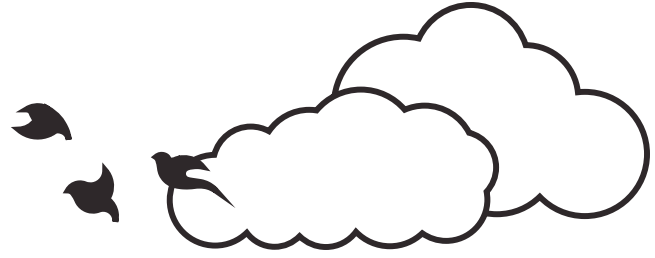
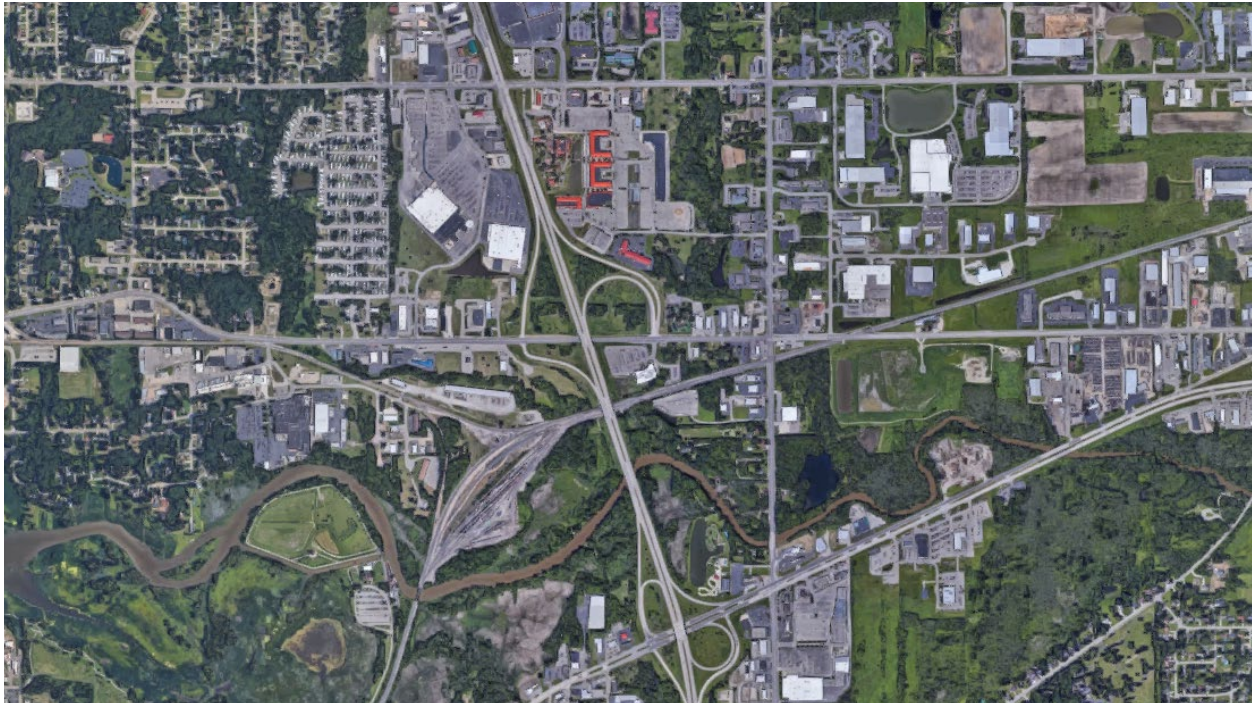


05



TRANSPORTATION PLAN



Land use patterns and transportation systems are inherently interconnected. Proximity to efficient and connected transportation networks is a primary factor in determining where new development occurs. However, the traffic generated from new development often exceeds the capacity of transportation systems and traffic becomes more congested. Traffic congestion and high volumes, lack of connectivity, are among the largest complaints of residents in growing urban fringe communities such as Holland Charter Township. As such, it is important for land use planning and transportation planning to be coordinated, and for the transportation system to allow individuals to get around not only by car, but also by walking, bicycle, or public transportation. This section is an analysis of the current and future transportation system in the Township.

