



ST. CLAIR COUNTY TRAILS PLAN

2019



ST. CLAIR COUNTY
METROPOLITAN
PLANNING
COMMISSION

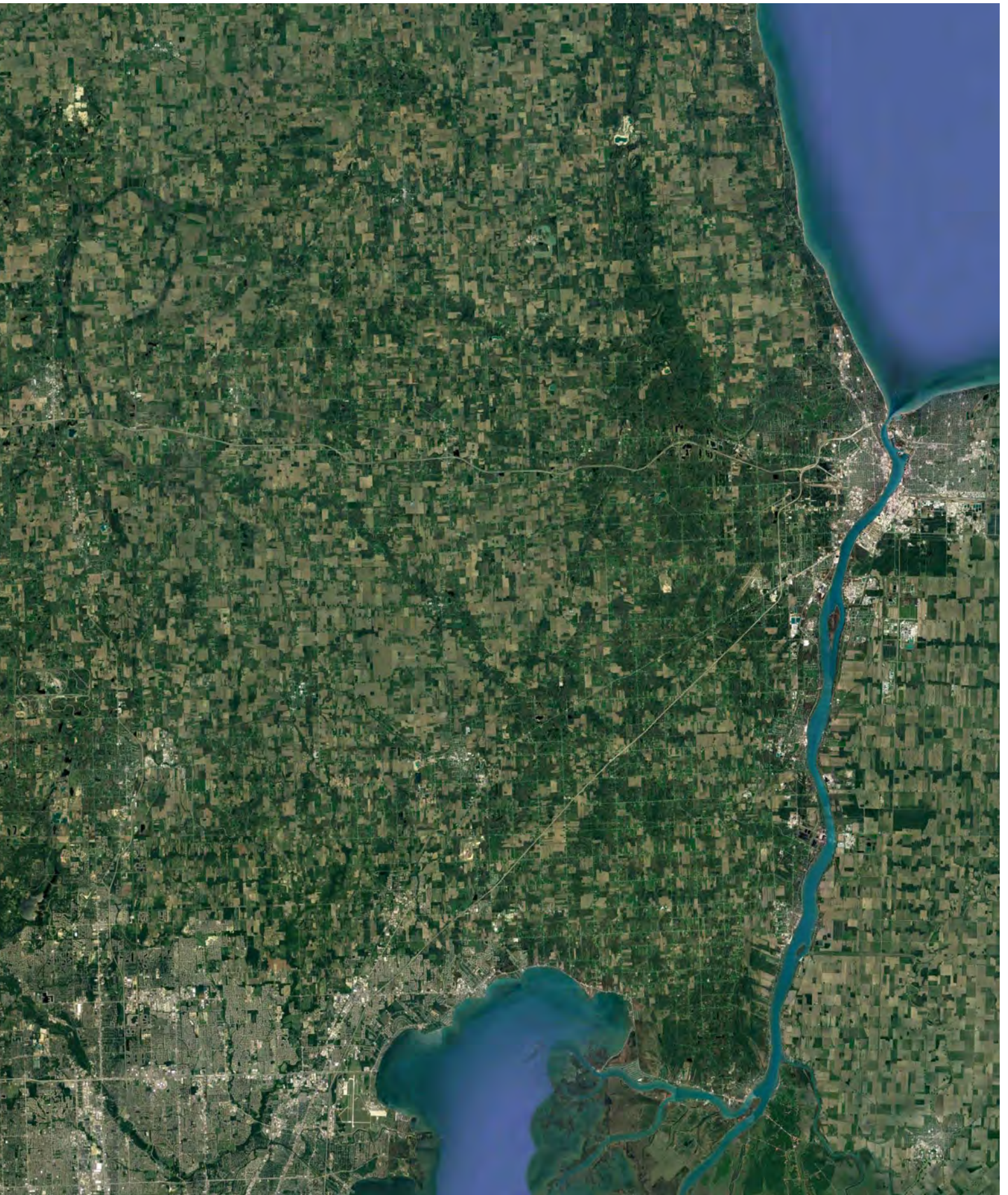


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**ST. CLAIR COUNTY
METROPOLITAN
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Community Foundation

Est. 1944

Planning Consultant:

SMITHGROUP

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Financial assistance for this project was provided, in part, by the Southeast Michigan Council of Governments (SEMCOG) Multi-Community Planning Assistance Grant Program and by the Community Foundation of St. Clair County.





CHAPTER 01

INTRODUCTION



PURPOSE & INTENT

Trails, greenways, bikeways, and other non-motorized transportation facilities are becoming a critical part of a community's mobility infrastructure. Whether helping to connect people to recreation opportunities and nature, tourists and visitors to local economies, or residents to their schools and jobs - such facilities play heavily into the quality of life of a community.

In St. Clair County, a number of signature regional trails connect to and through portions of the county. Such trails includes the Macomb-Orchard Trail, which is part of the state-wide Great Lake to Lake Route #1 trail system, the Wadhams to Avoca Trail, and over 26-miles of the Bridge to Bay Trail system. These existing trails are already defining elements of the communities through which they pass and greatly valued by residents and visitors alike.

Despite these successes in building the county's current trail network, the potential for a county-wide system is not yet fully-realized. In particular, there are significant gaps between existing trail segments, making it a challenge to connect from one system to another. Additionally, there are many destinations, important from an economic and recreational standpoint, that are not yet accessible by trails or other non-motorized facilities.

In many cases, the gaps in the current network exist because they reflect difficult or challenging areas for locating trails, impacting the feasibility and cost of implementation. In other cases, new connection opportunities have not been fully identified or included in planning documents previously.

The purpose of the **St. Clair County Trails Plan** is to assess the overall county and its major destinations, inventory the existing trail systems, and understand

community desires. These activities will support the adoption of an implementation focused plan that clearly identifies opportunities, needs, and priorities for future trail and bikeway projects.

Ultimately, the planning process is a chance to step back and take stock of current facilities and position county government, local municipal partners, and other agencies to pursue and implement the next wave of trail projects across St. Clair County.

To this end, the process engaged a broad range of stakeholders, local leaders, technical experts, and members of the public to responds to three key tasks:

- Identify existing gaps in county-wide trail networks
- Identify preferred alternatives to eliminate the gaps
- Prioritize projects to support implementation decisions

The following organizations led the planning effort:



Est. 1944

KEY TERMS

The following are key terms and concepts that underpin the approach and recommendation from this planning process.

TRAILS

Trails refer to dedicated, linear transportation corridors that provide opportunities for walking, running, biking, and other non-motorized uses for recreation, commuting, and other mobility needs. Trails are typically separate from roadway corridors and located along public or private land (with access easements). Trails are designed for all-ages and abilities, and often include additional design elements such as landscaping, wayfinding, furnishings (benches, waste cans, etc.).

BIKEWAYS

Bikeways refer to dedicated bicycle corridors, typically within existing roadways, that provide separation from motorized vehicles and/or use other treatments to create a lower stress and more comfortable environment for cycling. This lower stress environment can encourage a greater portion of the population to be comfortable biking in their communities.

ALL-AGES, ALL-ABILITIES

All-Ages, All-Abilities refers to an approach for designing non-motorized facilities (i.e. trails and bikeways) in ways that create safer and more comfortable environments for all users. This is especially important for cycling, where traditional bike lanes are often viewed as unsafe or uncomfortable, particularly when directly adjacent to fast moving and/or high traffic vehicle travel lanes.



GOALS

The following goals were developed early in the planning process in collaboration with the project's Steering Committee.

GOAL 1

DEVELOP A REGIONAL CONNECTED TRAIL NETWORK PROVIDING ACCESS TO ESSENTIAL ASSETS AND DESTINATIONS WITHIN AND OUTSIDE OF ST. CLAIR COUNTY.

Existing trails can provide greater benefit if they are connected to and part of a larger, complete network, which allows more people to access more destinations.

GOAL 2

USE TRAILS AS AN ECONOMIC DEVELOPMENT AND REINVESTMENT DRIVER FOR ST. CLAIR COUNTY COMMUNITIES.

Trails can provide economic benefits to people through tourism and recreational spending, as well as improving the quality of life in the community, which can help retain and attract people and jobs to the area.



GOAL 3

LEVERAGE EXISTING PLANS AND INITIATIVES TO ENCOURAGE COLLABORATION, PARTNERSHIPS AND EFFECTIVE USE OF RESOURCES FOR PROJECT IMPLEMENTATION

Building and maintaining trails is a complex process. Successful trail projects build partnerships between funding entities, property and right-of-way owners, and implementors.



GOAL 4

ENHANCE COMMUNITY HEALTH, PUBLIC SAFETY, AND GREEN INFRASTRUCTURE THROUGH SOUND TRAIL DESIGN AND MANAGEMENT.

Trails, greenways, and other non-motorized facilities must be designed using best practices to ensure the safety of trail users, protect environmental health, and ensure that trails are well-maintained and supported.



PLANNING PROCESS

The planning process for the St. Clair Trails Plan reflected a focused and concise series of steps that enabled the Planning Team to assemble key information, engage a broad range of stakeholders, and make smart, defensible decisions regarding future trail routes and implementation priorities.



PROJECT ROLES

PLANNING TEAM

Comprised of staff from the St. Clair County Metropolitan Planning Commission, St. Clair County Parks and Recreation, Michigan Trails and Greenways Alliance, and the Consultant. The Planning Team was responsible for managing the planning process, conducting outreach, performing analysis, providing technical expertise, and assembling plan documents.

STEERING COMMITTEE

Staff and/or elected representatives from individual municipalities, regional transportation and planning officials, and other key stakeholders involved in the trails and bikeway implementation. The Steering Committee was responsible for providing guidance and support to the planning process while sharing the perspectives of the communities and/or agencies they represent.

PUBLIC ENGAGEMENT

The public engagement effort was focused around a series of open meetings combined with a web survey to help understand the attitudes, preferences, and desires of St. Clair County residents.

PLANNING PHASES

The planning process proceeded over four major planning phases, as outlined below.

1

PHASE 1: EXPLORATION (OCT-DEC 2018)

The exploration phase consisted of the following primary tasks:

- Collected GIS/spatial data, including demographics, roadway characteristics, parcels, destinations/assets, and existing and planning non-motorized facilities.
- Held kick-off meeting with the Steering Committee to establish project goals and solicit initial feedback and identify trail gaps through mapping activities.
- Held two public workshops, at different times and locations during the day, to provide an overview of the project and collect additional feedback through mapping activities.

PHASE 2: TRAIL OPTIONS (JAN-FEB 2019)

In the second phase, the Planning Team conducted the following:

- Analyzed existing trail and non-motorized networks and combined this with stakeholder feedback to establish an inventory of trail gaps.
- Worked closely with stakeholders and local agency representatives to develop a series of options (future route segments) that could bridge these gaps. Developed typical cross-sections and facility designs.



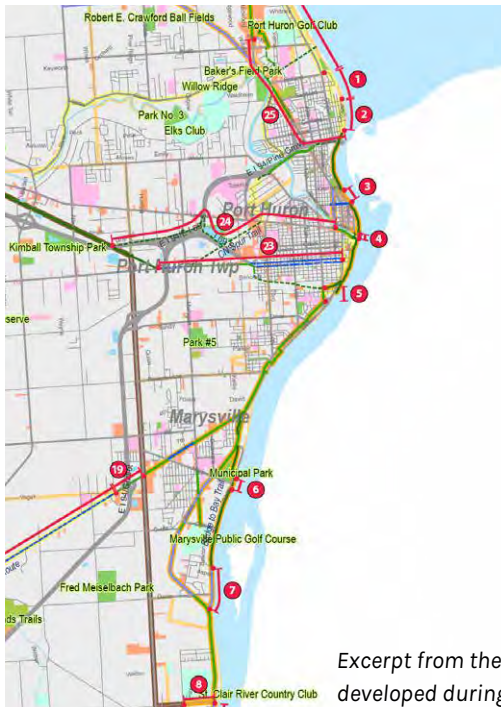
PHASE 4: PLAN ROLL-OUT

The final phase of work consisted of preparing the planning documents (this report) and distributing to project partners and the broader community.

2

3

4



Excerpt from the GAP map developed during Phase 2

PHASE 3: PRIORITIZATION (MARCH-APRIL 2019)

The prioritization phase included the following primary tasks:

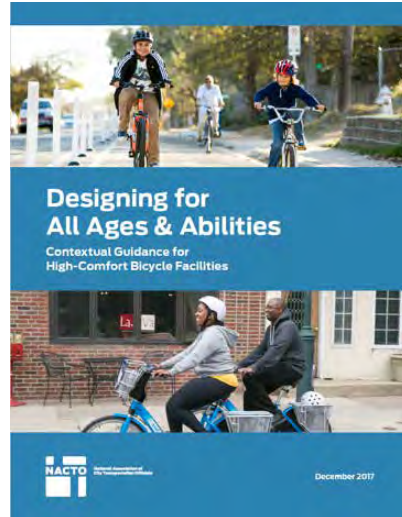
- Facilitated Steering Committee meeting #1 to discuss route priorities and scoring considerations.
- Developed and used a prioritization scoring matrix to assess the benefits, opportunities, costs, and challenges associated with implementing potential trail segments.
- Developed cost estimate for trail routes.
- Assembled priority routes and segments into an overall framework plan.

DESIGN APPROACH

Designing trails and bikeways is a rapidly evolving process, as the types of facilities, technologies, and treatments employed across the country explode. Underlying this evolution is a desire to design facilities that are more safe, comfortable, and attractive to a broader range of people. By designing facilities for all ages and abilities, the trail network becomes more accessible to more people and its use and associated benefits (health, tourism, economics, quality of life, etc) will be more fully realized.

Fortunately, there is a wealth of design guidance to assist in designing safe and comfortable facilities. This includes:

- Separated Bike Lane Planning and Design Guide (FHWA, 2015)
- Small Town and Rural Multimodal Networks (FHWA, 2016)
- Urban Bikeway Design Guide (NACTO, 2014)
- Advisory Bike Lanes in North America (Alta Planning + Design, 2017)
- Designing for All Ages & Abilities (NACTO, 2017)
- Michigan Manual of Uniform Traffic Control Devices (Experimental and Interim Approved treatments)
- Guide for the Development of Bike Facilities (AASHTO, 2012) - *New edition forthcoming*



LEVEL OF TRAFFIC STRESS AND DESIGNING FOR ALL AGES AND ABILITIES

Designing trails, bicycle facilities, and pedestrian amenities for safety first will create accessible and welcoming infrastructure for non-motorized users. Key to encouraging greater cycling rates is understanding the diverse types of bicycle riders that exist in a community and how their level of comfort and sense of safety affects the design of bicycle infrastructure.

A national survey of people living in the 50 largest metropolitan areas in the U.S. (see diagram on next page) found, for example, that only 5% of an area's population are "enthused and confident" and comfortable biking on non-residential (commercial) streets when bike lanes are present. Similarly, the survey found that 51% of the population is "interested but concerned" - they might be willing to bike on separated trails or protected bike lanes if such facilities exist, while 37% are unwilling, unable, or uncomfortable biking anywhere.

Related to the types of bike riders, is a planning and engineering tool called Level of Traffic Stress (LTS). LTS determines how "stressful" the riding experience is when considering a range of factors for biking within a roadway. Factors include the speed and volume of vehicle traffic, the number of travel lanes, the size and complexity of intersections, and the types of bicycle facilities provided. LTS 4 roads are considered the most stressful, while LTS 1 are the least.

LTS can be linked to the types of bike riders to better understand what types of riders are likely to be comfortable biking on which roadways. This in turn can inform what facilities to create that would make a road more comfortable for a broader range of users.

For example, LTS 3 corresponds to conventional bike lanes on major roadways, which only appeals to "strong and fearless" and/or "enthused and confident" riders (only 19% of the bike riding population). If protected

bike lanes (typically LTS 2) can be supplied instead, then most adults (70% of the bike riding population) would have some level of comfort using them.

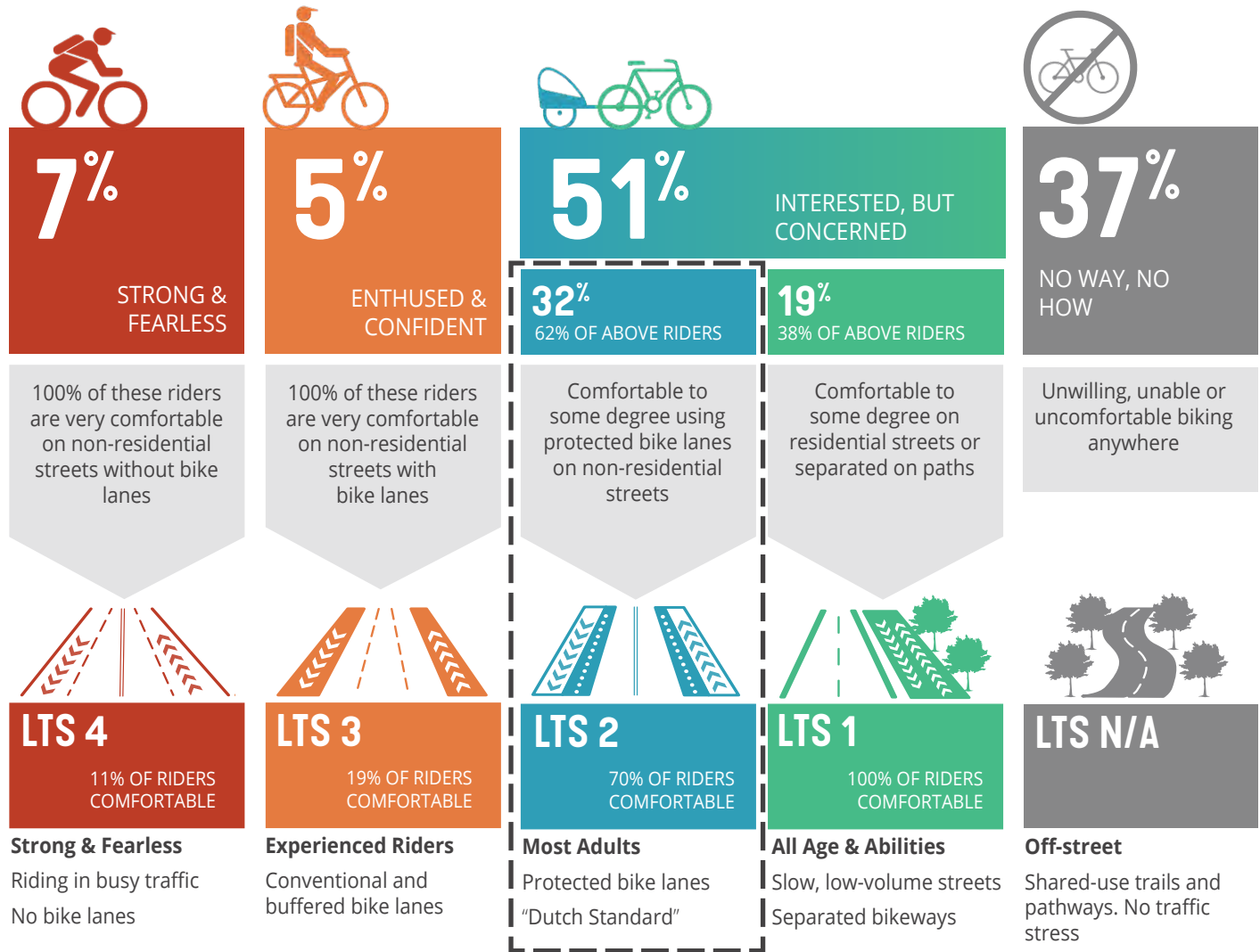
As proposed projects move into the implementation phase, it is important to design with an LTS approach. For the St. Clair County Trails Plan, LTS 1 and 2 facilities should be the target for all projects. The typical designs and cross-sections discussed in the following pages indicate what LTS level certain types of facilities can be designed to, as well as design considerations for where those facilities are most appropriate.

The diagram on the next page describes a visual relationship between the types of bike riders found in many communities and how that relates to the LTS of different types of facilities.



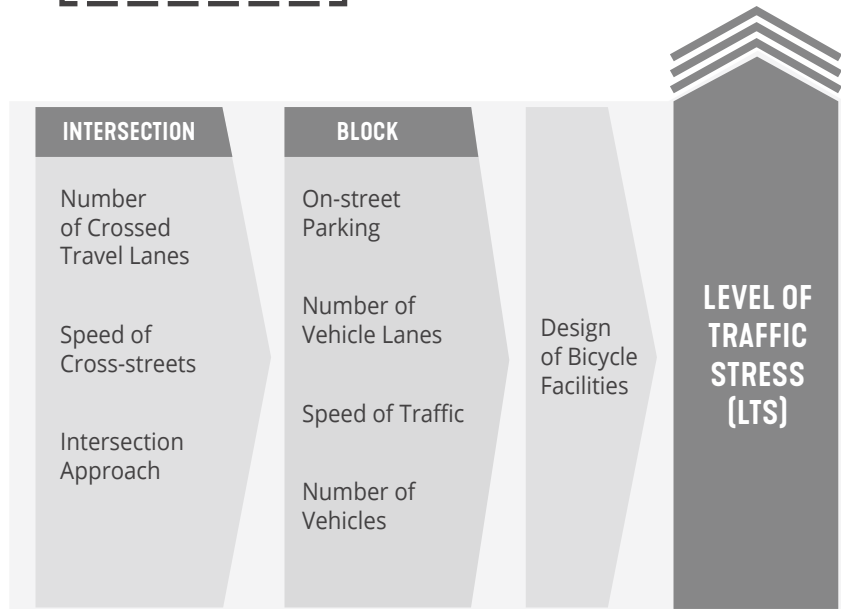
REALIZING ALL AGES & ABILITIES

Linking types of bicycle riders to level of traffic stress and facility design



GREENWAY FACILITY DESIGN TARGET IS LTS 2, WHICH IS TYPICALLY COMFORTABLE FOR 70% OF WILLING AND ABLE BICYCLE RIDERS

Source: (2016) Dill J. and McNeil N., Revisiting the Four Types of Cyclists: Findings from a National Survey, Journal of the Transportation Research Board.



TRAIL & BIKEWAY FACILITY TYPES

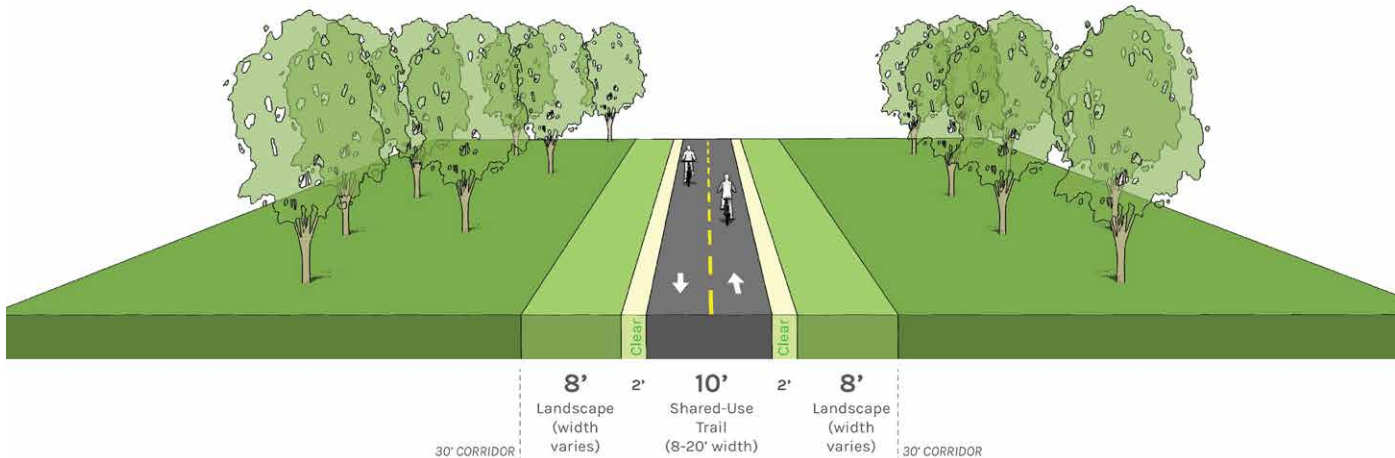
A variety of different types of facilities, many of which will be new to St. Clair County and individual communities, are referenced throughout this plan.

These include:

- Off-road trails
- Side paths
- Separated Bikeways (two-way)
- Buffered Bike Lanes
- Advisory Bike Lanes
- Conventional Bike Lanes
- Enhanced Sharrows

These facility types are described individually on the following pages.



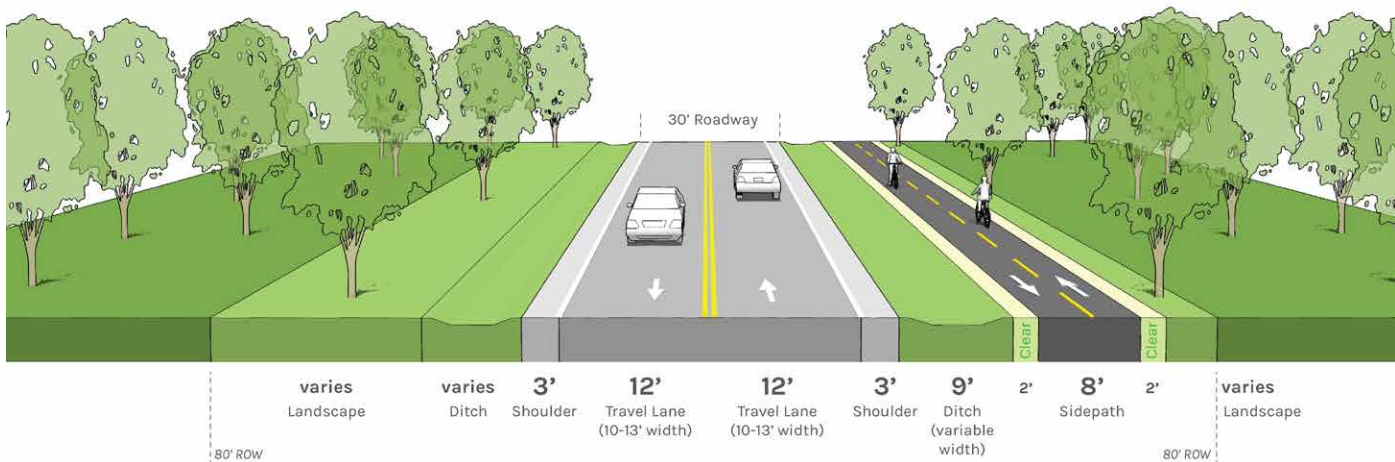


OFF-ROAD TRAILS

LEVEL OF TRAFFIC STRESS: 1

Off-road trails are typically designed as "shared-use" trails that allow multiple types of non-motorized uses (walking, running, biking, skating, etc.). The minimum preferred trail width is 10-feet, with 2-feet of clear shoulder on either side. In constrained locations, a narrower width may be acceptable. In locations where

high volumes of traffic are anticipated, providing wider trails that create separate pedestrian and bicycle travel areas is recommended, when space allows. Implementing off-road trails can be an opportunity to incorporate habitat/landscape restoration, site furnishings, and other amenities into the design.

