Wetlands Working For Your Community

Planning and Zoning for Clean Water

Local Wetland Protection Options

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Southwest Michigan Planning Commission

How and Where We Develop Land Effects Water Quality!

phase 1 neighborhood plan

Pokagon Band of Potawatomi Indians
PO Box 180
Dowagiac, MI 49047

Wightman & Assoc., Inc
2303 Pipestone Road
Benton Harbor, MI 49022

Project Number: 03025.00
Date: 06.04.03

Dailey Road Housing Development

43.2 Acres total

20 Homes

35.8 Acres of open space

Why Local Protection?

- Land Use Decisions - LOCAL
  - Greatly impact water and natural resources
- **Michigan Planning Enabling Act:** to promote public health, safety and general welfare.
- Local Government has authority to protect wetlands beyond federal and state government
- **Clean Water Goal –**
- **How it will be achieved?**

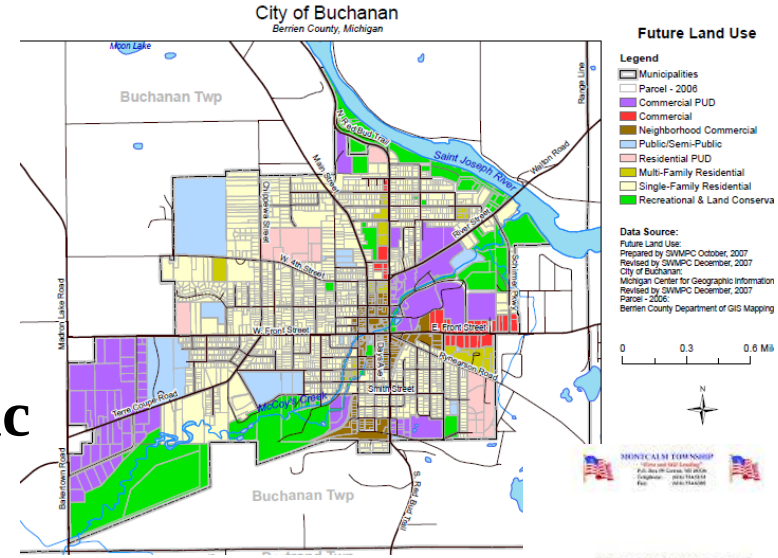
Planning & Zoning for Wetlands

1. Identify wetlands (maps, physical cues, professional services)

2. Master Plan - Language and Maps

3. Effective Ordinances – Change the Rules of Development!

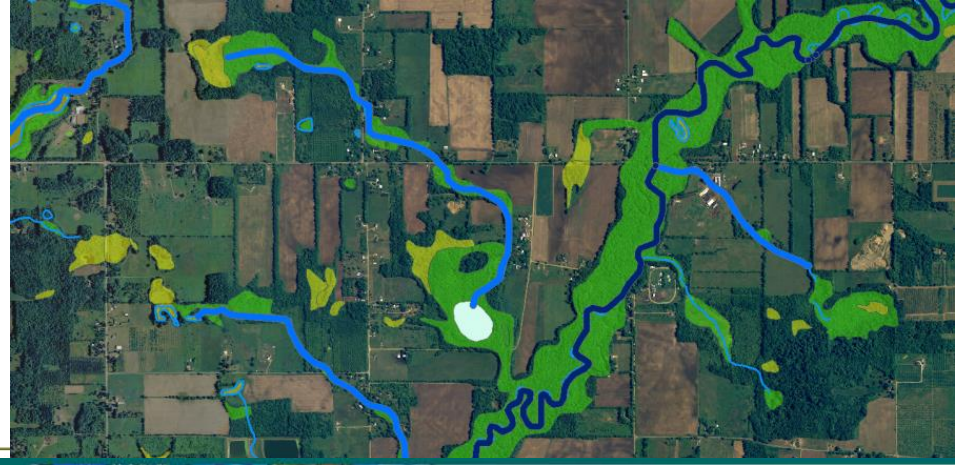
- Target **open space acquisitions**
- Work with partners to **educate public**



MONTCALM TOWNSHIP

ZONING ORDINANCE

Where Are They?



National Wetlands Inventory

Search NWI Website

Menu: Home | Wetlands Data | Status and Trends | Wetlands L

Wetlands Mapper

The Wetlands Mapper integrates digital map data with other resource inform
recommend looking at the following prior to launching a map:

1. Please read the Disclaimer, Data Limitations, Exclusions and

Refer to the following links for documentation and answers to

2.
- Wetlands Mapper Documentation and Instructions Mar
- Frequently Asked Questions: Wetlands Mapper (PDF)
- Frequently Asked Questions web page
- Printing maps with the Wetlands Mapper (PDF)
- Mapper Introduction

3. 
Click here to open the Wetlands M
(Mapper program will open on a ne

Wetlands Map Viewer
Department of Environmental Quality

Michigan.gov Home | DEQ | Online Services | Permits | Programs | Site Map | Contacts | Locations

search address, city, zip, and more

Clear | Zoom Extents | Navigation Info

Part 303 Final Wetlands Inventory

Wetlands as identified on NWI and MIRIS maps

Soil areas which include wetland soils

Wetlands as identified on NWI and MIRIS maps and soil areas which include wetland soils

Base Map Legend

Unincorporated Places

Interchanges

Highways:

