

# TELLING STORIES WITH MAPPING

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Center for Urban and  
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UNIVERSITY OF MINNESOTA

# Why do you need a map? What's its purpose?

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Who is the audience?

How will they access/use the map.

What is the map's job?

For example:

- Looking at **several data sources** at once
- Communicating or **illustrating a point** or key finding
- **Persuading**
- Exploring: a tool for people to use to **make their own meaning**

# Cartography 101

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- Basemaps
- Titles
- Types of data and layer symbology
- Layer properties
- Legends

# Title

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A good title includes:

- Theme
- Place
- Time

*e.g. Twin Cities Bicycle Trails, 2018*

You don't need to include the word "map" in your title!

# Basemaps

Appropriate applications for different basemaps:

- **Reference**
  - *Business locations*
  - *Mountain peaks (for hikers)*
  - *Nearby landmarks for tourism*
- **Thematic**
  - *Obesity rates by state*
  - *Ecological footprints by country*
  - *Housing values by neighborhood*

## Select a basemap



Imagery



Imagery with Labels



Streets



Topographic



Terrain with Labels



Light Gray Canvas



National Geographic



Oceans



OpenStreetMap



Bing Maps Aerial



Bing Maps Hybrid

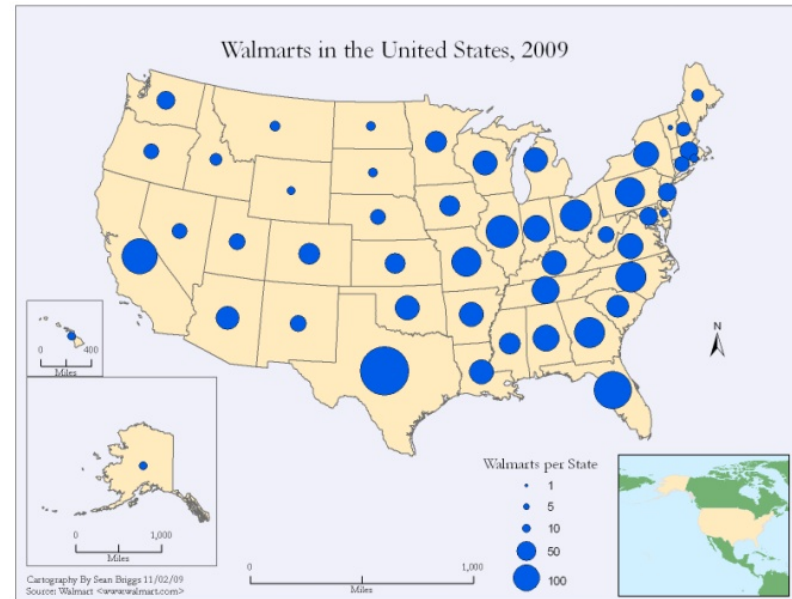


Bing Maps Road



# Layer Symbolology

- Qualitative
  - Differences in kind of thing
  - No order is implied
- Quantitative
  - Differences in amount, rank, etc.
  - Graduated order
  - Rates vs counts



# Symbology: Qualitative Data

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- Hue



- Shape



- Examples:

- Points symbolizing different kinds of schools – public vs private, K-12 vs higher ed
- Polygons of land use classification – residential, commercial, etc.



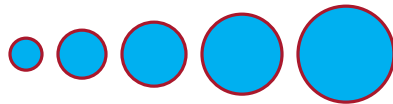
# Symbology: Quantitative Data

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- Lightness



- Size



- Examples:

- State population
- Employment density by census tract

- Use conventions – lighter color = less, darker color = more; red = bad, green = good... or challenge conventions, carefully
- Use a different color (gray, for example) for “no data”

# Layer Properties

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- Transparency: can be set from 0-100%
- Order matters: watch out for top layers to obscure lower layers

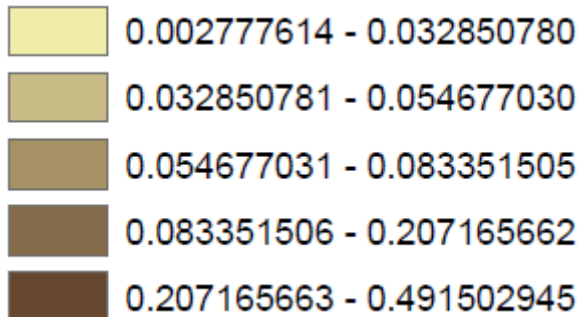
# Legend

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- You can choose what to hide/show in your legend
- It should be easy to interpret

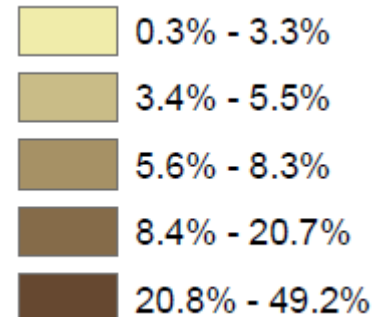
For example:

**Ww2\_vet\_pop70**



**VS.**

**% WWII Vets by County**

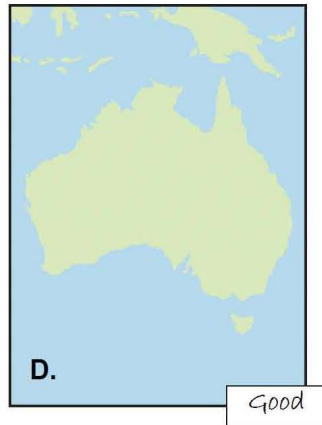


# Tips for Making Clearer Maps

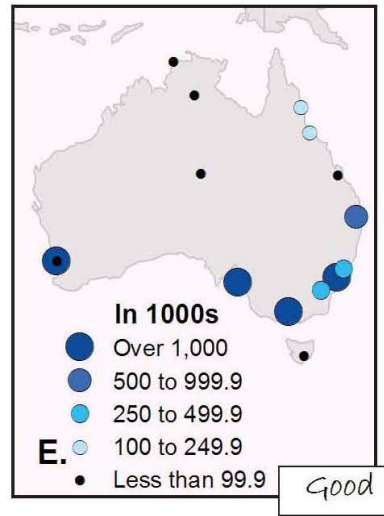
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- Visual Contrast
- Legibility
- Figure-Ground
- Hierarchical Organization
- Balance

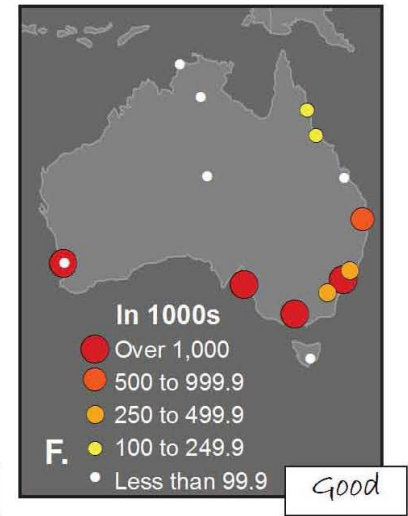
# Visual Contrast



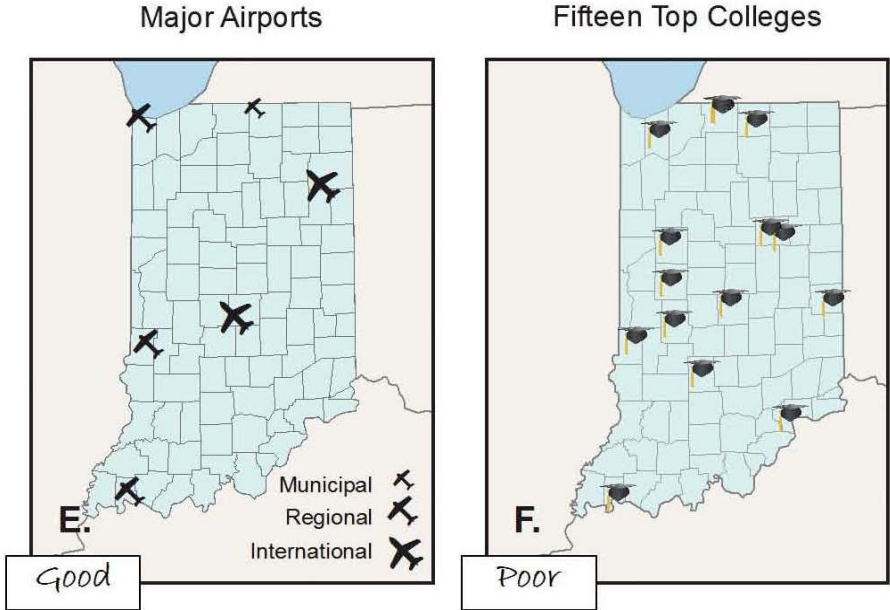
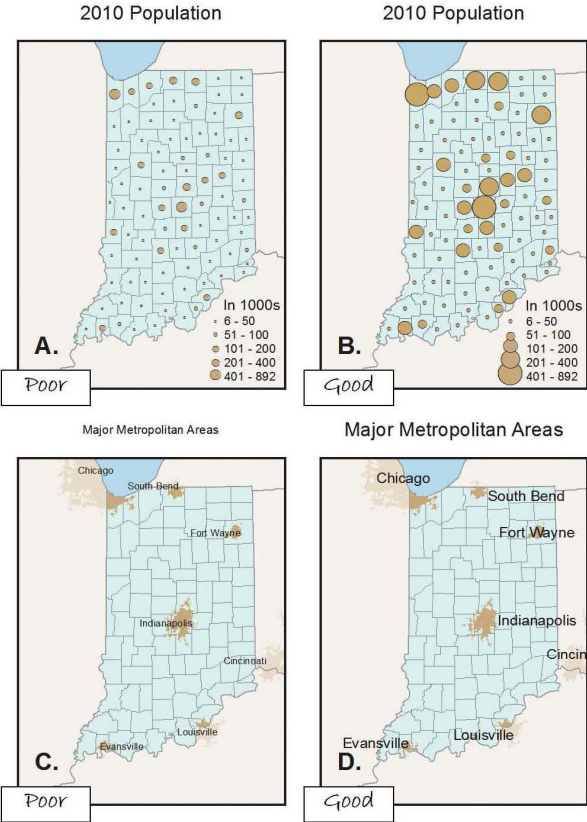
2000 Population in Cities