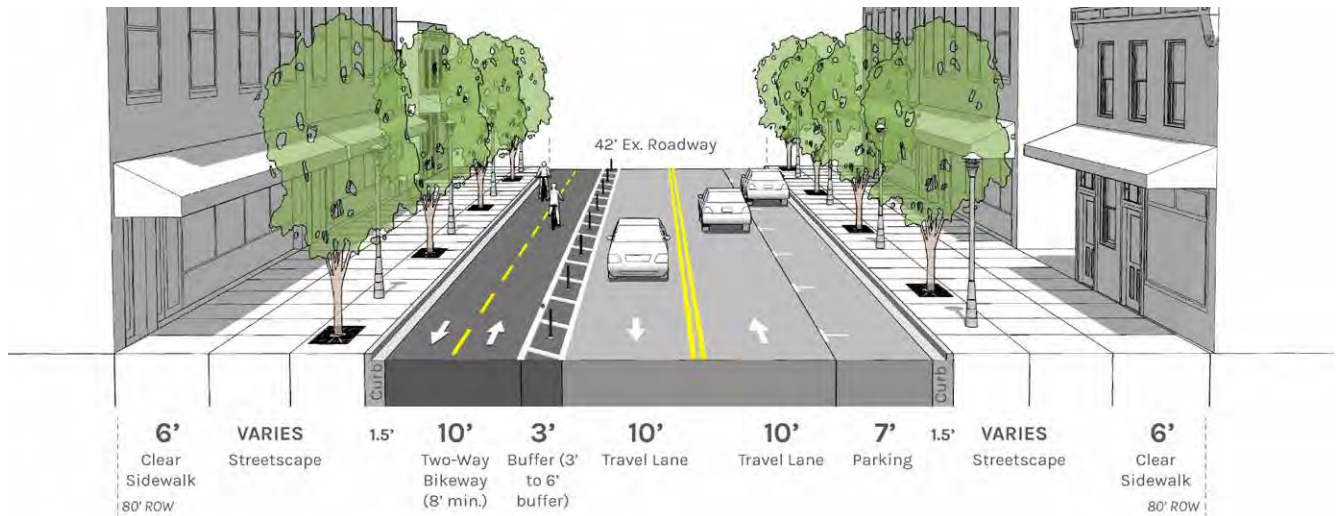


SIDE PATHS

LEVEL OF TRAFFIC STRESS: 1 OR 2

Side paths are typically designed like trails (above), but are located adjacent to a roadway and typically still within a public right-of-way. Like trails, side paths are designed as shared-use facilities allowing pedestrian as well as bicycle users. The minimum preferred side path width is 10-feet, although narrower widths may be acceptable in narrower conditions (as shown in the image above).

One common challenge with implementing side paths, particularly in more rural areas, is the need to accommodate drainage ditches alongside the roadway. This can require extensive land grading around the side path or may require installing culverts to facilitate drainage underground, below the side path.

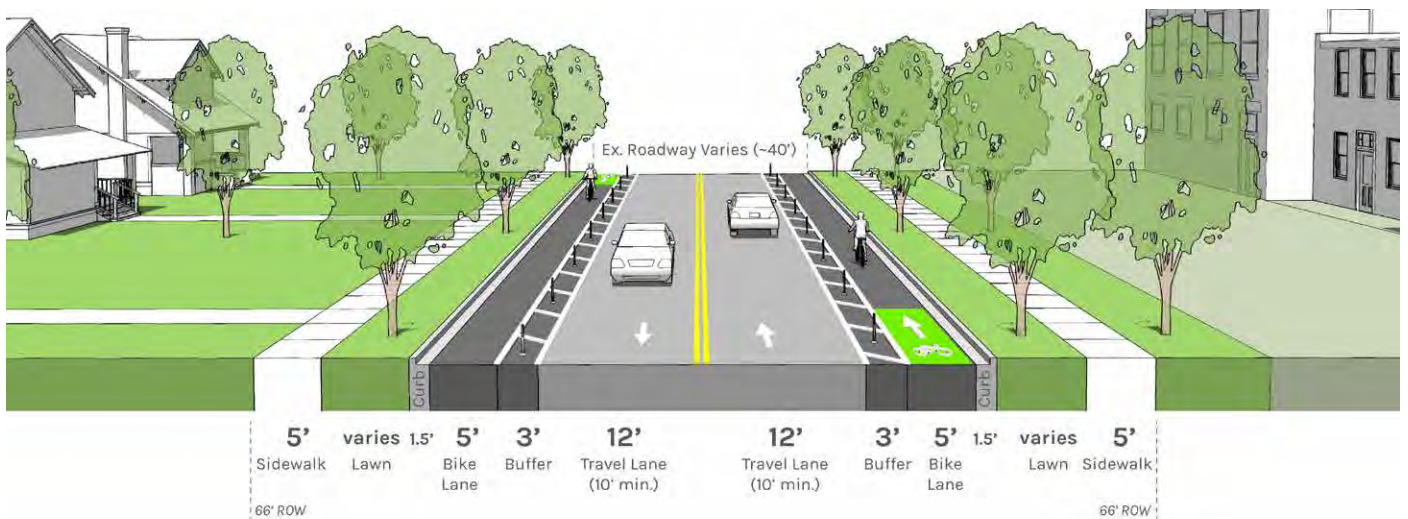


SEPARATED BIKEWAY (TWO-WAY)

LEVEL OF TRAFFIC STRESS: 1 OR 2

Two-way separated bikeways can be used in a variety of environments to provide a more comfortable facility for cycling where there is not space for side paths. In constrained locations, like downtown commercial areas, two-way facilities preserve more roadway width for vehicle uses (travel lanes and parking), while still providing physical separation between cars and bikes

with the use of a buffer zone. The buffer should utilize curbing, delineator posts, planter boxes, and/or raised medians to provide a physical barrier between vehicle and travel lanes. Separated bikeways, especially two-way varieties, require additional design considerations at intersections and street crossings.

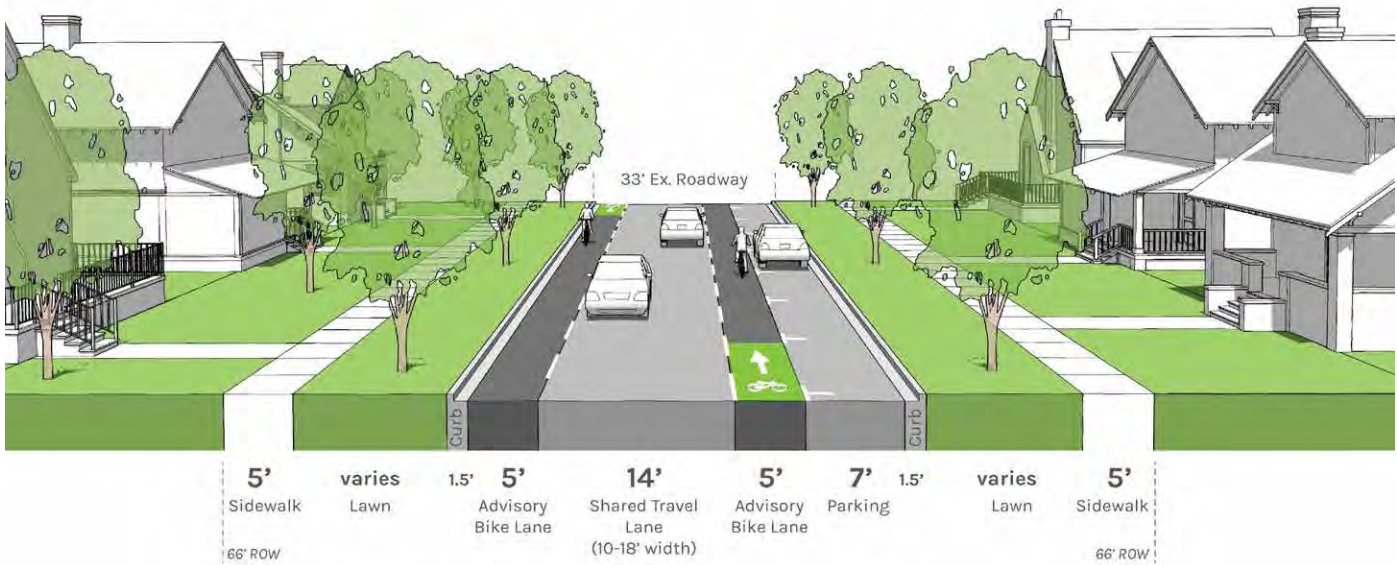


BUFFERED BIKE LANES

LEVEL OF TRAFFIC STRESS: 2

Buffered bike lanes are similar to conventional bike lanes, but add additional buffer space between the bike lane and adjacent vehicle lanes. Typically, this buffer is defined by pavement markings, but delineator posts, curbing, and other obstructions can be used to provide more physical separation. This is especially valuable when adjacent to higher traffic and/or speed areas.

A row of parking can also be used to help provide physical separation, but care must be taken to provide adequate clearances and buffers to prevent car doors from swinging into the bike lane, as bike riders may have less room to move safely out of the way.

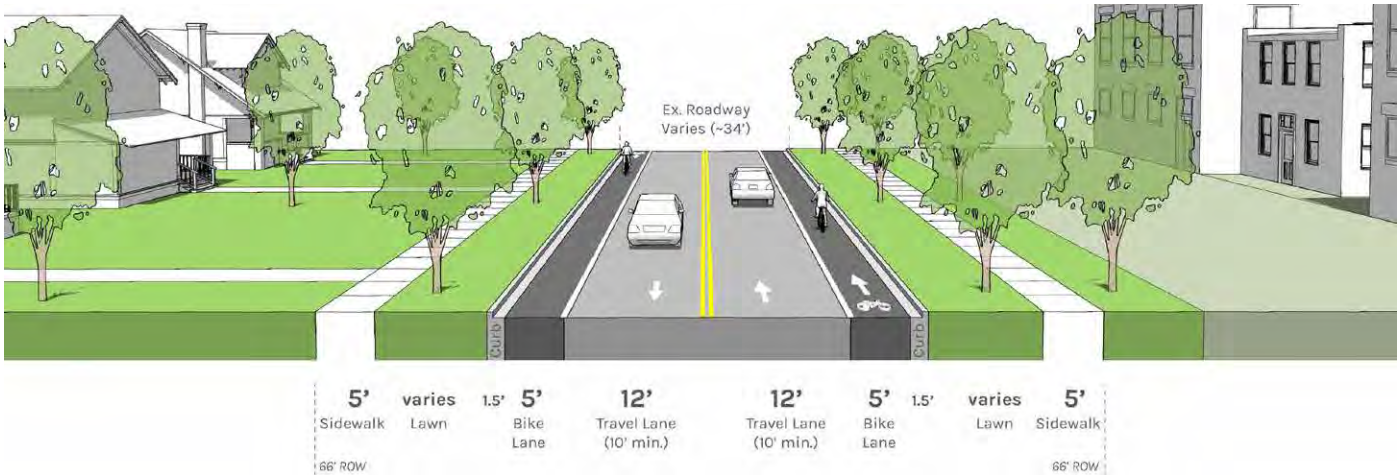


ADVISORY BIKE LANES

LEVEL OF TRAFFIC STRESS: 2

Advisory bike lanes are a new treatment suitable for use on lower volume roadways, such as local residential streets, where centerline stripes are not normally present. Advisory lanes help formalize vehicle behavior on lower volume streets while clearly identifying space for bike riders and signaling that the

corridor is an intended bicycle route. With advisory lanes, vehicles travel closer to the center of the street, and shift over to the right (yielding to bike riders), when opposing vehicle traffic is present. Depending on street width, on-street parking can be accommodated on one or both sides of the roadway.

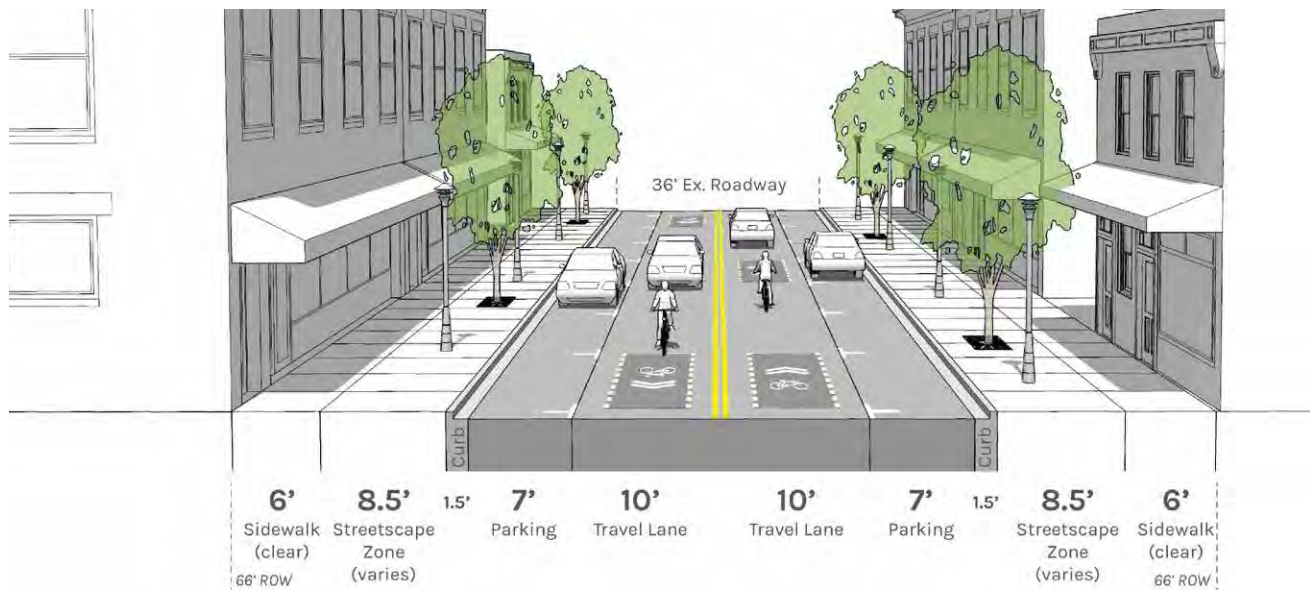


CONVENTIONAL BIKE LANES

LEVEL OF TRAFFIC STRESS: 3 OR 4

Conventional bike lanes do not generally provide for lower levels of traffic stress given the free-flowing travel lane directly adjacent to the bike lane. While conventional lanes may be comfortable for some users on lower speed or volume routes, they are generally not considered all ages, all abilities appropriate facilities. Conventional lanes may be used where space is extremely limited, site or project constraints

preclude other treatments, or as a temporary treatment while alternative routes or improvements are waiting implementation.



ENHANCED SHARROWS

LEVEL OF TRAFFIC STRESS: 3 OR 4

Sharrow markings (i.e. "Share the Road" markings) help signal to vehicle drivers that the roadway is intended for more frequent use by bike riders as part of a bicycle network. However, sharrow markings are not effective as an all ages and all abilities type of facility.

Enhanced sharrow markings can be used on minimum width roadways (i.e. 10-foot travel lanes) and should be centered in the travel lane (not placed to the right as is typical practice). Additional white dashed lines can be

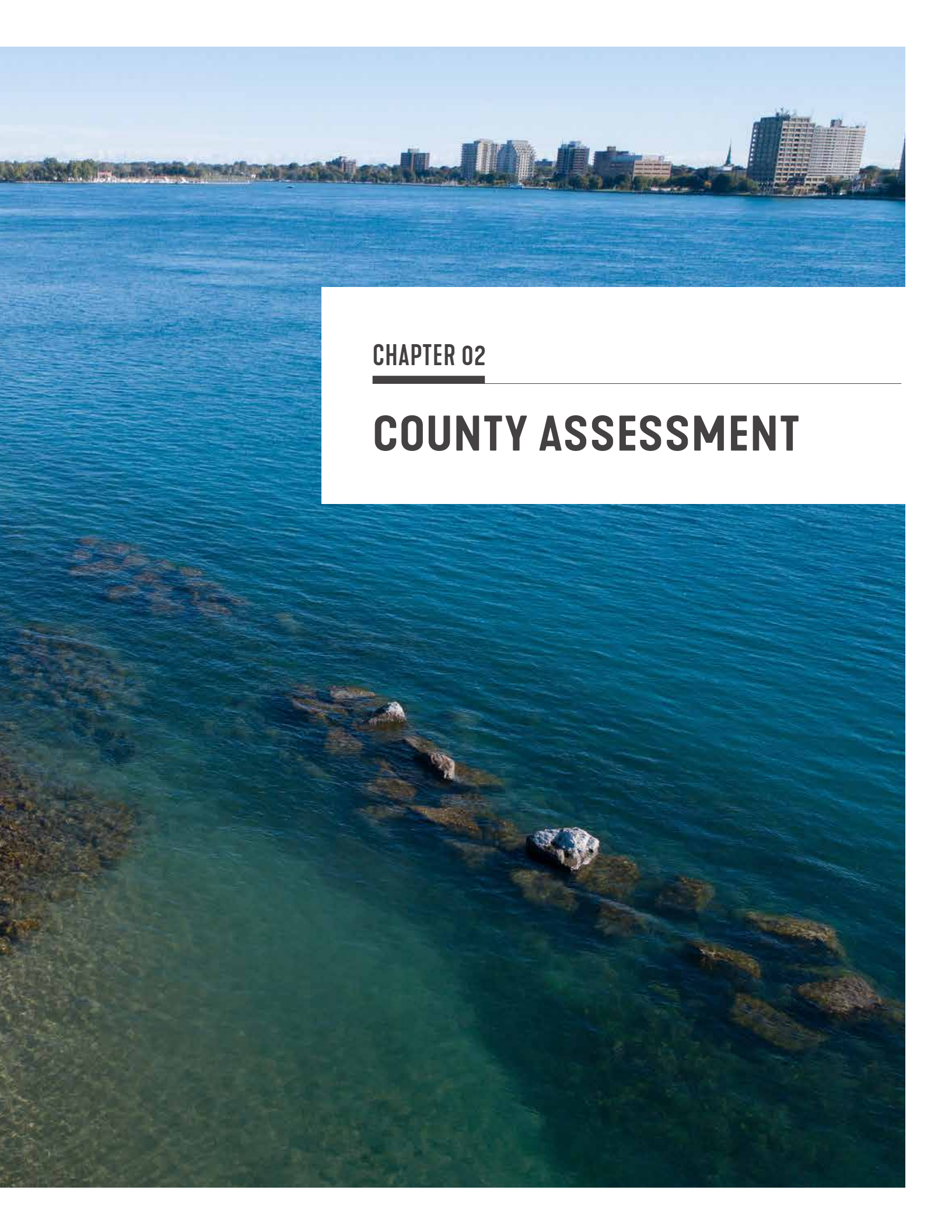
used flanking on the sharrow symbol to provide greater visibility and indicate where in the travel lane bike riders should be positioned. Unlike typical sharrow markings that are ambiguous about whether cars should be able to pass bike riders, enhanced sharrows reinforce that the lane is fully shared and that vehicles should not pass around bike riders.

Enhanced sharrows are most applicable on slower speed and lower volume roadways.

ADDITIONAL DESIGN CONSIDERATIONS

- Bike lanes should provide a minimum preferred width of 5-feet in each direction for bicycle operations. When bike lanes are adjacent to a curb and gutter, the gutter should not be counted towards lane width unless a seamless surface is provided and stormwater inlet structures are bike-friendly.
- In locations with high volumes of bike traffic, wider bike lanes should be provided to enable bike riders to more easily pass one another.
- Separated bicycle facilities, depending on the type of buffer and overall dimensions, may require specialized maintenance equipment for sweeping and snow maintenance. Care should be given to evaluate snow storage needs, with snow stored within the buffer, behind the road curb, or a combination of the two.





CHAPTER 02

COUNTY ASSESSMENT

PLANNING CONTEXT

St. Clair County consists of 33 municipalities, including 8 cities, and 2 villages. Many of these communities have their own transportation and planning departments with established master plans or transportation plans that have a bearing on the development of this Trails Plan, specifically in terms of opportunities for property access for trails or use of roadways for multi-modal (vehicle, walking, biking, transit) facilities.

At the county level, St. Clair County owns and manages many of the roadways outside of incorporated cities and townships, and has jurisdiction over the design and operations of their roads. The St. Clair County Parks and Recreation department helps manage recreation and trail facilities (such as the Bridge to Bay Trail). Similarly, state-owned roadways require coordination with Michigan Department of Transportation (MDOT) for planning and implementing future improvements.

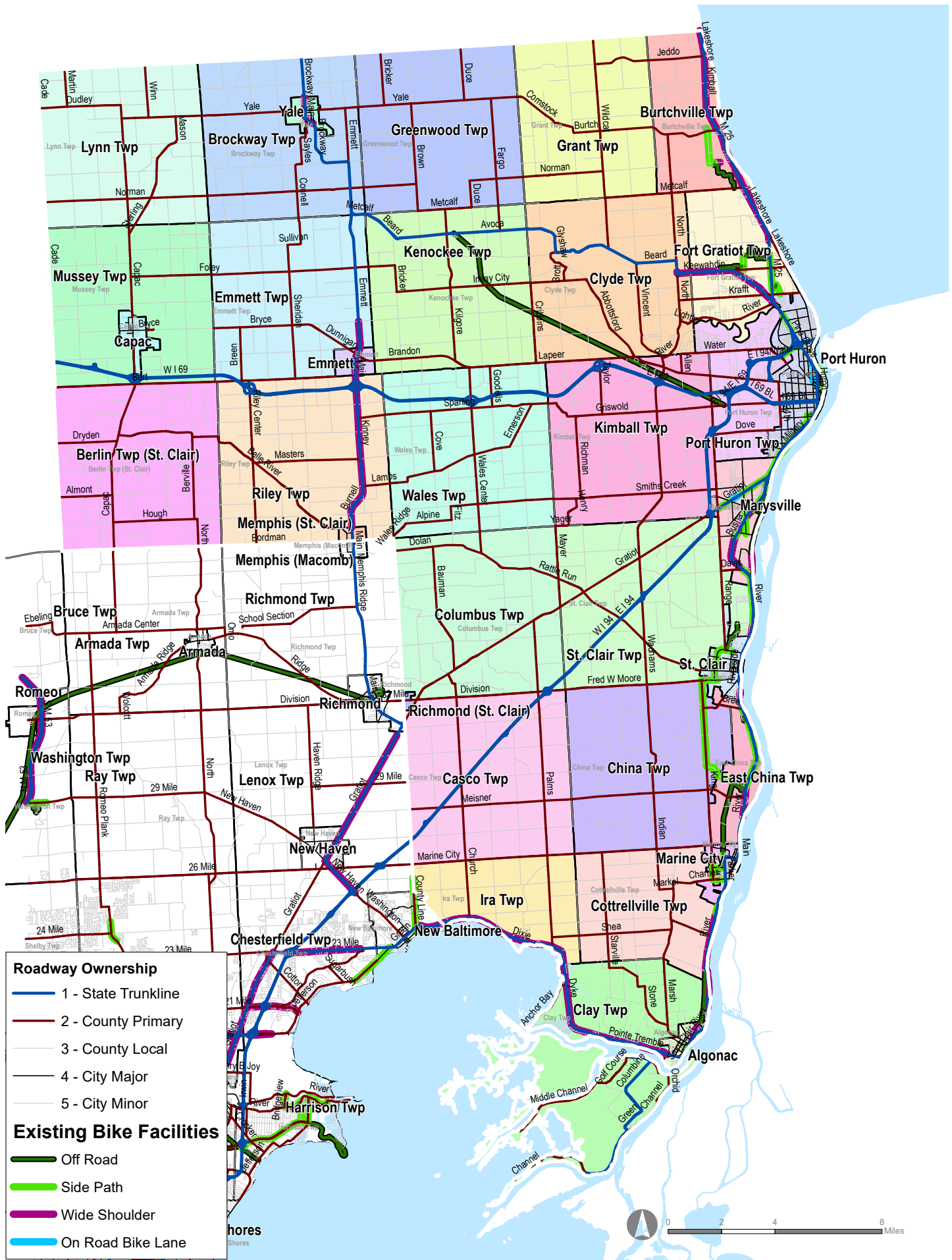
Last, a number of other agencies or non-government organizations have a connection to trail and bikeway planning in St. Clair County. This includes:

- Michigan Trails & Greenways Alliance and the Great Lake to Lake Trails initiative (Route #1 is proposed to connect through St. Clair County)
- Blueways of St. Clair

RELEVANT PLANNING DOCUMENTS

Past planning documents helped inform the development of the St. Clair County Trails Plan. Critical documents include:

- St. Clair County Trails and Routes Master Plan (2009) - This document provides a high-level look at potential greenways and route across the county, with detailed studies of a number of proposed non-motorized improvements. Since the plan was created, a number of non-motorized improvements have been made, but many are still outstanding. This 2009 plan was a useful starting point for exploring route opportunities for the current planning process.
- The SEMCOG Regional Bicycle and Pedestrian Travel Plan for Southeast Michigan (2019) - Provided a baseline inventory of non-motorized facilities and roadway information. Future planning elements identifies a network of regional non-motorized routes in St. Clair County and connections to adjacent counties.
- 2045 Long Range Transportation Plan adopted in 2019 - Developed by St. Clair County Metropolitan Planning Commission, this documents outlines the long range changes to transportation needs and demands. This plan is built on a demographic and economic trend analysis and calls for improvements to safety, a complete streets design approach and future planning efforts to resolve gaps in the non-motorized network.



Roadway Ownership

- 1 - State Trunkline
- 2 - County Primary
- 3 - County Local
- 4 - City Major
- 5 - City Minor

Existing Bike Facilities

- Off Road
- Side Path
- Wide Shoulder
- On Road Bike Lane



EXISTING & PLANNED TRAILS & NON-MOTORIZED FACILITIES

Understanding the extent of existing and previously proposed trails and other non-motorized facilities (bike lanes, wide shoulders, etc) is an essential starting point for developing a strategic long-term planning vision. The Planning Team utilized detailed roadway and trail data compiled by SEMCOG as a starting point for assembling a trail inventory. Review of this information with the Steering Committee, project partners, and local agency representatives provided further refinement to the existing inventory.