Freeways

Highways

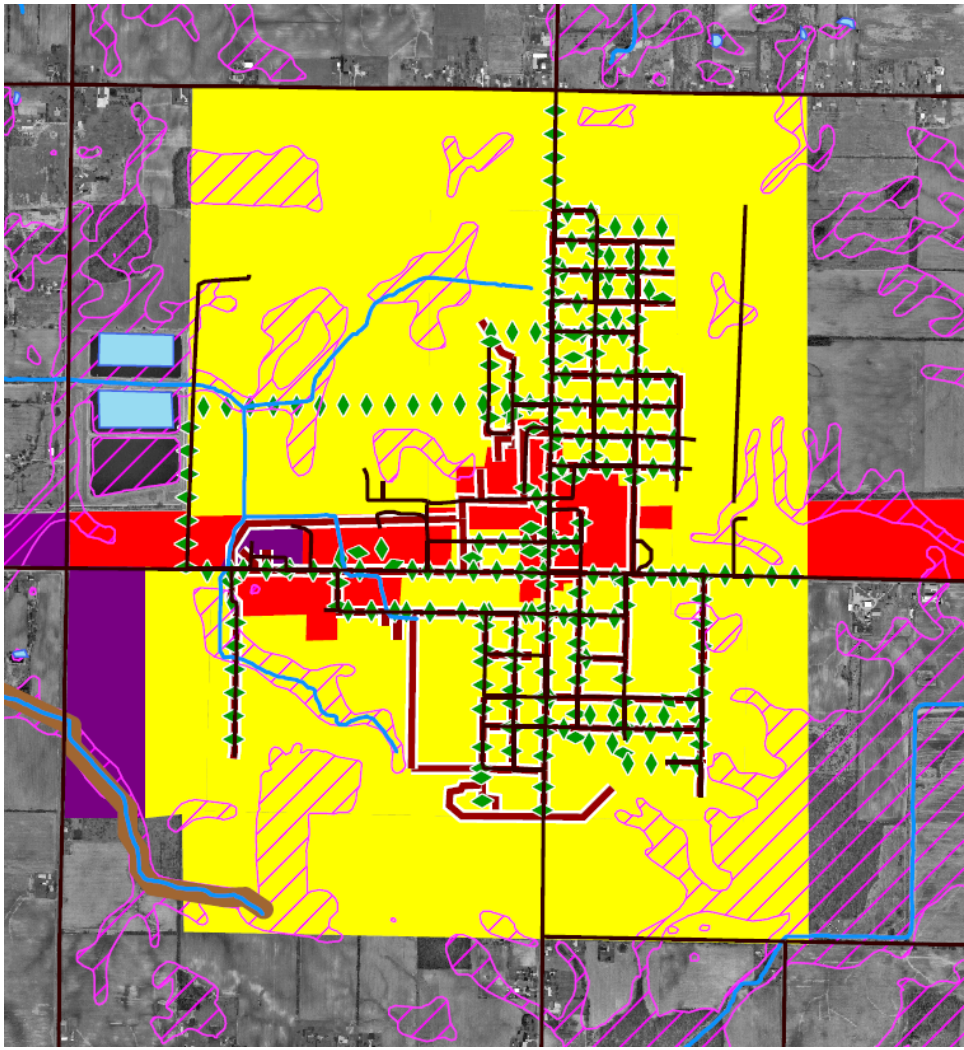
Primary Roads

Lon: -85.9091, Lat: 42.0953

Wetlands and the Master Plan

Master Plan – guide for where and how land is developed

- Identify & Map –
  Where are/were they?
- Values/Benefits –
  What functions do/did they serve?
- Goals/Policies
- **FUTURE LAND USE MAP!**



Master Plan Language

Wetlands contribute to the quality of other natural resources, such as inland lakes, ground water, fisheries, and wildlife, as well as to the _____River and its tributaries. **Acre for acre, wetlands produce more wildlife and plants than any other land cover type.**

Benefits of wetlands include:

- **Reducing flooding** by absorbing runoff from rain and melting snow and slowly releasing excess water into rivers and lakes. (One-acre, flooded to a depth of one foot, contains 325,851 gallons of water.)
- **Filtering pollutants** from surface runoff, trapping fertilizers, pesticides, sediments, and other potential contaminants and breaking them down into less harmful substances, improving water clarity and quality.
- **Recharging groundwater** supplies when connected to underground aquifers.
- **Contributing to natural nutrient and water cycles**, and producing vital atmospheric gases, including oxygen and serving as nutrient traps, when next to inland lakes or streams
- **Providing commercial and recreational values to the economy**, by producing plants, game birds (ducks, geese) and fur-bearing mammals. Survival of certain varieties of fish directly depend on wetlands, requiring shallow water areas for breeding, feeding and escaping from predators.

How Much Wetland Loss?

COUNTY	Current Wetland Acres	PreSettlement Wetland Acres	Wetland Loss
Berrien County	19,033	40,192	53%
Branch County	43,084	86,980	50%
Calhoun County	32,430	40,942	21%
Cass County	39,694	55,096	28%
Dekalb County	393	2,133	82%
Elkhart County	12,654	58,115	78%
Hillsdale County	12,052	21,191	43%
Kalamazoo County	24,843	30,491	19%
Kosciusko County	2,848	18,164	84%
Lagrange County	21,246	62,276	66%
Noble County	20,938	57,948	64%
St. Joseph County (IN)	2,311	27,896	92%
St. Joseph County (MI)	34,431	53,232	35%
Steuben County	16,199	35,601	54%
Van Buren County	32,869	66,283	50%
TOTAL	315,024	656,540	52%

Why Should I Care? What Have We Lost?

COUNTY	Wetland Loss	Floodwater Functional Loss	Streamflow Maintenance Functional Loss	Nutrient Transformation Functional Loss	Sediment Retention Functional Loss
Berrien County	53%	58%	52%	44%	52%
Branch County	50%	60%	54%	41%	51%
Calhoun County	21%	42%	23%	4%	20%
Cass County	28%	37%	31%	31%	36%
Dekalb County	82%	78%	77%	71%	55%
Elkhart County	78%	76%	82%	69%	71%
Hillsdale County	43%	48%	44%	35%	38%
Kalamazoo County	19%	42%	27%	10%	30%
Kosciusko County	84%	84%	86%	76%	70%
Lagrange County	66%	67%	67%	46%	52%
Noble County	64%	66%	67%	47%	47%
St. Joseph County (IN	92%	92%	94%	89%	87%
St. Joseph County (MI	35%	45%	37%	29%	39%
Steuben County	54%	62%	51%	44%	56%
Van Buren County	50%	61%	49%	52%	61%
TOTAL	52%	58%	54%	42%	49%

