

# Resilience on the Great Lakes: A Tale of Two Counties

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# Why this approach?

- Comparisons can be instructive if well chosen
- Resilience is broad concept; which best practices are most important?
- Or is context more important?
- Opportunity to review broader range of issues potentially affecting coastal resilience

Counties chosen:

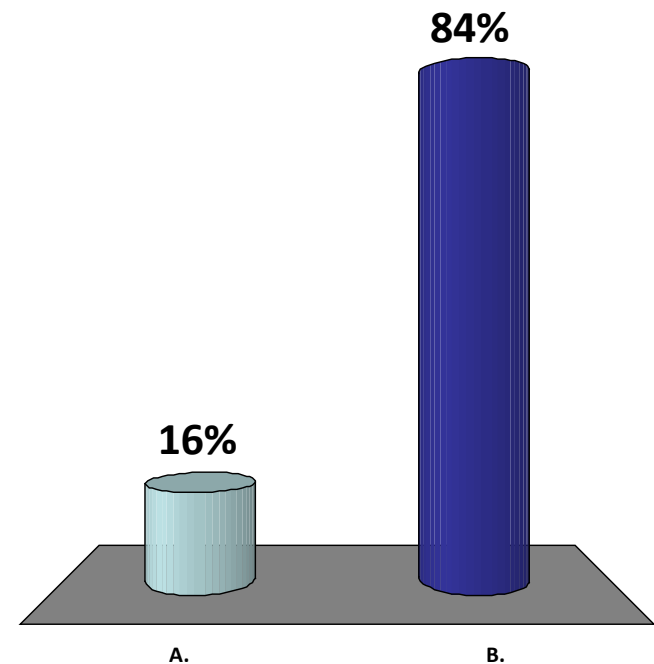
- #1: Ozaukee County, Wisconsin
- #2: Berrien County, Michigan

# What's different?

- Planning context:
  - Wisconsin prescribes very specific set of elements to be included in comprehensive plans
- Authority:
  - Wisconsin counties have land-use controls on unincorporated land, like most Midwest states
  - Land-use authority in Michigan resides with townships and municipalities
- What they have in common:
  - Shoreline on Lake Michigan
  - Proximity to large urban centers

# Whose system do you prefer?

- A. Michigan, with all land-use authority devolved to municipalities and townships, and counties playing only an advisory role in planning?
- B. Wisconsin, and most of the Midwest, with counties controlling zoning in unincorporated areas but cooperating with municipalities on extraterritorial zoning?