In terms of trails separated from roadways, the most significant existing facilities include:

- **The Wadhams to Avoca Trail** - This is a roughly 12.5-mile long section of trail along a former railroad corridor connecting from Avoca Road in the north-central part of the county southeast to the west edge of Port Huron. Completing the connection at the east of this trail into Port Huron and Bridge to Bay Trail is a critical need. Additionally, the Wadhams to Avoca Trail can be extended in the north west part of the county with a connection to Yale for area residents and to provide a destination point for trail users.
- **Bridge to Bay Trail** - The Bridge to Bay Trail is envisioned as a contiguous series of trail routes connecting New Baltimore around Anchor Bay and north along the St. Clair River corridor to Lakeport State Park. The Bridge to Bay Trail was planned as a 54-mile system of trails that will connect to commercial/economic centers, recreational assets, and other key destinations along the shoreline. To date, approximately 26-miles of the system have been constructed as a combination of side paths (along rural roadways) and shared-use trails separate from the roadway. The remaining 28-miles

of planned routes reflect a number of significant "gaps" in the system, which this Trails Plan will further describe and propose solutions. These gaps predominately reflect connections into the heart of commercial/economic centers in the connected communities (e.g. downtown Port Huron, Marysville, St. Clair, Marine City, and Algonac) or where more rural roadway conditions are constrained and provide less clear opportunity for constructing a side path.

- **Macomb-Orchard Trail/Great Lake to Lake Route #1** - The existing Macomb-Orchard Trail ends in the City of Richmond in Macomb County. This trail is part of the planned Great Lake to Lake Route #1 trail, which will connect from South Haven on Lake Michigan across the state to Port Huron (ending in Lighthouse Park). A significant gap exists between the City of Richmond heading east towards the Bridge to Bay Trail, which this plan will address.

Past planning efforts have also identified a number of other potential off-street trails or on-street bike routes. While many of these routes are considered by this plan, many of these off-street routes are contingent on securing significant access easements (along utility corridors for example). While they should continue to be pursued from a long-term standpoint, this Trails Plan focuses more on critical gaps that stitch together the segments of existing regional trails in ways that are more implementable in the near-term.



- Existing/Proposed Non-Motorized**
- 8-10' Shared-use Path
 - 8' Fines Shared-use Path
 - ⋯ Proposed Shared-use Path
 - - - Proposed Unimproved Path
 - 8-10' Side Path
 - Bike Lane Existing
 - Wide Shoulder Existing
 - ⋯ Mapped Only Bike Route
 - ⋯ Planned Back-Road Bike Route
 - ⋯ Planned Bike Route
- SEMCOG Regional Non-Motor.**
- SEMCOG Regional Non-Motor.
- Parks & Open Space**
- Public Parks
 - Conservation Lands
 - Private/Club Open Space

COMMUNITY ENGAGEMENT

Engagement with a range of stakeholders, local experts, residents, and organizations was essential to this planning process. The engagement efforts occurred during each phase of work and included the following activities:

- Steering Committee Kick-Off Work Session (November 7, 2018)
 - Communicated the purpose, scope, and process of the St. Clair County Trails Plan.
 - Developed the project goals collaboratively.
 - Reviewed demographic mapping, analysis tasks, and data coordination.
 - Identified key destinations, trail/bikeway opportunities, and challenge areas, and known trail gaps via destination and asset mapping activity with stakeholders.
- Meeting with Municipal Leaders (November 29, 2018). This meeting was with township supervisors and city managers in affected communities to review the project goals, discuss the gap analysis, and inform them on how they could be involved and provide input.
- Two Public Meetings (December 11, 2018, 11:30-1:30, 6:30-8:30)
 - Provided an overview of the plan purpose, goal, and process.
 - Presented educational materials about best practices and design methods for trail and bikeway design that supports an all ages and all

abilities approach.

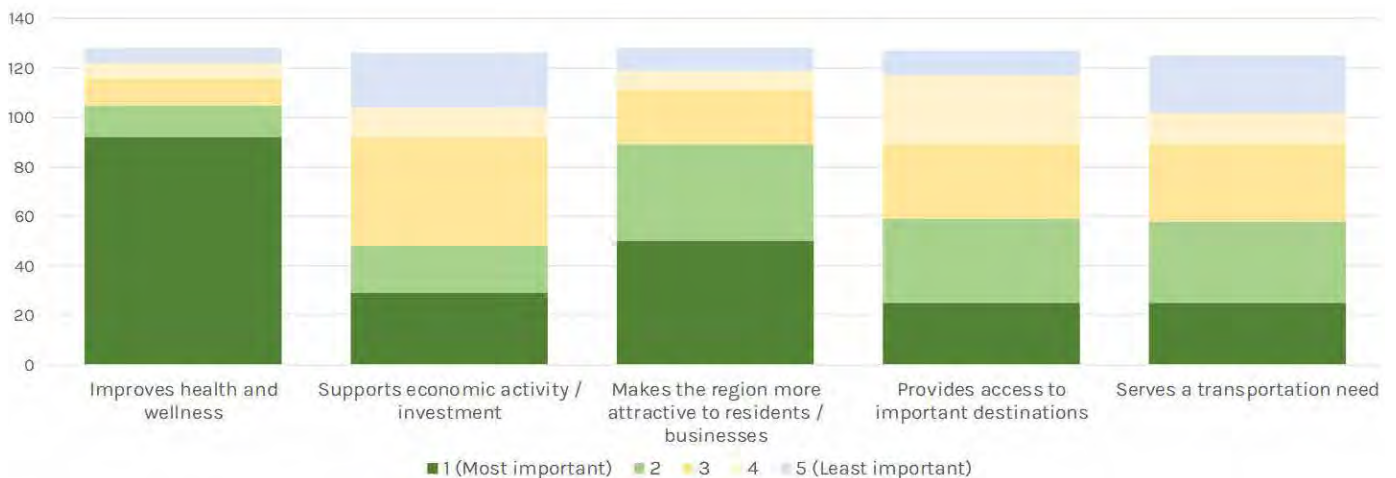
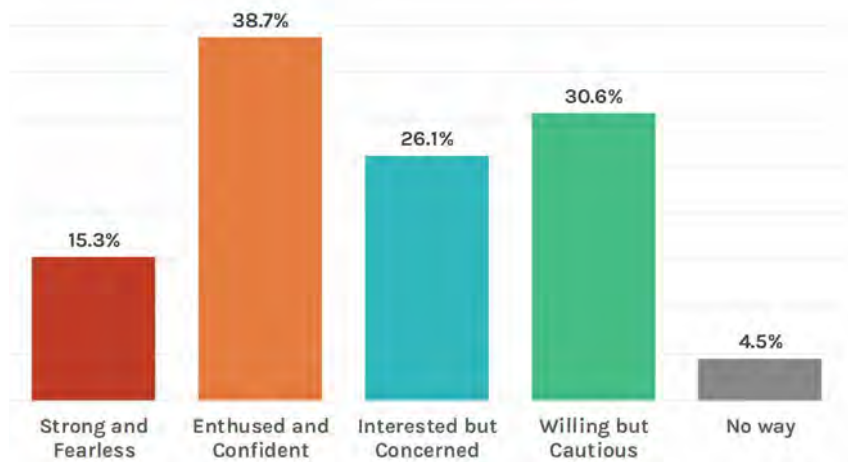
- Reviewed trail gaps identified by the Steering Committee and Planning Team, and supplemented with additional input from the public.
- Launched a web-based survey concurrent with the public meeting (along with paper copies for direct distribution to meeting participants). Results are summarized on subsequent pages.
- St. Clair County Transportation Study (SCCOTS) Work Session (February 13, 2019). This group was comprised of MDOT officials, regional, county, and local transportation-related staff that are focused on engineering and implementing transportation projects.
 - Reviewed preliminary route options and segments for technical feasibility and to gauge implementation support or other considerations for implementation (cost, constructability, property access, preferred design treatments, etc.).
- Steering Committee Direction Meeting (March 21, 2019)
 - Reviewed refined route options and approaches for resolving gaps in the network at a detailed level with the Steering Committee.
 - Discussed factors and methods for prioritizing projects for implementation.

SURVEY FINDINGS

The web-based and paper survey generated 130 responses, with the large majority of these (104 responses) during December 2018-January 2019. The survey was advertised through the county website, press-releases, social media, and shared with community representatives for further distribution.

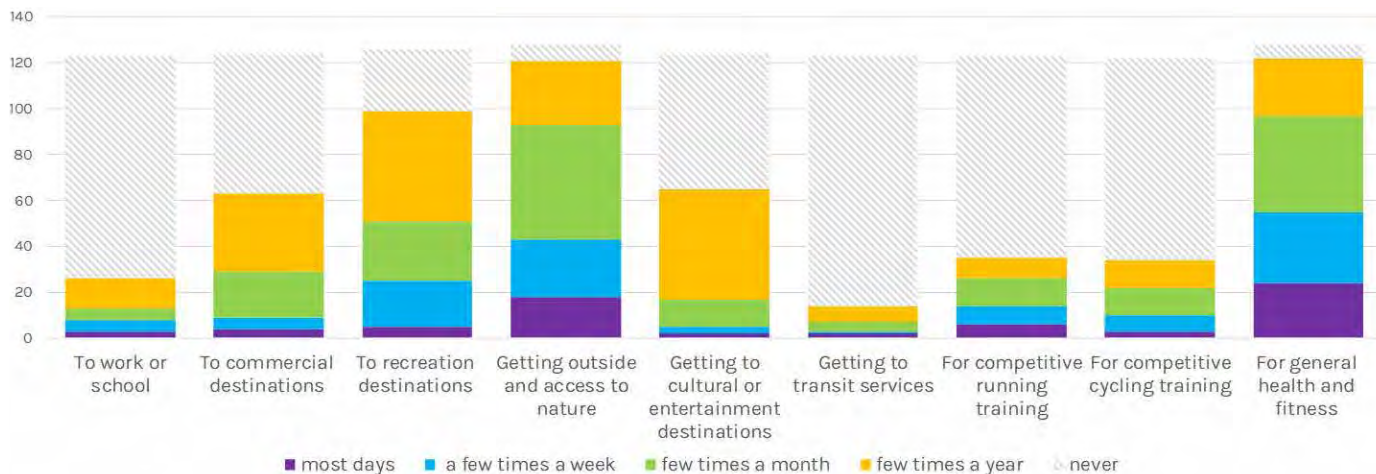
Q: WHAT TYPE OF BIKE RIDER ARE YOU?

The first question asked respondents to identify what type of bike rider they are. A very high portion of respondents reported they were "Strong and Fearless" (15.3%) or "Enthusied and Confident" (38.7%), compared to national averages of 7% and 5% respectively. This indicates there was a self-selection bias among survey participants, such that those that took the survey were more likely to already be more confident bike riders. "Interested but Concerned" and "Willing but Cautious" combined for 56.7%, which is also a higher than national averages (at 51%).



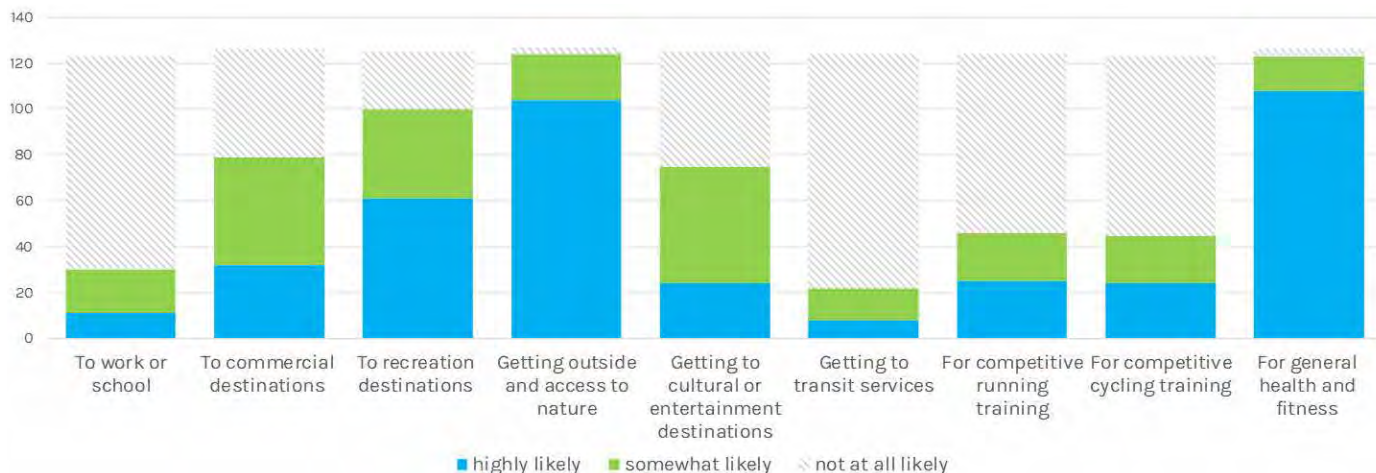
Q: WHAT DO YOU FEEL ARE THE MOST IMPORTANT TRAIL OR BIKEWAY BENEFITS?

Improving health and wellness was by far the most important benefit reported by survey respondents. Making the region more attractive to residents and business also scored highly, although a seemingly related benefit - supporting economic activity and investment - scored the lowest. This may be due to not understanding the link between trails, residents/job attraction, and economic health.



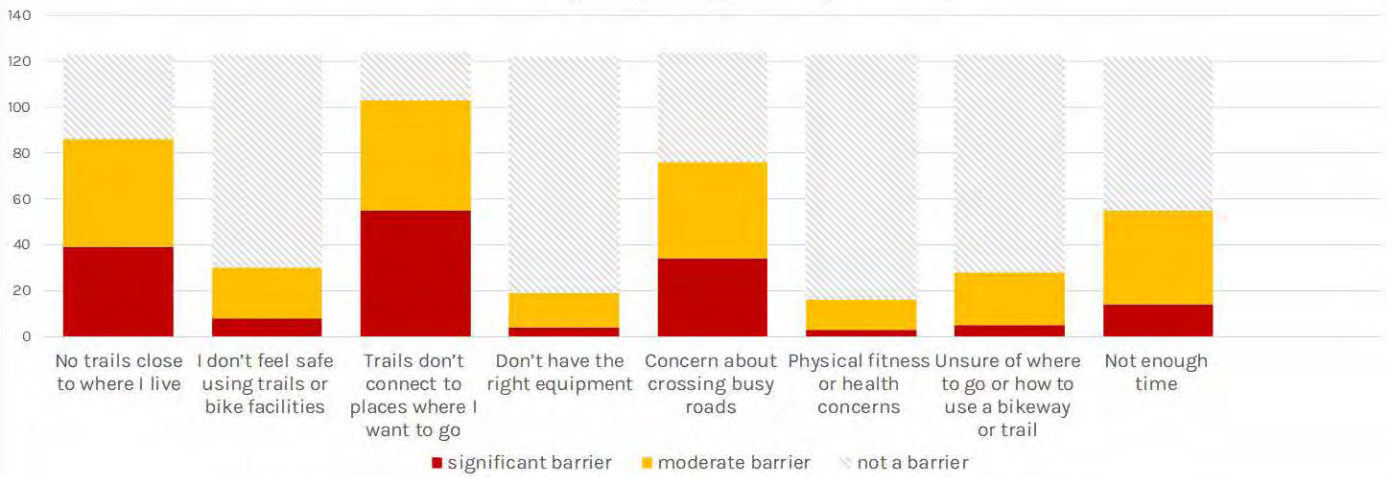
Q: HOW FREQUENTLY DO YOU CURRENTLY USE TRAILS AND BIKEWAYS FOR DIFFERENT ACTIVITIES?

Trails and bikeways were used most frequently for "Getting Outside and Access to Nature" and "For General Health and Fitness." Accessing recreational, commercial, and cultural/entertainment destinations were also a frequent use for trails and bikeways. Given the limited level of transit service across the county, it is not surprising to see "Getting to transit services" score towards the bottom.



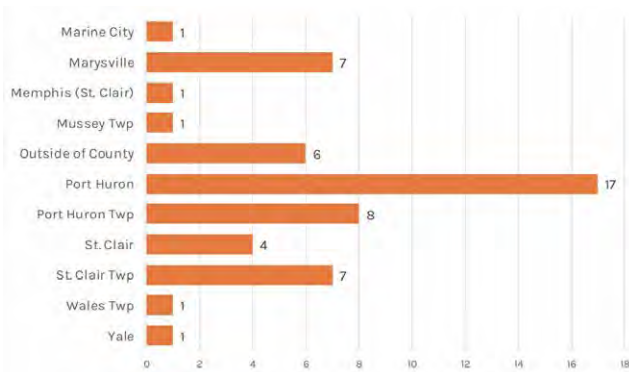
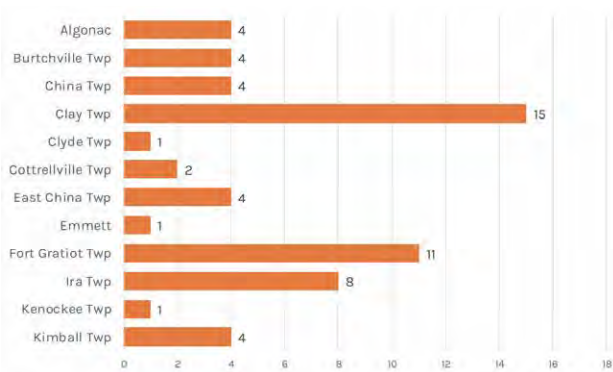
Q: HOW LIKELY ARE YOU TO USE TRAILS AND BIKEWAYS FOR DIFFERENT ACTIVITIES IN THE FUTURE?

Results are overall consistent with patterns from the prior question about current trail use frequency. Numbers across nearly all categories were slightly higher compared to current uses.



Q: TO WHAT EXTENT ARE THE FOLLOWING BARRIERS PREVENTING YOU FROM USING TRAILS OR BIKEWAYS MORE OFTEN?

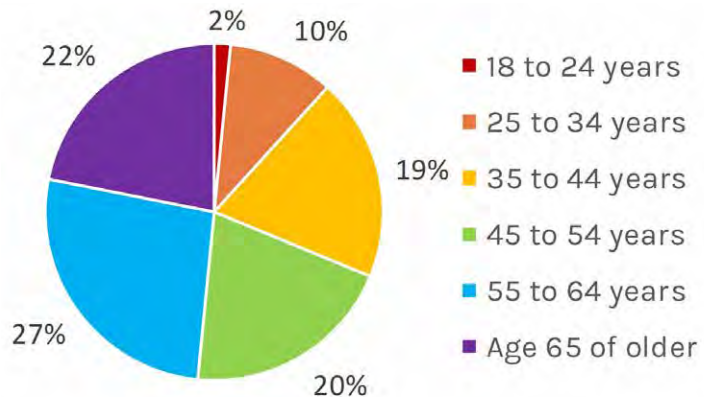
The most significant perceived barrier, "Trails don't connect to places where I want to go," is fortunately a barrier this planning effort can help address by identifying desired destinations and identifying ways to build a more complete, less fragmented trail system.



Q: WHAT COMMUNITY DO YOU LIVE IN?

Q: WHAT IS YOUR AGE?

In comparison to the county-wide demographics, the survey respondents tended to be older adults. 22% of respondents are 65 years of age or older, compared to 14.5%. Similar, only 2% of respondents were under 18 years, compared to 19.6% of the county overall being 18 years or younger.







CHAPTER 03

TRAIL FRAMEWORK

TRAIL FRAMEWORK PROCESS

WHAT IS A TRAIL FRAMEWORK?

The central element of the St. Clair County Trails Plan is the trail framework. A trail framework identifies feasible and actionable trail projects - whether new off-road trails or on-road bikeways - that support the project goals of:

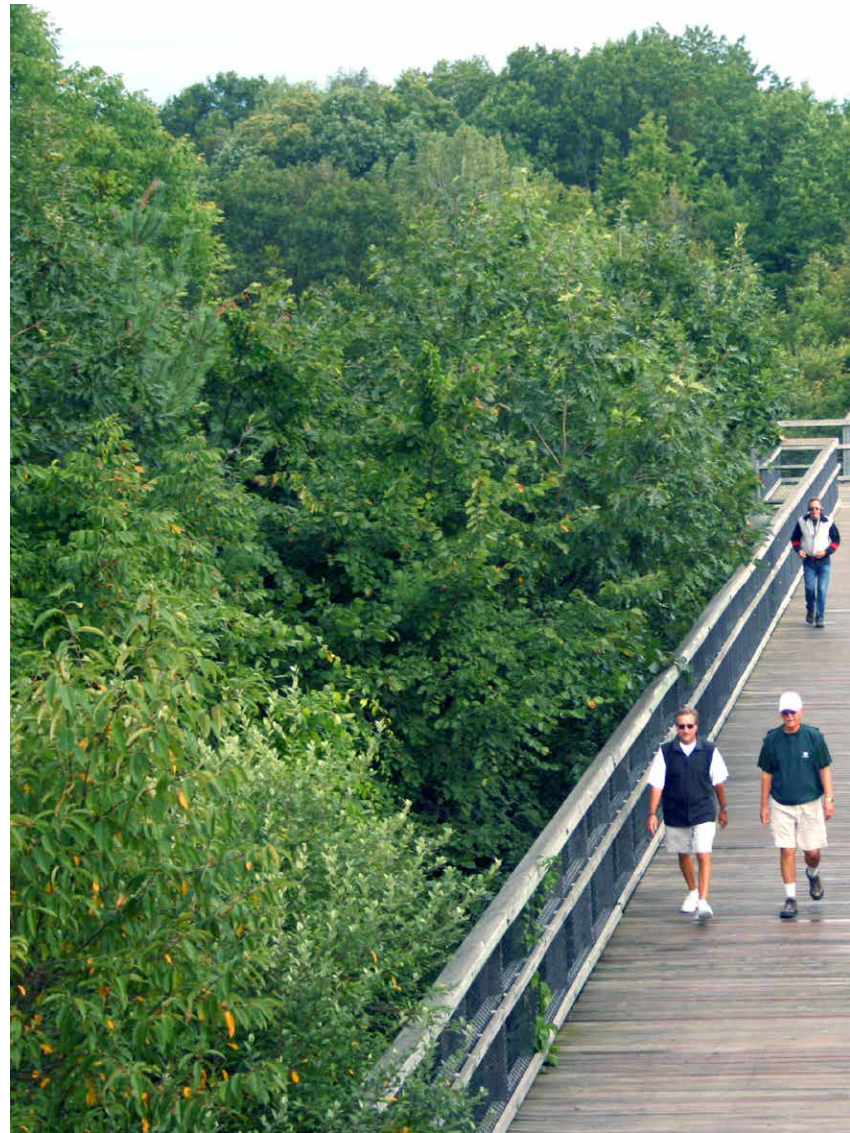
- Creating a connected regional trail network
- Driving economic development and reinvestment
- Encouraging collaborations and partnerships
- Enhancing public health, safety, and green infrastructure

HOW IS TRAIL FRAMEWORK PLAN BUILT?

The trail framework plan for St. Clair County was built through a three-step process.

STEP 1 - GAP IDENTIFICATION

Using existing spatial data, stakeholder feedback, field investigation, and local expertise, the Planning Team identified overall gaps in the trail system. This planning effort focused primarily on gaps in the larger regional network, with the objective of linking together the significant existing trails into an intact network. Specific attention was paid during this process to identify gaps that aligned with key destinations and assets along proposed corridors - such as recreational destinations and downtowns or other commercial centers.





STEP 2 - GAP ALTERNATIVES

The Planning Team, working closely with the projects partner organizations, identified potential routes or trail "segments" that are candidates for filling the identified gaps. In many cases, there are multiple routes or trail alignments that could bridge a gap. After a broad range of candidate segments were identified, each segment was assessed in terms of feasibility, length, potential cost of construction (based on the type of proposed facility), and potential roadway or property impacts.

STEP 3 - PROJECT PRIORITIZATION

The final step in the process was developing a scoring matrix to help quickly prioritize the many segments and inform how a sequence of route segments could be stitched together into a logical "project" that could be pursued for implementation.

The following pages describes each step in this process in more detail.

GAP IDENTIFICATION

Twenty-five (25) major gaps were identified by the Planning Team. These gaps became the focus of the trail planning effort. The following briefly describes the extent and major opportunities associated with gap. The map on the following page shows the location of these gaps in red.

