



HOLLAND MOVES

Holland Non-Motorized Transportation Plan

APPROVED BY CITY OF HOLLAND PLANNING COMMISSION (06/14/22)
APPROVED BY CITY OF HOLLAND CITY COUNCIL (07/06/22)



ACKNOWLEDGMENTS

Thank you to the residents and stakeholders who were involved in the creation of Holland Moves. Your ideas helped shaped the recommendations in the plan!

CITY COUNCIL

Nathan Bocks, Mayor
Tim Vreeman, Ward 1
Jay Peters, Ward 2
Belinda Coronado, Ward 3
Nicki Arendshorst, Ward 4
Scott Corbin, Ward 5
David Hoekstra, Ward 6
Quincy Byrd, At-Large
Lyn Raymond, At-Large

PLANNING COMMISSION

Brooke Anderson, Chairperson
Dave De Block, Vice-Chairperson
Jennifer Owens, Secretary
Luis Lozano
Nate Bosch
Jeff Genova
Nathan Bocks, Mayor
Lyn Raymond, Council Member, Annual Appointment
Jennifer Orme, City Staff Representative, Annual Appointment

CITY STAFF

Steve Peterson, Senior City Planner
Mark Vanderploeg, Community & Neighborhood Services Director
Mark Kornelis, Community Development Coordinator/Planner
Brian White, Transportation Services Director
Ryan Ng, Staff Engineer

STAKEHOLDER MEMBERS

Andy Kenyon, Parks
Alec Miller, MACC
Elisa Hoekwater, Max
Travis Williams, ODC
Dan Callam, Macatawa Greenway
Fred Keena, Ottawa County RC
Craig Atwood, Allegan County RC
Meika Weiss, Pedal Holland
Corey Broersma, Holland Twp
John Crawford, Neighborhood Improvement Committee
Peggy Fakler, The Arc
Garett Shrode, Hope College Student
Justin Lambers, Resident

CONSULTANT TEAM

MKSK

Brad Strader, AICP, PTP
Principal-in-Charge

Ann Marie Kerby, AICP
Project Manager

Kevin Miller
Planner

Aligned Planning

Lynée Wells, AICP
Public and Stakeholder Engagement



TABLE OF CONTENTS

| | |
|---|-----------|
| SECTION 01 PLAN OVERVIEW | 05 |
| SECTION 02 SUMMARY OF EXISTING CONDITIONS | 13 |
| SECTION 03 ENGAGEMENT SUMMARY | 19 |
| SECTION 04 GOALS AND OBJECTIVES | 27 |
| SECTION 05 TRANSPORTATION TOOLKIT | 31 |
| SECTION 06 NON-MOTORIZED IMPROVEMENT OPTIONS | 41 |
| SECTION 07 ACTION PLAN | 47 |
| SECTION 08 APPENDIX | 57 |



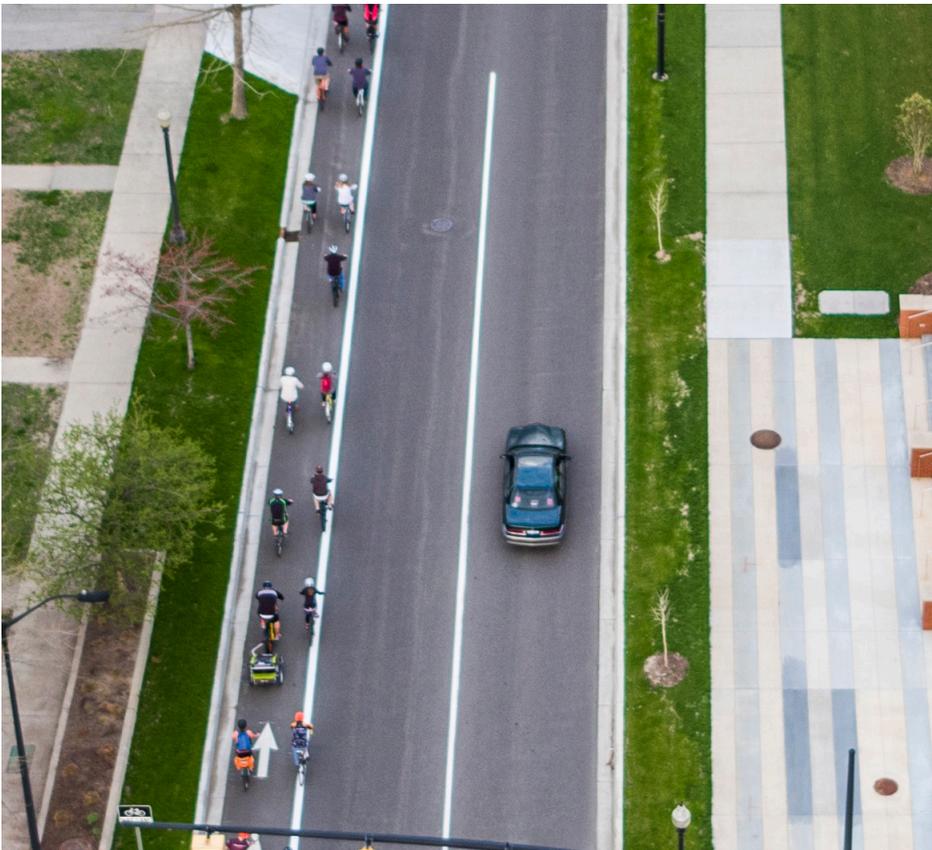
SECTION 01

PLAN OVERVIEW

PLAN OVERVIEW

WHY CREATE A NON-MOTORIZED PLAN?

The Holland Moves Plan was created to identify key projects that will help create a safer non-motorized network for the City of Holland, with a focus on connecting to schools, parks, Downtown, adjacent communities, and points of interest. This plan will be a guiding document for City leadership and staff to use as it relates to prioritizing non-motorized projects, identifying and deciding on types of improvements based on best practices, and use as a resource for funding and partnership opportunities.



PLAN CONTENT

The plan was framed by stakeholder and public engagement to help provide context and guidance on challenges, goals, and opportunities for improvements. The plan builds upon previous planning efforts and significant bike and walking investments that have already been made. Holland Moves incorporates a transportation toolbox of pedestrian and bike facility types that can be utilized when making decisions on network improvements.

The Action Plan provides direction on what priority projects should be implemented. Those include:

- Filling sidewalk gaps in the eastern and western residential neighborhoods.
- Improving connections for bicyclists and pedestrians.
- Constructing multi-use paths along higher volume/speed roads where on-street bike facilities and sidewalks next to the roadway are not ideal.
- Expanding the bike network to connect to adjacent communities and destinations.
- Improving safety at key intersections.

OVERALL PROJECT INTENT

- Create a non-motorized transportation plan for Holland
- Determine gaps and challenges in the non-motorized network for pedestrians and bicyclists
- Prioritize improvements that safely connect residents and visitors to parks, schools, adjacent communities, and points of interest
- Develop a flexible action plan with a menu of options for short and long term projects

COMMONLY USED TERMS

Establish consistent language for stakeholders, elected officials and the public.



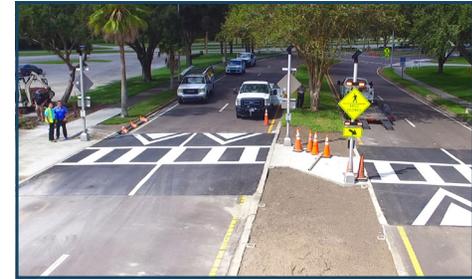
Non-Motorized Transportation (Walking, Biking, Riding Scooters/Boards)



Facilities (Term for things in the street for use by non-motorized travelers)



Multi-Use Path (8'-10' or more, usually on one side of a street, separated by a parkway for walking or biking, often used for recreation and often asphalt)



Controlled vs Uncontrolled Pedestrian Crossing (Crossing where a traffic control device (beacons, flashing lights, signals) is used vs markings/signage)



Sidewalk (Typically 6' wide, concrete, brick, or asphalt surface for non-motorized use. Typically 8' wide in Downtown)



Bike Lane (On-street facility that is a separated lane from vehicle traffic for bicycles)

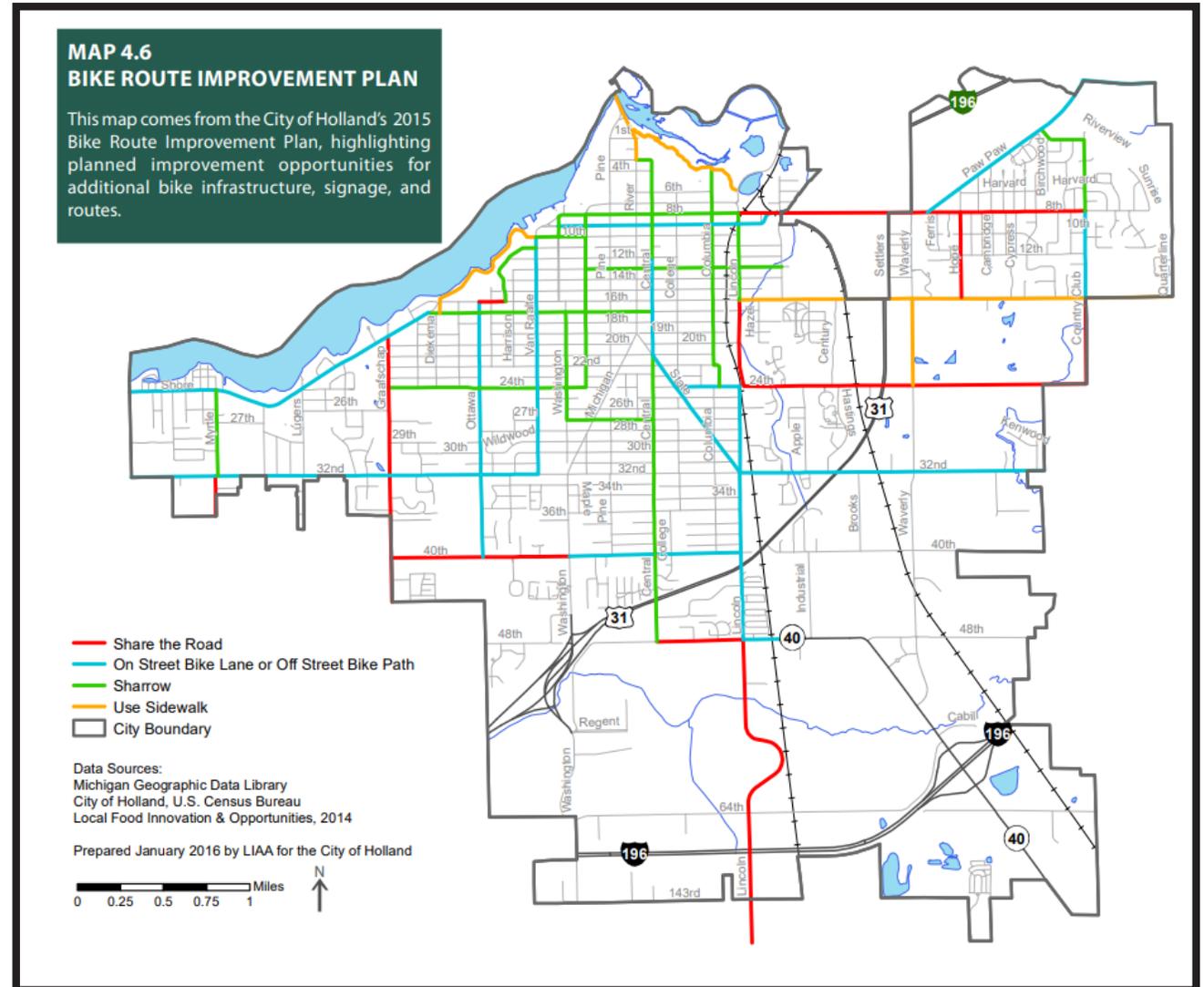
RELEVANT PLANS

The City has a legacy of investing in non-motorized infrastructure. This plan is intended to help continue that legacy and propel the City into leading non-motorized planning in West Michigan. Past plans from the community, Holland Township, and at the County level were reviewed to ensure that recommendations in Holland Moves align with existing goals and actions that have already been proposed. The following section summarizes some of the key goals and takeaways from these plans that were considered in the development of Holland Moves. Additionally, the City of Holland coordinated with Filmore Township, Laketown Township, and the Ottawa County Road Commission as part of this planning effort.

CITY OF HOLLAND MASTER PLAN (2017)

Non-motorized transportation is a priority component of the City's Master Plan. The plan states that while there is already a diverse non-motorized network, there are locations where additional infrastructure is needed and safety could be improved.

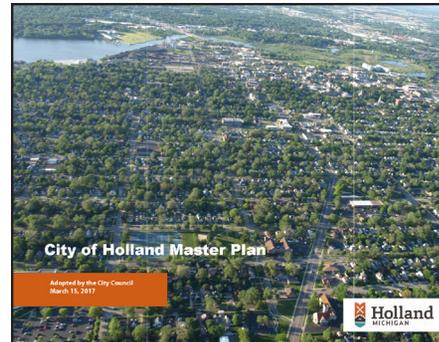
The map of potential non-motorized improvements as well as the transportation goals and action steps were used to help guide and target priority areas in this plan.



CITY OF HOLLAND MASTER PLAN (2017) - CONTINUED

Relevant Action Steps:

- Continue to integrate Complete Streets guidelines to accommodate all users
- Invest in bike and pedestrian infrastructure
- Provide non-motorized connections to regional trail systems
- Improve intersections to promote walkability and bikeability
- Investigate a bike rental system
- Provide education on bicycle safety
- Provide pedestrian infrastructure to accommodate all users
- Install new sidewalks where there are gaps
- Maintain and expand heated sidewalks in the downtown area
- Provide traffic calming measures to slow speeds and increase safety
- Support plans to improve safety and appearance of Chicago Drive

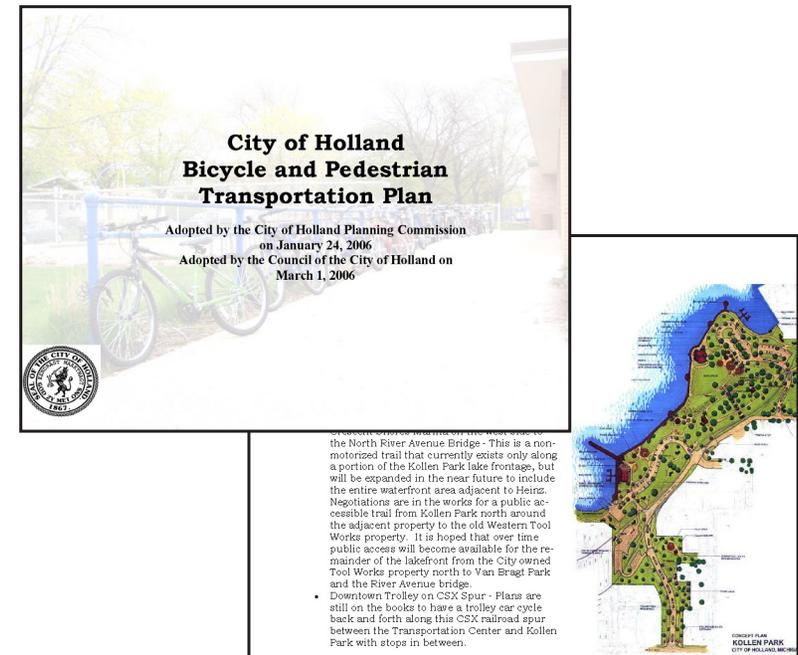


MASTER PLAN GOAL:

“THE CITY OF HOLLAND WILL HAVE A SAFE, CONNECTED TRANSPORTATION SYSTEM THAT SERVES MULTIPLE MODES.”

CITY OF HOLLAND BIKE AND PEDESTRIAN PLAN (2006)

The City’s previous Bike and Pedestrian Plan listed out proposed improvements, including the sidewalk “fill the gap” programs, “cross town” bike routes, improving non-motorized crossings, and other recommendations. The plan also listed priority sites, implementation and financing strategies. While the City utilized this plan to implement non-motorized improvements to the transportation network, there were items missing that the City desired to be included in the Holland Moves Plan. This included focusing on providing recommendations for making north/south pedestrian and bike connections, providing more sound recommendations for future improvements, and including best practices that can be used and referenced during project planning.



HOLLAND BIKE AND PEDESTRIAN TRANSPORTATION PLAN EXCERPT (2006)

HOLLAND COMPLETE STREETS RESOLUTION (2011)

In 2011, Holland Planning Commission and City Council passed a resolution supporting a “Complete Streets” Policy. This policy emphasizes supporting and designing a safe transportation network that provides access for users of all ages and abilities. This policy sets the framework for future pedestrian, bike and transit infrastructure decision-making, including modifying streets with sidewalks, crosswalks, shared use paths, bike lanes, signage, and other features to help provide a more comfortable traveling environment.

MACATAWA AREA COORDINATING COUNCIL NON-MOTORIZED PLAN (2014)

This plan describes the existing bike and pedestrian transportation network in the Macatawa Area region. The plan focuses on coordinating future investments in order to create a safe and connected network of bike and pedestrian facilities through the MACC area. The plan identifies regional connectors and proposes future routes and facilities as well as design considerations for the facilities. Project costs and funding was also laid out for the different recommendations and improvements.

Regional connector projects that impact the City of Holland include the following routes:

- US Bike Route 35
- Multi-Use Path along Beeline Road/62nd Street
- Future Regional Shared Used Path along CSX railroad

Of the Council of the City of Holland, Michigan
Supporting a “Complete Streets” Policy for the City of Holland

At a regular meeting of the City Council of the City of Holland, Ottawa and Allegan Counties, Michigan, held in the City Council Chambers of City Hall of the City of Holland on the 20th day of April, 2011, at 7:00 p.m.

PRESENT: Mayor Dykstra, Council Members De Boer, Peters, Burch, Vande Vusse, Whiteman and Hoekstra.

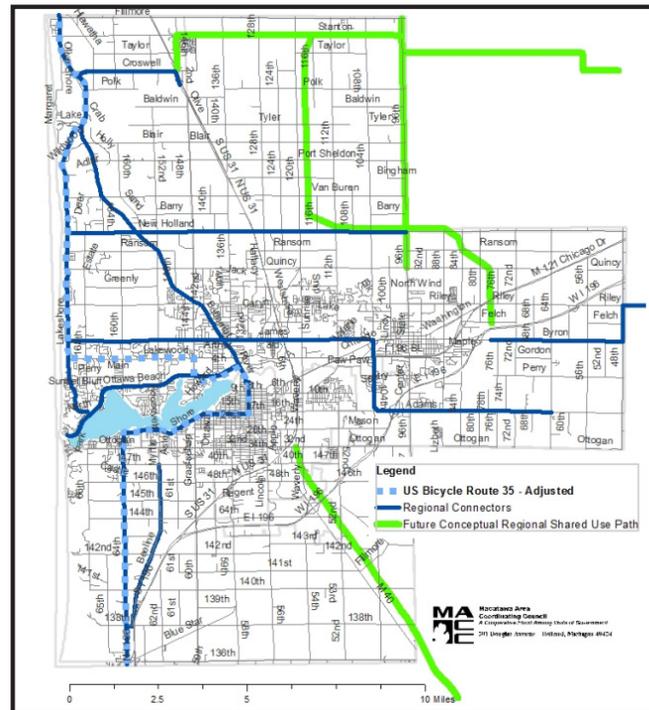
ABSENT: Council Member Trethewey

MOTION BY: Council Member Whiteman

SUPPORTED BY: Council Member Peters

WHEREAS, “Complete Streets” are defined as a design framework that enables safe and convenient access for all users, including pedestrians, bicyclists, transit riders, and drivers of all ages and abilities; and

HOLLAND COMPLETE STREETS RESOLUTION EXCERPT (2011)



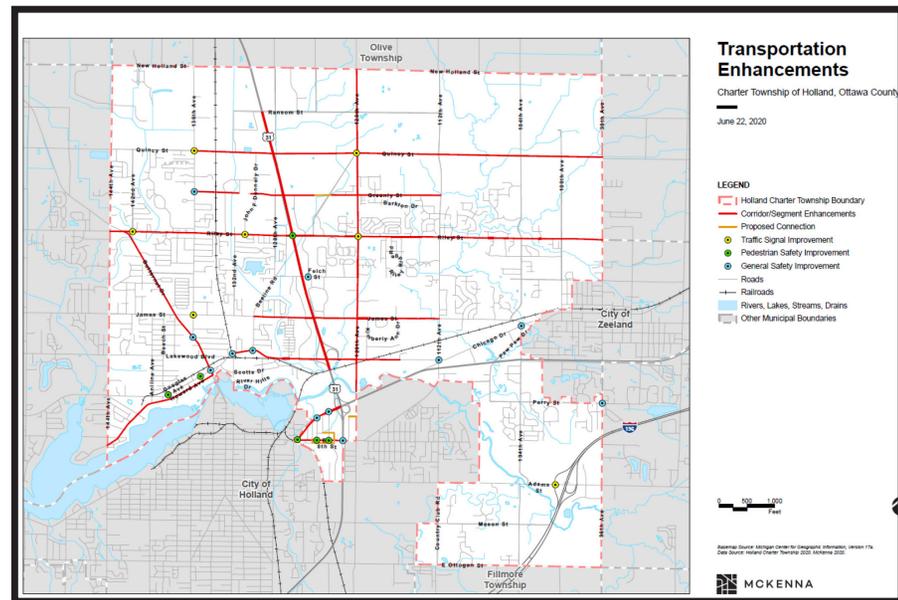
FUTURE REGIONAL CONNECTORS MAP EXCERPT FROM MACATAWA AREA COORDINATING COUNCIL NON-MOTORIZED PLAN (2014)

HOLLAND CHARTER TOWNSHIP COMPREHENSIVE PLAN (2020)

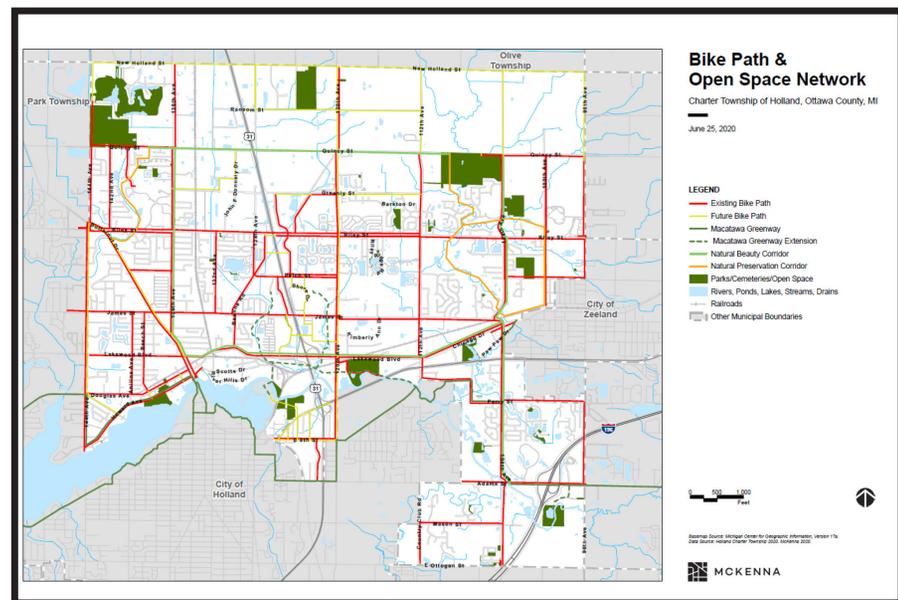
The Holland Charter Township Comprehensive Plan was reviewed to ensure recommendations in this non-motorized plan are aligned with the Township’s goals and recommendations.

