



A CASE STUDY

# THE CITY OF MONROE



Michigan Coastal Community Working Waterfronts

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## Michigan Coastal Community Working Waterfronts

This case study was compiled as part of a set of 11 working waterfront case studies in coastal communities. For more information on the series, please see the Introduction, Value and Context, Waterfront Land Use, Best Practices, and Recommendations and Next Steps sections.

### OTHER CASE STUDIES IN THIS SERIES:

Alpena	Marquette	Saugatuck
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# TABLE OF CONTENTS

Introduction.....	4
Summary .....	5
Context .....	7
Community Profile .....	8
Community Overview .....	9
Waterfront History.....	10
Waterfront Summary .....	11
Zoning.....	12
Parcel Classification .....	16
Infrastructure and Access.....	18
Working Waterfront SWOT Analysis .....	19
Tools, Strategies and Best Practices for Maintaining Working Waterfronts.....	20
Guiding Principles.....	21
References and Resources.....	22

## FIGURES AND TABLES

Figure 1. State of Michigan and Monroe County and aerial image of the city of Monroe with Lake Erie and the River Raisin ..... 6

Table 1. Intent, permitted uses and special uses of zoning districts that accommodate water-dependent uses and/or public access ..... 12

Figure 2. City of Monroe 2007 zoning districts ..... 13

Figure 3. Map of zoning adjacent to waterfront and frontage by zoning category ..... 14

Figure 4. Map of zoning and location of water-dependent uses within a 1000-foot buffer of water bodies and waterfront land area by zoning category ..... 15

Figure 5. Classification of parcels within a 1000-foot buffer of water bodies by water dependency ..... 16

Figure 6. Parcel frontage and area within 1000-foot buffer by water dependency classification ..... 17

Figure 7. Water-dependent and enhanced uses, docks and waterfront parks along the waterfront and within 1000 feet of bodies of water ..... 18

Table 2. Strengths, weaknesses, opportunities and threats related to maintaining Monroe’s working waterfront ..... 19



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## INTRODUCTION

Many coastal communities have areas known as working waterfronts — waterfront lands, waterfront infrastructure and waterways that are used for water-dependent uses and activities. These uses may include ports, small recreational boat and fishing docks and other types of places or businesses where people use and access the water. Coastal communities' working waterfronts offer economic and cultural value, contribute to a community's identity and are intrinsically tied to a region's natural resources.

A number of factors — such as population change, competing land uses and development pressure, fluctuations in water levels, changes in

fish stocks and regulations, aging and inadequate infrastructure, decline in waterfront industry and economic recession — threaten the viability of water-dependent businesses and access to the public trust waters. Left unchecked, these threats can result in the slow loss of working waterfronts and permanent conversion of waterfront property to non-water-dependent uses.

Active waterfront planning and the sharing and implementation of tools, resources and strategies for maintaining and protecting working waterfronts can ensure access for water-dependent uses and activities, as well as preserve options for future waterfront uses.

### **This case study:**

- Characterizes one of many working waterfronts found throughout Michigan's diverse coastal communities.
- Identifies existing waterfront amenities, waterfront history, waterfront zoning and land area occupied by water-related uses.
- Highlights examples of waterfront challenges, threats and opportunities as well as tools and strategies for maintaining the working waterfront.

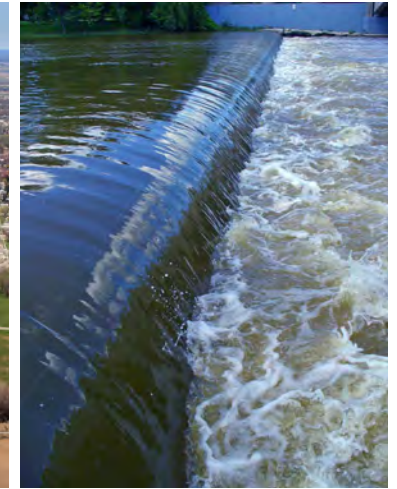
# SUMMARY



U.S. Army Corps of Engineers



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Monroe, Michigan was founded in 1785 in Southeast Michigan at the mouth of the River Raisin on Lake Erie. Originally called Frenchtown, Monroe is Michigan's third oldest community. The town is known for its National Historic District and is home to the National Register of Historic Places War of 1812 River Raisin Battlefield.

Monroe has approximately 7 miles of frontage on Lake Erie and the River Raisin. Land use along the waterfront consists of 65 percent industrial, 27 percent commercial, 4 percent residential and 3 percent open space zoning districts. Land use within a 1000-foot buffer consists of approximately 85 percent industrial, 7 percent commercial, 4 percent

mixed use, 3 percent residential and 2 percent open space uses. Monroe's waterfront commercial district, general industrial district and public recreation and open space zoning districts accommodate water-related uses in the city.

The Port of Monroe, established in 1932 under the Port District Act of 1925, is Michigan's only port on Lake Erie and the only port established under this Act in Michigan. It was constructed in the 1930s and 1940s and continues to play a significant transportation role in the state and is a major employer in the region. The Port Commission continuously maintains, improves and attracts new businesses to the port.

Monroe Harbor is a deep draft commercial harbor that ranked 140th in shipping in the U.S. with more than 1 million tons of material shipped or received in 2008. Bulk commodities that pass through Monroe Harbor, including petroleum products, coal, stone and aggregates, generate \$66 million annually in direct revenue and \$14 million annually in personal income and support over 300 jobs.

Monroe has marinas on both the north and south sides of the River Raisin as well as a boat launch at Hellenburg Park. Waterfront parks, a downtown riverwalk and Sterling State Park, located on the edge of Monroe and Frenchtown Township, provide additional access and recreational opportunities. Monroe is home to a

260-acre Eagle Island Marsh unit of the Detroit River International Wildlife.

The River Raisin is a designated Area of Concern due to contamination from former industry. The community continues to work to restore river conditions and fish populations, remove contaminants, stabilize banks and take out dams and establish natural areas.

Best practices for maintaining access to the waterfront for the public and water-dependent uses include establishing a port authority that provides the foundation for economic development and ensures access for shipping and industry, as well as river restoration.