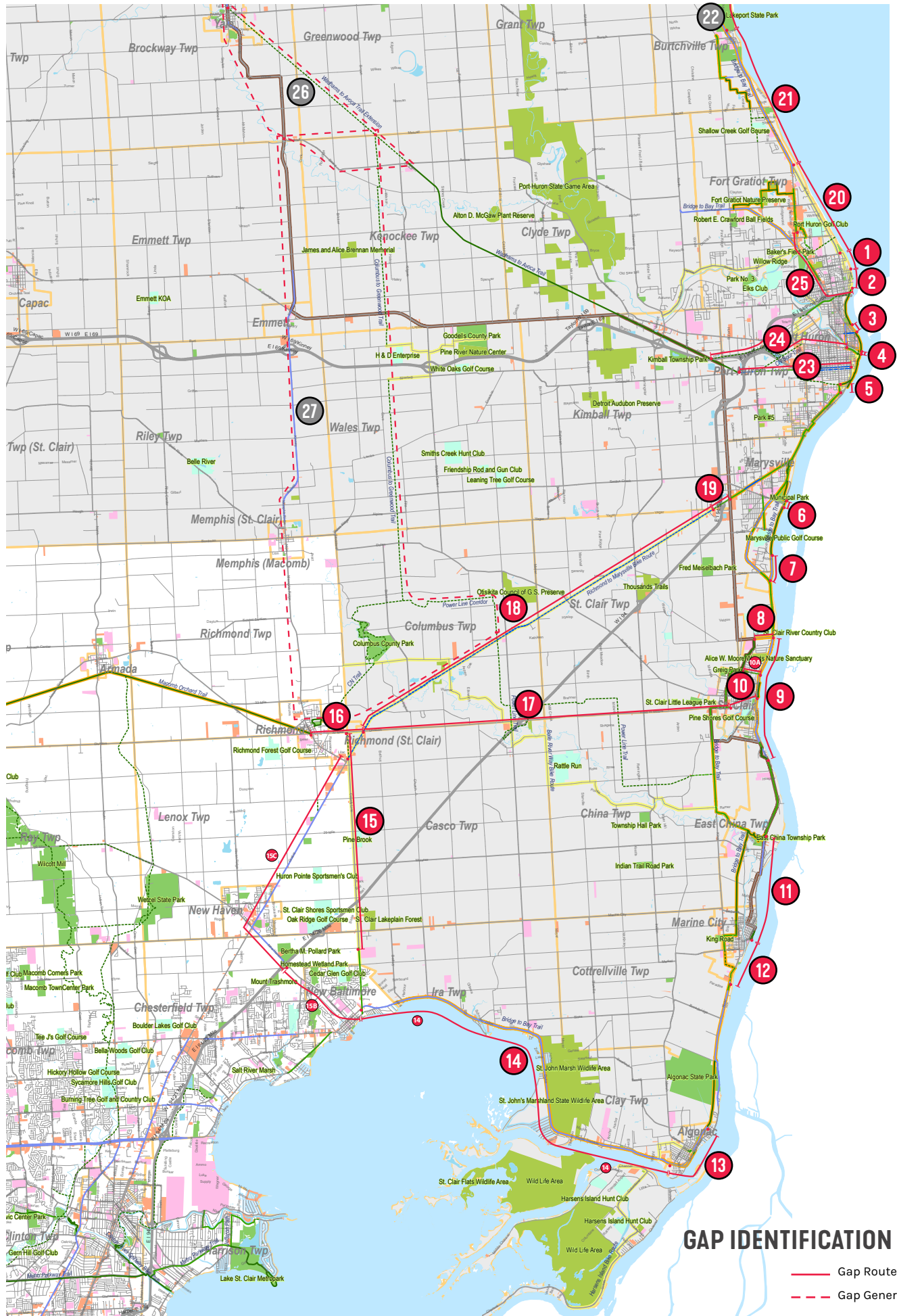
- GAP 1 - LIGHTHOUSE PARK TO LAKESIDE PARK
- GAP 2 - LIGHTHOUSE PARK TO THOMAS EDISON PARK
- GAP 3 - PINE GROVE PARK TO KEIFER PARK
- GAP 4 - DOWNTOWN PORT HURON
- GAP 5 - BLUE WATER RIVER WALK TO ELECTRIC
- GAP 6 - MARYSVILLE CONNECTIONS
- GAP 7 - MARYSVILLE TO BUSHA ROAD
- GAP 8,9,10 (COMBINED) - ST. CLAIR CONNECTIONS
- GAP 11 - MARINE CITY CONNECTIONS
- GAP 12 - MARINE CITY TO ALGONAC STATE PARK
- GAP 13 - ALGONAC CONNECTIONS
- GAP 14 - ALGONAC TO NEW BALTIMORE
- GAP 15 - NEW BALTIMORE TO RICHMOND
- GAP 16 - RICHMOND CONNECTIONS
- GAP 17/18/19 (COMBINED) - GREAT LAKE TO LAKE TRAIL EAST CONNECTION
- GAP 20 - FORT GRATIOT PRESERVE TO LAKESHORE
- GAP 21 - LAKEPORT STATE PARK TO FORT GRATIOT PRESERVE

- GAP 23/24 (COMBINED) - WADHAMS TO AVOCA TRAIL TO BRIDGE TO BAY TRAIL (PORT HURON WEST)
- GAP 25 - PORT HURON NORTH CONNECTORS

Detailed maps of each of these gaps and the identified segments, key land uses, and recreational destinations are included in the appendix of this report.

A few additional gaps were identified on the overall county plan, but these gaps were not explored in greater detail in this planning effort. These include:

- GAP 22 - LAKEPORT STATE PARK TO NORTH COUNTY LINE. Lakeport State Park is the identified terminus for the Bridge to Bay Trail system. Connections further to the north are desired to complete cross-county connections, and efforts to build these can be explored in the future.
- GAP 26 - WADHAMS TO AVOCA TRAIL EXTENSION. This gap reflects a desire to continue to the Wadhams to Avoca Trail further to the northwest into Yale. This gap, while ultimately important to the overall network, faces challenges in terms of property access along the railroad corridor.
- GAP 27 - CENTRAL COUNTY NORTH-SOUTH CONNECTION. A number of potential off-road trail routes have been identified by prior trail planning efforts as a means of connecting north-south through the central part of the county. This could include the use of the utility (power line) corridors or trails within road right-of-ways. Portions of this gap lies within Macomb County, and so cross-country coordination will be important for addressing this gap in the future.



GAP IDENTIFICATION MAP

- Gap Route
- - - Gap General Area

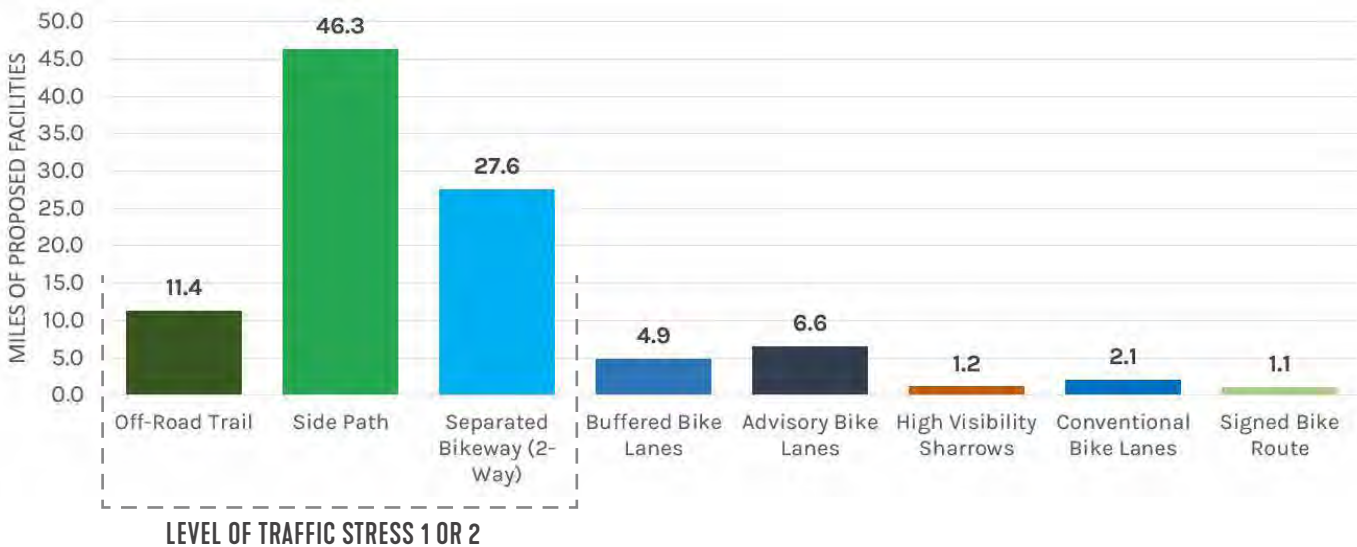
GAP ALTERNATIVES

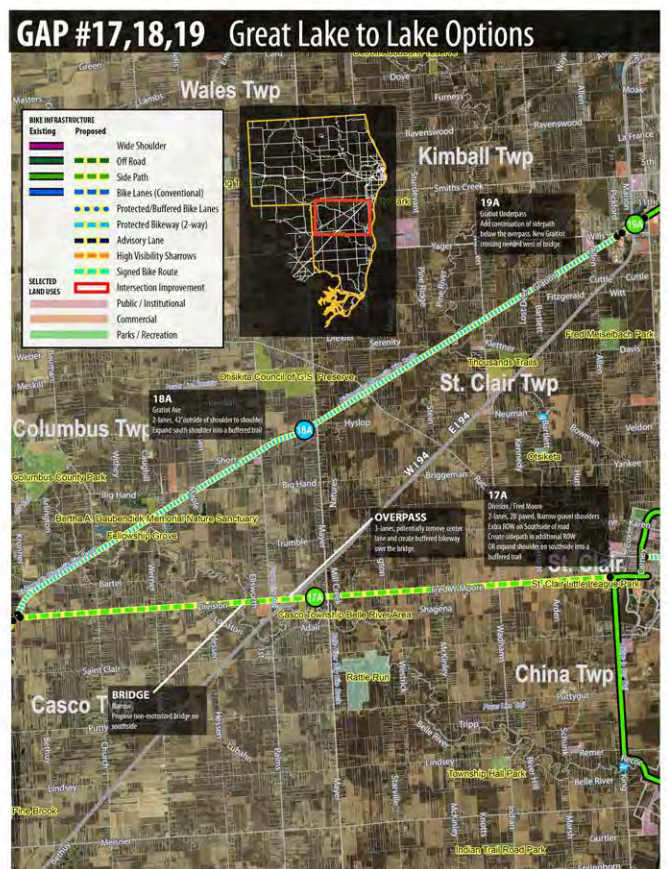
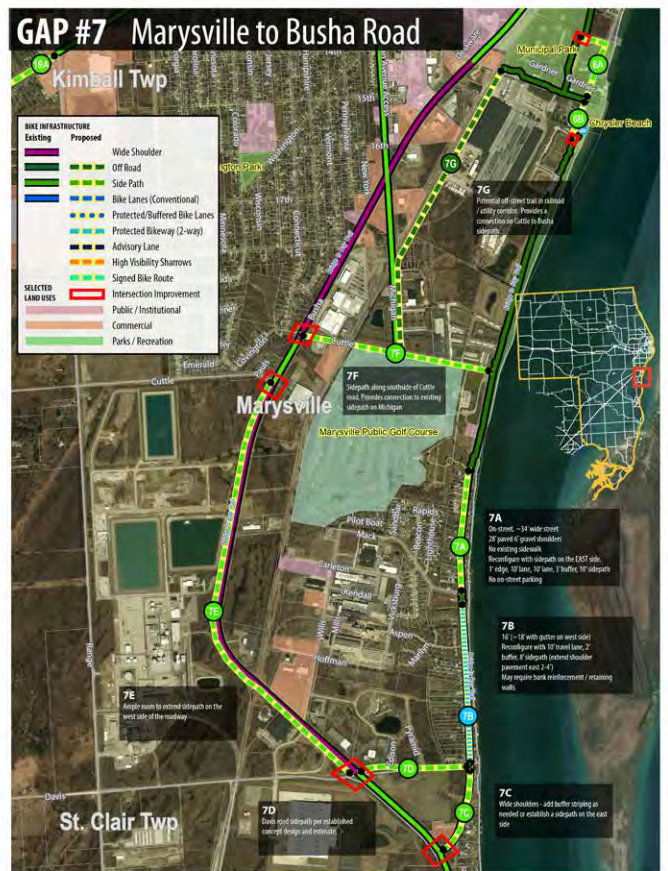
For each of the analyzed gaps, a range of alternative ideas were explored for bridging the gap. Specifically, these ideas were individual segments that identified a specific type of trail or bikeway facility (see Chapter One - Trail and Bikeway Facility Types for conceptual examples of each type). These facilities include:

- Off-Road Trails
- Side Paths
- Separated Bikeways (two-way facility)
- Buffered Bike Lanes
- Advisory Bike Lanes
- Enhanced Sharrows
- Conventional Bike Lanes
- Signed Bike Routes

In total, 137 individual segments were identified, representing 101-miles of potential new facilities. The majority of these proposed facilities, consistent with the overall design approach of emphasizing all ages and all abilities, are Level of Traffic Stress (LTS) 1 or 2 facilities. Off-road trails, side paths, and separated bikeways comprise 84% of the total length of proposed route segments.

The maps on the following page show examples of the detailed gap maps included in the appendix of this report. The gap maps identify the start and end point of each segment and the proposed facility type.





SAMPLING OF THE GAP ALTERNATIVES MAPS USED DURING THE PLANNING PROCESS. ALL DETAILED MAPS INCLUDED IN THE REPORT APPENDIX.

PROJECT PRIORITIZATION

The final step in developing the framework was evaluating the benefits, opportunities, and costs of each of the route segments based on a range of criteria and use that as basis for selecting prioritized segments to combine into a coherent project. The resulting lists of projects reflects the culmination of this planing effort and are described in detail in the next section.

The evaluation approach considered two major elements: (1) the "value" a given segment provided in terms of alignments with the overall goals of the St. Clair Trails Plan; and (2) the "challenges" faced when implementing the routes.

VALUE CRITERIA

- **Connections to existing trails or bicycle facilities:** Segments scored higher if they connected to lower Levels of Traffic Stress (LTS) facilities, such as trails or side paths. Segments scores higher if the proposed alignment or what was being connected to was part of an identified regional trail connection (i.e. Bridge to Bay Trail or Great Lake to Lake Trail Route #1).
- **Destinations Accessed and Economic Benefits:** Segments scored higher for connecting directly to core commercial or downtown commercial destinations, large recreational facilities or regional park destinations, and smaller park destinations.
- **Attractiveness and Impact of Proposed Facility:** If the proposed facility type is LTS 1 or 2, passes through an especially scenic or attractive context the segment scored more highly. If the route was on a street in a higher LTS 3 or 4 environment, its score was reduced.

- **Transportation Opportunities:** If the segment passed through high population density, high job density, or both high population AND high job density areas, it scored higher. This criteria reflects the segments ability to serve pure transportation functions for connecting people to potential workplaces.
- **Implementation Support:** If the route is aligned with an identified capital improvement project, has an identified organization that will champion implementation, and/or has a committed funding source, it scored higher.

CHALLENGE CRITERIA

- **Property Access:** If a segment relies on an access easement through private property or direct acquisition, the route scored lower. If more than ten different property owners are affected, the score was further reduced.
- **Impacted Right-of-Way Uses:** If right-of-way widths are constrained and trade-offs need to be made in street uses in order to accommodate a trail or bikeway facility (such as removing parking or travel lanes), then the route may score lower. In some cases, roadway reconfigurations - such as a road diets - are a net positive on their own and may ultimately result in a higher score for the route.
- **Cost of Construction and Complexity:** If there are anticipated costs for a given segment above and beyond the typically associated cost (such as segments requiring bridges or elevated trail, major utility or drainage changes, etc) the route may be scored lower.

PRIMARY PROJECTS

The three types of projects described below (Critical Gaps, Transformative, and Important) are projects that should be actively pursued for implementation as a priority for partners and agencies across the county. These projects reflect those that generally scored high across the priority matrix scoring and/or provide essential, primary connections between existing trail facilities.

CRITICAL GAP

Projects that provide an essential connection between two existing and significant trails or other non-motorized facilities. Implementing Critical Gap projects will provide the most significant improvements to the overall interconnectivity of the trail network. Cost is less of a consideration given the importance of the connection.

TRANSFORMATIVE

Projects that are more expensive and/or challenging to implement, but which have the capacity to dramatically change the experience and function of the corridor. High value and impact projects with relatively higher implementation costs.

IMPORTANT

Projects that add significantly to the overall network by connecting to new destinations. Typically, they connect on at least one end to an existing trail or non-motorized facility, and thus extend the reach of existing facilities. Typically high value projects with moderate costs.

SECONDARY PROJECTS

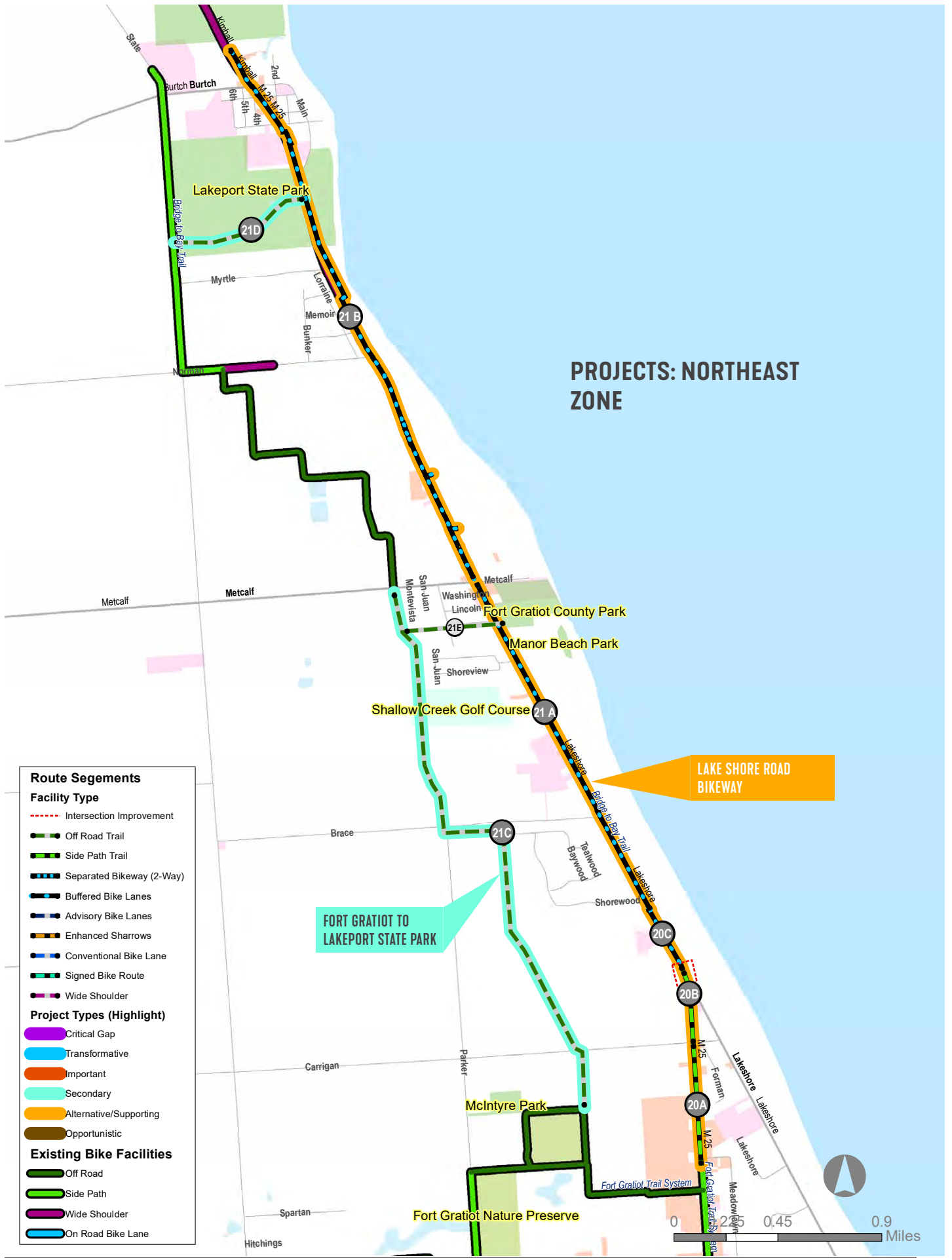
These projects reflect additional opportunities for creating trails and other non-motorized connections. These projects are considered secondary because they may do one or more of the following (1) provide a supplemental or additional parallel connection to a primary project; (2) provide a near-term alternative to a primary project with a lower-level facility; and, (3) may be an opportunistic or “easy win” project that is quick to implement but delivers less benefits.

SECONDARY

These are new routes that are significant and should be viewed as the “next set” of priority projects. Opportunities to implement these projects should always be considered.

ALTERNATIVE

These are near-term, alternative, or other supporting routes. Should certain primary routes prove infeasible, then these alternative routes can be considered. This category also includes routes that are relatively low-cost and/or provide less amenity value compared to other routes, but should nevertheless be planned long-term as part of the overall network. Opportunities to piggyback these projects on other roadway projects should be considered.



PROJECTS: NORTHEAST ZONE

Route Segments	
Facility Type	
	Intersection Improvement
	Off Road Trail
	Side Path Trail
	Separated Bikeway (2-Way)
	Buffered Bike Lanes
	Advisory Bike Lanes
	Enhanced Sharrows
	Conventional Bike Lane
	Signed Bike Route
	Wide Shoulder
Project Types (Highlight)	
	Critical Gap
	Transformative
	Important
	Secondary
	Alternative/Supporting
	Opportunistic
Existing Bike Facilities	
	Off Road
	Side Path
	Wide Shoulder
	On Road Bike Lane

LAKE SHORE ROAD BIKEWAY

FORT GRATIOT TO LAKEPORT STATE PARK

PROJECTS: NORTHEAST ZONE

FORT GRATIOT TO LAKEPORT STATE PARK (GAP 21)

Segment 21C/21D - SECONDARY | New Route

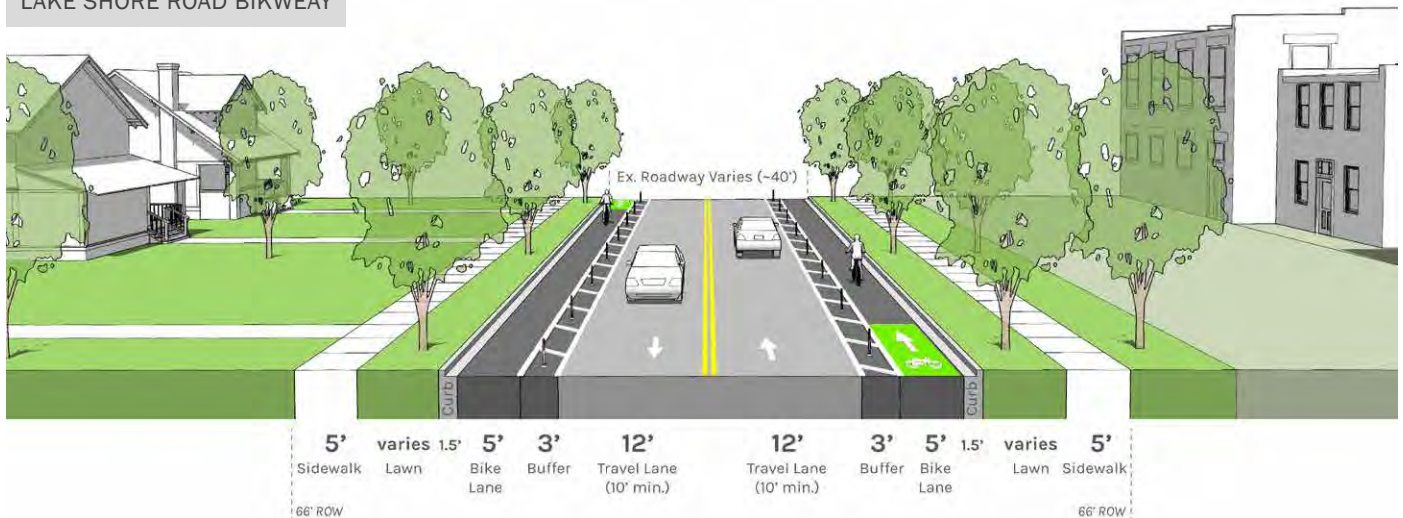
This proposed off-street trail would utilize mostly undeveloped natural lands and connect from Fort Gratiot Nature Preserve north to existing trails at Metcalf Road (east of Eastwood Drive). Implementation of this trail will require securing access easements through privately held property. A second section of off-street trail can be constructed through Lakeport State Park to provide a connection out to the lake front, utilizing the existing non-motorized bridge over Lakeshore Road.

LAKESHORE ROAD BIKEWAY (GAP 21)

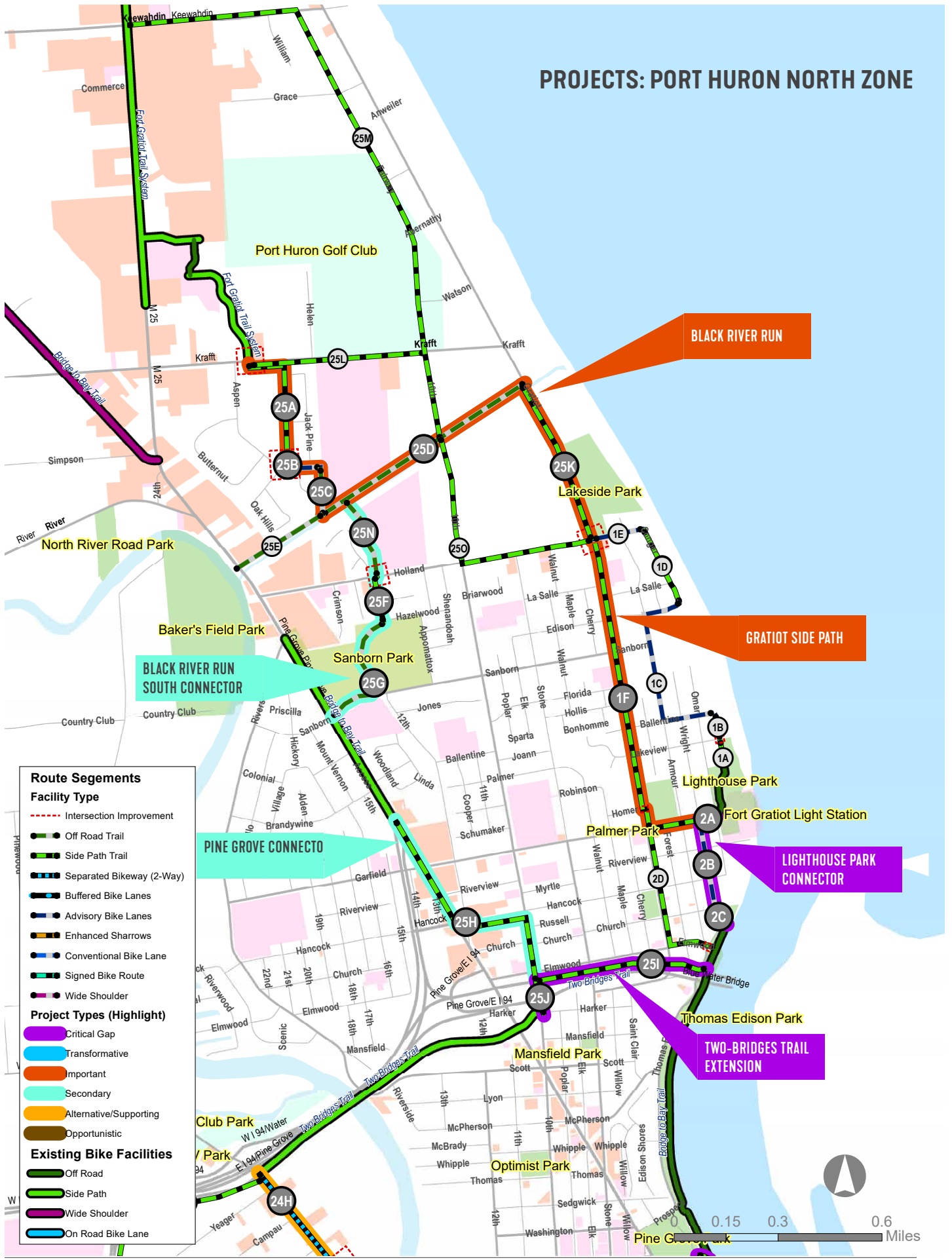
Segment 20A/20B/20C/21A/21B - ALTERNATIVE

As a potential near-term alternative to the above route is to extend the existing side path on 24th Avenue (M-25) north to Lakeshore Road (segment 20A and 20B). Relatively wide shoulders along the length of the corridor allows for buffered bike lanes to be installed through lane striping and signage. While not a low LTS facility, it would provide a connection and help raise the visibility of bike riders along the corridor and moderate driving speeds.