The top map to the right describes the recommended corridor/segment enhancements, as well as identifies locations for traffic signal, pedestrian, and general safety improvements. Chicago Drive and 8th Street are both recommended to be enhanced, including for pedestrians and overall safety improvements.

The bottom map shows bike path and open space network existing facilities and recommendations. This includes a future bike path along Chicago Drive.



TRANSPORTATION ENHANCEMENTS MAP EXCERPT FROM THE HOLLAND CHARTER TOWNSHIP COMPREHENSIVE PLAN (2020)



BIKE PATH AND OPEN SPACE NETWORK MAP EXCERPT FROM THE HOLLAND CHARTER TOWNSHIP COMPREHENSIVE PLAN (2020)



Jack H. Miller
Center for Musical Arts

SECTION 02

SUMMARY OF EXISTING CONDITIONS

SUMMARY OF EXISTING CONDITIONS

OVERVIEW

An inventory of the multi-modal network was completed to highlight existing facilities, planned/future facilities, and point out missing links in the system. Additionally, other factors like traffic counts, volumes of traffic, transit routes, demographics, and crash data were examined to help determine priority and appropriate areas for improvements to the non-motorized network.

Maps of the existing and proposed/planned sidewalks, bike lanes, and multi-use paths are included in this section on page 15. The maps note where there are community destinations (i.e. parks, Downtown), public facilities (i.e. schools, health care), industrial areas which are major employment hubs, and higher density residential areas.

Additional reference materials and maps related to existing conditions (i.e. demographic analysis and vehicular crash histories involving bikes and pedestrians) can be found in the Appendix.



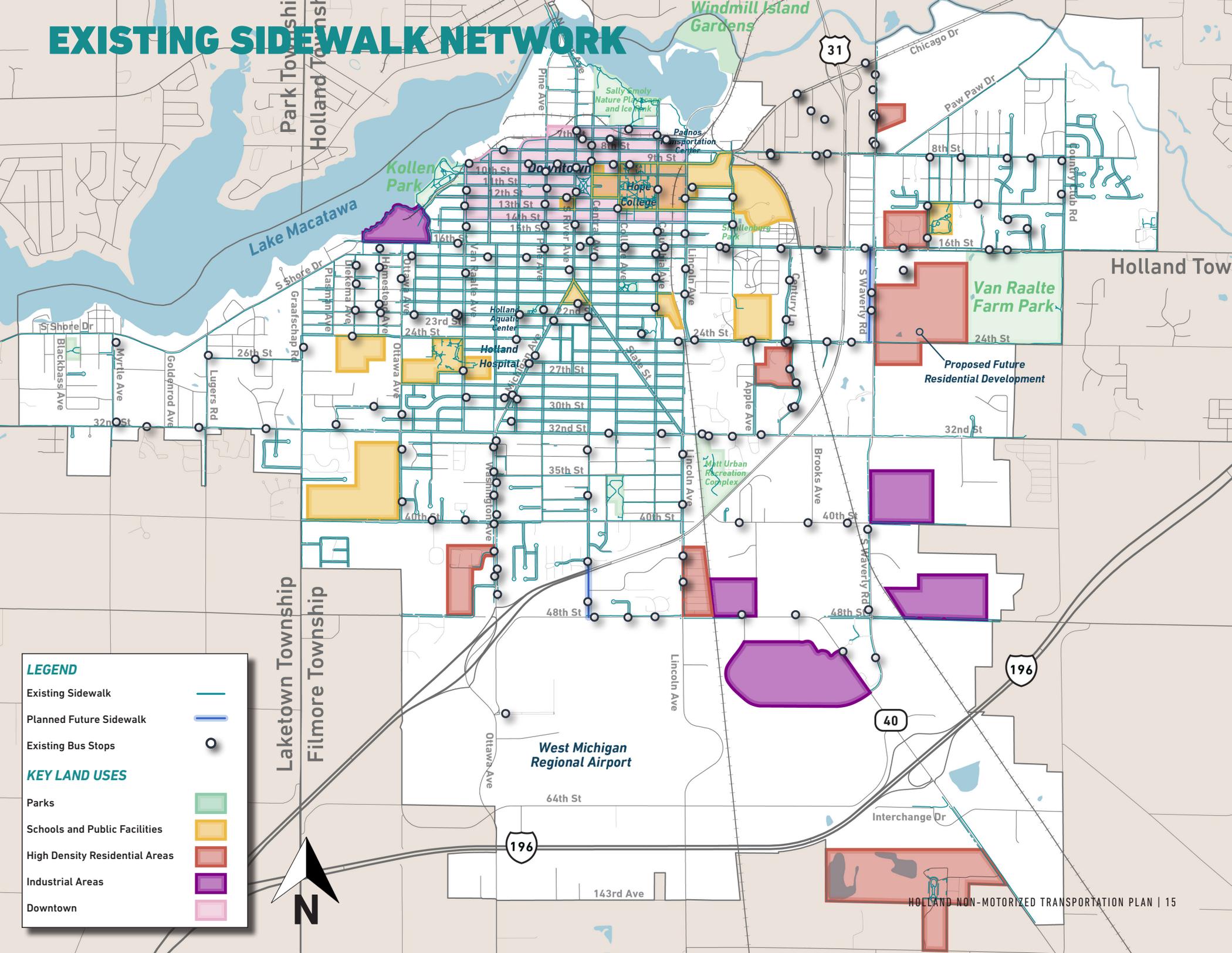
SIDEWALKS

Holland already has a fairly extensive sidewalk network (see Sidewalk Map on p. 15). Sidewalks are present along almost all of the streets in the central portion of the City, specifically between 7th Street and 32nd Street. The City also operates the largest municipally-run snow melt system in North America. The system is installed under sidewalks in downtown Holland and some adjacent areas - allowing for greater mobility and access to the area in the wintertime.

Outside of the central core of the City, there are interspersed gaps within the sidewalk network. In the southern portion of the City, there are few sidewalks present that run along the major and minor roadways. Importantly, there are missing sidewalks that are adjacent to transit stops, industrial hubs, and higher density residential areas. Additionally, there are gaps in some residential neighborhoods in the northwest and northeast portions of the City that could provide enhanced safety and walkability.



EXISTING SIDEWALK NETWORK



LEGEND

- Existing Sidewalk
 - Planned Future Sidewalk
 - Existing Bus Stops
- ### KEY LAND USES
- Parks
 - Schools and Public Facilities
 - High Density Residential Areas
 - Industrial Areas
 - Downtown



BIKE LANES

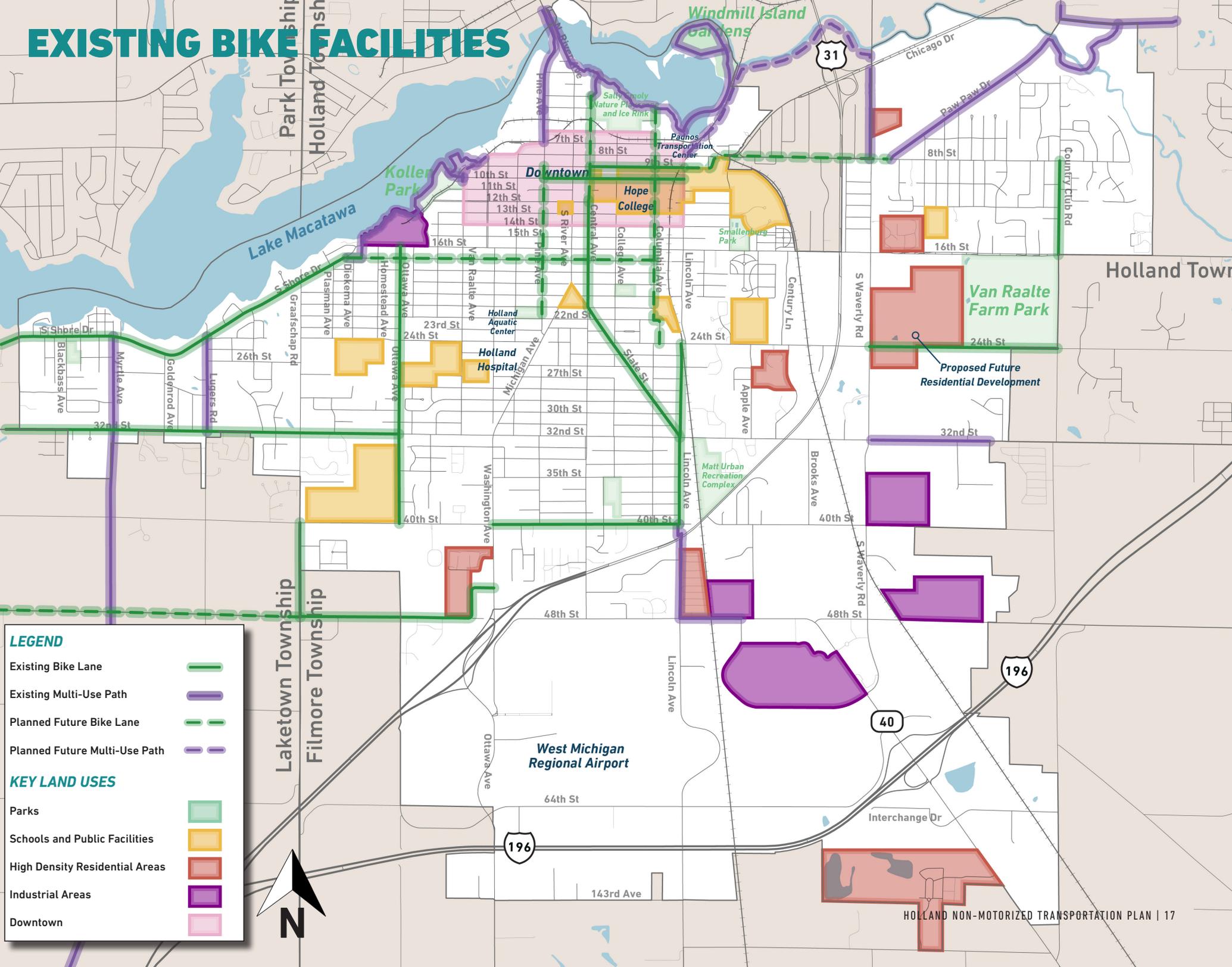
Holland has established a good framework for bike facilities, especially around Downtown, Hope College, and along Lake Macatawa. There are approximately 13.6 miles of existing bike lanes throughout the City, and another 11.8 miles of bike lanes (along Pine Avenue, 17th Street, and Columbia Avenue) are proposed to be implemented in the next couple of years. While these bike lanes do help provide connections to some major destinations within the City of Holland, there are still missing east-west and north-south connections that could be made to provide greater connectivity to schools, high-density residential areas, transit stops, and parks.

MULTI-USE PATHS

Multi-use paths in the City are 8 to 10 feet wide, separated from the street, and used for walking and biking. There is a smaller existing network of multi-use paths in the northern portion of the City, including along Lake Macatawa, helping to connect the parks to Downtown. There is also an existing multi-use path along Paw Paw Drive which continues into Holland Township. Shorter segments of multi-use paths occur at Myrtle, Lugers, and Lincoln and link up to existing bike lanes. Proposed or planned multi-use paths are also noted on the Existing Bike Facilities Map (p. 17) along Lake Macatawa (which would connect two existing multi-use paths together) and along a railroad easement from approximately 32nd Street south to the City boundary (and into Holland Township). There are additional opportunities, where there is more significant right-of-way, to fill in north-south multi-use pathways, especially in the southern half of the City.



EXISTING BIKE FACILITIES



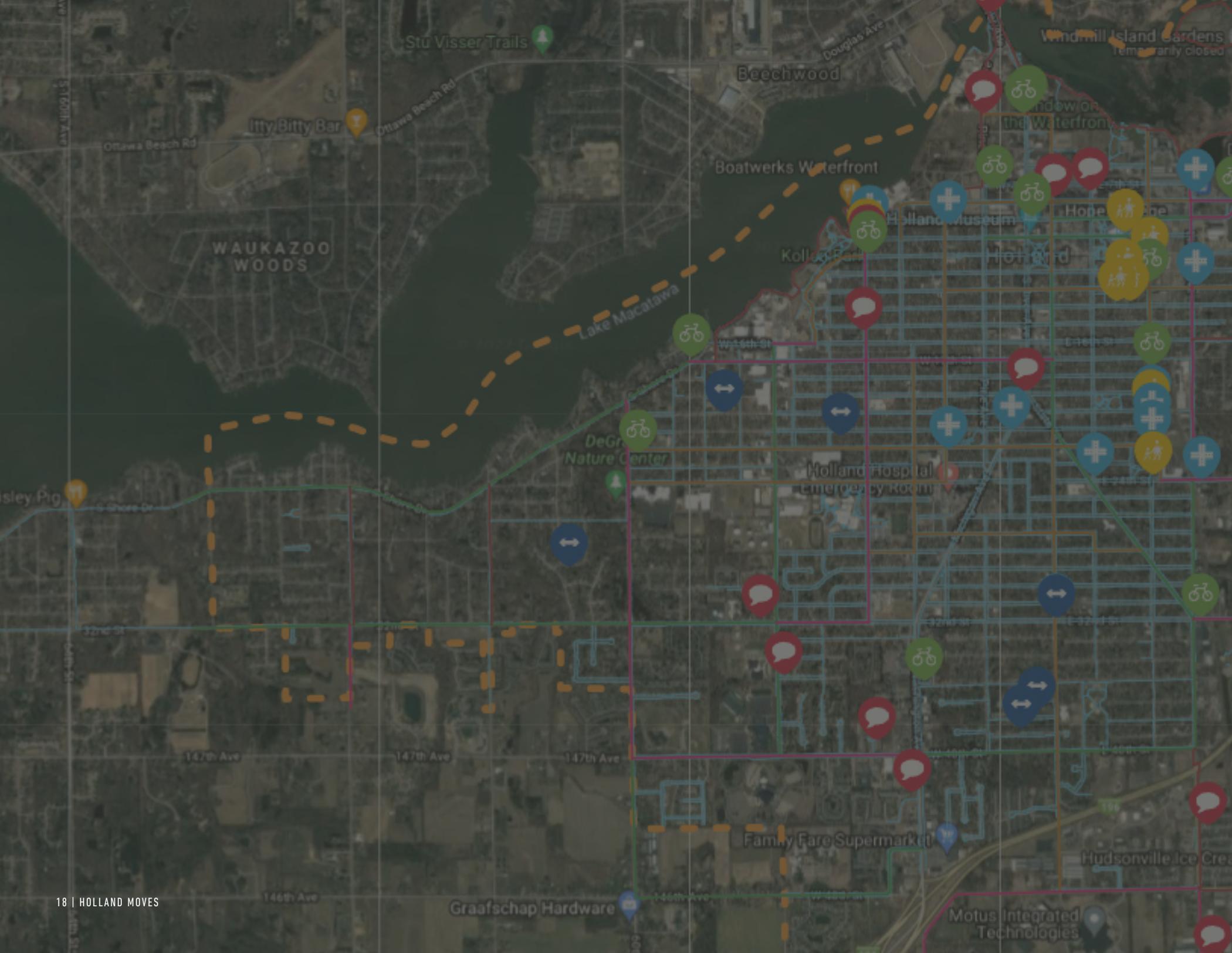
LEGEND

- Existing Bike Lane
- Existing Multi-Use Path
- Planned Future Bike Lane
- Planned Future Multi-Use Path

KEY LAND USES

- Parks
- Schools and Public Facilities
- High Density Residential Areas
- Industrial Areas
- Downtown





Stu Visser Trails

Beechwood

Windmill Island Gardens
Temporarily closed

Itty Bitty Bar

Waukazoo Woods

Boatwerks Waterfront

Holland Museum

Hope Ave

Lake Macatawa

Kollis Park

Holland

DeGraaf Nature Center

Holland Hospital
Emergency Room

147th Ave

147th Ave

147th Ave

Family Fare Supermarket

Hudsonville Ice Cream

146th Ave

Graafschap Hardware

146th Ave

Motus Integrated Technologies



SECTION 03

ENGAGEMENT SUMMARY

ENGAGEMENT SUMMARY

Stakeholder and community involvement was conducted throughout the planning process and was used to gather information on existing conditions and challenges (i.e. gaps in the non-motorized network, barriers to safe biking and walking, etc.). Engagement also led to feedback on the City's connectivity goals and ideas about improvements.

CITY GUIDANCE

A Kick-off Meeting was held in January 2022 with City staff to review the project goals. During this meeting, City staff discussed proposed multi-use paths and bike facility projects as well as important destinations that are critical to connect to as part of the non-motorized network. After the meeting, City staff and the consultant team went on a tour of the City to visit key employment, commercial, and residential hubs and note ideas on what improvements could be made to increase connectivity.

STAKEHOLDER MEETINGS

A stakeholder group comprised of various organizations (i.e. City, Ottawa and Allegan counties, adjacent communities, Pedal Holland, MAX Transit, residents, etc.) was formed at the beginning of the planning process. During the first meeting, stakeholders were asked to provide feedback on the draft project goals as well as describe initial ideas for improving the non-motorized network. The second meeting with stakeholders centered around gathering feedback on initial non-motorized recommendations, including where to add bike lanes, fill in sidewalk gaps, and add multi-use paths. Input provided by stakeholders helped provide critical guidance to develop and refine the plan's overall goals and recommendations.

COMMUNITY INPUT



INTRODUCTIONS

STATE YOUR NAME, ENTITY AND DESCRIBE IN THREE WORDS YOUR MOST MEMORABLE WALK

(FEEL FREE TO INCLUDE IT WITH YOUR INTRO, OR TYPE INTO THE CHAT)

ROLES

- » CONSULTANT TEAM
ROLE: GATHER AND ANALYZE DATA, ENGAGE COMMUNITY, DEVELOP ACTION PLAN
- » CITY STAFF/DEPARTMENTS
ROLE: ASSIST CONSULTANT TEAM, COORDINATE STAKEHOLDERS AND COMMUNITY, IMPLEMENT PLAN
- » COMMUNITY MEMBERS AND STAKEHOLDERS
ROLE: PROVIDE DATA RELATED TO LIVED EXPERIENCES, SHARE IDEAS, SUPPORT DECISION-MAKERS

HOLLAND | NON-MOTORIZED TRANSPORTATION PLAN

The Holland community was engaged in a variety of ways to help shape the outcomes of the plan through shared experiences and feedback. A project website was created to promote the planning process and also provide multiple opportunities for feedback, including a survey, interactive map, and a comment wall. Residents and stakeholders were also invited to attend a Public Open House held in April 2022 to view the proposed bike and pedestrian improvements, provide insight and feedback, and help prioritize projects.

INTERACTIVE MAP

An interactive map on the project website noted existing conditions (i.e. bike lanes, sidewalks, vehicle crash history with bikes and pedestrians, etc.). The map also included several different icons that participants could choose from and place on any location on the map to note where they desired a non-motorized improvement. These included: add a bike lane, add sidewalk, improve a crossing, improve corridor safety, etc. Input gathered from the map strongly influenced the recommended bike and pedestrian improvement options.