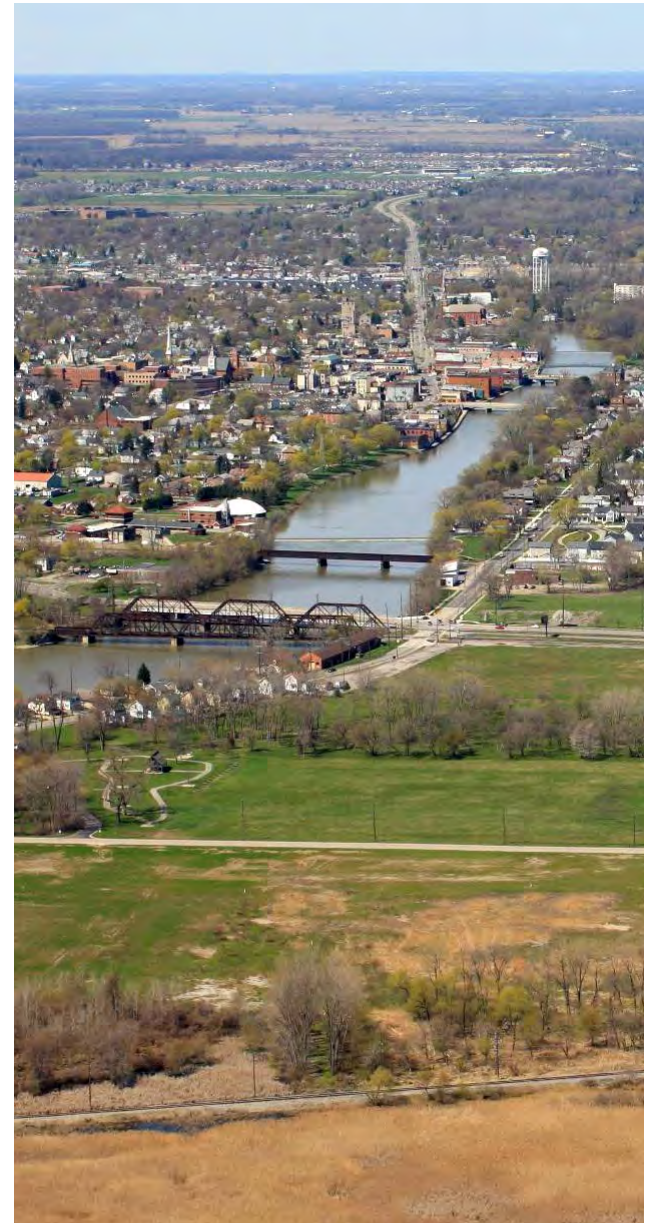
# MONROE, MI



FIGURE 1. STATE OF MICHIGAN AND MONROE COUNTY (LEFT) AND AERIAL IMAGE OF THE CITY OF MONROE WITH LAKE ERIE AND THE RIVER RAISIN.

# CONTEXT

Jurisdiction / Government	City
Region	Southeast
County	Monroe
Metropolitan Statistical Area	Monroe Metropolitan Area, Detroit-Ann Arbor-Flint CSA, Toledo Metropolitan area
Land Area	5888 acres / 9.2 miles
Watershed/Subwatershed	Lake Erie Basin / River Raisin
Dominant Land Use of Subwatershed	Agriculture
Adjacent Bodies of Water	River Raisin, Lake Erie
Types of Water Body	Great Lake, River
Percent of Land Area within the CZM	31%
Population (2010)	20,733
Percent of County's Population	13.6%
Percent of County's Land Area	1.6%
Urban / Suburban / Rural	Urban
Federally Authorized Harbors/Projects	Monroe Harbor
Type of Port	Recreational, Commercial, Cargo



U.S. Army Corps of Engineers

# COMMUNITY PROFILE

## POPULATION

- The population of the City of Monroe declined 6 percent from 2000 to 2010. In 2010, the city's population density was 2,261 persons/square mile.
- The population of Monroe County decreased by 4 percent from 2000 to 2010.
- The median age in Monroe decreased from 36 in 2000 to 35 in 2010.

## EDUCATION

- Of the city's population age 25 years and older (67% of the city's total population), 88 percent have a high school degree or higher and 21 percent have a bachelor's degree or higher.
- Of the county's population age 25 years and older (67% of the county's total population), 88 percent have a high school degree or higher and 17 percent have a bachelors degree or higher.

## INCOME

- The median household income between 2006 and 2010 in the City of Monroe was \$42,673, compared to the median household income in Monroe County of \$55,366.

## EMPLOYMENT

- Of the city's population over age 16:
- 59 percent are in the labor force and employed.
  - 10 percent are unemployed.
  - 60 percent are employed in the top 4 (of 13 total) industries classified in the American Community Survey: educational services and health care assistance (20%); manufacturing (20%); retail trade (11%); and arts, entertainment, recreation and accommodation and food services (9%).
  - 26 percent are employed in management, business, science and arts occupations, 26 percent in sales and office occupations, 21 percent in production, transportation and material moving occupations, 20 percent in service occupations and 7 percent in natural resources, construction and maintenance occupations.

### Monroe County Great Lakes Jobs Snapshot (NOAA)

- In 2009, Great Lakes related jobs accounted for 7 percent of total jobs in Monroe County.
- Great Lakes related jobs provided employment for 2,597 people, \$53 million in wages and \$94 million in goods and services.



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## HOUSING

- From 2000 to 2010, the total number of housing units in Monroe increased by 1 percent, and the percent occupancy of housing units decreased by 5 percent.
- Owner occupied housing units decreased by 4 percent, and renter occupied housing units increased by 5 percent from 2000 to 2010.
- Residential construction in Monroe County increased from 368 buildings in 1990 to 1,465 buildings in 2000 and then declined to 211 buildings in 2010.



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# COMMUNITY OVERVIEW

The City of Monroe is located in Southeast Michigan on Lake Erie. It is approximately 40 miles southwest of Detroit and 25 miles northwest of Toledo. Monroe is the largest city in and county seat of Monroe County. The city is characterized by a historic downtown surrounded by urban residential areas and an industrial waterfront along Lake Erie and the mouth of the River Raisin.

Monroe is Michigan's third oldest community. The community is known for its National Historic District and is home to the National Register of Historic Places War of 1812 River Raisin Battlefield. Among the city's primary planning objectives are to balance historic preservation efforts and stewardship with economic development opportunities and "to be the most vibrant, walkable, historic small city in the Midwest."

Monroe is home to the Port of Monroe, Michigan's only port on Lake Erie. The Port of Monroe plays a significant transportation role in the state and is a major employer in the region. DTE Energy and Macsteel, two businesses located at the port, are among the top employers in the city. The Port is accessible to major interstate and highway systems, Monroe's Custer Airport and is served by two railroads. The need for environmental cleanup of contamination associated with industrial uses has lead Monroe to become a leader in brownfield redevelopment.

The County of Monroe is has 35 parks with more than 530 acres of park space. There are approximately 315 acres of land designated for parks and open space recreational uses within city limits. Monroe is home to the 260-acre Eagle Island Marsh unit of the Detroit River International Wildlife Refuge and the 1,300-acre

Sterling State Park, which provides opportunities for boating, swimming, camping, hiking and fishing. The city's downtown has a half mile long river walk along the south bank of the River Raisin.

## CAPACITY

Monroe operates under a council-manager form of government with a city manager, mayor and a six-member city council. The city has a Recreation Department with one recreation supervisor and a Community Development Department with a director, a clerk and two planning staff members. Planning staff support the Citizens Planning Commission, Historic District Commission, Brownfield Redevelopment Authority and the Economic Development Review Committee, as well as update the city's Capital Improvement Plan and administer grants and funding initiatives. In addition to its comprehensive plan, the city has a 2008-2012 Five-Year Recreation Plan and Port Master Plan drafted by the Port Commission.



River Raisin. *Elizabeth Durfee*



Boats on the River Raisin. *Elizabeth Durfee*



Sterling State Park. *Elizabeth Durfee*

# WATERFRONT HISTORY



Historic River Raisin Battlefield. *Patrick J. Chaisson*



Pedestrian bridge in Hellenberg Park. *Elizabeth Durfee*



Port of Monroe office. *Elizabeth Durfee*

Monroe was founded in 1785. Its location at the mouth of the River Raisin on Lake Erie attracted Native Americans and later French missionaries and fur trappers. The first tribe to live in the area was the Potawatomi.