DESIGN APPROACH FOR LAKE SHORE ROAD BIKWEAY



PROJECTS: PORT HURON NORTH ZONE



PROJECTS: PORT HURON NORTH ZONE

GRATIOT SIDE PATH (GAP 1)

Segment 1F - IMPORTANT

Provides a side path connection down Garfield Street, connecting Lighthouse Park to Palmer Park and then north on Gratiot Avenue to Lakeside Park. The existing lawn extensions (between the sidewalk and road curb) are quite wide, and can readily accommodate a side path.

LIGHTHOUSE PARK CONNECTOR (GAP 2)

Segment 2A/2B/2C - CRITICAL GAP

Provides the final connection from the current north end of the Bridge-to-Bay Trail to Lighthouse Park (terminus for the Great Lake to Lake Route #1). Uses a combination of side paths and advisory bike lanes on slower moving streets. Intersections should be converted into all-way stops (instead of two-way stops), to slow traffic and allow bike riders to make safer crossings through neighborhood streets.

TWO-BRIDGES TRAIL EXTENSION (GAP 25)

Segment 25J/25I - CRITICAL GAP

The existing Two-Bridges Trail ends at 10th Street just south of the border crossing facility at Harker Street. Segment 25J would improve the existing sidewalk conditions below the bridge on 10th Street to create a connection to a new side path along Elmwood Street (25I). This side path would link into existing sidewalks, which can be widened and can ultimately connect to the existing trail at the water's edge.

An desirable alternative or supplement is to locate a separated trail below the Blue Water Bridge within the bridge easement.

BLACK RIVER RUN (GAP 25)

Segment 25K/25D/25C/25B/ 25A - IMPORTANT

This route provides a connection from Lakeside Park north to an existing side path and trail system along 24th Avenue – a large commercial shopping district. The first segment (25K) is a continuation of the side path along Gratiot Avenue, and turns west at the Black River, becoming an off-street trail (25D) at the top of the bank. This trail runs around the back edges of Port Huron Northern High School (25C) with an opening onto Jack Pine Lane (25B), using advisory lanes. The existing sidewalk on Tamarack Drive (25A) can be expanded into a side path connecting north to Kraft Road. A new mid-block crossing between Tamarack Drive and Aspen Drive will provide a connection to the existing side paths that continue further north.

BLACK RIVER RUN – SOUTH CONNECTOR (GAP 25)

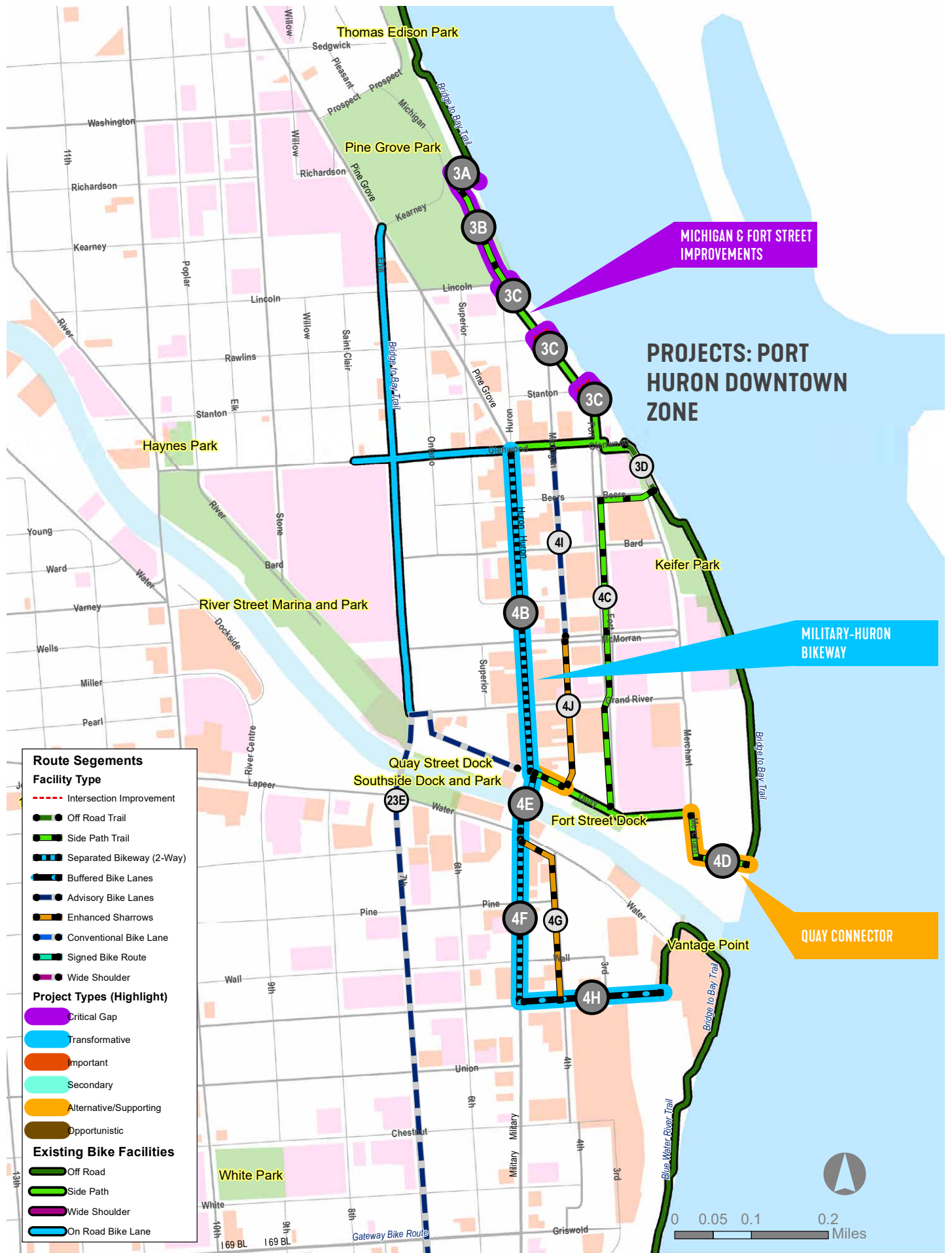
Segment 25N/25F/25G - SECONDARY

A subsequent phase of trail in this area can utilize a new non-motorized bridge over the Black River to the Holland Woods Middle School (25N). An off-street trail can connect to and cross Hollard Avenue and connect south on Parkway Drive (25F) to Sanborn Park. A new/improved trail through the park (25G) can provide a connection to the existing side path on Pine Grove Avenue.

PINE GROVE CONNECTOR (GAP 25)

Segment 25H - SECONDARY

A shorter section of side path that extends south from the existing section of side path along Pine Grove, traversing down Hancock Street and 10th Street to connect to the Two-Bridges Trail Extension. This would help complete a small local loop of trails.



PROJECTS: PORT HURON DOWNTOWN ZONE

MICHIGAN & FORT STREET IMPROVEMENTS (GAP 3)

Segment 3/3A/3B - CRITICAL GAP

Widening sidewalk into a side path to provide a consistent width connection south to the existing trail segments. Intersection improvements along Michigan Street (e.g. bumpouts to reduce crossing distances) should be incorporated as part of these improvements.

MILITARY-HURON BIKEWAY (GAP 4)

Segment 4B/4E/4F - TRANSFORMATIVE

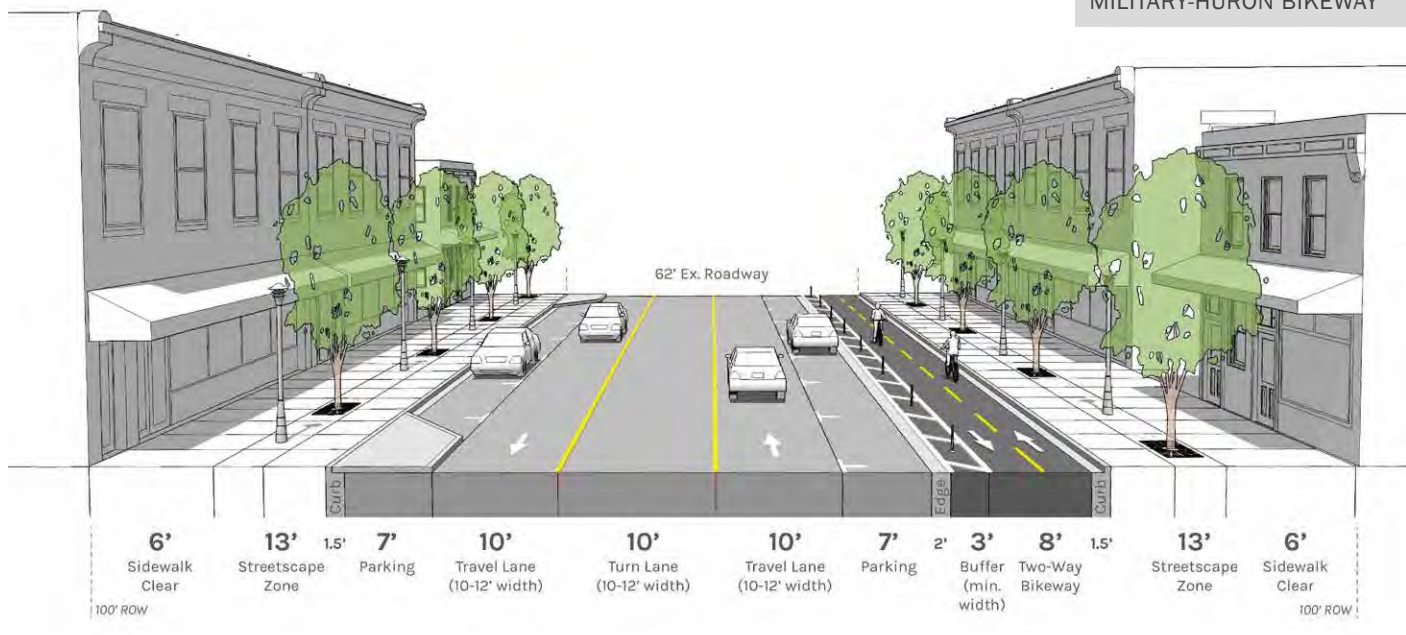
Pursue a road diet on Military Street/Huron Street (four lanes to three lanes) in order to build a protected bikeway on the east side, which would provide direct connection to many significant destinations. Construction would be relatively economical given that minimal curb adjustments would be needed, although some bumpouts would need to be removed. Existing parking can largely be preserved on both sides of the road (see cross-section below for conceptual design).

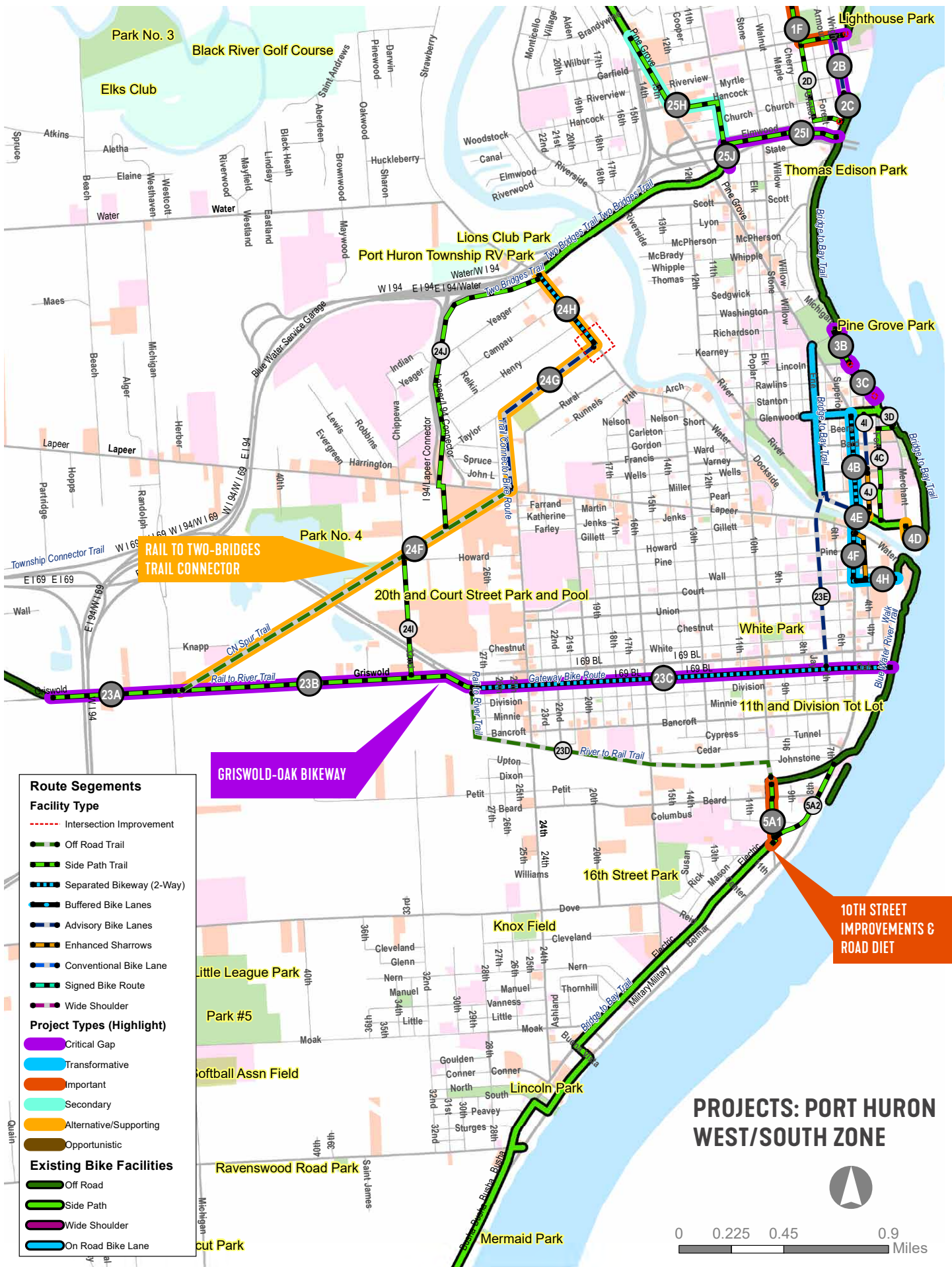
QUAY CONNECTOR (GAP 4)

4D - ALTERNATIVE

Quay Street improvements are planned for 2019. Extend side path connection (4D) to existing trail and Quay Street side path. Improve the block of Quay Street (4E) east of Huron Street to create connection to Huron Street near the bridge. Consider lane reduction/narrowing on Quay Street to create additional bikeway space. Alternatively, rebuild poor condition curb and sidewalk to create extension of the side path. This route could connect to the southern portion of the Military-Huron Bikeway to avoid having to do the full extent of that project in one undertaking.

DESIGN APPROACH FOR THE MILITARY-HURON BIKEWAY





Route Segments	
Facility Type	
	Intersection Improvement
	Off Road Trail
	Side Path Trail
	Separated Bikeway (2-Way)
	Buffered Bike Lanes
	Advisory Bike Lanes
	Enhanced Sharrows
	Conventional Bike Lane
	Signed Bike Route
	Wide Shoulder
Project Types (Highlight)	
	Critical Gap
	Transformative
	Important
	Secondary
	Alternative/Supporting
	Opportunistic
Existing Bike Facilities	
	Off Road
	Side Path
	Wide Shoulder
	On Road Bike Lane

PROJECTS: PORT HURON WEST/SOUTH ZONE



PROJECTS: PORT HURON WEST/SOUTH ZONE

10TH STREET IMPROVEMENTS & ROAD DIET (GAP 5)

Segment 5A1 – IMPORTANT

The existing side path on 10th Street is in very poor condition and is not adequately buffered from the curb and active travel lanes. It also does not meet standard width requirements for shared-use trails. Pursue a road diet (four to three lanes) given the lower AADT volumes. Rebuild east side of the roadway with a proper width side path trail. Alternatively, could build a two-way bikeway in the roadway via space created from the road diet as a less costly approach.

GRISWOLD-OAK BIKEWAY (GAP 23)

Segment 23A/23B/23C - CRITICAL GAP

The existing Wadhams to Avoca Trail ends just west of I-94. There is ample room below the I-94 bridge and to the east to construct a side path from the current trail terminus east to Michigan Road (23A). At Michigan Road, the side path crosses to the south side of the roadway and follows Griswold Street until it transitions into Oak Street (23B). Along Oak Street, parking can be removed from the south side of the street to create ample room for a wide protected bikeway (two-way bike travel) through the residential area. The three-lane portions of Oak Street would require a lane reduction down to two-lanes to provide room for the bikeway.

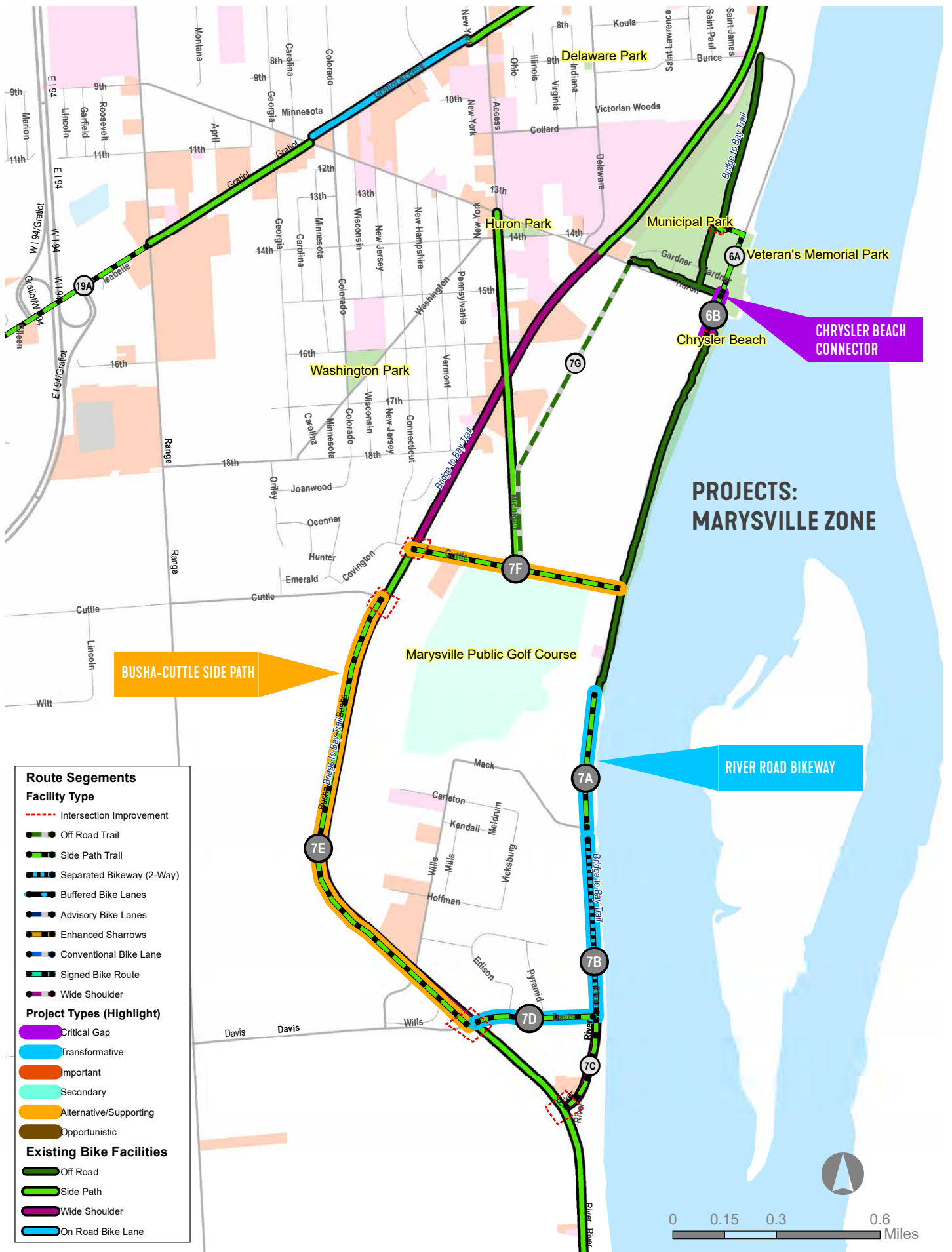
Overall, this route provides a direct connection to the existing Bridge-to-Bay Trail (Blue Water River Walk portion) and from there into downtown Port Huron.

The existing Blue Water River Walk may not be a direct enough or desired route for certain types of trail users (e.g. faster moving bike riders). A connection along 7th Street, with the potential use of advisory bike lanes connecting northward, can be considered as a supplemental link.

RAIL TO TWO-BRIDGES TRAIL CONNECTOR (GAP 24)

Segment 24F/24G/24H – ALTERNATIVE

An alternative to (or additional future route supplementing) the Griswold Street/Oak Street route is to utilize the existing railroad and utility corridor (24F) for an off-street trail connecting Griswold Street to Lapeer Avenue. From there, the trail can utilize advisory bike lanes and other bike boulevard treatments along Rural Street (24G) to Water Street, providing a connection to residences and Port Huron Little League Park. Water Street (24H), is a potential road diet candidate street, which could allow construction of a protected bikeway north to the existing Two-Bridges Trails.



PROJECTS: MARYSVILLE ZONE

CHRYSLER BEACH CONNECTOR (GAP 6)

Segment 6B – CRITICAL GAP

A short section of side path along River Road with new mid-block crossing and intersection improvements to connect to the existing trail along the water’s edge. Avoids having to route trail uses through parking lots and congested riverfront areas.

BUSHA-CUTTLE SIDE PATH (GAP 7)

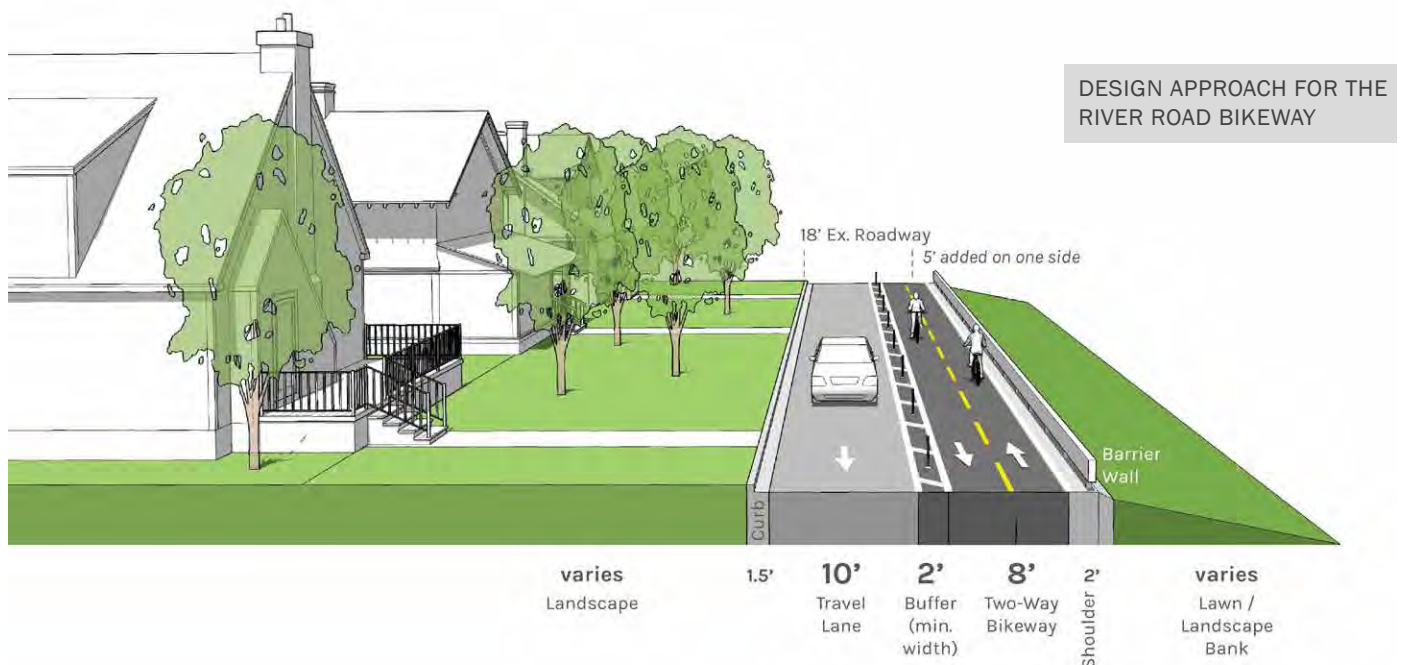
Segment 7F / 7E – ALTERNATIVE

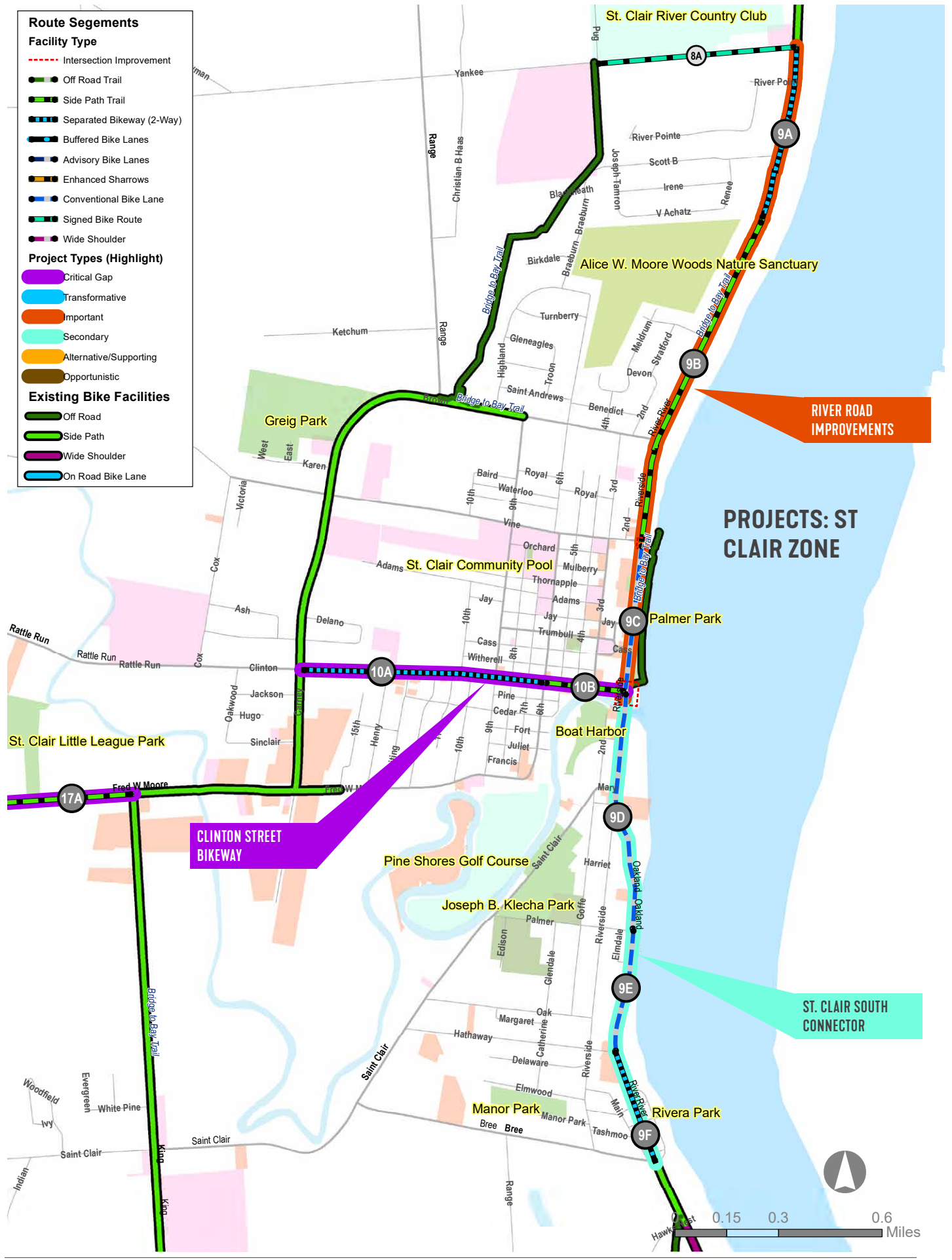
Should the River Road Bikeway be infeasible, a side path along Cuttle Road and Busha Highway can provide a connection south. This alignment can also be considered in conjunction with the River Road Bikeway in the long-term as an opportunity to create a localized trail loop.