Maps of Qualitative Information

Wetland Function*

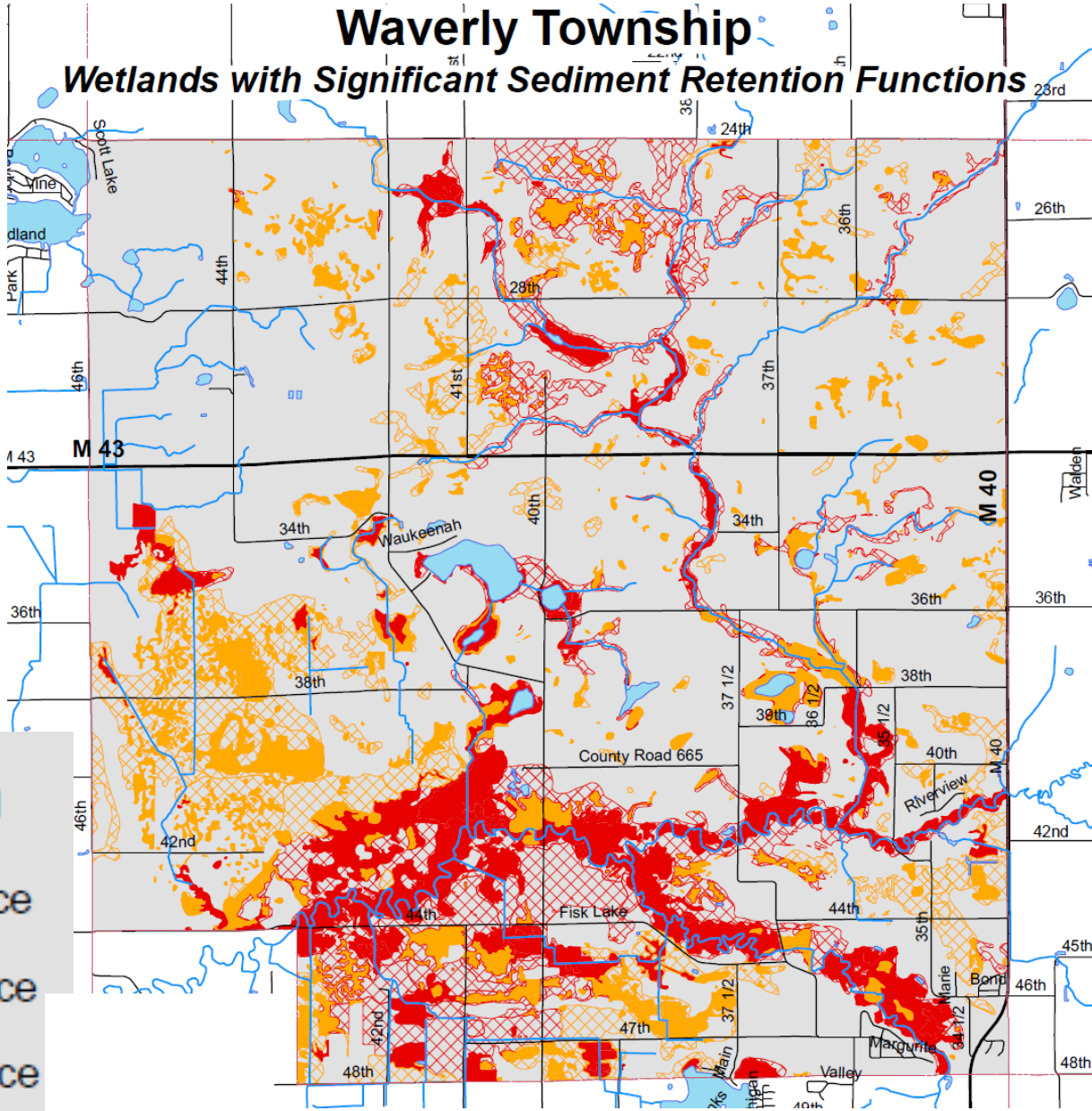
- Existing High Significance
- Existing Medium Significanc
- Historic High Significance
- Historic Medium Significance

"Wetland Function is composed of one or more of the following assessments:

1. Sediment & Particulate Retentic
2. Nutrient Transformation
3. Surface Water Detention

Map Wetland Function - Sediment Retention

55% loss of function



Sediment Retention

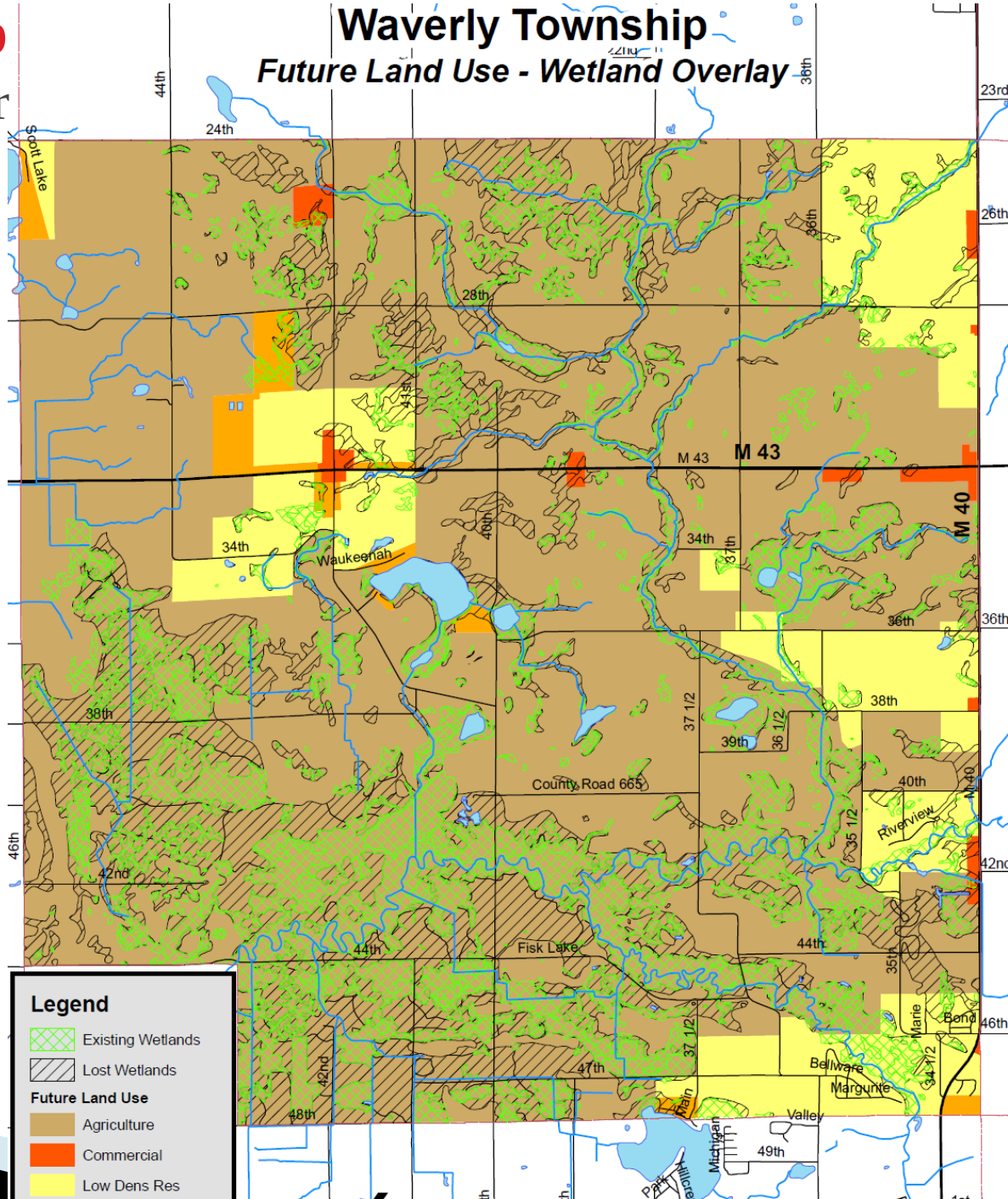
- Historic Med Significance
- Historic High Significance
- Existing Med Significance
- Existing High Significance

Wetland Related Goals

- Protect water resources (streams, rivers, lakes and **wetlands**).
- Protect wetlands and wetland **function** to protect water quality, mitigate flooding and provide aquatic habitat.
- Protect **and restore** wetland **areas** and their **functions**, thereby protecting and improving hydrology and water quality.