Monroe was originally called Frenchtown and is the site of the War of 1812 Battle of Frenchtown. In 1982, the River Raisin Battlefield was added to the National Register of Historic Places. The River Raisin Battlefield National Park was designated in 2009.

The Port of Monroe was established in 1932 pursuant to the Port District Act, PA 234 of 1925. It is the only port established under this act in Michigan. The port was constructed in the late 1930s and 1940s after the incorporation of land held by the Monroe Industrial Commission in 1932. Development in the region grew with the growth of industries at the port and upstream along the River Raisin.

The River Raisin is a designated Area of Concern due to contamination associated with historical discharges of oils and grease, heavy metals and PCBs (polychlorinated biphenyls) from industrial facilities as well as industrial and municipal waste. Work to remove the beneficial use impairments (in order to seek delisting as an Area of Concern) in the River Raisin is ongoing. Brownfield redevelopment and natural areas — such as the Wildlife-Habitat Council-certified site at the DTE Energy Monroe Power Plant — contribute the restoration of the natural environment in Monroe.

# WATERFRONT SUMMARY

Land use along the River Raisin in downtown Monroe consists of a mix of commercial and residential property. Downstream of the downtown, waterfront land use is characterized by a mix of residential, scattered business and undeveloped land. Industrially uses and wetlands dominate the Lake Erie waterfront at the mouth of the River Raisin.

Monroe Harbor is a deep draft commercial harbor with project depths of 21 feet in Lake Erie, 18 feet in the turning basin and over 5 miles of maintained channel. In 2008 the harbor ranked 140th in shipping in the U.S. with more than 1 million tons of material shipped or received. The harbor has 1,500 feet of public dock on the turning basin and 1,500 feet of public dock and 2,300 feet of private dock on the River Raisin. The harbor requires dredging on a 2-3 year cycle. Bulk commodities that pass through, including petroleum products, coal, stone and aggregates, generate \$66 million annually in direct revenue, \$14 million annually in personal income and support over 300 jobs. Light loading associated with a loss of 2 and 3 feet of water can increase transportation costs by \$1.5 and \$2.4 million annually. There are currently five businesses located at the port of Monroe: Barnhart Crane & Rigging Company, DTE Energy, Gerdau MACSTEEL and Michigan Paving and Materials Company Ventower Industries.

Marinas located in Monroe include the Riverfront Marina, Mooner's Marina and Roe's Riverside Bait and Tackle. The city has a boat launch on the River Raisin at Hellenburg Park. Waterfront parks including Veteran's Park, Roessler Field, Hellenburg Park as well as the riverwalk provide public river access. Sterling State Park, located on the edge of Monroe and in Frenchtown Township, has a boat launch, beach, campground and nature trails.

## WORKING WATERFRONT CHALLENGES AND ACTIONS

One challenge the community faces is contamination in the River Raisin. The community has used a variety of funding sources including Great Lakes Legacy Act, Michigan Department of Environmental Quality and Great Lakes Restoration Initiative funds to dredge and remove contaminants, remove dams and restore river conditions and fish populations. Additional actions include bank improvements at Sterling Island near Hellenberg Park to control erosion and sediment, improve fish habitat and enhance recreational opportunities.



Boats docked on the east side of the River Raisin. *Elizabeth Durfee*



Boat ramps at Hellenberg Park. *Elizabeth Durfee*



Fish cleaning station along the River Raisin. *Elizabeth Durfee*

# ZONING ORDINANCE

ZONING DISTRICT	INTENT OF DISTRICT	PERMITTED USE	SPECIAL USE
General Industrial District	Intended to provide locations for the development of medium to heavy industrial uses and be located where adequate utilities and suitable road and rail access are available	Multiple manufacturing facilities, Storage, material processing and finishing, utilities and rail yards	Sewage disposal plants
Public Recreation and Open Space District	This district is intended to provide an exclusive area for natural features, open spaces and specified government, civic and public recreational facilities	Nature preserves and natural areas, public parks and recreation facilities with low use intensity including playgrounds, picnic areas, pathways	
Waterfront Commercial District	Intended to provide an area along the River Raisin specifically for those uses and services which are marine oriented and for related recreational, entertainment and retail establishments	Marinas, fishing equipment and sales, charter boat and fishing businesses	Watercraft service, sales and boat storage businesses, including rack, hoist and launch facilities

TABLE 1. INTENT, PERMITTED USES AND SPECIAL USES OF ZONING DISTRICTS THAT ACCOMMODATE WATER-DEPENDENT USES AND/OR PUBLIC ACCESS.

# ZONING

Waterfront land use along the River Raisin downstream of North Dixie Highway consists of industrial, recreation and open space, commercial and residential uses. Land use along Lake Erie is zoned for industrial uses and consists of industrial uses, wetlands and open space.

Six of the City of Monroe's 17 zoning districts fall within a 1000-foot buffer of Lake Erie and/or the River Raisin (Figure 4 displays zoning within this 1000-foot buffer). Five zoning districts about Lake Erie and/or the River Raisin.

Three zoning districts in Monroe support water-related uses. The waterfront commercial district permits commercial and recreational water-related uses such as marinas, watercraft services and charter fishing businesses. Manufacturing and utilities are permitted in the general industrial district. The public recreation and open space district permits parks and recreational uses (Table 1). A majority of identified water-dependent uses are located in the industrial, public recreation and open space and marine commercial districts (Figure 4).