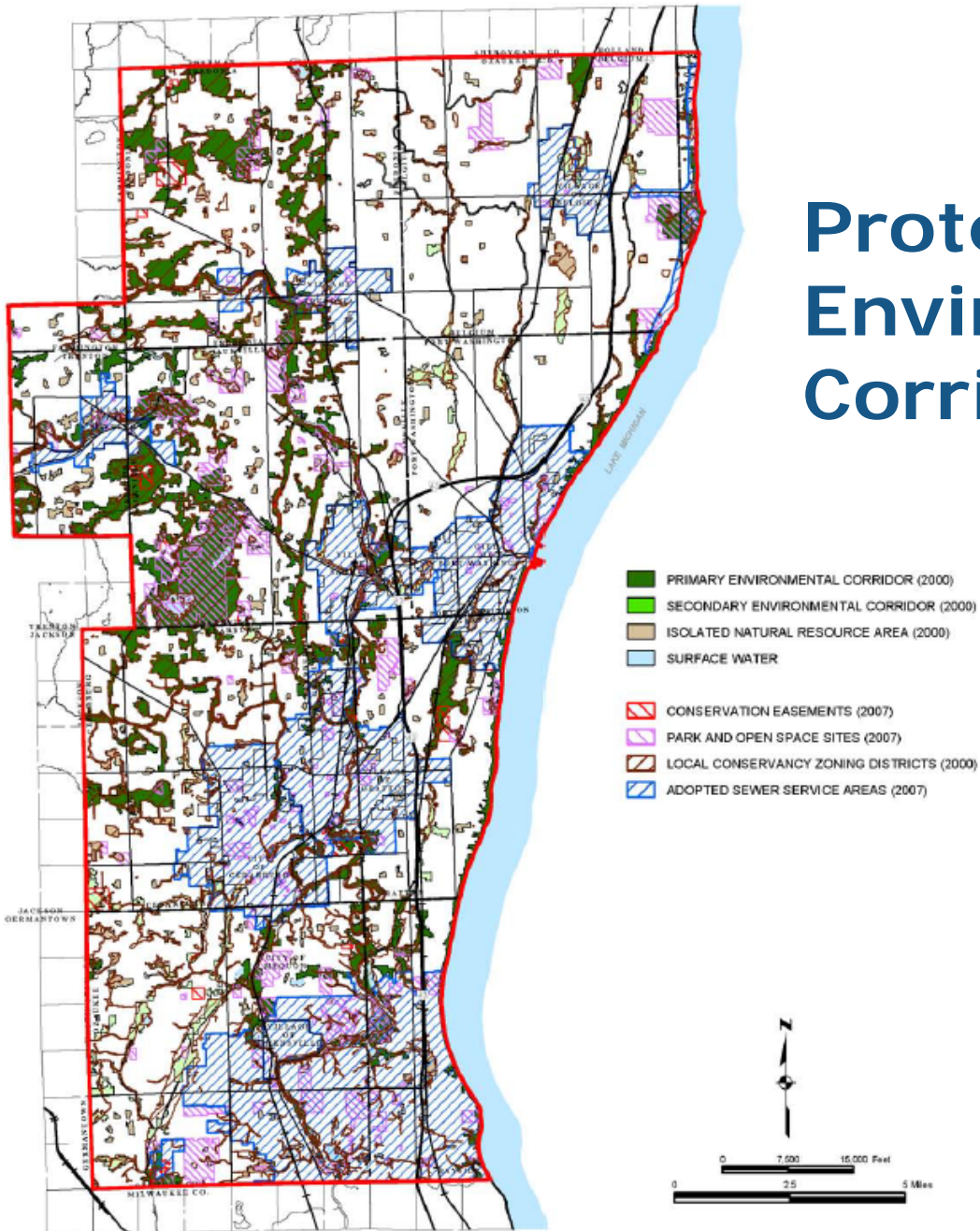


# Ozaukee County

First goal in Issues and Opportunities Element:

- **Goal:** Preserve and enhance Ozaukee County's natural resources, including Lake Michigan, open space, and agricultural land.
  - **Objective:** Develop methods to protect and preserve agricultural areas.
  - **Objective:** Develop methods to protect and preserve natural areas, including wetlands, wildlife habitats, lakes, woodlands, open spaces, groundwater resources, and floodplains.
  - **Objective:** Preserve and enhance a system of parks and open spaces within the County.
  - **Objective:** Encourage integrated water resource management of surface water, groundwater, and water dependent natural resources.
  - **Objective:** Encourage the protection of Lake Michigan's water quality and shoreline, including Lake Michigan bluffs.

# Protecting Environmental Corridors



### Lake Michigan Issue

Shoreline erosion and bluff stability conditions are important considerations in planning for the protection and sound development and redevelopment of land located along Lake Michigan. Unstable areas are not compatible with urban uses and should be protected from development. It is also important to protect Lake Michigan, which is a National resource, from degradation by threats such as point and nonpoint pollution sources. The proximity of the County to Lake Michigan was identified during the SWOT analysis as a strength due to its recreational resources and as a source of water for consumption in the County. Loss of water supply was identified as a threat during the SWOT analysis.

Table 96

#### GUIDELINES FOR DEVELOPMENT CONSIDERED COMPATIBLE WITH ENVIRONMENTAL CORRIDORS AND ISOLATED NATURAL RESOURCE AREAS

Component Natural Resource and Related Features within Environmental Corridors <sup>a</sup>	Permitted Development															Rural Density Residential Development (see General Development Guidelines below)	Other Development (See General Development Guidelines below)
	Transportation and Utility Facilities (see General Development Guidelines below)				Recreational Facilities (see General Development Guidelines below)												
	Streets and Highways	Utility Lines and Related Facilities	Engineered Stormwater Management Facilities	Engineered Flood Control Facilities <sup>b</sup>	Trails <sup>c</sup>	Picnic Areas	Family Camping <sup>d</sup>	Swimming Beaches	Boat Access	Ski Hills	Golf	Playfields	Hard-Surface Courts	Parking	Buildings		
Lakes, Rivers, and Streams.....	-- <sup>e</sup>	-- <sup>fg</sup>	--	-- <sup>h</sup>	-- <sup>i</sup>	--	--	X	X	--	--	--	--	--	--	--	--
Shoreland.....	X	X	X	X	X	X	--	X	X	--	X	--	--	X	X	--	--
Floodplain <sup>g</sup> .....	-- <sup>j</sup>	X	X	X	X	X	--	X	X	--	X	X	--	X	X	--	--
Wetland <sup>h</sup> .....	-- <sup>j</sup>	X	--	--	X <sup>o</sup>	--	--	--	X	--	--	--	--	--	--	--	--
Wet Soils.....	X	X	X	X	X	--	--	X	X	--	X	--	--	X	--	--	--
Woodland.....	X	X	X <sup>p</sup>	--	X	X	X	--	X	X	X	X	X	X	X <sup>q</sup>	X	X
Wildlife Habitat.....	X	X	X	--	X	X	X	--	X	X	X	X	X	X	X	X	X
Sleep Slope.....	X	X	--	--	-- <sup>r</sup>	--	--	--	--	X <sup>s</sup>	X	--	--	--	--	--	--
Prairie.....	--	-- <sup>t</sup>	--	--	-- <sup>r</sup>	--	--	--	--	--	--	--	--	--	--	--	--
Park.....	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	--	--
Historic Site.....	--	-- <sup>u</sup>	--	--	-- <sup>r</sup>	--	--	--	--	--	--	--	--	X	--	--	--
Scenic Viewpoint.....	X	X	--	--	X	X	X	--	X	X	X	--	--	X	X	X	X
Natural Area or Critical Species Habitat Site.....	--	--	--	--	-- <sup>v</sup>	--	--	--	--	--	--	--	--	--	--	--	--

