Taubman College of Architecture and Urban Planning
University of Michigan

CONNECTING THE COASTLINE

Envisioning a Port Huron to Toledo Greenway

Blue Water Bridge Port Huron

CONNECTING THE COASTLINE

Envisioning a Port Huron to Toledo Greenway

PREPARED BY

Andy Aamodt, Rich Bunnell, Yuchen Ding, Lauren Grove, Brian Hilbrands, Samuel Leibman, Christina McEmber, Samantha Olson, Erik Perdonik, and Julie Tschirhart

Taubman College of Architecture and Urban Planning
University of Michigan

FACULTY ADVISORS

Philip D'Anieri and Eric Dueweke

ON BEHALF OF

The Community Foundation for Southeast Michigan

MAY, 2017

ACKNOWLEDGMENTS

We want to thank the following individuals for lending their expertise to this report:

- **Mark Brochu**
  St. Clair County Parks & Recreation Commission
- **Chris Bunch**
  Six Rivers Land Conservancy
- **Keith Burwell**
  Toledo Community Foundation
- **Mark Butler**
  Windsor-Detroit Bridge Authority
- **Melissa Buzzard**
  Michigan Department of Natural Resources
- **Brian Charlton**
  SmithGroupJJR
- **Ann Conklin**
  Michigan Parks & Recreation Association
- **Christine Connell**
  Toledo Metropolitan Area Council of Governments
- **John Crumm**
  Macomb County Department of Roads
- **Josh DeBruyn**
  Michigan Department of Transportation
- **Paul Dimond**
  Miller Canfield
- **Pat Doher**
  SmithGroupJJR
- **Doug Donnelly**
  Michigan Department of Natural Resources
- **Chuck Flink**
  Greenways, Inc.
- **Dan Gilmartin**
  Michigan Municipal League
- **Ritchie Harrison**
  Detroit RiverFront Conservancy
- **Kerry Irons**
  Adventure Cycling
- **Nina Kelly**
  Huron Clinton Metropolitan Authority
- **Oliver Kiley**
  SmithGroupJJR
- **Tim Killeen**
  Wayne County Commissioner
- **Tyler Klifman**
  Southeast Michigan Council of Governments
- **Liz Koto**
  St. Clair Shores, Planning Department

We also would like to thank **Melissa Smiley** and **Tom Woiwode** of the Community Foundation for Southeast Michigan for allowing us to share in their vision. Your excitement about greenways in Southeast Michigan was contagious and we feel honored to have been able to contribute to moving a regional greenway vision forward.

Lastly, this report would not have been possible without the guidance and wisdom of our co-instructors, **Philip D'Anieri** and **Eric Dueweke**. Thank you for your perspective and insight.

- **Nancy Krupiarz**
  Michigan Trails & Greenways Alliance
- **Larissa Larsen**
  University of Michigan Urban & Regional Planning
- **Matthew Lonnerstater**
  Carlisle Wortman Associates
- **Bonnie McInerney-Slater**
  City of New Baltimore
- **Taylor Myatt**
  Southeastern Michigan Land Conservancy
- **Jeffrey Nolish**
  City of Detroit Planning & Development
- **Jeff Olson**
  Alta Planning
- **Brian Pawlik**
  Southeast Michigan Council of Governments
- **Robert Peven**
  Monroe County Planning Department
- **George Phifer**
  Huron Clinton Metropolitan Authority
- **John Paul Rea**
  Macomb County Planning & Economic Development
- **Steven Roach**
  League of Michigan Bicyclists
- **Kathleen Russeau**
  Community Foundation of Monroe County
- **Todd Scott**
  Detroit Greenways Alliance
- **Valerie Strassberg**
  The Nature Conservancy
- **J.J. Tighe**
  Michigan Fitness Foundation
- **Anita Twardesky**
  Downriver Linked Greenways Initiative
- **Nikki Van Bloem**
  Michigan Department of Natural Resources
- **Ken Verkest**
  Michigan Department of Natural Resources

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

SUMMARY

This report is the result of a four-month effort to envision a continuous greenway running along the coast of southeast Michigan, from Port Huron to Toledo, Ohio. A group of urban planning master's students at the University of Michigan conducted this analysis on behalf of the Community Foundation for Southeast Michigan, whose GreenWays Initiative set out to foster a "strong culture of support for walking and biking" in the region.

Thirty-five local units of government border the shoreline, crossing four counties from north to south: St. Clair, Macomb, Wayne, and Monroe. These jurisdictions are home to over 1.2 million people, and are as geographically diverse as they are demographically. What ultimately binds them together is the coastline, leading the Community Foundation to pose the question: ***How can a continuous greenway connect these seemingly disparate communities?*** Over a four-month period, the project team employed a variety of research methods to answer this question.

HISTORY

After studying other greenway network efforts across the globe, identifying public funding streams to leverage private dollars, and securing support from numerous stakeholders, the GreenWays Initiative launched in 2001. The Initiative adopted a three-pronged approach that focused on public education and outreach, capacity-building programs, and grant-making throughout the region, with a set of three governing principles: linkage, leverage, and collaboration. The Initiative has helped to create over 100 miles of greenways in the region.

CFSEM deliberately did not define a greenway in narrow terms, because they wanted to offer communities the ability to envision their greenways on their own. Instead, for the Community Foundation, a greenway is an umbrella term representing a variety of landscapes. The foundation defines greenways as “linear open spaces, including habitats and trails, that link parks, nature reserves, cultural features or historic sites with each other, for recreation and conservation purposes.”

BENEFITS

Greenways have demonstrated quantifiable benefits in six primary categories. They serve a ***social*** function, helping members of a community forge an "affective bond" with their surroundings. They have the potential to drive significant ***economic*** growth throughout southeast Michigan. They offer a wide range of ***environmental*** benefits, promoting ecological health and, in turn, improving the lives and well-being of residents. Green spaces are critical resources for ***public health***, particularly in low-income and minority communities. Regular exposure to nature has a positive ***psychological*** impact, helping with basic mental functioning. Finally, greenways in southeast Michigan can serve an ***educational*** purpose, allowing residents to become better acquainted with neighborhoods, and the history of their region in general.

REGIONAL ASSESSMENT

Background research for this report revealed that a "jigsaw puzzle" of state agencies, city and county governments, foundations, and coalitions of citizens and nonprofits are energized about and engaged in planning greenways across the region. The challenge for creating a pathway between Port Huron and Toledo lies in weaving these scattered efforts into a cohesive strategy.

The project team defined three criteria to assess existing infrastructure within the study area. ***Level of service*** refers to how thoroughly a piece of trail infrastructure serves the needs of non-motorized transportation, with a higher level of service indicating a safer and more immersive experience for pedestrians and cyclists. ***Context*** refers to the presence of different amenities, including waterfront access, parks and other green space, retail corridors, and residential areas. ***Connectivity*** refers to the potential of a trail segment to connect to existing trail networks. Based on these criteria, the authors conducted a GIS analysis of infrastructure within the study area, with a more detailed, county-level analysis available in Chapter 4.

VISION

Where the regional assessment revealed gaps in infrastructure suitable for a greenway, the project team assessed potential route options outside of the ½-mile corridor, along existing railways or highways, or within road rights-of-way. The team then highlighted the economic, social, and environmental assets of each jurisdiction by choosing routes that intersect with downtown and commercial corridors, residential areas, schools, and parks. Though a granular, street-level analysis of every gap in the study area is beyond the scope of this report, Chapter 5 features several maps detailing how a coordinated greenway effort might approach the study area's "low-hanging fruit," gaps that can be prioritized on account of existing infrastructure, intersection with amenities, and/or their potential to bring residents closer to the shoreline.

The project team reviewed numerous models for ***governance and organizational structure***, and concluded that a metropolitan planning organization (MPO) or nonprofit governance model would be most appropriate for a greenway network of this size and scope. For ***maintenance*** of the trail system, this report recommends two options: creation of a centralized maintenance endowment, or coordination of a network of volunteers and "trail ambassadors." A shoreline greenway in southeast Michigan would ideally derive ***funding*** from a variety of federal, state, regional, and local sources that would go toward planning, implementation, signage, and maintenance (see Appendix B for a detailed list of potential sources). Finally, a robust ***marketing*** effort can generate community buy-in, with a unified branding strategy, strong social media presence, and coordination with the wider governing body.

COUNTY PROFILES

Though this report's goal is to connect the seemingly disparate communities of southeast Michigan, it is necessary to acknowledge the on-the-ground realities of each individual county in the study area, as they each have a distinct identity, different levels of greenway planning and implementation, and their own sets of opportunities and challenges.

- ***St. Clair County*** is largely rural in character, but has seen significant movement in greenway

planning through efforts such as the Bridge to Bay Trail.

- ***Macomb County*** is more suburban in character and home to the Mobilize Macomb Initiative, which seeks to develop a non-motorized trailway linking residents to the waterfront.
- ***Wayne County*** is home to Detroit, the largest city in the region and the state, and features a diverse array of greenway efforts and champions.
- ***Monroe County*** is predominantly rural and features almost no greenway infrastructure, though stakeholder interviews have indicated latent community enthusiasm for trails.

NEXT STEPS

Turning to the future, the project team has identified some initial action steps for a Port Huron to Toledo greenway. They have been divided into systemwide recommendations and location specific recommendations.

- ***Institutional action items*** include identifying regional greenway champions, convening shoreline jurisdictions in each county, collaborating with the state on the Iron Belle Trail, and developing a funding and marketing strategy based on the recommendations in this report.
- ***Geographic action items*** include completing the Bridge to Bay Trail, and exploring options for implementing greenway infrastructure in place in the regions surrounding the Selfridge Air Base, Grosse Pointe Farms, East Jefferson Avenue near Belle Isle, and U.S. Bike Route 25.

1 INTRODUCTION

OVERVIEW

Boasting more than 12,000 miles of recreational trails, Michigan is nationally recognized as the "Trails State." Yet the southeast Michigan shoreline, one of the state's most scenic, densely populated, and culturally rich corridors, lacks a continuous waterfront trail. Acknowledging this gap, the Community Foundation for Southeast Michigan, whose GreenWays Initiative set out to foster a "strong culture of support for walking and biking" in the region, commissioned a team of urban planning students at the University of Michigan to envision a continuous greenway from Port Huron, Michigan to Toledo, Ohio.

The southeast Michigan shoreline stretches for about 150 miles from the mouth of Lake Huron to the Michigan-Ohio border. Thirty-five local units of government border the shoreline, home to over 1.2 million people. These shoreline communities are as geographically diverse as they are demographically, and they offer an informative cross-section of life in southeast Michigan.

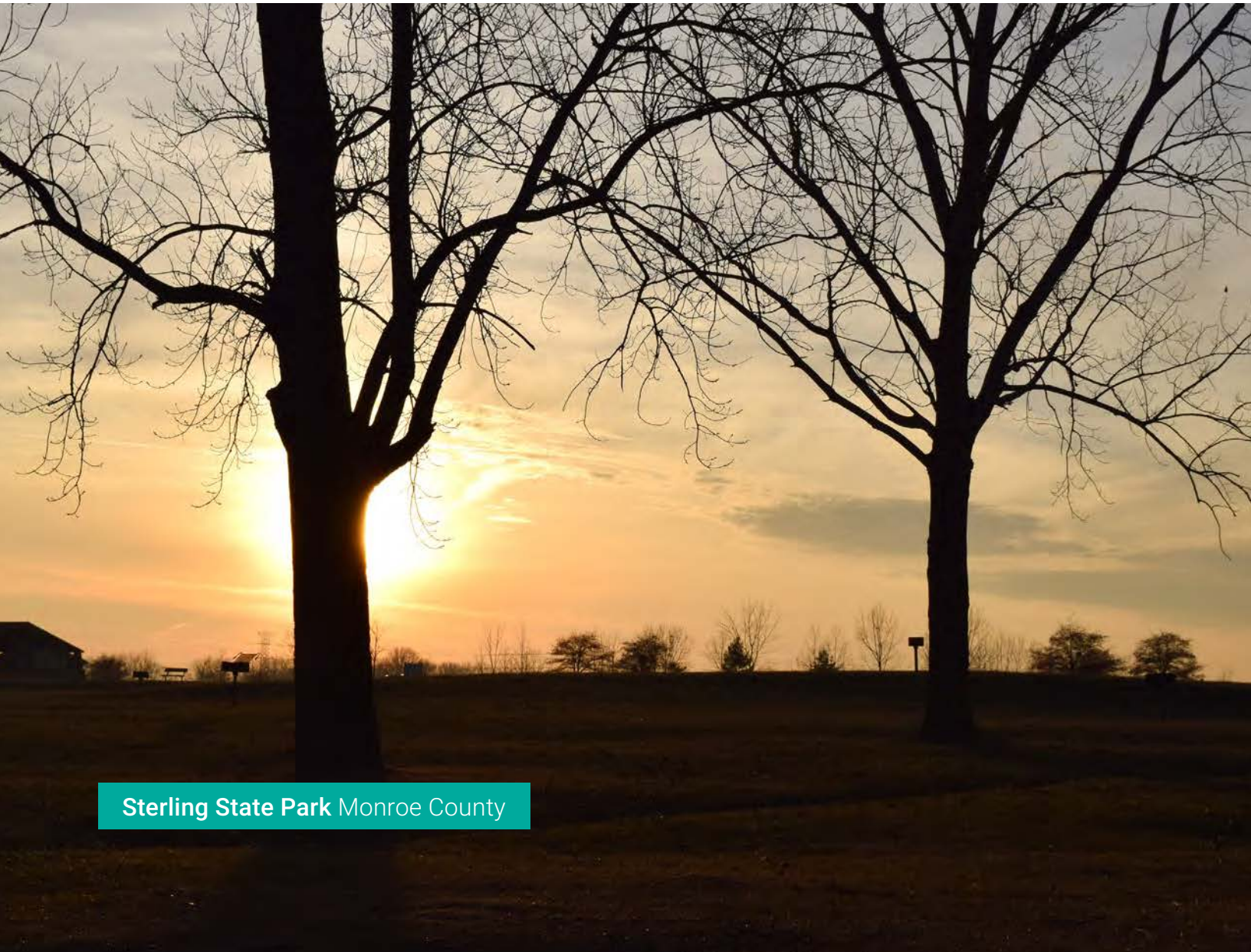
Land uses are mostly rural along the waterfront in Monroe County and St. Clair County, with distinct downtowns that serve as population centers. For example, Port Huron in St. Clair County and Monroe in Monroe County are both the most populous cities of their respective counties, and have a higher population density than their surrounding environs.

In comparison, Wayne and Macomb counties are almost completely built out along the shoreline, and have a more evenly distributed population density. Macomb is largely suburban, while Wayne County is both residential and features a significant amount of industry, primarily in the southwest portion of Detroit and its suburbs to the southwest.

The shoreline varies in terms of demographics as well. The jurisdictions in St. Clair and Monroe Counties along the waterfront are largely white, while the Wayne County and Macomb County jurisdictions have higher concentrations of black, Hispanic, and Arab-American residents. Much has been written about the region's divisive racial history. For example, Thomas Sugrue's seminal work *The Origins of the Urban Crisis* examines the link between race and socioeconomic status in the region, and charts the effect of race on inequality in Detroit's postwar decline. The segregation by race and income in the region that exists today is a testament to these unresolved issues. Still, what unites all of these counties is the coastline of the Great Lakes. In conceiving this

project, the Community Foundation for Southeast Michigan posed the question: How could a continuous greenway connect the disparate communities that lie along our treasured Great Lakes coastline in southeast Michigan?

Over a four-month period, the project team investigated this question and others, working to envision a greenway scenario that connects Port Huron to Toledo, Ohio. Building upon the work of the Community Foundation for Southeast Michigan and other greenway champions, this investigation plots a path forward for linking the many miles of trails and pathways along our region's Great Lakes shoreline and filling in the major gaps.



Sterling State Park Monroe County

GOALS & METHODOLOGY

In this report, the project team sets out to:

- Assess the current state of southeast Michigan's greenway system
- Identify existing and planned waterfront infrastructure
- Catalog active greenway champions and interested partners
- Formulate recommendations on governance, funding, and marketing strategies that would be necessary for a continuous Port Huron to Toledo greenway

To achieve the above goals, the team employed research methods including:

A survey of the four-county project area through a series of **site visits** to get a sense of the cultural and historical amenities, parks and open space, land uses, and existing greenway infrastructure

Interviews with 35 greenway champions, previous GreenWays Initiative grantees and funders, and other stakeholders

Literature reviews of the benefits of greenways, as well as reports detailing existing and planned greenways throughout the region

Analysis of existing and planned trail data using **Geographic Information Systems (GIS) software** to determine gaps along the shoreline

Assessments of **existing infrastructure** to determine the varying types of non-motorized pathways, evaluate routes, and create a typology of existing and planned greenways

Investigations of 12 **case studies** from in- and out-of-state greenway networks to compile best practices to inform our vision and recommendations

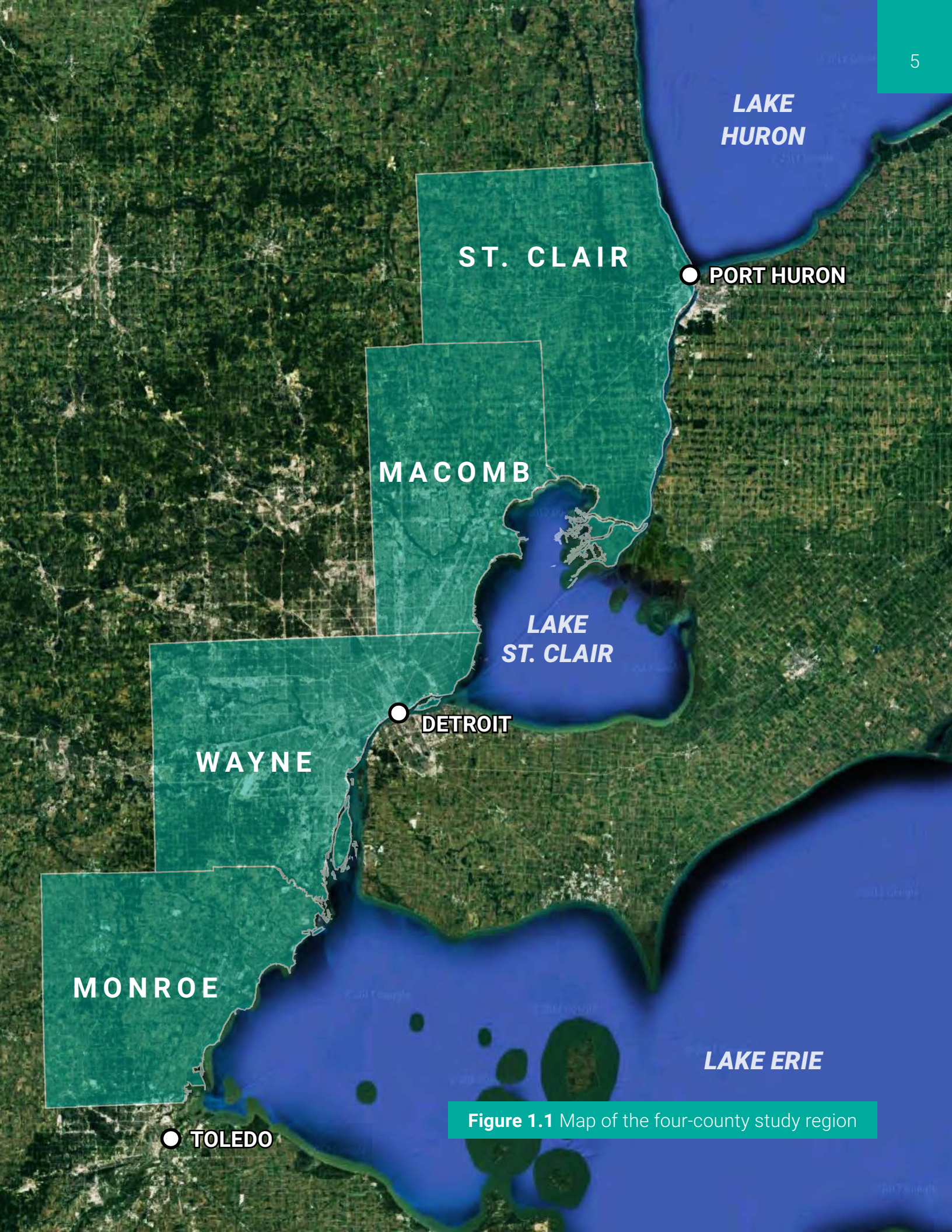


Figure 1.1 Map of the four-county study region

Thomas Edison Statue Port Huron

2

HISTORY OF GREENWAYS INITIATIVE

Rivard Plaza Detroit

HISTORY

To understand the policy and planning decisions that led to present conditions, it is necessary to assess the current institutional and physical landscape of greenways in southeast Michigan. This chapter provides a brief overview of the Community Foundation for Southeast Michigan's GreenWays Initiative, as well as other major greenway milestones in this area's history.

Much of the greenway planning in southeast Michigan originated from two independent and parallel efforts in the 1990s. In 1998, the then-Michigan Chapter of the Rails-to-Trails Conservancy published a report titled *A Vision for Southeast Michigan Greenways*. Compiled by the Southeastern Michigan Greenways Project, this report identified over 2,000 miles of potential greenways within southeast Michigan, emphasizing the use of abandoned railway corridors to create a network of greenways for pedestrians and bicyclists.[1]

At the same time, Tom Woiwode of the Nature Conservancy and several of his board members were discussing how they could position their work to operate within urban landscapes, such as Detroit. Woiwode was also interested in greenways, and was especially taken with their potential to connect communities across southeast Michigan.

Building upon the interest in greenways from the Rails-to-Trails Conservancy's 1998 study, in the summer of 1999, interested stakeholders assembled to formulate a path forward. Through a series of monthly meetings, planners, parks and recreation directors, and other stakeholders from more than 70 organizations and agencies sought to answer the question of how to foster the creation of a greenway network in southeast Michigan. From these dialogues, four challenges emerged: lack of funding, the need for an organizational structure that encouraged cross-jurisdictional collaboration, the desire for interdisciplinary skill building, and the necessity to expand public understanding of the work.[2]

FUNDING GUIDELINES

After studying other greenway network efforts across the globe, identifying public funding streams to leverage private dollars, and securing the collaboration of the Community Foundation for Southeast Michigan and other foundations, the GreenWays Initiative launched in 2001. The Initiative outlined three primary objectives:

- Help local governments and nonprofit organizations construct and implement greenways projects
- Build the capacity of nonprofits and government agencies to engage in future greenways projects
- Build awareness in southeast Michigan about the benefits of greenways

The GreenWays Initiative adopted a three-pronged approach that focused on public education and outreach, capacity-building programs, and grantmaking throughout the seven-county region. Two types of grants were available to applicants: GreenWays Predevelopment Grants, for predevelopment activities, and GreenWays Land Grants, for construction and land acquisition.

Central to the GreenWays Initiative effort were a set of principles to govern their funding priorities: linkage, leverage, and collaboration. The program description and grantmaking guidelines for the effort states that the GreenWays Initiative was about "linking communities, leveraging vision, resources, and people, and collaborating to promote and protect the health and well-being of the community for the present and the future."[3]

DEFINING GREENWAYS

The Community Foundation for Southeast Michigan deliberately did not define a greenway in narrow terms, because they wanted to offer communities the ability to envision their greenways on their own. Instead, for the Community Foundation, a greenway is an umbrella term representing a variety of landscapes. The CFSEM defines greenways as "linear open spaces, including habitats and trails, that link parks, nature reserves, cultural features or historic sites with each other, for recreation and conservation purposes."[4]

Greenways are 'linear open spaces, including habitats and trails, that link parks, nature reserves, cultural features or historic sites with each other, for recreation and conservation purposes.'

Eastside Greenway Cuyahoga County, Ohio

Figure 2.1 Greenways funded by the GreenWays Initiative

OUTCOMES

The Community Foundation for Southeast Michigan raised $25 million for the GreenWays Initiative, and was able to secure $8 million from other private sources including the Kresge Foundation, McGregor Fund, The Carls Foundation, John S. and James L. Knight Foundation, Matilda R. Wilson Fund, Whitney Fund, The Americana Foundation, and The Frey Foundation. This funding was used to attract $125 million in matching investments in public dollars. The GreenWays Initiative helped to create over 100 miles of greenways linking 80 municipalities across seven counties (Figure 2.1).[5]

Several southeast Michigan greenway-related organizations also found their genesis during the GreenWays Initiative, including the Detroit RiverFront Conservancy, the Detroit Greenways Coalition, and the Downriver Linked Greenways Initiative (see Chapter 4 for more information on these organizations).

Dequindre Cut Detroit

Macomb Orchard Trail Macomb County

Flat Rock Connector Wayne and Monroe Counties

Rouge River Gateway Wayne County

The GreenWays Initiative represents a significant era in the history of southeast Michigan greenway planning. The next step, envisioned by this report, is to connect these disparate planning efforts into a continuous pathway, linking the region from Port Huron to Toledo. The next chapter gives an overview of the benefits that greenways offer to communities, paying particular attention to the context of southeast Michigan, and makes a case for a Port Huron to Toledo greenway.

ENDNOTES

[1] Rails-to-Trails Conservancy (2002). "GreenWays Initiative: Planning for Detroit's Rail-Trails."

[2] Tom Woiwode. Interview by authors. February 6, 2017.

[3] Community Foundation for Southeast Michigan. (2001). "GreenWays Initiative: Program Description, Grantmaking Guidelines, Policies, and Application Information." (p. 1)

[4] Ibid.

[5] "GreenWays Initiative." Community Foundation for Southeast Michigan. Accessed April 25, 2017. https://cfsem.org/initiative/greenways-initiative/.

Vietnam War Memorial Monroe

3

BENEFITS OF GREENWAYS

Parks are not islands that exist in isolation … They are connected to streets, sidewalks, and public spaces.

— New York City Parks Commissioner Mitchell Silver

Dequindre Cut Detroit

Greenways are a part of a region, not apart from a region. Metropolitan areas are complex social ecosystems, and well-planned, well-maintained green space has the potential to offer benefits to residents in a number of intricate, interlocking ways that complement and support one another. A greenway connecting Port Huron to Toledo has the potential to connect communities to their surroundings and to each other, bolster the regional economy, promote environmental sustainability, improve public physical and mental health, and educate residents about the unique natural and cultural features of southeast Michigan.

SOCIAL

Greenways help members of a community forge an "affective bond" with their surroundings, as well as with one another. High-quality green space close to residents' homes has a documented influence on place attachment, a socio-psychological concept that describes people's emotional, symbolic, and functional ties toward a geographic locale.[1] A region's unique features play a significant role in bringing about this attachment. For example, the city of Minneapolis boasts 22 lakes, and thanks to the progressive thinking of landscape architect Horace Cleveland, 70 percent of the land adjacent to these lakes consists of public open space.The trails receive heavy traffic from commuters and visitors, in the process bolstering the city's identity and national renown as the "City of Lakes."[2]

Southeast Michigan has no shortage of unique natural, built and cultural features, and the four counties in this report's study region present numerous opportunities to forge a closer bond between residents and their surrounding geography. The region is filled with scenic natural spaces including wetlands, wildlife refuges, lakes, and, perhaps most importantly, a continuous shoreline. Much of the region is urban in character, dotted with numerous remnants of the area's industrial past, imbuing the landscape with historical character. Smaller suburban communities on the urban fringe offer residents a respite from the stress of urban life. These features currently exist in isolation, and linking them together into a single greenway vision could do much toward helping the region establish and assert a strong, recognizable identity.

Neighborhood open spaces, and green spaces in particular, also have the potential to serve as "the community's front porch," offering communities a common amenity that all residents can benefit

GREENWAY LESSONS

East Coast Greenway

Location: The entire U.S. East Coast
Length: 3,000 miles, plus 2,000 miles of "alternate routes"

The name "East Coast Greenway" is no exaggeration — when completed, this trail network will span the entire Eastern seaboard of the United States, from the Canadian border in Calais, Maine, to the end of the Florida Keys in Key West. The East Coast Greenway Alliance, a nonprofit organization serving as a governing body for the network, envisions the trail as a continuous and mostly paved route sited almost entirely on public rights-of-way.