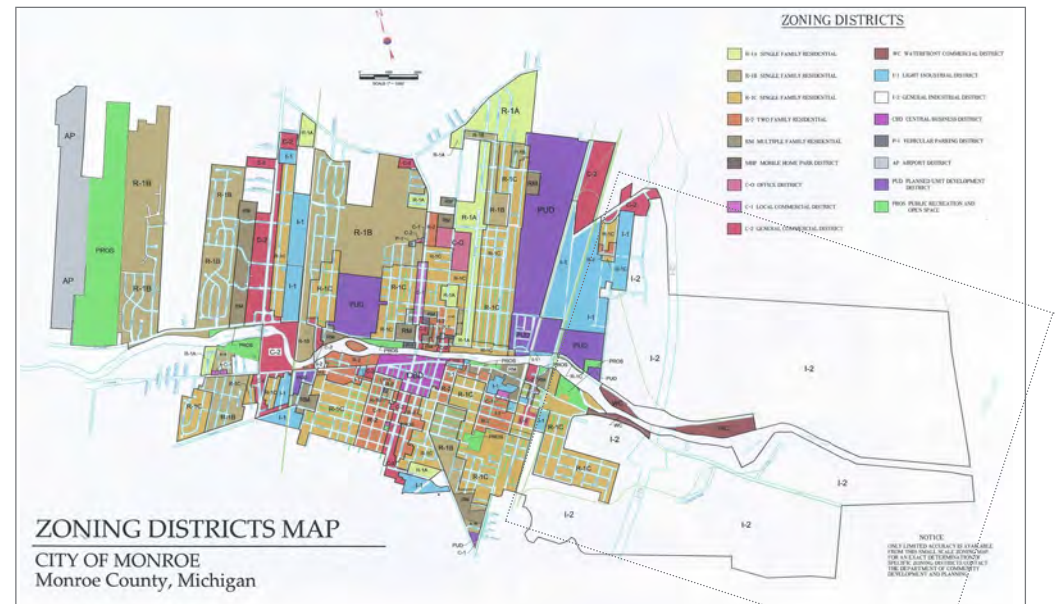
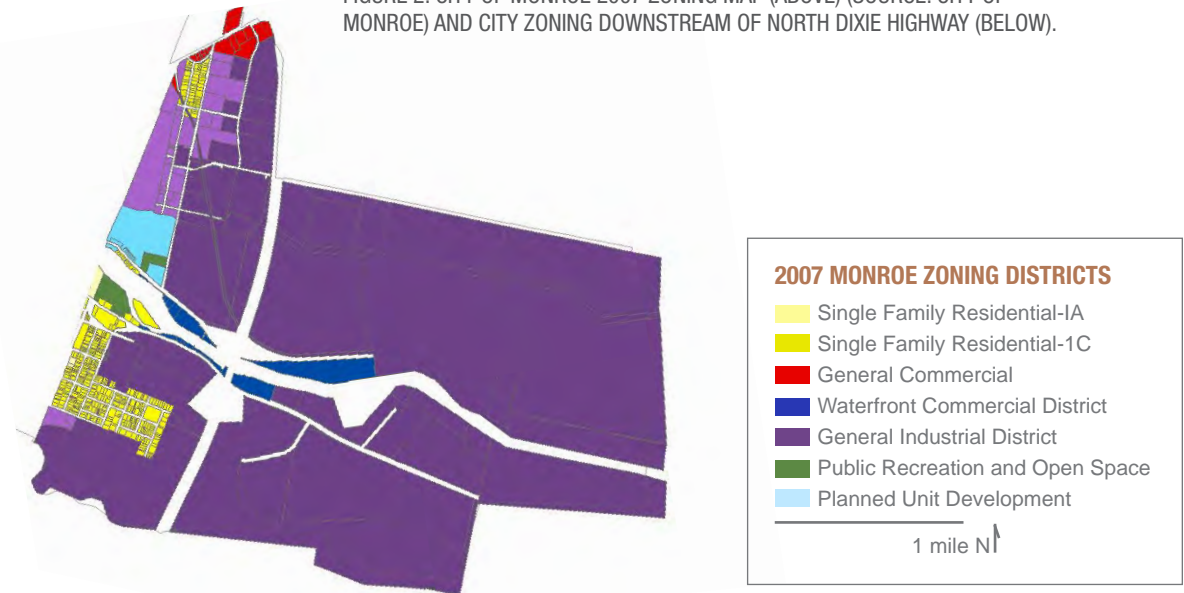


FIGURE 2. CITY OF MONROE 2007 ZONING MAP (ABOVE) (SOURCE: CITY OF MONROE) AND CITY ZONING DOWNSTREAM OF NORTH DIXIE HIGHWAY (BELOW).



# ZONING ADJACENT TO WATERFRONT

Industrial uses account for approximately 65 percent of the total frontage along Lake Erie and the River Raisin downstream of North Dixie Highway. Remaining land use along the waterfront consists of 27 percent commercial use, including the Waterfront Commercial District, 4 percent residential and 3 percent open space use (Figure 3).

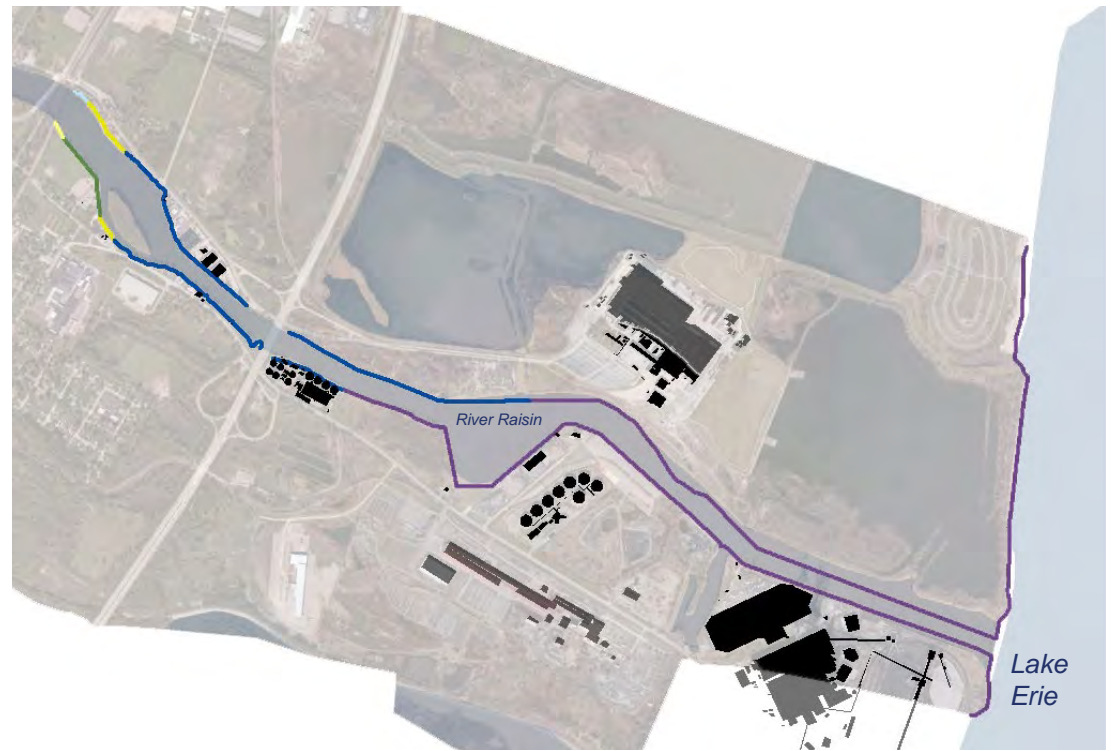
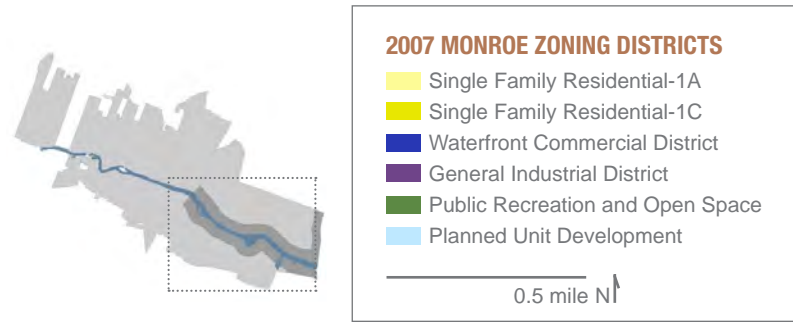


FIGURE 3. MAP OF ZONING ADJACENT TO WATERFRONT (RIGHT) AND FRONTAGE BY ZONING CATEGORY (BELOW).