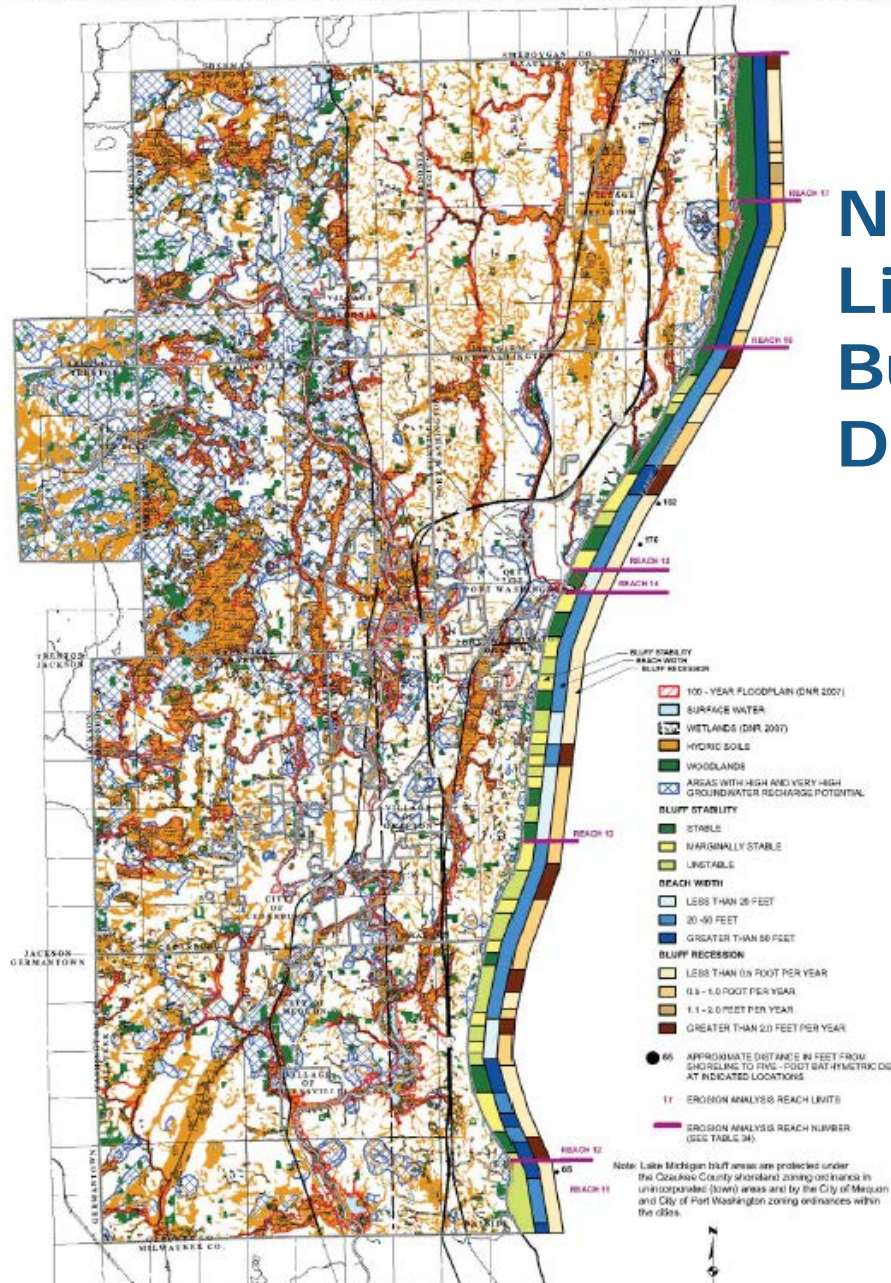
NOTE: An "X" indicates that facility development is permitted within the specified natural resource feature. In those portions of the environmental corridors having more than one of the listed natural resource features, the natural resource feature with the most restrictive development limitation should take precedence.

# Ozaukee: Natural Resources

- **Goal:** Protect Lake Michigan's water quality and shoreline, including Lake Michigan bluffs.
  - **Objective:** Protect land owners from Lake Michigan bluff erosion.
    - **Policy:** Restrict urban land uses and other incompatible land uses and structures in areas identified on Map 92 in Chapter VIII.
    - **Policy:** Implement strategies regarding Lake Michigan bluff erosion, including those recommended in the *Ozaukee County Land and Water Resource Management Plan 2005 – 2010*, and subsequent updates.



# Natural Limitations to Building Site Development



Note: Lake Michigan bluff areas are projected under the Ozaukee County shoreland zoning ordinance in unincorporated (town) areas and by the City of Mequon and City of Port Washington zoning ordinances within the cities.



National Weather Service map

Source: Wisconsin Geological and Historical Survey; T.D. Edl, D.M. McKeown, J.A. Calkman, Wisconsin Department of Natural Resources, and SEWRPC.