Existing Transportation Analysis

Essentially, the existing public road network in the Township is under the jurisdiction of the Ottawa County Road Commission (OCRC) or the Michigan Department of transportation (MDOT). Private streets are typically under the jurisdiction of Homeowners Associations (HOAs) or a Property Owners Association (POA).

In general, the major transportation corridors in Holland Charter Township are well-connected and provide access from one area of the Township to another, as well as into neighboring municipalities. The road network in the Township is comprised of an interstate highway, principal arterial roads, County Primary, and County Local streets. The major road corridors with the highest traffic volumes in Holland Charter Township include US-31, Interstate-196, Douglas Avenue, Riley Street, and Lakewood Boulevard.

Given the general suburban and pockets of rural character of Holland Charter Township and in addition to the major road corridors, the Township also includes a number of shorter distance, less traveled local streets. Local streets in the Township are typically used to access residential neighborhoods. Residential neighborhoods in the Township are largely characterized by disconnected streets and cul-de-sac designs.

Functional Classification of Roadways

Regional planning and transportation agencies classify roadways based on their function using the standards from the OCRC, Highway Functional Classification Concepts, Criteria and Procedures Manual (U.S. Department of Transportation, Federal Highway Administration, 2013), which follow the guidelines of the Federal-Aid Highway Act of 1973 and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). The manual outlines a system of functional classification of streets for rural areas, small urban areas, and urbanizing areas. Road classifications identify the appropriate type and volume of traffic for each segment of the road network, and establish expectations among residents, Township officials, and transportation engineers for the operational characteristics of each road.

The following map identifies the functional classification of the roadways in the Township, according to the classifications utilized by the OCRC. Knowing the functional road classifications can assist local units of government in prioritization and project identification for improving the transportation system.

FREEWAYS

Freeways are designed to handle large volumes of traffic moving at high speeds over long distances. The only freeway serving Holland Charter Township is Interstate 196. I-196 is the major freeway corridor that provides access from Holland Charter Township to the City of Grand Rapids to the northeast, and other areas such as Saugatuck and South Haven to the southwest. I-196 also leads into I-94 in the St. Joseph area; and from there provides access into Indiana and Illinois, particularly the City of Chicago.

According to the MDOT annual average daily traffic data analysis completed in 2016, I-196 carries a capacity of over 100,000 vehicles per day in the Holland Township area.

PRINCIPAL ARTERIALS

Principal arterial roads and highways serve the major centers of activity, the highest traffic volume corridors, and the longest trips. Principal arterials serve major traffic movements within the Township and region. Holland Charter Township includes two major regional thoroughfares within its boundaries. US-31 is perhaps the most frequented north-south connection within the Township, providing access to the City of Holland to the south, and the City of Grand Haven and Muskegon to the north. Adding to its regional significance, US-31 is the main corridor in the Township that provides goods and services such as shops, restaurants, grocery stores to Township residents, as well as residents in neighboring municipalities. In addition to US-31, Chicago Drive is also a principal arterial road within Holland Charter Township. Chicago Drive is a major thoroughfare that provides southeast-northwest access to areas such as the City of Zeeland, City of Hudsonville, and the City of Grand Rapids.

COUNTY PRIMARY

County Primary roads interconnect with the principal arterial system and provide access to destinations of moderate distance with a lower level of traffic mobility. County Primary roads place more emphasis on land access than do principal arterials. Holland Charter Township includes many County Primary roads within its boundaries. The County Primary roads within the Township include Riley Street, Butternut Drive, Douglas Avenue, Lakewood Boulevard, James Street, Beeline Road, 120th Avenue, 112th Avenue (south of Riley Street), 136th Avenue, 96th Avenue, and Adams Street.