# ZONING WITHIN 1000 FEET OF WATERFRONT

Land use within a 1000-foot buffer of Lake Erie and/or the River Raisin downstream of North Dixie Highway is dominated by industrial use, accounting for approximately 85 percent of the area within the buffer. Remaining land use within 1000 feet of the waterfront is comprised of 7 percent commercial, 4 percent mixed use, 3 percent residential and 2 percent open space use (Figure 4).

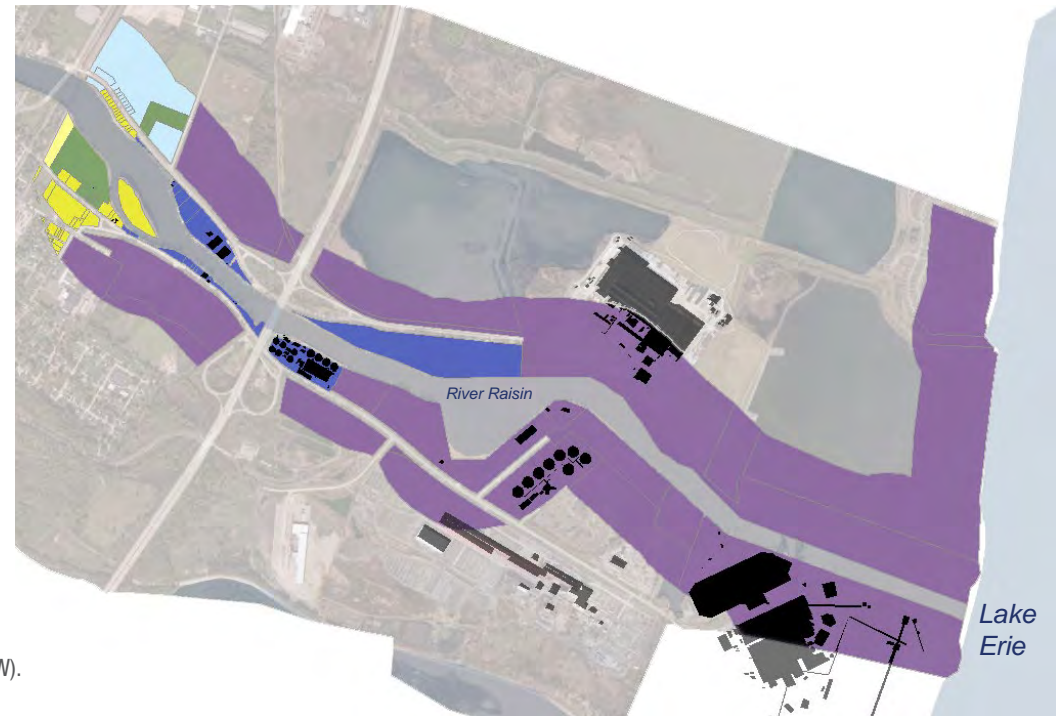
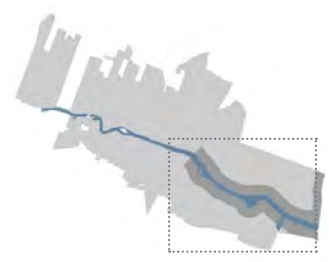
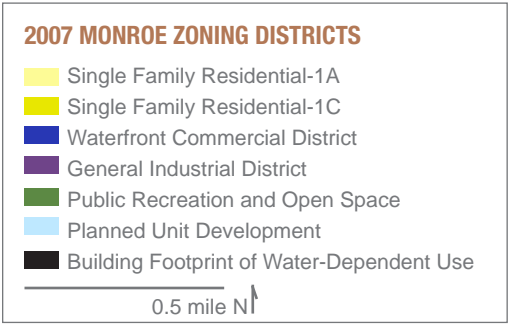
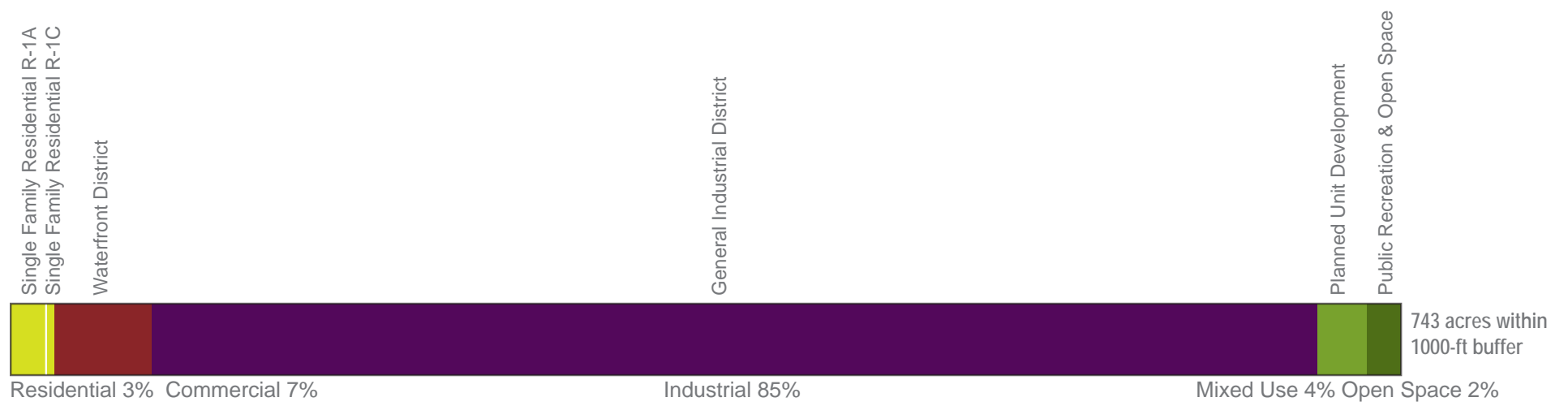
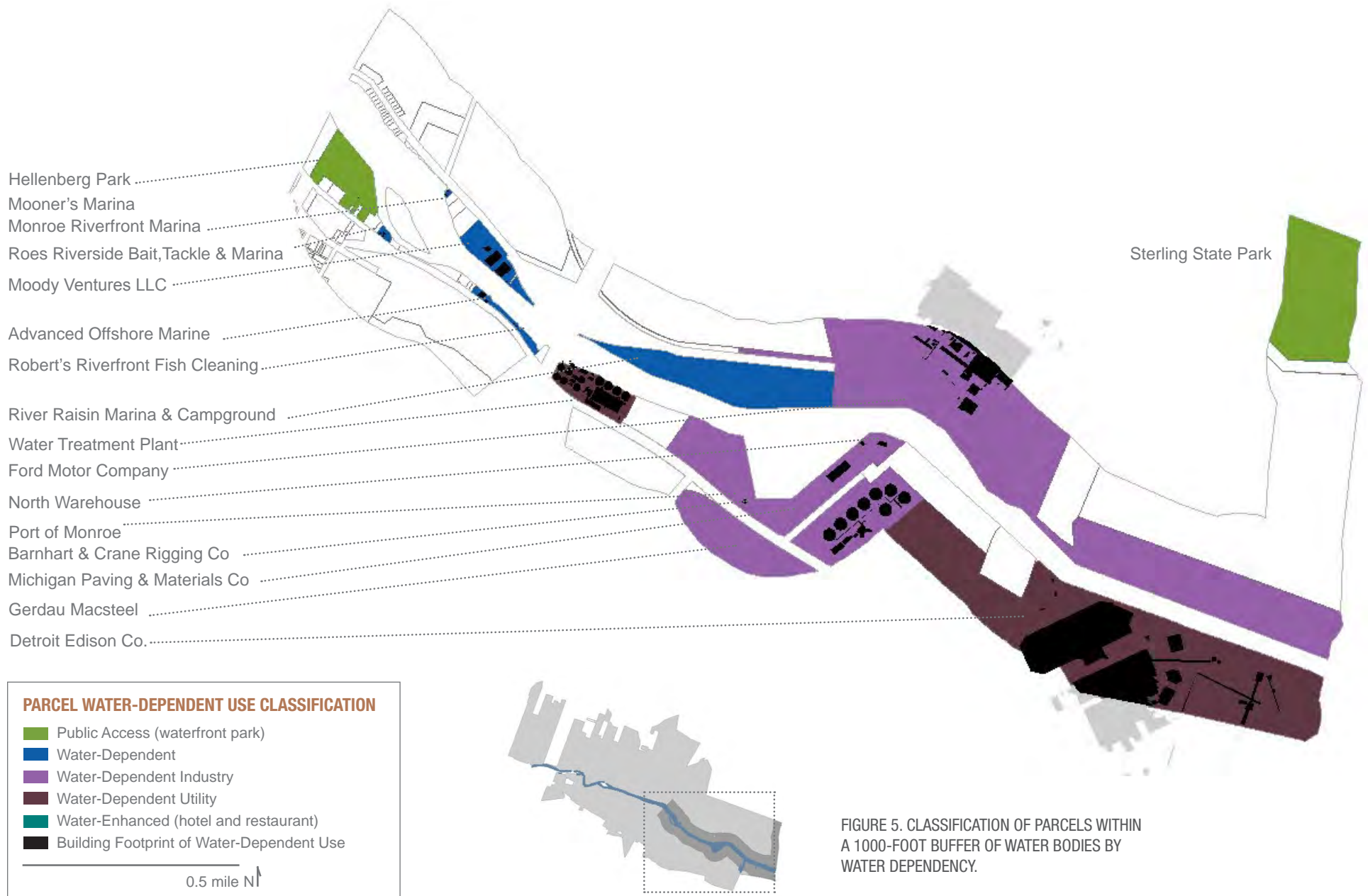