# Ozaukee: Land-use compatibility

- **Policy:** Discourage incompatible uses in environmental corridors, natural areas, and critical species habitat sites in Ozaukee County.
  - **Program:** Develop model lowland conservancy and upland conservancy zoning districts based on Table 95, *Guidelines for Development Considered Compatible with Environmental Corridors and Isolated Natural Resource Areas*, in Chapter VII for use in local government zoning ordinances.
  - **Program:** Protect environmental corridors through the County plat review process.
  - **Program:** Protect natural areas and critical species habitat sites identified in the Ozaukee County Park and Open Space Plan.
  - **Program:** Develop a County Land Division Ordinance that could be used countywide to help protect identified natural resource areas.
  - **Program:** Promote model conservation subdivision ordinances, such as the *Rural Cluster Development Guide*,<sup>13</sup> to local governments. Assist local governments in interpreting and implementing conservation subdivision ordinances.
- **Policy:** Protect floodplains and wetlands from incompatible uses.
  - **Program:** Continue to administer and enforce the Ozaukee County Shoreland and Floodplain Zoning Ordinance and ensure the Ordinance is consistent with the County comprehensive plan.
- **Policy:** Protect the Lake Michigan shoreline, including Lake Michigan bluffs.
  - **Program:** Continue to administer and enforce the Ozaukee County Shoreland and Floodplain Zoning Ordinance and ensure the Ordinance is consistent with the County comprehensive plan.
  - **Program:** Update the Ozaukee County Shoreland and Floodplain Zoning Ordinance setback regulations with the assistance of the Wisconsin Coastal Management Program (WCMP) and Wisconsin Sea Grant.

# Implementation

- Figures in Implementation Element list:
  - 70 priority programs for Agriculture, Natural Resources, and Cultural Resources
  - 27 priority programs for Land Use
- Very detailed plan (888 pages), but . . . .
  - not always easy to sort out what might contribute specifically to resilience

# Berrien County, Michigan

- Much shorter plan at 56 pages because . . . .
  - Not required to detail land-use practices; focuses strictly on policy in county's advisory capacity
- Rural land-use authority resides with townships (model shared with Pennsylvania and New Jersey)



# Landscapes Element

- Urban
- Small City/Village
- Suburban
- Lakefront/Residential
- Rural
- Open Space/Natural Areas

Land Use	Acres	Percent
Residential	35,197	9.4%
Commercial	4,911	1.3%
Industrial	5,634	1.5%
Public/Semi-Public	13,063	3.5%
Agriculture/Vacant	314,545	84.2%
<b>TOTAL</b>	<b>373,350</b>	<b>100.0%</b>

Figure 8: Distribution of existing land use.  
Data source: Berrien County GIS

## Major Shoreline Communities in Berrien County:

- St. Joseph
- Benton Harbor

# Berrien: Demographic shifts

Population 1970-2020 (projected)

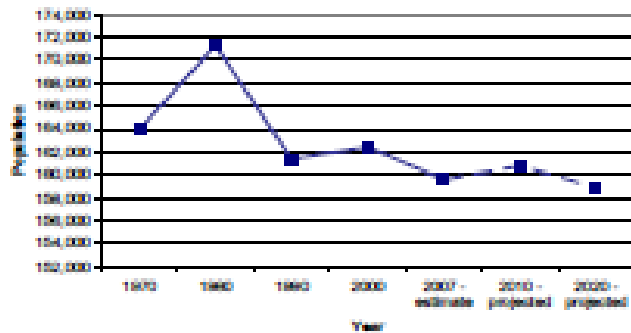


Figure 7: Population projections. Source: Michigan State Demographer

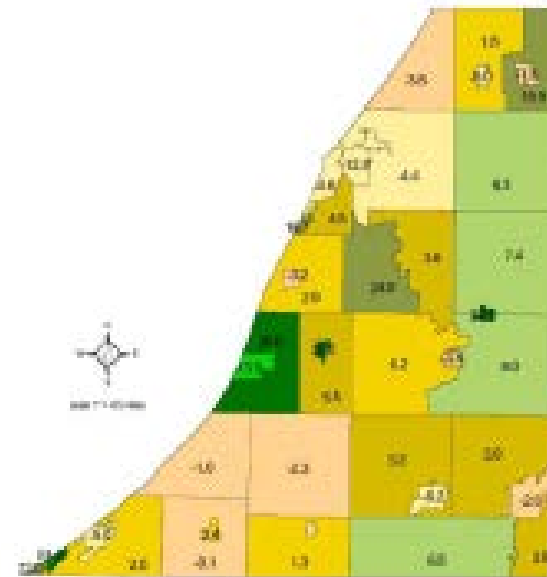


Figure 10: 1990 - 2020 Population.