Future Land Use Map

Identifying Opportunities for Protection and Restoration



Legend

Existing Wetlands

Lost Wetlands

Future Land Use

Agriculture

Commercial

Low Dens Res

Med/High Dens Res

Wetland Protection Options

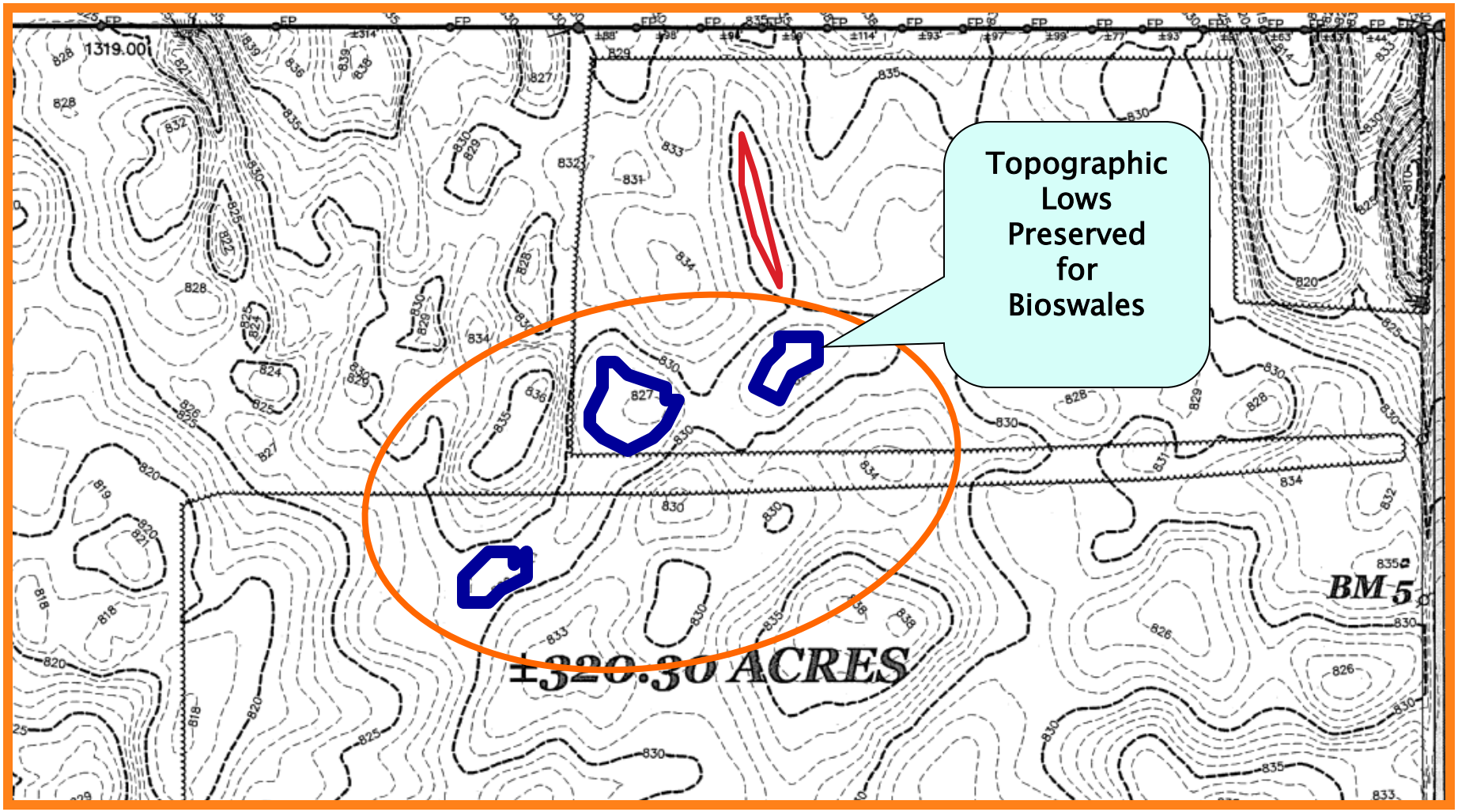
Allow	Encourage	Require
Master Plan – Future Land Use Map and Zoning Map	Site Plan Review	**Site Plan Review**
Remove Zoning Barriers	Incentives for Planned Unit Developments/ Conservation Subdivisions	**Explicit about wetlands being included in open space**
	Permit Coordination with State/Federal agencies	**Overlay Districts**
	Public Land – Examples/ Demonstrations	**Wetland Protection Ordinance**
		Restrict Development in Hydric Soils
		Building Setbacks with Vegetated Buffer

Effective Ordinances

- Site Plan Review
- Planned Unit Developments (PUDs)
- Open Space Developments (conservation developments, cluster developments)
- Wetland Protection Ordinance
- Building restrictions for hydric soils
- Overlay District
- Building Setbacks and Buffers

Site Plan Review

- Explicitly state that applicants must abide by state and federal wetland related laws and ensure coordination with state/federal wetland permit process
- Require all natural features including **wetlands** and areas of **hydric soils** to be shown on site plan
- Review Standards that:
  - **Protect wetlands/hydric soil areas** and **minimize impacts** to wetlands and their functions
  - **Restrict removal or alteration** of natural features
  - **Preserve topography** and **natural drainage** patterns (swales, low areas, wetlands, ponds)
  - Encourage/Require use of **Low Impact Development**

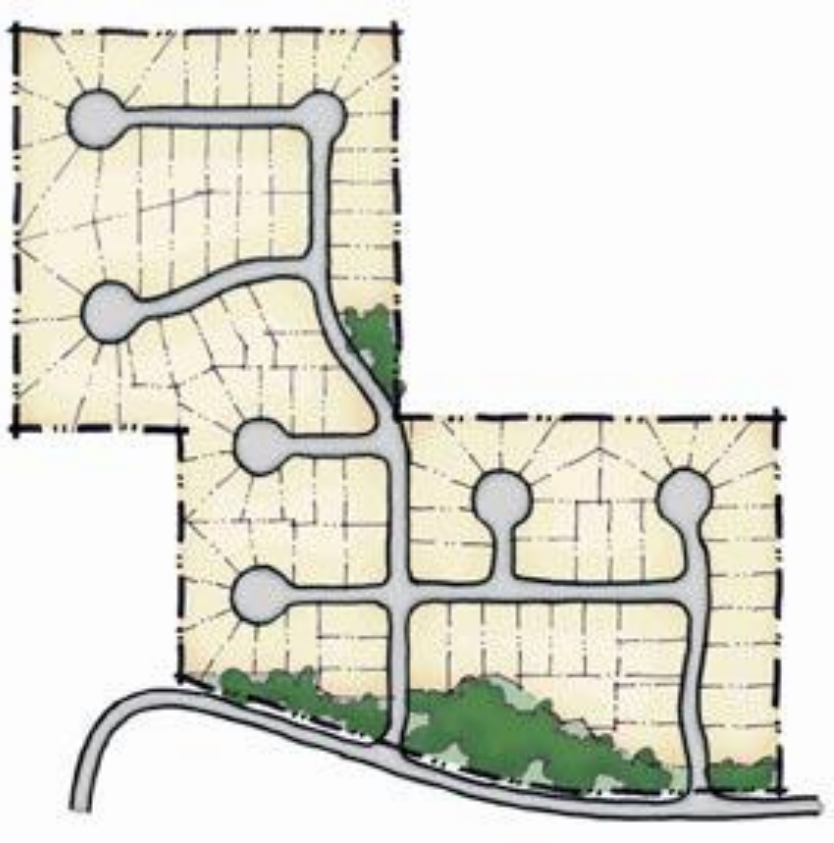


Goals - Protect Watershed Hydrology
Protect Natural Features

Strategy: Incorporate Design into Topography
(utilize natural drainage patterns)

