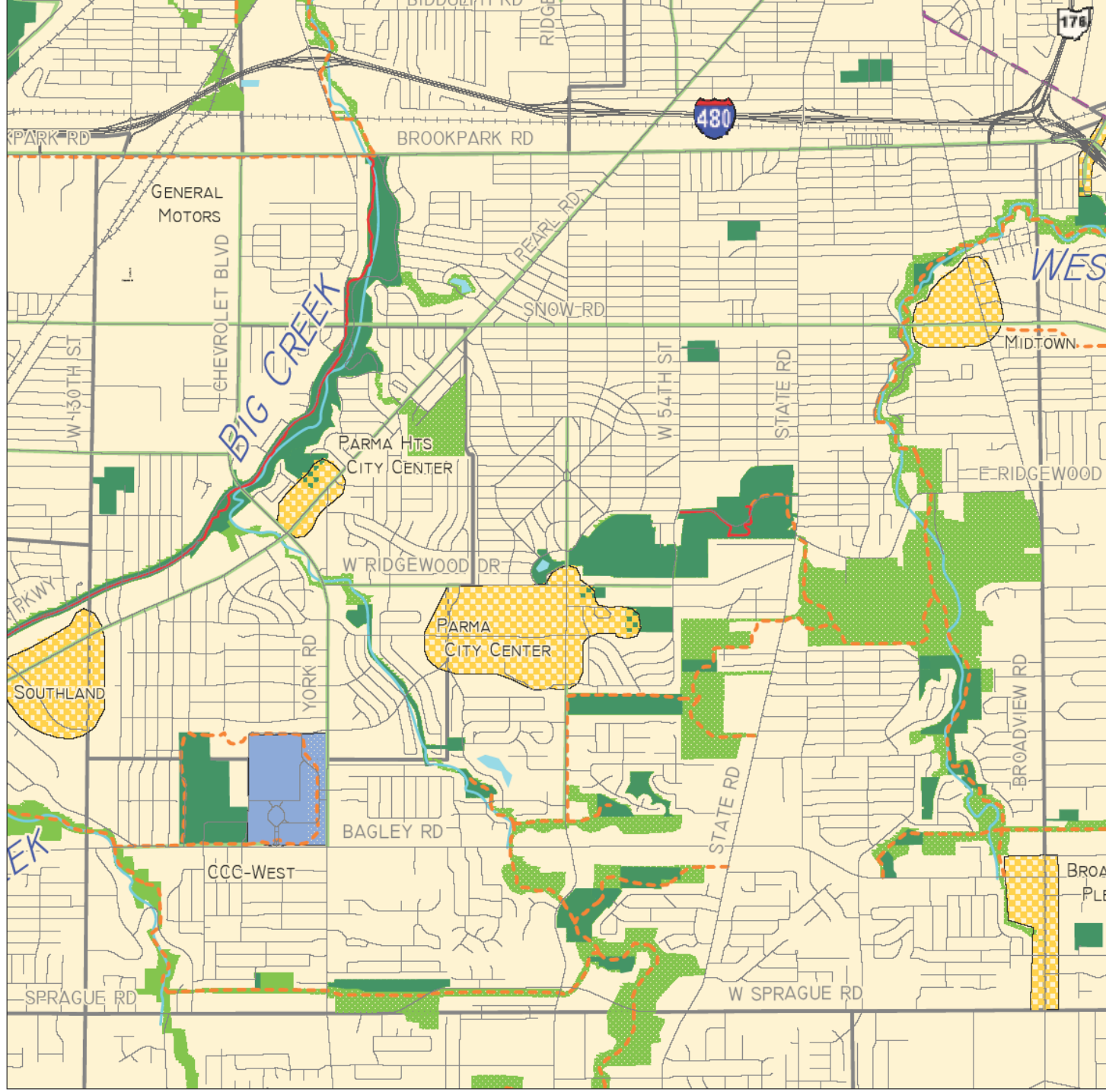
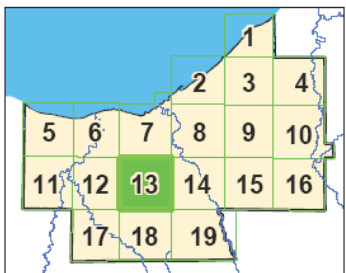
CUYAHOGA VALLEY SCENIC RAILWAY