Source: U.S. Census 1970-2007 estimate, Michigan Department of Management and Budget Office of the State Demographer 2010 & 2020 projections

Growth exception:  
 Grand Beach Village  
 (up 51.4%)



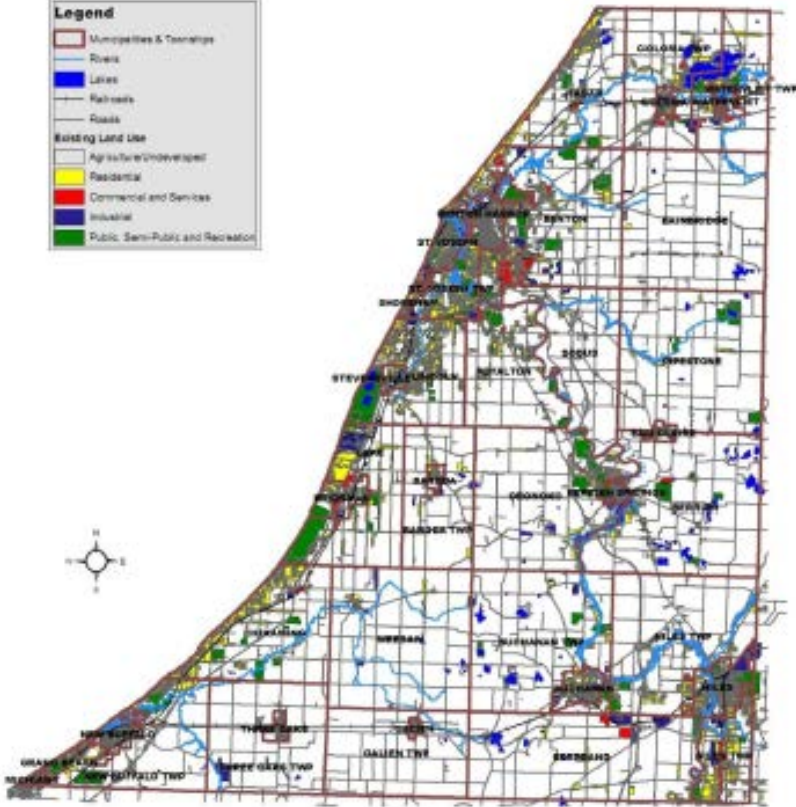
Berrien County - Existing Land Use

**Legend**

- Municipalities & Townships
- Rivers
- Lakes
- Railroads
- Roads

**Existing Land Use**

- Agriculture/Undeveloped
- Residential
- Commercial and Services
- Industrial
- Public, Semi-Public and Recreation



Map created for Berrien County  
 Community Development by:



Last Updated: 5/14/09

Data source: Berrien County and  
 Michigan Geographic Data Library

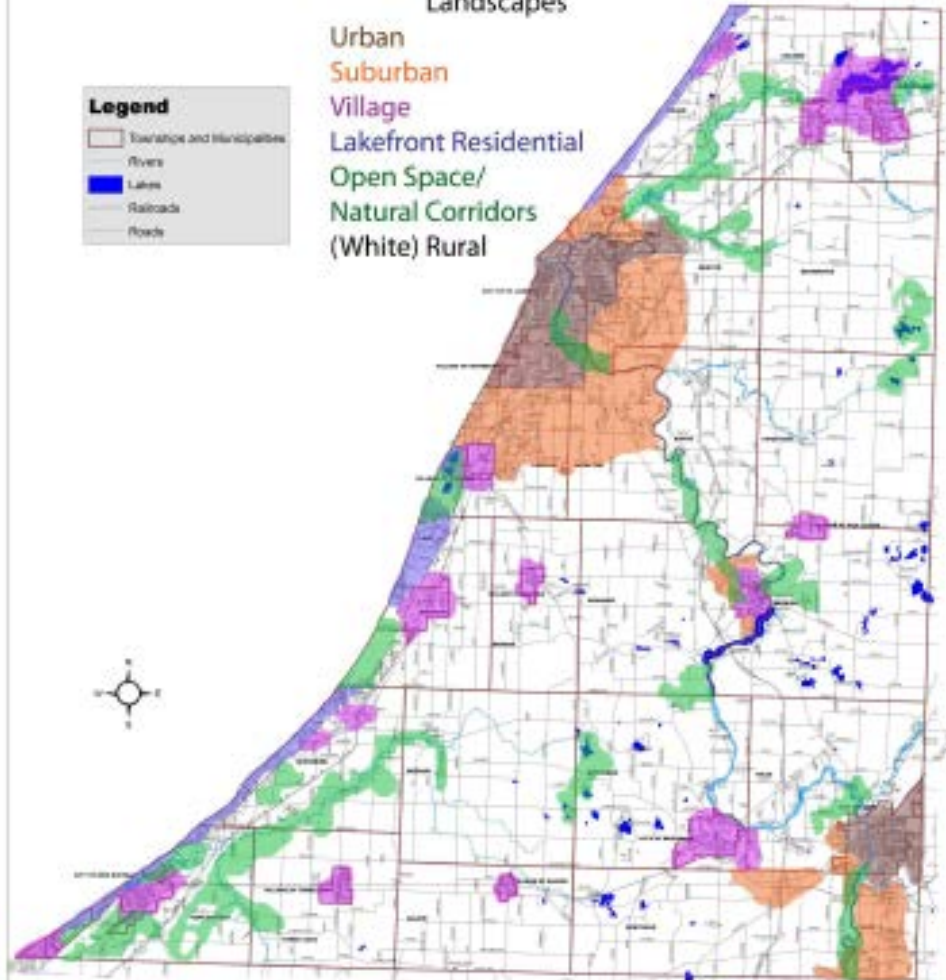
Berrien County - Base Map

Landscapes

- Urban
- Suburban
- Village
- Lakefront Residential
- Open Space/  
 Natural Corridors
- (White) Rural