2,422
TOTAL WEBSITE VISITS

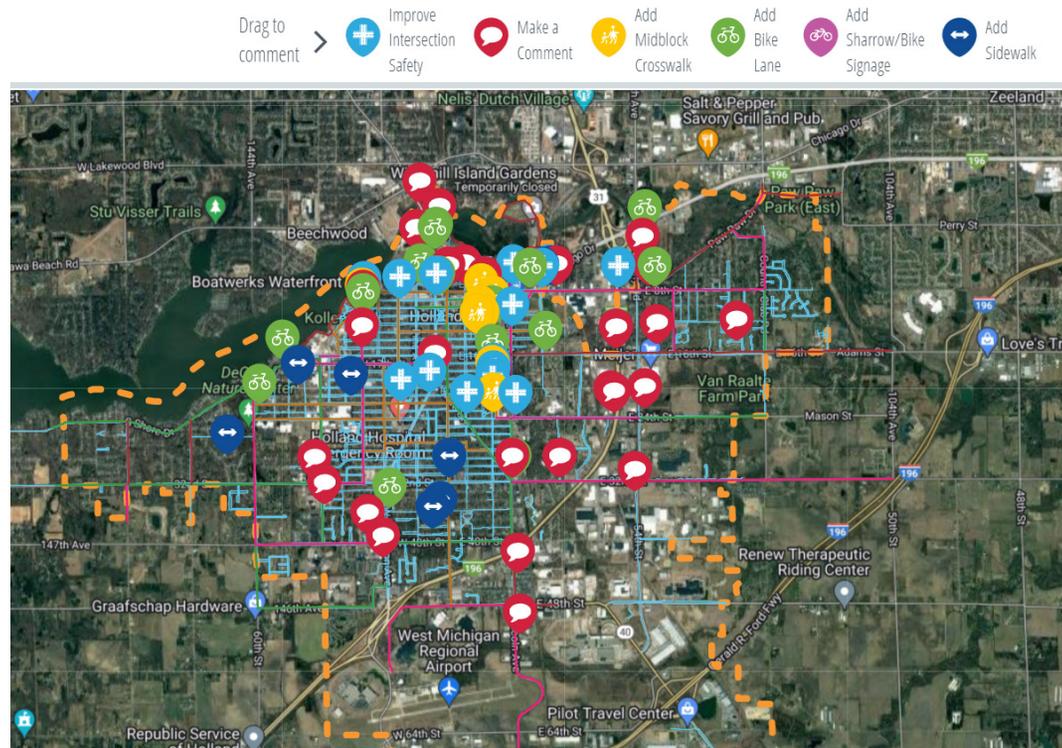
690
UNIQUE USERS

148
UNIQUE STAKEHOLDERS

83
INTERACTIVE MAP COMMENTS

105
SURVEY RESPONSES

30
IDEAS WALL COMMENTS



SURVEY RESULTS

WHAT WE HEARD FROM THE COMMUNITY

An online survey was created to identify the strengths and challenges that the City currently faces with non-motorized transportation. This section provides a summary of those results. The full set of survey results can be found in the Appendix.

While the majority of survey respondents indicated that they drive their own vehicle, around 50% chose walking and biking as well (participants could choose more than one option) as their most frequent modes of transportation. Since most respondents chose driving their own vehicle as their most frequent type of transportation, they cited the main reasons are for travel time and safety.

The survey also prompted participants to list which types of active transportation they participate in most frequently - with biking and walking for recreation as being the top answers. However, biking and walking to major destinations (i.e. shopping, parks, etc.) were also listed as top answers, so better connecting residents to major destinations is a priority.

Participants described why they walk or bike around the City of Holland, with the majority indicating that they do so for health and environmental benefits. Around 50% also indicated that they walk or bike to save money on transportation related expenses.

Online Survey

My most frequent mode of transportation in Holland is...

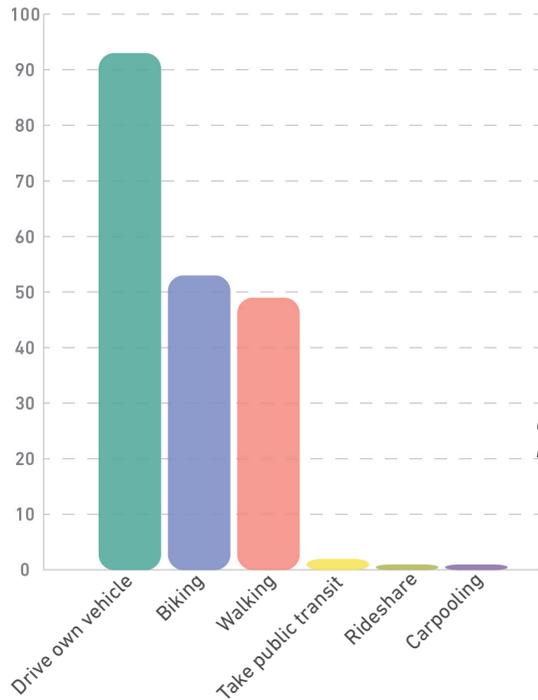
Multiple options can be chosen:

- Driving my own vehicle
- Carpooling
- Walking
- Biking
- Taking public transportation
- Rideshare
- Other (describe)

Close

QUESTION 1

My most frequent mode of transportation in Holland is...

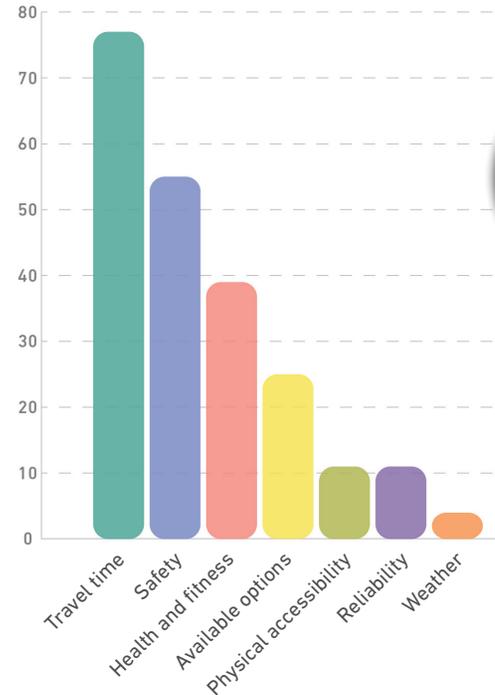


2019 American Community Survey includes lower percentages of bike/walk for commuting in Holland*

**The American Community Survey is an ongoing survey conducted by the U.S. Census Bureau that provides demographic, housing, and transportation information on a yearly basis*

QUESTION 2

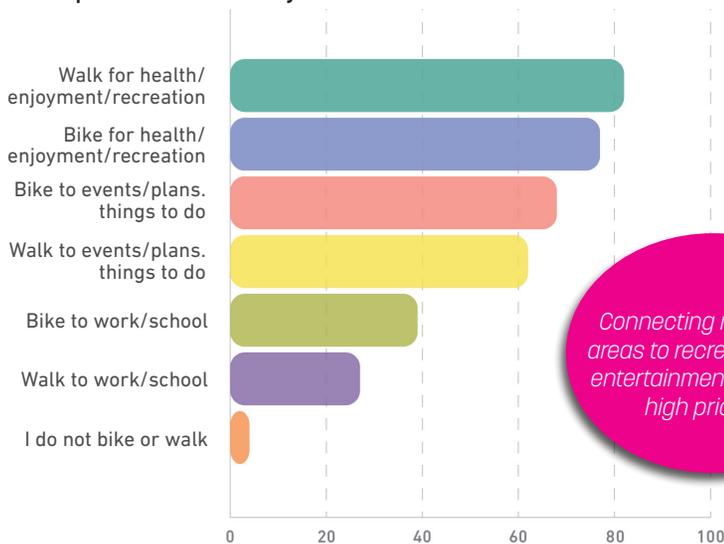
The way I travel around the city is based primarily on the following considerations...



Faster speeds result in greater safety issues which means there is a need to better connect these two topics. Can we have it both ways?

QUESTION 3

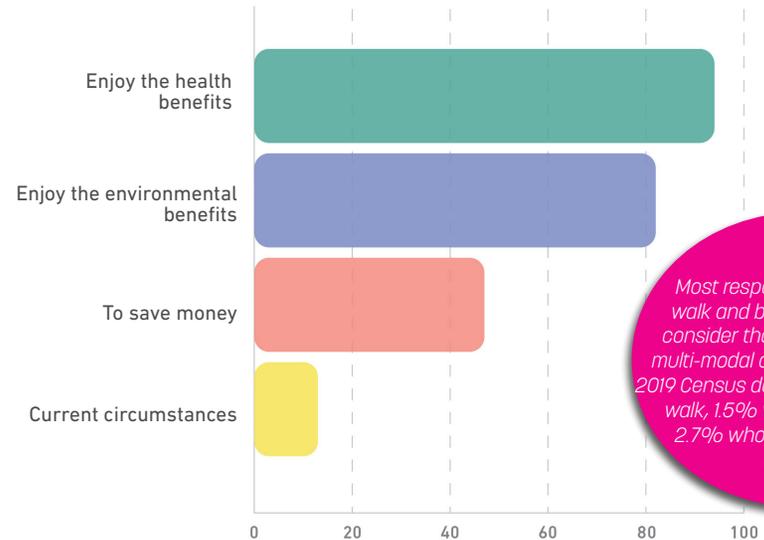
Which methods of non-motorized or active transportation do you participate in currently?



Connecting residential areas to recreational and entertainment areas are high priorities

QUESTION 4

If you currently walk or bike regularly, why do you do so?



Most respondents choose to walk and bike, yet we need to consider those who depend on multi-modal options to get around. 2019 Census data includes 6.9% who walk, 15% who use transit and 2.7% who use "other" to get to work.

PUBLIC OPEN HOUSE

An in-person Public Open House was held on April 14, 2022 to show the progress on the plan, including existing conditions, results of engagement, and initial recommendations. The community also had the opportunity to give feedback and select priorities for the street-level improvements for the City. The full report of the public open house event can be found in the Appendix. This section provides a summary of each activity from the Public Open House event.

ACTIVITY 1 - INVESTMENT IN NON-MOTORIZED AMENITIES:

Participants were given four pennies and asked to invest in different non-motorized amenities. The top three investment priorities were slower speeds, bike racks, and shade.

ACTIVITY 2 - BIKE AND PEDESTRIAN FACILITIES PRIORITIES:

Participants were asked to give input on where to prioritize street space improvements for pedestrian and bicycle facilities. To provide the best level of detail, the City was split into four different districts to show the draft bike and pedestrian facility improvements. Each participant could mark one project per map to prioritize, as well as have the option to write in comments. The following section summarizes which recommended projects participants prioritized.

District 1 - Westside and Maplewood Priorities:

- Bike facilities along Pine, north of 24th
- Improvements to 24th at Graaftschap
- Bike lanes along 32nd east of Lincoln
- Desire for major N-S and E-W connections, including VanRaalte, Columbia, 10th and 24th
- Matt Urban park at 32nd and 40th

- 24th at Apple is a difficult crossing
- Low-income areas need better service, specifically north and south of downtown

District 2 - Downtown Priorities:

- Improvements to Pine, 8th, Van Raalte and Central at 16th
- Bike lanes recommended on 17th versus 22nd
- Add a stop sign at 19th and College
- 16th and Central noted as needing a safer intersection
- Crosswalk at Moran Park and the Aquatic Center
- Traffic calming at VanRaalte and 10th
- Removing cars on 8th, making it a pedestrian-only corridor

District 3 - South End Priorities:

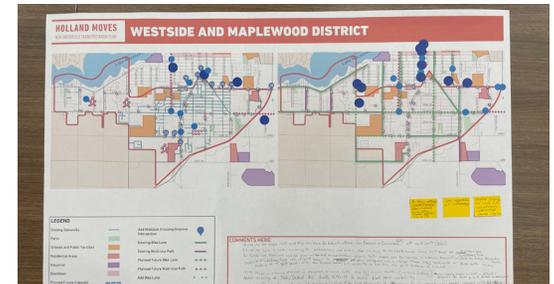
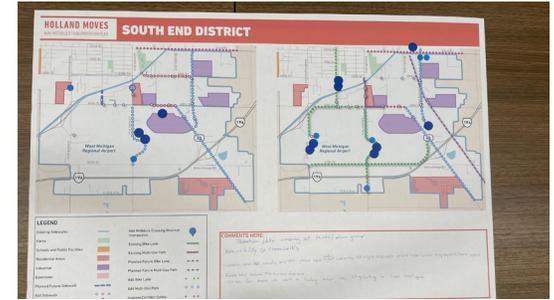
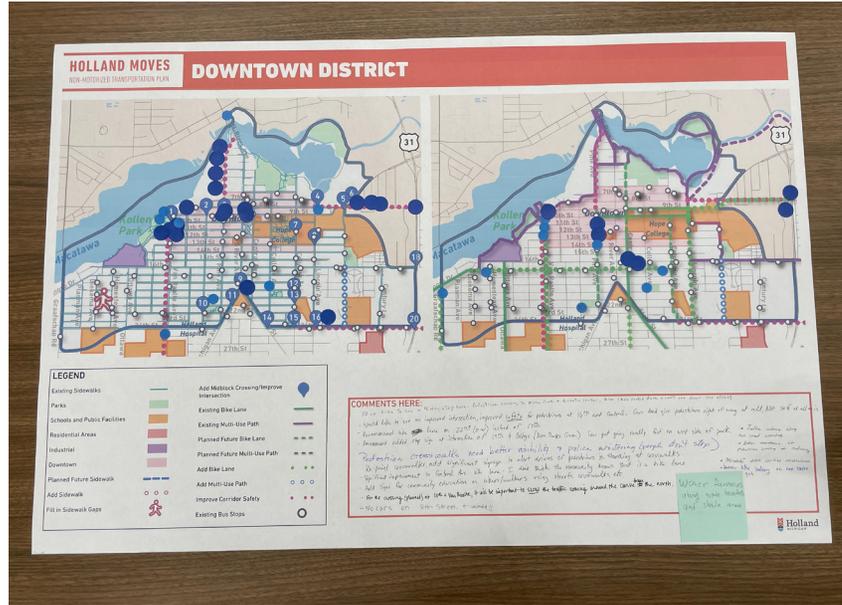
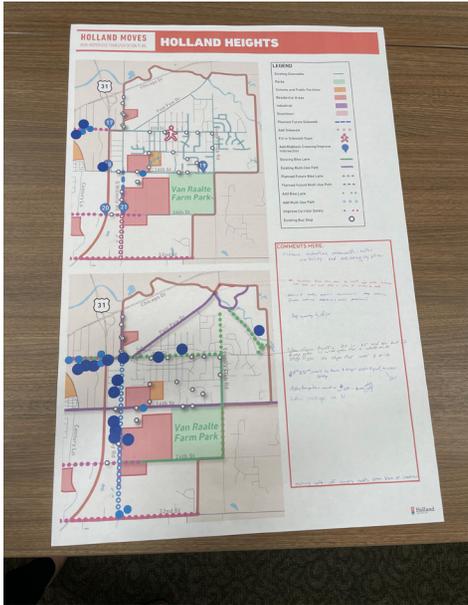
- Bike and pedestrian connections at the tunnel, but above grade
- Better street light timing along Waverly near 32nd and 40th
- Improvements to Ottawa near the airport
- Desire for more bike lanes at Lincoln and 40th

District 4 - Holland Heights Priorities:

- Bike and pedestrian facilities along Waverly and 8th
- Traffic calming on Waverly and along 8th, east of Paw Paw
- 8th and US-31 were marked for a long signal for the crosswalk

ACTIVITY 3 - GENERAL COMMENTS

Participants shared general comments about their experiences with biking and walking around Holland. Along with the improvements to the system, participants identified policy recommendations to be included in the plan. The comments included topics such as funding maintenance, limiting electric bikes on pathways, durability of crosswalks, signage in crosswalks, adopt a law for vehicles to stop for pedestrians in crosswalks, and audit City parks and adjacent non-motorized facilities to prioritize improvements.







SECTION 04

GOALS AND OBJECTIVES

GOALS AND OBJECTIVES

The goals and objectives of this plan focus on improving connectivity for different methods of non-motorized transportation throughout the City of Holland. Filling gaps and making enhancements to the existing non-motorized network can help promote more walking and biking by making these facilities safer, more convenient and inviting to use. These investments can also lead to an improved quality of life, health benefits, fewer vehicle emissions, fewer and less severe pedestrian/bicycle accidents and injuries, and a potential reduction of vehicular traffic.

GOALS

BALANCE STREET SPACE

Balanced street spaces accommodate multi-modal transportation through on and off-street facilities that support employment and recreational needs and enhance quality of life.

ENHANCE SAFETY

Enhanced safety results from streets, pathways, and intersections that are designed for the pedestrian.

CONNECT DESTINATIONS

Connected destinations have a predictable, intuitive way to travel from all directions via many nodes including to regional pathways, parks, downtown and areas with high population density.

INCREASE ACCESS AND CHOICE

Increased access and choice is available to the community when decisions are made to invest in multi-modal systems and priority is placed on those who depend on modes other than a single-occupancy vehicle.

OBJECTIVES

- » Dedicate funding to maintain non-motorized facilities.
- » Adopt and enforce a law requiring vehicles to stop for pedestrians within crosswalks.
- » Conduct a City-wide audit of all parks, adjacent crosswalks, and bike routes to ensure that these locations are prioritized for improvements where needed.
- » Conduct an education campaign about bike facilities and safety.
- » Increase tree canopy along key multi-use paths to help beautify the corridors as well as provide shade for walkers and bikers.
- » Better connect the bike and pedestrian network to public transit stops (i.e. fill in sidewalk and bike lane gaps) to help increase access to jobs, destinations, and to other communities.
- » Coordinate with MDOT to study, seek funding, and approve non-motorized crossings along I-196 and US-31.
- » Apply access management best practices as part of site plan review along major corridors to promote safer traffic circulation.
- » Study potential lane reconfiguration locations in the City to help calm traffic and identify additional opportunities to fill the remaining roadway space (i.e. bike facilities and green infrastructure).
- » Require sidewalks and pedestrian circulation plans for all new development as part of the site plan review process.
- » Add more inverted U type bike racks in Downtown Holland and bike repair stations in City parks.
- » Investigate a bike share system near key destinations.
- » Improve pedestrian and bike crossings at major intersections.

NEW AND ENHANCED NON-MOTORIZED FACILITIES IN HOLLAND WILL....

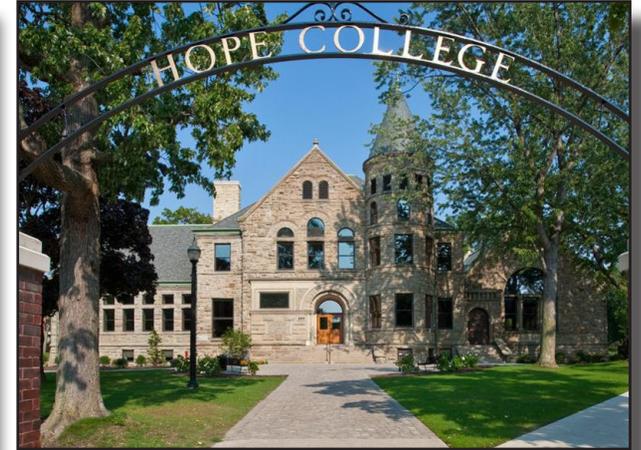
**CONNECT...
TO PARKS**



**CONNECT...
TO EXISTING TRAILS**



**CONNECT...
TO MAJOR DESTINATIONS**



**CONNECT...
TO DOWNTOWN**



**CONNECT...
TO NEIGHBORHOODS**



**IMPROVE...
PUBLIC HEALTH**





SECTION 05

TRANSPORTATION TOOLKIT

TRANSPORTATION TOOLKIT

This section describes some best practices that can be applied in the City of Holland to help improve accessibility and provide more mobility options to enhance the overall safety for non-motorized travelers. This section focuses on providing options for tools to implement the desired changes within Holland's non-motorized network. It includes pedestrian and bike improvement options, lane reconfiguration tips and standards, additional mobility best practices, and demonstration project examples.

PEDESTRIAN IMPROVEMENTS

FILL IN SIDEWALK GAPS

Sidewalks are usually a minimum of 6-feet wide, but can range up to 7-10 feet wide in high use areas (i.e. Downtown, Hope College, etc.).

BUMP-OUTS

Bump-outs, also known as curb extensions, are used to narrow the roadway physically and visually to help create a safer and shorter crossing for pedestrians. Bump-outs provide more room for amenities such as street trees and benches.

RAPID RECTANGULAR FLASHING BEACONS (RRFB'S)

Rapid Rectangular Flashing Beacons (RRFB's) are crosswalk enhancements that flash lights at a high frequency when activated to indicate pedestrian crossings to oncoming vehicles. RRFB's are very effective at alerting and promoting yielding behavior for vehicles and increasing crossing safety for pedestrians.

MID-BLOCK CROSSINGS

Mid-block crossings are usually located at places where people wish to cross, but the existing infrastructure is not well serving. Mid-block crossings allow pedestrians to have a safe space to wait while

crossing. These crossings are popular for roadways near key points such as schools, parks, and other public facilities.

RAISED CROSSWALKS

Raised crosswalks are ramped at an angle that spans the entire width of the roadway and helps to reduce vehicle speeds and promotes safety. These crossings are usually depicted with paint and markings and can be utilized alongside bump-outs and mid-block crossings.

IMPROVED STREETSCAPE

Although often more expensive, improved streetscapes can help beautify pedestrian amenities, promote walkability and pedestrian activity, as well as create solutions for stormwater runoff.



COST: \$ \$ \$ \$ \$



COST: \$ \$ \$ \$ \$



COST: \$ \$ \$ \$ \$



COST: \$ \$ \$ \$ \$



COST: \$ \$ \$ \$ \$



COST: \$ \$ \$ \$ \$

SAFER UNCONTROLLED PEDESTRIAN CROSSINGS

Pedestrians typically cross the street at a point where it is most convenient for their path of travel. This can sometimes be at locations where there is no traffic signal or marked pedestrian crossing, but is a direct line between their origin and destination. While it is not possible at every intersection, it is important to provide consistent, safe, and convenient crossings often to encourage safe crossing behavior.