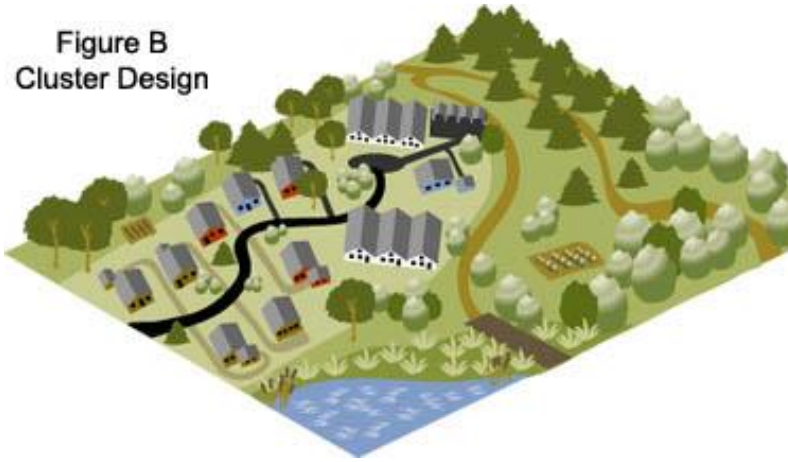
Open Space Developments and PUDs

Traditional



Open Space Development

Open Space/PUDs



- A **by-right** form of development
- PUDs require open space (30-50%)
- Open Space Developments & PUDS explicitly require wetlands to be included in open space areas
- **Provide Incentives** for developers that conserve non-regulated lands (wetlands)
  - Allow for flexible site design criteria (setbacks, road widths, lot sizes)
  - Density bonuses for protecting wetlands

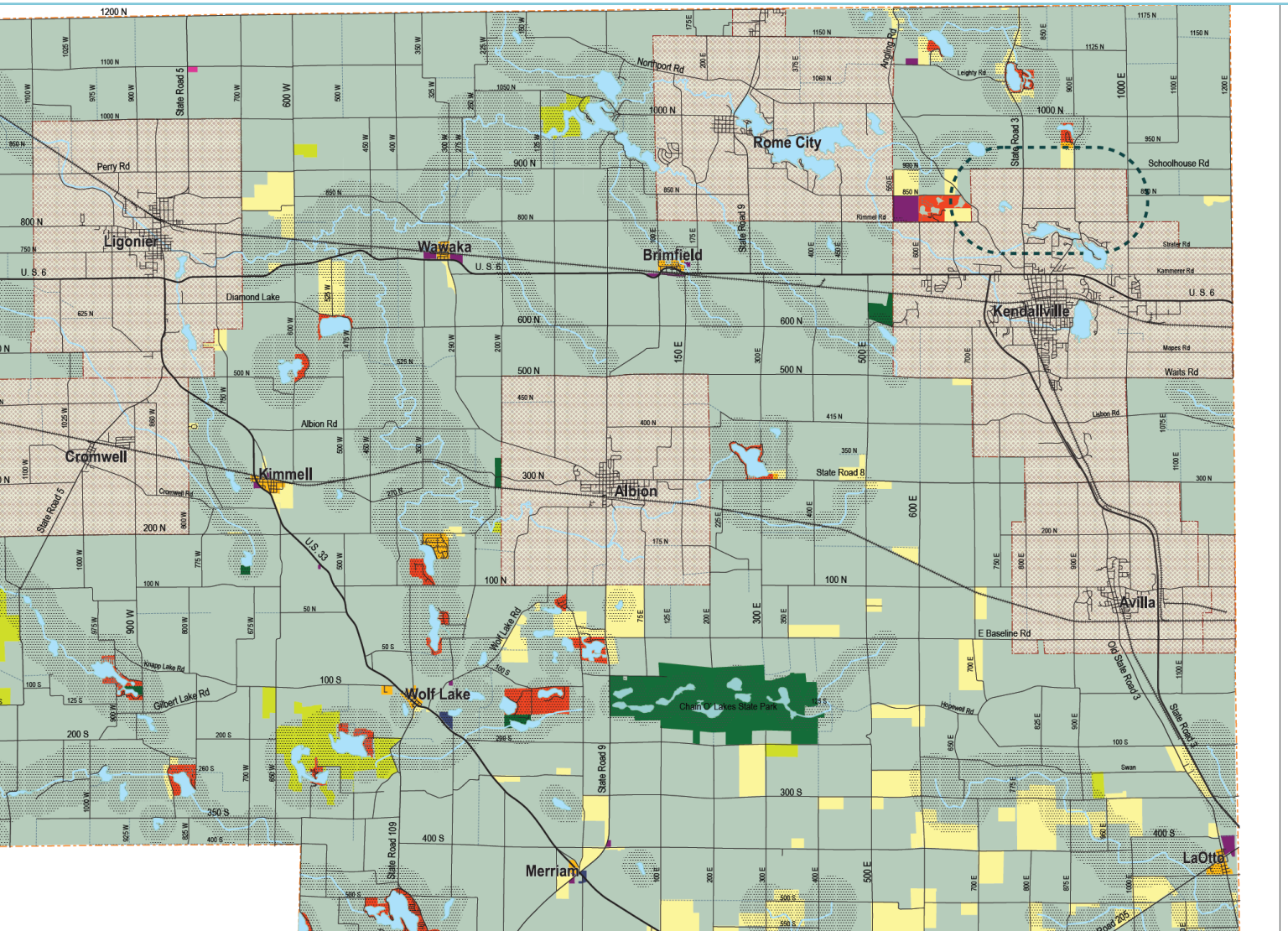
Wetland Protection Ordinance

- Wetlands that are not under state/federal jurisdiction
- Require standards that are more strict than state/federal laws (activities in a wetland, mitigation requirements)
- Identify and map wetlands: prioritize which wetlands the ordinance applies to, particularly in communities with extensive wetland resources. (use LLWFA)
- Ensure local permitting process coordinates with state and federal permits

Building restriction for hydric soils

Water Quality Overlay District

- Usually include rivers, streams and lakes- ADD WETLANDS!