The Alliance doesn't own any trail segments, all of which are locally owned and operated by states, municipalities, and other public entities, giving each individual community a sense of ownership. Rather than hugging the coastline, the trail takes detours to include inland cities such as Hartford, Connecticut, Raleigh, North Carolina, and Richmond, Virginia. With a broad regional vision that respects the identity of each individual community, the East Coast Greenway is an example of the societal benefits that a regional greenway offers for Southeast Michigan.

from.[3] Frequent interactions and a strong diversity of both trail uses and users can help residents develop deeper social ties, promote tolerance, and bring about a common positive interest in the welfare of the trail.[4] Lastly, a greenway can help residents think of the shoreline as a unified, regionwide entity. Each individual community has something to gain from a high-quality trail system, but the wider benefit lies in promoting a more unified regional identity, forging lasting bonds between communities that historically don't interact with one another.

ECONOMIC

Greenways have the potential to drive significant economic growth throughout southeast Michigan. A 2012 study by the Michigan State University Land Policy Institute examining the economic impacts of green infrastructure on Michigan communities found that both the number of miles of Great Lakes shoreline and the presence of identified trails are significantly correlated with increased population growth and employment levels.[5] In addition, a 2014 study by the Michigan Department of Transportation examining the economic impacts of expanding bicycle infrastructure in Michigan found that the infrastructure generated approximately $668 million statewide.[6]

Greenways also offer a multitude of economic advantages in and of themselves.[7] Spending by residents on greenway-related activities supports recreationally oriented business and employment. Trails generate tourism, with the National Park Service stating that outdoor recreation and leisure expenditures account for a substantial part of a typical tourist's discretionary spending. Greenways reduce public costs by reducing residents' reliance on "gray" urban

Milwaukee Junction Detroit

infrastructure, which is often built from concrete and steel and serves a single use. Finally, there is broad consensus that green space has a positive effect on nearby property values.[8, 9]

Greenways have proven potential to drive economic growth, but this spurs the question of who actually benefits from such growth, with the distribution of open space often disproportionately benefiting predominantly white and affluent communities. A robust regional greenway network along the Great Lakes shoreline has the potential to benefit a diverse range of communities and people, but the greenway system should be "just green enough" to promote economic growth without spurring gentrification.[10]

Trails generate tourism, with the National Park Service stating that outdoor recreation and leisure expenditures account for a substantial part of a typical tourist's discretionary spending.

William G. Milliken State Park and Harbor Detroit

ENVIRONMENTAL

Greenways offer a wide range of environmental benefits that promote ecological health and improve the lives and well-being of residents. They are a form of "green infrastructure," a multifunctional approach to urban design that emphasizes building with nature.[11] Whereas a traditional, "gray" concrete path serves the single use of facilitating transportation, greenways can also provide wildlife habitat, regulate air and water quality, mitigate floods, and provide a variety of other benefits.[12]

Green infrastructure also regulates temperature and fights the "urban heat island effect," in which urban areas are hotter than surrounding rural areas, due to the influence of human activities. For example, in the neighborhood of Cheonggyecheon in Seoul, South Korea, the government replaced an elevated freeway with a walkable river corridor, reducing the temperature in the neighborhood by 10 degrees Fahrenheit, while providing a new civic gathering space.[13] This is particularly relevant in Detroit, which experiences summer heat waves that have a disproportionate effect on vulnerable populations such as elderly, minority, and low-income residents.[14]

Greenways also offer a number of indirect, systemic improvements to environmental health. By providing thoroughfares for pedestrians and cyclists, greenways allow for less dependence on car trips to reach destinations, reducing vehicle miles traveled and improving local air quality. They can also simply set a good example, serving as a catalyst for municipalities to undertake other regional environmental planning efforts such as water planning, habitat conservation, floodplain management, and recreation plans.[15] This has already proven to be the case with prior greenway efforts in the Detroit region, with the Rouge River Gateway Corridor inspiring efforts to clean up the Rouge River and its surrounding natural habitats.[16]

PUBLIC HEALTH

Studies have found that greenways have a positive impact on both physical activity levels and cardiovascular health.[17] Public parks are critical resources for physical activity, particularly in low-income and minority communities, where residents have less access to more costly forms of exercise such as gym memberships.[18] In addition, both proximity and level of service (see Chapter 4 for a discussion of level of service) are instrumental toward encouraging residents to be active, with larger, more attractive open spaces close to people's homes more likely to spur larger amounts of physical activity.[19]

The physical benefits associated with greenways also have a spillover effect on economic benefits. Health care costs are currently the largest expenditure in the United States, and leisure, not paid work or housework, is where the most physical activity occurs.[20] An investment of $10 per capita per year in recreational space increases public health to the same level as spending $60 to $70 per hour on a personal trainer, or the more than $10,000 spent per person per year on health care in the United States.[21]

A 2014 report by the Michigan Department of Transportation suggests that there is potentially significant enthusiasm for cycling within the greater Michigan community, but that the state's transportation infrastructure has not yet caught up with demand. The department conducted a survey that found that respondents cited lack of infrastructure as the single greatest barrier to both bicycling for recreation and commuting by bicycle. John Lindenmayer of the League of Michigan Bicyclists stated that "there are more voices talking about bicycling than ever before" in Michigan, and other stakeholders

An investment of $10 per capita per year in recreational space increases public health to the same level as spending $60 to $70 per hour on a personal trainer, or the more than $10,000 spent per person per year on health care in the United States.

noted repeatedly that bicycle infrastructure and policy needs to adapt to address this shift.[22]

Typical Americans currently spend 90 percent of their lives within buildings, and urban residents are at an inherent disadvantage in terms of processing stress compared with their rural counterparts.

PSYCHOLOGICAL

It is difficult to quantify the invisible, psychological responses that green spaces inspire in individuals, but they are essential to consider, because they may be among the most important benefits that greenways have to offer.[23] Humans demonstrate an innate aesthetic response to green space, and regular exposure to nature is also important for basic mental functioning.[24]

Typical Americans currently spend 90 percent of their lives within buildings, and urban residents are at an inherent disadvantage in terms of processing stress compared with their rural counterparts.[25] Additionally, the frequent distractions of modern urban life bring about what is known as "directed attention fatigue," the same sort of fatigue that sets in after hours of driving despite a relatively low level of physical activity.[26] As little as half an hour in a less distracting and mentally demanding environment, such as a greenway, is enough to restore one's attentive capacity and better prepare them for the demands of modern life.

On a community level, greenways bring about a sense of being "part of a whole" that contributes to one's satisfaction and level of comfort with their neighbors and surrounding environment. Trails facilitate individuality while allowing one to be part of a group, with different people using them in different ways depending on their own specific needs.[27] High-quality green space has been linked to lower levels of neighborhood crime, contributing to residents' overall perception of their safety.[28] A trail system offers

an opportunity for residents to volunteer and give back, through programs such as safety patrols, friends groups, maintenance, fundraising, and other forms of stewardship.[29]

EDUCATIONAL

Greenways in southeast Michigan can serve as a hands-on environmental classroom for people to experience natural landscapes, furthering environmental awareness. There is the potential for users to gain knowledge about environmental phenomena along the greenway via interpretive signage, brochures, and special events that promote discovery learning. For example, trail signage could be designed to inform trail-users about water quality issues particular to each watershed, and such signs could also include tips on how to improve water quality.[30, 31]

Furthermore, greenways create the potential for users to become better acquainted with businesses, neighborhoods, and the history of their region in general. Greenways can provide users with a sense of history in that most trails use former railroads, waterways, or Native American foot trails.[32] For example, trail signage could be designed to highlight former industrial sites along the shoreline important to Michigan's growth and development. These co-benefits ultimately make the impact of greenways more than the sum of their parts.

GREENWAY LESSONS

Underground Railroad Detroit Alternate 1

Location: Detroit metro region
Length: 281.4 miles

The brainchild of nonprofit Adventure Cycling, the Underground Railroad bicycle network is an instructive example of how to use a region's history and pre-existing infrastructure to promote safe, non-motorized transportation with an educational component.

Rather than invest in and build new infrastructure, Adventure Cycling conducts extensive research into safe bicycle routes and local and regional history to produce informational pamphlets for cross-country cyclists. The Detroit Alternate 1 is part of a series of bicycle routes that showcase segments of the Underground Railroad, the 19th-century network of secret routes and safe houses that African-American slaves used to escape to northern states.

Planning this route involved coordination with the Detroit Historical Society, the National Park Service, the Michigan Trails and Greenway Alliance, and the City of Detroit Historic Commission, as well as numerous local volunteers.

Sterling State Park Monroe County

TAKEAWAYS

Several recurring themes tie together the benefits of greenways:

Context matters. The landscape connecting Lake Huron to Lake Erie encompasses regions and municipalities with different local character, and there is no "one size fits all" solution to designing and implementing a regional trail system. Whether urban, suburban, or rural, each greenway segment needs to use what is already there as a baseline, improving the surrounding area while respecting and not fundamentally altering its distinctive character.

The quality of trails matters. Researchers and practitioners have universally found that the benefits of greenways scale with residents' proximity to trails, as well as the degree to which these trails are properly monitored and maintained. Planners cannot simply design a park and call it a day — trail segments must receive thoughtful design and continuous stewardships for their potential benefits to translate into reality.

There is overlap between types of benefits. The benefits of greenways are interconnected, and improvements in one category have the potential to spill over into other categories. A larger sense of community attachment leads to more environmentally responsible behavior. Healthier, more physically active residents spend less on health care and more on local businesses. Residents who are educated on the history and unique natural features of the riverfront region will experience a greater sense of place and pride in their community.

ENDNOTES

[1] Arne Arnberger and Renate Eder. "The Influence of Green Space on Community Attachment of Urban and Suburban Residents." Urban Forestry & Urban Greening 11, no. 1 (2012): 41-49.

[2] "Parks Without Borders: Creating a Seamless Public Realm." The Dirt. January 30, 2017. Accessed April 07, 2017. https://dirt.asla.org/2017/01/30/parks-without-borders-creating-a-seamless-public-realm/.

[3] Rory Robinson. "Economic (and other) Benefits of Trails, Greenways and Open Space." National Park Service. Last modified March 24, 2017. https://harta-gotrails.org/wp-content/uploads/2016/06/economictrailsbenefits.pdf

[4] Aleksandra Kaźmierczak. "The Contribution Of Local Parks To Neighbourhood Social Ties." *Landscape and Urban Planning* 109, no. 1 (2013): 31-44.

[5] Michigan State University Land Policy Institute. 2012. *Drivers of Economic Performance in Michigan: Natural Features, Green Infrastructure, and Social/Cultural Amenities*.

[6] Michigan Department of Transportation. 2012. *Community and Economic Benefits of Bicycling in Michigan*.

[7] Robinson, 2017.

[8] Ibid.

[9] Kent F. Kovacs. "Integrating Property Value and Local Recreation Models to Value Ecosystem Services from Regional Parks." *Landscape and Urban Planning* 108, no. 2 (2012): 79-90.

[10] Jennifer R. Wolch, Jason Byrne, and Joshua P. Newell. "Urban Green Space, Public Health, and Environmental Justice: The Challenge of Making Cities 'Just Green Enough.'" *Landscape and Urban Planning* 125 (2014): 234-244.

[11] Kathleen L. Wolf. "Ergonomics of the City: Green Infrastructure and Social Benefits." In *Engineering Green: Proceedings of the 11th National Urban Forest Conference*. Washington DC: American Forests, vol. 115. 2003.

[12] Lincoln R. Larson, Samuel J. Keith, Mariela Fernandez, and Viniece Jennings. "Ecosystem Services and Urban Greenways: What's the Public's Perspective?" *Ecosystem Services* 22 (2016): 111-116.

[13] Joan Busquets, ed. *Deconstruction/Construction: The Cheonggyecheon Restoration Project In Seoul*. Harvard University Graduate School of Design, 2011.

[14] Jalonne L. White-Newsome, Sabrina McCormick, Natalie Sampson, Miatta A. Buxton, Marie S. O'Neill, Carina J. Gronlund, Linda Catalano, Kathryn C. Conlon,

and Edith A. Parker. "Strategies to Reduce the Harmful Effects of Extreme Heat Events: A Four-City Study." *International Journal of Environmental Research and Public Health* 11, no. 2 (2014): 1960-1988.

[15] Tom Daniels. *The Environmental Planning Handbook: For Sustainable Communities and Regions*. American Planning Association, 2014.

[16] Wayne County, Michigan. 2011. *Rouge River Gateway Master Plan Update: 2011*.

[17] Larson et al., 2016.

[18] Deborah A. Cohen, Thomas L. McKenzie, Amber Sehgal, Stephanie Williamson, Daniela Golinelli, and Nicole Lurie. "Contribution of Public Parks to Physical Activity." *American Journal of Public Health* 97, no. 3 (2007): 509-514.

[19] Takemi Sugiyama, Jacinta Francis, Nicholas J. Middleton, Neville Owen, and Billie Giles-Corti. "Associations between recreational walking and attractiveness, size, and proximity of neighborhood open spaces." American Journal of Public Health 100, no. 9 (2010): 1752-1757.

[20] Geoffrey Godbey, Andrew Mowen, and V. A. Ashburn. "The Benefits of Physical Activity Provided by Park and Recreation Services: The Scientific Evidence." Ashburn, VA: National Recreation and Park Association, 2010.

[21] Sean P. Keehan, John A. Poisal, Gigi A. Cuckler, Andrea M. Sisko, Sheila D. Smith, Andrew J. Madison, Devin A. Stone, Christian J. Wolfe, and Joseph M. Lizonitz. "National Health Expenditure Projections, 2015–25: Economy, Prices, and Aging Expected to Shape Spending and Enrollment." *Health Affairs* (2016): 10-1377.

[22] MDOT, 2014.

[23] Chon, Jinhyung, and C. Scott Shafer. "Aesthetic Responses to Urban Greenway Trail Environments." *Landscape Research* 34, no. 1 (2009): 83-104.

[24] Larson et al., 2016.

[25] Gregory N. Bratman, J. Paul Hamilton, and Gretchen C. Daily. "The Impacts of Nature Experience on Human Cognitive Function and Mental Health." Annals of the New York Academy of Sciences 1249, no. 1 (2012): 118-136.

[26] Stephen Kaplan. "The restorative benefits of nature: Toward an integrative framework." *Journal of Environmental Psychology* 15, no. 3 (1995): 169-182.

[27] Robinson, 2017.

[28] Sandra Bogar and Kirsten M. Beyer. "Green Space, Violence, and Crime: a Systematic Review." *Trauma, Violence, & Abuse* 17, no. 2 (2016): 160-171.

[29] Robinson, 2017.

[30] "Benefits of Greenways." Greenways, Inc. Last modified 2011. http://www.greenways.com/benefits-of-greenways

[31] Robinson, 2017.

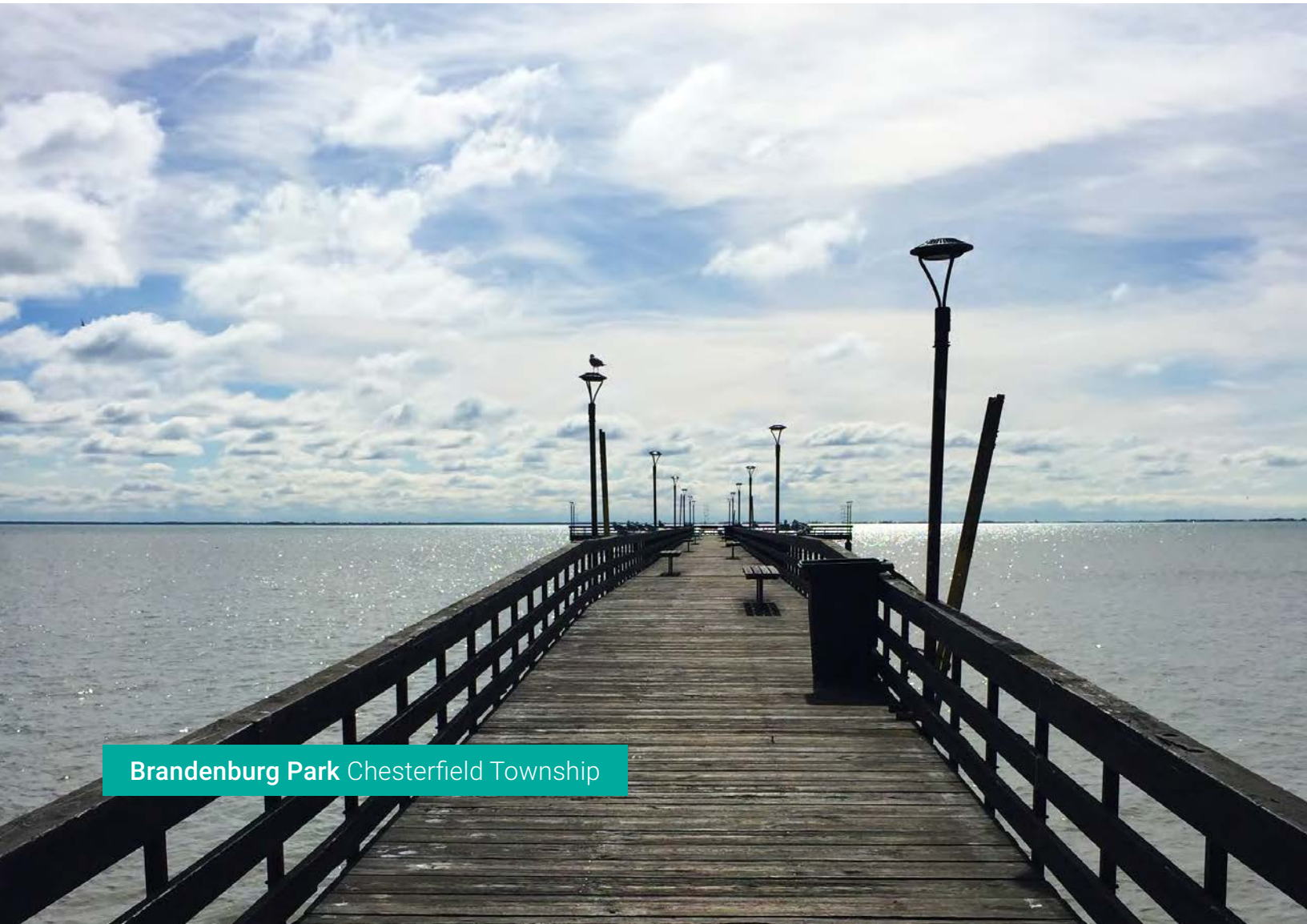
[32] Ibid.

4

REGIONAL ASSESSMENT

OVERVIEW

The following section presents the current status of greenway planning in southeast Michigan, providing a framework for a Port Huron to Toledo greenway that connects people to the waterfront and to each other. The research team has assessed the institutional and physical landscape of greenway planning in southeast Michigan, examining efforts at the state, county, regional, and local levels. Analyzing the existing and planned trail infrastructure along the shoreline, the research team has identified gaps and weighed solutions to fill those gaps. The primary takeaway from this analysis is that southeast Michigan is home to myriad greenway actors and efforts, but lacks a clear leader or regional strategy to knit these threads together.



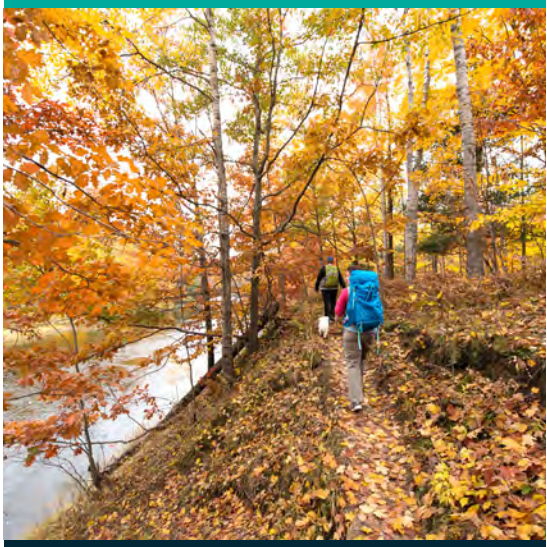
Brandenburg Park Chesterfield Township

INSTITUTIONAL LANDSCAPE

The jurisdictions within the study area feature varying levels of active greenway implementation and planning. State agencies, city and county governments, foundations, and coalitions of citizens and nonprofits are energized about and engaged in planning greenways across southeast Michigan. The challenge for creating a continuous pathway between Port Huron and Toledo will be to coordinate these efforts into a cohesive strategy. This section highlights the key champions that comprise a jigsaw puzzle of greenway planning and implementation in southeast Michigan, illustrating the considerable enthusiasm for trails and greenways in the area, as well as identifying opportunities for potential partnerships.

STATE

The passage of the **Michigan Trailways Act** in 1994 set the stage for the significant level of trail investment seen in Michigan in the present day. The act declared that "the planning, acquisition, development, operation, and maintenance of trails are in the best interest of this state and are a public purpose."[1] The State of Michigan began to market itself as the nation's "Trail State." Home to over 12,000 miles of recreational trails, state leadership endeavored to continue on this path by creating the *Michigan Comprehensive Trail Plan* in May 2013 and the *Michigan State Trail Implementation Plan* in January 2014. The centerpiece of the state's trail building strategy is the Iron Belle Trail, a 1,259-mile hiking and 774-mile cycling trail administered by the **Michigan Department of Natural Resources** that, when complete, will run from Detroit to Ironwood, at the western tip of the Upper Peninsula. Another state-level greenway advocate is the **Michigan**



Iron Belle Trail

Location: Michigan, linking Ironwood in the Upper Peninsula to Detroit in the Lower Peninsula
Length: 1,259 miles hiking route, 774 miles biking route

Announced in 2013 by Gov. Rick Snyder as Michigan's "Showcase Trail," the Iron Belle Trail is a pair of hiking and biking trails that span the length of Michigan, from its southeast corner to its northwest border with Wisconsin.

Currently in its third round of funding, the Iron Belle Trail is an initiative of the Michigan Department of Natural Resources, who are working to stitch together the route by providing Michigan Natural Resources Trust Fund, TAP funds, and other dollars to local units of government.

The Iron Belle Trail is an emblematic example of the enthusiasm and state support for trails and greenways in Michigan and provides a framework for the sort of public partnership that could work for a Port Huron to Toledo greenway.

Figure 4.1 Adventure Cycling's National Corridor Plan, December 2016

Trails and Greenways Alliance (MTGA). Formerly the Michigan chapter of the Rails-to-Trails Conservancy, and an affiliate of the Michigan Fitness Foundation, the MTGA became a distinct 501(c)(3) nonprofit in 2005, it serves as the "statewide voice for non-motorized trail users, helping people build, connect and promote trails for a healthier and more prosperous Michigan."[2] The Alliance's *Connecting Michigan: A Statewide Trailways Vision and Action Plan* (2007) offers a blueprint for connecting the networks of trails and greenways within the state, providing strategy on funding, land acquisition, design, and building community support. MTGA offers technical assistance to agencies and municipalities across the state that are in the process of developing or maintaining trails. One of its current major trail projects is the Great Lake-to-Lake Trails system, a collaboration with the Kresge Foundation. This system consists of five cross-state trails that will connect the Great Lakes to one another. Route 1, planned to connect Port Huron and South Haven is currently underway, with 178 miles already in place.[3]

The **Michigan Department of Transportation (MDOT)** and **Adventure Cycling** are also active at the statewide level, working to create nationally designated bike routes throughout the state. Adventure Cycling is a nonprofit organization that promotes traveling by bicycle and helps to coordinate the designation of U.S. Bike Routes.[4] The U.S. Bicycle Routes System is a network of bicycling routes that are federally designated for their significance and suitability for long distance travel via bicycle. Adventure Cycling works with state departments of transportation across the country to garner local support for these routes, which are then officially designated by the **American Association of State and Highway Transportation Officials (AASHTO)**.[5] The proposed corridor for the U.S. Bike Route 25 runs through the study area, originating in Cincinnati, connecting to Toledo, and then running along the southeast Michigan shoreline to Port Huron, where it will connect with U.S. Bike Route 20.

Adventure Cycling has also outlined a historical bicycling route in this corridor, the 500-mile Detroit Alternate route for their Underground Railroad Route — a 2,000-mile bicycle route that follows the path of the underground railroad from Mobile, Alabama to Owen Point, Ontario (see "Greenway Champions" in Chapter 3). The Detroit Alternate route travels from Oberlin, Ohio to Owen Point, Ontario and hits several sites important to the Underground Railroad in southeast Michigan such as the Historic Second Baptist Church and Elmwood Cemetery.[6]

COUNTY & LOCAL

ST. CLAIR COUNTY

The primary greenway champion in St. Clair County is the **St. Clair County Parks and Recreation Commission (PARC)**. Formed in 1994, the commission levies a property tax for the planning and implementation of parks and greenways. PARC's most significant project is the Bridge to Bay Trail. When complete, this waterfront trail will stretch 54 miles, connecting Port Huron to Marine City. PARC has worked closely with the 13 local units of government that border St. Clair County's shoreline to plan and implement this greenway.[7]

MACOMB COUNTY

Macomb County has also demonstrated growing enthusiasm for cycling and increased pedestrian connectivity. The **Department of Planning and Economic Development** and the

Department of Roads are the key agents for implementing greenways in the county. Planning and Economic Development is currently working on an update to the county's non-motorized master plan called Mobilize Macomb, an initiative to "make Macomb's streets, trails, and pathways friendly places for pedestrians and bicyclists of all ages and abilities."[8] With the county featuring 32 miles of Lake St. Clair coastline but significant private property along the waterfront in the form of marinas and homes, Mobilize Macomb endeavors to create one public access point for every linear mile.

WAYNE COUNTY

Much of the greenway planning and implementation efforts in Wayne County occur below the county level. The **Detroit RiverFront Conservancy (DRFC)** and **Detroit Greenways Coalition (DGC)**, both of which grew out of the Community Foundation for Southeast Michigan's GreenWays Initiative, are actively expanding the greenway network within the city of Detroit. The DRFC is a 501(c)(3) nonprofit established in 2003 to revitalize a 5.5-mile stretch of Detroit's downtown riverfront from the MacArthur Bridge to Belle Isle and the Ambassador Bridge. The first section of the DRFC's RiverWalk opened in 2007, and the DRFC unveiled plans to connect final gaps in the eastern section of the greenway in the spring of 2017.

The **Detroit Greenways Coalition** serves as an advocate, convener, fundraiser, and technical assistance provider for greenway projects within Detroit's city limits. The DGC began as a coalition of greenway advocates in 2007, and became a 501(c)(3) nonprofit in 2013. DGC is a fundamental greenway champion in Detroit and is a strong potential collaborator for a Port Huron to Toledo greenway.

Additionally, the Planning and Development Department and Department of Public Works for the **City of Detroit** are championing bicycle infrastructure across the city. As of spring 2017, a Greater Downtown Area Bicycle Network Plan is available for public comment, and will be incorporated into an update to the city's 2006 non-motorized master plan.[9]

MONROE COUNTY

The **City of Monroe** has been responsible for much of the greenway planning in Monroe County, namely the River Raisin Heritage Trail. Working with partners such as the **Community Foundation of Monroe County** and the **Monroe County Planning Department**, the Heritage

Trail spans 15 miles and connects local parks along the River Raisin, ending at the River Raisin National Battlefield Park.[10]

COALITION-REGIONAL

Numerous actors cross jurisdictional lines when working on greenway infrastructure in the region. Fundamental to the vision of this report is the effort of the **Southeast Michigan Council of Governments (SEMCOG)** and the **Michigan Department of Transportation (MDOT)**, who in 2014 collaborated on the *Bicycle and Pedestrian Travel Plan for Southeast Michigan*. The plan catalogues the physical infrastructure supportive to biking and walking in SEMCOG's seven-county service area, identifies key gaps, and offers tools, actions, and recommendations to improve the region's non-motorized network.[11] At present, SEMCOG is working to offer technical assistance to their members to help implement these strategies and increase regional connectivity in the pedestrian and bicycle network in southeast Michigan.

The **Downriver Linked Greenways Initiative (DLGI)** is a coalition representing 21 communities across Wayne and Monroe Counties. Growing out of the Downriver Summit community conference in 1999, DLGI has been stitching together greenway infrastructure for nearly two decades, with plans to create a network of over 130 miles of greenways.[12]

The **Inner Circle Greenway Coalition** is working to complete a 26-mile non-motorized pathway connecting Dearborn, Detroit, Highland Park, and Hamtramck. The Detroit Greenways Coalition, along with the city governments for the host communities, MDOT, the DNR, the Kresge Foundation, and the Community Foundation for Southeast Michigan, submitted a TIGER grant application in 2015 for the funds to complete the greenway.[13] Portions of this greenway overlap with a vision for a waterfront Port Huron to Toledo greenway.