FIGURE 4. MAP OF ZONING AND LOCATION OF WATER-DEPENDENT USES WITHIN A 1000-FOOT BUFFER OF WATER BODIES (RIGHT) AND WATERFRONT LAND AREA BY ZONING CATEGORY (BELOW).



# PARCEL CLASSIFICATION AND INVENTORY





# PARCEL CLASSIFICATION

Parcels that provide public access to the waterfront account for approximately 7 percent of the total frontage along Lake Erie and the Dead River downstream of North Dixie Highway (approximately 7 miles) and approximately 6 percent of the area (approximately 743 acres) within a 1000-foot buffer of these bodies of water. Parcels that have identified water-dependent uses account for 17 percent of frontage and 5 percent of the area within a 1000-foot buffer of Lake Erie and the River Raisin (Figure 6). Industries and utilities along the waterfront account for 32 percent and 16 percent of frontage and 27 and 17 percent, respectively, of the area within this buffer.

Figure 5 displays an inventory of identified water related uses and classification of parcels with water-dependent and water-enhanced uses and parcels that provide public access.

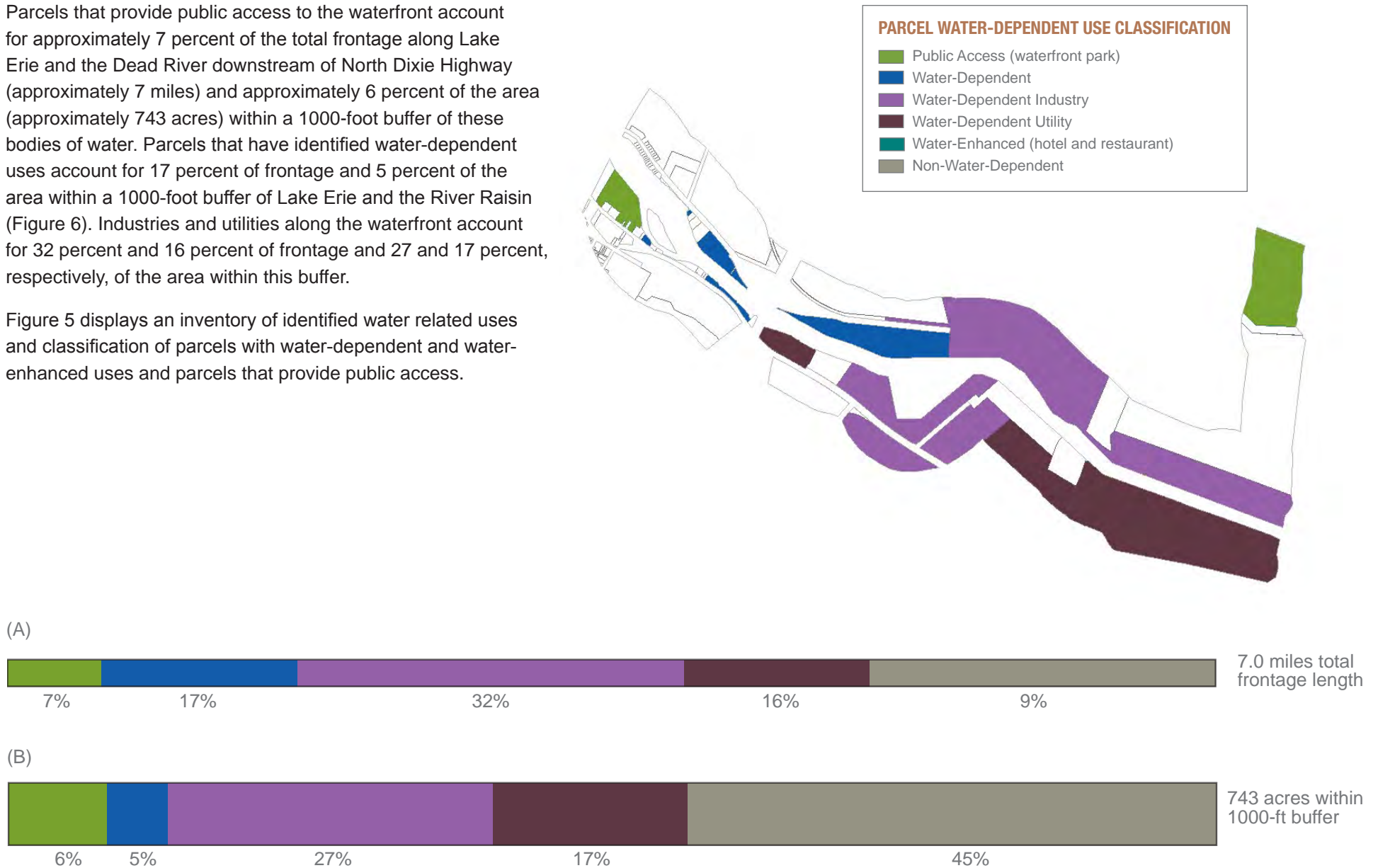


FIGURE 6. PARCEL FRONTAGE (A) AND AREA WITHIN 1000-FOOT BUFFER BY WATER DEPENDENCY CLASSIFICATION (B).