Noble County, Indiana

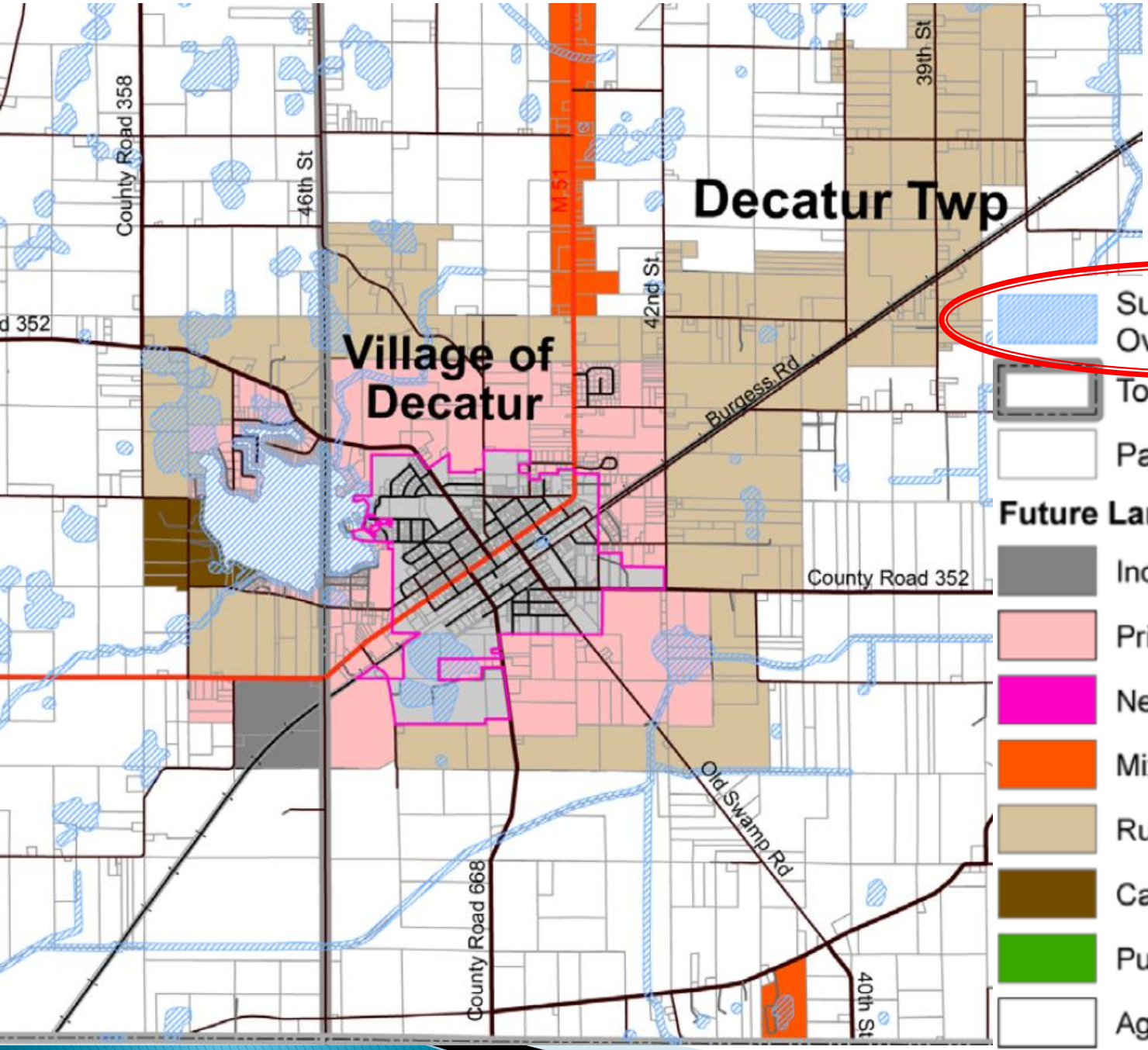
MAP LEGEND

- Conservation Area
- Surface Water Protection Area
- Recreation and Open Space
- General Agriculture
- Rural Residential
- Residential
- Lake Residential
- Multifamily Residential
- Government/Institutional
- Village Commercial
- General Commercial
- Industrial
- Municipal Planning Jurisdiction
- Airport Hazard Area
- Lake
- Stream/Drainageway