2000 Population in Cities

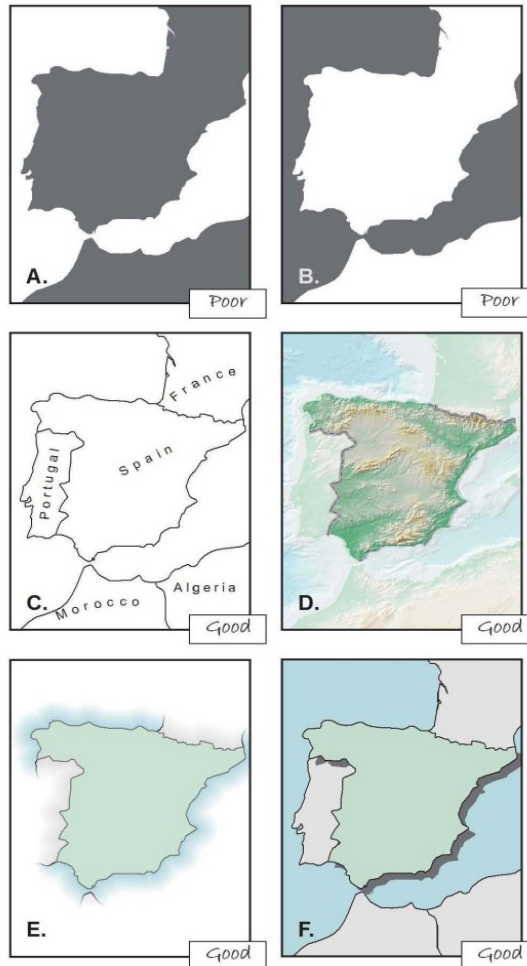


# Legibility



Source for Map F: <http://collegeapps.about.com/od/collegerankings/tp/top-indiana-colleges.htm>

# Figure-Ground

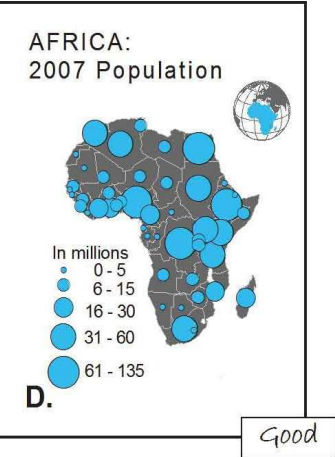
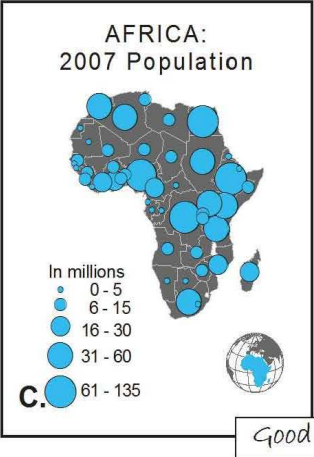
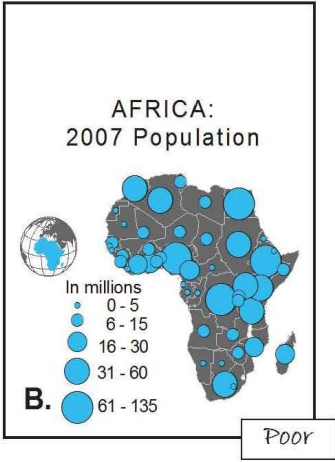
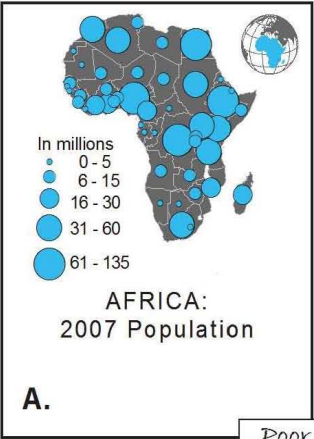