TOLEDO

The Toledo metropolitan area is home to several enthusiastic greenway champions who are working on biking and hiking infrastructure. The **Toledo Metropolitan Area Council of**

Swan Creek Metropark Toledo

Governments (TMACOG) has outlined a vision for bicycling infrastructure investments in their 2015-2045 transportation plan, *On the Move*. TMACOG is the metropolitan planning organization for the Toledo area, including the three southernmost townships in Monroe County in Michigan. The routes they have identified include connections into Michigan along Dixie Highway, lending support to a greenway that could follow the same route.

Additionally, the **Ohio Department of Transportation** is working with Adventure Cycling and AASHTO to designate U.S. Bike Route 25 within the state of Ohio. They have selected Douglass Road for this route, with plans to connect to U.S. Bike Route 30, which originates in Luna Pier, Michigan. In a separate effort, **Metroparks Toledo** is working to connect their system of 16 metroparks with greenways.

CONCLUSION

There are numerous active greenway planning efforts in southeast Michigan that a Port Huron to Toledo greenway could leverage to weave together into a united vision. The next section examines existing and planned greenway infrastructure in detail and outlines several options for connecting the key gaps.

Bishop Park Wyandotte

GREENWAY LESSONS

Cuyahoga Greenways

Location: Cuyahoga County, Ohio
Length: 60 miles planned (30 miles complete)

The Cuyahoga County Planning Commission established the Trail Leadership Network (TLN) to implement the Cuyahoga Greenways plan. TLN is a working collaboration of agencies and organizations with vested interests in, and responsibilities for, trails and/or bicycle and pedestrian infrastructure.

In addition to its multidisciplinary organizational structure, the Cuyahoga plan features an in-depth analysis of greenway route options. TLN initially established route options based on community input and then assessed them using measures of connectivity, economic impact, health and safety, and environmental benefits. Weights were assigned to all criteria based on a subset of relevant factors. Cuyahoga's analysis methods inspired this report's assessment criteria for route options.
(Source: Cuyahoga County Planning Commission)

PHYSICAL LANDSCAPE

A total of 35 jurisdictions border the shoreline stretching from Port Huron to the Michigan-Ohio border. Several physical barriers pose challenges to planning and implementing greenway infrastructure along the shoreline, but these challenges can also offer opportunities for a trail to extend inland. A path routed around these physical barriers would cross through 37 jurisdictions (see Figure 4.1). These jurisdictions contain approximately 162 miles of existing trails and 162 miles of planned trails. With the goal of bringing people to the waterfront, the following physical landscape analysis focuses on the area within ½ mile of the shoreline, hereafter referred to as the "shoreline corridor."

The shoreline corridor contains numerous gaps in trail infrastructure. These gaps represent opportunities to construct pathways that connect downtown corridors, residential areas, industrial sites, and agricultural zones. A greenway system that weaves various landscapes together would allow residents and visitors the chance to experience a full range of southeast Michigan features.

While planning to address gaps, three questions arose: what is the full range of existing trail infrastructure, what amenities exist in each jurisdiction, and how can a shoreline greenway connect to existing and planned trails? To address these questions, the project team assessed the shoreline corridor based on three criteria: **level of service**, **context**, and **connectivity**.

Figure 4.2 Jurisdictions along shoreline corridor

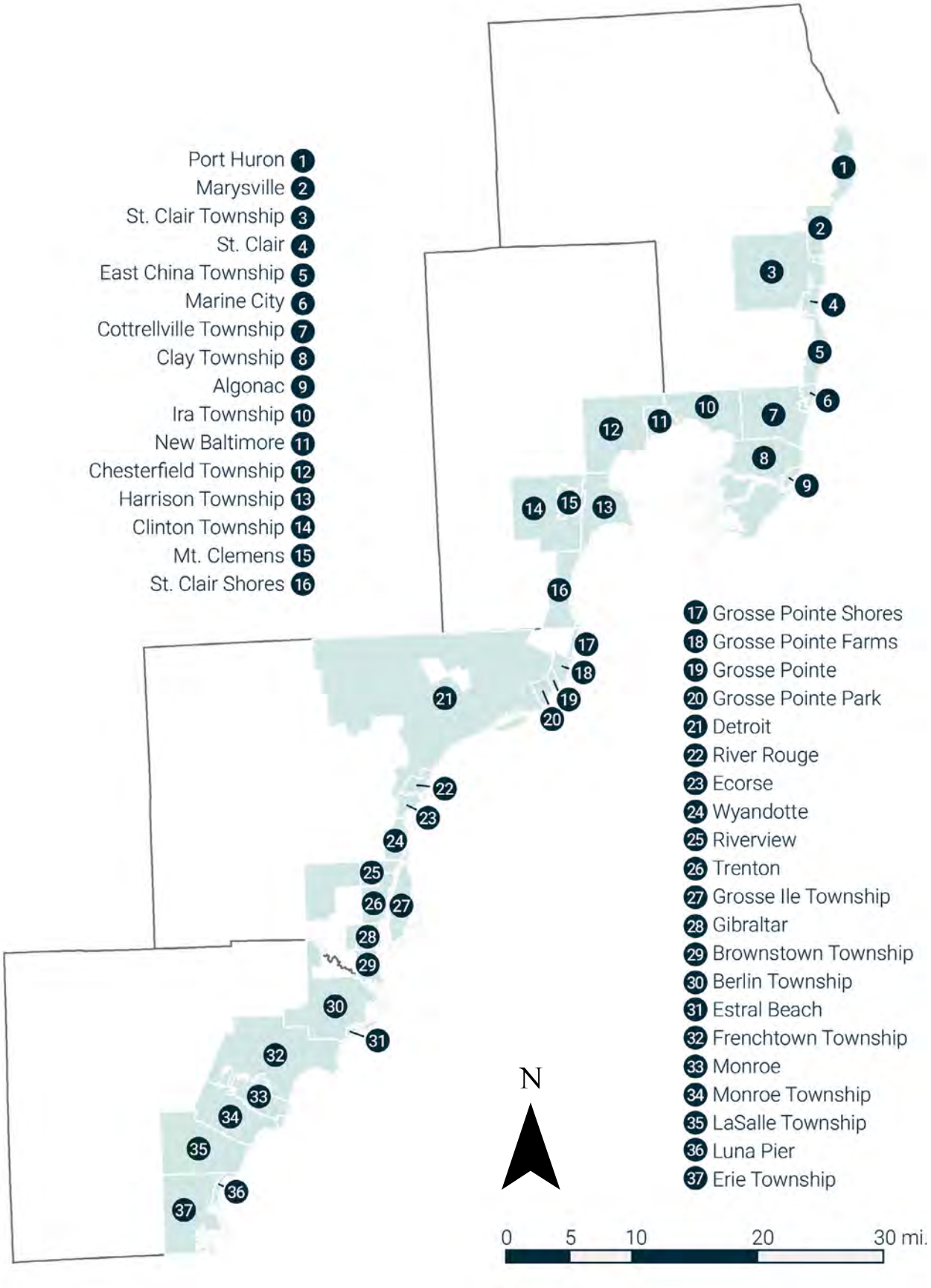
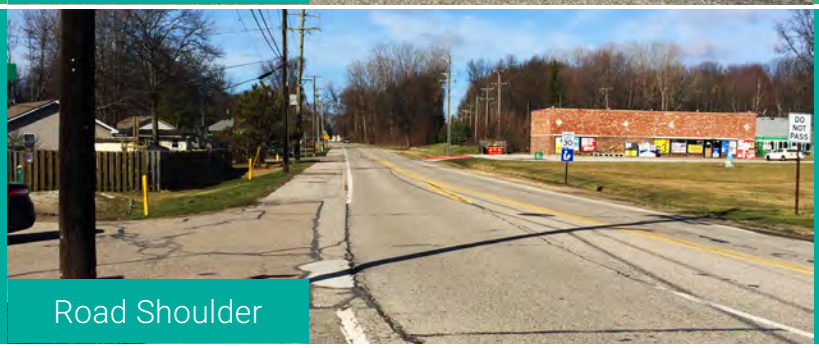


Table 4.1 Typology of levels of service in study region

LEVEL	EXAMPLE	DESCRIPTION
1	 Sidewalk	A path within a road right-of-way that accommodates pedestrians, but is not safe for simultaneous pedestrian and cyclist use, and requires provision of very little infrastructure.
2	 Road Shoulder	Accommodates stopped vehicles and emergency use, and provides lateral support for the roadway structure. Paved shoulders are often used by bicyclists and are at times part of a designated bicycle route. In this typology, paved shoulders lack the presence of sidewalks.
3	 Bike Lane	On-road facility that has been designated for preferential or exclusive use by cyclists, typically indicated by pavement markings and signs. In this typology, bike lanes are accompanied by sidewalks.
4	 Shared-Use Path within ROW	Accommodates two-way travel of pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Such a path is separated from motor vehicle traffic by open space or a physical barrier, but remains within the road right-of-way. Wider than a sidewalk, usually ranging from 8 to 10 feet in width.
5	 Standalone Shared-Use Path	Same level of accommodation as level of service 4, but incorporated into linear natural areas such as parks or conservation areas, along stream or river corridors, or along waterfronts. In many communities, shared-use paths may also be referred to as trails, multi-use trails, hiker/biker trails, or greenways.

LEVEL OF SERVICE

The term "level of service" refers to how well a piece of trail infrastructure serves the needs of non-motorized transportation. Infrastructure with a higher level of service is safer for pedestrians and cyclists and provides a more immersive user experience, free of barriers and distractions. Based on these criteria, the project team developed a typology consisting of five categories of infrastructure (see Table 4.1), with higher numbers corresponding with a higher level of service.

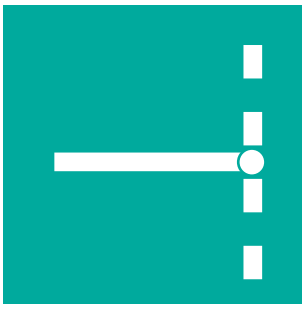
CONTEXT

Figure 4.3 Categories of amenities along shoreline corridor

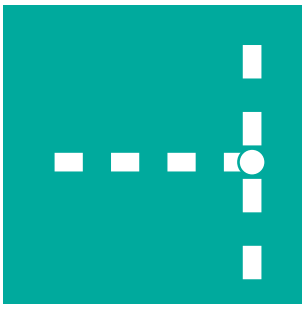
Southeast Michigan encompasses a wide variety of amenities that are important to capture in a regional greenway. "Context" refers to the presence of different amenities along the trail segment. These include, but are not limited to, proximity to water, parks and green space, retail corridors, and residential areas (see Figure 4.3). An important function of the greenway is to provide users with access to other nearby amenities such as parks, downtown and local

businesses, schools, and cultural/historical areas, so these factors are taken into account when assessing the value added to the existing physical landscape within the shoreline corridor.

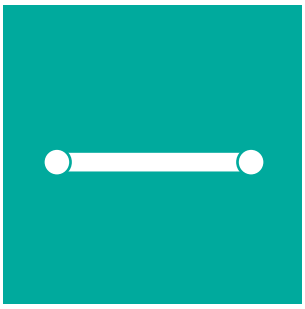
CONNECTIVITY



Connects to existing trails



Connects to planned trails



Shortest-distance path

One of the goals of this greenway vision is to connect people and communities in southeast Michigan. When possible, the greenway will connect to existing trail networks, whether they parallel the shoreline or take the user inland, with the goal of creating an integrated trail system. Connectivity to planned trail networks also adds value to the greenway vision, because it increases accessibility and has the potential to create partnerships and help share infrastructure costs. Finally, connectivity via shortest-distance paths may add value for some users. For example, parts of Jefferson Avenue in Wayne County are more than ½-mile inland from the shoreline, but offer the option to follow a visibly straight path that spans the regional corridor.

As mentioned in Chapter 1, southeast Michigan has shown enthusiasm for trails and parks. Numerous trails in the shoreline corridor could potentially connect to or become part of a regional shoreline greenway. Assessing infrastructure, community context, and connectivity will help determine which of these existing trails are currently suited to form part of a greenway, and what areas may need to be improved.

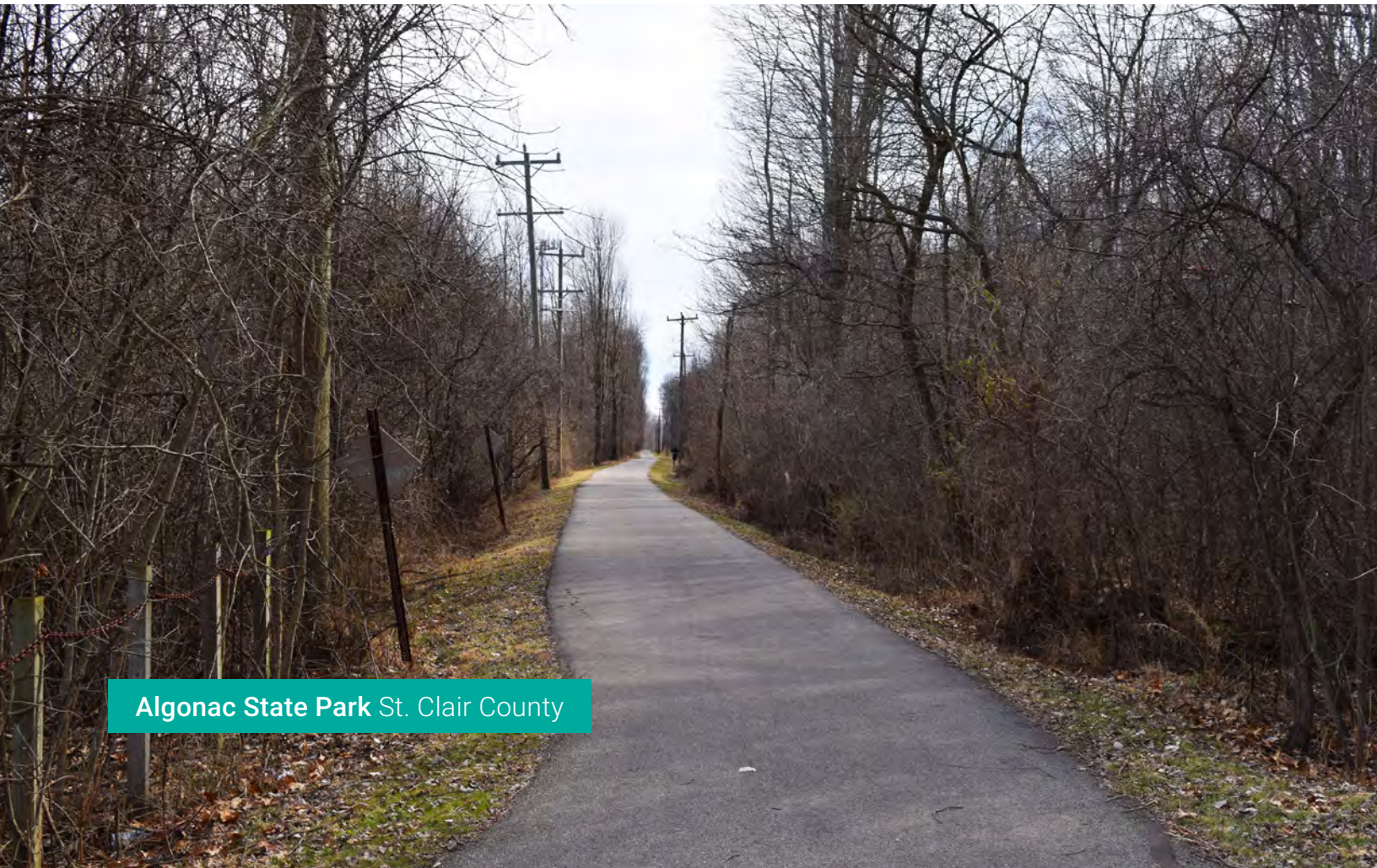
In assessing these three categories, the project team was able to determine possible routes for a southeast Michigan greenway that will be visioned in the next chapter. The next section will provide an assessment of the typologies and characteristics of the existing trails within the counties of the shoreline corridor.

Brandenburg Park Chesterfield Township

ST. CLAIR COUNTY

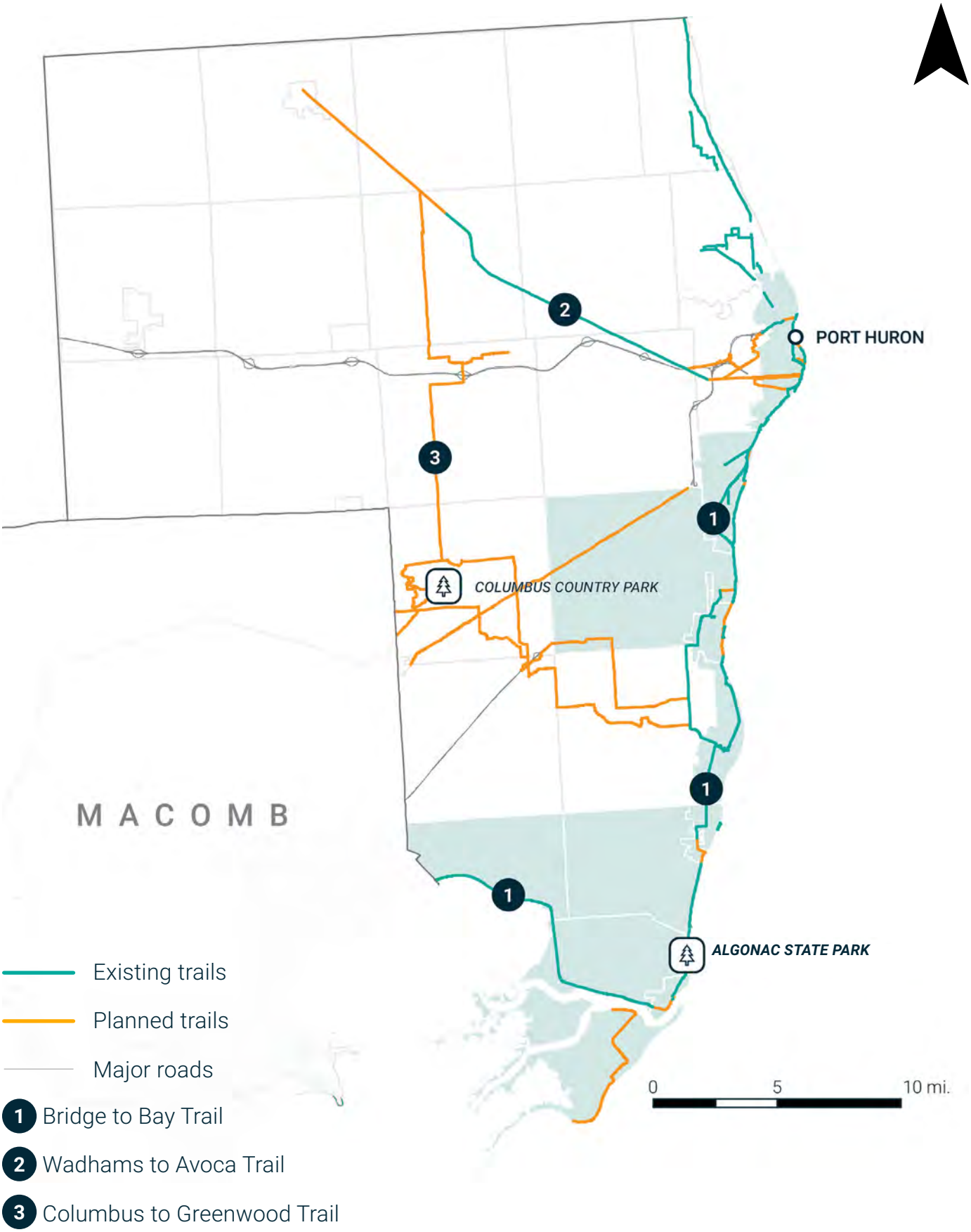
EXISTING TRAILS

St. Clair County features an extensive network of trails, and has taken a proactive approach to trail planning and implementation. The highlight of the county's trail system is the Bridge to Bay Trail, which begins in Port Huron and continues south through 13 municipalities until reaching the county border at New Baltimore. The trail connects numerous parks, beaches, neighborhoods and communities throughout the county. Planning and support began in the 1990s, led by the county's Parks and Recreation Advisory Council, who saw the potential benefit in connecting the numerous parks along and near the waterfront. Today the Bridge to Bay plan calls for a 54-mile paved trail running through downtown commercial areas, residential neighborhoods, and serene woodlands.



Algonac State Park St. Clair County

Figure 4.4 Existing and planned trail infrastructure in St. Clair County



The trail itself varies greatly in terms of levels of service and other characteristics. All five levels of service outlined in this report's typology are represented at some point along the Bridge to Bay Trail. The northern part of the trail tends to see higher levels of service, with lengthy boardwalks and shared-use paths stretching from Port Huron to Marine City, and only a few intermittent gaps. Some sections of the trail are very close to the waterfront, while others drift a mile or two inland. Small gaps between the higher levels of service (4 or 5) appear in urban areas like Port Huron, Marysville, and St. Clair. In these gaps there are often levels of service 1 or 2 (sidewalk, road shoulder), but no separate non-motorized infrastructure.

South of Marine City, the Bridge to Bay begins to make use of longer stretches of road shoulder (Level 2) for its trail. A shared-use path begins in Algonac State Park, but it comes to an end near the north side of Algonac. Algonac is another example of an urban gap in the trail network, with sidewalks (Level 1) being the primary infrastructure within the town. Heading west from Algonac, the Bridge to Bay once again makes use of road shoulders (Level 2) which continue all the way to the county border.

Table 4.2 Existing shoreline corridor infrastructure in St. Clair County, by level of service

Level 1	Sidewalk	1.25 mi
Level 2	Paved road shoulder	15.89 mi
Level 3	Bike lane	0.33 mi
Level 4	Shared-use path within ROW	12.09 mi
Level 5	Standalone shared-use path	8.84 mi

PLANNED TRAILS

In part because of the already extensive network of the Bridge to Bay Trail, there are few planned trails within St. Clair County. However, there are a number of trails planned for areas of the county that lie farther inland. Within the shoreline corridor, St. Clair County is continuing to address gaps within the Bridge to Bay Trail by connecting existing segments and creating shared-use paths where possible.

Bridge to Bay Road Shoulder St. Clair County

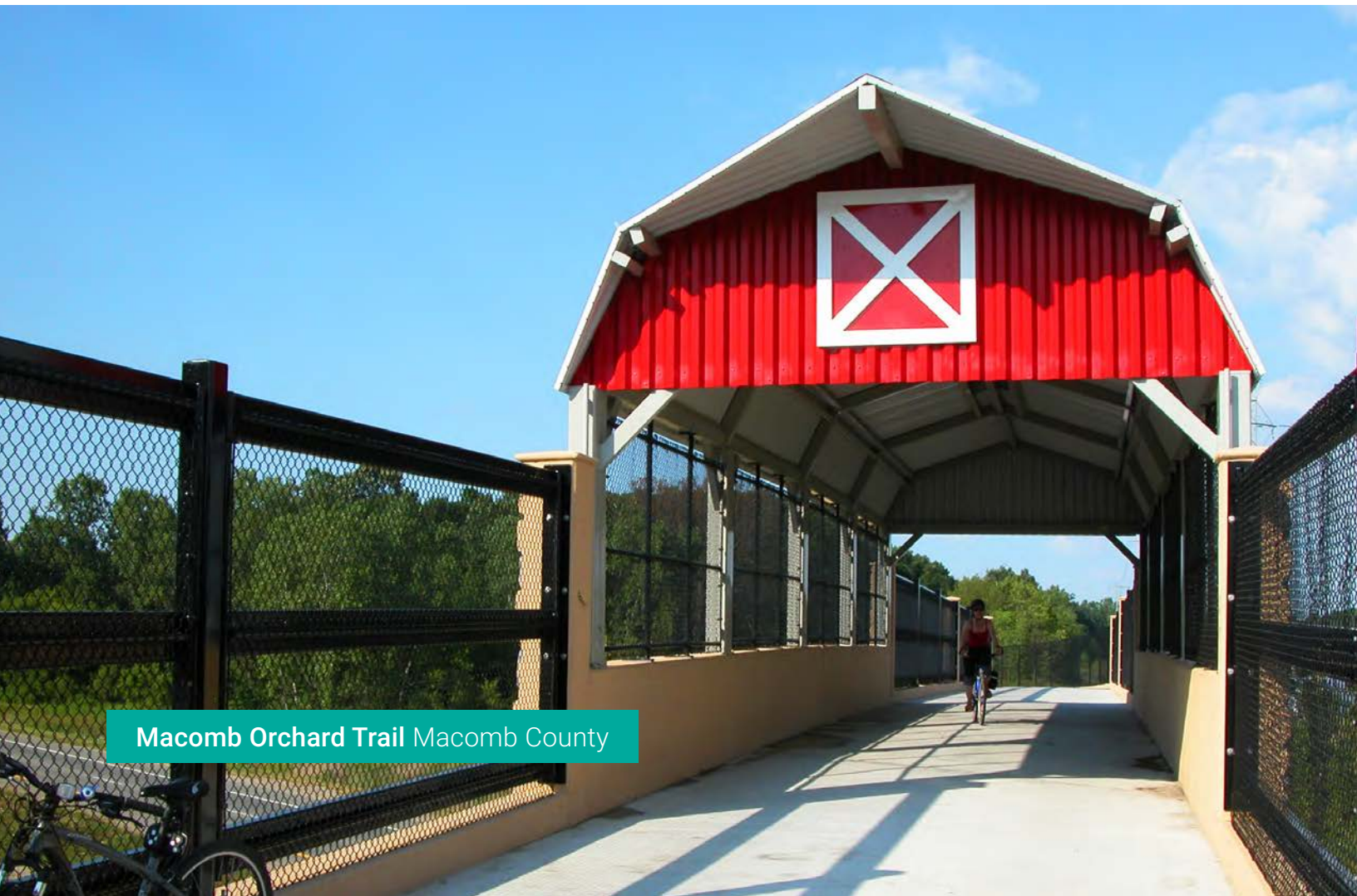
Among the planned inland trails, two connector trails will help expand the Bridge to Bay trail network. One connector is located near Port Huron and would connect the Bridge to Bay to the Wadhams to Avoca Trail, a 12-mile rail-to-trail project that begins in Kimball Township and heads west towards Avoca. Wadhams to Avoca is a Level 5 shared-use trail with 5 paved miles, and 7 miles consisting of crushed limestone. Planned connections include the Rail to River trail, envisioned as a shared-use path, and the Gateway Bike Route, which would be an on-street bike route.

The second planned trail is located in the southern part of the county, and would connect the Bridge to Bay trail to the Macomb Orchard Trail. The Macomb Orchard Trail intersects the county line at Richmond. Its primary planned connection is the Power Line trail, which would stretch west from the Bridge to Bay Trail near East China Township within a transmission corridor, and would eventually connect with Columbus County Park. From there, a proposed rail-to-trail project would connect Columbus County Park to Richmond and the Macomb Orchard Trail. Both connecting trails would be shared-use paths.