EXISTING

PROPOSED



0 2000 4000
Feet





Boulder, CO

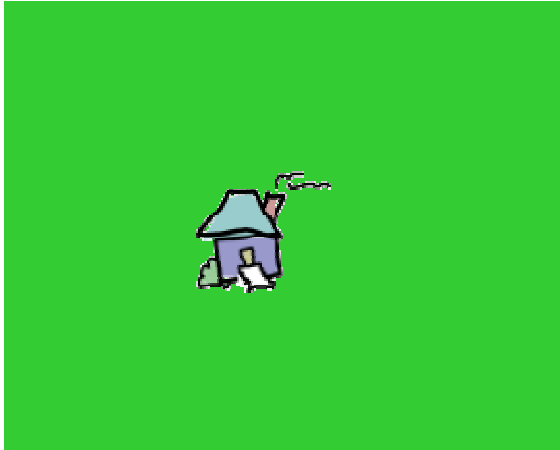
Green Density



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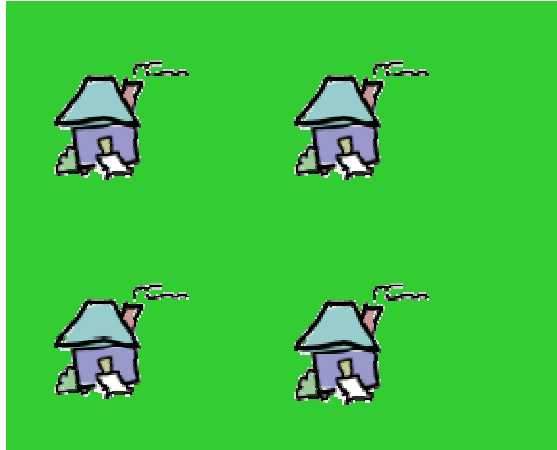
EPA Research on Smart Growth & Water

*Scenario A:
1 unit/acre*



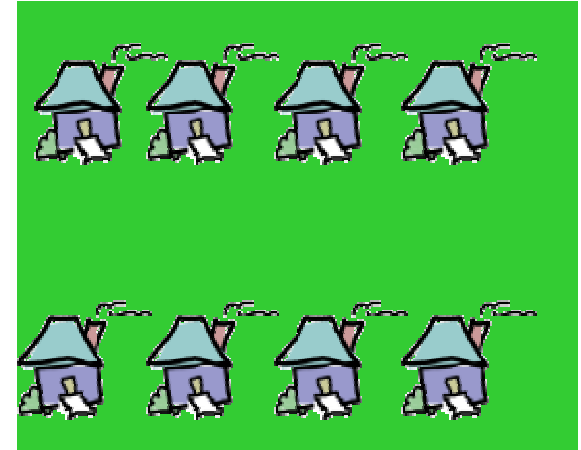
Impervious cover = 20%
Runoff/acre = 18,700 ft³/yr
Runoff/unit = 18,700 ft³/yr