CROSSING TYPES

The U.S. Department of Transportation Federal Highway Administration (FHWA) has a guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations that provides a step-by-step process for selecting appropriate treatments which include the following:

- Crosswalk visibility enhancements
- In-street pedestrian crossing signage
- Advance yield signage and markings
- Curb extensions
- Raised crosswalks
- Pedestrian refuge islands
- Pedestrian Hybrid Beacons (PHBs)
- Lane Reconfigurations

APPLYING THE GUIDE

The numbers in each cell of the chart represent the treatments that are appropriate for that context (roadway configuration, traffic volumes and speed limit). Numbers that are highlighted in the dark circles are those recommended for use in that particular location.

| Roadway Configuration | Posted Speed Limit and AADT | | | | | | | | |
|--|-----------------------------|---------------------|-------------------|---------------------------|---------------------|-------------------|----------------------|-------------------|-------------------|
| | Vehicle AADT <9,000 | | | Vehicle AADT 9,000–15,000 | | | Vehicle AADT >15,000 | | |
| | ≤30 mph | 35 mph | ≥40 mph | ≤30 mph | 35 mph | ≥40 mph | ≤30 mph | 35 mph | ≥40 mph |
| 2 lanes (1 lane in each direction) | ① 2 4 5 6 | ① 5 6 7 9 | ① 5 6 ⑦ ⑨ | ① 4 5 6 7 9 | ① 5 6 7 9 | ① 5 6 ⑦ ⑨ | ① 4 5 6 7 9 | ① 5 6 7 9 | ① 5 6 ⑨ |
| 3 lanes with raised median (1 lane in each direction) | ① 2 3 4 5 | ① ③ 5 7 9 | ① ③ 5 ⑦ ⑨ | ① 3 4 5 7 9 | ① ③ 5 ⑦ ⑨ | ① ③ 5 ⑦ ⑨ | ① ③ 4 5 7 9 | ① ③ 5 ⑦ ⑨ | ① ③ 5 ⑨ |
| 3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane) | ① 2 3 4 5 6 7 9 | ① ③ 5 6 7 9 | ① ③ 5 6 ⑨ | ① 3 4 5 6 7 9 | ① ③ 5 6 ⑦ ⑨ | ① ③ 5 6 ⑨ | ① ③ 4 5 6 7 9 | ① ③ 5 6 ⑨ | ① ③ 5 6 ⑨ |
| 4+ lanes with raised median (2 or more lanes in each direction) | ① ③ 5 7 8 9 | ① ③ 5 7 8 9 | ① ③ 5 ⑧ ⑨ | ① ③ 5 7 8 9 | ① ③ 5 ⑦ ⑧ ⑨ | ① ③ 5 ⑧ ⑨ | ① ③ 5 ⑦ ⑧ ⑨ | ① ③ 5 ⑧ ⑨ | ① ③ 5 ⑧ ⑨ |
| 4+ lanes w/o raised median (2 or more lanes in each direction) | ① ③ 5 6 7 8 9 | ① ③ 5 ⑥ 7 8 9 | ① ③ 5 ⑥ ⑧ ⑨ | ① ③ 5 ⑥ 7 8 9 | ① ③ 5 ⑥ ⑦ ⑧ ⑨ | ① ③ 5 ⑥ ⑧ ⑨ | ① ③ 5 ⑥ ⑦ ⑧ ⑨ | ① ③ 5 ⑥ ⑧ ⑨ | ① ③ 5 ⑥ ⑧ ⑨ |

Given the set of conditions in a cell,

- # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.
- Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.
- Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

- 1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
- 2 Raised crosswalk
- 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
- 4 In-Street Pedestrian Crossing sign
- 5 Curb extension
- 6 Pedestrian refuge island
- 7 Rectangular Rapid-Flashing Beacon (RRFB)**
- 8 Road Diet
- 9 Pedestrian Hybrid Beacon (PHB)**

Field Guide for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations - Source: FHWA

BIKE IMPROVEMENTS

BIKE LANES

Bike lanes are used to create dedicated spaces on roads and help provide more comfort and safety for bikers at all different experience levels. These lanes can be identified by striping, on-road markings, and/or physical barriers (i.e. bollards) may be used to keep bicyclists separated from vehicular traffic. “Advisory” bike lanes are used on roads where bike lanes may otherwise not fit (i.e. vehicle traffic uses the center lane with bike lanes on either side. When two drivers traveling in the opposite direction approach each other, the vehicles move into the bike lanes to pass each other safely).

CYCLE TRACKS

Cycle tracks act as exclusive bike lanes and are separated from travel lanes, parking lanes, and sidewalks. These may be one or two lanes at street level, sidewalk level, or intermediate level. Cycle tracks can offer a higher level of security compared to bike lanes and may be a more attractive option along higher volume routes.

MULTI-USE PATH

A multi-use path, typically 8-10 feet wide, is similar to a sidewalk, but it provides equal priority to bike riders along with pedestrians. Multi-use paths are used adjacent to roads, allow two-way movements on one side of a road, and provide safe separation.

SIGNAGE AND SHARROWS

Bike signage and pavement markings, like “Sharrows”, help make it clear to motorists that they should be aware of bicyclists. This option is low in cost, but when being used alone, should only be used along lower volume and lower speed corridors. These are often useful to make connections to existing bike lanes or multi-use paths. Signage must meet the Michigan Manual of Uniform Traffic Controlled Devices.

SIGNAGE AND MARKINGS



COST: \$ \$ \$ \$ \$

BIKE LANES



COST: \$ \$ \$ \$ \$

CYCLE TRACKS



COST: \$ \$ \$ \$ \$

MULTI-USE PATH



COST (Path): \$ \$ \$ \$ \$

COST (Acq. ROW): \$ \$ \$ \$ \$



Jack H. Miller
Center for Musical Arts

221

COLUMBIA AVE

LANE RECONFIGURATION OPTIONS

Lane reconfigurations are a design-based safety solution that reconfigures a road by removing travel lanes to repurpose the space for other uses and travel modes. The most common scenario is the conversion of an undivided, four-lane roadway to a three-lane roadway where the center lane serves as a two-way, left-turn lane. In many cases, features such as bike lanes, on-street parking, or green infrastructure are incorporated into the street redesign.

According to the Federal Highway Administration (FHWA), roadways with up to 15,000 vehicles per day are ideal candidates for lane reconfigurations to three lanes. Roadways with volumes between 15,000-20,000 are usually good candidates as well (see the Traffic Volume Map in the Appendix). However, the potential benefits and associated trade-offs of a lane reconfiguration must be considered.

POTENTIAL BENEFITS

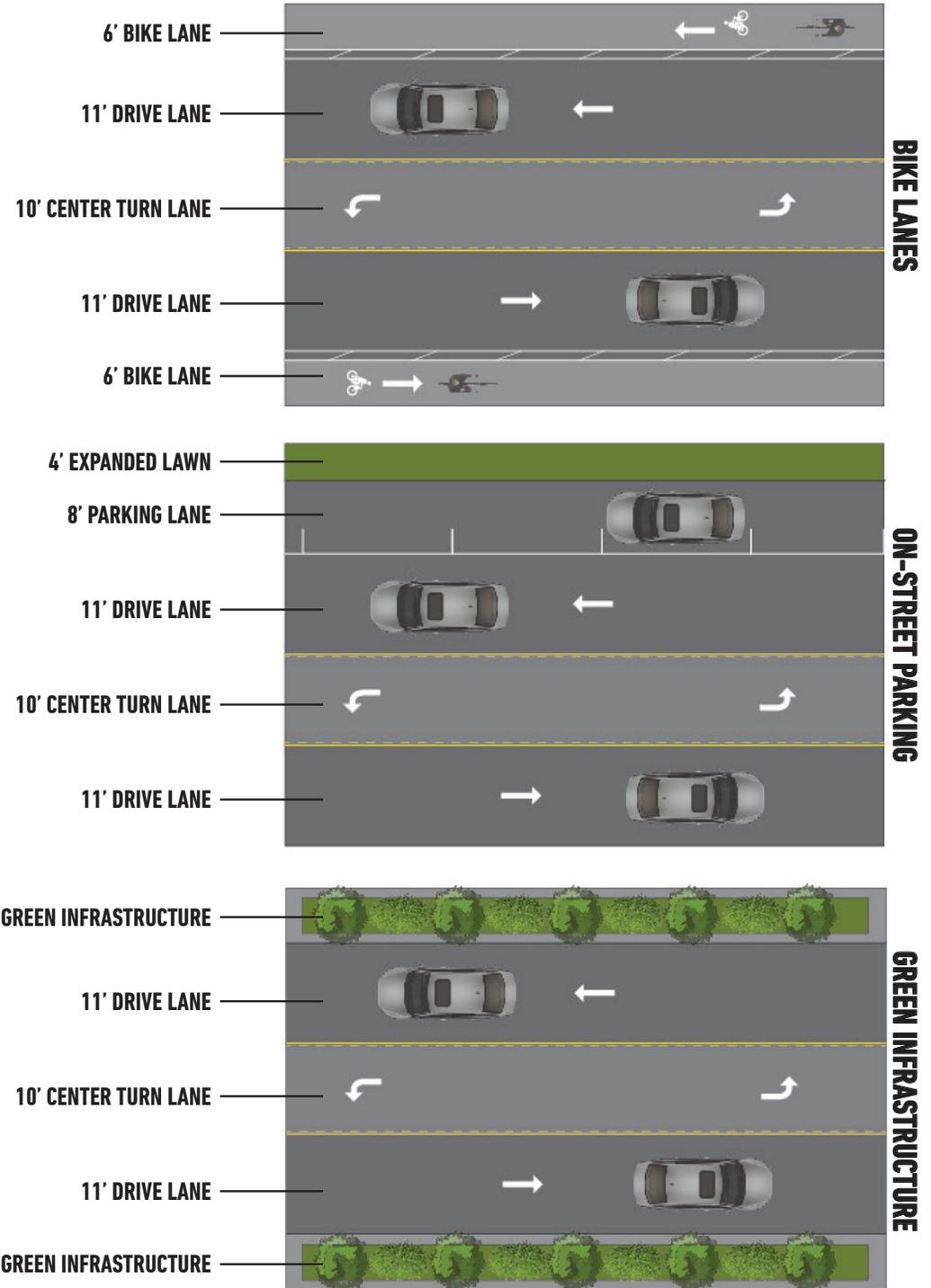
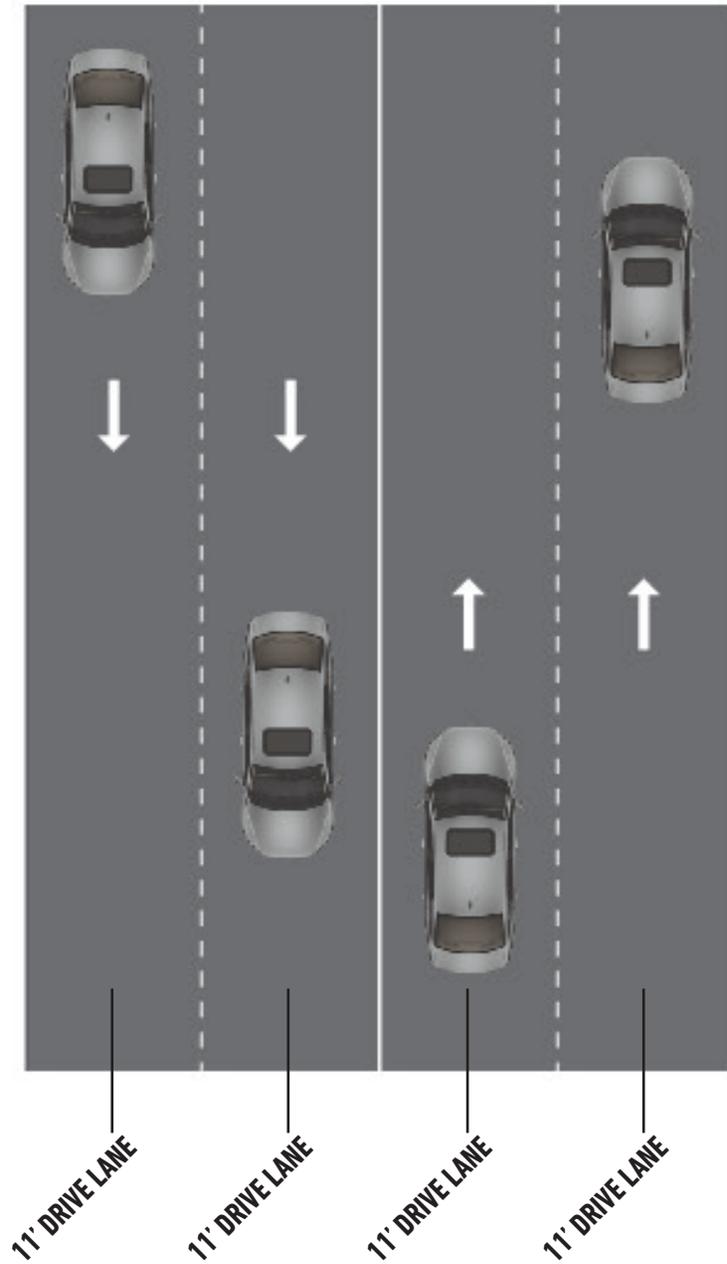
- **Safer traffic speeds:** Reducing travel to one lane in each direction limits vehicle speeds.
- **Operational improvements:** The addition of a center left-turn lane reduces conflicts with through-moving vehicles.
- **Reduction of number and severity of crashes:** Studies show a 19 to 47 percent reduction in crashes when a lane reconfiguration is implemented.
- **Additional space in the right-of-way for other uses:** Space that has been made available through conversion can create opportunities for new on-street parking, bike lanes, wider sidewalks, etc.
- **Reduction of the overall crossing distance for pedestrians:** The addition of on-street parking or center medians can reduce the crossing distance for pedestrians.
- **Improved safety for all users:** Motorists, pedestrians, transit users, and bicyclists all benefit from fewer potential conflict zones and enhanced accommodations.

CONSIDERATIONS

- **Potential delay at traffic signals:** Reducing the number of travel lanes can increase delay at major intersections. However, traffic signal timing and designated turn lanes can resolve this.
- **Potential reduction in capacity for increased traffic volume:** Some traffic may divert to alternate routes.
- **Potential congestion with in-lane bus stops:** When travel lanes are reduced, buses are required to stop in the travel lane to pick up passengers.
- **Potential impacts on transit service reliability:** If the road conversion adds on-street parking or space for buses to pull out of the travel lane for passenger pick-up, the bus then has to wait for traffic to pass to move back into the travel lane. Adding bump-outs at bus stops would resolve this issue, but potentially add to congestion.
- **Potential reduction of on-street parking:** In scenarios where bike infrastructure is prioritized, there may not be space remaining for on-street parking.
- **Potential impacts on maintenance and snow removal:** If the road conversion includes installation of medians or other curbed infrastructure, it can add complexities to maintenance and snow removal efforts.

RECONFIGURATION OF LANES LEAVES MORE ROOM FOR...

EXISTING LANE CONFIGURATION



DEMONSTRATION PROJECTS

In order to help the community visualize and test redesign options for potential future lane reconfiguration projects, temporary demonstration or pilot projects can serve as an effective educational and evaluation tool. This method has been found to accelerate the typical process for design road reconfigurations and improvements, as the public and stakeholders are better able to visually understand the benefits and consequences of a particular design option.

The temporary nature of pilot projects allows communities to test out new design ideas without the cost and time burden of a full construction project. After evaluating the results, the community can decide whether to move forward with their design concept, alter the design, or simply remove the temporary materials and return to the previous road design. The community should be well informed and educated throughout the entire process to ensure that pedestrians, bicyclists, and drivers are all prepared for the temporary changes.

LAKE TO LAKE: EAST GRAND RAPIDS



This safe street demonstration utilized human-scaled infrastructure to understand current and existing conditions, while inviting the community to participate and give feedback. The project removed a turn lane, added a crosswalk and created a four-way stop. During installation, average vehicle through speeds were 13 mph, a decrease of 44% during the safe street demonstration. Eight months later, the project was permanently constructed.

DIVISION UNITED: GRAND RAPIDS



The Division United Demonstration project enhanced public spaces, calmed streets, hosted pop-up businesses, and created new public art. The goal of the overall project was to integrate land use and transportation planning with transit capital investments. The project included a new crosswalk, mid-block crossing, and bus shelter enhancements. The project saw a reduction in traffic speed, enhanced feelings of safety, and improved connections to businesses and neighborhoods.

10TH STREET CYCLE TRACK: HOLLAND



In August 2020, the City of Holland set up a demonstration project of a cycle track along 10th Street (between Van Raalte Ave and Lincoln Ave) to simulate another option for bike infrastructure beyond typical bike lanes. Ultimately, the project was scaled down to bike lanes (implemented in 2021) after the demonstration project took place.

EXPANDED MOBILITY OPTIONS

BIKE SHARE

Sharing vehicles/rides has become a popular option for travel and is an option for the City of Holland to consider implementing in high-traffic pedestrian areas like Downtown or Hope College. Bike share services help provide a low-cost and on-demand transportation option for individuals that allow them a convenient method of travel while also providing connections with other transportation services that are available. Users may connect to these services through kiosks or through a mobile app that unlocks the ride and creates/manages the trip. Stations are typically spread out to allow bicycle shared use for individuals to borrow and return the bikes from a “dock”.

The City of Grand Rapids conducted a bike and scooter share pilot program in 2020 with the purpose of evaluating how the availability of shared bikes and e-scooters impact travel across a range of geographic areas and demographic groups. The study also looked at how these vehicles can improve overall mobility and complement other methods of travel and transit services, what types of shared mobility vehicles increase non-automobile mobility, ways to manage bike and scooter parking between trips without impeding accessible pedestrian travel or negatively affecting sidewalk and curbside zone uses, and providing a “safe space” to test non-motorized and electric-assist micro-mobility options.

E-SCOOTERS/E-BIKES

E-scooters and e-bikes have also become more popular choice in the past few years, especially as a means of alternative travel options for short vehicle trips (typically within 1-2 miles). However, e-scooters can also create some issues, such as where these vehicles can be used - on roadways, on pathways or on pedestrian

sidewalks. And since there is no designated pick-up or drop-off zones, this can also lead to cluttered sidewalks and conflicts for pedestrians and bicyclists. These are challenges to consider if Holland choose to allow for e-scooters in the future.

One topic brought up during the Public Open House was whether or not to allow e-bikes on multi-use paths or sidewalks. In the State of Michigan, only Class 1 e-bikes are allowed on paved trails. Higher classes of e-bikes are directed to use bike lanes or vehicle lanes on the roads or on trails where motorized vehicles are allowed. Cities have the authority to regulate the allowance or restriction of e-bikes on pathways as well.

- **Class 1** - equipped with motor that assists only when pedaling and disengages when bike reaches 20 mph
- **Class 2** - equipped with motor that propels the bike regardless of pedaling to a maximum speed of 20 mph and disengages when brakes are applied, or throttle is released
- **Class 3** - equipped with motor that assists only when pedaling and disengages when bike reaches 28 mph