RIVER ROAD BIKEWAY (GAP 7)

Segment 7A/7B/7D – TRANSFORMATIVE

A constrained but transformational opportunity to extend and utilize the existing trail better by making a connection further south to the existing side path on Busha Highway. This requires coordination with property owners and additional engineering work along steeper sections. One-way vehicle travel would be maintained with the shoulder widened towards the east to make space for a two-way bike facility. Retaining walls and barriers will likely be needed to stabilize the bank and protect riders.





PROJECTS: ST. CLAIR ZONE

RIVER ROAD IMPROVEMENTS (GAP 9)

Segment 9A/9B/9C - IMPORTANT

Planned improvements in St. Clair along portions of Riverside Drive and extending into River Road include a road diet and establishing bike lanes. Road diet plans indicate adequate width for creating buffered/protected bike lanes, and/or consolidating bike lanes into a protected two-way bikeway, especially in the commercial sections (9C). Section 9A is a priority for a side path continuation or buffered bikeway via shoulder widening.

ST. CLAIR SOUTH CONNECTOR (GAP 9)

Segment 9A/9B/9C - SECONDARY

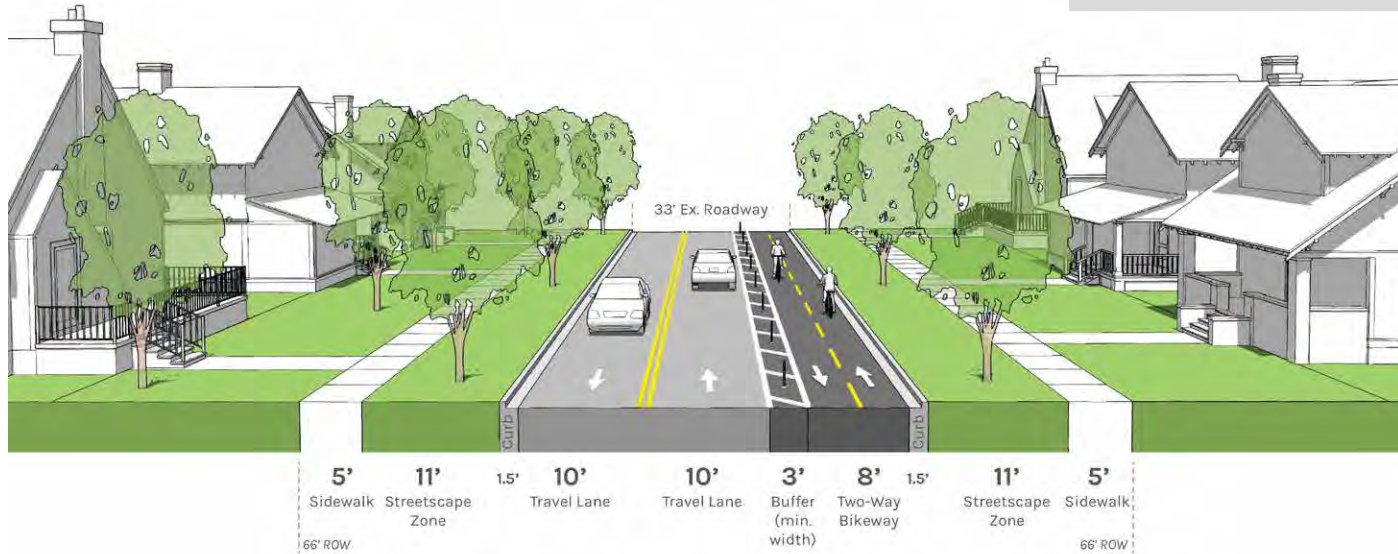
The St. Clair South Connector is an on-road route utilizing conventional bike lanes and short segments of buffered bike lanes where feasible. The right-of-way is narrow and of limited width for more extensive facilities. The side path on King Road provides a higher level facility (and is already built) and should be used as the main connection south from St. Clair.

CLINTON STREET BIKEWAY (GAP 10)

Segment 10A/10B - CRITICAL GAP

The Clinton Street Bikeway is critical for providing an east-west connection from the existing Fred Moore side path trail and connected trails/side paths through the center of town east into the downtown commercial area. Section 10A in the residential zone is relatively straightforward given the lack of on-street parking and overly wide travel lanes with unused pavement areas. Section 10B, going through a more commercial area, will be trickier to construct but provides a connection.

DESIGN APPROACH FOR THE CLINTON ROAD BIKEWAY



Route Segments

Facility Type

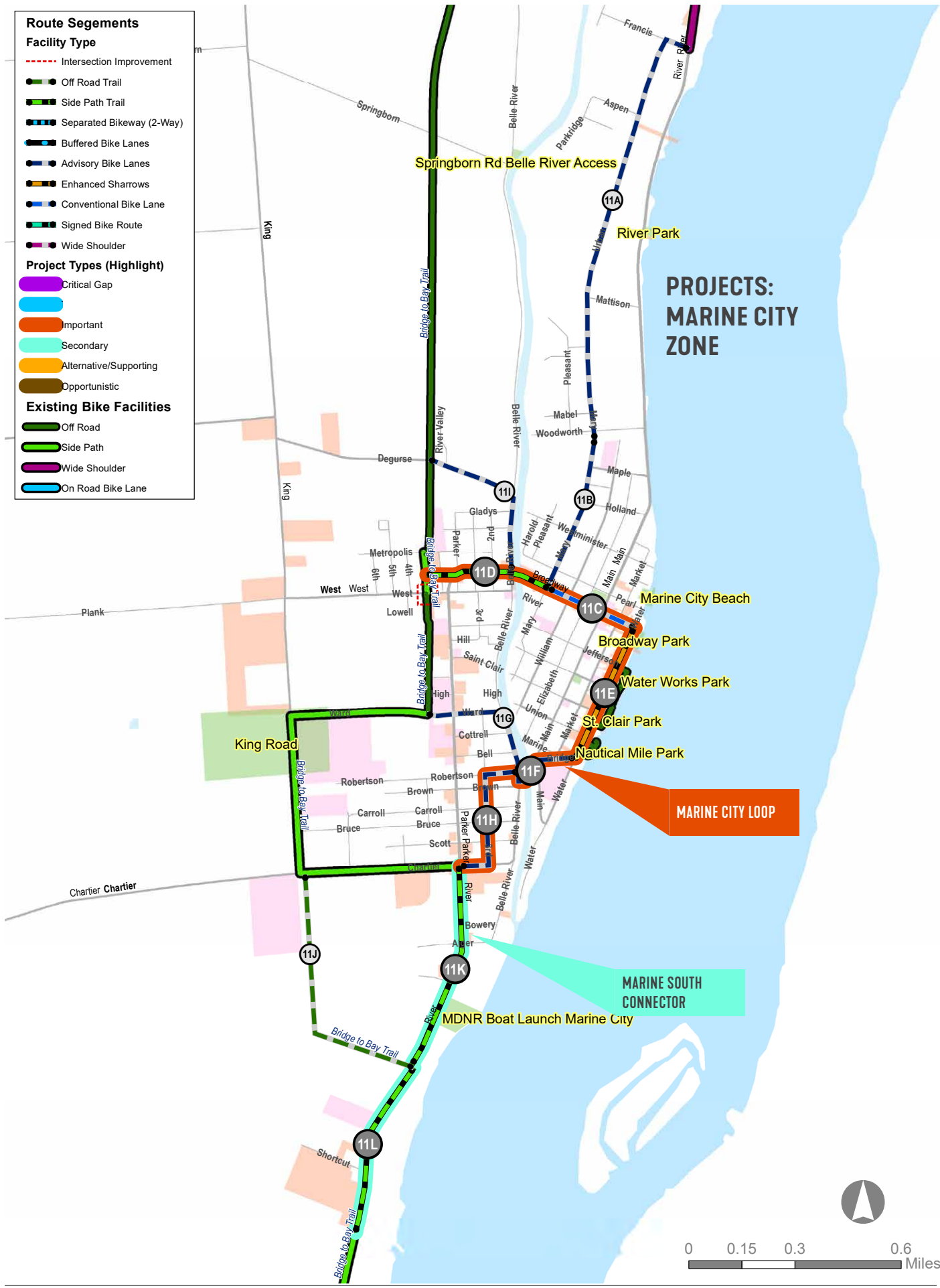
- Intersection Improvement
- Off Road Trail
- Side Path Trail
- Separated Bikeway (2-Way)
- Buffered Bike Lanes
- Advisory Bike Lanes
- Enhanced Sharrows
- Conventional Bike Lane
- Signed Bike Route
- Wide Shoulder

Project Types (Highlight)

- Critical Gap
- Important
- Secondary
- Alternative/Supporting
- Opportunistic

Existing Bike Facilities

- Off Road
- Side Path
- Wide Shoulder
- On Road Bike Lane



**PROJECTS:
MARINE CITY
ZONE**

MARINE CITY LOOP

**MARINE SOUTH
CONNECTOR**

PROJECTS: MARINE CITY ZONE

MARINE CITY LOOP TRAIL (GAP 11)

Segment 11D/11C/11E/11F/11H - IMPORTANT

This series of segments provides a connection from the trails and side paths west of the downtown area into the center of town and the waterfront area. The route along 11D will require coordination with property owners given the tight space between the curb and back of sidewalk. A non-motorized bridge may be considered over the river in this location. Section 11C has ample pavement width and lanes to accommodate in-road bicycle facilities, such as buffered lanes transitioning into conventional lanes and/or sharrows in the core business area. Going south out of the downtown area (11F and 11H) can utilize advisory bikes lanes and sharrows given the low traffic volumes (less than 2,000 AADT).

MARINE SOUTH CONNECTOR (GAP 11)

Segment 11K/11L - SECONDARY

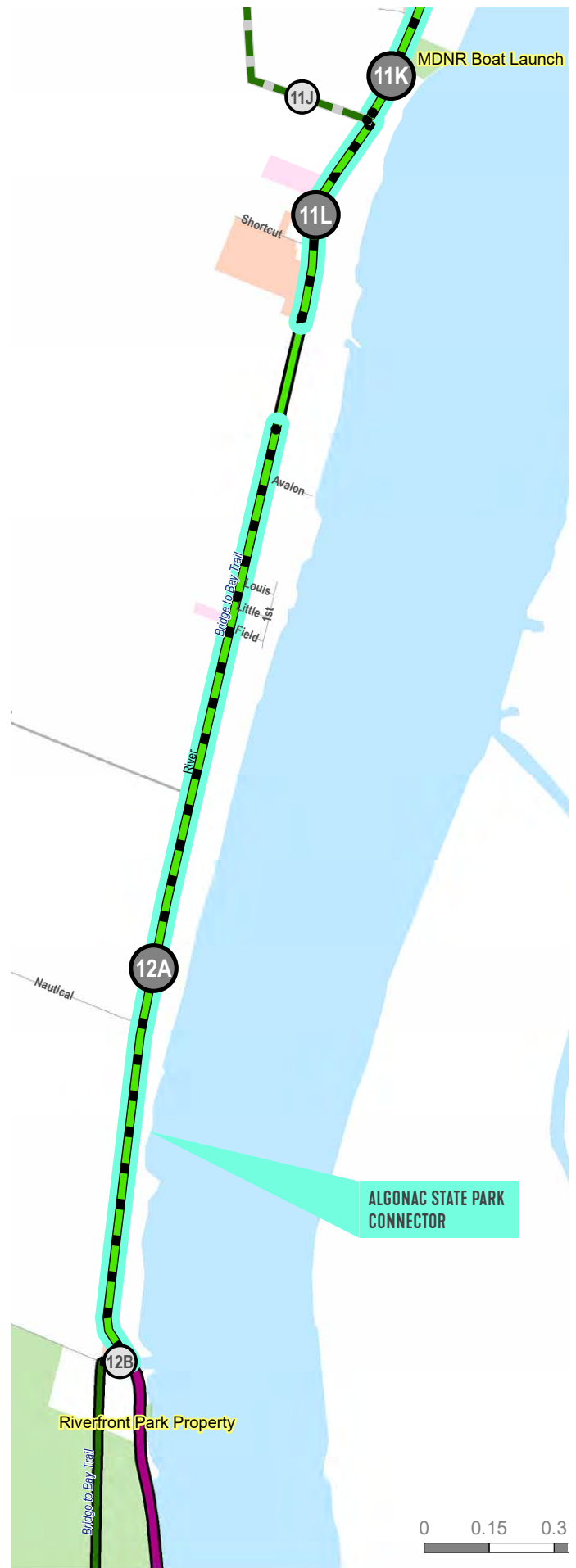
Route continues southward down River Road along Chartier Road. Existing sidewalks can be widened (and extended) into a side path. Ample room along the side of the roadway for side path construction. This alignment is preferred over 11J (potential off-street trail) due to having a clearer and more direct connection into the downtown area. If site constraints post a challenge, 11J can be used as an alternative alignment to 11K, providing a connection to the existing side path on Chartier Road.

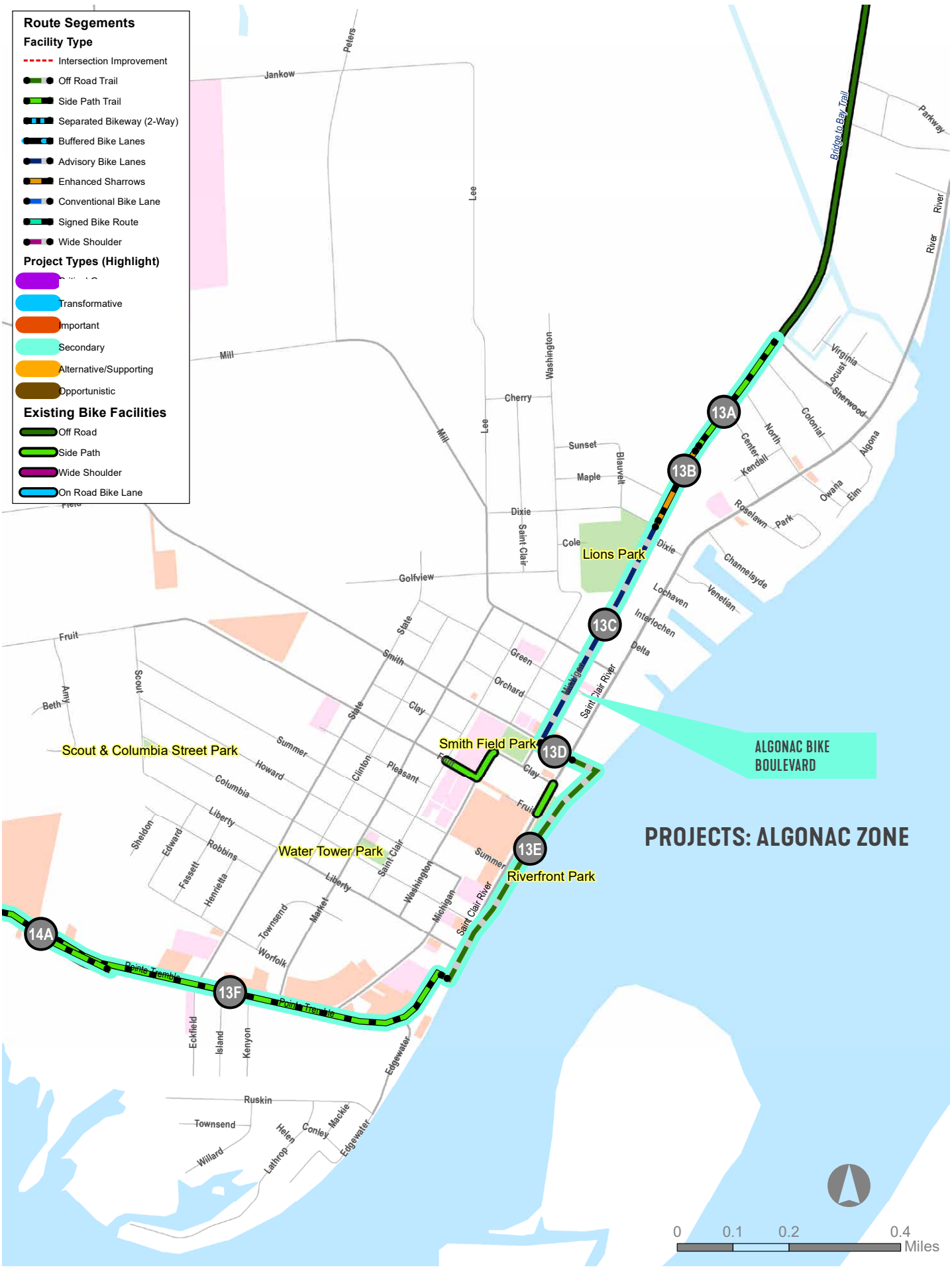
ALGONAC STATE PARK CONNECTOR (GAP 12)

Segment 12A/12B - SECONDARY

Route shown on map at right

If space permits, can be implemented as a side path. If not, widen the existing shoulder into a protected bikeway/trail on the west side of the road. This trail provides a connection to the existing trail in Algonac State Park.





PROJECTS: ALGONAC ZONE

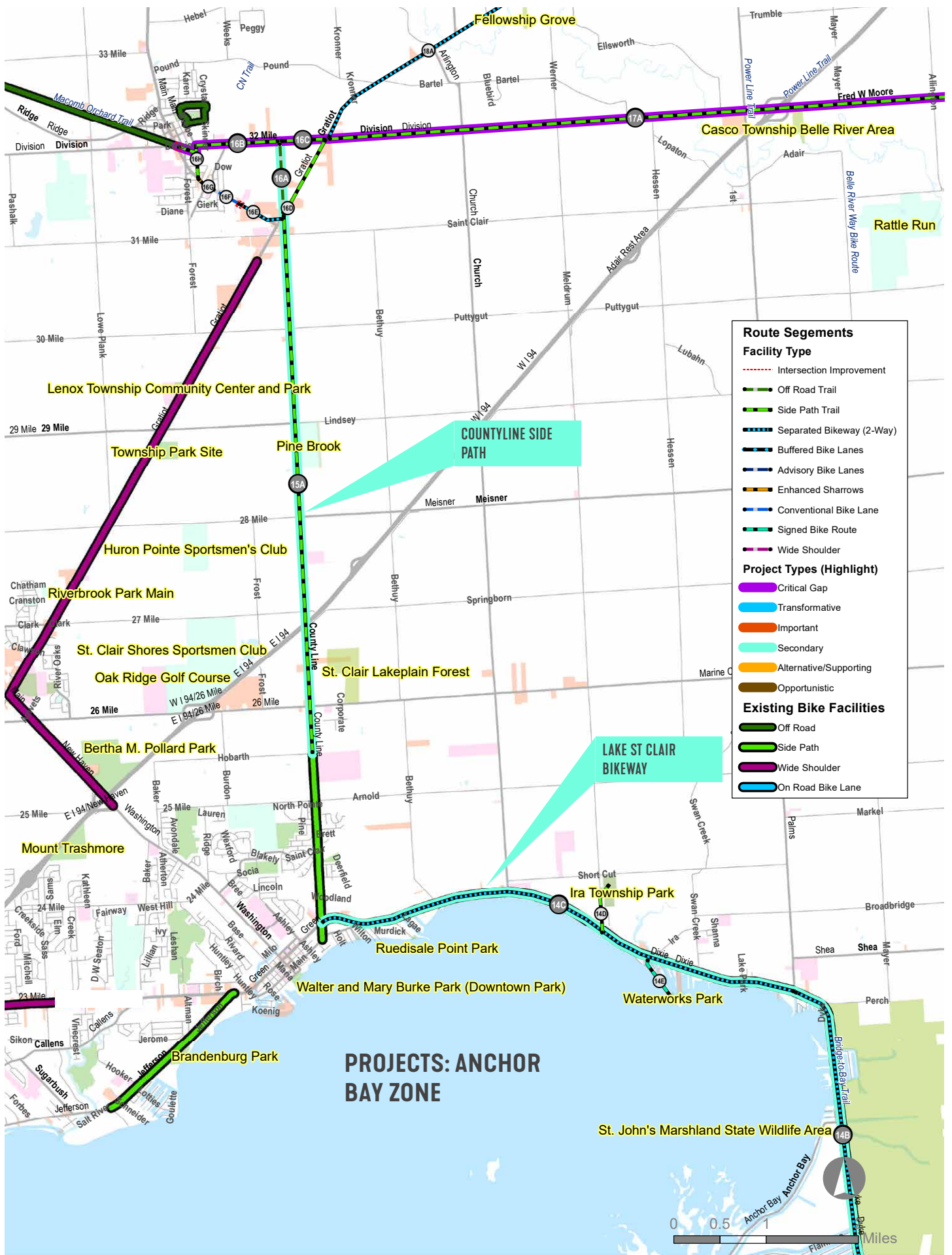
ALGONAC BIKE BOULEVARD (GAP 13)

Segment 13A/13B/13C/13D - SECONDARY

The Algonac Bike Boulevard begins at the terminus of the Algonac State Park Trail near Sherwood and Michigan Road. The route uses a side path (13A), which then transitions into shared roadway (sharrows and advisory bike lanes) for 13B and 13C. These roads are residential with low traffic volumes. Segment 13D passes through a more commercial and built-up area, with a proposed side path connecting along Smith, across River Road, and to the existing trail/boardwalk (13E). Opportunities to improve the existing boardwalk should be considered to make it more accommodating of all types of non-motorized users.

ALGONAC BOARDWALK





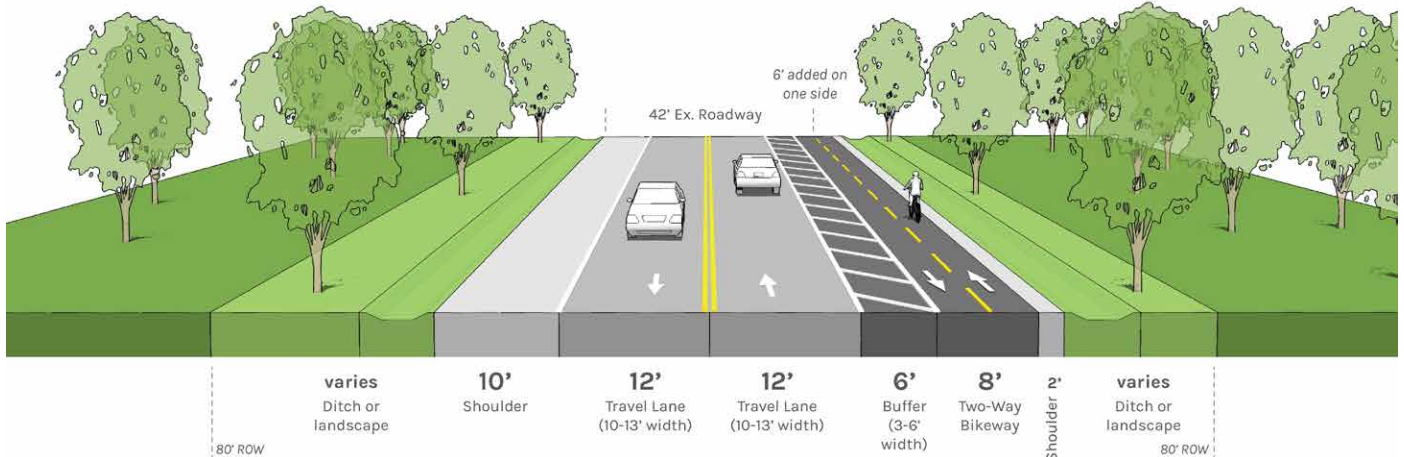
PROJECTS: ANCHOR BAY ZONE

LAKE ST. CLAIR BIKEWAY (GAP 14)

Segment 13/E13F/14A/14B/14C - SECONDARY

This is a challenging stretch of roadway (Dyke Road and Dixie Highway) with relatively high traffic volumes and speeds with a range of adjacent uses. However, it provides a key connection along the scenic lakefront and wildlife areas, as well as providing a connection to New Baltimore. Sidewalks in segment 13F and 14A can be expanded on the north side of the road (where present) into a side path. Segment 14B and 14C would transition into a buffered bikeway section. In some locations, the existing shoulders may be wide enough to accommodate a bikeway with modest improvements. In other locations, especially along the Marsh where the roadway is more constrained, the shoulder would need to be widened, separate side paths established, or boardwalks constructed. This could be constructed as an alternate route for the Great Lake to Lake Trail Route #1. Although it has some dimensional challenges it does offer the opportunity to connect with numerous waterfront communities.