**Legend**

- Township and Municipalities
- Rivers
- Lakes
- Railroads
- Roads



Map created for Berrien County  
 Community Development by:



Last Updated: 5/14/09

Data source: Berrien County and  
 Michigan Geographic Data Library

Map 1: Berrien County Existing Land Use. Data source: Michigan Geographic Data Library

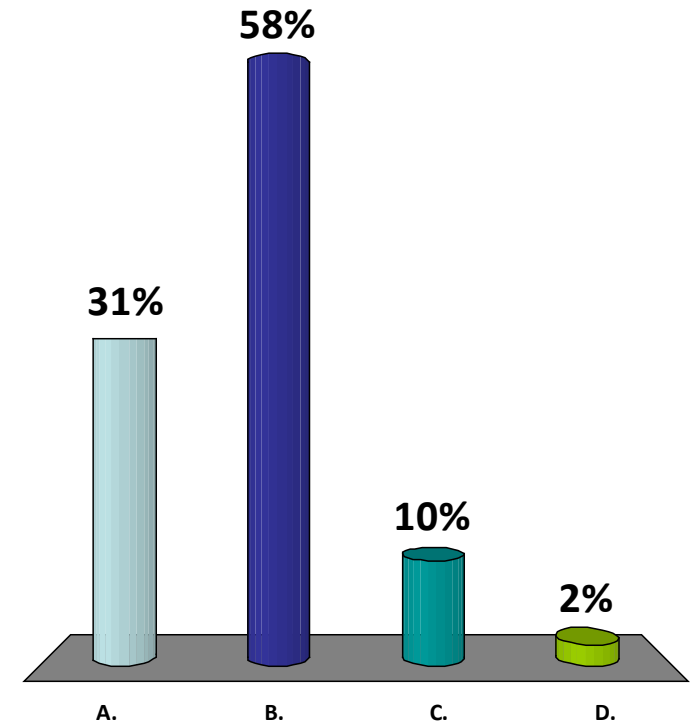
# Green Infrastructure Element

- Delineation of economic, health, and environmental benefits of green infrastructure
- “Population projected to decrease, but interest from Chicagoland area will continue”
- Little demand for housing, except for seasonal/second homes from Chicago suburbs . . . .
- “However, the areas most attractive for these upscale residents often coincide with the most fragile natural areas.”
- Vacation homes account for more than 10% of housing in seven communities



# Should Berrien County coastal communities

- A. Be more aggressive in limiting lakefront residential development?
- B. Enact stricter setbacks without trying to limit the amount of such development?
- C. Encourage second-home owners to move back to Chicago, where they all came from?
- D. Increase minimum lot and building sizes to keep out all but the wealthy?



# Green Infrastructure Principles (from SWMPC)

- Connectivity is key
- Context matters
- [GI] should be grounded in sound science and land-use planning theory and practice
- GI can and should function as the framework for conservation and development
- GI should be planned and protected before development
- GI is a critical public investment that should be funded up front
- GI affords benefits to nature and people
- GI respects the needs and desires of landowners and other stakeholders
- GI requires making connections to activities within and beyond the community
- GI requires long-term commitment