COUNTY LOCAL

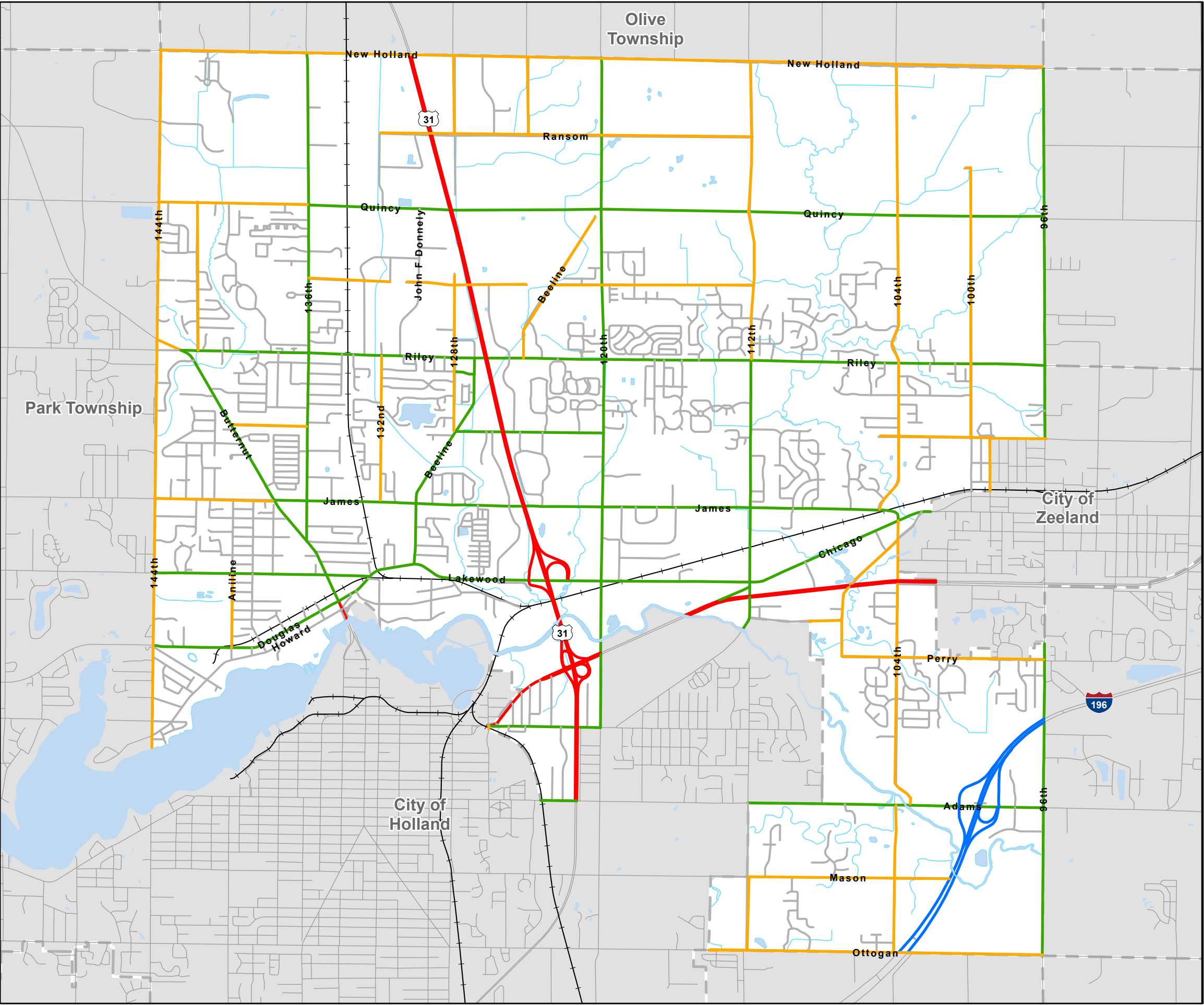
County Local roads provide both access to abutting properties and traffic circulation within residential, commercial, industrial, and agricultural areas. The purpose of a County Local road is to collect traffic from the Township and channel it to the arterial system. The existing inventory of County Local roads in Holland Charter Township include Felch Street, New Holland Street, Beeline Road, 144th Avenue, 100th Avenue, Ransom Street, and Quincy Street.

COUNTY ROAD IMPROVEMENTS

The basic source of revenue for road maintenance and improvements is the gas and weight tax collected by the State through Act 51. Most of these funds are collected through gas/diesel fuel purchases and vehicle registration fees. MDOT is ultimately responsible for routine maintenance on all state highways. The Road Commission currently inventories the capacity and classification schedules of all roads and conducts maintenance and reconstruction based on these characteristics.