# INFRASTRUCTURE AND ACCESS

Figure 8 displays aerial imagery with waterfront infrastructure within a 1000-foot boundary of Lake Erie and the River Raisin that have identified water-related uses and highlights parks and beaches that provide public access.

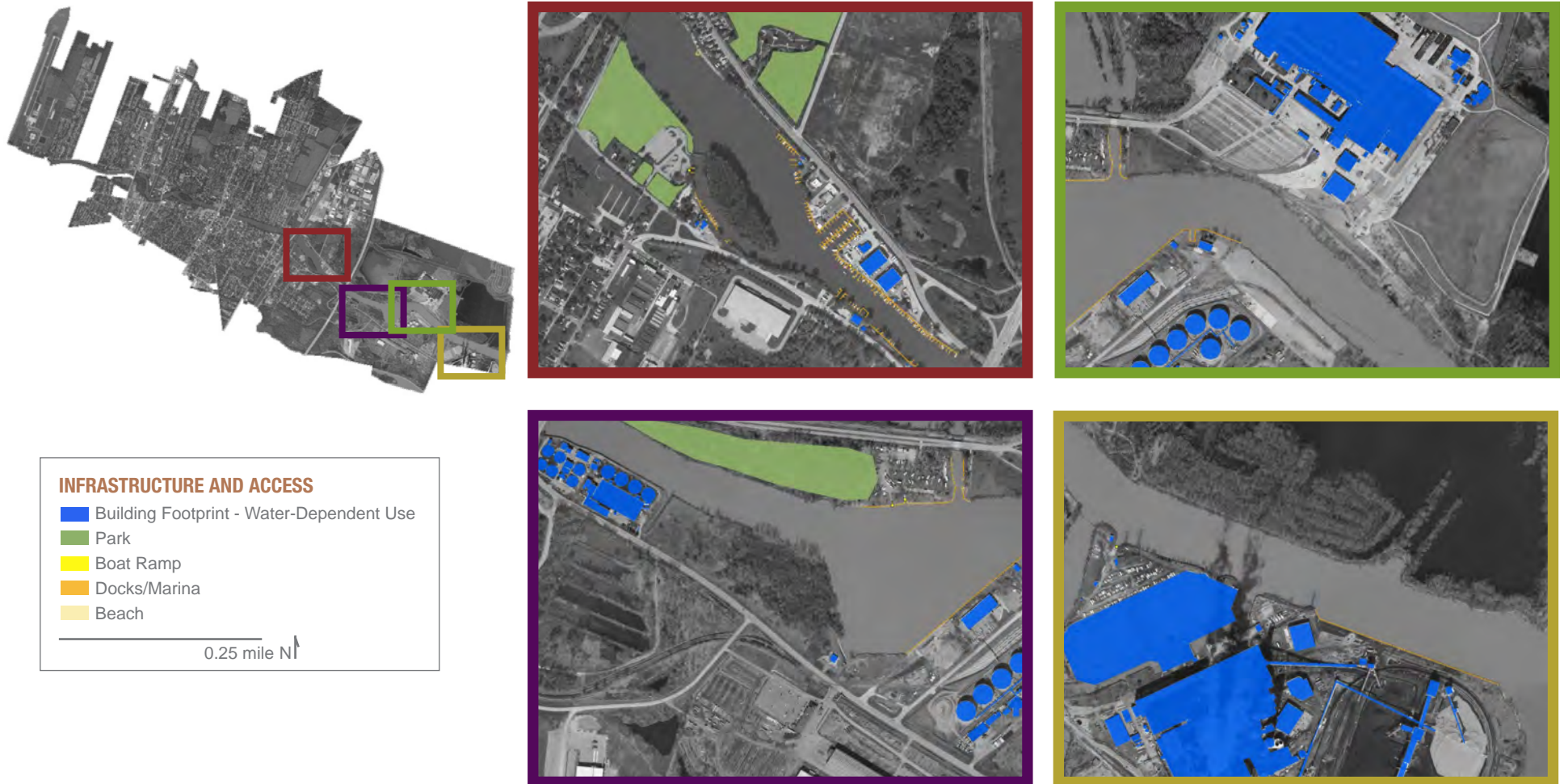


FIGURE 8. WATER-DEPENDENT AND ENHANCED USES, DOCKS, WATERFRONT PARKS ALONG THE WATERFRONT AND WITHIN 1000 FEET OF WATER BODIES.

# WORKING WATERFRONT SWOT ANALYSIS

There are a number of factors that influence a community’s ability to maintain a robust working waterfront. The strengths, weaknesses, opportunities and threats (SWOT) analysis below (Table 2) provides examples of the challenges and opportunities associated with maintaining Monroe’s waterfront as a place that provides public access and supports and is well integrated within the community from a planning and physical perspective.

A SWOT analysis is a strategic planning tool with four elements: strengths, weaknesses, opportunities and threats. The analysis identifies the positive, negative, internal and external factors that influence an individual, business, organization or place’s ability to achieve an objective. For example, internal factors may include human, physical or financial resources and past activities or programs. External factors may include future trends, the economy, or the physical environment.

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>■ Established Port Authority an economic driver</li> <li>■ Historical sites, War of 1812 Battlefield</li> <li>■ River Raisin Battlefield National Park</li> <li>■ Only major port in Michigan on Lake Erie</li> <li>■ Sterling State Park</li> <li>■ Industrial uses along lake do not interfere with recreational marinas on the river</li> <li>■ Port provides local and regional employment</li> <li>■ Developed trail system with riverfront access</li> <li>■ International Wildlife Refuge, wetlands</li> <li>■ Deep draft cargo, commercial and recreational harbor</li> <li>■ Brownfield redevelopment</li> <li>■ Resilient Monroe regional planning initiative</li> </ul>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>■ Recreation deficiencies - many of the transportation routes and natural features that transverse the city act as divisive elements and hinder access to recreation facilities for children and seniors</li> <li>■ Environmental contamination</li> <li>■ Limited public access to Lake Erie</li> <li>■ Vacant land along riverfront</li> <li>■ Little to no connectivity to the Lake Erie waterfront</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>■ Provide additional opportunities for public access along the riverfront through land acquisition or access easements</li> <li>■ Attract new industries to port</li> <li>■ Utilizing GLRI funds for River Raisin dam removal that will allow fish passage and potentially attract more visitors</li> <li>■ Potentiation opportunity to incorporate riverfront into future National Park plans along Elm Avenue, as well as acquire waterfront property near park</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>■ Additional clean up of brownfields and contaminated sites required</li> </ul>

TABLE 2. STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS RELATED TO MAINTAINING MONROE’S WORKING WATERFRONT.

# TOOLS, STRATEGIES AND BEST PRACTICE FOR MAINTAINING WORKING WATERFRONTS



Monroe Riverside Marina and Moody Ventures. *Elizabeth Durfee*

## ESTABLISHING A PORT AUTHORITY

Establishing a port authority can provide a functional industrial and economic base for the community and state while maintaining adequate access for industry and shipping. The Port of Monroe was established in 1932 pursuant to the Port

District Act, Public Act 234 of 1925 and continues to work to attract development and industries and to make improvements in the port.