*Scenario B:
4 units/acre*



Impervious cover = 38%
Runoff/acre = 24,800 ft³/yr
Runoff/unit = 6,200 ft³/yr

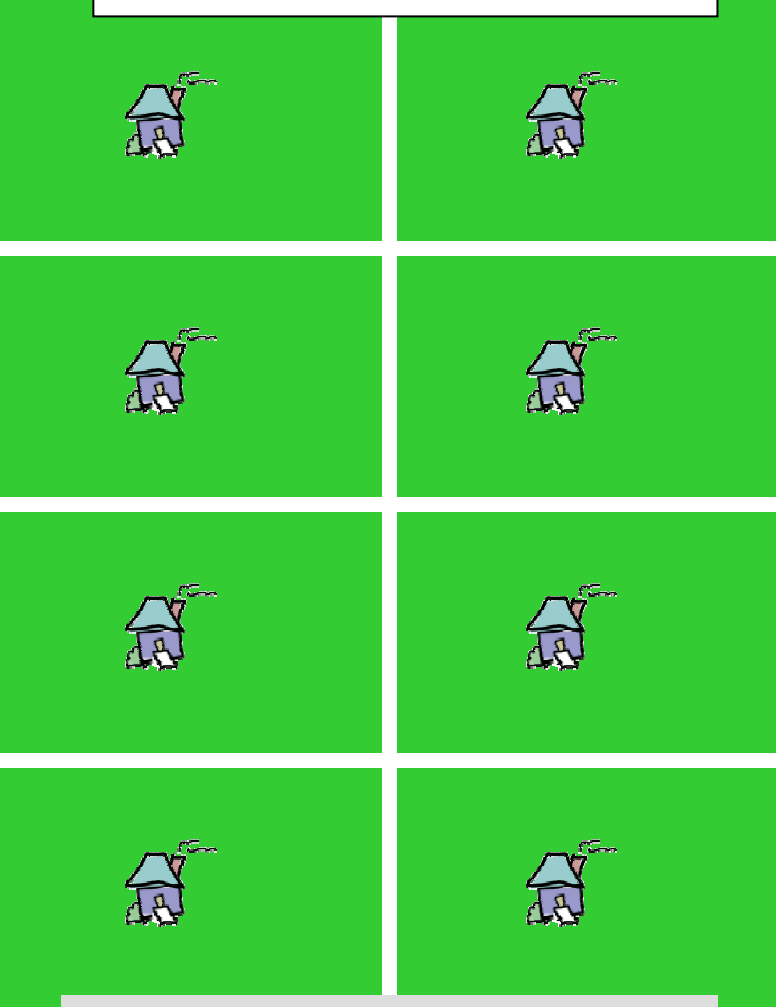
*Scenario C:
8 units/acre*



Impervious cover = 65%
Runoff/acre = 39,600 ft³/yr
Runoff/unit = 4,950 ft³/yr

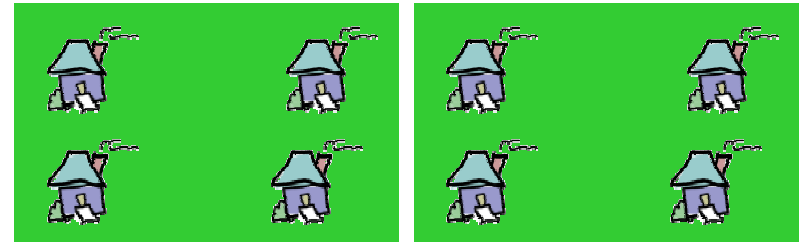
Accommodating the eight houses at varying densities

Scenario A: 1 unit/acre



Impervious cover = **20%**
Total runoff = **149,600 ft³/yr**
Runoff/house = **18,700 ft³/yr**

Scenario B: 4 units/acre



Impervious cover = **38%**
Total runoff = **49,600 ft³/yr**
Runoff/house = **6,200 ft³/yr**

Scenario C: 8 units/acre



Impervious cover = **65%**
Total runoff = **39,600 ft³/yr**
Runoff/house = **4,950 ft³/yr**