DESIGN APPROACH FOR THE LAKE ST. CLAIR BIKEWAY (ADJACENT LAND USE CONTEXT VARIES)



MINOR LAKE ST. CLAIR BIKEWAY CONNECTORS

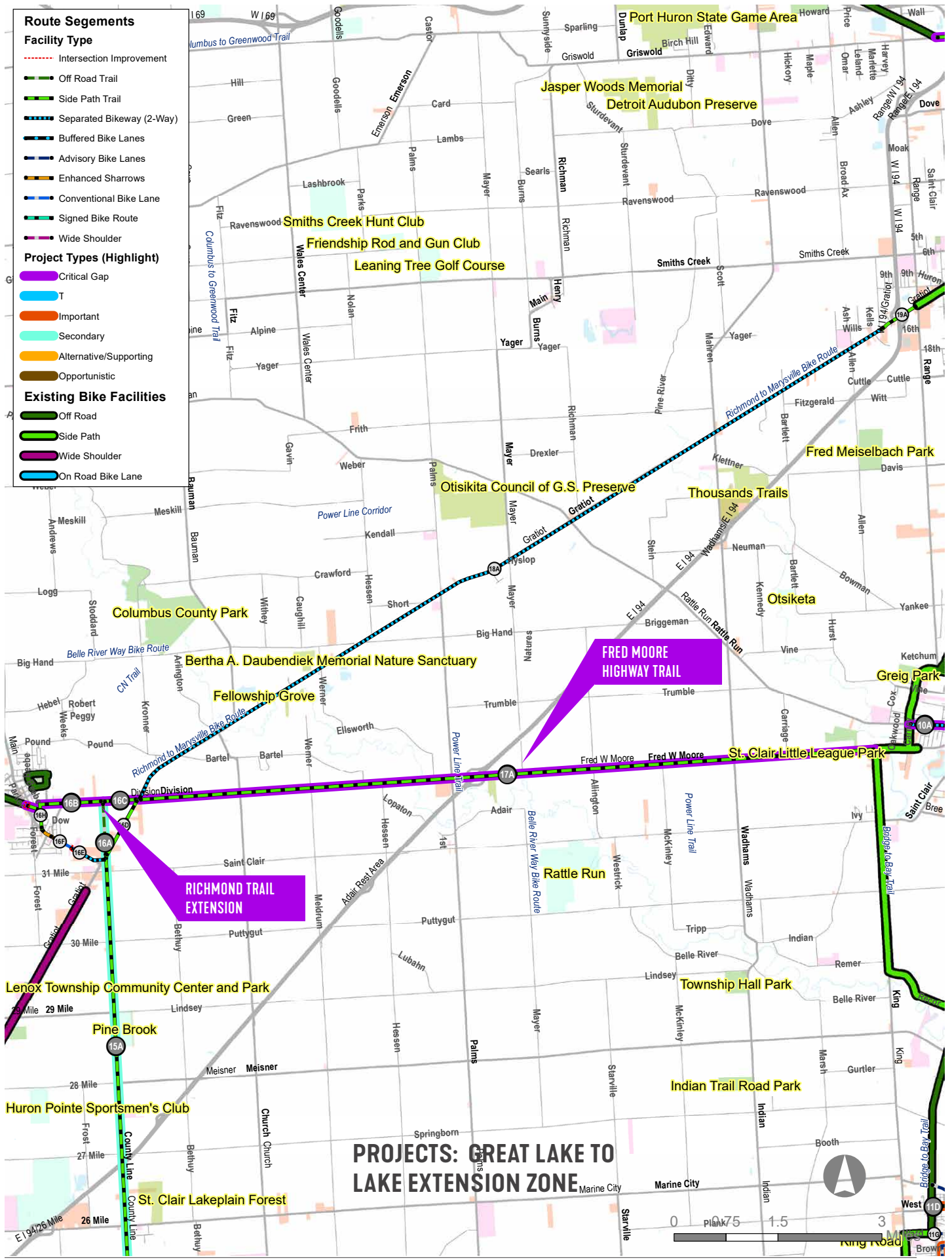
Segment 14D/14E

- 14D is a proposed side path to connect from Dixie Highway north on Meldrum Road to the Ira Township Hall and Ira Park.
- Segment 14E is a shared road/bike route through a residential and marina district that provides a clear connection to Water Works Park.

COUNTY LINE SIDE PATH (GAP 15)

Segment 15A - SECONDARY

This segment extends the existing side path along County Line Road, which ends at Anchor Bay High School, north into Richmond. This side path can be constructed on the east side of the roadway as a separate side path where room permits or a buffered bikeway by paving and widening the shoulder. The bridge over I-94 is very narrow, and a separate non-motorized bridge crossing may be preferred. Any modification of existing bridges or new bridge construction would require coordination with MDOT and FHWA.



PROJECTS: GREAT LAKE TO LAKE EXTENSION ZONE

RICHMOND TRAIL EXTENSION (GAP 16)

Segment 16A/16B/16C – CRITICAL

Richmond has already assembled plans for a trail connection from the existing end point of the Macomb-Orchard Trail (part of Great Lake to Lake Trail Route #1) through the downtown Richmond area and east to the municipal limits. These segments propose a combination of off-street trail (16A) and side paths (16B and 16C) on the south side of 32 Mile/Division Street. There are some tight locations (e.g. at a railroad crossing) where coordination with adjacent property owners and the rail company will be needed. Richmond has already acquired access to portions of segment 16B for trail improvements.

Segments 16E,F,G,H along Main Street represent a future opportunity to provide a supplemental trail connection into the heart of town, linking the north and south commercial areas together while improving mobility options for residents and visitors alike.

FRED MOORE HIGHWAY TRAIL (GAP 17)

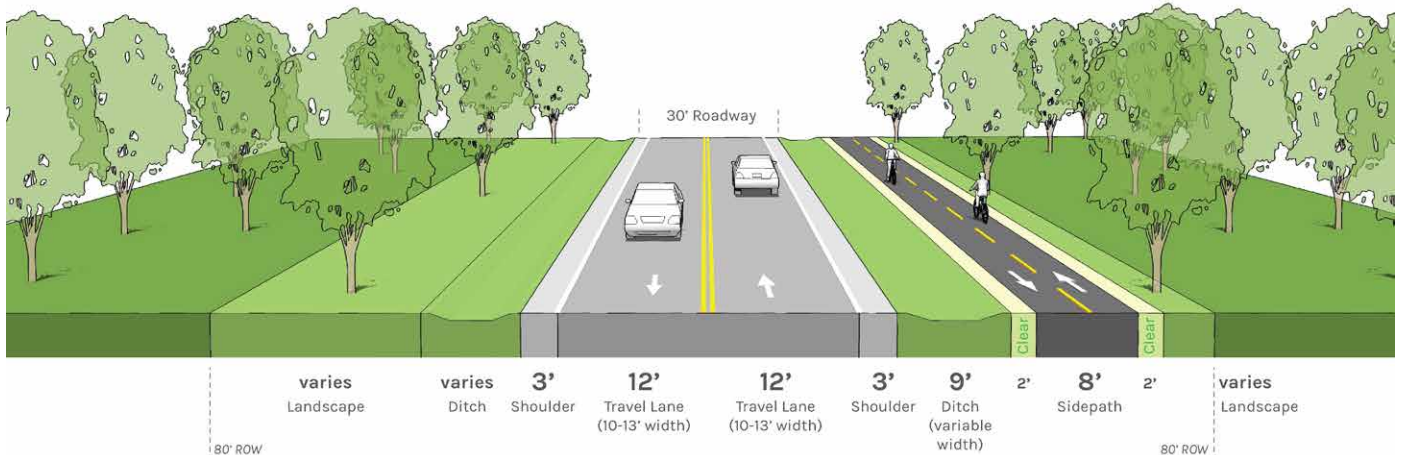
Segment 17A – CRITICAL

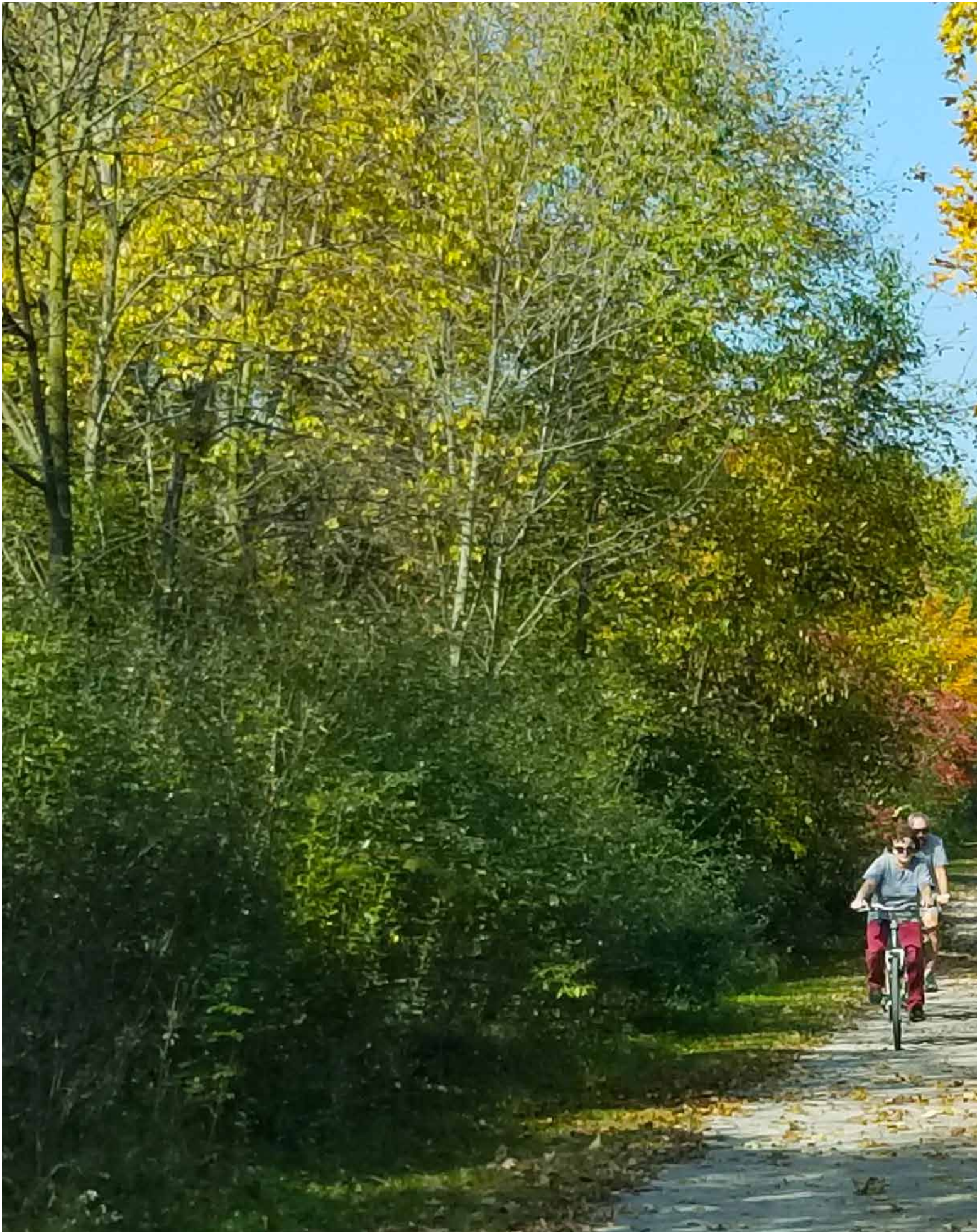
Gap 17 reflects a preferred route for extending the Great Lake to Lake Trail Route #1 east from its current end point in the City of Richmond (as part of the Richmond Trail Extension described above).

Segment 17A provides a side path connection on the south side of the Division Street and Fred Moore Highway from Richmond eastward to the existing side paths at King Road and Fred Moore Highway in St. Clair. Large portions of Fred Moore Highway have an additional 80 feet of right-of-way on the south side of the road, providing opportunities to establish a side path trail well removed from the road way. Road bridges over streams and/or I-94 are wide enough to accommodate transitioning to a buffered bikeway in some locations, but in others may require a separate boardwalk or non-motorized bridge.

Fred Moore Highway was selected, in working closely with the Steering Committee, as the preferred route given its relatively lower cost of construction and, more importantly, that it provides a direct connection to the City of St. Clair and other shoreline communities, which an alignment along Gratiot Avenue would circumvent. Alternate routes for the Great Lakes to Lake Trail Route #1 could include Gratiot (18A0 or the Lake St. Clair Bikeway (13E-F, 14A-C).

DESIGN APPROACH FOR THE FRED MOORE HIGHWAY TRAIL







CHAPTER 04

IMPLEMENTATION

IMPLEMENTATION STRATEGY

The implementation strategy for the St. Clair County Trails Plan calls for identifying clear priorities and actionable trail projects that will rapidly help bridge critical gaps and build a more robust trail network. This strategy organizes the projects described in the previous chapter by project type and provides a high-level cost estimate as well.

APPROACH

The recommended approach for implementation seeks to build the most robust and complete network as directly as possible and in a manner that satisfies the all ages and all abilities design approach. This approach recommends the following:

- Focus on the **CRITICAL GAP and TRANSFORMATIVE** projects first, from both technical resources (staff time, etc) standpoint and funding procurement. These two categories of projects represent the critical linkages that will build out the regional trail network. High-level funding (large grants, county-wide or regional transportation programs, etc) should be focused on these critical gaps and transformative projects first, as they will benefit the greatest number of uses across the county.
- The **IMPORTANT** projects should be viewed as the next level of priority down. However, action towards implementation should be taken immediately and in concurrence with planning and designing the critical gaps and transformative projects.

- Implementation of certain critical gaps and all transformative projects may take multiple years to design, engineer, and fund. Where there are lower cost, quicker to implement, near-term **ALTERNATIVE ROUTES** identified, emphasis should be placed on implementing these as an interim connection. However, attention and action must still be taken to continue advancing the primary route.
- The **SECONDARY** routes are the last level of priority. Primarily, these routes **extend** the trail system into new areas (as opposed to filling gaps that connect existing trails together). Long-term, these routes are vital for building a robust, county-wide trail system. While attention should be paid to implement these routes when an opportunity presents itself, building these in the absence of first addressing critical gaps and transformative projects can result in additional fragmented or disconnected trails and bikeway facilities being built. As consequence, their value may not be fully realized at the time of construction.



TRAIL CONSTRUCTION COST OPINIONS

This implementation strategy provides a high-level, conceptual cost opinion for each type of trail or bikeway facility on a linear foot basis. These costs reflect direct construction costs. The following stipulations apply to the cost numbers:

- Does NOT include the cost for roadway re-surfacing or other utility improvements that may want to align with the project.
- Does NOT include the cost of purchasing land or access easements for trails outside of the public right-of-way.
- Does NOT include costs for addressing environmental issues or remediation needs.
- Does NOT include soft costs such as survey work, permitting, planning, design, or engineering.
- Does NOT include any escalation of cost numbers over time. Dollar amounts reflect those at the time this plan was produced.
- DOES include a 40% construction allowance over the baseline to account for general contingencies, allowances for utility adjustments, drainage, or other construction items directly impacted by the facility construction.
- DOES include allowances for intersection improvements and enhancements.
- Two-way separated bikeways, trails, and shared-use paths are assumed to be 10-foot wide using asphalt. Includes allowances for pavement markings, signage, delineator posts, curb islands, and other design elements standard to trails and bikeways.

- The route selection process considered existing curb-to-curb dimensions so as to minimize the need to reconstruct or move street curb.

The averaged costs per linear foot of construction, by trail type and subject to the above stipulations, are listed in the table below:

TRAIL TYPE	COST PER LF
Off-Road Trail (10')	\$145 / LF
Side Path (10') with Drainage	\$180 / LF
Two-Way Bikeway Urban (within existing curb-to-curb)	\$135 / LF
Two-Way Bikeway Rural (where it requires widening a shoulder)	\$200 / LF
Buffered Bike Lanes	\$70 / LF in urban \$55 / LF in rural
Advisory Bikes Lanes	\$15 / LF
Enhanced Sharrows	\$12 / LF
Conventional Bike Lanes	\$15 / LF

BRIDGE-TO-BAY TRAIL - KEY PROJECTS

■ Critical Gaps ■ Important
■ Transformative ■ Alternate ■ Secondary

Project Name	GAP	MILES	COST *	Notes
Lighthouse Park Connector	2	0.4	\$135k	Low cost, advisory bike lanes and side paths
Michigan & Fort Street Improvements	3	0.5	\$290k	Widening existing sidewalks and improving intersections for greater user comfort and safety
Chrysler Beach Connector	6	0.1	\$140k	Short side path connection with new mid-block crossings
Clinton Street Bikeway	10	0.9	\$735k	Separated bikeway through a primarily residential area
Military-Huron Bikeway	4	0.9	\$1.1M	Contingent on a road diet (meets initial criteria) to construct two-way separated bikeway. Preserves parking. Minimal curb impacts
River Road Bikeway	7	1.2	\$1.5M	May require minor private property encroachments. May require building low retaining wall at edge of embankment
Black River Run	25	1.9	\$1.5M	Utilizes public river corridor, school property, and rights-of-way
Gratiot Side Path	1	1.0	\$950k	Urban side path
10th Street Improvements	5	0.3	\$265k	Deteriorating existing facilities, road diet opportunity along roadway
River Road Improvements	9	2.0	\$1.4M	Will be partly implemented through the planned road diet project
Marine City Loop Trail	11	1.7	\$440k	Combination of treatments to connect into the heart of town

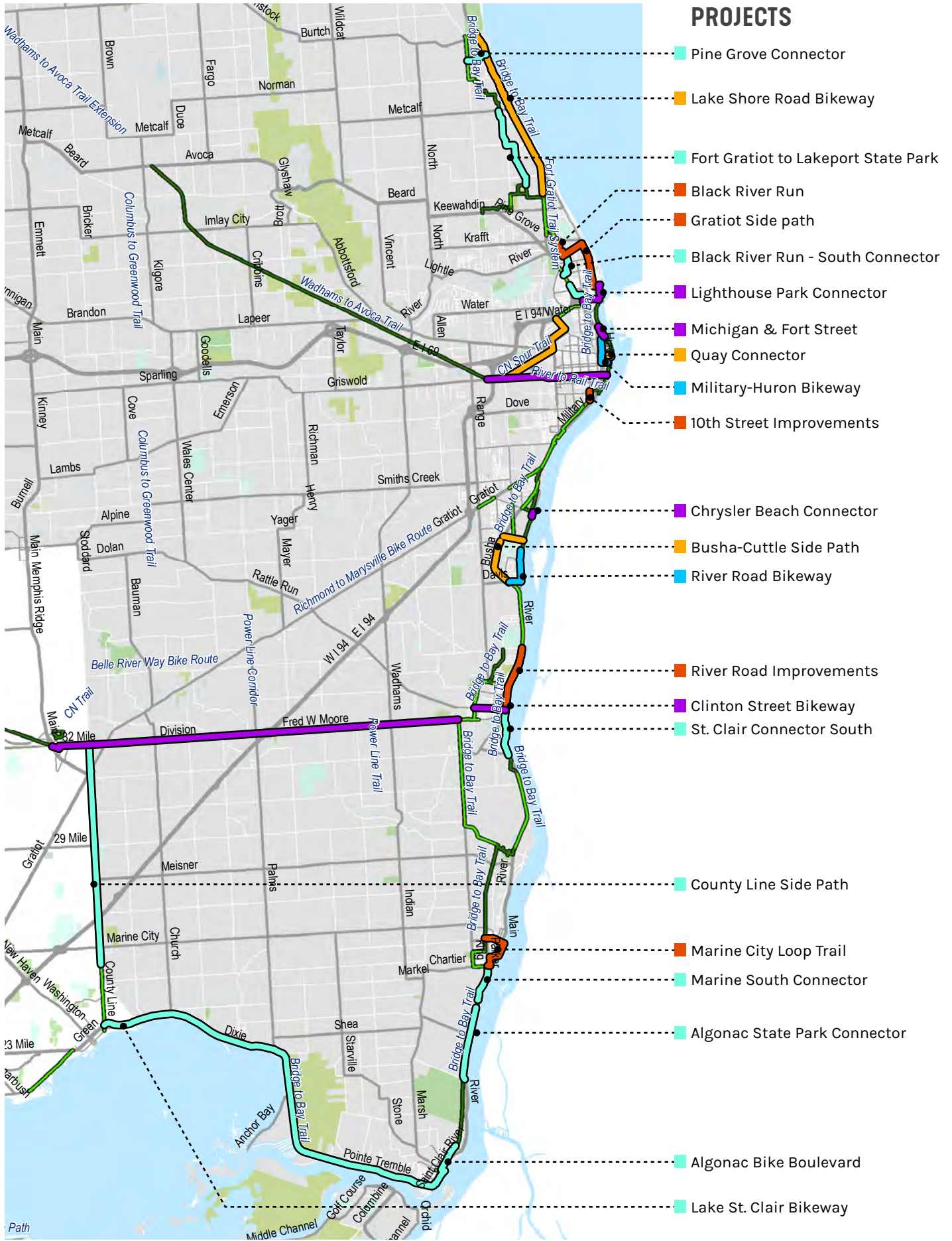
BRIDGE-TO-BAY TRAIL - SECONDARY/ALTERNATIVE ROUTES

Lake Shore Road Bikeway	21	5.6	\$2.6M	Alternative route should Fort Gratiot to Lakeport State Park be unable to secure property access for an off-road trail
Quay Connector	4	0.2	\$170k	Builds on Quay Street improvements pending implementation
Busha-Cuttle Side Path	7	2.1	\$2.0M	Alternative southward route should River Road Bikeway be infeasible
Pine Grove Connector	25	0.7	\$712k	Side paths to complete the loop from Black River to the Two-Bridges Trail
Fort Gratiot to Lakeport State Park	21	3.3	\$2.5M	Requires access easements or property acquisition for entire length
Black River Run South Connector	25	0.8	\$1.6M	Additional trails and side paths through school and park property. Large non-motorized bridge crossing over Black River
St. Clair South Connector	9	1.4	\$335k	Lower cost conventional bike lanes. Provides more direct south compared to routing west along the King Road side path
Marine South Connector	11	1.1	\$1.1M	Side path extension
Algonac State Park Connector	12	2.2	\$2.1M	Rural side path or separated bikeway via widening the shoulder
Algonac Bike Boulevard	13	0.9	\$330k	Primarily advisory lanes and other lower cost in-road treatments along a low speed and volume roadway
Lake St. Clair Bikeway	14	13.1	\$13.5M	Rural separated bikeway via shoulder widening
County Line Side Path	15	5.9	\$5.6M	Side path trail extension

The Bridge-to-Bay Trail projects reflect the largest subset of trails in this plan and represent 48.2-miles of trail and \$58.9-million in conceptual construction costs.

Implementing just the Critical Gap, Transformative, and Important routes would provide a contiguous connection from the Fort Gratiot Park area south to Marine City. This set of trails would cost approximately \$13.2-million and includes 11-miles of new trail facility.

BRIDGE-TO-BAY TRAIL PROJECTS



- Pine Grove Connector
- Lake Shore Road Bikeway
- Fort Gratiot to Lakeport State Park
- Black River Run
- Gratiot Side path
- Black River Run - South Connector
- Lighthouse Park Connector
- Michigan & Fort Street
- Quay Connector
- Military-Huron Bikeway
- 10th Street Improvements
- Chrysler Beach Connector
- Busha-Cuttle Side Path
- River Road Bikeway
- River Road Improvements
- Clinton Street Bikeway
- St. Clair Connector South
- County Line Side Path
- Marine City Loop Trail
- Marine South Connector
- Algonac State Park Connector
- Algonac Bike Boulevard
- Lake St. Clair Bikeway

WADHAMS TO AVOCA TRAIL

■ Critical Gaps ■ Important
■ Transformative ■ Alternate ■ Secondary

Project Name	GAP	MILES	COST *	Notes
Griswold-Oak Bikeway	23	3.6	\$3.1M	Combination of side paths and separated two-way bikeways
Two-Bridges Trail Extension	25	0.6	\$575k	Side paths within public right-of-ways
Rail to Two-Bridges Connector	24	2.9	\$1.6M	Alternative (or a long-term additional) route to the Griswold-Oak Bikeway, although requires rail and utility corridor access agreements

The Wadhams to Avoca Trail projects include new facilities that connect from the existing terminus of the trail east through Port Huron along two potential routes. The Rail to Tow-Bridges Connector is envisioned

an alternative and/or complimentary route to the Griswold-Oak Bikeway.

GREAT LAKE TO LAKE TRAIL

■ Critical Gaps ■ Important
■ Transformative ■ Alternate ■ Secondary

Project Name	GAP	MILES	COST *	Notes
Fred Moore Highway Trail	17	10.6	\$10.1M	Side path with occasional boardwalk sections on the south side of the roadway, utilizing a wider public right-of-way where present.
Richmond Trail Extension	16	1.7	\$1.6M	Trail has been extensively planned by the City of Richmond and is being actively advanced towards implementation.

These two Critical Gap projects provide the connection from the existing end-point of the Great Lake to Trail Route #1 (aka the Macomb Orchard Trail) east to the Bridge-to-Bay Trail.

OVERALL IMPLEMENTATION STRATEGY

The Critical Gap and Transformative projects reflect the most important projects at the center of stitching together a complete trail network. Importantly, many of the critical gaps are relatively short in length (less than a mile), with the Fred Moore Highway Trail as a standout trail in terms of longer overall length. Collectively, the critical gaps and transformative projects represent 20.7-miles and approximately \$19.3-million in conceptual construction costs (exclusive of any soft or other total project costs).