# Green Infrastructure in Detroit

**“After the flood: Expanded green infrastructure could help absorb rain, planners say”**

**Headline from MLive Michigan,  
August 16, 2014**

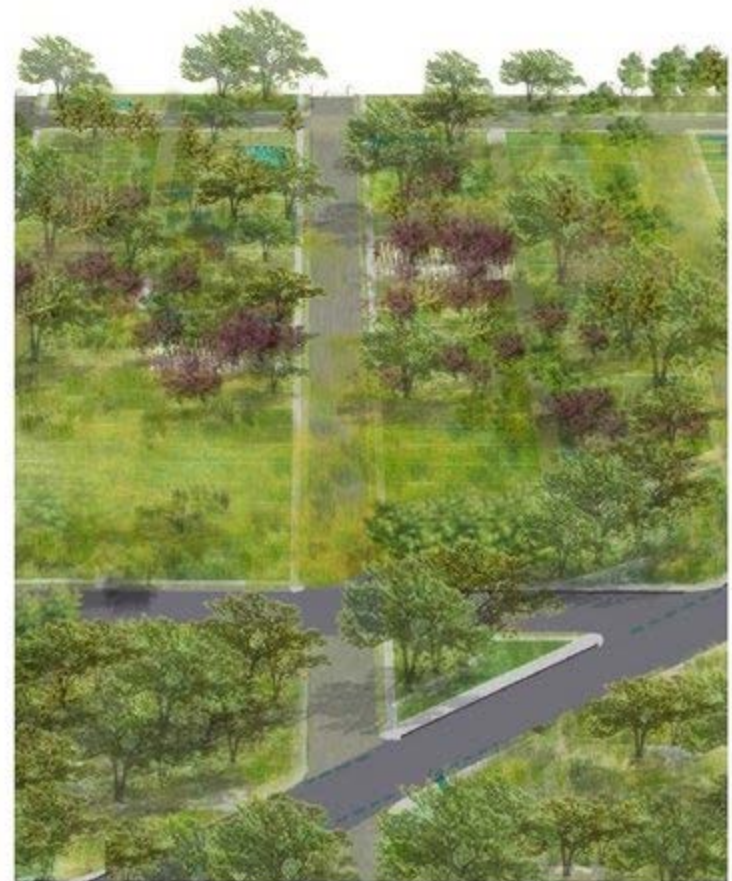


Image Source: Detroit Future City

# Economic Development

## Hazard Mitigation

Berrien County has taken a proactive role in melding hazard mitigation planning with economic development activities. Items included in the Hazard Mitigation Action Plan that partner with economic and community development groups are assisting businesses to plan for disasters, develop mechanisms for assessing damage, encouraging businesses to locate in appropriate locations to mitigate potential disasters and provide adequate emergency response. Brownfield redevelopment is also included as a hazard mitigation technique.

## Rise of Agro-tourism:

Agricultural tourism is not measured as a component of industry, yet this is a key feature of the economy in Berrien County as is evidenced by the survey results that identify it as the major economic driver in the County as a whole. Berrien County ranks third in the state in value of production of fruits, nuts and berries, which comprise 26.5% of the total agricultural value produced in the County.