Most of the Ottawa County Road Commission road improvement projects involve basic repairs and maintenance including paving, patching, sealing, and drainage improvements. Some of the road projects in Holland Charter Township as defined by the Ottawa County Road Commission Strategic Improvements Plan include surface maintenance projects for various County Local and Township Local roads and shoulder widenings on several County Local roads.

Additionally, Holland Charter Township is served by the Macatawa Area Coordinating Council (MACC), which is a federally designated metropolitan planning organization (MPO). MPO's are required by federal legislation to assist with providing coordinated transportation planning processes in urban areas with populations greater than 50,000 people. The MACC works collaboratively with area transportation authorities to select and prioritize road improvement projects, allocate funding, and identify future projects, both motorized and non-motorized; as well as public transit improvement projects, studies, and road surface ratings.



Transportation Network

Charter Township of Holland, Ottawa County, MI

May 5, 2020

LEGEND

- Interstate
- Principal Arterial Road
- County Primary Road
- County Local Road
- Local Road
- Railroads
- Rivers, Lakes, Streams, Drains
- Other Municipal Boundaries



Basemap Source: Michigan Center for Geographic Information, Version 17a.
Data Source: Holland Charter Township 2020. McKenna 2020.

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Walking and Biking

Overall, Holland Charter Township has a well-connected non-motorized pathway network that provides access to neighboring jurisdictions, such as the City of Holland to the south, Park Township and the Lakeshore to the west, and the City of Zeeland and Zeeland Charter Township to the east. Some of the major road corridors the pathways are located include Riley Street, James Street, Lakewood Boulevard, 104th Avenue, 112th Avenue, 120th Avenue, Butternut Drive, Beeline Road, and Adams Street. In majority of these routes, bike infrastructure is located on a single side of the road.

Another significant element to a successful bike network is the construction of widened shoulders. In general, widened shoulders are more commonly used by serious cyclists traveling at faster speeds, or commuters traveling to work. Holland Charter Township does not have an expansive widened shoulder network, with only small disconnected routes located along 136th Avenue from Quincy Street to New Holland Street, Beeline Road from Lakewood Boulevard to just south of Riley Street, and 96th Avenue from Quincy Street to New Holland Street.

As the Township continues to plan and construct bike infrastructure to complete the remaining gaps, additions to the non-motorized infrastructure should be considered as opportunities arise, especially during the reconstruction of roadways, to provide non-motorized access to major destinations.

To do this, the Township should consider opportunities to expand the non-motorized network by working alongside developers to include sidewalk or bike infrastructure in proposed construction plans for residential or commercial developments. Additionally, the Township should continue to strengthen the relationships with the Ottawa County Road Commission to improve major corridors by constructing widened shoulders in conjunction with road improvement projects.

In terms of sidewalks, Holland Charter Township has a largely disconnected system both on public roadways as well as private residential streets. A majority of the residential neighborhoods in the Township are characterized by cul-de-sac designs and dead-end roads. Additionally, the major road corridors within the Township only include pedestrian infrastructure on a single side of the roadway, making crossings dangerous or difficult.

Public Transportation

Holland Charter Township is served by the Macatawa Area Express Transit Authority, or more commonly known as the MAX. In total, the MAX has 11 bus routes located in the greater Holland/Zeeland area. MAX provides a fixed-route bus service as well as a complementary reserved ride demand response service for ADA customers.

In Holland Charter Township, there are several MAX routes that provide access to various community destinations such as grocery stores, medical offices, schools, multi-unit residential areas, and more. The bus routes that provide access to Holland Charter Township include routes 10, 9, 4, and 1. All routes begin and end in Downtown Holland.

RAILROADS

Good rail service is an advantage in attracting industrial users who find this service increasingly difficult to find as railroads abandon smaller and unprofitable lines. There are two active railroad corridors in Holland Charter Township, both operated by CSX. One corridor runs north-south, parallel to 136th Avenue on the west side of the road, and the other east-west, parallel to Douglas Avenue on the north side of the road, and Chicago Drive.