# Hierarchical Organization





# Balance



# Tips for Making Clearer Maps

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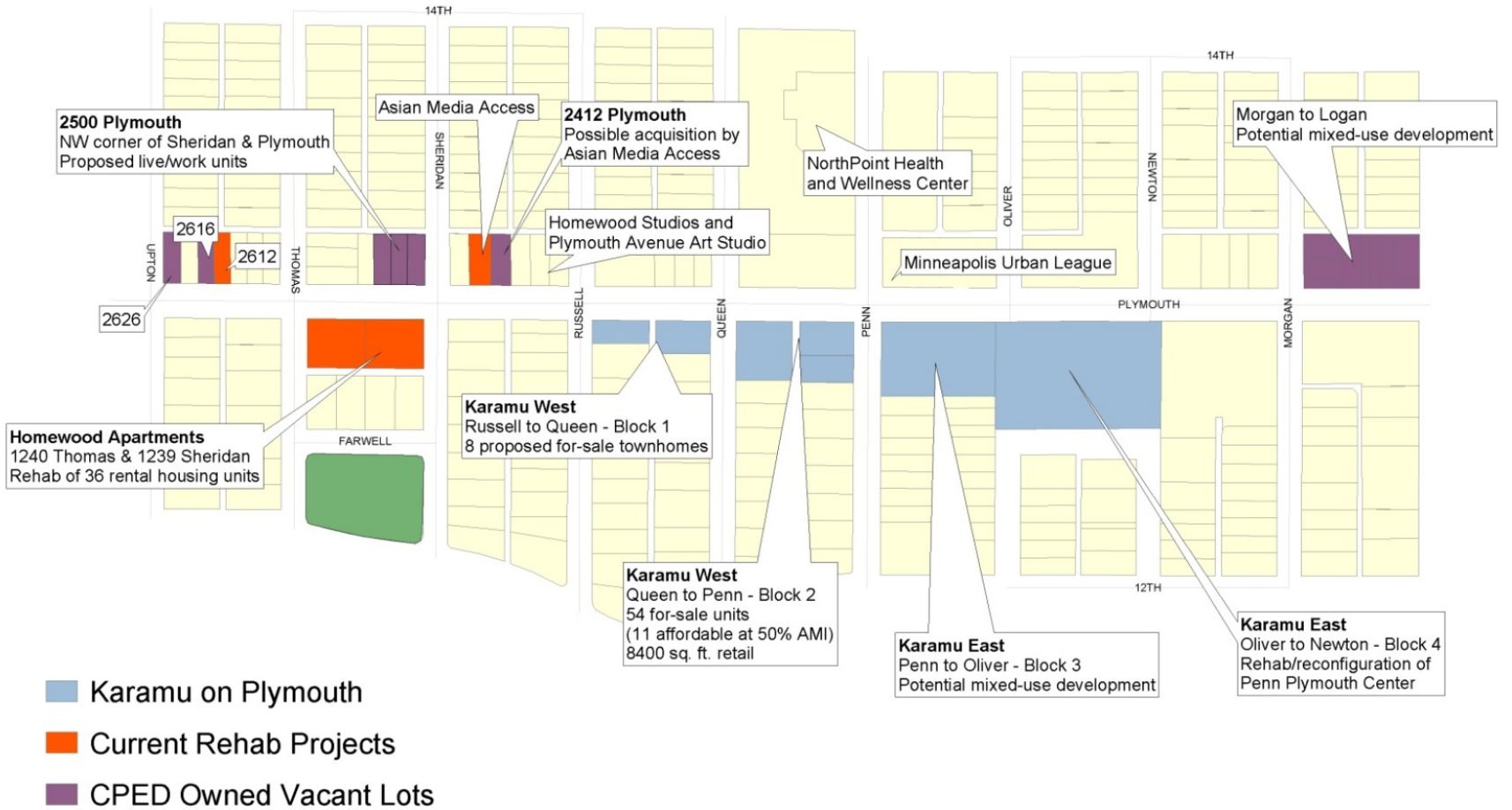
Put your map into the format and scale it will be in