Chico, CA



Brooklyn, NY



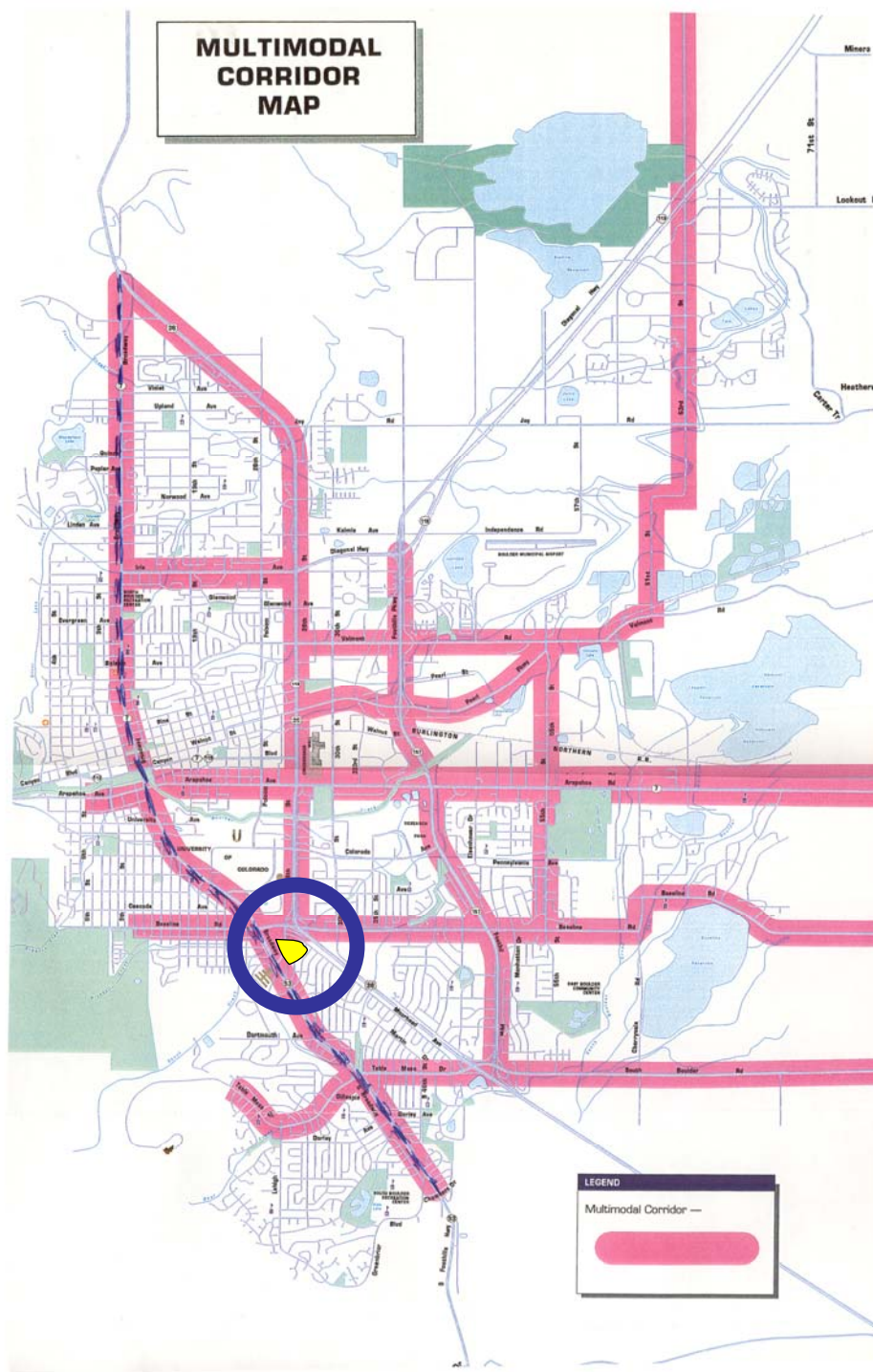
Boston, MA

Neighborhood Commercial Centers



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MULTIMODAL CORRIDOR MAP



LEGEND

Multimodal Corridor —





Boulder, CO

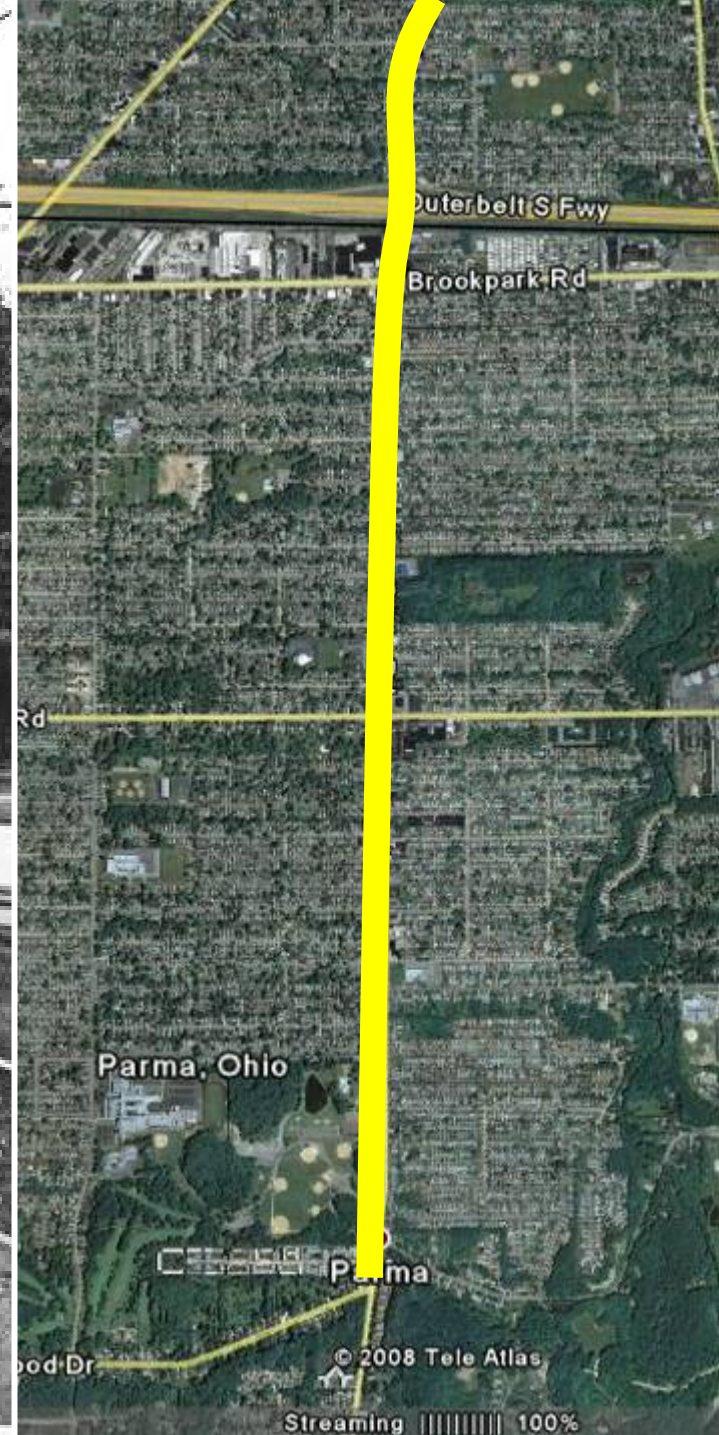


Boulder, CO

Setting Stage for Transit



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Required for Transit Corridors

- Dense, mixed-use nodes
- Walkable environments within ½ 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