Future Transportation Plan

Road Network

Although Holland Charter Township generally has a fluid road network on the major Township roads, various enhancements should be considered to create a well-connected, accessible, and safe system.

However, many of the residential areas within the Township are not connected. A majority of the single-family residential neighborhoods in the Township have cul-de-sac designs, which cuts off connectivity to adjacent neighborhoods as well as to other streets in the Township. For future network enhancements, the Township should consider encouraging the connection between neighborhoods with new proposed residential developments, and explore opportunities to implement connections to existing neighborhoods through neighborhood trailways or sidewalks. The Township should also consider encouraging the construction of “stub streets” during the development of new residential neighborhoods with the goal to promote connectivity to new streets in future adjacent developments.

In addition to enhancing road network connectivity, the Township should also explore opportunities to work alongside the OCRC, MACC, and MDOT to assess specific corridors for traffic calming and heightened safety measures such as stop light timing, construction, and duration, constructing roundabouts in appropriate areas, assessing opportunities for multi-modal crossings, analyzing speed limits, and more.

Truck Routes

Historically, Holland Charter Township is situated in a prime geographic location for the movement of goods and services, being within close proximity to the Macatawa River with Riverfront access and Lake access, railroad access, as well as within close proximity to major expressways and Principal Arterial roads, in more recent years. As a result, numerous successful industrial sites and industrial parks are located within the Township, specifically on the north side of the Township surrounding the US-31 Corridor, and the south side of the Township near the Riverfront and railroad.

Given the amount of successful industrial businesses within the Township, semi-truck traffic has become a common occurrence on major roads. To accommodate the area's growing economy, the Township should continue to encourage semi-truck traffic along routes within the industrial areas that connect to major thoroughfares such as the US-31 Corridor. Additionally, the Township should assess prime routes that which accommodate higher volumes of truck traffic and designate new truck routes where appropriate.

While assessing opportunities for future truck routes, the Township should also maintain a balance of Township-wide truck traffic by targeting certain corridors to limit truck access.

Gateways

To create an identity unique to only Holland Charter Township, gateways can be established at various significant points or intersections at significant defining intersections in the Township. The intent of establishing Townships gateways is not to signify Township limits or boundaries, but to add emphasis on key areas of the Township that have unique character and qualities for placemaking and wayfinding opportunities. These gateway locations can be constructed similar to those found in Georgetown Township, with decorative Township wayfinding signage and welcome signage, well-maintained landscaping, and other decorative elements such as lamp posts or banners. Gateway designs can also vary depending on what neighborhood the gateway is located. For example, decorative elements for each neighborhood in the Township can be unique from one another in terms of color palate, designs, fonts, and more. Various locations from each direction into the Township have been identified as prime locations for future gateway considerations:

- **Northern Gateway:** US-31 and Ransom
- **Western Gateway:** Chicago Drive and 112th Avenue
- **Southern Gateway :** River Avenue and Howard
- **Eastern Gateway:** Chicago Drive and 104th Avenue
- **Northwestern Gateway:** Butternut Drive and Riley Street
- **Southern Gateway:** US-31 and 16th Street
- **Federal District Gateway:** E. 8th Street and Chicago Drive

Road Upgrades

The Township will continue its support of the OCRC and MACC in its ongoing review of the condition of the Township's roads, and in the maintenance and rehabilitation of the roads as necessary.

CORRIDOR ENHANCEMENTS

High speed limits in most of the Township can lead to unsafe conditions for both pedestrians and other motorists – especially when traveling to significant community nodes such as schools and shopping centers. According to the Michigan Traffic Crash Facts data, Holland Charter Township experiences the majority of the total traffic accidents in all of Ottawa County per year. Specifically, these traffic accidents are concentrated along the US-31 Corridor, various points along Douglas Avenue and Lakewood Boulevard, and the I-196 ramp. To address this and improve safety for residents and visitors, the Township should identify the intersections with the most pedestrian, bicycle, and motorist accident reports to analyze which traffic calming or other safety measures can be implemented.

Riley Street and Quincy Street have been consistently identified as the main corridors in the Township that are in need of the most improvements in terms of traffic calming, beautification, pedestrian and non-motorized connectivity, and road surface quality. The Township should conduct a corridor study on both Riley Street and Quincy Street to identify various methods in which these routes can be improved.