Step away from it to look at it critically

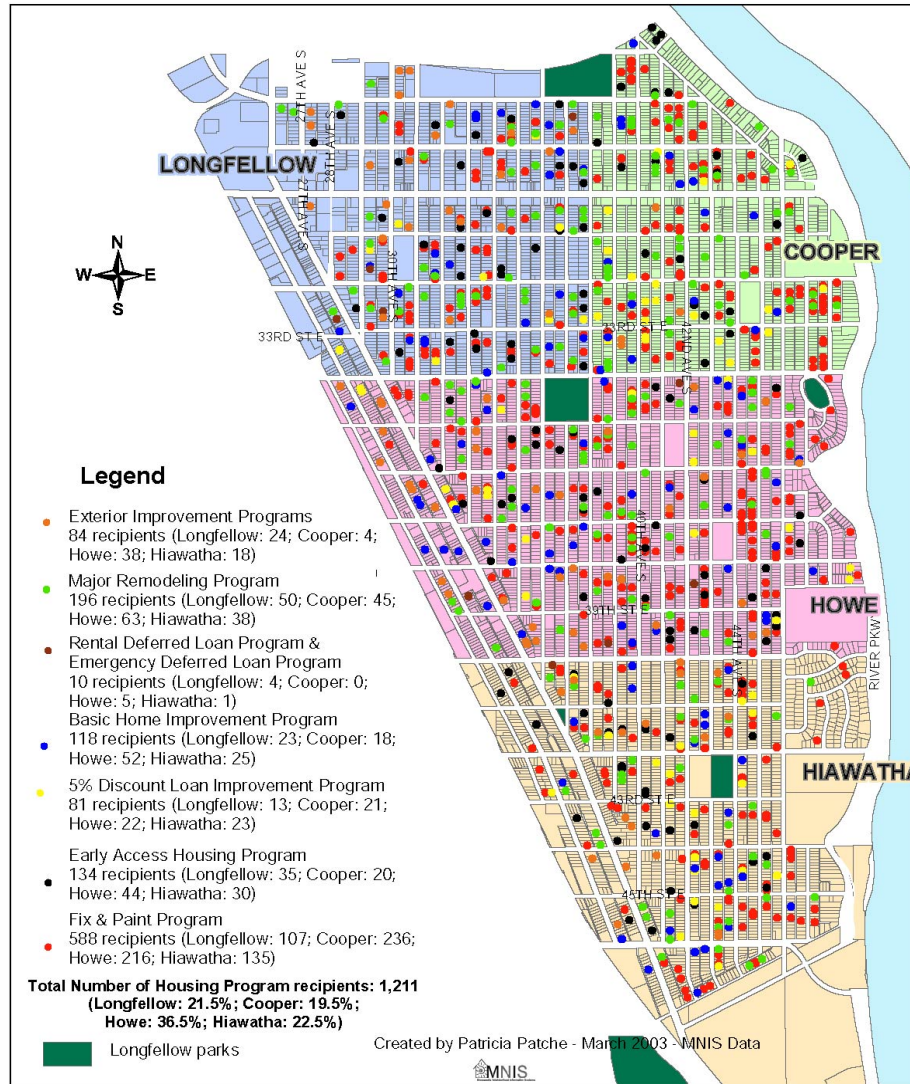
Invite someone else to look at it and tell you what they see

# Karamu on Plymouth

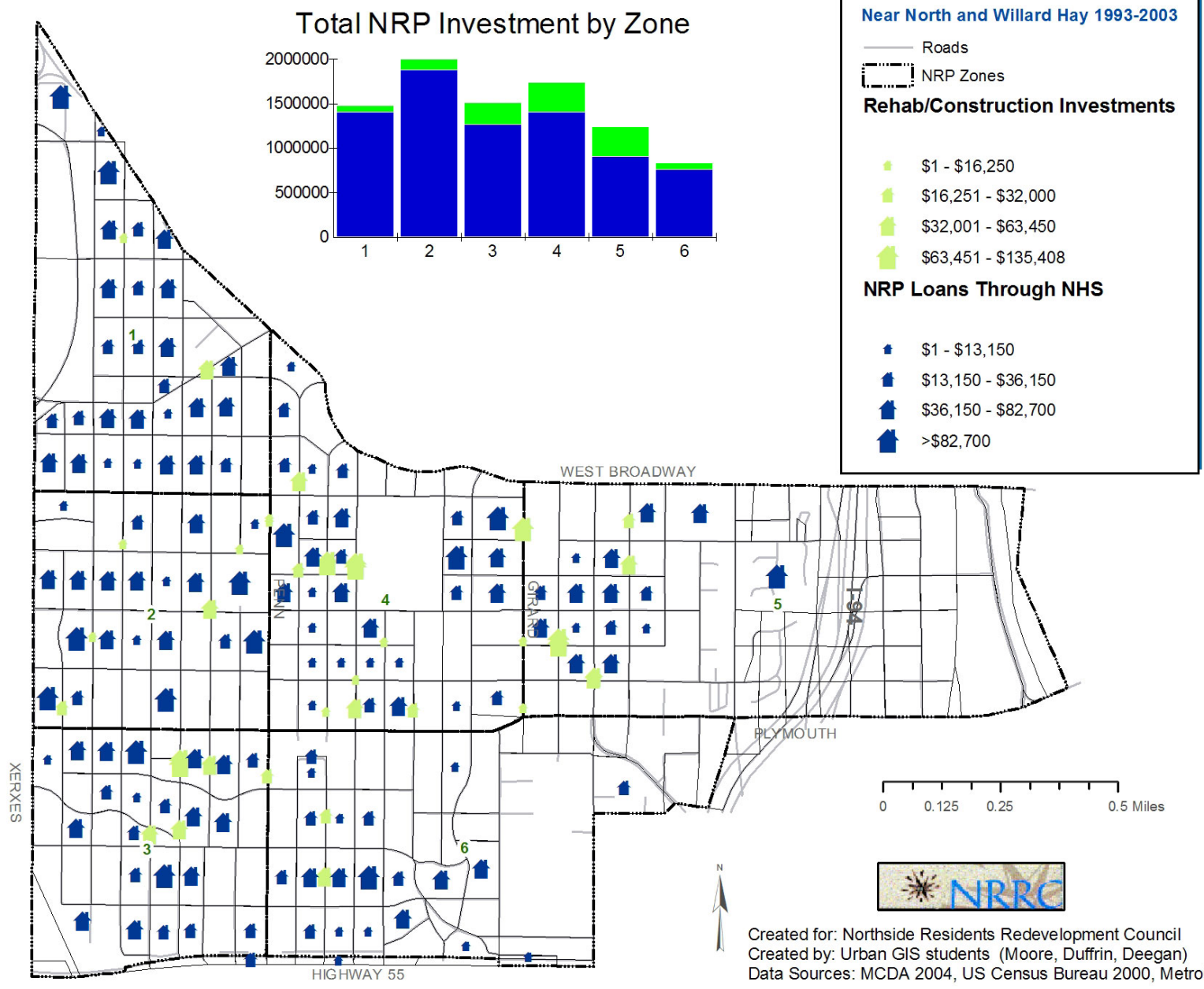
## Proposed Redevelopment and Revitalization Plan for Plymouth Avenue