Source: State of Michigan DOT





SECTION 06

NON-MOTORIZED IMPROVEMENT OPTIONS

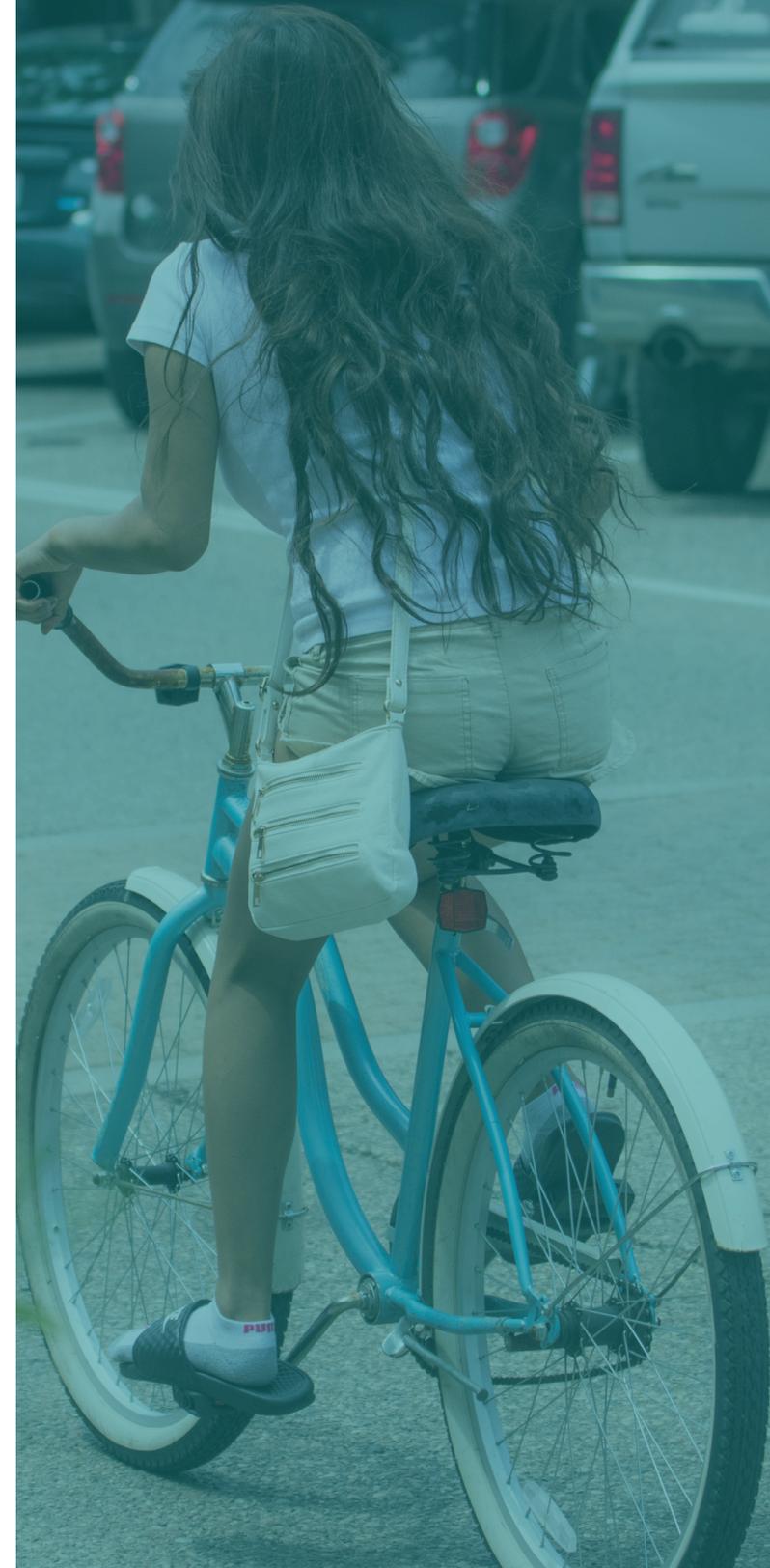
COMPREHENSIVE BIKE IMPROVEMENT PLAN

RECOMMENDED BIKE FACILITIES

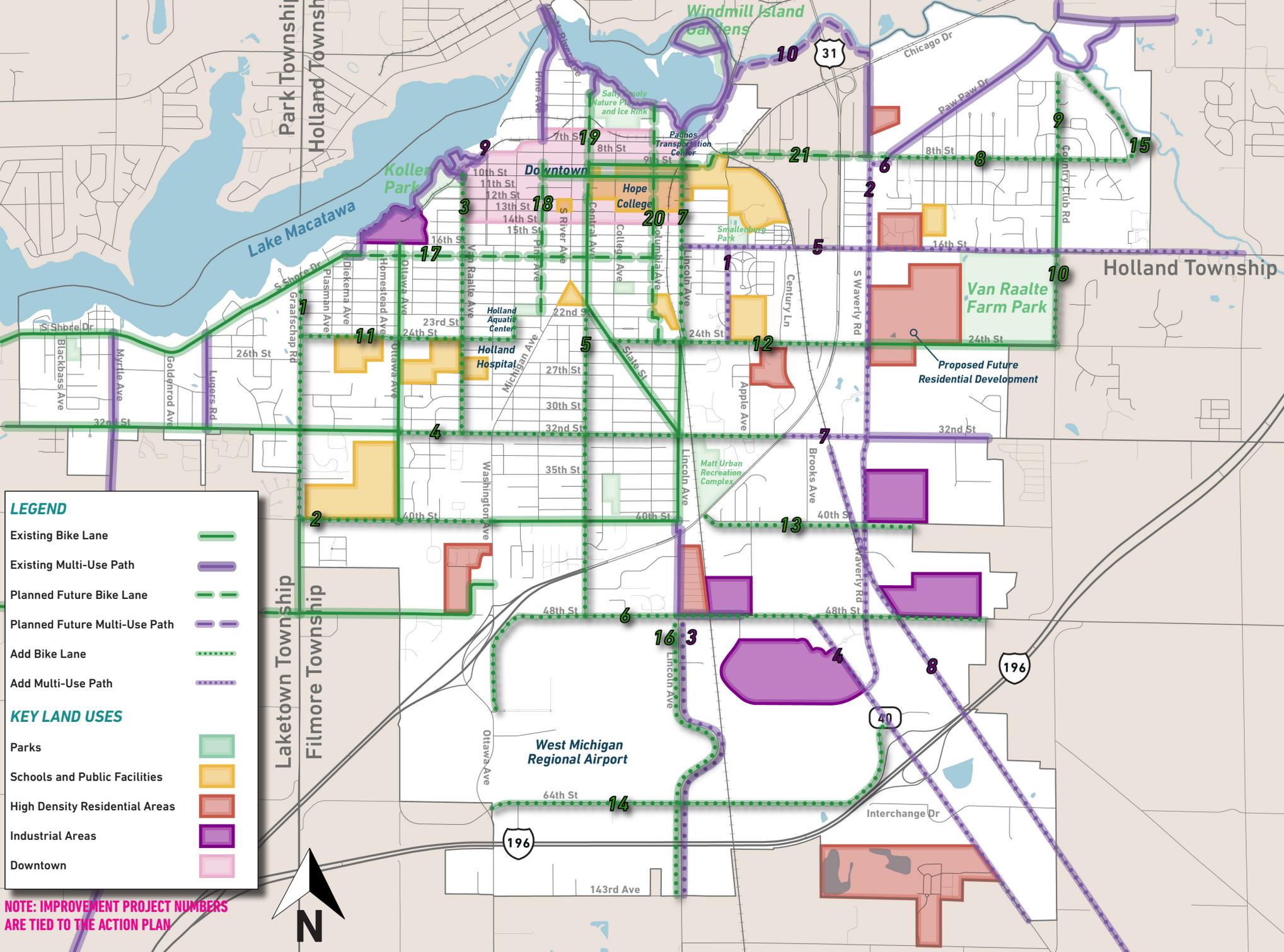
The map on the following page (43), illustrates where different bike facility types are recommended for implementation to create a more comprehensive and connected bike network in Holland. Each recommended bike facility is numbered and further described in the Action Plan (p. 48). This Comprehensive Bike Improvement Plan is intended to be flexible and serve as the framework to guide future planning. There may be different facility types implemented along proposed routes (or routes not shown) as a result of more detailed study and revisiting recommendations as the City evolves.

Proposed facility recommendations (adding a bike lane or multi-use path) were a result of public and stakeholder input, best practices, and took into account existing constraints (i.e. existing right-of-way, traffic volumes, speeds, etc.).

Planned facilities that are noted in the legend and on the map are projects that the City has already identified that will be completed in the next few years. These projects are also noted in the Action Plan (p. 48).



BIKE IMPROVEMENT PLAN



LEGEND

- Existing Bike Lane: Solid green line
- Existing Multi-Use Path: Solid purple line
- Planned Future Bike Lane: Dashed green line
- Planned Future Multi-Use Path: Dashed purple line
- Add Bike Lane: Dotted green line
- Add Multi-Use Path: Dotted purple line

KEY LAND USES

- Parks: Light green square
- Schools and Public Facilities: Yellow square
- High Density Residential Areas: Red square
- Industrial Areas: Purple square
- Downtown: Pink square

NOTE: IMPROVEMENT PROJECT NUMBERS ARE TIED TO THE ACTION PLAN

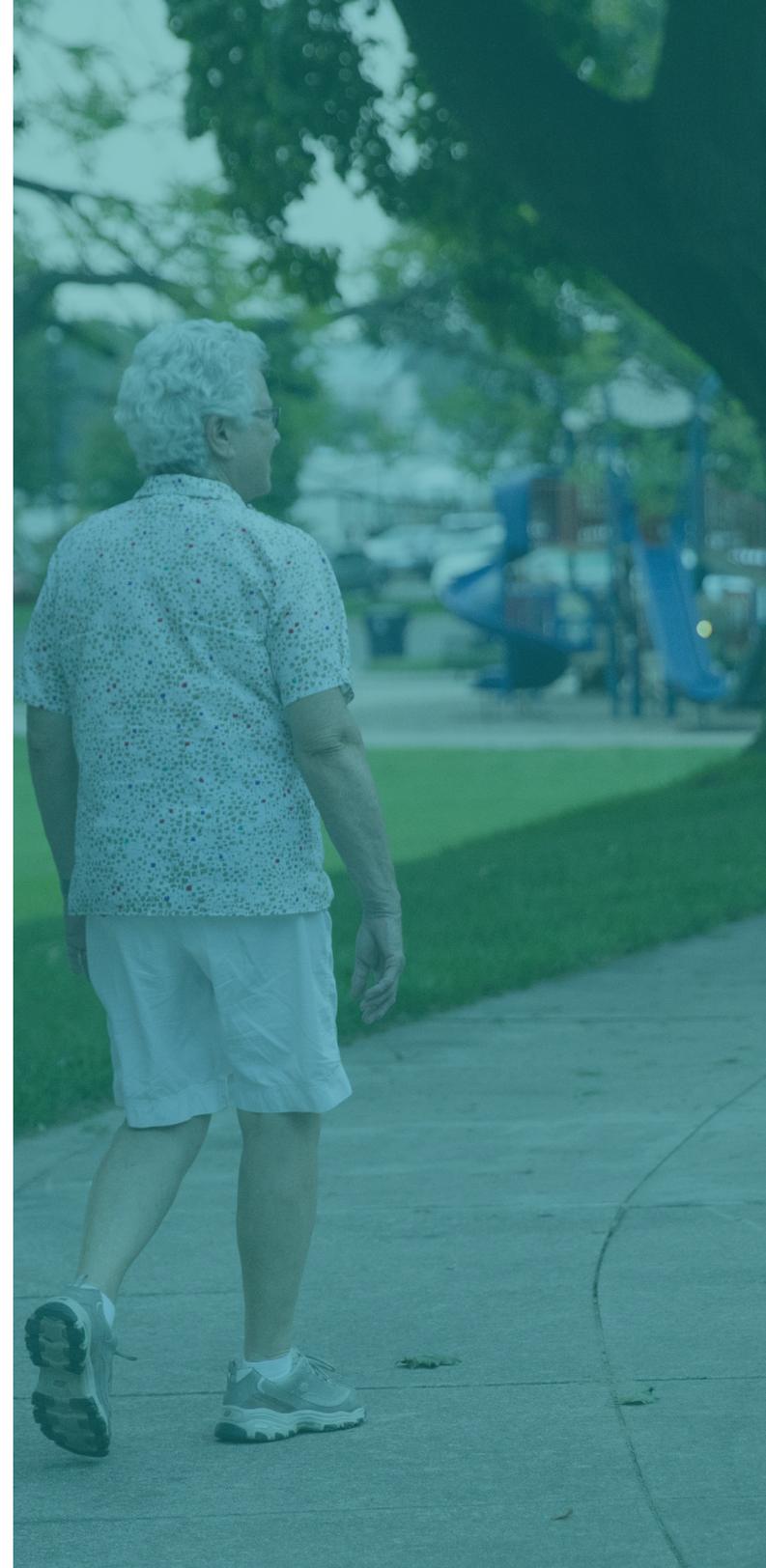
COMPREHENSIVE PEDESTRIAN IMPROVEMENT PLAN

RECOMMENDED PEDESTRIAN FACILITIES

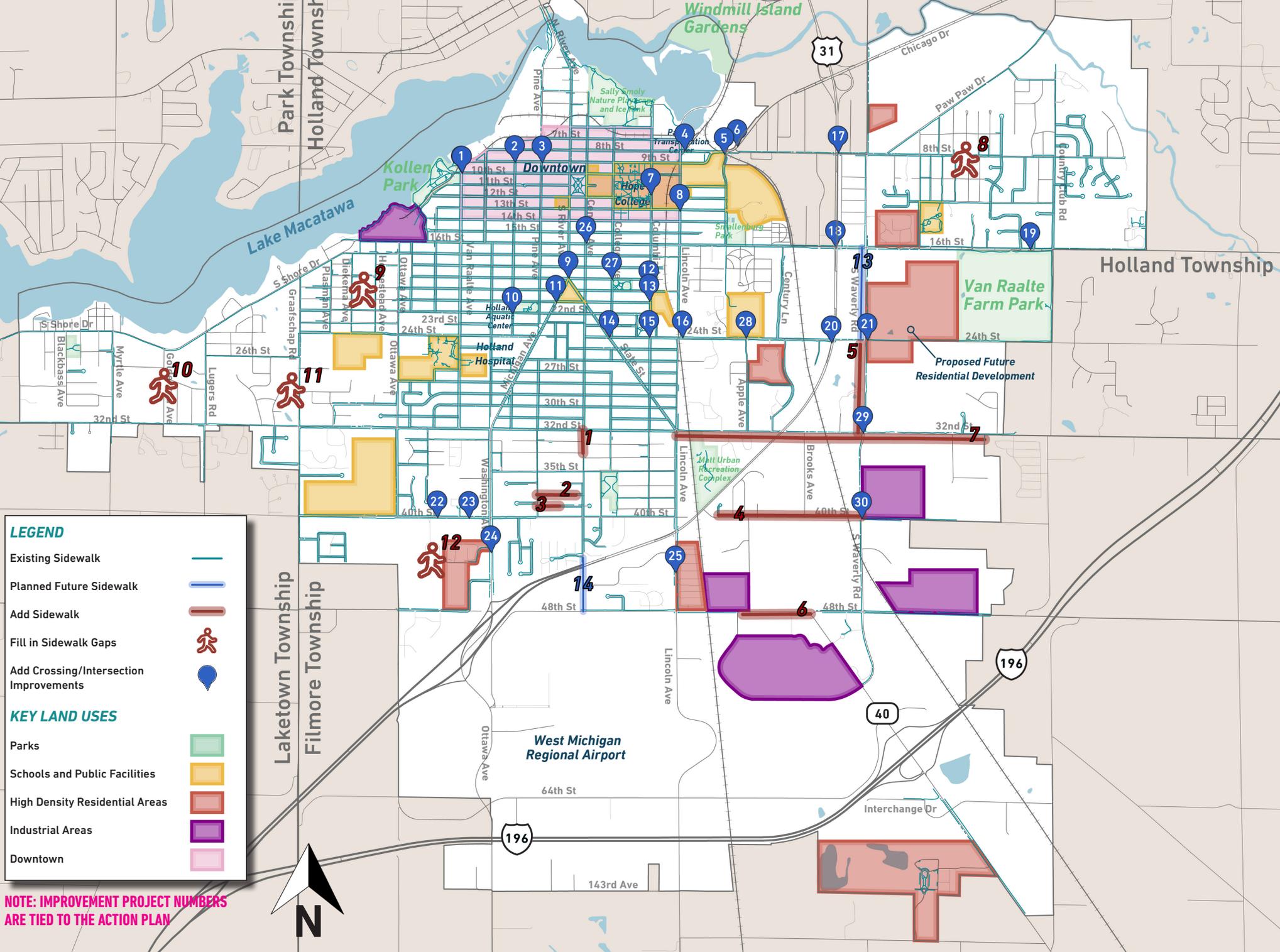
The map on the following page (45), illustrates where different pedestrian facility types are recommended for implementation. Each pedestrian facility is numbered and described in further detail in the Action Plan (p. 48). This Comprehensive Pedestrian Improvement Plan is intended to be flexible and serve as the framework to guide future planning. There may be different facility types implemented along proposed routes (or routes not shown) as a result of more detailed study and revisiting recommendations as the City evolves.

Facility recommendations that are proposed were a result of public and stakeholder input, best practices, and took into account existing constraints (i.e. existing right-of-way, traffic volumes, speeds, etc.). Pedestrian facility recommendations include filling in sidewalk gaps in targeted residential neighborhoods and adding sidewalk along specific corridors (sometimes just on one side of the street where it may be missing). Multi-use path recommendations were also included on this map as this type of facility is used by both bicyclists and pedestrians. Intersection and mid-block crossing improvement recommendations were established on the map to help increase safety for pedestrians (and bicyclists), especially along existing sidewalk corridors near schools and public facilities.

Planned facilities that are noted in the legend and on the map are projects that the City has already identified that will be completed in the next few years. These projects are also noted in the Action Plan (p. 48).



PEDESTRIAN IMPROVEMENT PLAN



LEGEND

- Existing Sidewalk 
- Planned Future Sidewalk 
- Add Sidewalk 
- Fill in Sidewalk Gaps 
- Add Crossing/Intersection Improvements 

KEY LAND USES

- Parks 
- Schools and Public Facilities 
- High Density Residential Areas 
- Industrial Areas 
- Downtown 

NOTE: IMPROVEMENT PROJECT NUMBERS ARE TIED TO THE ACTION PLAN





SECTION 07

ACTION PLAN

ACTION PLAN

A ROAD MAP FOR IMPLEMENTATION

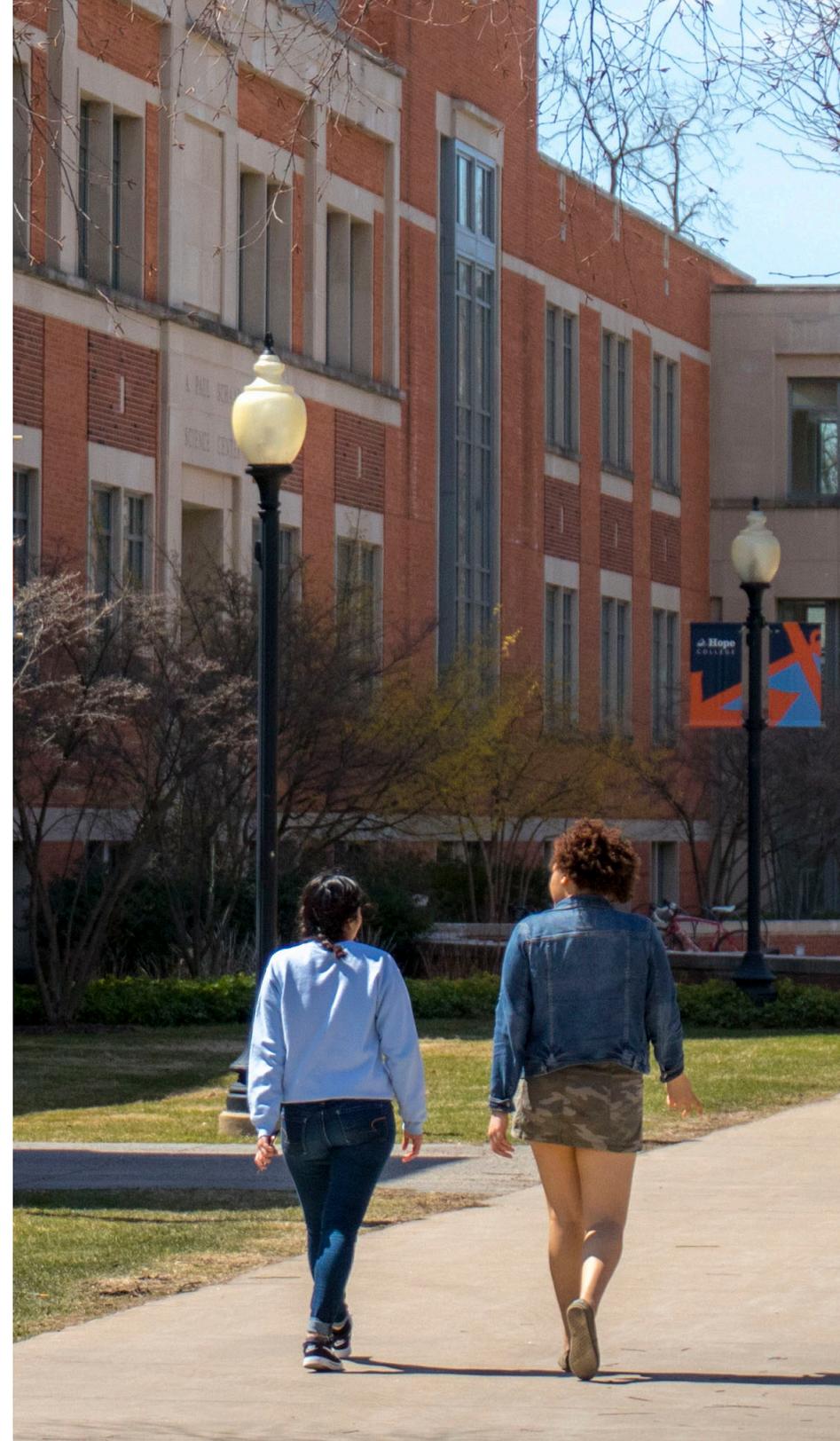
Successful implementation begins with having a clear and prioritized action plan in place that provides guidance on future investments in pedestrian and bicycle infrastructure. This section focuses on the physical projects that were recommended in the Pedestrian and Bike Improvement Plans (see pages 43 and 45).

Effort will be made by the City to make smart investments and share costs. When there are new construction, reconstruction, and maintenance projects occurring around the City, this plan will be referenced to ensure that pedestrian and bike infrastructure projects are included in those road or sidewalk projects. This could sometimes mean that priority level will need to be adjusted to accommodate those projects.

While this plan is comprehensive, there may be cases where a recommended project in this plan may not be feasible or the type of facility recommended in the plan may need to be changed. The City may also propose and construct future non-motorized projects that are not included in this plan.

CRITERIA FOR THE PLAN

Implementation of this plan must be achievable and realistic. A set of objective criteria was developed to help manage and prioritize the number of recommended projects. The criteria determined the level of priority (low, medium, or high) for each project based on the location of the project (i.e. near key destinations), its ability to fill in gaps and/or provide a mobility upgrade, if it was already part of another plan's recommendation, and if it was noted by the public as a priority project. A legend of the criteria is provided on the following page.