Additionally, in conjunction with various corridor enhancements such as beautification, traffic calming, pedestrian improvements, non-motorized accessibility, and others; traffic signal timing is another significant element to consider during corridor improvement processes. Some of the most common traffic signals that have been identified for future timing enhancements include:

- All traffic signals on the Riley Street Corridor
- All traffic signals on the James Street Corridor
- All traffic signals on the Lakewood Corridor
- Traffic signal at the Adams/196 intersection

Another significant element to enhancing road corridors in the Township is the exploration of opportunities to create new streets, or street extensions to enhance connectivity and mobility. As such, the Township should continue efforts to implement key street connections such as the extension of Greenly, from West Shore Drive, eastward, to Beeline. As a result, traffic in this area would flow more efficiently and effectively, especially during peak hours, congestion would be reduced, motorist safety would be increased, and the overall Township road network would have enhanced connection.

Along with the road enhancements as described in this Plan, Holland Charter Township should also consider the future potential impacts of the M-231 Phase II project. Constructed in 2015, M-231 Phase I provides a north-south link from Robinson Township Crockery Township, connecting M-104/I-96 to Lake Michigan Drive, in Ottawa County. Phase II as it is currently proposed, is planned to connect Lake Michigan Drive, to US-31, Chicago Drive, and I-196, passing through Olive Township and Zeeland Township. The M-231 project is largely the jurisdiction of the Michigan Department of Transportation, with assistance from Ottawa County, and local government staff.

The following map describes the recommended corridor and intersection enhancements in Holland Charter Township.