MACOMB COUNTY

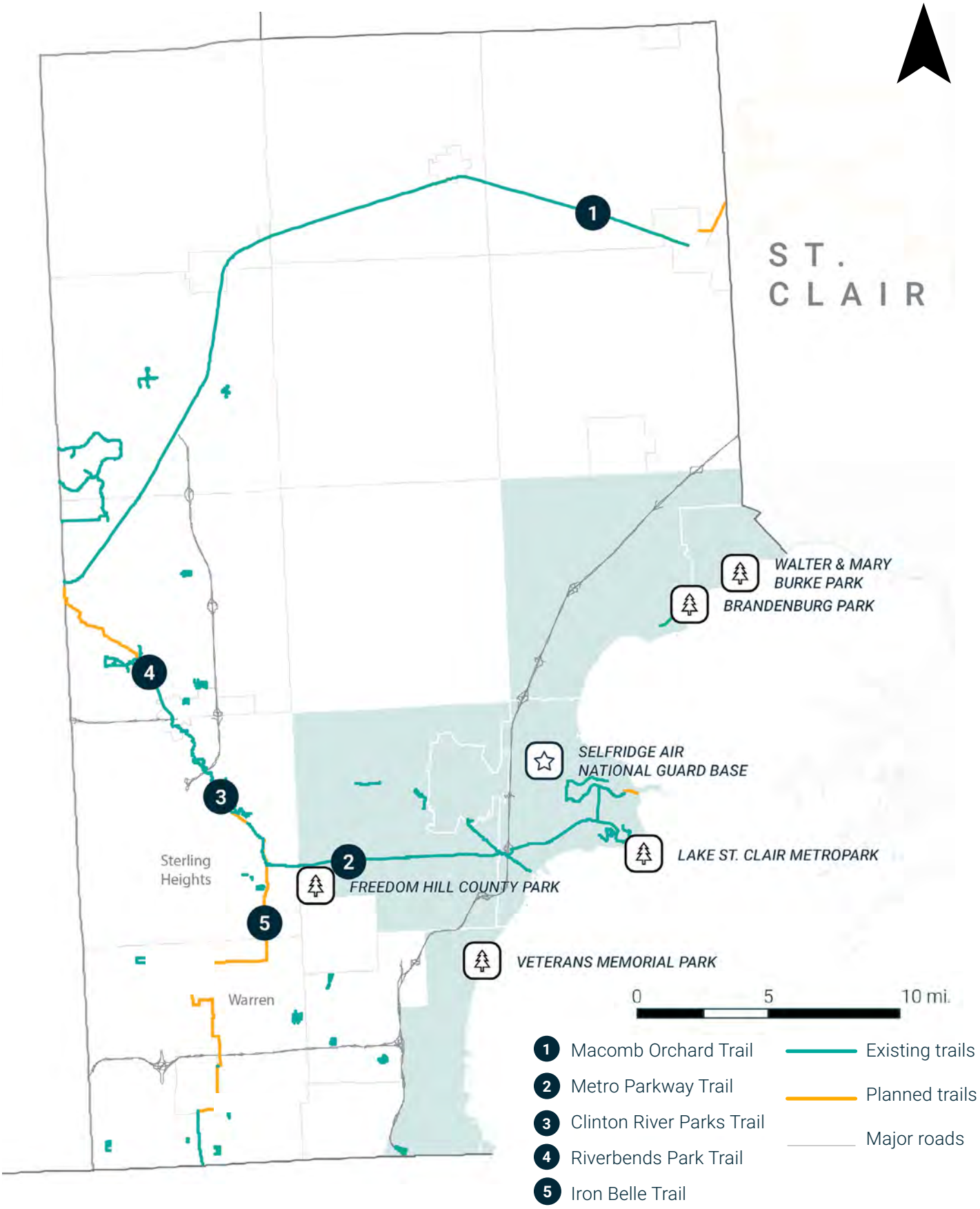
EXISTING TRAILS

Macomb County features a well-known inland trail system, the Macomb Orchard Trail, as well as trail initiatives that connect other smaller existing trails to one another. Currently, the Macomb Orchard Trail extends 24 miles southwest from Richmond Trailhead Park in Richmond to the Macomb Orchard Trail Welcome Center in Shelby Township. The Riverbends Park Trail, Iron Belle Trail, and Clinton River Parks Trail connect to one another, making up 15.1 miles of inland trail, and connect to the Macomb Orchard Trail and the Metro Parkway Trail. The Metro Parkway Trail is a mostly inland trail stretching 12 miles eastward from Freedom Hill County Park in Sterling Heights to Lake St. Clair Metropark on the Lake St. Clair waterfront.



Macomb Orchard Trail Macomb County

Figure 4.5 Existing and planned trail infrastructure in Macomb County



The shoreline corridor area contains roughly nine miles of existing trails (Level of Service 4 and 5). Lake St. Clair Metropark in Harrison Township, and the section of the Metro Parkway Trail within it, accounts for all of the Level 5 shoreline trail miles. In addition to Lake St. Clair Metropark, other parks along the shoreline feature non-motorized paths (Level 4), stretching about a mile north and south in each direction.

Walter and Mary Burke Park in New Baltimore, Brandenburg Park in Chesterfield Township, and Veterans Memorial Park in St. Clair Shores offer beautiful boardwalks and park amenities with pathways. However, these pathways tend to end abruptly, turning into narrow sidewalks (Level 1) or road shoulders (Level 2). Gaps and physical barriers include single-family residential homes in St. Clair Shores and the Selfridge Air Base in Harrison Township.

Table 4.3 Existing shoreline corridor infrastructure in Macomb County, by level of service

Level 1	Sidewalk	0 mi
Level 2	Paved road shoulder	0 mi
Level 3	Bike lane	0 mi
Level 4	Shared-use path within ROW	2.58 mi
Level 5	Standalone shared-use path	6.19 mi

PLANNED TRAILS

Macomb County aims to build on its robust inland trail infrastructure and take advantage of the waterfront through water trails. Plans to continue implementing inland trails are still in draft form as a part of the Mobilize Macomb initiative, a revision of the 2004 Trailways Master Plan aiming to make Macomb County more pedestrian and bicycle friendly, but could feature crosstown connectors like 9 Mile, 21 Mile, and 26 Mile Roads.

The Blue Economy Initiative intends to protect and enhance the Clinton River Watershed and

Clinton River Spillway Harrison Township

Lake St. Clair by increasing public access to and awareness of Macomb County's land and water resources. For example, the Blue Way Water Trail and Coastal Water Trail would present many opportunities to educate the public about the trails' role in protecting water quality and wildlife habitats.

Though additional non-motorized plans are still in the planning stage, previous plans envision "coastal hubs" along the shoreline corridor that could provide room for non-motorized pathways. Areas in New Baltimore, Chesterfield Township, Harrison Township, and St. Clair Shores feature green space, riverfront, and waterfront access that would add to the planned trail infrastructure farther inland.

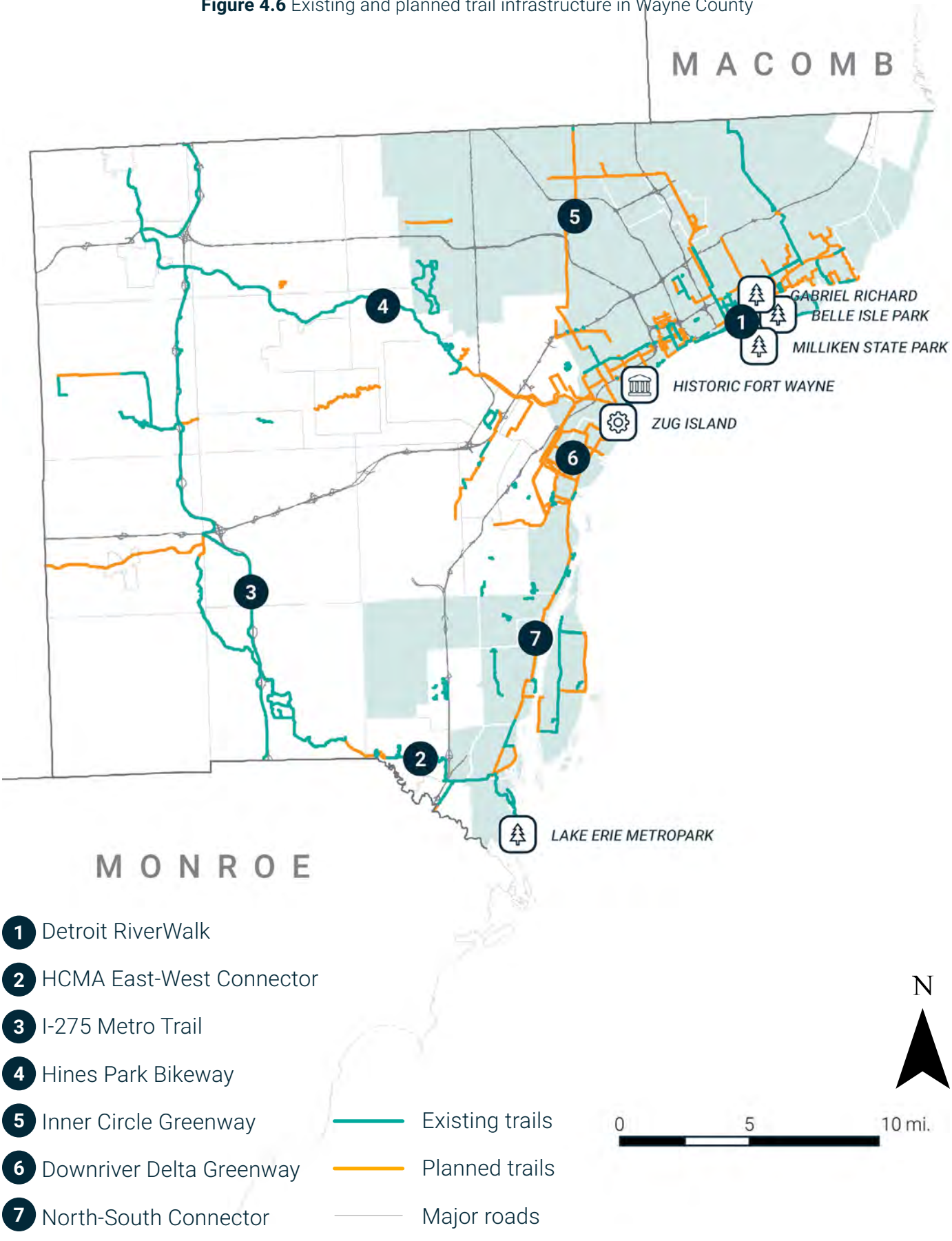
WAYNE COUNTY

EXISTING TRAILS

The centerpiece of Wayne County's existing trail infrastructure is the Detroit RiverWalk, which currently stretches about 3.4 miles from Gabriel Richard Park to West Riverfront Park and is a standalone, waterfront pathway (Level of Service 5, see photos). The RiverWalk intersects numerous waterfront parks such as Milliken State Park and Chene Park and provides access to downtown Detroit. It also connects to the Dequindre Cut, a standalone (Level 5) rails-to-trail greenway that currently spans 1.75 miles inland. The RiverWalk has spurred economic development on the East Riverfront, provided thousands of non-motorists with connections to the water, and created enthusiasm for waterfront access in southeast Michigan. Outside of the RiverWalk, trail infrastructure in the shoreline corridor of Wayne County is sparse.

William G. Milliken State Park Detroit

Figure 4.6 Existing and planned trail infrastructure in Wayne County



The communities of Grosse Pointe Shores, Grosse Pointe Farms, Grosse Pointe, and Grosse Pointe Park comprise a noteworthy gap in trail infrastructure, with single-family residential property taking up about 3.75 miles of the shoreline. There is potential for planning a greenway along a roughly three-mile stretch along Lake Shore Drive, as the road borders the water with apparent right-of-way for pedestrians and cyclists ranging in width from 120 to 150 feet.

The Downriver region south of Detroit poses challenges similar to Detroit's southwest side. Industrial land use is prevalent throughout the waterfront, especially in the cities of River Rouge, Ecorse, Wyandotte, and Trenton. Much of West Jefferson Avenue's non-motorized infrastructure consists of sidewalks, which do not provide an ideal level of service for a five-lane road.

Short increments of shared-use paths (Level 4) along West Jefferson appear south of Wyandotte and north of Gibraltar, but these increments account for 2.1 miles of the Downriver corridor's 18-mile shoreline. The HCMA East-West Connector is a good example of a shared-use path outside of the ROW (Level 5) in this region, but it runs perpendicular from the shoreline at Lake Erie Metropark, connecting to the inland I-275 Metro Trail.

Table 4.4 Existing shoreline corridor infrastructure in Wayne County, by level of service

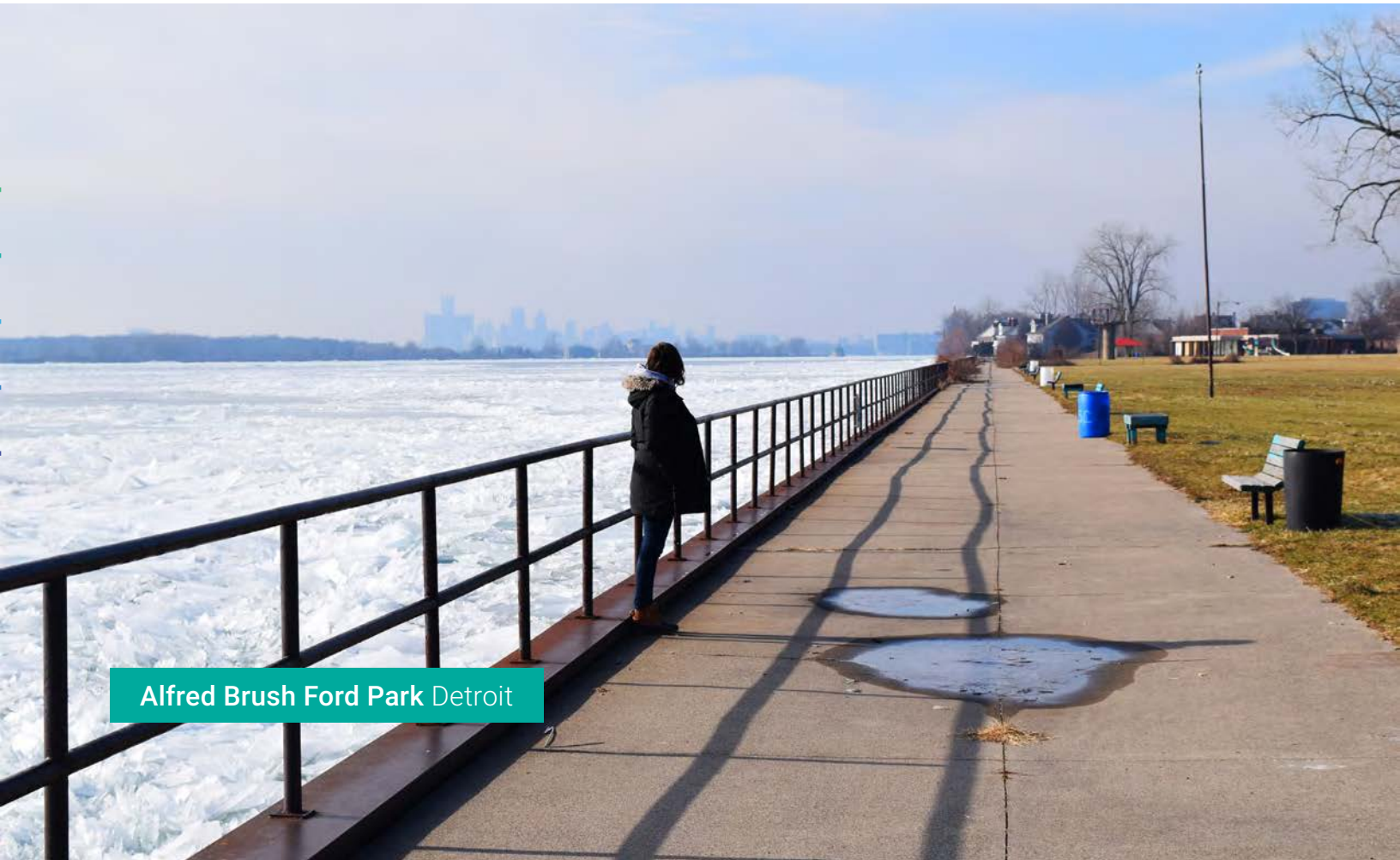
Level 1	Sidewalk	0 mi
Level 2	Paved road shoulder	0 mi
Level 3	Bike lane	2.50 mi
Level 4	Shared-use path within ROW	2.34 mi
Level 5	Standalone shared-use path	20.94 mi

PLANNED TRAILS

The Detroit RiverFront Conservancy plans to complete its East Riverfront Framework plan by connecting gaps in the RiverWalk between Rivard Plaza and Gabriel Richard Park. Farther

eastward, the nonprofit The Villages Community Development Corporation and partners have envisioned greenway networks that span more than 16 miles. The Detroit Greenways Coalition has expansive plans for the Inner Circle Greenway to link the riverfront, using the Dequindre Cut, to Hamtramck, Highland Park, and Dearborn. The Detroit Greenways Coalition is also involved in numerous other greenway planning efforts to link southwest Detroit to Downriver communities.

In the Downriver region, the Downriver Linked Greenways Initiative is working to connect Detroit greenways to the HCMA East-West Connector. DLGI suggests the use of west Jefferson Avenue (renamed Biddle Avenue in the city of Wyandotte), referring to this stretch as the North-South Connector. DLGI's planned Downriver Delta Greenways will consist of three separate greenways: the Rouge River Gateway Greenway, the Ecorse Greenway, and the Lincoln Park Greenway, all of which will connect either to the Detroit Greenway or the North-South Connector, spanning a total of 41 miles. Additionally, the Rouge River Gateway Greenway will extend inland, connecting to the existing Hines Park Bikeway.



Alfred Brush Ford Park Detroit

MONROE COUNTY

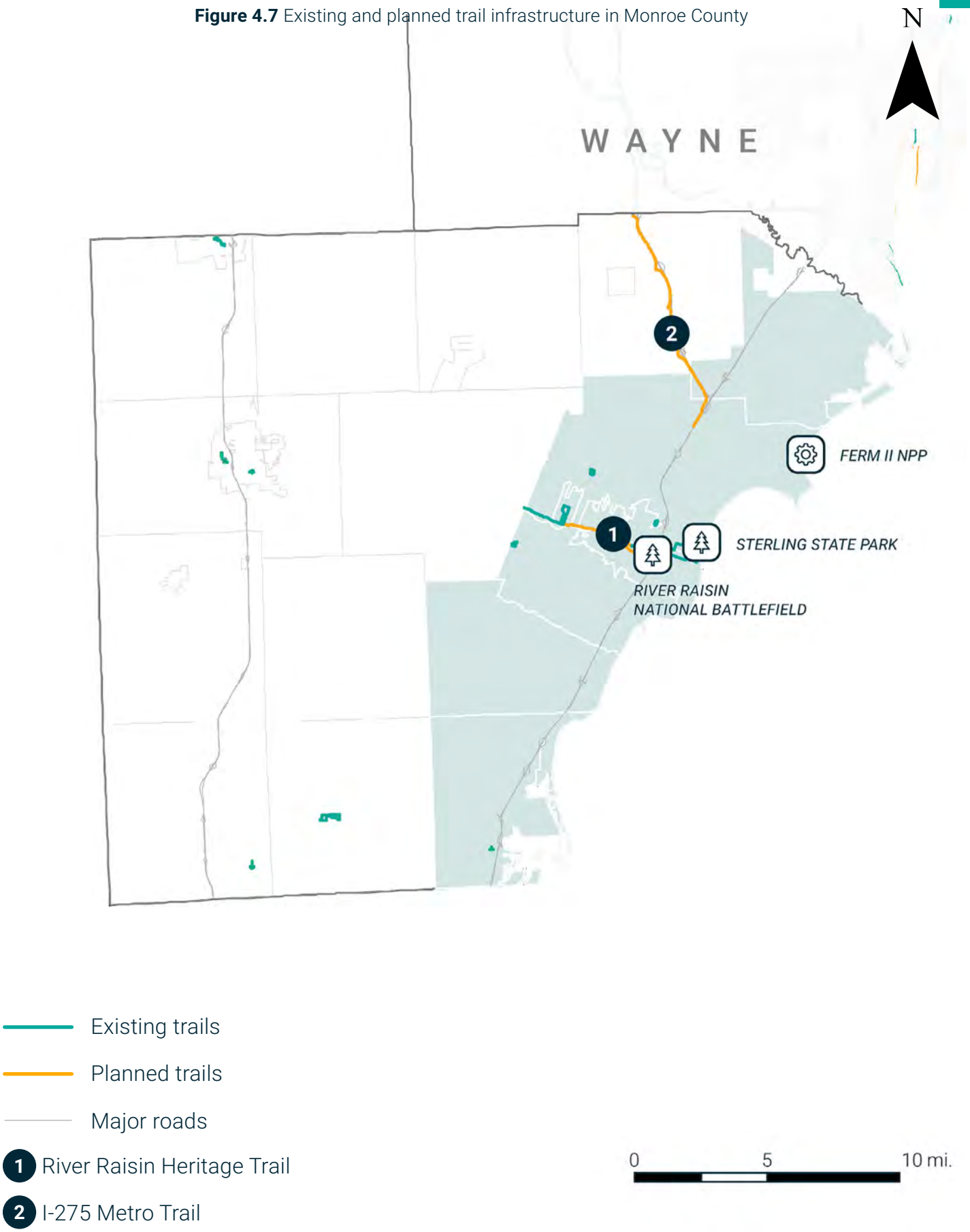
EXISTING TRAILS

Monroe County has very limited existing trail infrastructure, but stakeholder interviews indicate that there is latent enthusiasm for trails among the local community. The most significant trail within the county's shoreline corridor is the River Raisin Heritage Trail, which runs east and west through the city of Monroe. The trail connects the community to a wide range of amenities, such as Sterling State Park on the waterfront, local parks, and the River Raisin National Battlefield, site of several battles during the War of 1812. The paved hike-bike trail is 8 miles long, a large portion of it near the shoreline at Sterling State Park.

Berlin Township, the northernmost municipality along the Lake Erie shoreline in Monroe County, is a notable gap in trail infrastructure. U.S. Turnpike Road and North Dixie Highway are regional corridors extending 8.2 miles, but they do not accommodate pedestrians or bicyclists and do not lie within the ½-mile shoreline corridor. The roads south of Berlin Township, in Frenchtown

Monroe Monroe County

Figure 4.7 Existing and planned trail infrastructure in Monroe County



Township, are slightly more accommodating to non-motorized transport, with a 2-mile stretch of bike lane within the shoreline corridor. Monroe Township, Lasalle Township, Luna Pier, and Erie Township comprise the largest gap in trail infrastructure, consisting primarily of farmland and rural areas without sidewalks or road shoulders.

Table 4.5 Existing shoreline corridor infrastructure in Monroe County, by level of service

Level 1	Sidewalk	0 mi
Level 2	Paved road shoulder	0 mi
Level 3	Bike lane	0 mi
Level 4	Shared-use path within ROW	0 mi
Level 5	Standalone shared-use path	6.78 mi

PLANNED TRAILS

Monroe County has seen very little movement in terms of trail planning. Most current plans are the vision of the Downriver Linked Greenways Initiative, an effort to plan and implement non-motorized trails in the vicinity of the Downriver region. The DLGI is currently working to extend the I-275 Connector southeast into Frenchtown Township, but an active rail line and utility corridor have hampered efforts to plan and implement a trail running north-south parallel to I-75.

Other shoreline municipalities in Monroe County offer limited insight into local enthusiasm for non-motorized pathways. Berlin Township's 2016 Parks and Recreation Plan states a goal to "systematically preserve open spaces and greenways" and coordinate a greenway network with the DLGI, but there has been little movement toward this goal. In addition, the City of Monroe's Parks and Recreation Master Plan contains a map of planned greenway networks. However, most municipalities' master plans either mention non-motorized transit out of obligation or simply ignore the issue altogether, instead emphasizing the rural character of the region.
The three southernmost townships in Monroe County, Whiteford Township, Bedford Township,

and Erie Township, are represented by both the southeast Michigan metropolitan planning organization (MPO), SEMCOG, as well as the northwest Ohio MPO, the Toledo Metropolitan Area Council of Governments (TMACOG). TMACOG has plans for several nonmotorized connections into Michigan, those closest to the shoreline being a route along South Dixie Highway into Erie Township, and another along Douglass Road into Bedford Township.

Additionally, the Ohio Department of Transportation is working to have the U.S. Bike Route 25 designated along Douglass Road, with plans to connect to U.S. Bike Route 30 in Luna Pier. Other planned trails in the Toledo area include a system of greenways to connect the 16 parks of Metroparks Toledo, as well as a City of Toledo Bike Plan with 13 primary routes planned.

ENDNOTES

[1] Natural Resources and Environmental Protection Act of 1994, MCL 324.72102.

[2] "About." Michigan Trails and Greenways Alliance. Accessed April 5, 2017. http://michigantrails.org/about-us/.

[3] Nancy Krupiarz. (2017, March 15). Personal interview.

[4] "About Us." Adventure Cycling. Accessed April 5, 2017. https://www.adventurecycling.org/about-us/.

[5] "Implement a Bicycle Route." Adventure Cycling. Accessed April 5, 2017. https://www.adventurecycling.org/routes-and-maps/us-bicycle-route-system/implement-a-us-bicycle-route/.

[6] "Underground Railroad (UGRR)." Adventure Cycling. Accessed April 5, 2017. https://www.adventurecycling.org/routes-and-maps/adventure-cycling-route-network/underground-railroad-ugrr/.

[7] "Bridge to Bay Trail." The Offices of St. Clair County. Accessed April 5, 2017. https://www.stclaircounty.org/offices/parks/btob.aspx.

[8] "About This Site." Mobilize Macomb. Accessed April 5, 2017. http://mobilizemacomb.mindmixer.com/about-this-site

[9] City of Detroit. (2017). Greater Downtown Area Bicycle Network Plan.

[10] "Sponsors." River Raisin Heritage Trail. Accessed April 5, 2017. http://www.rrtrail.com/footer/sponsors/.

[11] SEMCOG & MDOT. (2014). Bicycle and Pedestrian Travel Plan for Southeast Michigan.

[12] "Home." Downriver Linked Greenways Initiative. Accessed April 5, 2017. http://www.downrivergreenways.org/.

[13] "Inner Circle Greenway." Detroit Greenways Coalition. Accessed April 5, 2017. http://detroitgreenways.org/inner-circle-greenway/.

Luna Pier Monroe County

5

VISION

The following section lays out an institutional and physical vision for a greenway in the study area. The project team proposes methods for filling in the physical gaps in the region, as shown in four example maps. Recommendations on governance, funding, and marketing that help support this vision are also presented.

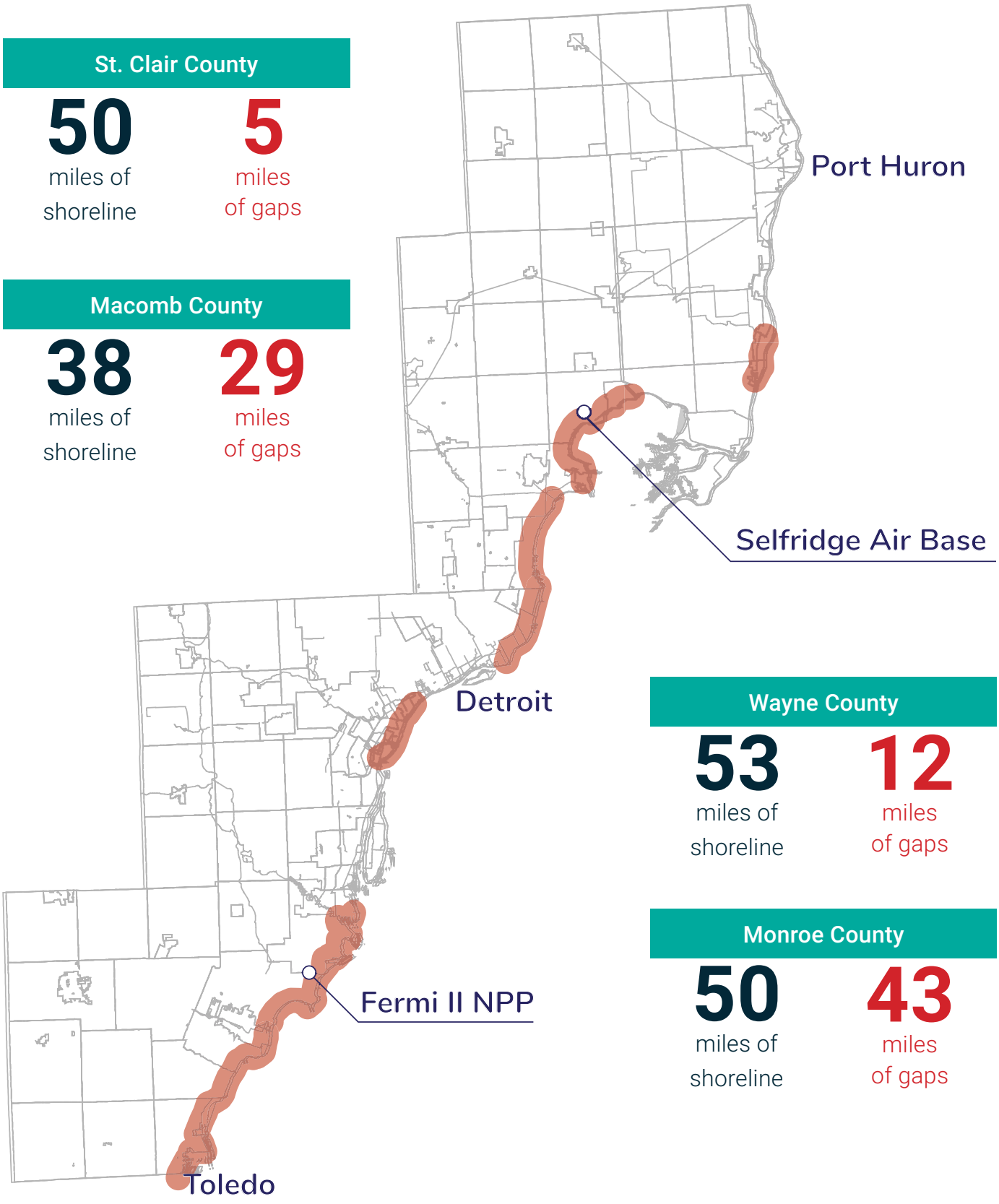
FILLING IN THE GAPS

A greenway running along the shoreline from Port Huron to Toledo can build on enthusiasm for trails in southeast Michigan, as well as existing and planned trail infrastructure in St. Clair, Macomb, Wayne, and Monroe counties. In exploring potential routes for a Port Huron to Toledo greenway, the project team has focused on connecting jurisdictions, ensuring safety for non-motorized transit users, and highlighting the diverse range of urban, industrial, agricultural, and residential landscapes that define the study area. Above all, the route aims to take advantage of the shorelines of Lake Huron, Lake Erie, Lake St. Clair, and the Detroit and St. Clair rivers, with the goal of bringing residents and visitors closer to the waterfront.