# Longfellow Housing Program Recipients 1995- Feb. 2003



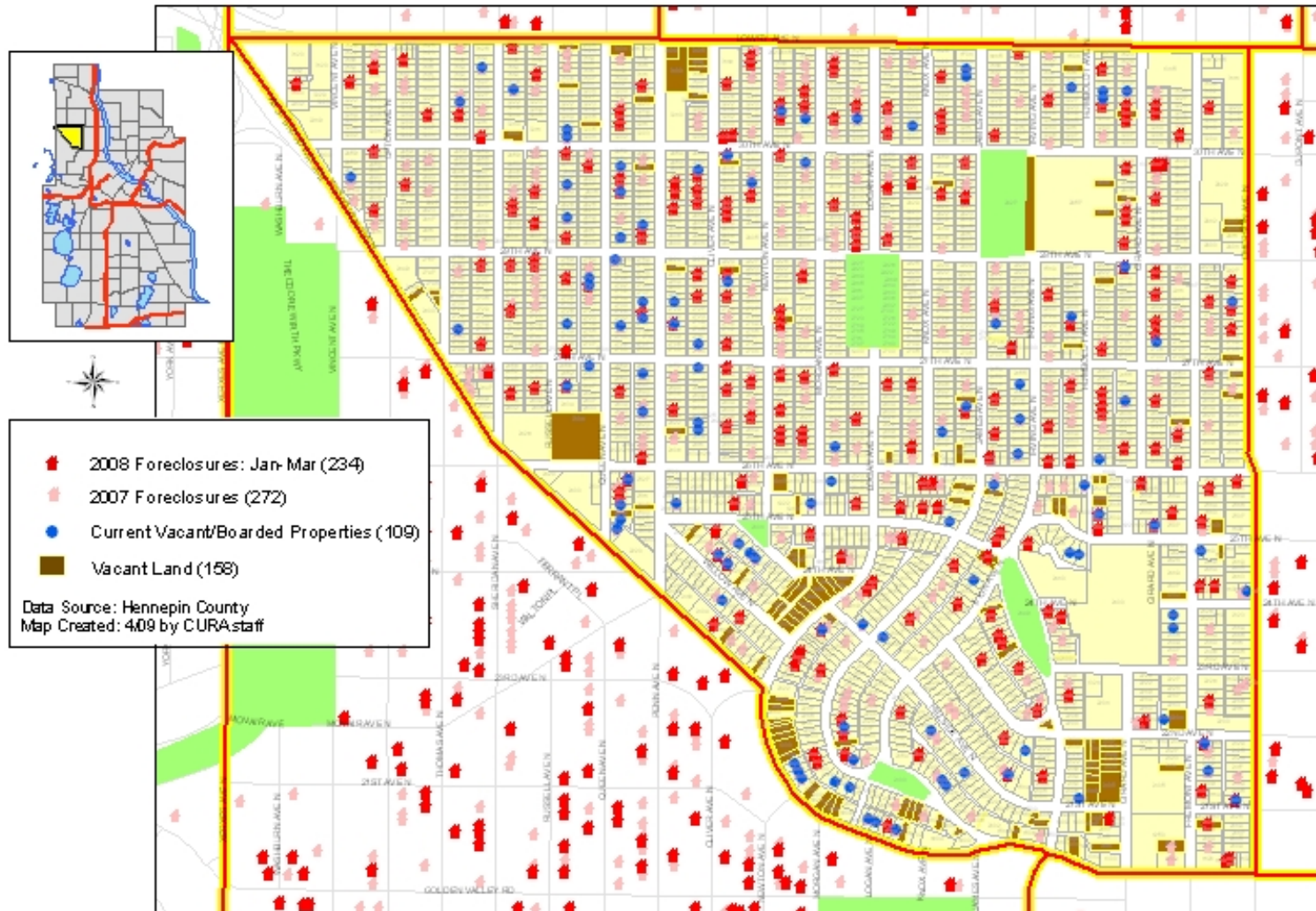
# Map 11: Total NRP Investments (1993-2003)