1 MILE 2 MILES 3 MILES

North

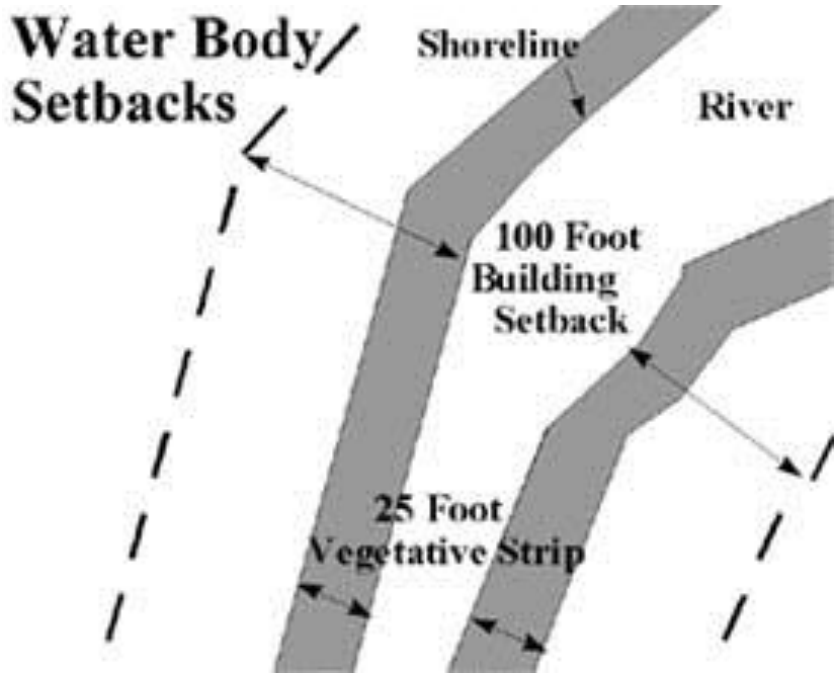
Future Land Use Map



Building setbacks for wetlands with vegetated buffer

- **Last Line of Defense -** last opportunity to clean polluted runoff

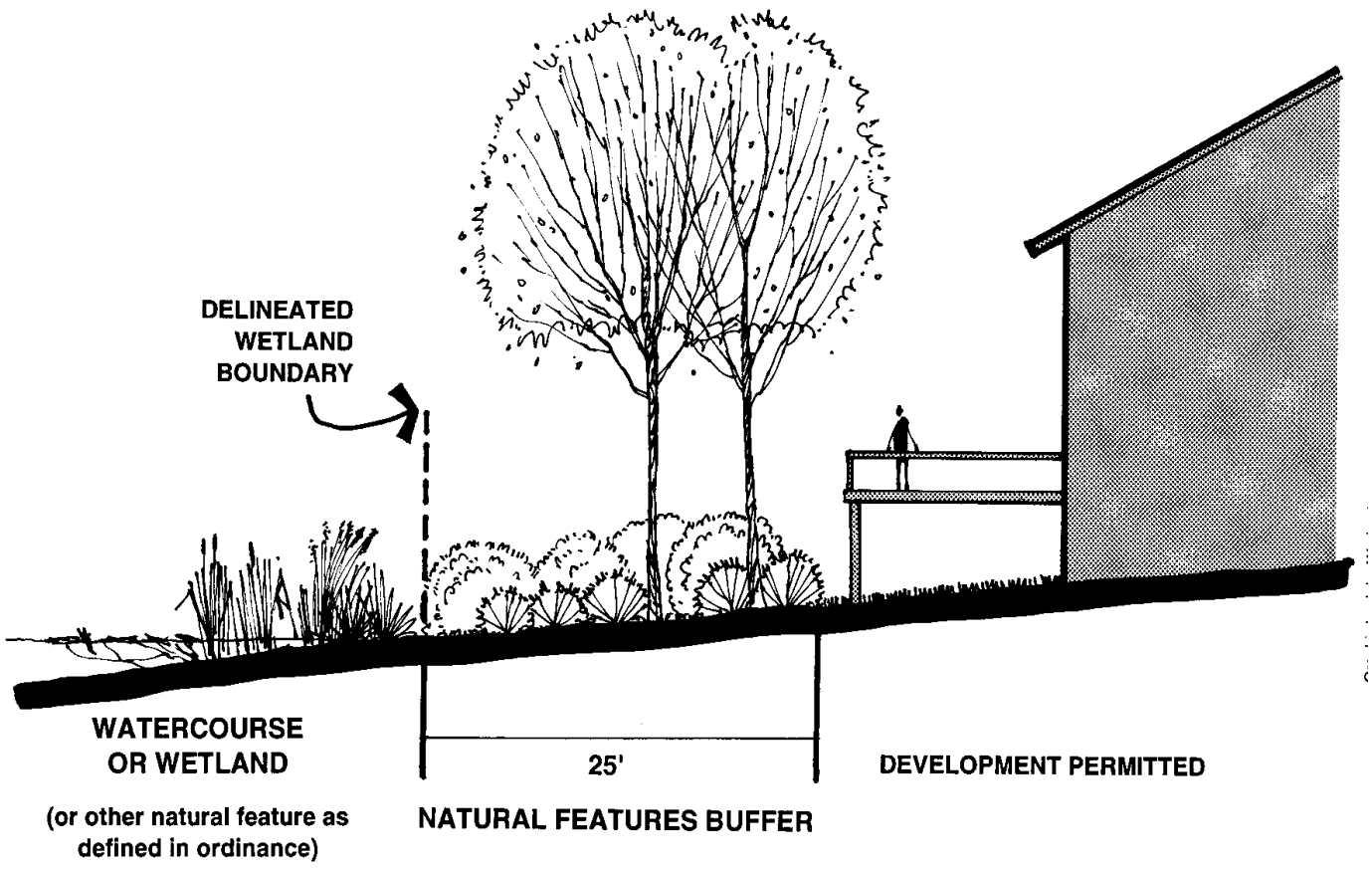
Over 60% of water pollution comes from runoff



The Last Line of Defense

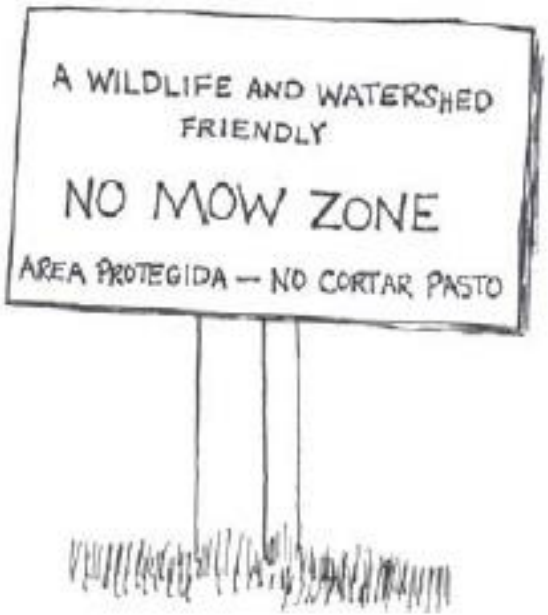
- Minimum setback for structures and septic systems from the shoreline/edge