PRIORITY CRITERIA

LOW PRIORITY LEVEL

-MEETS 4 OR LESS CRITERIA



MEDIUM PRIORITY LEVEL

-MEETS BETWEEN 5 AND 6 CRITERIA



HIGH PRIORITY LEVEL

-MEETS 7 OR MORE CRITERIA



| PRIORITY CRITERIA | SYMBOL |
|---|--------|
| LOCATED NEAR A SCHOOL, PUBLIC FACILITIES, OR HEALTH CARE FACILITIES | |
| LOCATED NEAR AN EXISTING TRANSIT STOP | |
| LOCATED NEAR DOWNTOWN OR COMMERCIAL DISTRICT | |
| LOCATED NEAR A PARK, TRAIL, OR RECREATIONAL AREA(S) | |
| LOCATED NEAR AN INDUSTRIAL AREA | |
| LOCATED NEAR A HIGH DENSITY RESIDENTIAL AREA | |
| FILLS GAPS IN THE EXISTING NON-MOTORIZED NETWORK, CONNECTS TO ADJACENT COMMUNITIES, AND/OR LINKS WITH REGIONAL FACILITIES | |
| MOBILITY UPGRADE (REMEDIES A BARRIER IN PERSONAL MOBILITY, HELPS PROVIDE BUFFER/PROTECTION ALONG A HIGH SPEED CORRIDOR AND/OR A HIGH VOLUME CORRIDOR) | |
| HAS THE PROJECT ALREADY BEEN LISTED IN ANY PREVIOUS CITY OF HOLLAND OR COUNTY PLAN? | |
| NOTED BY THE PUBLIC AS A PRIORITY PROJECT | |

HOLLAND MOVES ACTION PLAN

| ITEM | STREET / LOCATION | BOUNDARY | CRITERIA MET | PRIORITY LEVEL |
|---------------------------|-------------------|----------------------------------|---|----------------|
| BIKE LANE PROJECTS | | | | |
| 1 | Graafshap Rd | S Shore Dr to 40th St |       | ➡➡➡ |
| 2 | 40th St | Graafshap Rd to Washington Ave |      | ➡➡➡ |
| 3 | Van Raalte Ave | 10th St to 32nd St |          | ➡➡➡ |
| 4 | 32nd St | Ottawa Ave to US 31 |       | ➡➡➡ |
| 5 | Central Ave | 21st St to 48th St |       | ➡➡➡ |
| 6 | 48th St | Ottawa Ave to East City Limits |       | ➡➡➡ |
| 7 | Lincoln Ave | 7th St to 24th St |     | ➡➡➡ |
| 8 | 8th St | Paw Paw Dr to Country Club Rd |         | ➡➡➡ |
| 9 | Country Club Rd | Legion Park Dr to 8th St |    | ➡➡➡ |
| 10 | Country Club Rd | 16th St to 24th St |     | ➡➡➡ |
| 11 | 24th St | Graafshap Rd to Maple Rd/22nd Rd |      | ➡➡➡ |
| 12 | 24th St | State St to S Waverly Rd |    | ➡➡➡ |

| ITEM | STREET / LOCATION | BOUNDARY | CRITERIA MET | PRIORITY LEVEL |
|--------------------------------|-------------------------|---------------------------------|--|----------------|
| 13 | 40th St | US-31 to East City Limits |       | ➤➤➤ |
| 14 | 64th St | Ottawa Ave to M-40 |      | ➤➤➤ |
| 15 | Rivertrail | Paw Paw Dr to City Limits |   | ➤➤➤ |
| 16 | Lincoln Ave | 48th St to 143rd Ave |        | ➤➤➤ |
| 17 | 17th St | S Shore Dr to Columbia Ave |        | ➤➤➤ |
| 18 | Pine Ave | 9th St to 22nd St |       | ➤➤➤ |
| 19 | Central Ave | 3rd St to 12th St |     | ➤➤➤ |
| 20 | Columbia Ave | 4th St to 24th St |       | ➤➤➤ |
| 21 | 8th St | 9th St to Paw Paw Dr |       | ➤➤➤ |
| MULTI-USE PATH PROJECTS | | | | |
| 1 | Fairbanks Ave Extension | 16th St to 24th St |     | ➤➤➤ |
| 2 | S Waverly Rd | 8th St to M-40 |         | ➤➤➤ |
| 3 | Lincoln Ave | 48th St to 143rd Ave |        | ➤➤➤ |
| 4 | M-40 | 48th St to City Limits |      | ➤➤➤ |
| 5 | 16th St | Lincoln Ave to East City Limits |       | ➤➤➤ |

| ITEM | STREET / LOCATION | BOUNDARY | CRITERIA MET | PRIORITY LEVEL |
|------|--|-----------------------------|---|---|
| 6 | 8th St | S Waverly Rd and Paw Paw Dr |      |    |
| 7 | 32nd St | US-31 to S Waverly Rd |       |    |
| 8 | Along RXR Tracks | 32nd St to City Limits |       |    |
| 9 | 8th St | Washington Blvd to 10th St |       |    |
| 10 | Along Macatawa River and Holland Energy Park | 8th St to S Waverly Rd |      |    |

SIDEWALK PROJECTS

| | | | | |
|---|--------------------------|------------------------------------|---|---|
| 1 | Central Ave | 32nd St to 34th St |     |    |
| 2 | 38th St | Pine Ave to Central Ave |    |    |
| 3 | 39th St | Pine Ave to Central Ave |    |    |
| 4 | 40th St | Sagewood Ct to S Waverly Rd |       |    |
| 5 | S Waverly Rd | 24th St to 32nd St |        |    |
| 6 | 48th St | Industrial Ave to M-40 |      |    |
| 7 | 32nd St | Lincoln Ave to City Limits |        |    |
| 8 | Holland Heights District | Between Paw Paw Dr and 16th St |       |    |
| 9 | Downtown District | Between Plasman Ave and Ottawa Ave |     |    |

| ITEM | STREET / LOCATION | BOUNDARY | CRITERIA MET | PRIORITY LEVEL |
|------|---------------------------------|----------------------------------|--|---|
| 10 | Westside and Maplewood District | Between Myrtle Rd and Lugers Rd |     |    |
| 11 | Westside and Maplewood District | Between Lugers Rd and Ottawa Ave |   |    |
| 12 | Westside and Maplewood District | Between 40th St and 48th St |      |    |
| 13 | S Waverly Rd | 16th St to 24th St (west side) |       |    |
| 14 | Central Ave | Old Mill Dr to 48th St |      |    |

CROSSING AND INTERSECTION SAFETY PROJECTS

| | | | | |
|---|----------------|---------------------------------------|--|---|
| 1 | Van Raalte Ave | 10th St and 11th St Intersection |      |    |
| 2 | 9th St | 9th St and Maple Ave Intersection |     |    |
| 3 | 9th St | 9th St and Pine Ave Intersection |     |    |
| 4 | 8th St | 8th St and Lincoln Ave Intersection |         |    |
| 5 | 8th St | 8th St and Fairbanks Ave Intersection |         |    |
| 6 | Chicago Ave | Chicago Ave and 8th St Intersection |         |    |
| 7 | Columbia Ave | Between 10th St and 13th St |     |    |
| 8 | 13th St | 13th St and Lincoln Ave Intersection |     |    |
| 9 | 19th St | 19th St and S River Ave Intersection |        |    |

| ITEM | STREET / LOCATION | BOUNDARY | CRITERIA MET | PRIORITY LEVEL |
|------|-------------------|--|--|---|
| 10 | 22nd St | 22nd St and Maple Ave Intersection |     |    |
| 11 | 21st St | 21st St and Michigan Ave Intersection |        |    |
| 12 | Columbia Ave | Between 19th St and 13th St |     |    |
| 13 | 21st St | 21st St and Columbia Ave Intersection |     |    |
| 14 | 24th St | 24th St and State St Intersection |     |    |
| 15 | 24th St | Between Prospect Ave and Columbia Ave |    |    |
| 16 | 24th St | 24th St and Lincoln Ave Intersection |     |    |
| 17 | 8th St | 8th St and US 31 Intersection |       |    |
| 18 | 16th St | 16th St and US 31 Intersection |         |    |
| 19 | 16th St | Between Stratford Way and Oxford Ct |       |    |
| 20 | 24th St | 24th St and US 31 Intersection |        |    |
| 21 | 24th St | Between S Waverly Rd and Van Raalte Farm Park |       |    |
| 22 | 40th St | 40th St and Songbird Ln Intersection |     |    |
| 23 | 40th St | Between Zonne Ct and Washington Ave |      |    |
| 24 | Washington Ave | Washington Ave and Meadow Lane Dr Intersection |     |    |

| ITEM | STREET / LOCATION | BOUNDARY | CRITERIA MET | PRIORITY LEVEL |
|------|-------------------|---------------------------------------|---|---|
| 25 | Lincoln Ave | Between Veteran Dr and 48th St |      |    |
| 26 | 16th St | 16th St and Central Ave Intersection |        |    |
| 27 | 19th St | 19th St and College Ave Intersection |        |    |
| 28 | 24th St | 24th St and Apple Ave Intersection |       |    |
| 29 | 32nd St | 32nd and S Waverly Rd Intersection |      |    |
| 30 | 40th St | 40th St and S Waverly Rd Intersection |      |    |



PERFORMANCE MEASURES

The City will use the Holland Moves Plan during the creation of the Capital Improvements Program (CIP) each year.

One of the keys to successful implementation is to create a set of metrics or performance measures to track progress. The City will also create a set of performance measures and include those in annual reports to assess and demonstrate implementation of the Holland Moves goals and Action Plan.

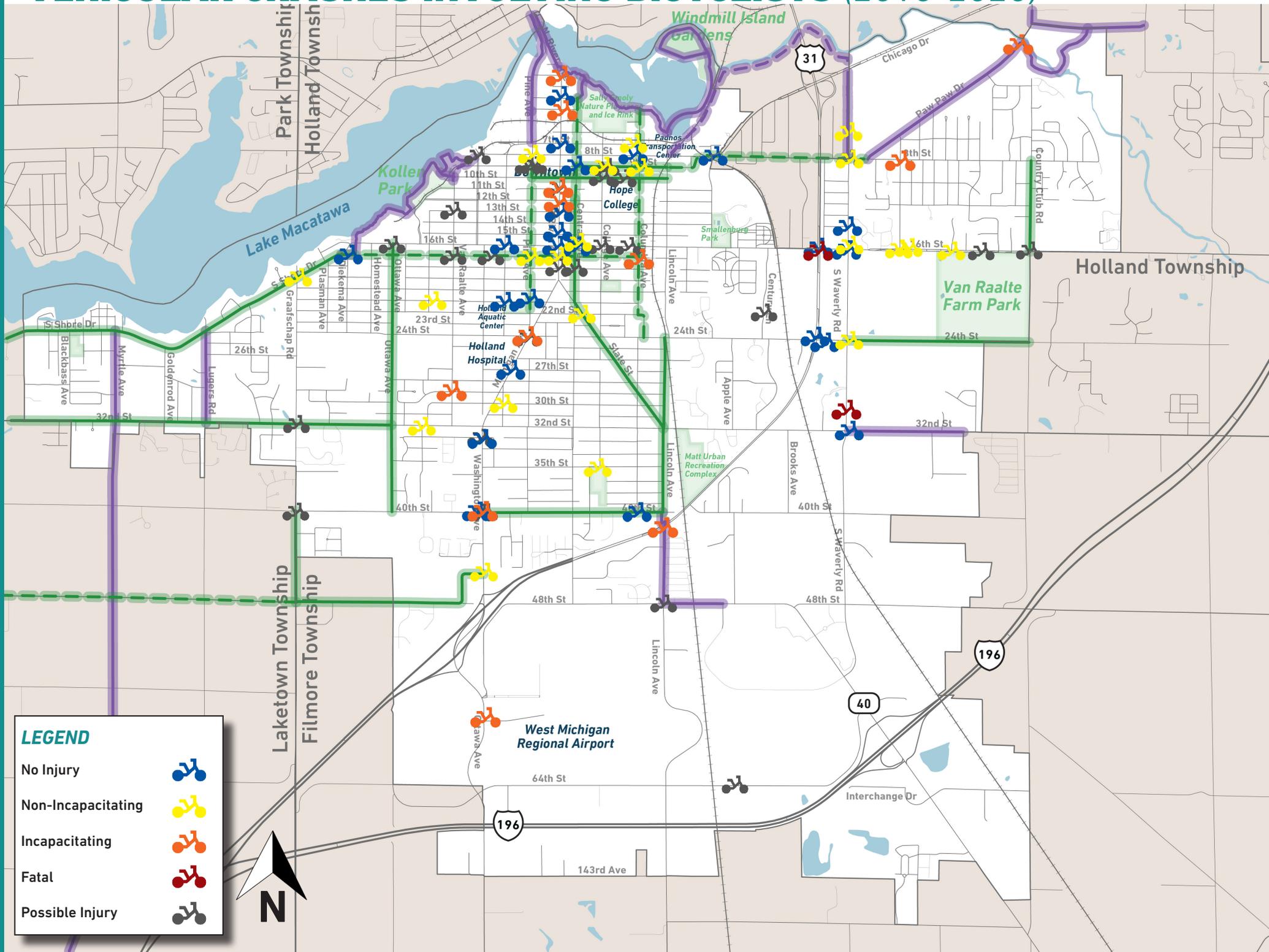
PAGE INTENTIONALLY LEFT BLANK



SECTION 08

APPENDIX

VEHICULAR CRASHES INVOLVING BICYCLISTS (2016-2020)

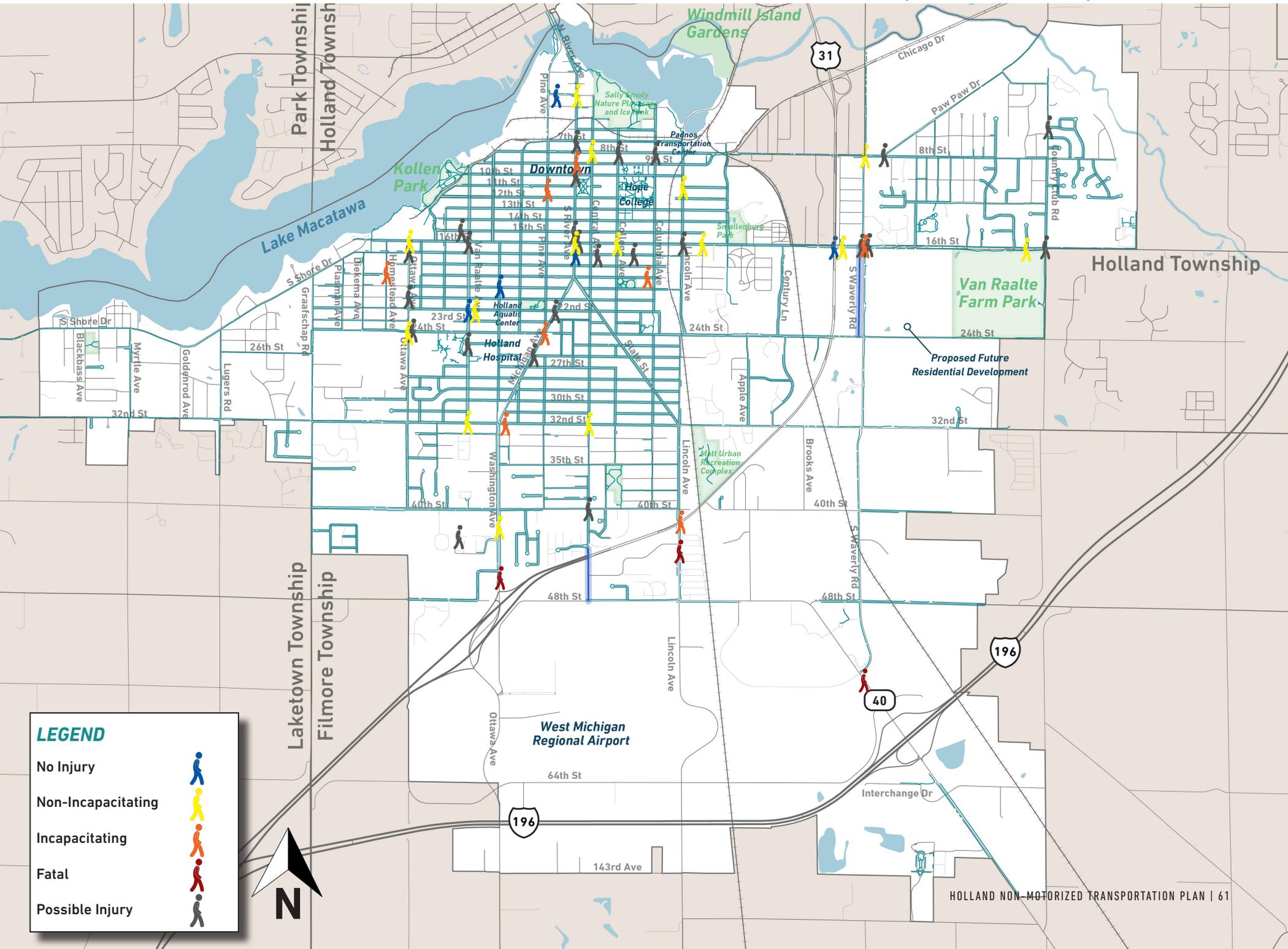


LEGEND

- No Injury 
- Non-Incapacitating 
- Incapacitating 
- Fatal 
- Possible Injury 



VEHICULAR CRASHES INVOLVING PEDESTRIANS (2016-2020)



LEGEND

- No Injury 
- Non-Incapacitating 
- Incapacitating 
- Fatal 
- Possible Injury 



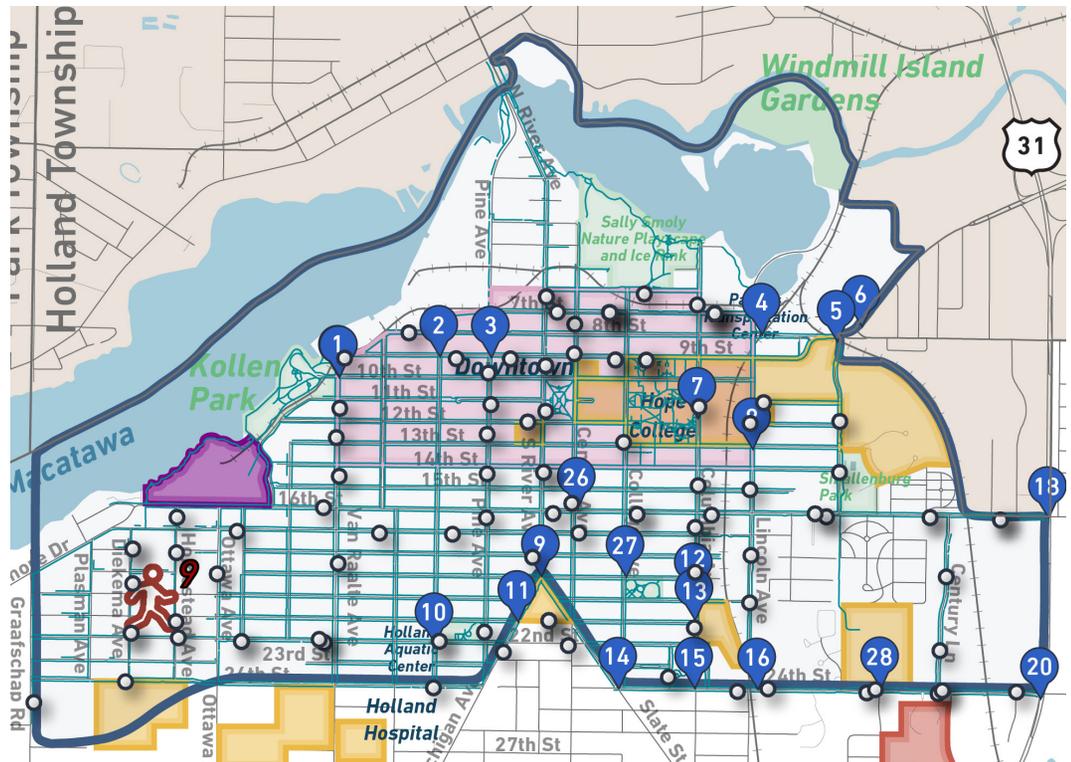
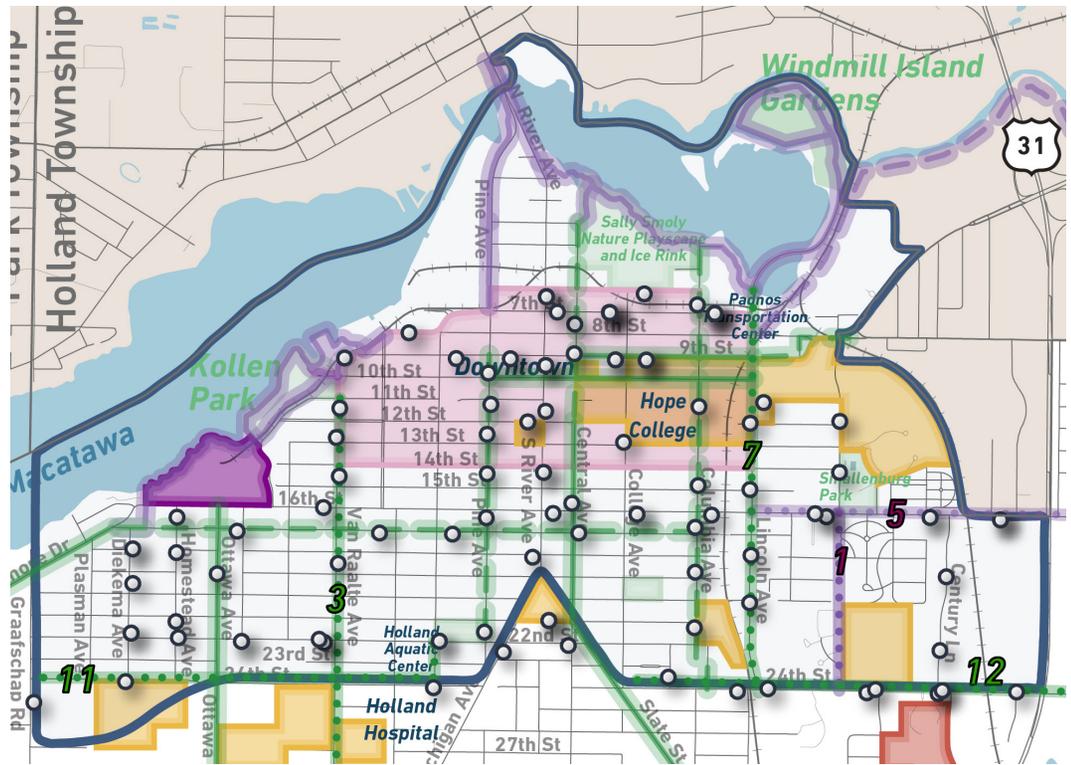
DISTRICT MAPS

DOWNTOWN DISTRICT BIKE FACILITY OPTIONS

LEGEND

| | | | |
|--|--|-------------------------------|--|
| Existing Sidewalks | | Add Bike Lane | |
| Planned Future Sidewalk | | Add Multi-Use Path | |
| Add Sidewalk | | Existing Bus Stops | |
| Fill in Sidewalk Gaps | | KEY LAND USES | |
| Add Crossing/Intersection Improvements | | Parks | |
| Existing Bike Lane | | Schools and Public Facilities | |
| Existing Multi-Use Path | | Residential Areas | |
| Planned Future Bike Lane | | Industrial | |
| Planned Future Multi-Use Path | | Downtown | |