To begin the visioning process for a continuous pathway close to the shoreline, the project team took inventory of existing trail infrastructure within a ½-mile of the waterfront (see Appendix A). Where gaps in suitable greenways exist, meaning no sidewalk or road shoulder, the project team considered potential route options outside of the ½-mile corridor, along existing railways or highways, or within the road right-of-way. The team then highlighted economic, social, and environmental assets within each jurisdiction by choosing potential routes that intersect with downtown and commercial corridors, residential areas, schools, and parks.

Figure 5.1 details gaps in shoreline infrastructure. The following four examples do not comprise a comprehensive assessment of how to fill every gap in the region. Rather, they serve as examples of how a coordinated greenway effort might approach the study area's "low-hanging fruit," gaps that can be prioritized because of existing infrastructure, intersection with amenities, and/or their potential to bring residents closer to the shoreline. These four examples are representative of the shoreline corridor's frequent land uses: agricultural, industrial, residential, and institutional. This process could serve as a set of guidelines for future efforts to fill the remaining, more difficult gaps.

Figure 5.1 Infrastructural gaps along shoreline corridor



ROUTE OPTIONS
SELFRIDGE AIR NATIONAL GUARD BASE

Selfridge Air National Guard Base in Macomb County's Harrison Township demonstrates an example of an institutional gap. Covering 3,600 acres, the base presents a formidable obstacle for a shoreline greenway. Using the level of service, context, and connectivity measurements outlined previously, the project team mapped out two potential route options, one prioritizing proximity to the water, the other connecting to more amenities inland.

- The ***shoreline option*** skirts around the east side of the base, making use of existing level 5 trail infrastructure as well as an existing campground and marina. Pre-existing collaboration between Harrison Township and Selfridge officials suggests that this option might be a future possibility.
- The ***Mount Clemens option*** utilizes existing roads and trails along this longer route and intersects with a variety of amenities, such as the L'Anse Creuse Schools and the Mt. Clemens commercial corridor, but drifts far from the shoreline.

While each option makes use of some existing trail infrastructure, each would require additional infrastructure, such as bike lanes, to create level 3 infrastructure. Both options have distinct benefits and drawbacks, and decisions on which factors should take precedence rests with local stakeholders and implementation partners.

Selfridge Air National Guard Base

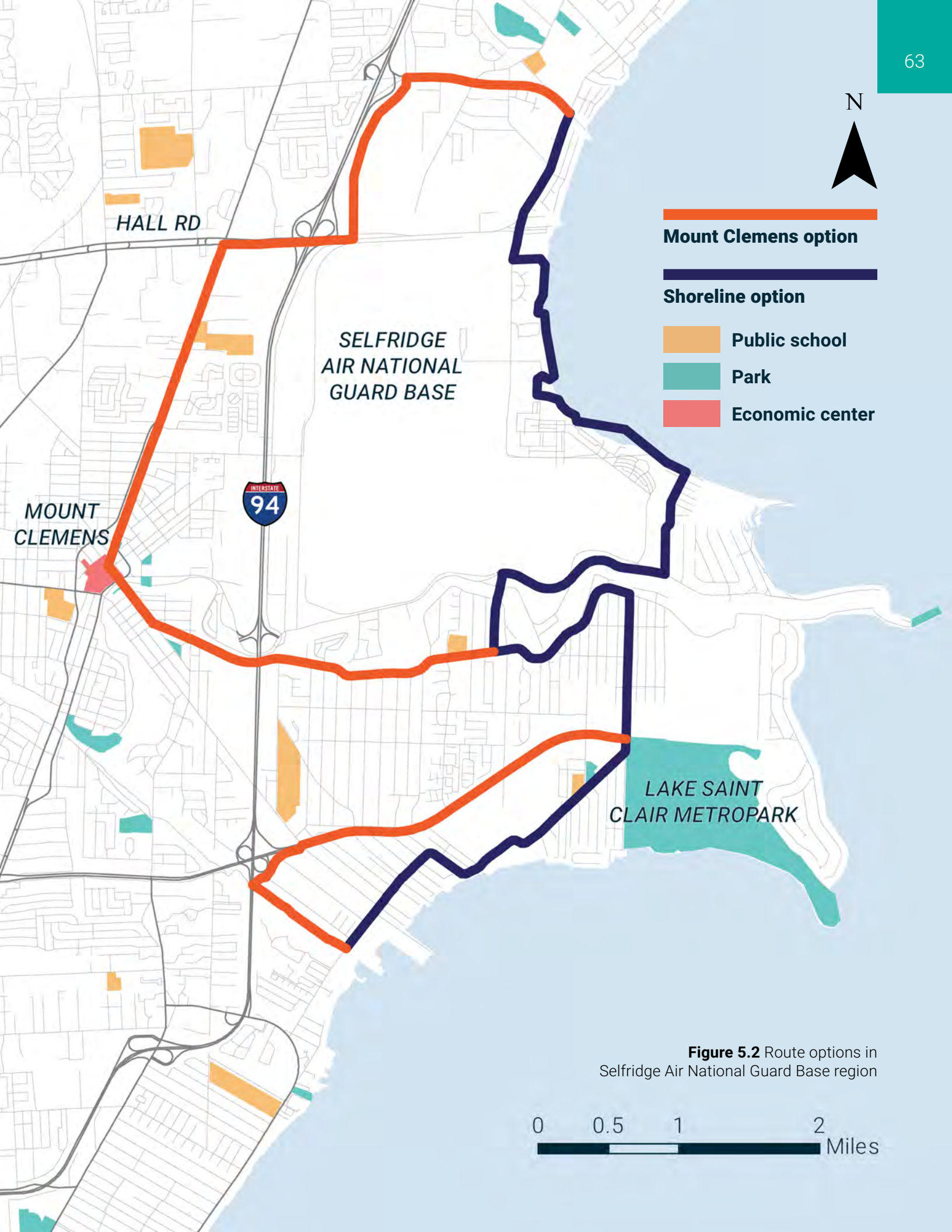


Figure 5.2 Route options in Selfridge Air National Guard Base region

A

B

C

D

ROUTE OPTIONS
GROSSE POINTE PARK/EAST DETROIT

The Grosse Pointe shoreline is an example of a residential gap. It contains numerous connector streets that often feature sidewalks, but rarely any other greenway infrastructure (see Image A to the left). The project team mapped out three potential route options through this area::

- The ***East Jefferson option*** runs along Jefferson Avenue and makes use of existing infrastructure such as sidewalks and protected bike lanes (Image B). This would require extending the current bike lanes on Jefferson, but a stretch of protected bike lane has recently been implemented along the corridor, demonstrating a precedent for expanding Jefferson's cycling infrastructure. This inland option provides the most direct route through the area, allowing users to traverse Grosse Pointe Park and Detroit in the fastest way possible, and offers the opportunity to travel through the Grosse Pointe Park and East Jefferson commercial corridors (Image C).
- The ***schools option*** asses through residential areas, traveling south of Jefferson and passing by Trombly Elementary in Grosse Pointe Park and Carstens Academy in Detroit, providing trail accessibility to both of those amenities.
- Finally, the ***parks option*** provides much closer access to the shoreline than the other routes, intersecting with a total of 10 parks (Image D).

The latter two options would require the widening of sidewalks to create a level 4 shared use path, or the addition of level 3 infrastructure such as bike lanes and sidewalks. Each option provides different opportunities and amenities for users.

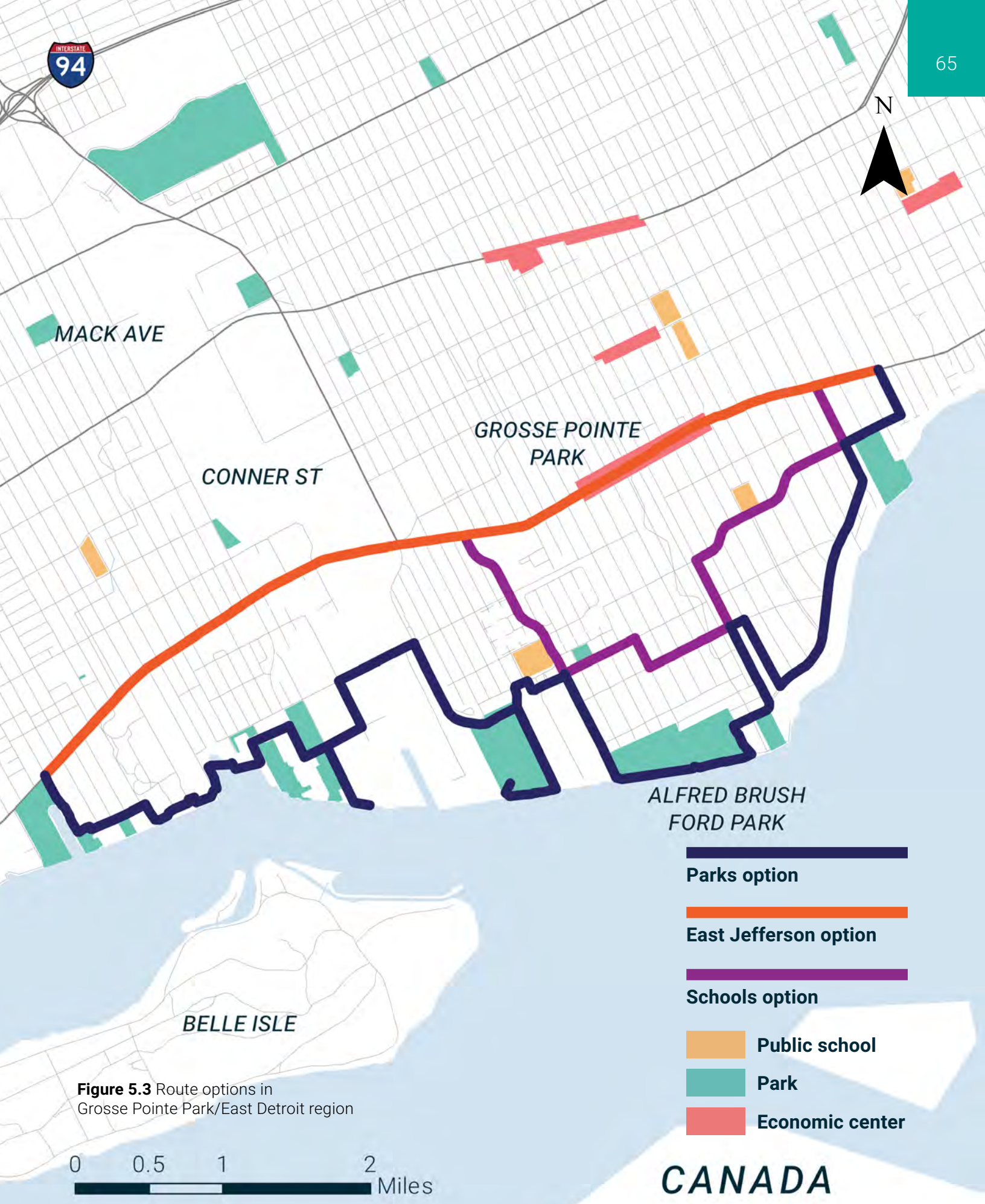


Figure 5.3 Route options in Grosse Pointe Park/East Detroit region

GREENWAY LESSONS

City Sculpture

Location: Midtown, Detroit

Local artist Robert Sestok's art aims to tell the story of Detroit's rich industrial history. To him, the metal and steel of Detroit's industrial facilities is archaeology. He also emphasizes the importance of maintenance — in his steel sculptures, the rust "stands as a metaphor that with a little maintenance, anything can be saved and restored for its higher purpose."
(Source: Allison Hendricks, Opportunity Detroit)

ROUTE OPTIONS
DOWNRIVER/SOUTHWEST DETROIT

The southwest Detroit and Downriver areas demonstrate a gap occupied by industrial facilities. Though the facilities themselves present potential barriers, a trail that brings users closer to them could pose an opportunity for industrial art, with educational signage describing the region's industrial history.

- The ***shoreline option*** brings users close to the waterfront and makes use of West Jefferson Avenue to efficiently connect Detroit to the Downriver region. Passing through the heart of economically distressed River Rouge, this route presents an opportunity for downtown revitalization.
- The ***Fort-Electric option*** makes use of wide rights-of-way on Fort and Electric streets, allowing for bike lanes or shared-use pathways, passing through downtown Lincoln Park and comes within ¼-mile of seven schools.
- The ***Ecorse Connector option*** deviates from the Fort-Electric route at West Outer Drive, taking advantage of Fort Street's infrastructure, passing Ecorse High School, then using the shoreline option for the remainder of the route.
- The ***industrial option*** is mostly identical to the shoreline option, but deviates in River Rouge, offering access to potential industrial art/educational opportunities.

Several of these options have received institutional support. The Downriver Linked Greenways Initiative (DLGI) has expressed interest in using West Jefferson Avenue, Marion Avenue, Outer Drive, Electric Avenue, and especially Fort Street as potential greenway routes. DLGI has conceptualized the Fort-Electric option as part of their planned Lincoln Park Greenway. Finally, the International Transmission Company (ITC) partnered with Canton Township to create trails stretching 3 miles of an overhead electric utility easement on Electric Avenue.

Figure 5.4 Route options in Downriver/Southwest Detroit region

Luna Pier Monroe County

ROUTE OPTIONS
SOUTH MONROE COUNTY

South Monroe County's gap is noteworthy because filling it would complete the southern end of the greenway vision. Three possible route options address this significant gap.

- The ***rail line*** and ***highway options*** make use of existing infrastructure to create quick, connective routes. The rail line option runs alongside an active railroad line, but presents challenges in terms of ownership, security, and user safety. The highway option runs parallel to I-75, and would resemble Wayne County's I-275 Metro Trail.
- The ***shoreline option*** is less direct than the first two options, but would bring users directly to the waterfront in Luna Pier and also show off Monroe County's rural character in areas like Laplaisance Road. Laplaisance Road mostly lacks a road shoulder, but expanding a stretch of road pavement to accommodate a bike lane or shared-use path is physically feasible.

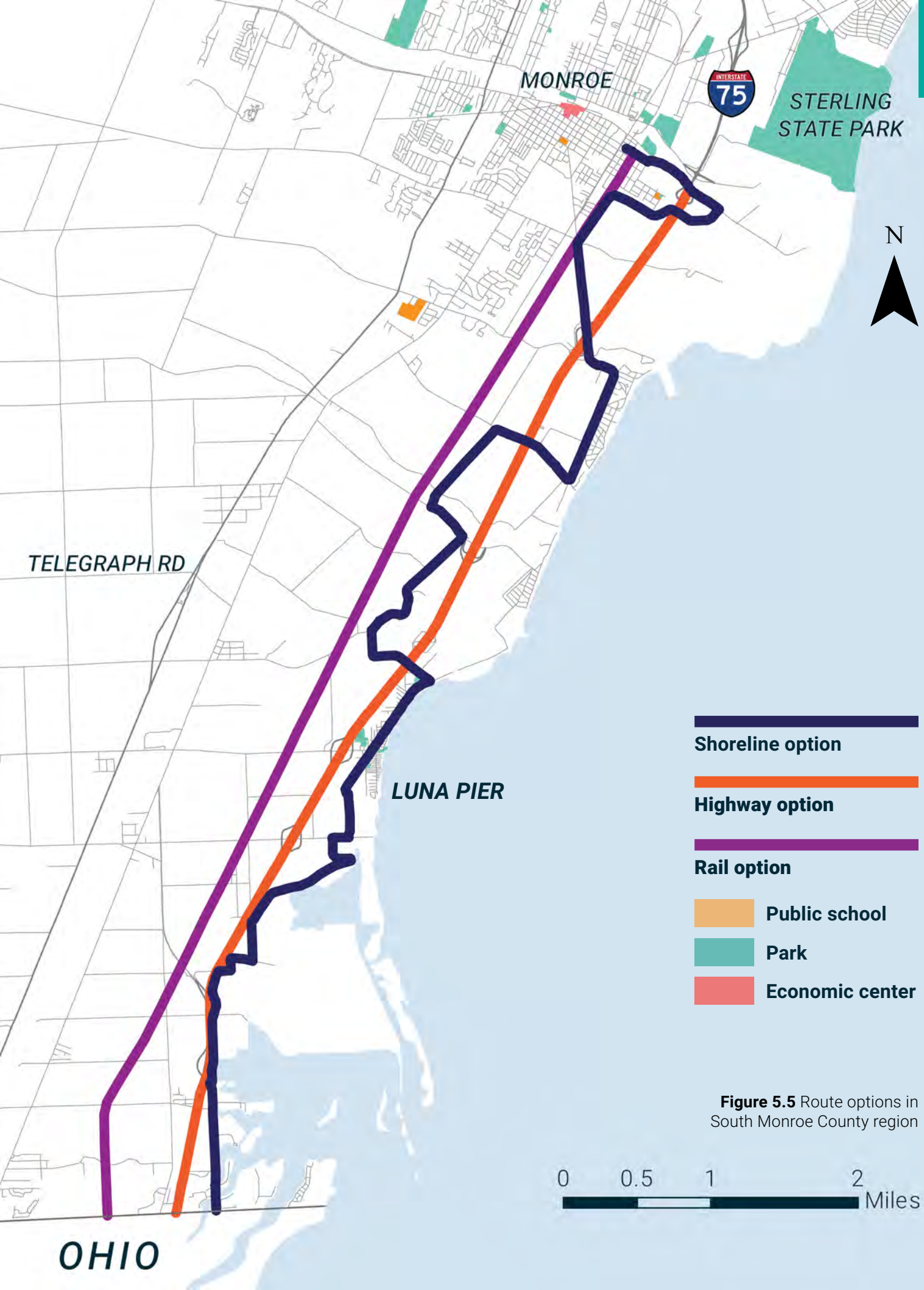


Figure 5.5 Route options in South Monroe County region

A complete greenway vision requires a strong governance, funding, and marketing strategy. There are dozens of separate jurisdictions through which a greenway could cross, each with an organizational structure that manages funding and promotion of parks and recreation. Whether by prioritization of trails at the state level or buy-in at the community level, each county and the jurisdictions within them require institutional mechanisms that serve to guide successful greenway planning, implementation, and marketing. This section explores possible governance structures, funding mechanisms, and marketing tools for a continuous Port Huron to Toledo greenway.

Lake Shore Drive Grosse Pointe Farms

GOVERNANCE

The task of creating a 150-mile greenway across four counties presents challenges. Of particular importance to this project is the task of establishing a sustainable and cohesive governance structure that can provide support for a greenway and its stakeholders.

Research into other greenway systems in Michigan and across the country suggests that having a unifying champion organization for this greenway, given its cross-county jurisdiction, is critical. Regardless of the specific governance structure, a Port Huron to Toledo greenway will require a single entity to take responsibility for:

- Organizing greenway efforts
- Collaborating with existing stakeholders
- Managing maintenance for greenway trails
- Coordinating funds
- Marketing

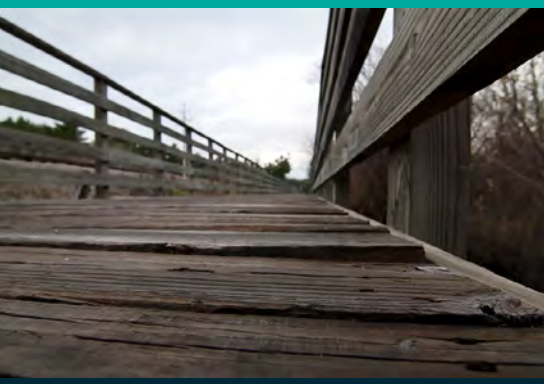
Whether such a champion is structured as a nonprofit, governmental agency, or private-public partnership, stakeholders from the multiple jurisdictions will need to coordinate with one another so as to stitch together the existing pieces of the greenway in a harmonious way.

GOVERNANCE RECOMMENDATIONS

Greenways across the country are as unique in their design as they are in their governance structure. **Table 5.1** details different models of governance and organizational structure drawn from research into greenway case studies.

Each of the governance options has individual advantages and drawbacks. For the purposes of a Port Huron to Toledo greenway, the project team believes that a ***metropolitan planning organization*** (MPO) or ***nonprofit*** governance model would be the most appropriate option. For example, in the Philly Circuit Trails system, the region's MPO, the Delaware Valley Regional Planning Commission, takes the lead on coordination between the nine counties. In southeast

GREENWAY LESSONS



TART Trails

Location: Grand Traverse and Leelanau Counties, Michigan
Length: Over 60 miles of trails, 8 multi-use trails and 1 crosstown bike route

Considered to be the gold standard for trail maintenance and development and community engagement within the state of Michigan, the Traverse Area Recreation and Transportation (TART) Trails was established as a 501(c)(3) nonprofit in 1998 when four individual trail groups merged. With seven staff members and 13 board members, TART Trails maintains a network of over 60 miles of trails.

TART Trails has been able to leverage the considerable grassroots enthusiasm for trails in the Grand Traverse region through their volunteer ambassador program. In the 2015 fiscal year, over 300 volunteers gave 5,550 hours of their time to TART Trails for trail maintenance and event support.

In addition to maintenance, Trail Ambassadors are responsible for educating users of the trails, offering directions, and serving as an example of proper trail etiquette. TART Trails engages users through numerous events such as the Tails to Trails 5K, and an active social media strategy across multiple platforms.

Michigan, SEMCOG is the MPO and could act as the champion for this effort.

A ***501(c)3 nonprofit*** greenway champion is another logical possibility. The nonprofit model has proven effective for greenways in the State of Michigan and across the country, such as the Traverse Area Recreation and Transportation (TART) Trails network, Fred Meijer Trail Network, and the East Coast Greenway. Within this type of structure, the nonprofit serves as a convener and marketer for the greenway, coordinating the maintenance and land acquisition with other stakeholders, such as city and county governments.

The Michigan Trails and Greenways Alliance (MTGA) has a track record as a convener for greenway efforts across the state, including the Great Lake to Lake Trails, and presents one logical leadership option. Another possibility is the Detroit Greenways Coalition (DGC). Currently a Detroit-specific organization, DGC could work toward a Lake Huron to Lake Erie greenway through expansion of their jurisdiction and scope.

Current efforts of the Michigan DNR with the Iron Belle Trail also present a strong opportunity for collaboration. The portion of a Port Huron to Toledo greenway between Belle Isle and Gibraltar overlap with the proposed hiking portion of the Iron Belle.

Table 5.1 Greenway governance options

Model	Description	Example
Nonprofit	Includes a board of trustees, officers (president, vice president, treasurer and secretary) and members	**Lansing River Trail** Lansing, Michigan
Metropolitan Planning Organization (MPO)	Governmental entity focused on transportation policy and planning; involves local government and authorities	**Circuit Trails Greenway** Metro Philadelphia, Pennsylvania and South New Jersey
Public Partnership	A group of public sector institutions agree to a partnership, such as two states or multiple regions, and create a Memorandum of Agreement that would outline their agreement and distribute responsibilities There is an agreement on a vision and a set of design/development guidelines. Partners work to implement the agreement within their respective jurisdictions. Maintenance and management are conducted in the same manner.	**The Iron Belle Trail** Ironwood to Belle Isle, Michigan
Strong-side Public-Private Partnership	Public sector takes the lead and partners with private sector partners (usually to secure funding or sponsorship) The public sector follows the implementation methods of a public partnership	**Cuyahoga Greenways** Cuyahoga County, Ohio
Strong side Private-Public Partnership	The case where the private sector is the lead group and partners with a “weak side” group of local partners Much of the design and implementation is championed and funded by the private sector, while the public sector takes on roles of operation and management	**Razorback Regional Greenway** Northwest Arkansas

GREENWAY LESSONS

Fred Meijer Trail Network

Location: West Michigan
Length: A network of over 125 miles

Fred Meijer, founder of the chain of Meijer superstores, offered a $3 million lead challenge gift to a capital campaign to the West Michigan Trails and Greenways Coalition, which would build, connect and create more green infrastructure throughout the area. The resulting network spans more than 125 miles throughout west- and mid-Michigan.

In addition to the lead challenge gift, the Meijer Foundation established an endowment to fund ongoing maintenance for the entire trail network. As an example of how a foundation that provided kickstarter support through covering maintenance costs, the Fred Meijer Trail Network also exemplifies how a trail council can organize and lead ongoing, sustainable and long term maintenance for the trails.
(Source: West Michigan Trails)

MAINTENANCE RECOMMENDATIONS

In addition to governance, maintenance is an important issue and can be structured in a variety of ways. **Table 5.2** outlines two options for maintenance structure.

If significant leadership from a foundation or other private sector entity can be leveraged, the creation of a maintenance endowment presents a sound concept. The Fred Meijer Trail Network follows this model, using a Trail Council comprised of the participating jurisdictions to decide allocation of maintenance funds.

Another popular approach is to coordinate volunteers and trail ambassadors for maintenance. Leveraging grassroots enthusiasm around trail segments is an effective way to both promote and maintain a greenway. The TART Trails network in the Grand Traverse Bay area is an example of a particularly effective volunteer trail maintenance program that could be looked to as a model for a Lake Huron to Lake Erie greenway.

FUNDING

A shoreline greenway in Southeast Michigan could ideally derive funding from a variety of sources (see **Table 5.3**). Working with four counties and at least 35 municipalities requires continued funding from federal, state, regional, and local sources for planning, implementation, signage, and maintenance. The timing and scale of any project can also affect the availability of particular funds.

Table 5.2 Greenway maintenance options

Model	Description	Example
Grassroots/Volunteer Ambassador	Volunteer-run state committees, state and local advocates, advocacy groups (get trail built and signed)	Traverse Area Recreation and Transportation (TART) Trails Traverse City, Michigan
Trail Council	Another committee of the Board, however, it is open to many different individuals and organizations that support the mission of the greenway	Fred Meijer Trail Network West and Mid-Michigan

Table 5.3 Greenway funding options

Source	Agency/Program	
Federal	• Federal Highway Administration Programs Transportation Enhancement Activities (TEA) Congestion Mitigation and Air Quality Improvement Program (CMAQ) Scenic Byways Program • Federal Transit Administration Programs Alternative Transportation in Parks and Public Lands • National Recreational Trails Fund Administered by the Michigan Department of Natural Resources (MDNR) • Recreational Trails Program Administered by the MDNR	
State	• Michigan Natural Resources Trust Fund • Research Improvement Fund	• MiRec Grants • Great Lakes Restoration Initiative
County/ municipal	• Transportation Improvements Program (TIP) • Parks and Recreation Budgets - Huron Clinton Metropolitan Authority (HCMA) - MDNR Parks and Recreation Division	• Downtown Development Authorities • Millages, Bonds, and Assessments • Utility Leases • Capital Improvements Program (CIP)
Private	• Hospital/Health Systems • Research/Corporate Donations	• Outdoor Recreation Retailers • Land Trusts
Partnerships	• Bridge to Bay Trail • Iron Belle Trail	• “Friends” Groups • Local Businesses
Other	• Crowdfunding	• Tourism

GREENWAY LESSONS

Razorback Regional Greenway

Location: Northwest Arkansas
Length: 36 miles

The funding mechanism for the Razorback Regional Greenway shows how federal and private dollars can be used to create a planning and design team, grant matching program, and greenway maintenance contract. The Northwest Arkansas Regional Planning Commission conceptualized the idea, using foundation funding to assemble a team to lead workshops and garner community feedback for visioning the expansions of the system. The team also generated cost-benefit analyses to demonstrate the economic impact for health and air quality improvements generated by the greenway.