Transportation Enhancements

Charter Township of Holland, Ottawa County, MI

June 22, 2020

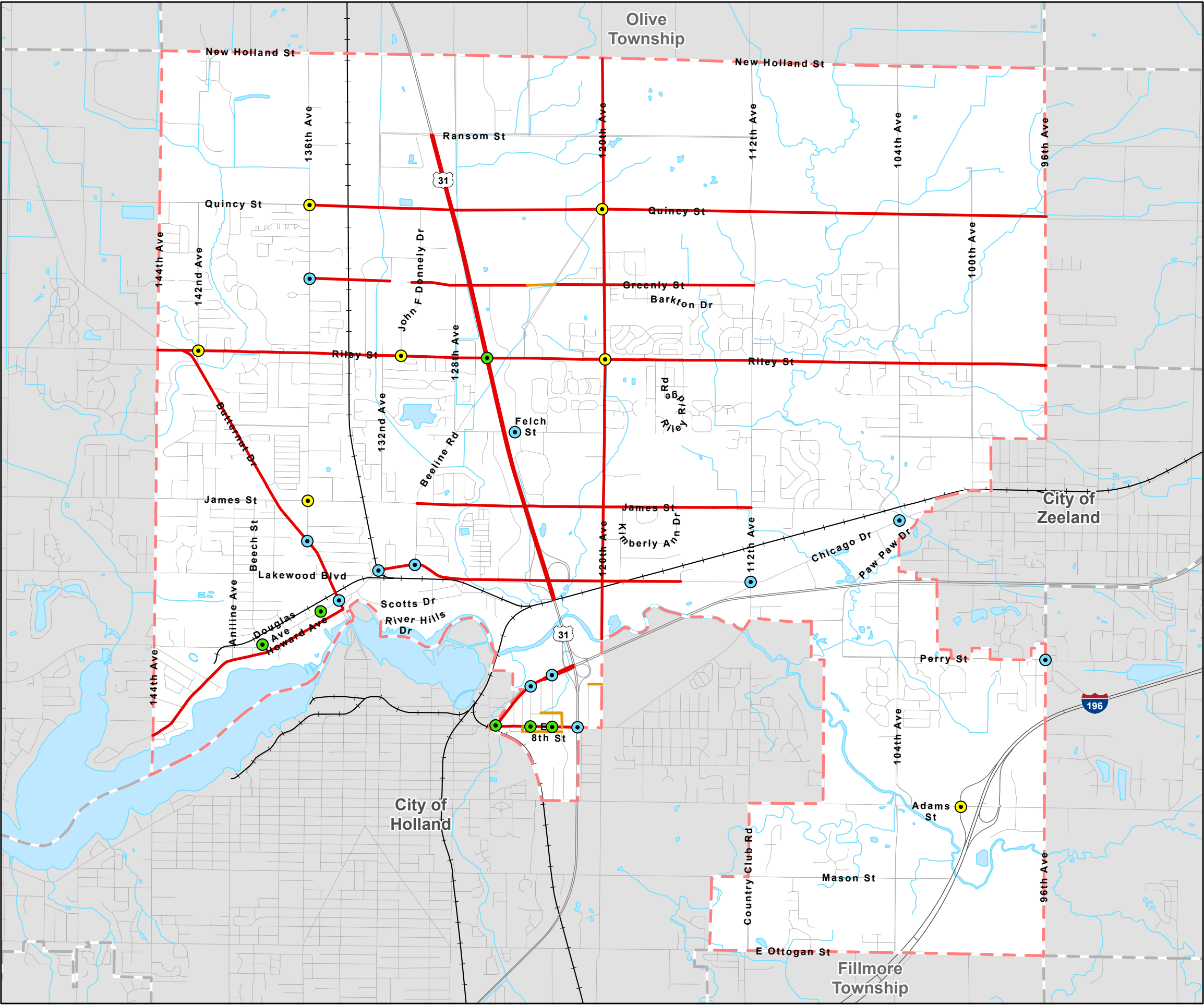
LEGEND

- Holland Charter Township Boundary
- Corridor/Segment Enhancements
- Proposed Connection
- Traffic Signal Improvement
- Pedestrian Safety Improvement
- General Safety Improvement
- Roads
- Railroads
- Rivers, Lakes, Streams, Drains
- Other Municipal Boundaries

05001,000

Feet

Basemap Source: Michigan Center for Geographic Information, Version 17a.
Data Source: Holland Charter Township 2020. McKenna 2020.



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Sidewalks

Although the Township has a generally well-connected bike path system, both the residential and commercial areas within the Township are lacking pedestrian infrastructure, such as sidewalks and protected crossings. Additionally, many of the sidewalks within the Township are located only on a single side of the road, making walking and crossing difficult along routes with higher speed limits and traffic volumes. The Township should encourage requiring sidewalks during the development or redevelopment of residential and commercial structures. The Township should also consider targeting specific areas for sidewalk improvement zones such as near popular community nodes such as schools, Township facilities, parks, and shopping centers.

Paved Shoulders

Paved shoulders are a common method of improving safety for pedestrians and cyclists in rural areas. According to federal safety standards, a widened paved shoulder is classified as being 4 feet or wider. In terms of existing paved shoulders within Holland Charter Township, short segments have been constructed along the west side of 96th Avenue near the City of Zeeland, along Beeline Road, and a short segment on the west side of 136th Avenue, north of Quincy Street. Additionally, a short segment of paved shoulders have been constructed on Ottogan Street, into the City of Holland.

According to the Strava Heat Map, an online data tool used by cyclists to track their routes in real-time, the most frequently cycled routes in Holland Charter Township include 144th Avenue, Riley Street, Quincy Street, 112th Avenue, 104th Avenue, James Street, Lakewood Boulevard, Douglas Avenue, New Holland Street, and Butternut Drive.

As a Result, to create a connected system of safe biking and walking routes through the Township, widened paved shoulders should be considered along the following corridors:

- New Holland Street
- Butternut Drive
- Riley Street
- 144th Avenue
- 104th Avenue
- James Street
- Douglas Avenue
- Lakewood Boulevard
- Quincy Street