DOWNTOWN DISTRICT PEDESTRIAN IMPROVEMENT OPTIONS

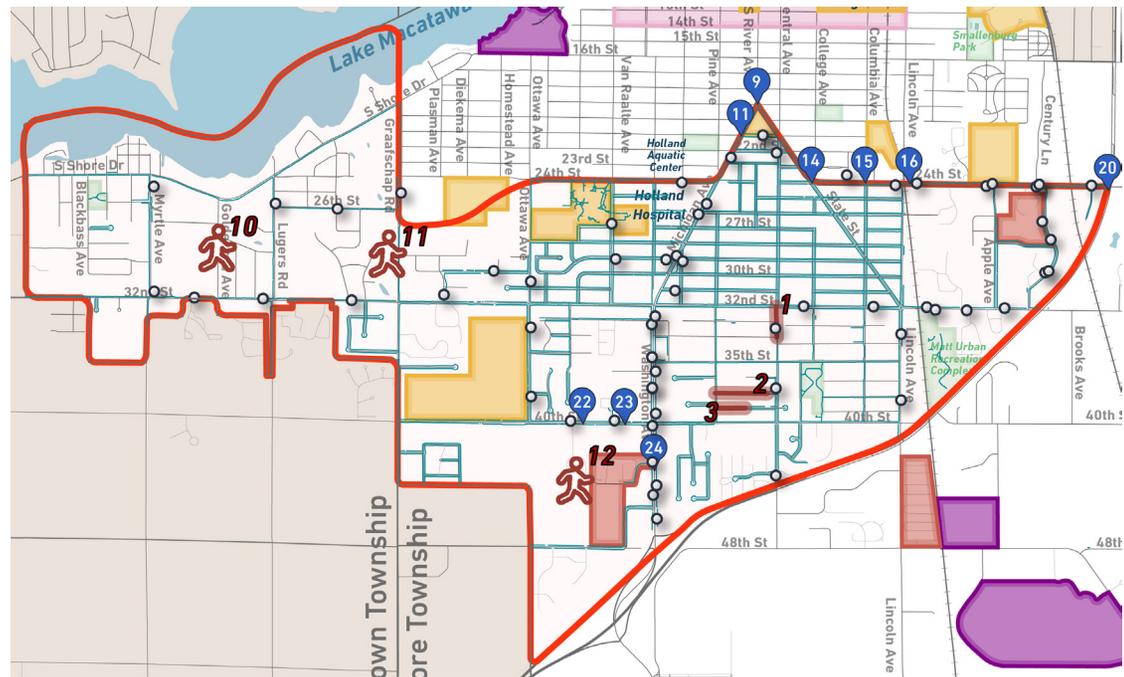
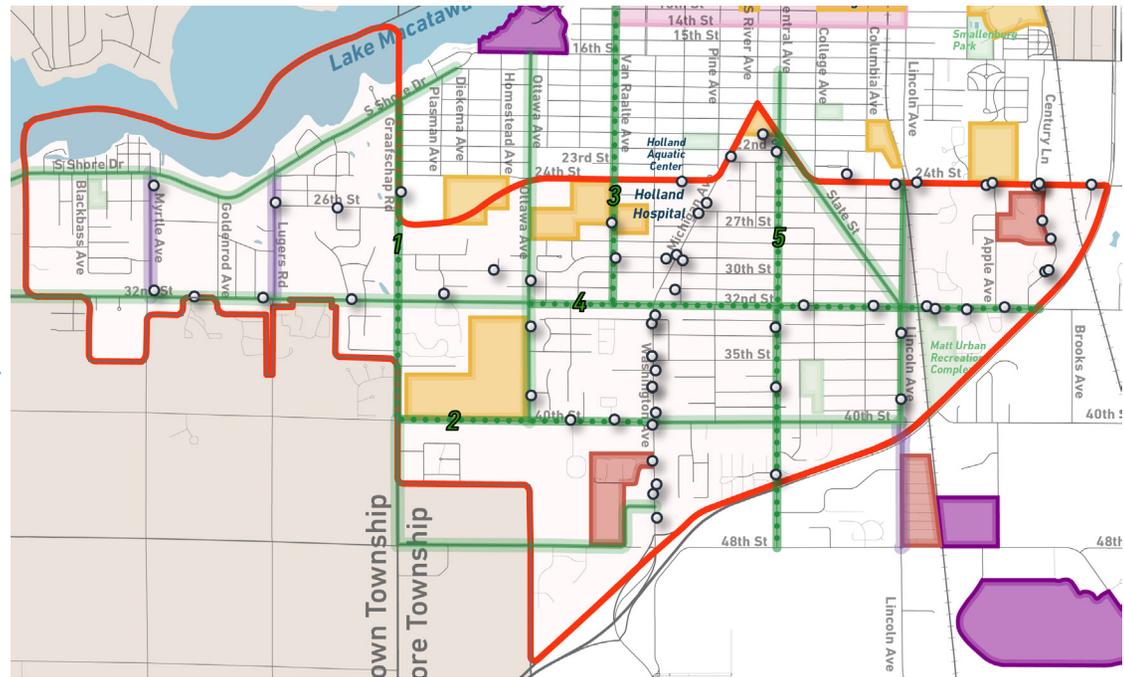


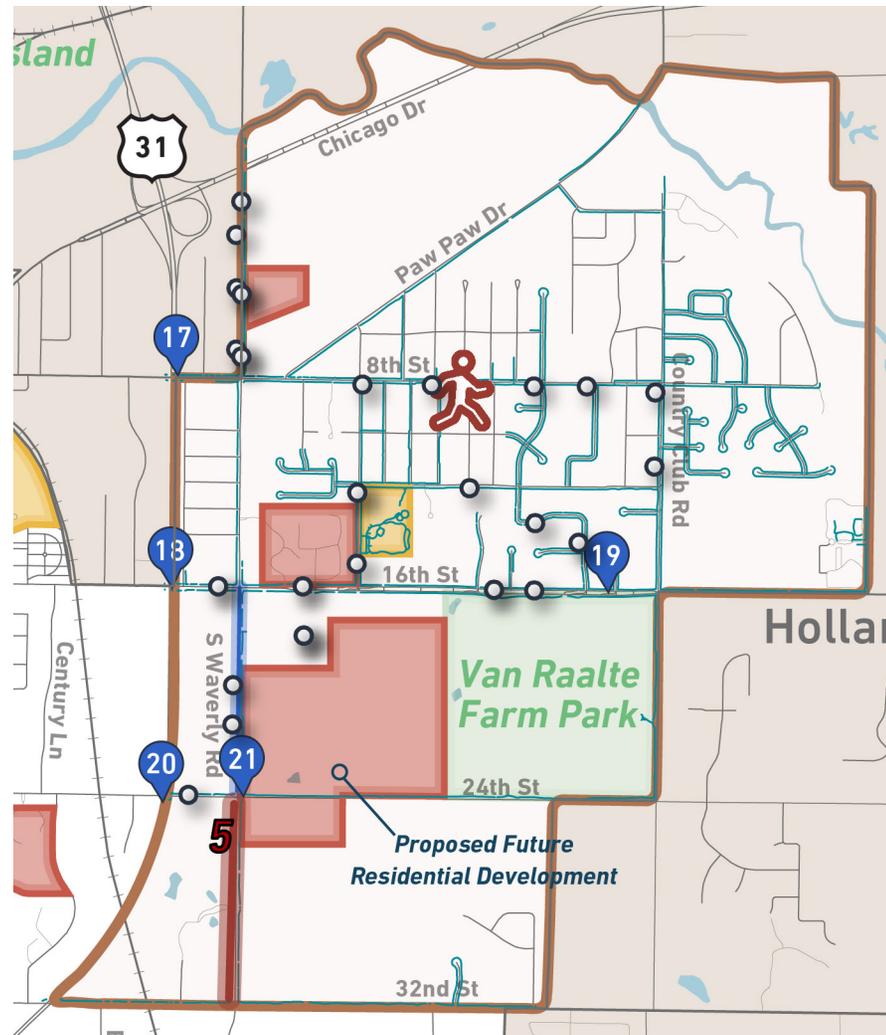
WESTSIDE AND MAPLE DISTRICT BIKE FACILITY OPTIONS

| LEGEND | |
|--|--|
| Existing Sidewalks | |
| Planned Future Sidewalk | |
| Add Sidewalk | |
| Fill in Sidewalk Gaps | |
| Add Crossing/Intersection Improvements | |
| Existing Bike Lane | |
| Existing Multi-Use Path | |
| Planned Future Bike Lane | |
| Planned Future Multi-Use Path | |
| Add Bike Lane | |
| Add Multi-Use Path | |
| Existing Bus Stops | |

| KEY LAND USES | |
|-------------------------------|--|
| Parks | |
| Schools and Public Facilities | |
| Residential Areas | |
| Industrial | |
| Downtown | |

WESTSIDE AND MAPLE DISTRICT PEDESTRIAN IMPROVEMENT OPTIONS





HOLLAND HEIGHTS DISTRICT BIKE FACILITY OPTIONS

LEGEND

| | |
|--|--|
| Existing Sidewalks | |
| Planned Future Sidewalk | |
| Add Sidewalk | |
| Fill in Sidewalk Gaps | |
| Add Crossing/Intersection Improvements | |
| Existing Bike Lane | |
| Existing Multi-Use Path | |
| Planned Future Bike Lane | |
| Planned Future Multi-Use Path | |

| | |
|--------------------|--|
| Add Bike Lane | |
| Add Multi-Use Path | |
| Existing Bus Stops | |

KEY LAND USES

| | |
|-------------------------------|--|
| Parks | |
| Schools and Public Facilities | |
| Residential Areas | |
| Industrial | |
| Downtown | |



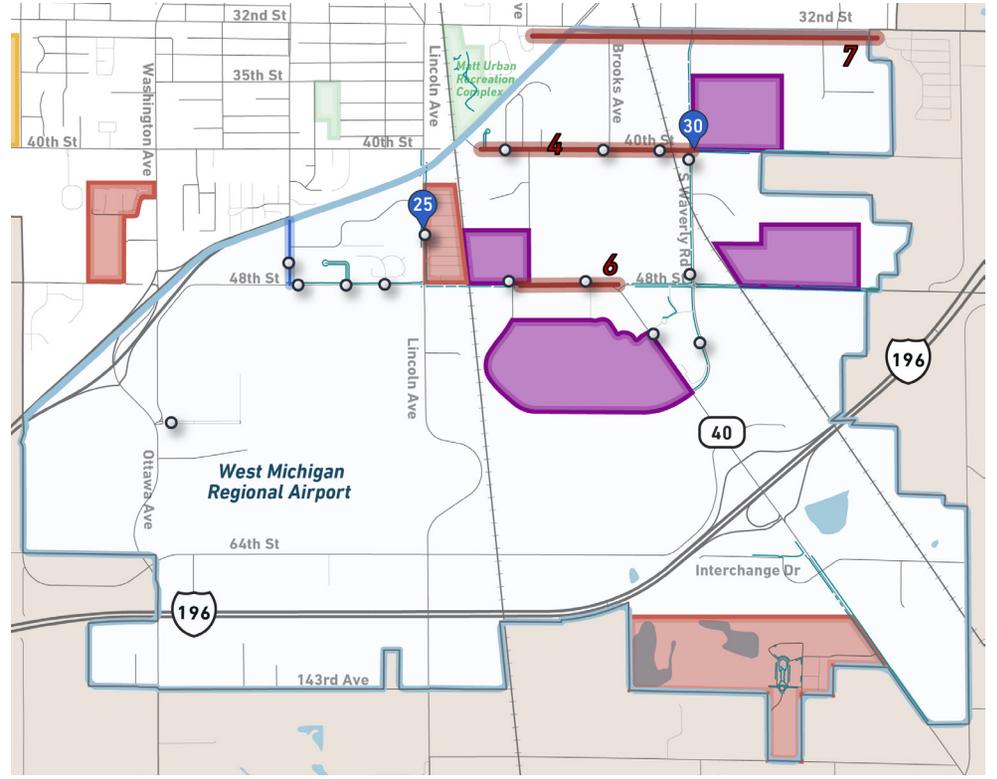
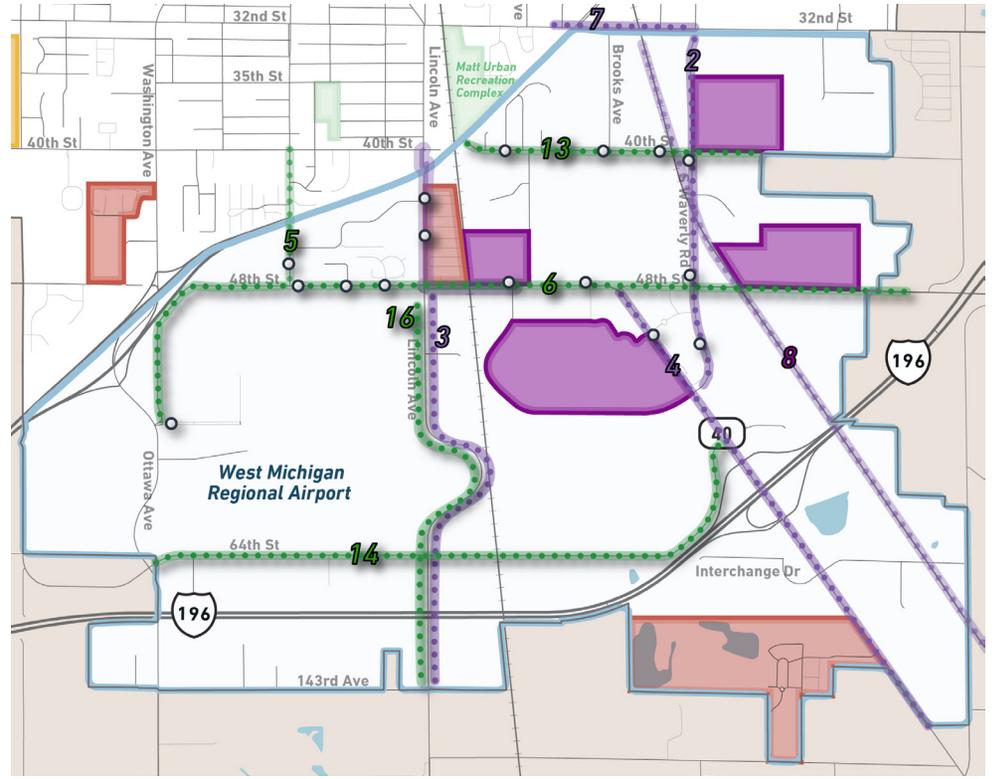
HOLLAND HEIGHTS DISTRICT PEDESTRIAN IMPROVEMENT OPTIONS

SOUTH END DISTRICT BIKE FACILITY OPTIONS

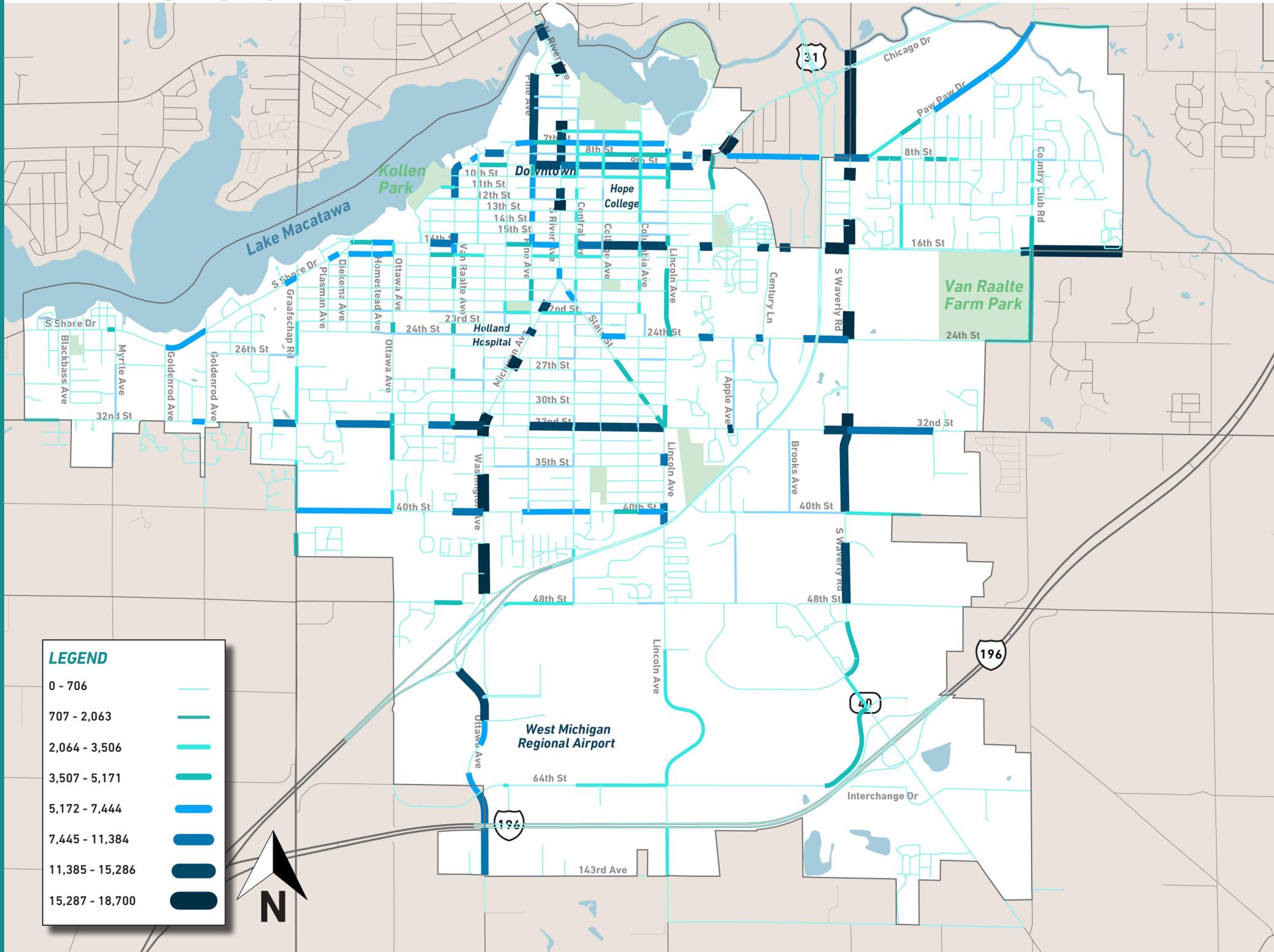
LEGEND

| | | | |
|--|--|-------------------------------|--|
| Existing Sidewalks | | Add Bike Lane | |
| Planned Future Sidewalk | | Add Multi-Use Path | |
| Add Sidewalk | | Existing Bus Stops | |
| Fill in Sidewalk Gaps | | KEY LAND USES | |
| Add Crossing/Intersection Improvements | | Parks | |
| Existing Bike Lane | | Schools and Public Facilities | |
| Existing Multi-Use Path | | Residential Areas | |
| Planned Future Bike Lane | | Industrial | |
| Planned Future Multi-Use Path | | Downtown | |

SOUTH END DISTRICT PEDESTRIAN IMPROVEMENT OPTIONS



TRAFFIC VOLUMES

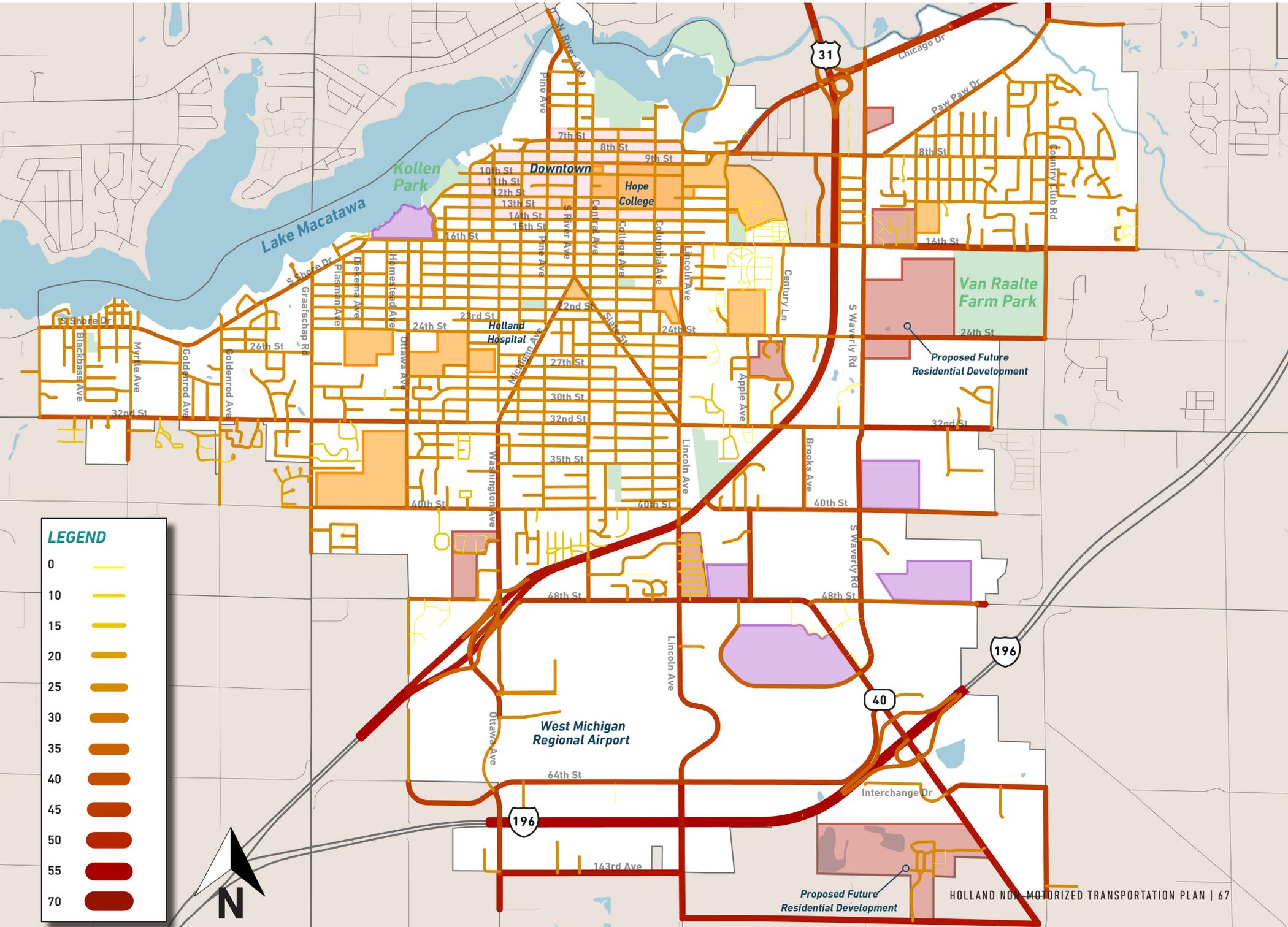


LEGEND

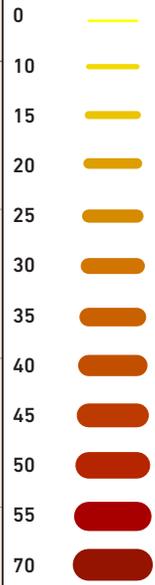
| | |
|-----------------|--|
| 0 - 706 | |
| 707 - 2,063 | |
| 2,064 - 3,506 | |
| 3,507 - 5,171 | |
| 5,172 - 7,444 | |
| 7,445 - 11,384 | |
| 11,385 - 15,286 | |
| 15,287 - 18,700 | |