Created for: Northside Residents Redevelopment Council  
 Created by: Urban GIS students (Moore, Duffrin, Deegan)  
 Data Sources: MCDA 2004, US Census Bureau 2000, MetroGIS



## JORDAN NEIGHBORHOOD: Foreclosures, Boarded Buildings and Vacant Lots



# Common GIS Tools

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Places to get data to use in ArcMap/ArcGIS Online:

- City and county open data websites (Mpls, St. Paul, Hennepin and Ramsey Counties, etc.)
- MN Geospatial Commons (statewide and MetroGIS datasets)
- Social Explorer and Factfinder (Census and ACS data)

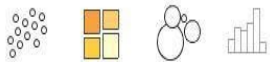
Places to create maps that you download, link to, etc.

- Social Explorer
- OnTheMap
- MN Compass and Neighborhood Profiles
- ArcGIS Online to make web maps, including story maps

Data Selection

ACS 2007 -- 2011 (5-Year Estimates)

Civilian Male In Labor Force 16 Years And Over: Unemployed

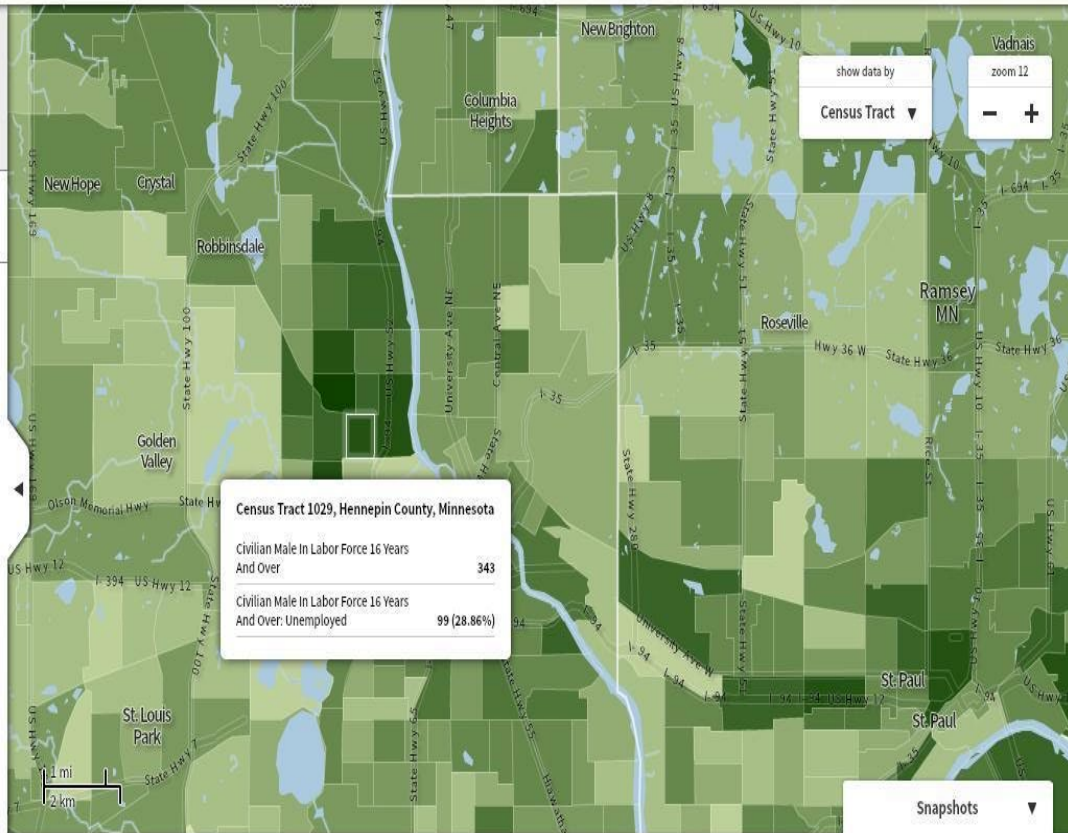


Shaded Area

- Insufficient data
- <1%
- 1% to 3%
- 3% to 5%
- 5% to 7%
- 7% to 10%
- 10% to 15%
- 15% to 20%
- 20% to 25%
- 25% to 50%
- > 50%