## RIVER RESTORATION

Establish partnerships and utilize a variety of funding sources, such as Great Lakes Restoration Initiative (GLRI)

funds, for river improvements including dam removal, contaminant removal and bank stabilization.

## RESILIENCE PLANNING

Build capacity to recover from adversity, reduce sensitivity and exposure to hazards and enable flexibility under economic, economic or social

change through resiliency and adaptation planning. Through regional resilience planning, communities can strengthen the economic resilience of waterfront-dependent uses as well as identify strategies to adapt physically to changing water level or increased storms.



Hellenberg Park. *Elizabeth Durfee*



Docks near Advanced Offshore Marine. *Elizabeth Durfee*

# GUIDING PRINCIPLES

## MANAGING WATERFRONTS AND WATER-DEPENDENT USES AS AN IMPORTANT ELEMENT OF A SUSTAINABLE COASTAL COMMUNITY

### PROCESS-BASED

- Engage diverse stakeholders and local, regional and state partners in waterfront planning.
- Integrate waterfront planning with local and regional master and comprehensive planning.
- Incorporate adaptation planning into waterfront planning.
- Articulate the community's vision for future of the waterfront.

### OUTCOME-BASED

- Protect the natural resources that working waterfronts uses are intrinsically tied to and dependent upon.
- Maximize the public benefit of working waterfronts through visual and physical access and amenities.
- Permit compatible mixed uses along the waterfront.
- Emphasize the economic and cultural value of local water-dependent uses.
- Preserve visual and physical access to water resources.
- Balance waterfront land uses to meet the needs of residents, visitors, water-dependent uses and ecological communities.
- Increase resiliency by promoting diverse and flexible water-dependent uses.

#### CITY OF MONROE

- ✓+ Increase resiliency to changing water levels and precipitation.
- ✓+ Protect natural resources.

**How does your community stand up?**

# REFERENCES AND RESOURCES

- Citizen Planning Commission, City Council, and Department of Community Development and Planning (2002) City of Monroe Comprehensive Plan. Retrieved from [http://www.egovlink.com/public\\_documents300/monroe/published\\_documents/Reports%20and%20Studies/City%20of%20Monroe%20Comprehensive%20Plan%202003.pdf](http://www.egovlink.com/public_documents300/monroe/published_documents/Reports%20and%20Studies/City%20of%20Monroe%20Comprehensive%20Plan%202003.pdf)
- City of Monroe (2007) City Government. Retrieved from [http://www.ci.monroe.mi.us/City\\_Manager\\_1.cfm](http://www.ci.monroe.mi.us/City_Manager_1.cfm)
- City of Monroe (2007) History of the City of Monroe. Retrieved from [http://www.ci.monroe.mi.us/About\\_Settlers.cfm](http://www.ci.monroe.mi.us/About_Settlers.cfm)
- City of Monroe (2007) Planning/Zoning Code. Retrieved from <http://www.ecode360.com/12410964>
- City of Monroe (2007) Recreation Department. Retrieved from [http://www.ci.monroe.mi.us/Recreation\\_1.cfm](http://www.ci.monroe.mi.us/Recreation_1.cfm)
- City of Monroe (2007) Welcome to Monroe. Retrieved from <http://www.ci.monroe.mi.us/>
- Digital Coast NOAA Coastal Services Center (2010) Monroe County, Michigan Snapshot. Retrieved from <http://www.csc.noaa.gov/snapshots/#ocean%2626115>
- Monroe County Convention and Visitors Bureau (2012) Recreation, Fishing and Boating. Retrieved from [http://www.monroeinfo.com/recreation-fishing\\_marinas.php](http://www.monroeinfo.com/recreation-fishing_marinas.php)
- Monroe County Parks Commission, Monroe County Board of Commissioners, and Monroe County Planning Department (2008) Monroe County 5-Year Recreation Plan 2008-2012. Retrieved from [http://www.co.monroe.mi.us/government/departments\\_offices/parks\\_and\\_recreation/docs/recplan2008\\_final.pdf](http://www.co.monroe.mi.us/government/departments_offices/parks_and_recreation/docs/recplan2008_final.pdf)
- Monroe County Planning Department & Commission (2009) Monroe County Comprehensive Plan, 2010 Update. Retrieved from [http://www.co.monroe.mi.us/docs/MONROE\\_COUNTY\\_2010\\_COMPREHENSIVE\\_PLAN.pdf](http://www.co.monroe.mi.us/docs/MONROE_COUNTY_2010_COMPREHENSIVE_PLAN.pdf)
- Personal Conversation Paul LaMarre III, Director of the Port of Monroe, MI, July 16, 2012.
- Personal Conversation Jeffrey Green, City Planner and Historic Preservation Officer, City of Monroe, MI, April 23, 2013.
- Port of Monroe (2012) Port Profile, Monroe Harbor Michigan. Retrieved from <http://www.portofmonroe.com/index.php/pom/port-profile>
- Port of Monroe (2012) Welcome to the Port of Monroe. Retrieved from <http://www.portofmonroe.com/index.php/pom/index>
- Resilient Monroe! (2013) Building Community Resilience. Retrieved from <http://www.resilientmonroe.org/>
- Slat, Charles (2012). Major River Raisin Projects to Start. MonroeNews.com. Retrieved from <http://www.monroenews.com/news/2012/jun/01/major-river-raisin-projects-start/>
- U.S. Census Bureau (2000). Profile of General Population and Housing Characteristics, City of Monroe. Retrieved July 2012 from <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- U.S. Census Bureau (2010). Educational Attainment 2006-2010 American Community Survey 5-year Estimates, City of Monroe. Retrieved from <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- U.S. Census Bureau (2010). Educational Attainment 2006-2010 American Community Survey 5-year Estimates, Monroe County. Retrieved from <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- U.S. Census Bureau (2010). Profile of General Population and Housing Characteristics, City of Monroe. Retrieved July 2012 from <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- U.S. Census Bureau (2010). Profile of General Population and Housing Characteristics, Monroe County. Retrieved July 2012 from <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- U.S. Census Bureau (2010). Profile of General Population and Housing Characteristics, Monroe County. Retrieved July 2012 from <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- U.S. Census Bureau (2010). Selected Economic Characteristics 2006-2010 American Community Survey 5-year Estimates, Monroe County. Retrieved from <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- U.S. Census Bureau (2010). Selected Economic Characteristics 2006-2010 American Community Survey 5-year Estimates, City of Monroe. Retrieved from <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- U.S. Environmental Protection Agency (2012) River Raisin Area of Concern. Retrieved from <http://www.epa.gov/greatlakes/aoc/river-raisin/index.html>
- U.S. Army Corps of Engineers (2012). Monroe Harbor, MI Fact Sheet. Retrieved from [http://www.lre.usace.army.mil/\\_kd/go.cfm?destination=Page&pg\\_id=2204&dialog=0](http://www.lre.usace.army.mil/_kd/go.cfm?destination=Page&pg_id=2204&dialog=0)