The greenway cost approximately $38 million. Funds came from a federal transportation grant, and a matching grant and gift from the Walton Family Foundation. The Northwest Arkansas Regional Planning Commission received $15 million in a federal transportation grant from the U.S. Department of Transportation and Federal Highway Administration to support design, acquisition of rights-of-way, and construction.
(Source: Northwest Arkansas Trails)

Yet, factoring in the increasing enthusiasm for trails, number of historic sites, intersection of parks, connectivity to communities, and habitat preservation opportunities in Southeast Michigan, a range of funding opportunities appears feasible for a 150-mile shoreline greenway.

IMPLEMENTATION COSTS

According to Building Journal's Asphalt Driveway Calculator, one mile of eight-foot wide asphalt will cost approximately $105,000 ($3 per square foot) to install based on a 15% job cost, and the costs associated with excavation, base layers, and a top coat.[1]

Required permits and features, such as curbs and drainage ditches, will increase costs. Multiple engineers will also be required to design around the effects of frost and water on trail surfaces, and to consider the slopes, angles, and curves of paved walkways.

MAINTENANCE COSTS

According to the 2007 Statewide Greenways Maintenance Inventory and Case Studies report, maintenance expenditures, such as snow removal, pothole repair, and landscaping, for a trail range from $984 to $3,500 per mile. The report also states that volunteer maintained trails have the lowest cost-per-mile expenditure at $39 per mile compared to other forms of trail maintenance.[2]

The Asphalt Institute states that asphalt walkways require

resealing every 2-5 years depending on weather and pavement quality.[3] According to HomeAdvisor, an eight-foot wide, one-mile long paved path will cost between $4,224 to $6,758 to reseal.[4] However, a properly maintained asphalt surface should last approximately 20 years before it requires resurfacing, according to Associated Engineering Consultants.[5]

Appendix B includes a detailed list of funding sources awarded to other greenway projects in Michigan.

MARKETING

The parks, trails, and points of interest that line the southeast Michigan shoreline are marketed through a variety of strategies. While many of these assets are owned by larger organizations responsible for outreach and visibility, levels of promotion remain inconsistent.

Assets with stronger marketing efforts, as well as those managed by well-known entities, show much higher rates of usage than their less-advertised counterparts. Active marketing of a Port Huron to Toledo greenway will be critical to generating interest and usage.

DATA ANALYSIS

Through research of agency websites and social media profiles, in-person site visits, and information from stakeholder interviews, the team was able to get a baseline of existing marketing efforts within the region. The project team evaluated

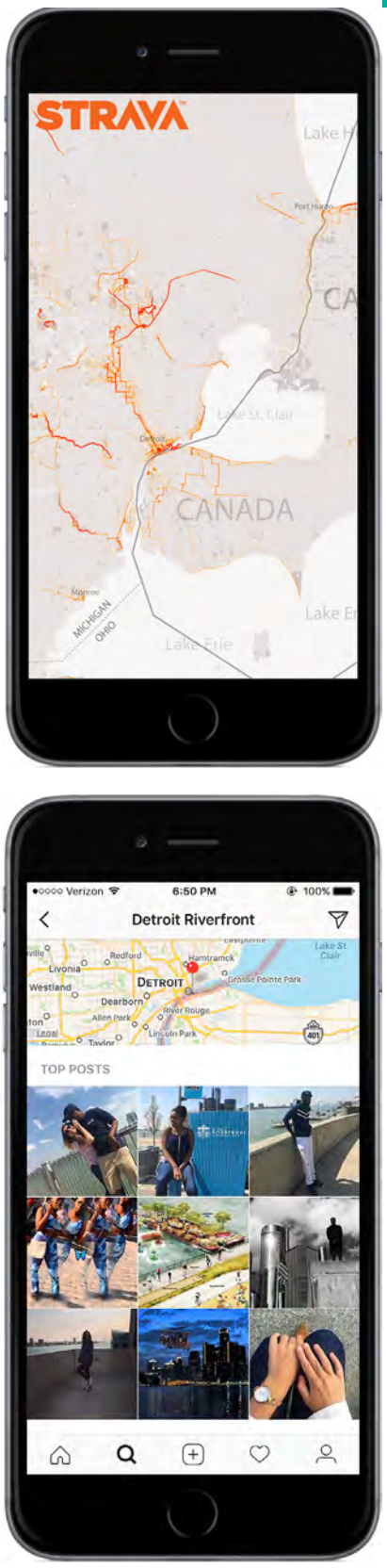


Figure 5.6 Examples of Strava "heat maps" (top) and Instagram mobile app (bottom)

GREENWAY LESSONS

The Circuit Trails

Location: Greater Philadelphia, Pennsylvania, and south New Jersey
Length: Planned 750 miles (300 complete)

The Circuit Trails network demonstrates how a robust, visible marketing campaign can generate community buy-in for a greenway system. The trails appear on social media regularly via a frequently updated blog, as well as Facebook, Instagram, and Twitter accounts. REI sponsored a "Circuit Trails Photo Challenge," in which trail users upload photos for a chance to win a $500 gift card — in the process promoting the network's scenic beauty.

Residents are invited to personally take part in the expansion of Circuit Trails by nominating trails they think should be part of the network. Finally, the Circuit Trails website features an extensive campaign toolkit that contains branding guidelines, as well as instructions for how to promote Circuit Trails on posters, billboards, T-shirts, mobile applications, and decals for public transportation. Much like Southeast Michigan, the Circuit Trails region features a kaleidoscope of different rural, suburban, and post-industrial urban landscapes, and their marketing approach demonstrates how seemingly disparate areas can be united under a single regional message: "Proud to Trail."
(Source: The Circuit Trails)

usage statistics from two mobile applications, Instagram and Strava, to assess how often people use parks and trails within the shoreline corridor. Instagram is a social media application that allows users to upload photos that contain a geographic tag (or geotag) indicating the user's location. Strava, a social network that allows runners and cyclists to upload routes and compete with one another, generates "heat maps" of where their users are running and cycling (see Figure 5.6).

While data from the two apps only represent a subset of potential greenway users, they provide an evaluation and comparison tool to ascertain where people are most active. Taken together, Instagram and Strava can paint a general picture of trail use in southeast Michigan. (See Appendix D for detailed social media data)

KEY FINDINGS

Much can be discovered by analyzing marketing efforts and success rates for existing southeast Michigan attractions.

Marketing is handled differently from asset to asset. Due to the wide range of unique marketing efforts across the region, there is a lack of cohesiveness in marketing between entities. For example, the Department of Natural Resources manages state parks, which are well-known, have specialized marketing campaigns and receive heavy visitor traffic, and the Huron-Clinton Metropolitan Authority markets the Metroparks system in a similar fashion. However, when a county or local jurisdiction is in charge of a park or trail, the marketing activity tends to be less visible.

Trail and park usage generally correlates with level of marketing. The majority of the existing Port Huron to Toledo route already receives a healthy level of traffic, but stronger marketing could increase usage for nearly half of the locations analyzed. Macomb County, responsible for the "Make Macomb Your Home" marketing campaign, sees the most usage for their parks and trails. Wayne County's marketing efforts are lackluster at the county and municipal level, but the county's population, sheer number of cultural assets, and the efforts of organizations with a local scope, such as the Detroit Riverfront Conservancy, do much to to fill the gap. In contrast, Monroe and St. Clair counties do little to market their trails, which receive a comparatively small amount of traffic.

Effective marketing and outreach makes a difference. While virtually all of the assets in Detroit enjoy unobstructed riverfront access, the parks under the purview of the Detroit RiverFront Conservancy show much higher usage statistics than their eastern Detroit counterparts. The RiverFront Conservancy has a robust marketing and outreach plan, whereas the eastern parks, which are operated by the city or county, currently receive limited, if any, marketing.

Some assets are organically successful despite limited marketing. Bishop Park in Wyandotte has the highest usage rate for a Wayne County park that is outside of Detroit, despite having no official internet presence outside of the City of Wyandotte's Parks and Recreation website. However, users of the park have organically generated a number of Instagram hashtags for the site, and created an unofficial Facebook page that boasts 24,000 check-ins to date. This shows that grassroots interest can be as effective as top-down organization or agency-led marketing.

In general, Strava heat map data mirrors Instagram usage data. Strava tracks data from people who use their application while long-distance cycling and running, representing only a subset of users for a potential Port Huron to Toledo greenway. Thus, longer and more bike-friendly routes, such as paved road shoulders, saw a boost, whereas more isolated assets with high tagging rates were less popular on a Strava map. Nonetheless, the Strava data, generally, support the findings from the Instagram data.

MARKETING RECOMMENDATIONS

After evaluating the data and looking at case studies from existing regional park and trail

BRANDING EXAMPLES

- **East Coast Greenway** (East Coast of USA) has very robust signage and branding throughout the system, but allows local partners limited leeway to add unique designs to East Coast Greenway-approved signage.

SOCIAL MEDIA EXAMPLES

- National Parks Service #FindYourPark (Hashtag)
- I Am Amsterdam (Sculpture)
- Great Lakes, Great Times (Sign)

(Source: CAAM Events)

systems across the country, the project team suggests the following recommendations for marketing a Port Huron to Toledo greenway:

Establish a strong, recognizable identity for the network. While naming a Port Huron to Toledo trail system this early in the process may lead to self-exclusion of area residents from the planning process, naming the vision plan could help to identify a brand and solidify the idea of the greenway in people's minds. In addition, creating a marketing toolkit with specifications for placement, sizing, and coloration of the greenway name and logo would help ensure a consistent and recognizable brand across the region.

Implement unique and consistent signage and wayfinding. Unique signage is critical to creating a unified trail system identity, and serves a practical purpose, assuring users that they are on the path.

Establish a strong social media presence for the system. An active and unified social media presence on platforms such as Twitter, Facebook, and Instagram is essential, and need not be expensive nor time-consuming. According to the market research resource Social Media Examiner, "84 percent of marketers found as little as six hours of effort per week was enough to generate increased traffic."[6]

Create and sell merchandise. Merchandise that is consistent with branding would act as a billboard for the system, and generate revenue for upkeep of the trail system and further marketing efforts.

Lead greenway users to participate in the marketing. Targeted social media hashtags, as well as small attractions or statues

that encourage pictures and postings, could spur organic marketing of the system among users and generate more interest in the system at a minimal cost.

CONCLUSION

Implementing a consistent marketing or branding effort would be highly beneficial for a continuous Port Huron to Toledo greenway. Greenway networks across the state and country that employ consistent and recognizable branding and an active social media strategy see higher rates of trail usage across the board. Implementing robust marketing efforts would be cost-effective and would likely follow the patterns of success in the data and case study examples.

MERCHANDISING EXAMPLES

- **TART Trails** (Traverse City, MI) -sells a small selection of pre-made merchandise
- **East Coast Greenway** (East Coast, USA) sells a wide variety of pre-made merchandise
- The **Detroit Riverfront Conservancy** (Detroit, MI) makes use of a vendor website to sell goods with customizable logos

USER PARTICIPATION EXAMPLES

- The **Detroit Riverfront Conservancy** has a strong social media marketing presence already. It would be strategic to have them promote the larger greenway network, building upon their already active user base.

(Source: Detroit Riverfront Conservancy)

ENDNOTES

[1] "Tips For Hiring The Best Asphalt Driveway Contractor." BuildingJournal.com. Accessed April 29, 2017. http://www.buildingjournal.com/asphalt-driveway-estimating.html/.

[2] Public Sector Consultants Inc (2007). "Statewide Greenways Maintenance Inventory and Case Studies."

[3] Minnesota Asphalt Pavement Association (2011). "Asphalt Paving Design Guide."

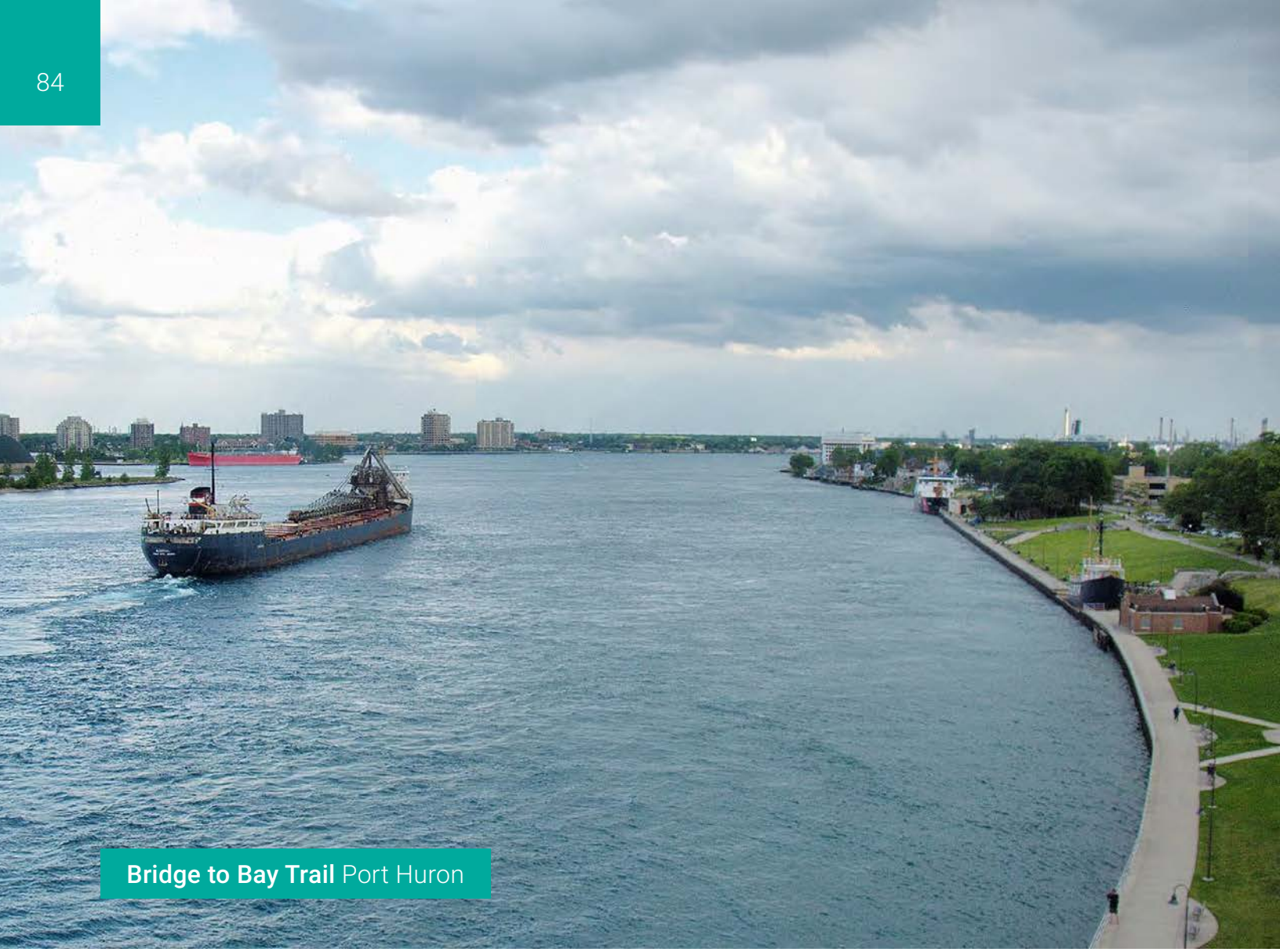
[4] "Submit and Get Matched to Pre-screened Asphalt & Driveway Sealing Pros." HomeAdvisor.com. Accessed April 29, 2017. http://www.homeadvisor.com/task.Asphalt-Sealing-Driveway-Paving.40881.html/.

[5] "Frequently Asked Questions." Associated Engineering Consultants. Accessed April 29, 2017. http://www.aecconsultants.com/faq.html/.

[6] "Search Engine Optimization Statistics." HubSpot. Accessed April 29, 2017. https://www.hubspot.com/marketing-statistics/.

Fort Gratiot Lighthouse Port Huron

6 COUNTY PROFILES



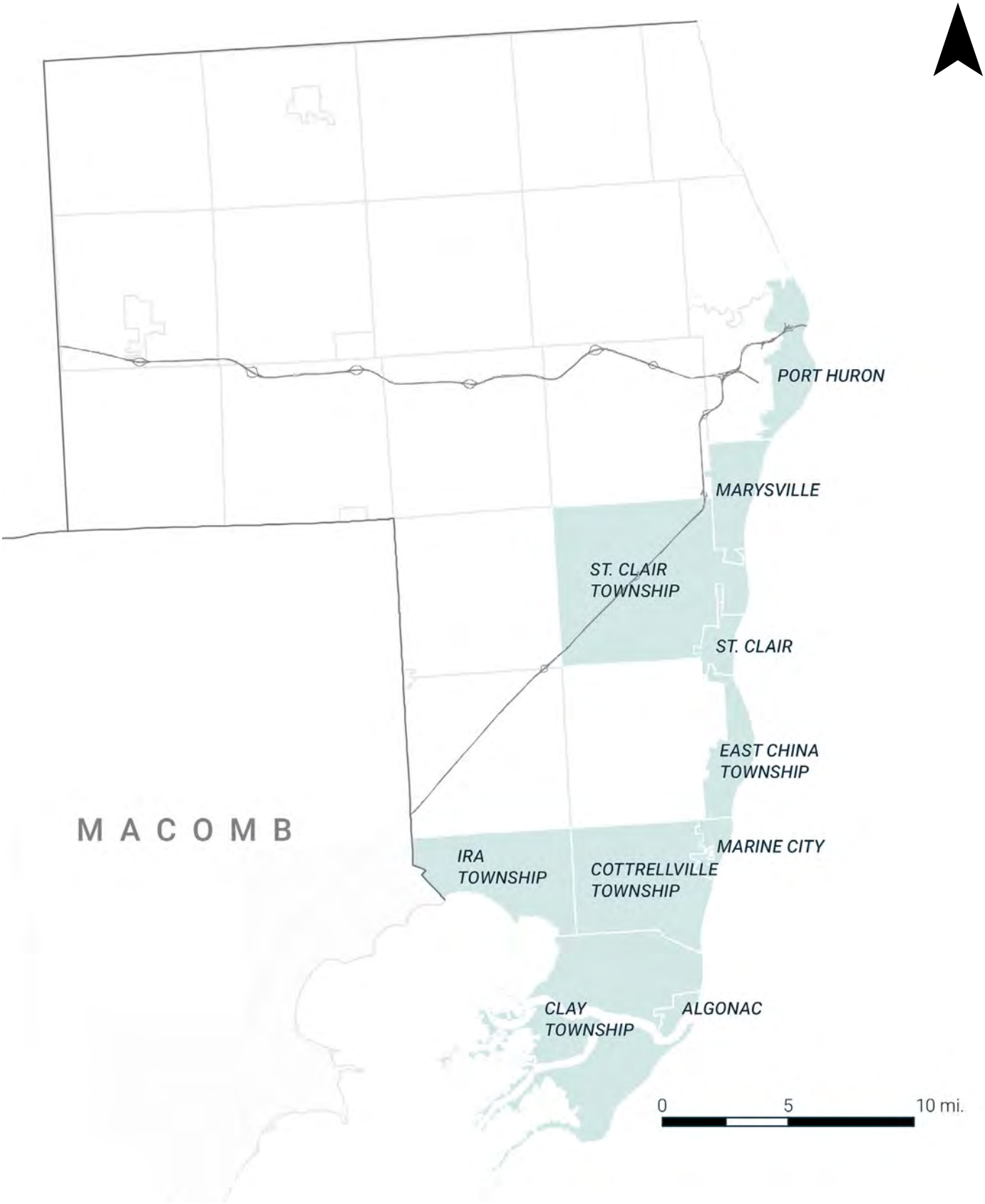
Bridge to Bay Trail Port Huron

ST. CLAIR COUNTY

St. Clair County is rural in character and home to several distinct shoreline downtowns. The county has a robust network of existing and planned trails with unparalleled access to its shoreline, and a dedicated countywide funding source for greenway development. Created in the 1990s via a countywide millage, the St. Clair County Parks and Recreation Commission (PARC) is the lead champion for greenways and parks within the county.

The centerpiece of greenway activity in the county is the Bridge to Bay Trail, a planned 54-mile greenway that runs along the county's shoreline from Port Huron to Marine City. The trail is well-received by residents for its ability to connect parks as well as beaches, schools, and commercial centers. The county continues to improve and maintain its park infrastructure as well as create new parks and trails.

Figure 6.1 St. Clair County shoreline jurisdictions



ST. CLAIR COUNTY BY THE NUMBERS

Total population **160,429**

Population along shoreline **80,891**

Land area **721 mi²**

Source: U.S. Census Bureau, American Community Survey 2015 (5-Year Estimates)

PHYSICAL LANDSCAPE

EXISTING TRAILS

- Bridge to Bay Trail
- Wadhams to Avoca Trail
- The Blueways of St. Clair
- US Bike Route 20

PLANNED TRAILS

- Bridge to Bay Extension
- Wadhams to Avoca — connection to Bridge to Bay Trail
- Macomb Orchard Trail — connection to Bridge to Bay Trail

KEY GAPS

- Much of what is considered a "trail" in the county is inconsistent, with road shoulders that disappear without warning. Large lengths of road shoulder stretch from New Baltimore to Algonac, Algonac State Park to Marine City, and St. Clair to Marysville
- Gaps exist in Algonac, Marine City, and north of St. Clair where there may be sidewalks, but no bike infrastructure

GREENWAY CHAMPIONS

- St. Clair County Parks and Recreation Commission
- Residents have been strong champions of the parks, voting to approve a parks millage
- Community Foundation of St. Clair County
- East China Township — pioneered the first 3-mile section of the Bridge to Bay Trail

CHALLENGES

- Improvement of trail quality; many are merely shoulders of a roadway
- Gaps in non-motorized infrastructure
- Poor wayfinding (especially in southern portions) for trail infrastructure

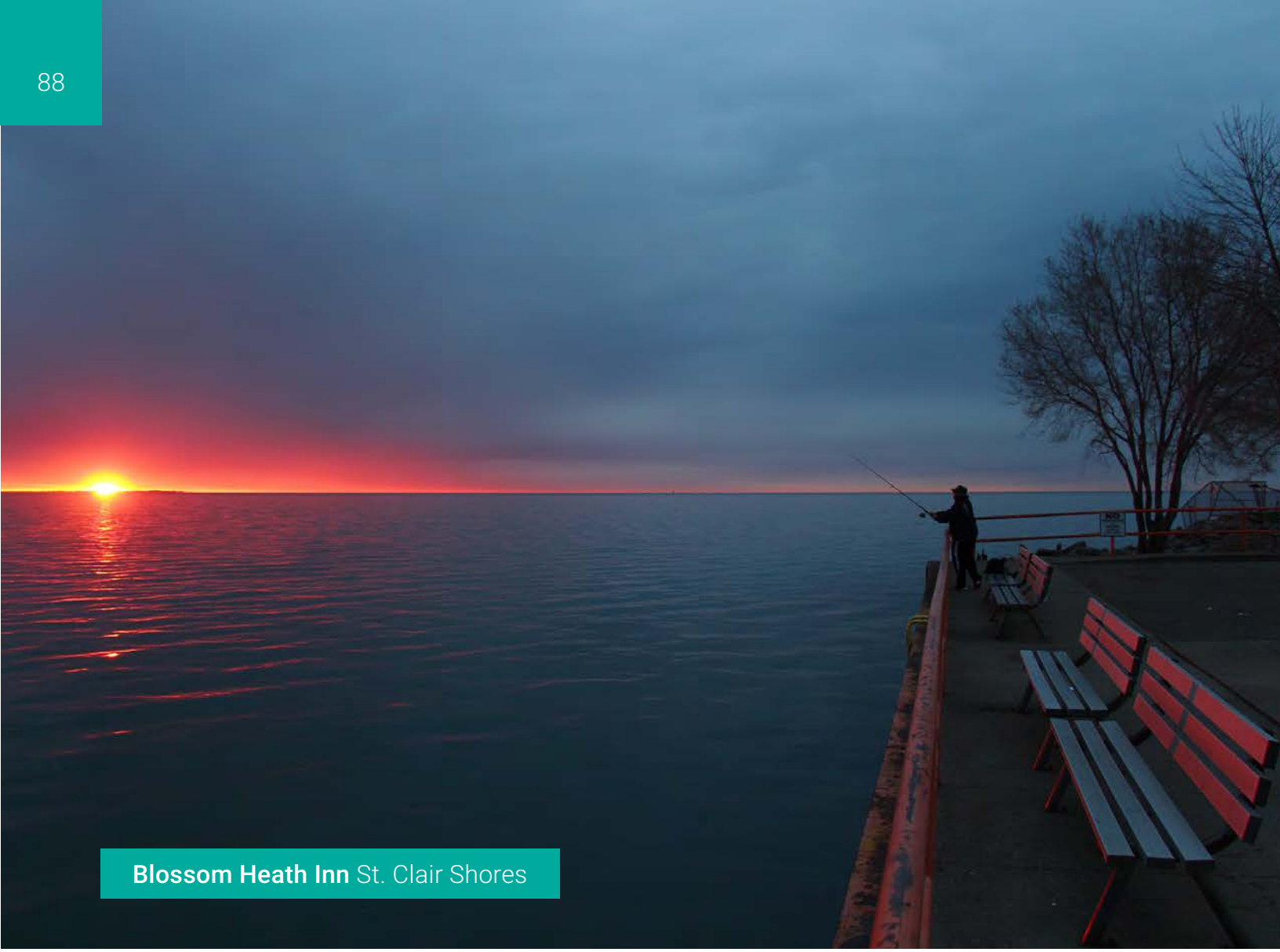
Palmer Park St.Clair

OPPORTUNITIES

- Existing support and funding millage for parks and greenways
- High level of public accessibility to waterfront
- Vast wealth of existing infrastructure and links between assets
- Presence of walkable communities along the waterfront
- The County is working to connect the Bridge to Bay Trail to the Macomb Orchard Trail as part of the Great Lake to Lake Trail from Port Huron to South Haven (along Gratiot Road)

RECOMMENDATIONS

- Better marketing of trails and green infrastructure, especially for the Bridge-to Bay-Trail, because the usage rates appear to be lower than surrounding counties
- Continue upgrading existing infrastructure deficiencies like road shoulders, shared-use or mode separated facilities



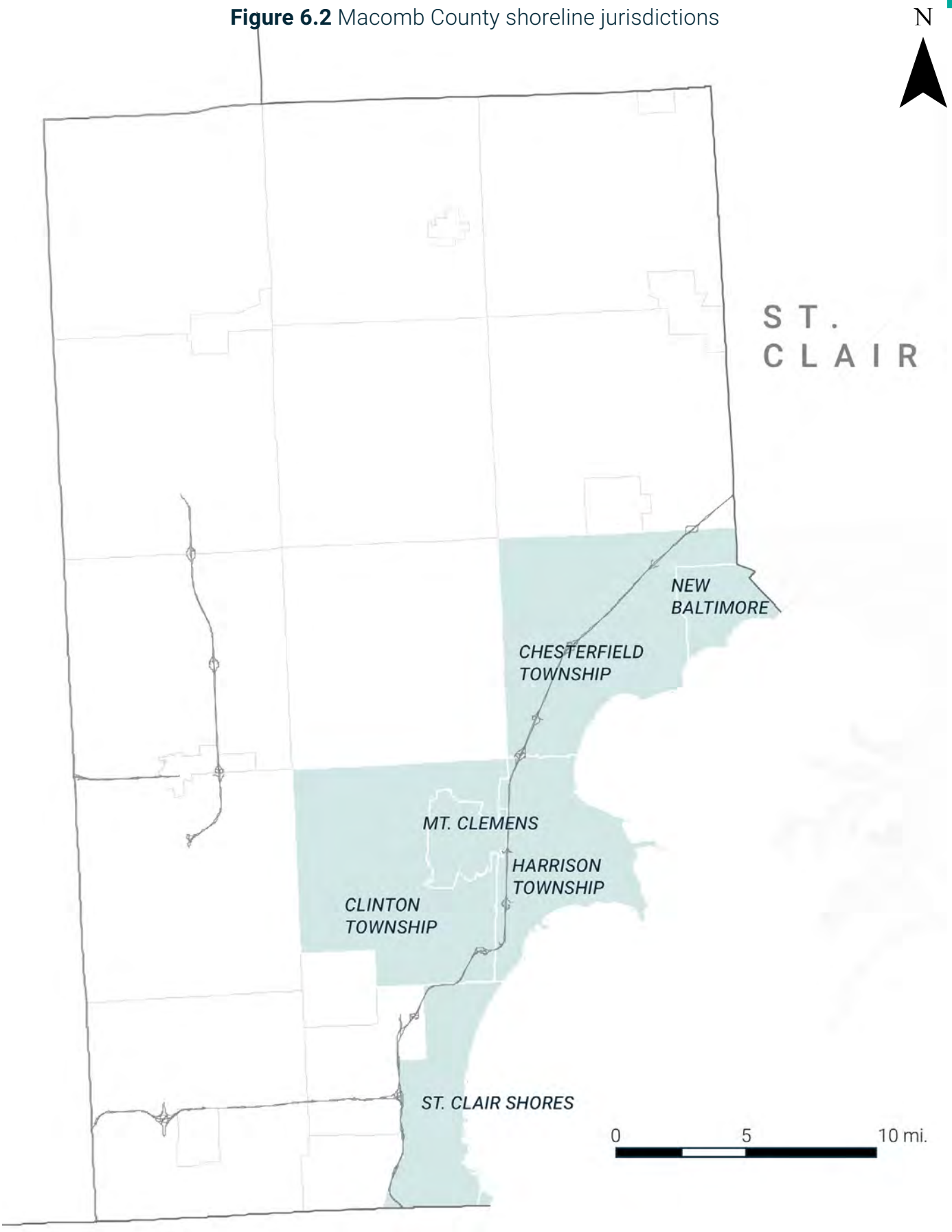
Blossom Heath Inn St. Clair Shores

MACOMB COUNTY

The second most populous county of the study area, Macomb County has grown more enthusiastic about nonmotorized transportation in recent years. Currently working on an update to their nonmotorized master plan, Mobilize Macomb, the county government is emphasizing environmental stewardship and creating public access to waterways and waterfronts across the county.