- Uncleared vegetated buffer strip immediately adjacent to a water body

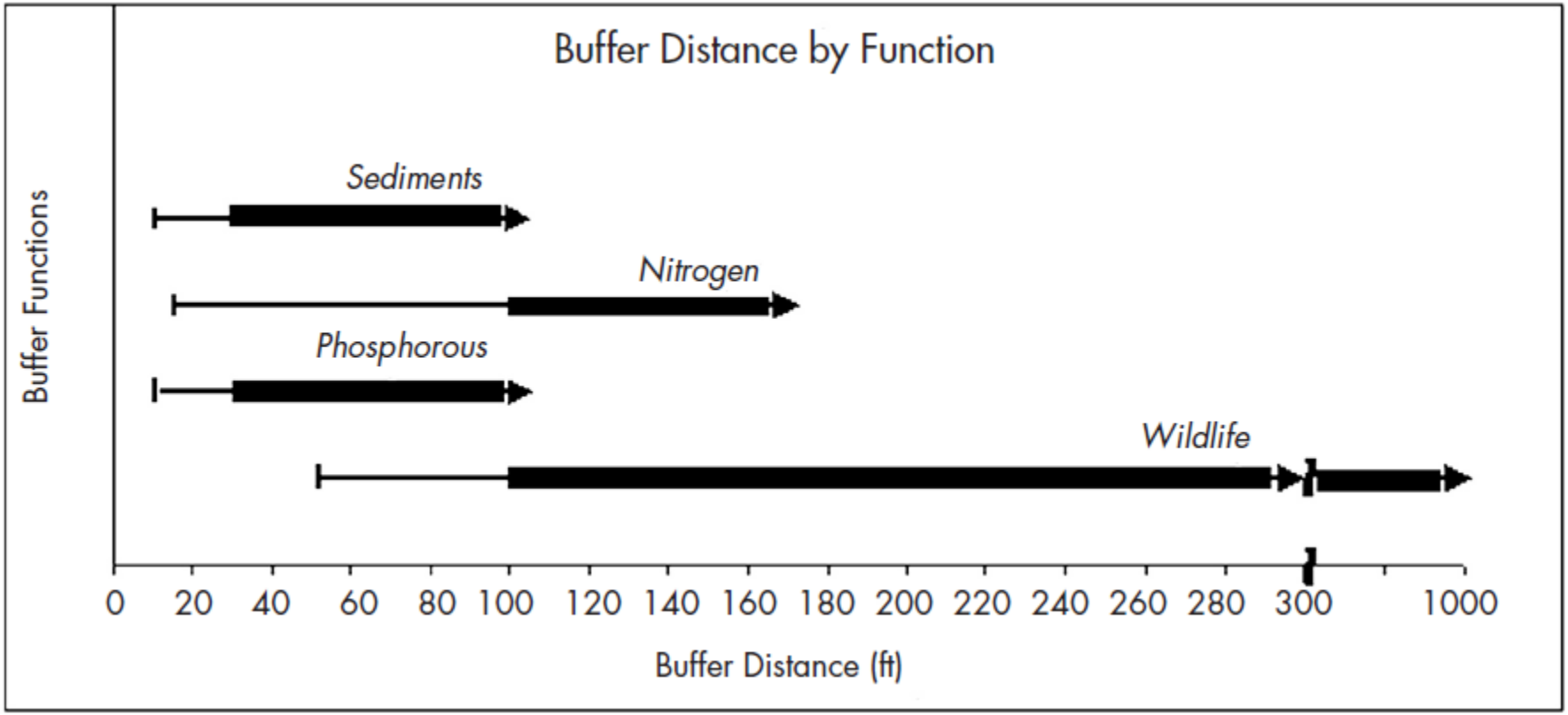


Homeowners Pay More

- **$6,858** to live adjacent to community-owned and open accessible riparian buffers.
- **$1,625** to live in subdivision but not immediately adjacent to the buffer.
- Properties with 500-foot wide buffer zone sold for **$2,500 to $3,800** more.
- Properties adjacent to open space sold for **$4,600 to $6,400** more than properties without open space.

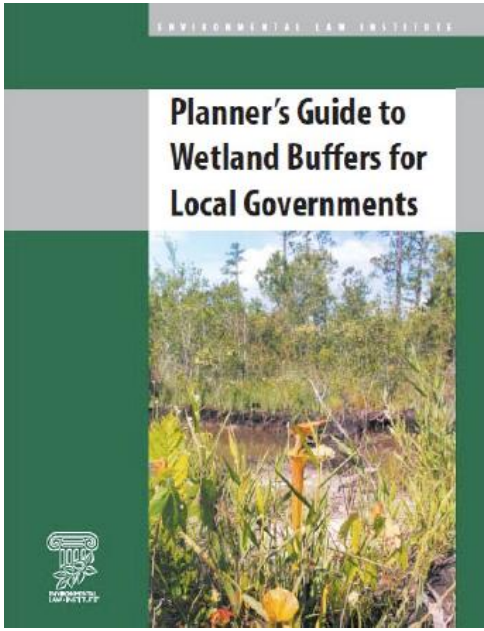


How Wide is Wide Enough?

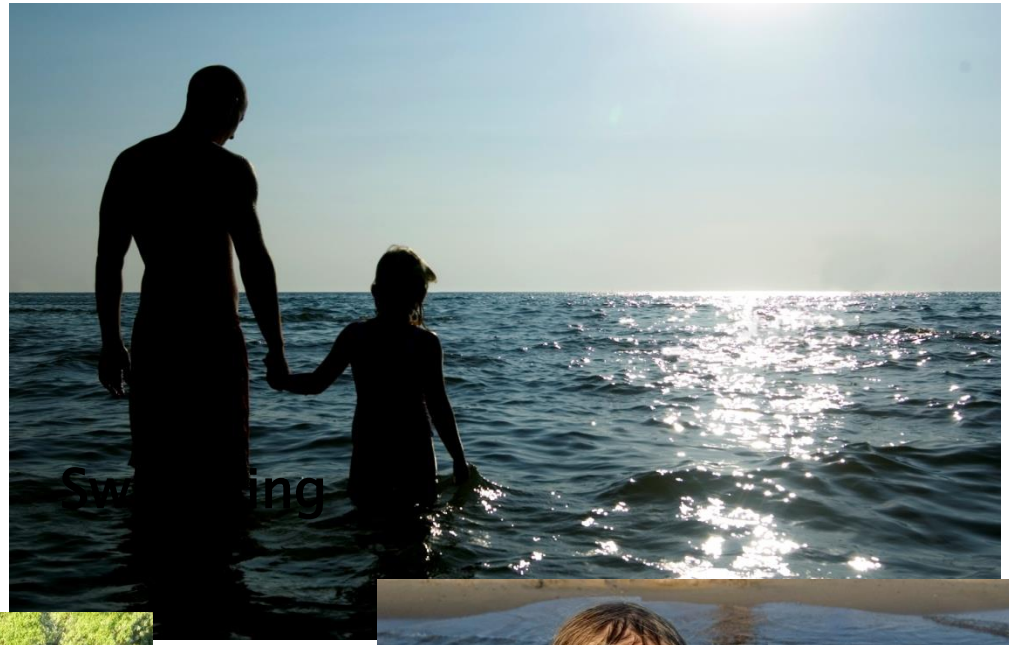


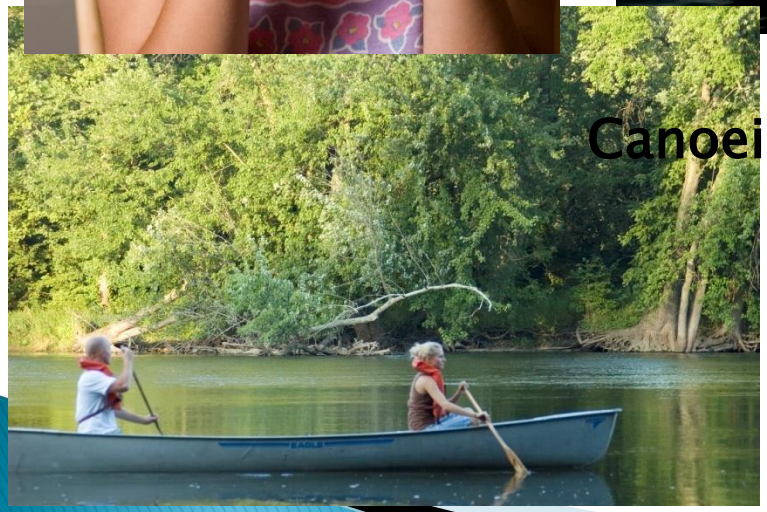
Resources

- Buffers – managing the water's edge
- http://www.sewrpc.org/SEWRPCFiles/Environment/RecentPublications/ManagingtheWatersEdge-brochure.pdf -
- MDEQ Local Wetlands http://www.michigan.gov/deq/0,4561,7-135-3313_3687-24312--,00.html
- IN Wetland Ordinance http://www.angelfire.com/in4/earthpages/indianawetlands.html
- Wetland Buffers for Local Govt
- http://www.elistore.org/reports_detail.asp?ID=11272
- Low Impact Development www.swmpc.org/lid.asp



Do your part so we can enjoy….





keep it BLUE

Summary

- We are blessed with many water resources.
- There is an opportunity to develop in a manner that will protect water resources.
- Continue to learn and get involved to protect our water resources!