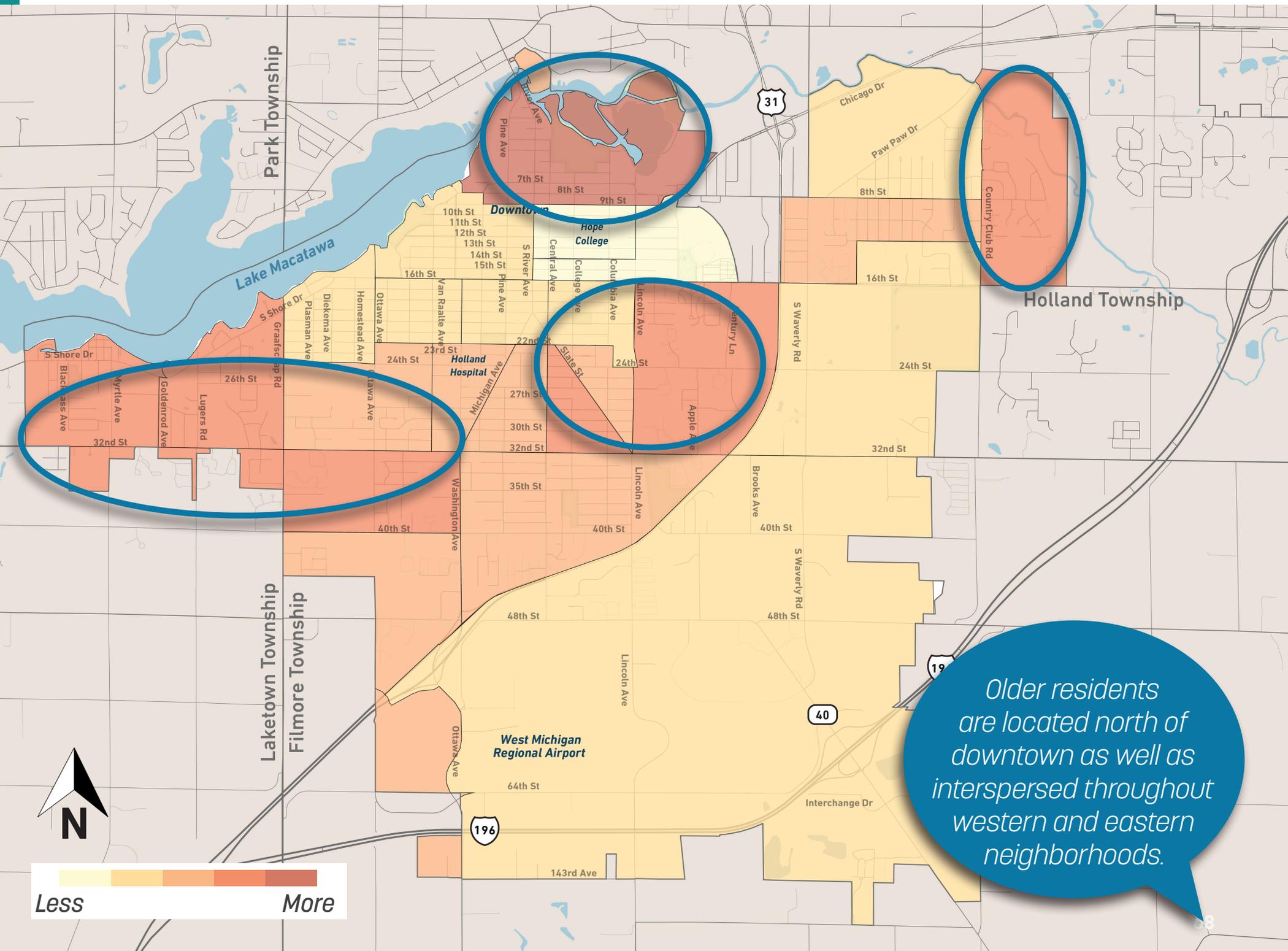
AVERAGE SPEEDS



LEGEND



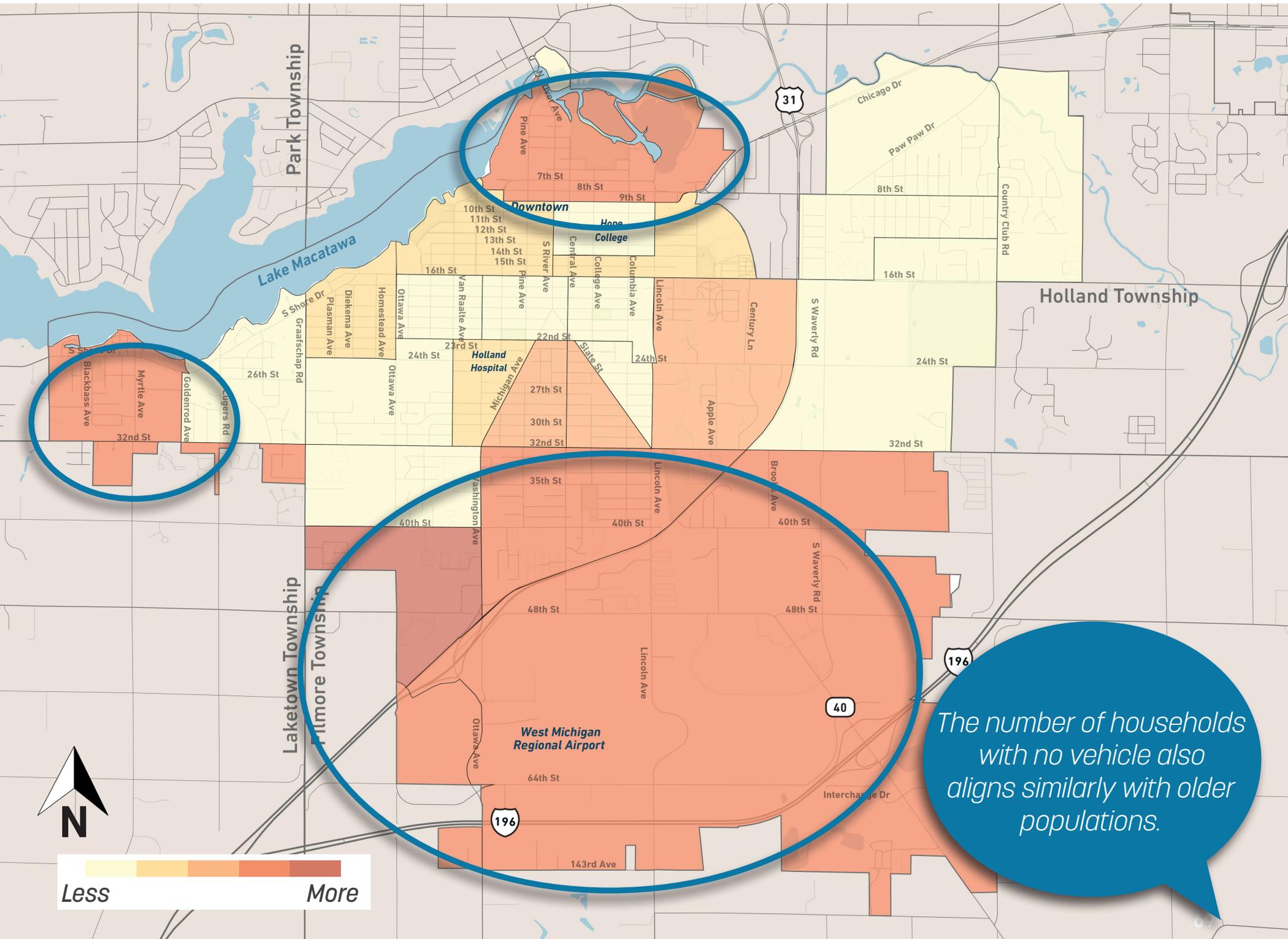
MEDIAN AGE



Older residents are located north of downtown as well as interspersed throughout western and eastern neighborhoods.

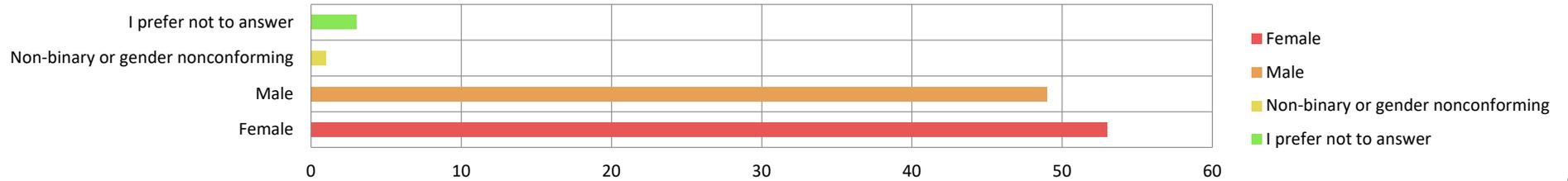


NUMBER OF HOUSEHOLDS WITH ACCESS TO NO VEHICLE

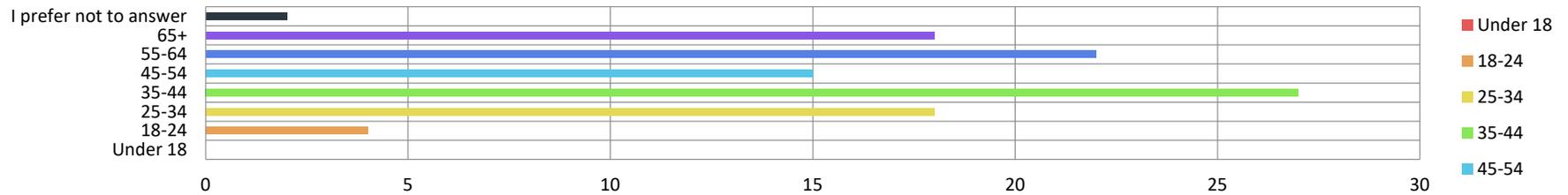


SURVEY RESPONSES

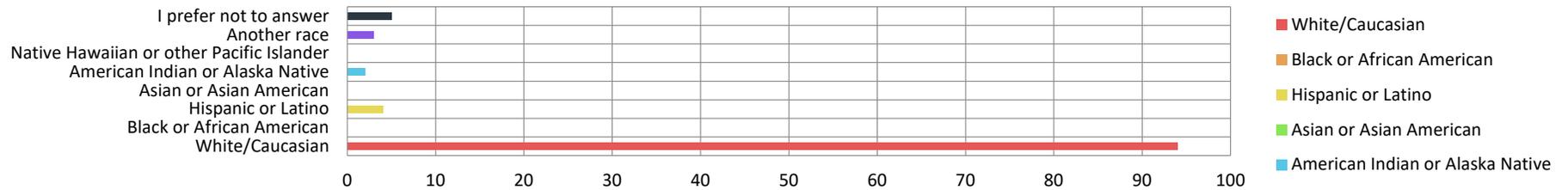
Please select a gender identity below:



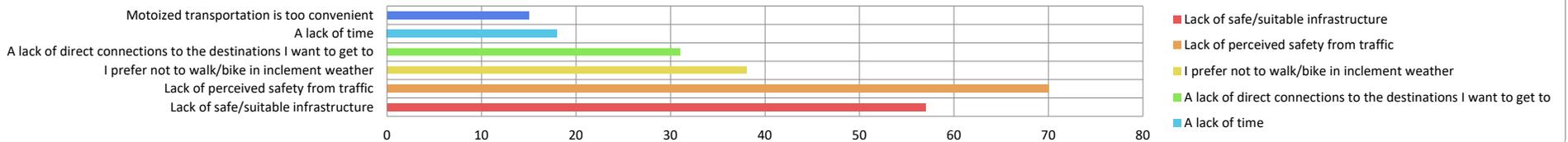
Please select your age group:



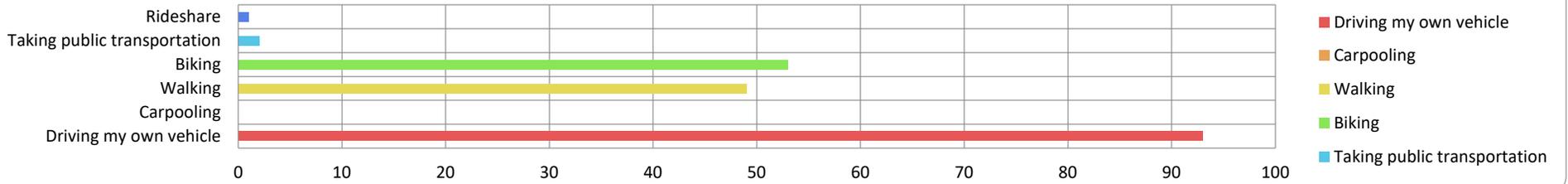
Please select all that apply when it comes to your race identity:



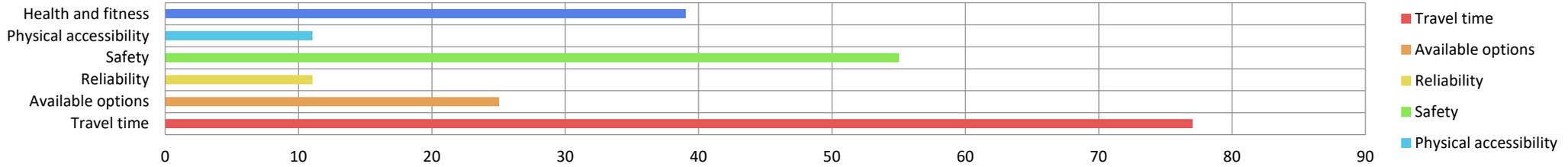
What are the biggest obstacles/limits to you participating more in active or non-motorized transportation modes?



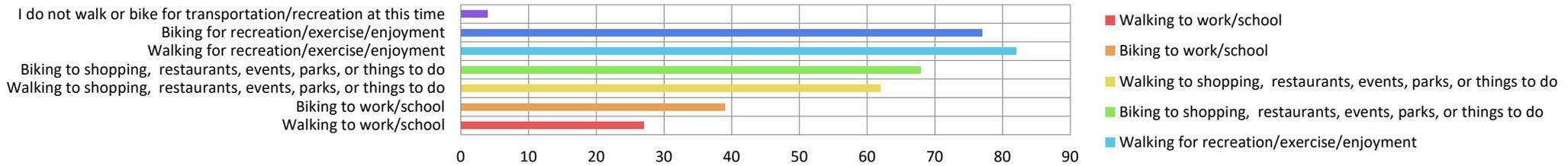
My most frequent mode of transportation in Holland is...



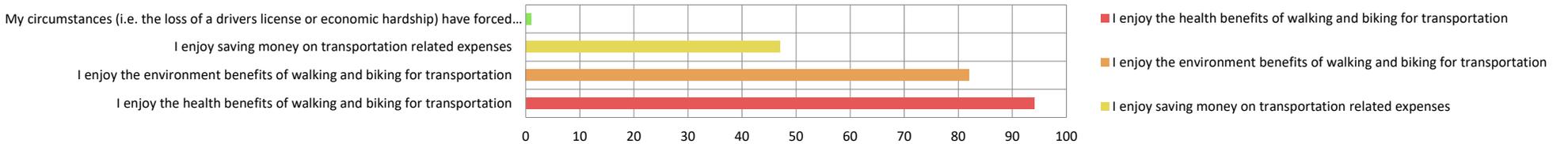
The way I travel around the city is based primarily on the following considerations...



Which methods of non-motorized or active transportation do you participate in currently?



If you currently walk or bike regularly, why do you do so?



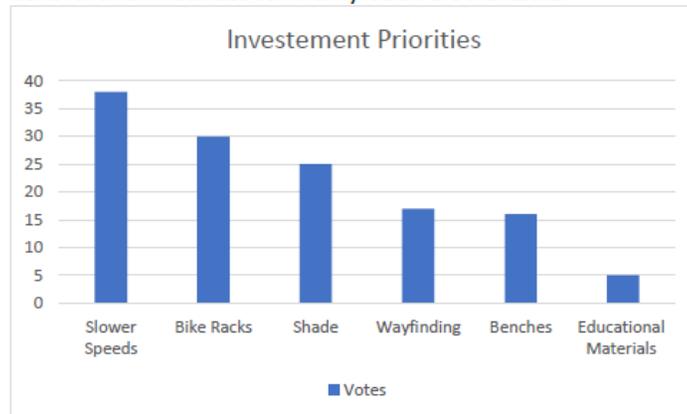
SUMMARY OF OPEN HOUSE

On April 14, 2022, the City of Holland and its consultant team from MKSK and Aligned Planning hosted an in-person Open House related to the city's Non-Motorized Transportation Plan. The purpose of the Open House was twofold. First, it provided an opportunity to share progress related to the plan document, including existing conditions, digital engagement results, and initial recommendations. Second, it provided participants an opportunity to give feedback and select priorities for street-level improvements in the city.

Images from the event can be found here:
<https://drive.google.com/drive/folders/1jxgqUQQy3KqPRis7YD6wpPFx4YIEDQ6U?usp=sharing>

Activity 1: Non-Motorized Support Elements

Participants were given four pennies and asked to invest in any combination of the following support items for a non-motorized community. Below are the results.



Activity 2: Bike and Pedestrian Facilities Priorities

Participants were asked to prioritize street space improvements for pedestrian and bicycle facilities. Quadrant maps were displayed and each participant could mark one project per map to prioritize. The maps also invited participants to write or draw comments. Please see the images below and the link above for more detailed information.

Quadrant 1: Westside and Maplewood



Priorities for Quadrant 1 include bike facilities along Pine, north of 24th, and improvements to 24th at Graaftschap. Bike lanes along 32nd east of Lincoln also received support. Folks mentioned a desire for major N-S and E-W connections, including VanRaalte, Columbia, 10th and 24th. Folks noted that Matt Urban park at 32nd and 40th does not have sidewalk nearby and crossing near the railroad is very dangerous. 24th at Apple is a difficult crossing. Low-income areas need better service, specifically north and south of downtown.

Quadrant 2: Downtown



Priorities for Quadrant 2 include improvements to Pine, 8th, Van Raalte and Central at 16th. Bike lanes are recommended on 17th versus 22nd and a stop sign at 19th and College was also included in the written comments. 16th and Central was noted as needing a safer intersection. A crosswalk at Moran Park and the Aquatic Center is noted. Traffic calming at VanRaalte and 10th is recommended, as well as removing cars on 8th, making it a pedestrian-only corridor.

Quadrant 3: Southend



Priorities for Quadrant 3 include bike and pedestrian connections at the tunnel, but above grade, and better street light timing along Waverly near 32nd and 40th. Improvements to Ottawa near the airport were also included, as was the desire for more bike lanes at Lincoln and 40th.

Quadrant 4: Holland Heights



Priorities for Quadrant 4 include bike and pedestrian facilities along Waverly and 8th. One participant noted a need for a transition from Paw Paw to the 112th shared use path, which is now a grass goat path. Traffic calming on Waverly was a high priority, as well as along 8th, east of Paw Paw. 8th and US31 is noted as needing a long signal for the crosswalk.

Activity 3: General Comments

Participants shared general comments about their experiences biking, walking and moving about the City. In addition to improvements to the system, participants identified policy recommendations to be included in the plan.

- **Maintenance:** The city should have a dedicated funding stream to maintain any on and off-street facilities, as well as prioritize these facilities for seasonal street sweeping and plowing.

- **Precedent:** A participant shared that St. Petersburg, FL has a culture of walking and biking, with adequate signage and enforcement that vehicles behave and prioritize the most vulnerable. This city would be one to highlight in the plan.
- **Electric Biking:** Electric bikes on pathways is a concern for people who are sharing this space as pedestrians or non-electrified bikes, due to their speed. There is a desire to ensure these bikes remain on the street and not on trails or shared use pathways.
- **Crosswalks:** Crosswalks are suggested to be painted with thermo-plast to ensure they are more durable and remain for several years, unlike the current painted walks. Further, a participant would like to see continental crosswalks, as they are more visible.
- **Signage:** Participants asked for crosswalk signs placed in the street space.
- **Policy:** Participants would like the City adopt and enforce a law requiring vehicles to stop for people crossing the street within marked or unmarked crosswalks, similar to the law passed in Grand Rapids in 2018. Currently, motorists are only required to yield. Law enforcement officials should be trained and enforce these rules.
- **Education:** Tree trimming within and near sidewalks was mentioned as a need. A suggestion was made to post an educational piece in the City's newsletter or social media about tree trimming, as well as reminders about the rules of the road for motorists as they encounter more people walking and biking in the community.
- **Parks Audit:** There should be an audit of all city parks and adjacent crosswalks and bike routes, and these areas should be prioritized for improvements.



HOLLAND MOVES

Holland Non-Motorized Transportation Plan