The county has already begun working with the Office of the Great Lakes, Clinton River Watershed Council, and Six Rivers Land Conservancy to redevelop the waterfront to promote greater public access and achieve community economic development objectives. In addition, there is resident support for new trails to connect to the popular Macomb Orchard Trail and Freedom Trail.

Figure 6.2 Macomb County shoreline jurisdictions



MACOMB COUNTY BY THE NUMBERS

Total population **854,689**

Population along shoreline **255,904**

Land area **479 mi²**

Source: U.S. Census Bureau, American Community Survey 2015 (5-Year Estimates)

PHYSICAL LANDSCAPE

EXISTING TRAILS

- Macomb Orchard Trail
- Freedom Trail
- Van Dyke Trail
- Dodge Park, connects to Freedom Trail
- Regional Trail System, connects to Dodge Park
- Chesterfield Township Trail
- Clinton River Water Trail
- Lake St. Clair Coastal Trail

PLANNED TRAILS

- Crosstown connectors on 9 Mile, 21 Mile, and 26 Mile Roads as a part of the Mobilize Macomb nonmotorized master plan update
- Planned waterfront access points every linear mile, as part of Mobilize Macomb update

KEY GAPS

- No continuous waterfront infrastructure for much of the county's shoreline

GREENWAY CHAMPIONS

- Macomb County Department of Planning and Economic Development
- Macomb County Parks and Recreation Department
- Macomb County Department of Roads
- City of St. Clair Shores
- Harrison Township
- Chesterfield Township
- City of New Baltimore

CHALLENGES

- Dense suburban areas such as Clinton Township and St. Clair Shores with private property along the waterfront
- Twenty miles of seawall
- No universal link along the waterfront

Lake St. Clair Metropark Harrison Township

- Security concerns at the Selfridge Air Base for a potential waterfront trail

OPPORTUNITIES

- Considerable enthusiasm for trails and nonmotorized transportation from county officials and residents
- Continuous Port Huron to Toledo greenway aligns with the county's initiative to re-engage with the waterfront and increase points of public access
- Assets such as Lake St. Clair Metropark, the Edsel and Eleanor Ford House, and the Nautical Mile in St. Clair Shores
- Several underutilized properties along the waterfront that could be incorporated into a greenway
- Selfridge Air Base interested in discussing waterfront public access along the base, and therefore might be less of a barrier than previously thought

RECOMMENDATIONS

- Create partnerships with governmental and nonprofit agencies within St. Clair County and Wayne County to develop and implement greenway linkages
- Create a Friends Group to assist the county with trail maintenance, event planning, and fundraising
- Continue to work with leadership at the Selfridge Base to develop, fund, and implement a greenway along the waterfront
- Consider the inclusion of a greenway along the waterfront within a seawall removal project, road project, or bridge project

RiverWalk Detroit

WAYNE COUNTY

In many ways, Wayne County is the heart of the southeast Michigan region, as it is home to Detroit, the largest city in the region and the state. Wayne County is the most populous county in the state of Michigan and includes the city of Detroit and a diverse array of suburban communities.

Home to a large number of hospitals, cultural institutions, universities, and the region's airport, Wayne County continues to a be a hub for the region. Wayne County, and the city of Detroit in particular, have numerous greenway champions that are actively stitching together a network of biking and pedestrian infrastructure that hug the waterfront, as well as connect more disparate neighborhoods to one another.

Figure 6.3 Wayne County shoreline jurisdictions

WAYNE COUNTY BY THE NUMBERS

Total population **1,778,969**

Population along shoreline **827,362**

Land area **612 mi²**

Source: U.S. Census Bureau, American Community Survey 2015 (5-Year Estimates)

PHYSICAL LANDSCAPE

EXISTING TRAILS

- Detroit RiverWalk
- Hines Park Bikeway
- Wyandotte Riverwalk
- I-275 Metro Trail
- HCMA East-West Connector

PLANNED TRAILS

- Iron Belle
- USBR 25
- Jefferson Avenue (bike lanes)
- Riverfront Route
- Detroit RiverWalk, east extension
- Inner Circle Greenway
- Gordie Howe International Bridge (bike lanes)
- Rouge River Gateway Greenway
- Ecorse Greenway
- Lincoln Park Greenway

KEY GAPS

- Jefferson Avenue and Lake Shore Drive in the Pointes
- Gabriel Richard Park to Grosse Pointe Park in Detroit, though bike infrastructure improvements are planned for Jefferson Avenue
- West Riverfront Park to city limits of Detroit

GREENWAY CHAMPIONS

- Downriver Linked Greenways Initiative
- Detroit Greenways Coalition
- Detroit RiverFront Conservancy
- Jefferson East, Inc.
- Villages CDC
- City of Detroit
- City of Wyandotte
- City of Flat Rock
- City of Dearborn
- City of Hamtramck
- Michigan Department of Natural

Detroit River International Wildlife Refuge Gibraltar

Resources (DNR)
- Kresge Foundation
- Community Foundation for Southeast Michigan
- Detroit Economic Growth Corporation
- Midtown, Inc.

CHALLENGES

- Obtaining the political will to route the greenway through the Pointe communities. Some portions of the most direct route along Jefferson Avenue may not have adequate right of way
- Private property along the riverfront between the MacArthur Bridge and Alter Road
- Heavy industry in Southwest Detroit along the riverfront
- Lack of funding for greenway projects in Out-Wayne County

OPPORTUNITIES

- Notable enthusiasm for greenways within the City of Detroit and the Downriver communities. Many funded greenway initiatives within the City of Detroit
- Considerable existing infrastructure along the waterfront
- Strong sense of collaboration among Downriver communities on greenway initiatives
- Addition of bike lanes along Lake Shore Drive when the seawall is updated in Grosse Pointe Farms

RECOMMENDATIONS

- Capitalize on historical, cultural, and natural amenities in county, which could be a big draw for a connected greenway able to access many of them.
- Leverage the work of the City of Detroit, Detroit Greenways Coalition, Detroit RiverFront Conservancy, to engage other stakeholders into a unified vision

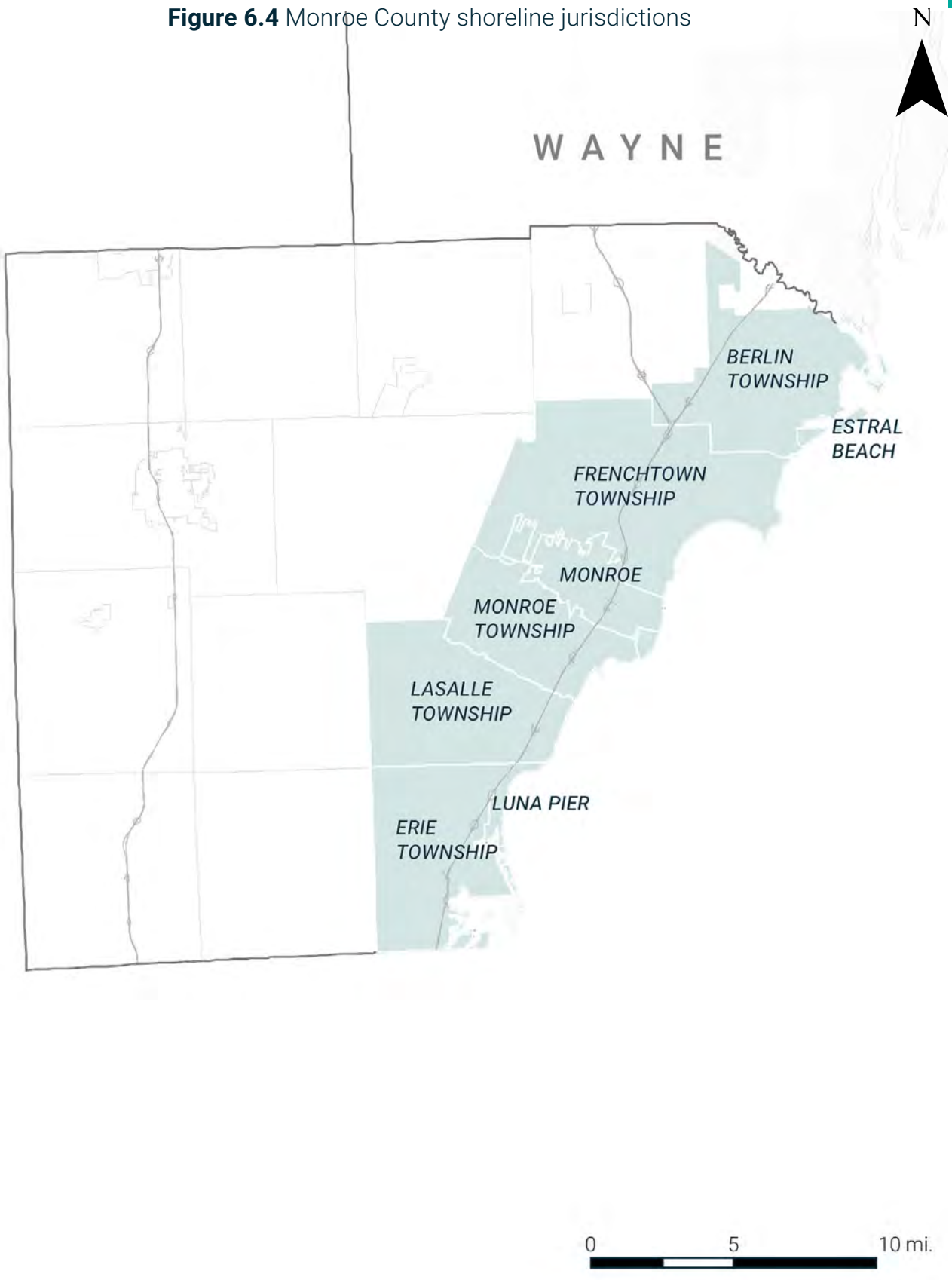
Enrico Fermi Nuclear Generating Station Frenchtown Township

MONROE COUNTY

Founded in 1817 and named after then-President James Monroe, Monroe County has deep roots in Michigan history. Residents consider the county's rural character to be central to the region's identity, a fact that is mentioned in nearly every Monroe jurisdiction's master plan.

The county represents a significant challenge to a continuous Port Huron to Toledo greenway, with little in the way of existing trail infrastructure and numerous barriers along the shoreline, including the Pointe Mouillee State Game Area and the Enrico Fermi Nuclear Generating Station. Despite these barriers, community outreach efforts have indicated that there is latent enthusiasm for trails in the county, and the Downriver Linked Greenways Initiative has pursued efforts to expand its trail network.

Figure 6.4 Monroe County shoreline jurisdictions



MONROE COUNTY BY THE NUMBERS

Total population **150,436**

Population along shoreline **75,116**

Land area **549 mi²**

Source: U.S. Census Bureau, American Community Survey 2015 (5-Year Estimates)

PHYSICAL LANDSCAPE

EXISTING TRAILS

- I-275 Connector
- River Raisin Heritage Trail
- Bicycle lanes along stretches of Dixie Highway near city of Monroe

PLANNED TRAILS

- Extension of I-275 Connector

KEY GAPS

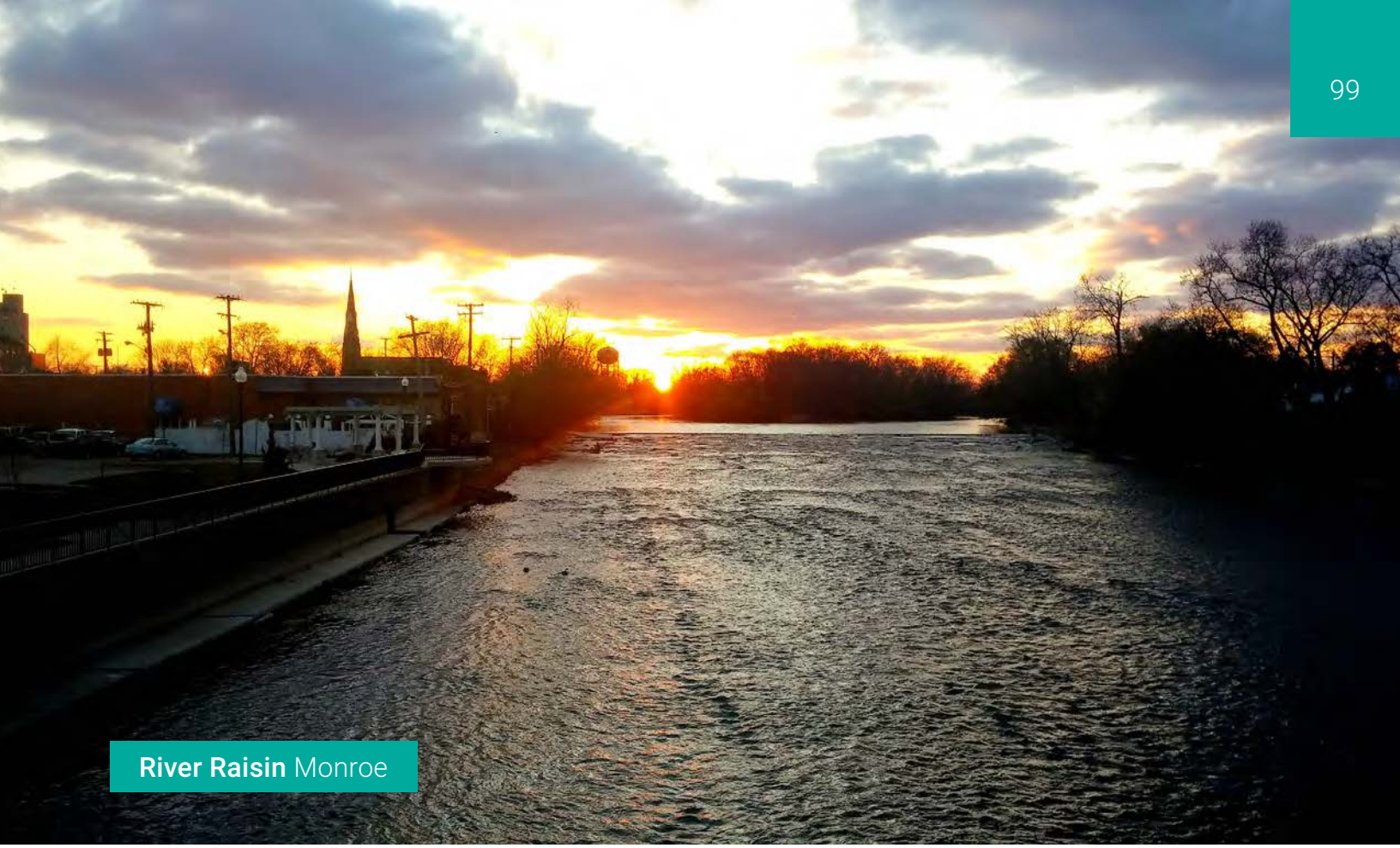
- Most of county, especially from south of the City of Monroe to the Ohio border, where there is no trail infrastructure whatsoever

GREENWAY CHAMPIONS

- Downriver Linked Greenways Initiative
- Monroe County
- City of Monroe
- Community Foundation of Monroe County

CHALLENGES

- Much of the coast contains obstacles such as the Enrico Fermi Nuclear Generating Station, Point Mouille State Game Area, and various wetlands, docks and businesses, so it is difficult to take advantage of proximity to Lake Erie — any greenway would likely have to be built farther inland
- A lot of private land with very little existing infrastructure — for much of the county, roads generally do not even have sidewalks, and there is limited bicycle lane access
- Funding — even when the county could obtain grants for prior greenway projects, they had difficulty obtaining matching funds at the local level and had to return them
- The most direct route north to south is to build alongside rail lines, but this is difficult in terms of pedestrian safety, as well as



River Raisin Monroe

obtaining permission from rail and utility companies to build within easements

OPPORTUNITIES

- Despite broad emphasis on rural character, Monroe County is not opposed to greenways — the residents really want trails, but nobody on a county-wide basis willing to administer and implement a trail network
- Heavy automobile reliance (close to 100% of all daily commutes) — more robust trail infrastructure could reduce vehicle miles traveled
- As opposed to heavily built-up areas like Wayne County, Monroe is already very green — any greenway that gets implemented already has a leg up in terms of natural beauty, and much planning in the county prioritizes conservation efforts

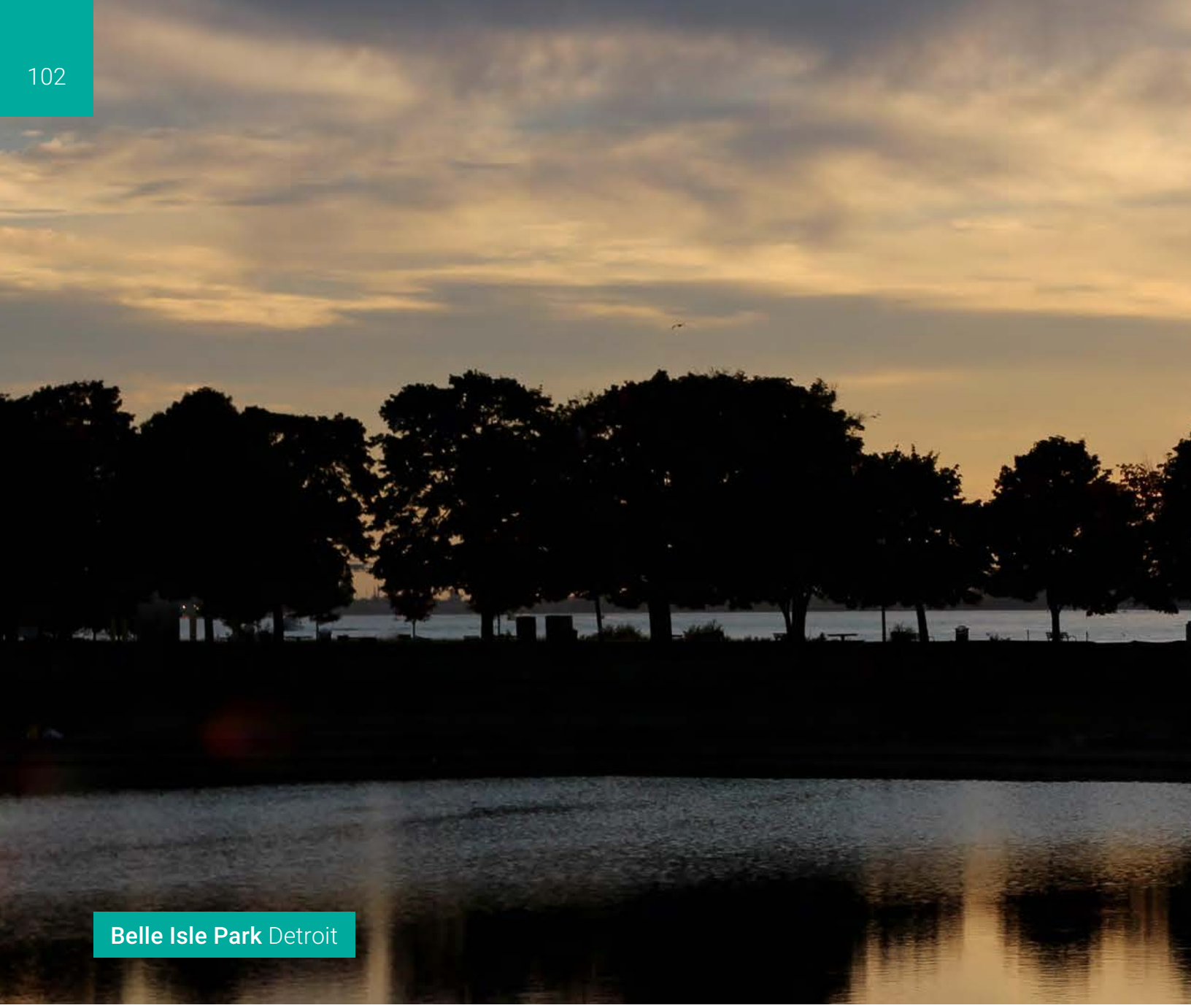
RECOMMENDATIONS

- There is by far the most groundwork to be done in this county, so the other three counties might have to "lead by example" — promoting trail efforts across the region under a single banner could awaken latent enthusiasm for trails and inspire the county to join in
- This county in particular would benefit from a centralized trail authority and a millage, to provide an institutional structure and guaranteed source of funding for trail efforts

Ambassador Bridge

7

CONCLUSION AND NEXT STEPS



Belle Isle Park Detroit

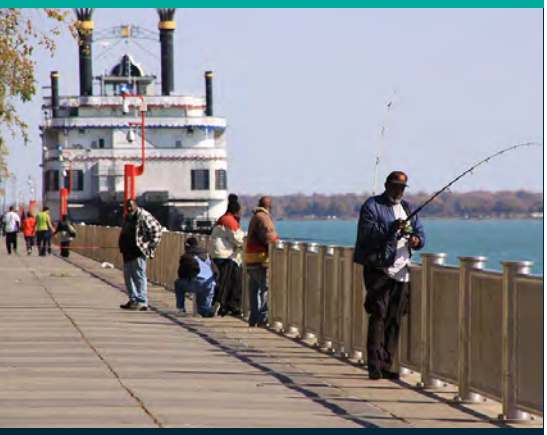
In this report, the project team has provided a detailed look into the regional context surrounding a Port Huron to Toledo greenway. Analysis of the literature on greenways showed that greenways provide a multitude of benefits to individuals, society, and the environment. An assessment of the southeast Michigan institutional landscape revealed an enthusiasm for trails among existing stakeholders in the region.

In assessing the physical landscape, the project team categorized types of gaps along the shoreline after exploring existing and planned trails. The team then envisioned potential routes, offering trail options based on the proximity to the water and open space, as well as proximity to schools, historical areas, and retail and population centers.

Through interviews and case study research, the team also gained insight into the best practices of governance, maintenance, funding, and marketing for trail systems across the country. Common among successful greenway systems is an organizational champion to spearhead the planning, organizing, and implementing of the greenway. In addition to governance structure, the project team's research explored numerous options for funding the greenway, as well as best practices in marketing and branding.

Turning to the future, the project team has identified some initial action steps for a Port Huron to Toledo greenway. They have been divided into systemwide recommendations and location-specific recommendations.

GREENWAY LESSONS



Detroit RiverWalk

Location: Detroit, Michigan
Length: 5½ miles planned (3½ miles complete)

In the heart of downtown Detroit, the Detroit RiverFront Conservancy (DRFC) has taken the lead to redevelop and reclaim the riverfront by improving, maintaining, and programming the Detroit Riverwalk.

The entire vision of the RiverWalk spans 5.5 miles, from Gabriel Richard Park to the Ambassador Bridge. To date, the DRFC has developed the East Riverfront from Gabriel Richard Park to the Joe Louis Arena. This 3½-mile path has attracted millions of visitors, offering a space for runners, walkers, bicyclists, and other users and connecting to parks, plazas (such as the Rivard Plaza), pavilions, and other pathways (such as the 2-mile urban trail, the Dequindre Cut), green spaces and other attractions.

Additionally, the DRFC uses the parks and pavilions for programs, including concerts, yoga classes, and festivals. In early 2017, DRFC leaders announced plans to expand the riverfront path, preserve riverfront property with green infrastructure and continue their work with inner-city linkages.

INSTITUTIONAL ACTION STEPS

- Identify a regional greenway champion or champions
- Convene shoreline jurisdictions by county to present greenway vision, answer questions, and garner support
- Meet with the state Department of Natural Resources to discuss Iron Belle Trail collaboration
- Select and capitalize on various funding sources available at the local, state, federal, public and private level
- Establish a marketing plan, including signage, social media platforms, and merchandise

GEOGRAPHIC ACTION STEPS

- Support St. Clair County in their completion of the Bridge to Bay Trail
- Explore the possibility (and funding options) for a trail at the Selfridge Air National Guard Base in Macomb County
- Incorporate a greenway with the reconstruction of the seawall in Grosse Pointe Farms
- Expand bike lane infrastructure on East Jefferson from Belle Isle to Grosse Pointe Park
- Work with Toledo partners (Toledo Metropolitan Area Council of Governments and the Ohio Department of Transportation), MDOT, and Adventure Cycling on designation of US Bike Route 25

Visioning and creating a continuous 150-mile greenway along the waterfront from Port Huron to Toledo is a large and overwhelming task, but the insight from this project's interviews, research, and case studies provided a wide range of options and approaches for making this vision a reality. The project team hopes that this document will stir interest among stakeholders and start the conversation to implement such a greenway in southeast Michigan.

8 APPENDICES

APPENDIX A: TRAIL MILEAGE CALCULATIONS

Data on existing and planned trails come from SEMCOG's "Bicycle_Pedestrian_Facilities" (2016) shapefile and Macomb County of Planning & Economic Development (2017).

Table 8.1 Existing Trail Mileage by County

	St. Clair	Macomb	Wayne	Monroe	Total
Level 1 Sidewalk	1.3	0.0	0.0	0.0	**1.3**
Level 2 Paved road Shoulder	15.9	0.0	0.0	0.0	**15.9**
Level 3 Bicycle lane	0.3	0.0	2.5	0.0	**2.8**
Level 4 Shared-use path within road right-of-way	12.1	2.6	2.3	0.0	**17.0**
Level 5 Standalone shared-use path	8.8	6.2	20.9	6.8	**42.8**
Total existing trails	85.4	89.8	163.2	18.3	**356.7**
Existing trails along shoreline corridor	38.4	8.8	25.8	6.8	**79.7**

Table 8.2 Planned Trail Mileage by County

	St. Clair	Macomb	Wayne	Monroe	Total
Total planned trails	107.0	18.1	165.8	12.7	**303.6**
Planned trails along shoreline corridor	9.7	0.4	46.4	0.0	**56.4**

APPENDIX B: FUNDING SOURCES

Table 8.3 Examples of Trail Funding Sources

Type of source	Name of source	Details
Federal	**U.S. Environmental Protection Agency (EPA)**	The EPA awarded the Wayne County Brownfield Redevelopment Authority a $200,000 grant to redevelop a DTE Energy Co. plant site in River Rouge. The redevelopment authority will attract developers to invest in housing within walkable neighborhoods that tie into the Gordie Howe International Bridge Project.[1]
State	**Michigan Natural Resources Trust Fund**	The Michigan Department of Natural Resources (DNR) was awarded a $2 million acquisition grant for the Iron Belle Trail.[2]
State	**Transportation Alternatives Program (TAP Funds)**	The Michigan Department of Transportation gave $4.7 million to seven projects along the Iron Belle biking trail.[2]
State	**Michigan Recreation Passport Grants**	Marquette County received $45,000 to finish the construction of trail segments along the Iron Belle/ North Country Trail in Marquette, Luce, and Ontonagon Counties. Marquette Charter Township received $45,000 to construct a trail through a park and to purchase picnic tables, benches and grills to go along the trail.[3]
County	**St. Clair County**	St. Clair County collects a millage rate (0.4956 mils) that generates approximately $2.6 million each year for parks and recreation facilities and programs. 25% of the funds are given to the 33 local governments for local parks and recreation projects.[4]
Local	**City of Monroe**	The City of Monroe used a $92,500 federal grant to build The East Elm Avenue Greenway to connect the River Raisin Heritage Trail. The federal government gave $440,000 with an additional $200,000 from city matching funds to improve the greenway's non-motorized system.[5]

(continued on next page)

Table 8.3 Funding Source Examples (Cont.)