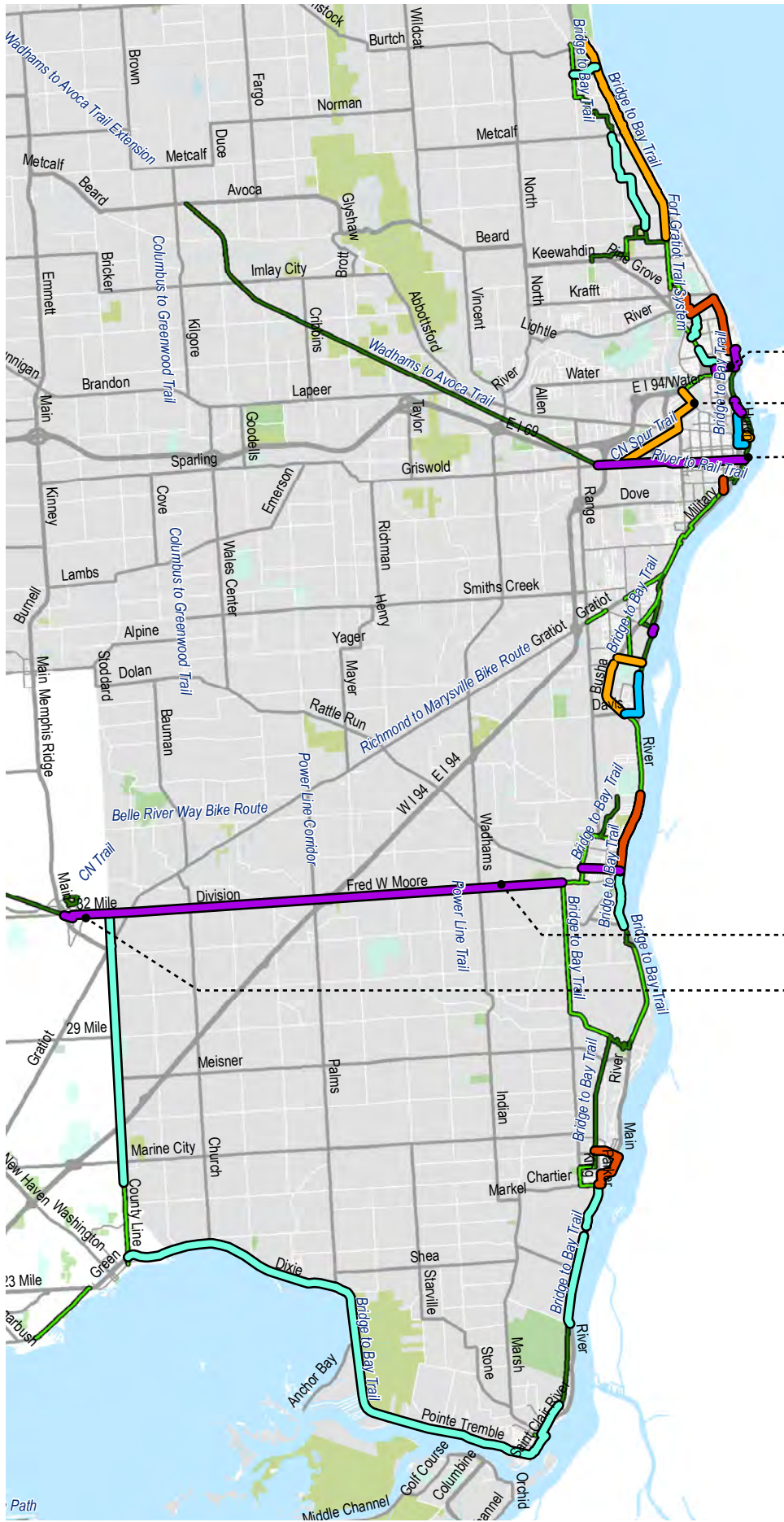
If these projects are constructed, there will be a low stress (LTS 1 or 2) facility for pedestrians and bikes that connect along the St. Clair River corridor from Lighthouse Park (terminus of the Great Lake to Lake Trail Route #1) south through Port Huron and beyond to Marysville, the City of St. Clair, and Marine City. This would unite a substantial section of the Bridge to Bay Trail, stitching together already built segments. An east-west route through Port Huron connects

the Bridge to Bay Trail to the Wadhams-Avoca Trail. Last, the side path trail along Fred Moore Highway establishes the east-west connection from St. Clair to the City of Richmond, where the trail network can connect to the existing Macomb-Orchard Trail.

From an implementation standpoint, the critical gap projects and transformative projects all utilize public rights-of-way or other lands where access is readily feasible. This means that implementing these projects are not likely to be held up by time-consuming property acquisitions or easement agreements.

The Secondary routes extend the network to other key destinations and will complete the major trail visions in the county - such as the full realization of the Bridge to Bay Trail.

Secondary and alternative route projects can be implemented opportunistically, especially when they align with other transportation capital projects (such as road resurfacing or reconstruction projects).



WADHAMS TO AVOCA TRAIL

- Two-Bridges Trail Extension
- Rail to Two-Bridges Connector
- Griswold-Oak Bikeway

GREAT LAKE TO LAKE TRAIL

- Fred Moore Highway Trail
- Richmond Trail Extension

CREATING SPACE FOR BIKEWAYS

Fitting new trails and bikeways into the existing fabric of developed urban and even rural environments can be challenging. Public street rights-of-way often face many competing demands for their space - vehicular travel lanes, transit service, commercial activities, parking, public gathering space, and more. Finding the room for non-motorized infrastructure, particularly separated and protected facilities for biking, can be a challenge.

STRATEGIES WITHIN RIGHTS-OF-WAY

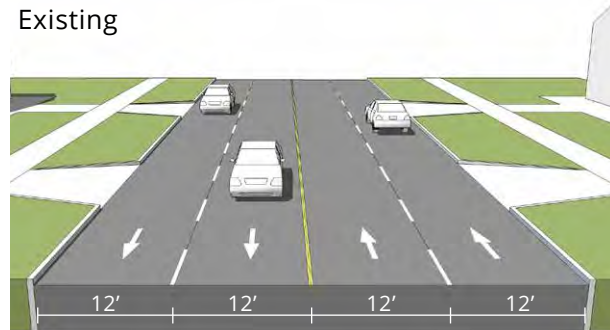
Utilizing rights-of-way for greenways and urban trails, where feasible, provides the advantage of using publicly owned land to accommodate trails, either within the existing roadway, reconfiguring the roadway, or placing it adjacent to the road outside curb. There is also the advantage of being able to implement projects in coordination with other improvements to the corridor that can improve safety, access, and aesthetics for all roadway users.

However, integrating greenways and non-motorized facilities into rights-of-way often requires trade-offs between different modes of travel or uses. The following pages show examples of how these transformations can be accomplished.

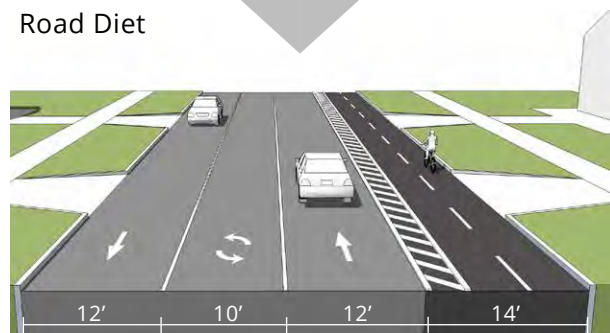
ROAD DIETS

Road diets typically include reducing the number of travel lanes (e.g. a four-lane road to a three-lane road) in order to create space for non-motorized facilities. Often, four-lane to three-lane road diets are feasible where traffic volumes are below 15,000 annual average daily traffic (AADT).

Existing

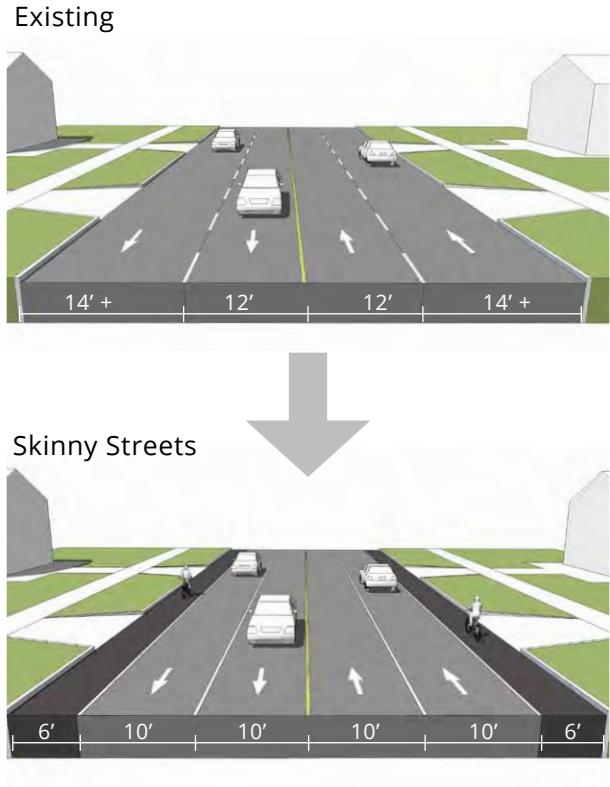


Road Diet



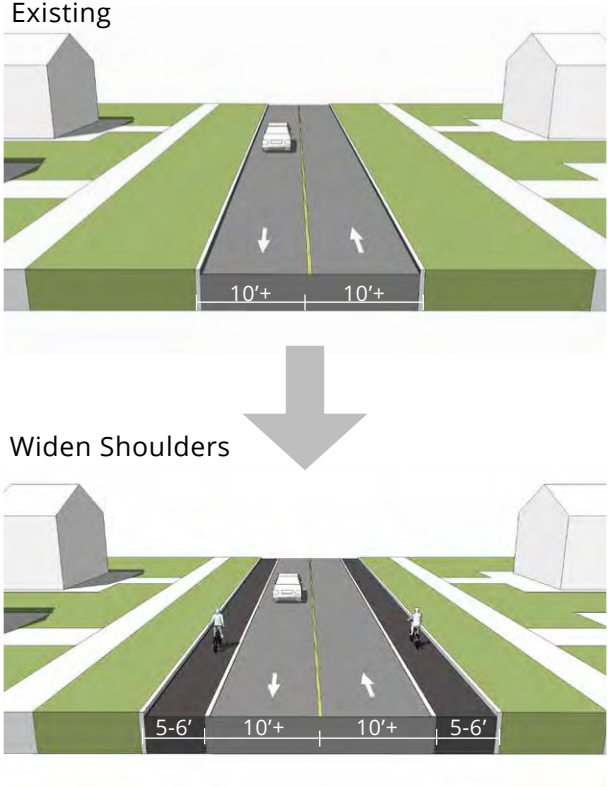
SKINNY STREETS

In some cases, vehicle travel lanes may be much wider than necessary, particularly for multi-lane roads with wide outside lanes. Reducing lanes to 10- or 11-feet in width can help slow vehicle speeds, reducing crash severity, while creating space for bike lanes within the roadway.



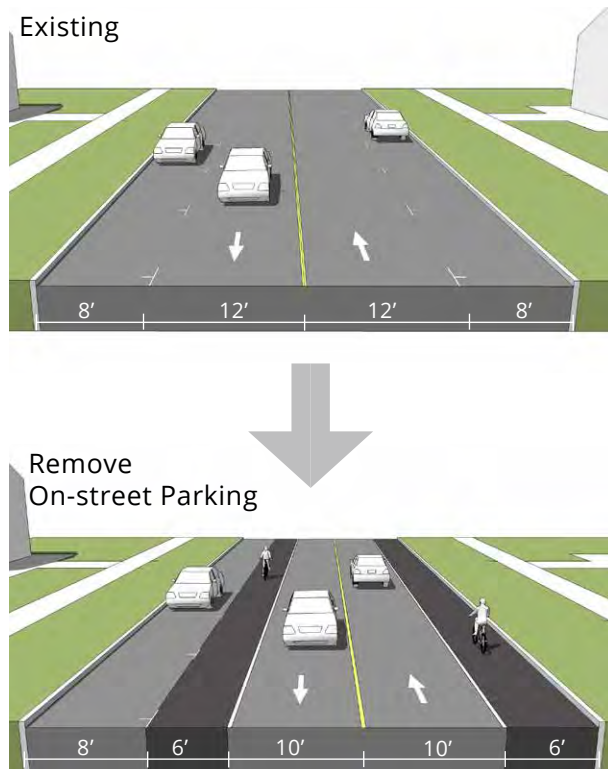
WIDEN SHOULDER

Many roads, particularly in more suburban or rural contexts, have ample room next to vehicle lanes where shoulders can be widened to accommodate better bicycle facilities. In some cases, this may require new pipes, culverts, and/or the modification of drainage ditches.



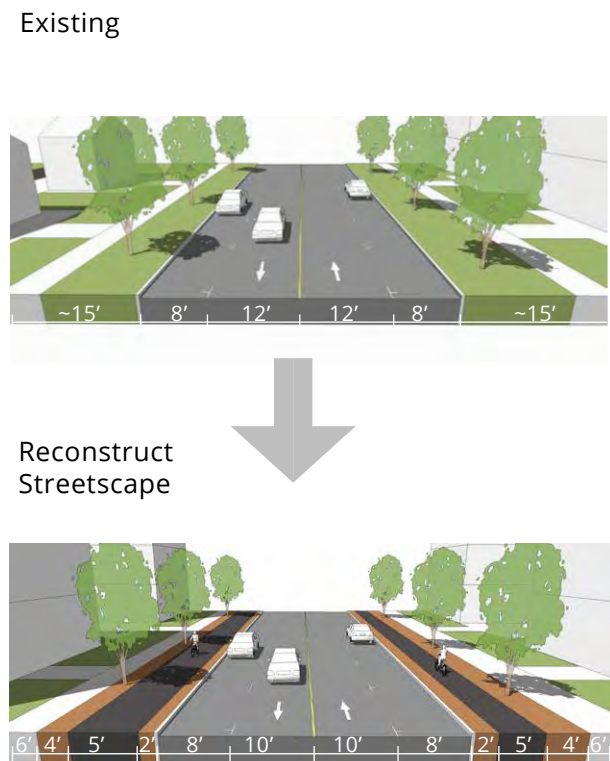
REMOVE ON-STREET PARKING

On-street parking is important for many commercial areas, but often there is more on-street parking than necessary with parking use rates that remain relatively low. Parking can often be removed from one side of the road, in conjunction with shrinking lane widths, to create new space for bicycle facilities.



RECONSTRUCT STREETScape

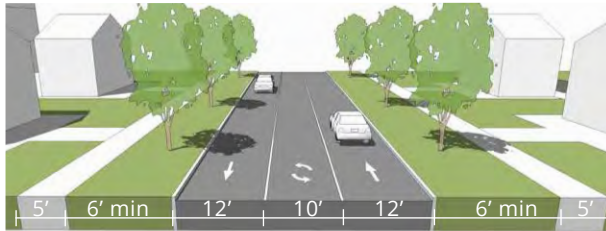
In many locations, particularly more urbanized areas, there can be opportunities to reconstruct the sidewalk/streetscape zone, particularly when widths are 15-feet or more. Raised or separated bike lanes can then be built at the sidewalk level.



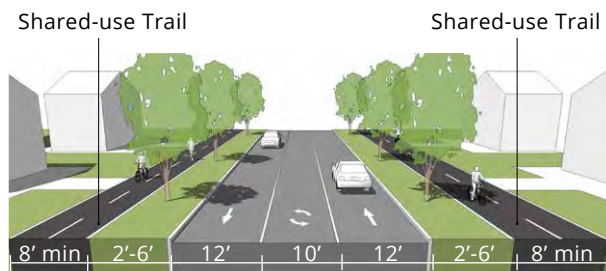
WIDEN SIDEWALKS INTO SIDE PATHS

Often, the landscape zone between the road curb and sidewalk may be wide, particularly in urban and/or rural contexts. This affords the opportunity to expand sidewalks on one or both sides of the road into multi-use side paths that can accommodate both pedestrian and bicycle travel.

Existing



Widen Sidewalks into Side Path



OUTSIDE RIGHTS-OF-WAY

Areas outside the public rights-of-way on either private or publicly owned parcels can also create opportunities for greenway and urban trail construction. These locations afford some of the best opportunities for implementing significant greenway projects that can incorporate landscaping and open space enhancements alongside a new non-motorized facility. Several approaches can be used to help achieve the desired affect.

ZONING CHANGES

One approach, particularly in built-up urban areas, is to adjust the front setback regulations for development to require a minimum distance from the street curb that is sufficient to accommodate greenways and urban trails. Typically, 20- to 24-feet can provide room for sidewalks, protected bike lanes, landscape, and other streetscape amenities while still maintain good urban form.

EASEMENTS ON PRIVATE PROPERTY

Easements on private, public, or institutional/civic properties can be pursued and set up to create corridors for greenways through adjacent parcels. Utility corridors (e.g. power lines) can be a good opportunity for pursuing easements due to their length and continuity. Often paved trails can double as service roads for utility operators.

PRIVATE CONSTRUCTION

Trails and greenways can also be constructed on private property as part of new development or in conjunction with a new development proposal. Several examples exist within the project area where a developer built a new or extended an existing trail system through their property. Having a dedicated plan, vision, and support from local leadership and the community can help establish the demand and benefits of adding these facilities.

MAKING IT HAPPEN

ESTABLISH A GOVERNANCE STRUCTURE

An important need for implementing such an extensive system of public infrastructure is having the right governance structure in place to oversee projects, coordinate implementation between multiple partners, and ensure that the planning, design, construction, and long-term maintenance activities are conducted in accordance with the plan vision and goals.

In St. Clair County, many different municipal entities plan and implement projects in partnerships with a broad range of groups, trail advocates, and funding sources. As part of a long-term initiative, stakeholders should identify a governance structure and process for continuing to plan, implement, and maintain trails and bikeways in a coordinated manner across the county.

For example, the Steering Committee established during this process could continue to be engaged on a regular basis (e.g. semi-annually) to review the state of the plan and any implementation progress, clarify priorities, and help make informed decisions from a county-wide perspective and in alignment with the project goals.

A governance structure can become more formalized through an established enacted body, such as a county-wide Trail Commission, comprised of key representatives from across the county that is tasked with implementing projects. A more formalized entity at the county level can help bridge the gap between individual communities and municipalities and ensure that resources are put towards projects that support a fully-connected network. This entity can also play a role in ensuring that signage, marketing/PR, branding, and other communications relative to the county-wide network is conducted in a coordinated and effective



PARTNERSHIPS AND COORDINATION

Successful implementation will require partnerships. It is important to acknowledge that there is not a one-size fits all approach to implementation, and the mix of partners involved with implementing will vary from project to project. However, it is anticipated that a range of partners from the local to regional level will be necessary.

The following lists identifies a range of potential partners, but is not intended to be an exhaustive list.

LOCAL COMMUNITIES

- Individual municipalities will play an instrumental role in helping to implement projects within their boundaries. Whether providing leadership, funding, or technical support, local engagement is essential.

COUNTY PARTNERS

- St. Clair County Metropolitan Planning Commission: Provides planning services and support to communities throughout the county.
- St. Clair County Transportation Study (SCCOTS): Regularly assembled group of municipal and agency representatives that meet to coordinate transportation projects. Coordination with group will be helpful for vetting designs and pursuing implementation.
- St. Clair County Parks and Recreation: Maintains and strengthens county owned park system through a local millage. Key partner in building or extending trail facilities.

REGIONAL AND STATE PARTNERS

- Southeast Michigan Council of Governments (SEMCOG): Provides planning assistance and helps coordinate non-motorized improvements throughout Southeast Michigan. Key partner for coordinating activities between adjacent counties.
- Michigan Department of Natural Resources (MDNR): Technical expertise and potential funding partner, particularly for off-road trails that can be aligned with natural area restoration/conservation activities and recreational assets.
- Michigan Department of Transportation (MDOT): Key partner and coordinating agency - both from a potential funding perspective and at technical level where proposed routes follow along or cross state-owned roadways.

FEDERAL PARTNERS

- National Park Service - Rivers, Trails and Conservation Assistance: Technical/design support, advocacy across regional network

NON-PROFIT PARTNERS

- Michigan Trails and Greenways Alliance (including Great Lakes to Lake Trails initiatives)
- Blueways of St. Clair: Alignment between boat launch sites and river trails with non-motorized routes
- Rails-to-Trails Conservancy: Can provide technical expertise and support, particularly with respect to routes aligned with railroad corridors.
- Community Foundation of St. Clair County
- Community Foundation for Southeast Michigan



FUNDING

A DIVERSITY OF SOURCES

Just as there will likely be many partners and organizations responsible with realizing the vision, funding will need to be provided from a diversity of sources.

One advantage of trails and bikeways, due to the broad range of community benefits they provide, is that they can leverage funding from a wide range of different sources. Being able to match multiple sources of funding together in order to implement a more robust project is an important tool for implementation.

TYPES OF FUNDING

Funding for can come from many of the following sources:

- Regional/State/Federal grant programs aligned with the following activities: non-motorized transportation, economic development, habitat and natural resource preservation/conservation, stormwater management, community health and welfare, transportation improvement programs.
- Capital Improvement Projects (CIP) at the local, county, or regional level - funded as transportation, infrastructure, or recreational projects.
- Public/private partnerships with private entities providing land access, easements, or direct financial contribution to greenway implementation.

FUNDING NEEDS

The need for funding includes the entire life-cycle of the greenways or urban trails. This includes design and planning costs, construction costs, as well as ongoing operations and maintenance costs. Establishing long-term maintenance endowments has been successfully used in other communities in order to provide the resources for ensuring the success of greenways in the long-term.

POTENTIAL SOURCES

- Non-motorized transportation grants
- Pedestrian safety grants
- Healthy/livable community grants
- Safe routes to schools program
- Federal Emergency Management Agency (FEMA) floodplain relief grants
- Water quality and watershed related grants
- Federal Transportation Investment Generating Economic Recovery (TIGER) transportation grants
- Michigan Department of Transportation (MDOT) trail related grants
- Economic development grants
- Brownfield funding
- Community and private foundations
- Corporate sponsorships
- Congestion Mitigation/Air Quality (CMAQ) funding



MAINTENANCE

The Metropolitan Planning Commission completed a Current Trail Condition Analysis of the entire existing trail network in May, 2019. This provides a thorough baseline upon which to advance a trail maintenance program.

Identifying which entity is responsible for which maintenance need during the planning and design phase of a specific project is essential to ensure that trails and bikeways are safe to use and in good condition for the years to come. Funding efforts should always account for maintenance needs in the total project cost development.

INSPECTIONS

Routine inspections are integral to all maintenance operations. Inspections should occur on a regularly scheduled basis. Frequency of trail inspections will depend on the amount of trail use, location, and age. Items to consider in trail inspections include: scheduling and documentation of inspections; the condition of railings, bridges, and trail surfaces; proper and adequate signage; removal of debris; and, coordination with other agencies associated with trail maintenance.

TRAIL SURFACE MAINTENANCE

- Snow clearing to the full width of trail facilities

- Sweeping/washing
- Pavement marking maintenance
- Pavement repair

FURNISHING AND AMENITY MAINTENANCE

- Cleaning and repair of seating areas, benches, etc.
- Waste collection (trash and recycling)
- Signage repair/maintenance
- Light pole operations and repair/maintenance
- Security call box maintenance and 911 fees

LANDSCAPE MAINTENANCE

- Stormwater (inlet and trap cleaning)
- Perennial beds
- Tree and shrub trimming/pruning - ensuring that trail areas are free and clear of any obstructions and that the 2-foot clear zones adjacent to bicycle areas are maintained
- Lawn mowing
- Fence repair

OTHER MAINTENANCE NEEDS

- Signal timing and adjustments
- Railroad crossing materials/surface maintenance
- Elevated trail and bridge inspections
- Utility inspections and maintenance



KEY ACTIVITIES AND RESPONSIBILITIES

PLAN MAINTENANCE AND REPORTING

The St. Clair County Trails Plan provides an overall vision and implementation strategy based on the conditions that exist today and reasonable assumptions about near-term changes. However, the plan should not be viewed as a static document. If conditions change significantly within the county or new opportunities present themselves, amending the plan should be considered. This is an area where continuing to engage the Steering Committee and other partners on a sustained basis proves invaluable for making important decisions down the road.

In addition to plan maintenance, establishing a mechanism for clearly communicating the current status and trail implementation progress to county residents and partners is important for maintaining interest and support for the trail system. A periodic (e.g. semi-annual) "State of Trails" newsletter (print and digital) can share recent successes and metrics, talk about upcoming projects, and help galvanize partners around shared knowledge of the system.

CAPITAL IMPROVEMENT PROJECT REVIEWS

A critical aspect of project implementation is aligning trail and bikeway improvements with roadway projects. An entity should be identified within the governance structure of the trail program to review CIP plans across all relevant jurisdictions to understand timing, project scopes, and potential overlaps with projects identified in this Trails Plan.

OPERATIONS AND PROGRAMMING

Beyond physical maintenance, operating a successful urban trail may also require investment in programming to build support and utilization of the trail facility. These programming needs may be conducted with volunteer labor, but are often a responsibility of the trail operating entity and hence may have a cost associated with providing these programs. Typical programs include:

- Creation and rotation of interpretive signage
- Art installation/rotation and selection oversight
- Trail ambassadors (trail "rangers") program coordination
- Special event coordination
- Project implementation coordination with other projects in the area
- Safety patrols and/or emergency fees

WAYFINDING AND SIGNAGE

A frequent challenge faced by larger trail systems is establishing a clear brand for the overall system while acknowledging respecting preexisting trails that may have their own brand or identity. While many existing trails may have some of their own identity elements (unique logo, naming convention, etc - such as Bridge to Bay Trail), this can be incorporated into a broader identity for an overall St. Clair Trail "system." Trail monuments and markers can include logos/names of the individual trail as well as denoting that it is part of a larger county-wide system.

The broader county-wide identity is also a good level to work in a unified approach to wayfinding (directional signs, maps) along the corridor. This would include developing a family of sign types and standards to provide a uniform image throughout the network.

COMMUNITY MASTER PLAN AND RECREATION PLAN ALIGNMENT

At the local level, effort should be made when communities engaged in master planning, recreation planning, or transportation planning initiatives to make sure the routes and projects identified in the St. Clair County Trails Plan are integrated into the local plans. Local plans are often the source for securing CIP dollars and many grants will require projects to be supported by a master plan and/or five-year recreation plan, through which public support and leadership approval can be demonstrated.