**Proprietor jobs have risen in Berrien County**

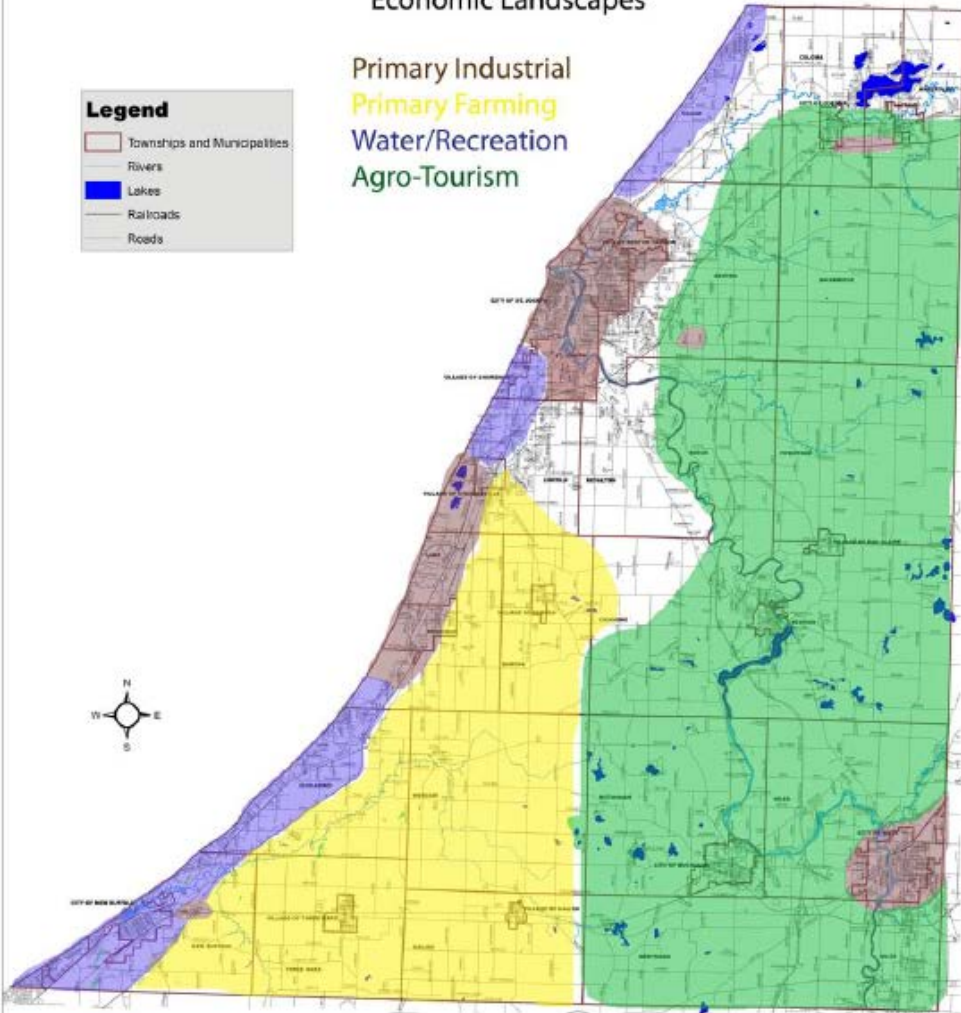
### Berrien County - Base Map

Economic Landscapes

Primary Industrial  
 Primary Farming  
 Water/Recreation  
 Agro-Tourism

**Legend**

- Townships and Municipalities
- Rivers
- Lakes
- Railroads
- Roads



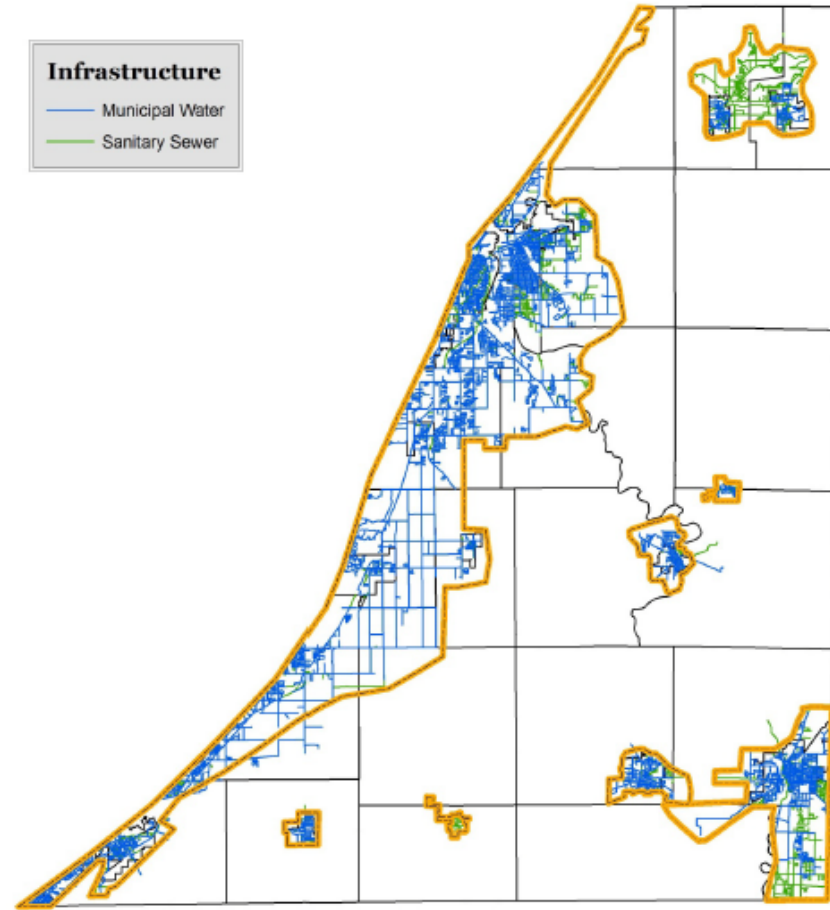
Map created for Berrien County  
 Community Development by  
  
 ENP & ASSOCIATES  
 Last Updated: 07/14/09  
 Data source: Berrien County and  
 Michigan Geographic Data Library



### Urban Service Boundaries

**Infrastructure**

- Municipal Water
- Sanitary Sewer



Map created for Berrien County  
 Community Development by:



Data Source: Michigan Geographic Data Library  
 & Berrien County Community Development

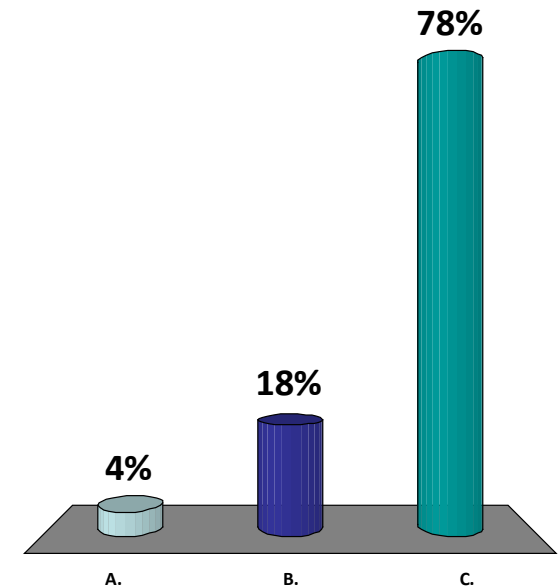
Map 1: Urban Service Boundaries.

## “No Build:” St. Joseph, MI

- Case study on [Great Lakes Coastal Resilience](#) site
- Ordinance driven by homeowner request for seawall that triggered concerns among neighbors (2012)
- Engineering firm hired to conduct study of impacts
- Moratorium imposed to allow completion of studies
- Setback recommended of 130-180' above ordinary high tide line to protect public trust
- Ordinance created Edgewater Beach Overlay District (November 2012) north of St. Joseph River
- First such restrictions in Michigan along Lake Michigan

# Does the St. Joseph ordinance

- A. Go too far in restricting the right to build?
- B. Not go far enough in protecting the lakefront?
- C. Split the difference just right and promote resilience in St. Joseph?





## “No Build:” St. Joseph, MI

- Subsequent FEMA Great Lakes Coastal Flood Study (2013)
- Berrien one of six counties included in data collection





# Contact Information

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