Private	**Fred Meijer**	A gift of $3 million was given to the West Michigan Trails & Greenways Coalition to build the Fred Meijer Trail Network.[6]
Private	**Walton Family Foundation**	The foundation provided a $15 million grant matching program to build the Razorback Regional Greenway.[7]
Private	**Blue Cross Blue Shield of Michigan**	A $4,000 grant was given to the City of Trenton to enhance its bicycle network through the designation of shared bicycle and vehicle lanes, updating signage, and the purchase and installation of bike racks.[8]
Private	**Consumer's Energy Foundation**	A $25,000 grant was given to the Ottawa County Planning and Performance Improvement Department to build Spoonville Trail.[9]
Private	**DTE Energy Foundation**	DTE gave $5,000 for a trail to connect Elizabeth Park and Grosse Ile Parkway Bridge to the Refuge Gateway of the Detroit River International Wildlife Refuge in Trenton.[10]
Private	**Kresge Foundation**	The foundation awarded $3.5 million for the Conner Creek Greenway, Dequindre Cut, Midtown Loop, and Detroit Greenways Coalition.[11]
Partnerships	**Michigan Department of Natural Resources (DNR) (Iron Belle Trail)**	The DNR awarded $350,000 to 18 recipients for work on the Iron Belle Trail.[12]
Partnerships	**St. Clair County Parks and Recreation Commission (Bridge to Bay Trail)**	In addition to grant assistance, a portion of the commission's millage was used to designate and sign US Bike Route 20, and to assist Ira Township, St. Clair Township, and Port Huron with construction of the Bridge to Bay Trail.[13]
Crowdfunding	**Michigan Economic Development Corporation (MEDC)**	The Petoskey Community Trail Project received $22,500 from crowdfunding. The goal was to reach $20,000 to meet MEDC's $20,000 match. The campaign was launched by MEDC and Northern Lakes Economic Alliance Petoskey.[14]

APPENDIX B REFERENCES

[1] Rachel Bassler. "EPA Awards $200,000 Brownfield Grant for Redevelopment Plan in River Rouge, Mich." EPA. January 5, 2017. Accessed April 7, 2017. https://www.epa.gov/newsreleases/epa-awards-200000-brownfield-grant-redevelopment-plan-river-rouge-mich

[2] "FAQ about Michigan's Iron Belle Trail." Michigan Department of Natural Resources. Last modified March 13, 2015. https://www.michigan.gov/documents/dnr/Iron-Belle-FAQ_484098_7.pdf

[3] "Recreation Passport grants to fund $1.3 million in local park improvements." UPMatters. 2017. http://www.upmatters.com/news/local-news/recreation-passport-grants-to-fund-13-million-in-local-park-improvements/323319273

[4] St. Clair County Park and Recreation Commission. "St. Clair County Parks and Recreation Commission Millage Fact Sheet." Accessed April 7, 2017. http://www.mparks.org/Portals/0/Resource-Center/Funding/Millages/Millage%20Fact%20Sheet%20-%20St%20Clair%20County%20Parks.pdf

[5] George A. Brown. "A Historic Connection!- Monroe dedicates the River Raisin Heritage Trail linking the River Raisin Battlefield National Park to William C. Sterling State Park. City of Monroe. June 25, 2010. Accessed April 7, 2017. https://www.monroeccc.edu/news/10-11/The%20River%20Raisin%20Hertiage%20Trail%20-%20Mayor%27s%20Release%20-%2025JUN10.pdf

[6] Michigan Trails Magazine. 2016. "Fred Meijer Mid West Michigan Trail Network." Accessed April 7, 2017. http://www.westmichigantrails.com/Fred-Meijer-Mid-West-Michigan-Trail-Network-61.php

[7] Northwest Arkansas Trails. "Razorback Regional Greenway." Accessed April 7, 2017. https://www.nwatrails.org/trail/razorback-regional-greenway/

[8] Joann Gonyea. "Catalyst Award boosts fund for bike network." October 10, 2016. Accessed April 7, 2017. http://www.trentontrib.com/catalyst-award-boosts-fund-for-bike-network.html

[9] Council of Michigan Foundations. "Ottawa County awarded $25,000 for Spoonville Trail." April 26, 106. Accessed April 7, 2017. https://www.michiganfoundations.org/news/ottawa-county-awarded-25000-spoonville-trail

[10] Downriver Linked Greenways Initiative. "Funding secured for two downriver greenways." June 27, 2014. Accessed April 7, 2017. http://www.downrivergreenways.org/greenways-news-realease

[11] Kelli B. Kavanaugh. "Kresge grants $3.5M to three Detroit greenways: Conner Creek Greenway, Dequindre Cut, Midtown Loop." Metromode Metro Detroit. January 27, 2009. Accessed April 7, 2017. http://www.secondwavemedia.com/metromode/devnews/greenways17609.aspx

[12] Melissa Buzzard. "DNR awards $350,000 in third round of funding for projects along Michigan's Iron Belle Trail." Michigan Department of Natural Resources. March 16, 2017. Accessed April 7, 2017. http://www.michigan.gov/dnr/0,4570,7-153-10365_16839_71459-407148--,00.html

[13] St. Clair County Parks. "St. Clair County Parks Progress Report." St. Clair County. Summer 2010. Accessed April 7, 2017. https://www.stclaircounty.org/offices/parks/forms/SCCParks%20Summer%20issue%202.pdf

[14] Nate Pilon. "Crowdfunding campaign launched for Petoskey Community Trail." Michigan Economic Development Corporation. June 1, 2015. Accessed April 7, 2017. http://www.michiganbusiness.org/press-releases/crowdfunding-campaign-launched-for-petoskey-community-trail/

APPENDIX C: MARKETING

USAGE OF PARKS, TRAILS AND POINTS OF INTEREST

The project team mined Instagram data to find each existing asset's relevant location geotag and hashtags, and ranked usage based on how many posts were made to them. Hashtagged posts were counted, whereas geotagged posts were arranged according to light, moderate, or heavy usage.

IDENTIFYING MARKETING IMPROVEMENT NEEDS

By combining and evaluating the two metrics of Instagram data and comparing each asset in one visual, the project team determined areas of weakness. Any asset that had lower than "Heavy" usage on its geotag, and under 1,000 posts to its hashtag has been identified as "in need of marketing improvement."

Table 8.4 Trail Marketing Overview

County	Number of parks, trails and points of interest	In need of marketing improvement	
St. Clair	9	6	66.7%
Macomb	4	1	25%
Wayne	20	6	30%
Monroe	3	2	66.7%
Total	**36**	**15**	**41.7%**

Table 8.5 Trail Data from Instagram

County	Trail name	Location	Geotag?	Geotag use	Hashtag	Hashtag posts
St. Clair	Bridge to Bay Trail	multiple	No	N/A	#BridgeToBayTrail	7
	Wadhams-to-Avoca Trail	multiple	Yes	Moderate	#WadhamsToAvocaTrail	119

Table 8.5 Trail Data from Instagram (Cont.)

	Blue Water Riverwalk	Port Huron	Yes	Heavy	#BlueWaterRiverWalk	165
	Thomas Edison Park	Port Huron	No	N/A	Too generic to for accuracy	0
	Kiefer Park	Port Huron	Yes	Light	#KieferPark	3
	Palmer Park (and Boardwalk)	St. Clair	Yes	Light	Too generic for accuracy	0
	East China Township Park	East China	Yes	Light	Too generic for accuracy	
	Algonac State Park	Marine City	Yes	Heavy	#AlgonacStatePark	219
	St. John's Marsh Wildlife Area	Clay	Yes	Light	#StJohnsMarsh	160
Macomb	Macomb Orchard Trail	multiple	Yes (multiple)	Moderate	#MacombOrchardTrail	509
	Lake St. Clair Metropark	Harrison	Yes	Heavy	#LakeStClairMetropark	630
	Veterans Memorial Park	St. Clair Shores	Yes	Heavy	Too generic for accuracy	0
	Lakefront Park	St. Clair Shores	Yes	Heavy	Too generic for accuracy	0
Wayne	The War Memorial	Grosse Point Farms	Yes	Heavy	Too generic for accuracy	0
	Edsel & Eleanor Ford House	Grosse Point Shores	Yes	Heavy	#Edsel[andEleanor]Ford-House	541
	Alfred Brush (AB) Ford Park	Detroit	Yes	Moderate	#ABFordPark	8
	Erma Henderson Park	Detroit	Yes (as "Erma Henderson Marina")	Moderate	No	0
	Gabriel Richard Park	Detroit	Yes	Heavy	#GabrielRichardPark	63
	Mount Elliot Park	Detroit	Yes	Heavy	#MtElliorPark	51
	Chene Park [Concert Venue]	Detroit	Yes	Heavy	#ChenePark	16,459
	Dequindre Cut	Detroit	Yes (multiple)	Heavy	#DequindreCut	5,759
	Milliken State Park and Harbor	Detroit	Yes	Heavy	#MillikenStatePark	149
	Detroit Riverwalk [Riverfront]	Detroit	Yes (as "Detroit Riverfront")	Heavy	#DetroitRiverwalk #DetroitRiverfront	6,698 5,826
	West Riverfront Park	Detroit	Yes	Heavy	#WestRiverfrontPark	275
	Riverside Park	Detroit	Yes	Heavy	Too generic for accuracy	0
	Historic Fort Wayne	Detroit	Yes	Heavy	#HistoricFortWayne	526
	Belanger Park (DTE River Rouge)	River Rouge	Yes	Light	#BelangerPark	18
	John D. Dingell Park	Ecorse	Yes	Light	No	0

Table 8.5 Trail Data from Instagram (Cont.)

Monroe	I-275 Metro Trail	multiple	Yes (as "I-275 bike trail")	Moderate	Various	10
	Bishop Park	Wyandotte	Yes (as "Wyandotte Bishop Park")	Heavy	#BishopPark	2,206
	Elizabeth Park	Trenton	Yes	Heavy	Too generic for accuracy	0
	Detroit International Wildlife Refuge	Grosse Ile Twp.	Yes	Light	No	0
	Lake Erie Metropark	Brownstown Charter	Yes	Heavy	#LakeErieMetropark	795
	Point Mouillee State Game Area	South Rockwood	Yes	Moderate	#PointMouillee	43
	River Raisin Heritage Trail	Monroe	Yes	Light	#RiverRaisinHeritageTrail	12
	Sterling State Park	Monroe	Yes	Heavy	#SterlingStatePark	1,389

APPENDIX D: COUNTY AND SHORELINE DEMOGRAPHICS

(Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2015)

Table 8.6 St. Clair County Population

Jurisdiction	Population	Population density (per square mile)	Female	Male
Port Huron	29,508	3,651	50.8%	49.2%
Marysville	9,797	1,340	51.2%	49.9%
St. Clair Township	6,728	175	49.9%	50.1%
St. Clair	5,394	1,840	48.3%	51.7%
East China Township	3,737	567	52.0%	48.0%
Marine City	4,172	1,942	49.0%	51.1%
Cottrellville Township	3,507	168	53.5%	46.5%
Clay Township	8,898	251	50.1%	49.9%
Algonac	4,063	2,839	48.7%	51.3%
Ira Township	5,087	298	48.8%	51.2%
Shoreline jurisdiction total	80,891	1,307	50.2%	49.9%
County total	**160,429**	**222**	**50.4%**	**49.6%**

Table 8.7 St. Clair County Age Breakdown

Jurisdiction	Under 18	18-34	35-54	55 - 74	75+
Port Huron	23.7%	24.0%	25.3%	20.4%	6.6%
Marysville	22.4%	16.9%	26.8%	24.9%	9.1%
St. Clair Township	22.5%	15.3%	29.6%	26.4%	6.2%
St. Clair	23.3%	18.4%	30.1%	21.2%	7.0%
East China Township	16.5%	12.7%	29.9%	26.2%	14.7%

Table 8.7 St. Clair County Age Breakdown (Cont.)

Marine City	21.2%	18.2%	30.8%	22.6%	7.2%
Cottrellville Township	22.0%	15.7%	29.2%	24.7%	8.4%
Clay Township	16.8%	16.2%	26.8%	31.3%	8.9%
Algonac	16.5%	19.4%	24.0%	33.8%	6.3%
Ira Township	20.0%	21.2%	28.4%	24.6%	5.7%
Shoreline total	20.5%	17.8%	28.1%	25.6%	8.0%
County total	**22.3%**	**18.6%**	**28.3%**	**23.9%**	**6.9%**

Table 8.8 St. Clair County Race and Ethnicity

Jurisdiction	White alone	Black or African American	Asian	Other	Hispanic or Latino
Port Huron	84.3%	7.8%	1.2%	6.7%	5.2%
Marysville	97.5%	0.2%	1.2%	1.2%	0.9%
St. Clair Township	97.3%	0.1%	0.7%	1.9%	1.6%
St. Clair	96.6%	1.0%	1.2%	1.2%	2.2%
East China Township	95.3%	3.5%	0.0%	1.2%	0.4%
Marine City	97.8%	0.5%	0.0%	1.6%	0.7%
Cottrellville Township	99.2%	0.0%	0.0%	0.8%	0.3%
Clay Township	98.6%	0.0%	0.5%	0.9%	0.5%
Algonac	98.2%	0.1%	0.5%	1.2%	1.2%
Ira Township	96.6%	0.6%	1.1%	1.7%	0.6%
Shoreline total	96.1%	1.4%	0.6%	1.8%	1.4%
County total	**93.6%**	**2.2%**	**0.6%**	**3.6%**	**3.1%**

Table 8.9 St. Clair County Economic Factors

Jurisdiction	Median household income	Unemployment rate	Poverty status (% living in poverty, ages 18-64)	Vacancy rate
Port Huron	$33,674	14.7%	27.7%	11.5%
Marysville	$53,611	6.0%	8.8%	5.6%
St. Clair Township	$74,623	6.7%	4.5%	6.1%
St. Clair	$56,449	7.3%	13.3%	8.1%
East China Township	$52,754	8.4%	14.4%	13.1%

Table 8.9 St. Clair County Economic Factors (Cont.)

Marine City	$40,240	9.1%	14.2%	8.5%
Cottrellville Township	$51,218	9.8%	13.4%	11.3%
Clay Township	$55,039	9.0%	8.6%	29.6%
Algonac	$40,733	10.4%	16.2%	12.9%
Ira Township	$65,226	13.8%	13.0%	12.4%
Shoreline total	$52,356.70	9.5%	13.4%	11.9%
County total	**$49,730**	**10.4%**	**14.4%**	**10.8%**

Table 8.10 Macomb County Population

Jurisdiction	Population	Population density (per square mile)	Female	Male
New Baltimore	12,212	2,650	52.0%	48.0%
Chesterfield Township	44,079	1,598	50.3%	49.7%
Harrison Township	24,801	1,716	51.8%	48.2%
Clinton Township	98,543	3,507	53.7%	46.3%
Mt. Clemens	16,381	4,025	50.7%	49.3%
St. Clair Shores	59,888	5,154	51.5%	48.6%
Shoreline total	**255,904**	**3,108**	**51.7%**	**48.4%**
County total	**854,689**	**1,784**	**51.4%**	**48.6%**

Table 8.11 Macomb County Age Breakdown

Jurisdiction	Under 18	18-34	35-54	55-74	75+
New Baltimore	27.4%	16.8%	34.0%	17.3%	4.5%
Chesterfield Township	24.8%	20.3%	31.1%	19.3%	4.5%
Harrison Township	18.9%	20.2%	28.5%	25.8%	6.6%
Clinton Township	19.8%	21.9%	26.9%	22.9%	8.5%
Mt. Clemens	19.9%	22.1%	22.9%	22.8%	5.4%
St. Clair Shores	18.9%	20.6%	26.8%	23.8%	10.0%
Shoreline total	**21.6%**	**20.3%**	**28.4%**	**22.0%**	**6.6%**
County total	**22.2%**	**20.8%**	**28.4%**	**21.7%**	**7.0%**

Table 8.12 Macomb County Race and Ethnicity

Jurisdiction	White alone	Black or African-American	Asian	Other	Hispanic or Latino
New Baltimore	96.4%	0.6%	0.9%	2.2%	2.7%
Chesterfield Township	91.1%	4.9%	1.2%	2.9%	2.9%
Harrison Township	87.6%	8.8%	0.3%	3.3%	3.1%
Clinton Township	80.3%	15.0%	2.0%	2.7%	2.5%
Mt. Clemens	68%	26.7%	1.9%	3.4%	2.3%
St. Clair Shores	92.0%	4.9%	0.9%	2.3%	1.7%
Shoreline total	85.9%	10.2%	1.2%	2.8%	2.5%
County total	**83.2%**	**10.3%**	**3.5%**	**3.1%**	**2.4%**

Table 8.13 Macomb County Economic Factors

Jurisdiction	Median household income	Unemployment rate	Poverty status (% living in poverty, ages 18-64)	Vacancy rate
New Baltimore	$77,997	4.0%	5.9%	3.7%
Chesterfield Township	$66,779	8.9%	8.1%	6.0%
Harrison Township	$57,217	8.4%	10.0%	9.3%
Clinton Township	$48,466	10.2%	11.8%	6.6%
Mt. Clemens	$35,653	14.6%	19.5%	12.4%
St. Clair Shores	$53,093	8.9%	9.9%	6.0%
Shoreline total	**$56,534**	**9.2%**	**10.9%**	**7.3%**
County total	**$54,582**	**9.0%**	**11.6%**	**6.5%**

Table 8.14 Wayne County Population

Jurisdiction	Population	Population density (per square mile)	Female	Male
Grosse Pointe Shores	2,995	2606	52.3%	47.7%
Grosse Pointe Farms	9,307	3384	50.2%	49.8%
Grosse Pointe	5,295	4999	54.1%	46.0%
Grosse Pointe Park	11,343	5230	51.3%	48.7%
Detroit	690,074	4974	52.7%	47.3%
River Rouge	7,673	2892	53.4%	46.6%

Table 8.14 Wayne County Population (Cont.)

Ecorse	9,338	3330	50.3%	49.7%
Wyandotte	25,376	4812	50.7%	49.3%
Riverview	12,266	2791	55.6%	44.4%
Trenton	18,522	2546	52.6%	47.4%
Gibraltar	4,566	1208	50.9%	49.1%
Brownstown Township	30,607	1379	50.0%	50.0%
Shoreline total	**827,362**	**3346**	**52.0%**	**48.0%**
County total	**1,778,969**	**2906**	**51.9%**	**48.1%**

Table 8.15 Wayne County Age Breakdown

Jurisdiction	Under 18	18-34	35-54	55-74	75+
Grosse Pointe Shores	18%	9%	23%	31%	20%
Grosse Pointe Farms	30%	10%	27%	26%	7%
Grosse Pointe	27%	9%	31%	24%	8%
Grosse Pointe Park	25%	16%	29%	24%	6%
Detroit	25%	25%	12%	20%	5%
River Rouge	26%	24%	24%	21%	5%
Ecorse	26%	20%	27%	21%	7%
Wyandotte	20%	22%	30%	22%	7%
Riverview	20%	21%	23%	24%	12%
Trenton	20%	18%	28%	22%	12%
Gibraltar	21%	19%	30%	24%	7%
Brownstown Township	24%	19%	31%	21%	5%
Shoreline total	**23.5%**	**17.7%**	**26.3%**	**23.3%**	**8.4%**
County total	**24%**	**22%**	**25%**	**20%**	**6%**

Table 8.16 Wayne County Race and Ethnicity

Jurisdiction	White alone	Black or African American	Asian	Other	Hispanic or Latino
Grosse Pointe Shores	93.7%	1.8%	3.0%	1.5%	1.5%
Grosse Pointe Farms	94.8%	2.7%	1.1%	1.4%	2.1%
Grosse Pointe	92.3%	1.0%	2.1%	4.6%	2.7%
Grosse Pointe Park	85.9%	10.2%	1.4%	2.4%	3.0%
Detroit	13.4%	80.1%	1.3%	5.2%	7.7%

Table 8.16 Wayne County Race and Ethnicity (Cont.)

River Rouge	40.1%	53.0%	0.4%	6.5%	11.9%
Ecorse	46.9%	44.8%	0.0%	8.3%	13.1%
Wyandotte	95.2%	1.1%	0.5%	3.2%	5.4%
Riverview	91.1%	5.7%	0.6%	2.6%	5.9%
Trenton	95.5%	2.1%	0.9%	1.5%	4.0%
Gibraltar	95.4%	2.2%	0.3%	2.0%	1.9%
Brownstown Township	83.8%	7.1%	5.5%	3.6%	7.1%
Shoreline total	**77.4%**	**17.7%**	**1.4%**	**3.6%**	**5.5%**
County total	**53.3%**	**39.4%**	**2.9%**	**4.3%**	**5.6%**

Table 8.17 Wayne County Economic Factors

Jurisdiction	Median household income	Unemployment rate	Poverty status (% living in poverty, ages 18-64)	Vacancy rate
Grosse Pointe Shores	$139,074	4.4%	2.1%	5.2%
Grosse Pointe Farms	$115,918	5.1%	4.8%	6.3%
Grosse Pointe	$98,578	6.5%	3.4%	8.5%
Grosse Pointe Park	$95,179	5.4%	6.8%	10.1%
Detroit	$25,764	24.9%	37.5%	30.0%
River Rouge	$26,230	26.0%	40.6%	27.6%
Ecorse	$28,131	24.6%	31.4%	24.0%
Wyandotte	$51,237	10.3%	11.4%	9.6%
Riverview	$49,796	7.1%	12.4%	6.8%
Trenton	$55,218	5.7%	7.4%	4.6%
Gibraltar	$66,477	10.7%	11.9%	15.6%
Brownstown Township	$70,095	6.5%	7.6%	7.6%
Shoreline total	**$68,475**	**11.4%**	**14.8%**	**13.0%**
County total	**$41,210**	**14.9%**	**23.1%**	**18.4%**

Table 8.18 Monroe County Population

Jurisdiction	Population	Population density (per square mile)	Female	Male
Berlin Township	9,242	288	48.6%	51.4%
Estral Beach	397	861	55.4%	44.6%

Table 8.18 Monroe County Population (Cont.)

Frenchtown Township	20,134	481	50.8%	49.2%
Monroe	20,335	2,218	53.3%	46.7%
Monroe Township	14,387	851	51.8%	48.2%
LaSalle Township	4,832	181	46.6%	53.4%
Luna Pier	1,341	893	51.4%	48.6%
Erie Township	4,448	187	49.4%	50.6%
Shoreline total	**75,116**	**745**	**50.9%**	**49.1%**
County total	**150,436**	**273**	**50.8%**	**49.2%**

Table 8.19 Monroe County Age Breakdown

Jurisdiction	Under 18	18-34	35-54	55-74	75+
Berlin Township	24.7%	20.3%	29.8%	20.3%	4.9%
Estral Beach	17.1%	17.1%	24.2%	33.5%	8.1%
Frenchtown Township	23.7%	20.6%	27.9%	21.6%	6.2%
Monroe	24.2%	23.3%	26.0%	20.8%	5.7%
Monroe Township	21.7%	19.8%	28.1%	22.3%	8.1%
LaSalle Township	23.0%	14.8%	27.1%	28.6%	6.5%
Luna Pier	21.5%	19.7%	21.4%	31.0%	6.4%
Erie Township	20.1%	19.9%	28.0%	27.4%	4.5%
Shoreline total	**22.0%**	**19.4%**	**26.6%**	**25.7%**	**6.3%**
County total	**22.9%**	**19.3%**	**28.0%**	**23.3%**	**6.5%**

Table 8.20 Monroe County Race and Ethnicity

Jurisdiction	White alone	Black or African American	Asian	Other	Hispanic or Latino
Berlin Township	95.3%	1.4%	0.7%	2.7%	4.9%
Estral Beach	99.5%	0.3%	0.0%	0.3%	1.3%
Frenchtown Township	94.5%	2.5%	0.2%	2.8%	4.5%
Monroe	88.9%	6.3%	0.6%	4.2%	3.6%
Monroe Township	91.9%	3.9%	0.6%	3.6%	3.7%
LaSalle Township	96.3%	0.5%	1.8%	1.5%	4.1%
Luna Pier	94.5%	2.2%	0.9%	2.3%	0.4%
Erie Township	95.6%	0.1%	1.2%	3.1%	6.5%
Shoreline total	**94.6%**	**2.2%**	**0.8%**	**2.6%**	**3.6%**
County total	**94.6%**	**2.3%**	**0.6%**	**2.5%**	**3.3%**

Table 8.21 Monroe County Economic Factors

Jurisdiction	Median household income	Unemployment rate	Poverty status (% living in poverty, ages 18-64)	Vacancy rate
Berlin Township	$67,827	7.8%	7.8%	8.6%
Estral Beach	$49,583	18.6%	14.1%	13.3%
Frenchtown Township	$46,665	10.4%	15.8%	9.0%
Monroe	$44,452	9.2%	15.6%	9.2%
Monroe Township	$46,964	8.5%	15.1%	9.1%
LaSalle Township	$68,159	6.6%	7.7%	7.3%
Luna Pier	$48,462	11.1%	16.2%	12.4%
Erie Township	$56,230	10.0%	7.2%	10.0%
Shoreline total	**$53,542.75**	**10.3%**	**12.4%**	**9.9%**
County total	**$55,653**	**8.3%**	**10.9%**	**8.3%**

Table 8.22 Shoreline Corridor Population

County	Population	Population density (per square mile)	Female	Male
St. Clair	80,891	1,307	50%	50%
Macomb	255,904	3,108	52%	48%
Wayne	827,362	3346	52%	48%
Monroe	75,116	745	51%	49%
Combined	**1,239,273**	**2,127**	**51%**	**49%**

Table 8.23 Shoreline Corridor Age Breakdown

County	Under 18	18-34	35-54	55-74	75+
St. Clair	20%	18%	28%	26%	8%
Macomb	22%	20%	28%	22%	7%
Wayne	24%	18%	26%	23%	8%
Monroe	22%	19%	27%	26%	6%
Combined	**22%**	**19%**	**27%**	**24%**	**7%**

Table 8.24 Shoreline Corridor Race and Ethnicity

County	White alone	Black or African American	Asian	Other	Hispanic or Latino
St. Clair	96%	1%	1%	2%	1%
Macomb	86%	10%	1%	3%	3%
Wayne	77%	18%	1%	4%	6%
Monroe	95%	2%	1%	3%	4%
Combined	**88%**	**8%**	**1%**	**3%**	**3%**

Table 8.25 Shoreline Corridor Economic Factors

County	Median household income	Unemployment rate	Poverty status (% living in poverty, ages 18-64)	Vacancy rate
St. Clair	$80,891	10%	13%	12%
Macomb	$56,534	9%	11%	7%
Wayne	$68,475	11%	15%	13%
Monroe	$53,543	10%	12%	10%
Combined	**$64,861**	**10%**	**13%**	**11%**

APPENDIX E: GIS SOURCES

Bicycle_Pedestrian_Facilities.shp:
SEMCOG (2016). “Bicycle_Pedestrian_Facilities.”
Community_Boundaires.shp:
SEMCOG (2016). “Minor Civil Divisions (MCD).”
County_Boundaries.shp:
SEMCOG (2016). “Counties.”
Roads.shp:
SEMCOG (2016). “Roads.”
Maps created using ArcMap 10.4.1

Blue Water Bridge Port Huron

Taubman College of Architecture and Urban Planning
University of Michigan