COLORS

EDIT CUT-POINTS



show data by  
 Census Tract

zoom 12  
 - +

Snapshots

Click here to take a snapshot

data

annotate

layers



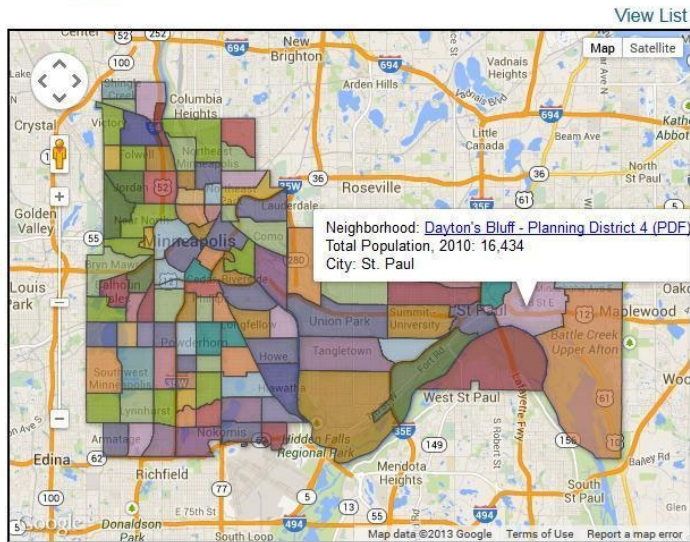
PROFILES

# MINNEAPOLIS-SAINT PAUL NEIGHBORHOODS

Find at-a-glance trends and data by neighborhood, including population, housing, and employment.

View or download a pdf of any profile: Click on a section of the map, or choose View List (above the map, right) to select a neighborhood by name. In Minneapolis, profiles are also available by community – groupings of several neighborhoods (map). Some data are unavailable by neighborhood, but may be found at the larger community level.

Download data file with margins of error.



Special thanks to the McKnight Foundation for providing funding for Compass neighborhood profiles. Additional thanks to our Neighborhood Profile Advisory Committee and also to the Community Planning & Economic Development department at the City of Minneapolis for providing data assistance.

## MORE NEIGHBORHOOD DATA

Looking for more data? We've identified these links to useful sites.

City of Minneapolis neighborhood profiles (2000 census)

City of Minneapolis 2010 Census Results

### Saint Paul neighborhood profile

October 2011

#### Planning District 4

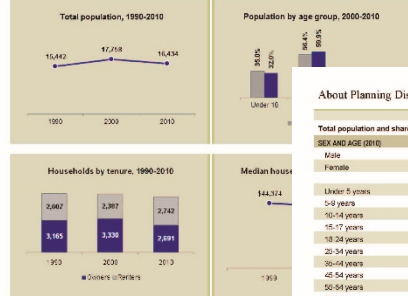
Dayton's Bluff in St. Paul

About this area

The Dayton's Bluff neighborhood is bounded by Grove Street, Cool 7th Street, Johnson Parkway, Winnetona Avenue, Warner Road, the Mississippi River, Lafayette Road, MN Highway 52, and I 35C. It includes the American Indian Village School (Park 6), Dayton's Bluff Achievement Plus Elementary (Park 8), Vinod Kumar Vaidya School (Park 6), 199C Community Academy (Park 8), St. John Lutheran School (Park 8), St. Michaels Academy (Park 6), Fair Cross Academy (St. St. 19A), Velocution State University. The neighborhood is home to several social service organizations, as well as parks, recreation centers, food markets, and businesses.



Trends in the area



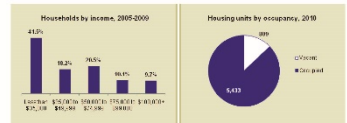
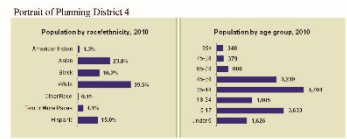
1 | Minnesota Compass Planning District 4 / Dayton's Bluff in St. Paul

#### About Planning District 4 residents

	Planning District 4		Saint Paul	
	Number	Percent	Number	Percent
<b>Total population and share of city's population (2010)</b>	16,434	1.8%	290,708	100.0%
<b>RACE AND AGE (2010)</b>				
Male	8,253	50.2%	139,350	47.9%
Female	8,181	49.8%	151,358	52.1%
<b>Under 5 years</b>	1,404	8.6%	22,242	7.6%
5-9 years	1,359	8.3%	19,901	6.9%
10-14 years	1,244	7.6%	18,217	6.3%
15-17 years	899	5.5%	12,572	4.3%
18-24 years	1,263	7.7%	18,207	6.3%
25-34 years	3,467	21.1%	49,477	17.0%
35-44 years	2,257	13.8%	30,769	10.6%
45-54 years	1,945	11.8%	26,706	9.2%
55-64 years	1,391	8.5%	20,922	7.2%
65-74 years				
75 years and older				
17 years and younger	5			
18 years and older	14			
50 years and older	1			
<b>RACE AND ETHNICITY (2010)</b>				
White	6			
Black or African American	2			
American Indian and Alaska Native	1			
Asian or Pacific Islander	3			
Other race				
Two or more races				
Hispanic or Latino	2			

\* People who do not identify as Hispanic may be of any race, but are represented as All race categories are non-Hispanic.

2 | Minnesota Compass Planning District 4 / Dayton's Bluff in St. Paul



\* Some geographic regions are generally identified as Hispanic, but may be of any race, but are represented as All race or listed in the Population or race/ethnicity categories. All race categories are non-Hispanic.

# Support

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U-Spatial training: both in-person and downloadable content for desktop and web mapping

ESRI online trainings and technical workshops from user conferences are available to UMN students