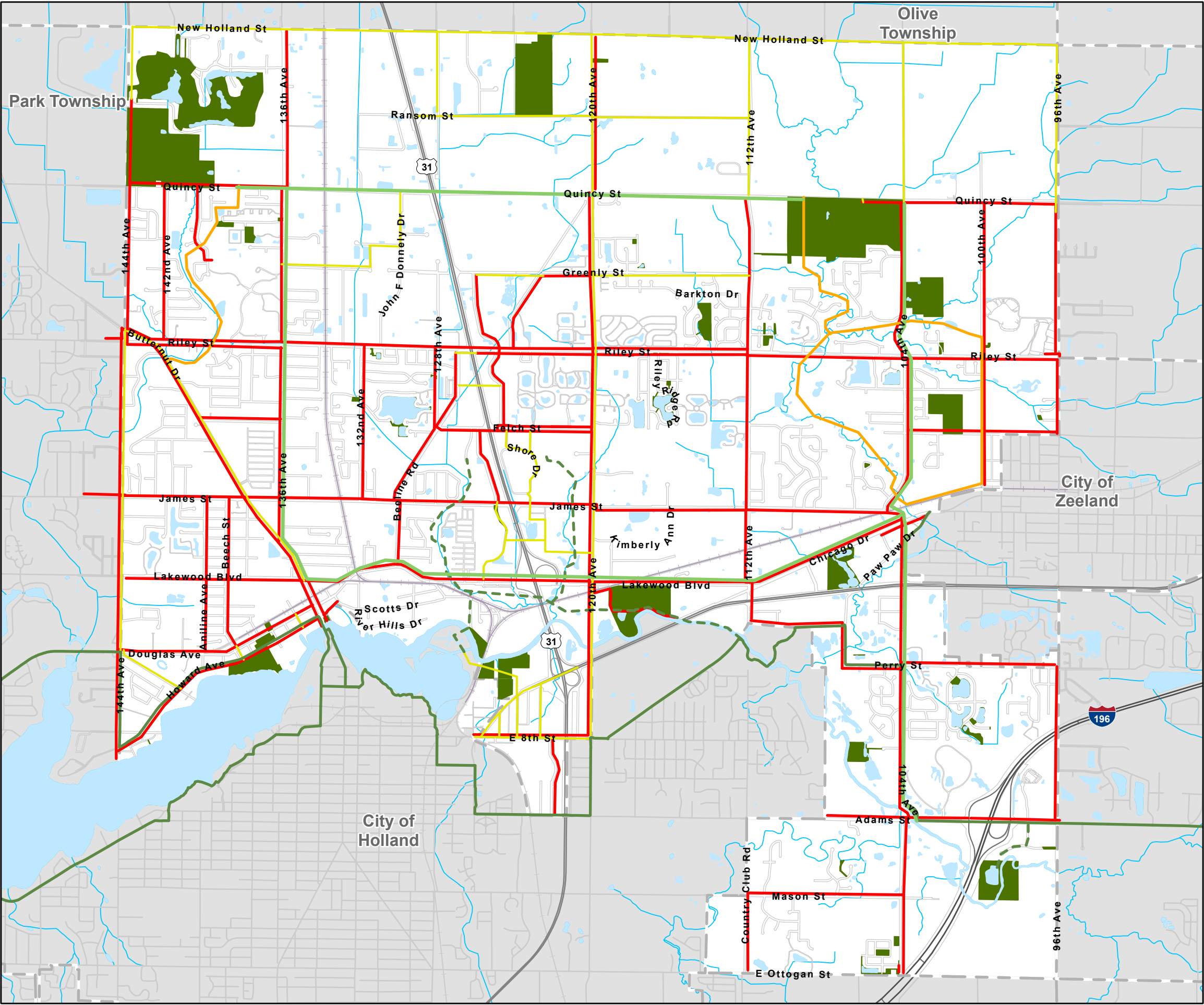
Additionally, the Township should continue working relationships with the OCRC and MACC to assess routes identified in the OCRC's Strategic Improvements Schedule and the MACC's Strategic Improvements Plan and/or Long Range Transportation Plan to add 4 feet of paved shoulders as a part of the project scope, where applicable.

Bike Paths

According to the American Association of Highway and Transportation Officials (AASHTO), bike paths are characterized as being at least eight feet wide, compared to five feet for a sidewalk, and are designed to carry cyclists traveling several miles, rather than pedestrians walking only a few blocks. However, they are also an asset for pedestrians. Because bike paths envision longer distance travel and more cyclists than walkers, they are more practical along suburban thoroughfares than sidewalks. This plan envisions bike paths in the following locations:

- Both sides of 120th Avenue
- Both sides of Butternut Drive
- Both sides of 144th Avenue from Douglas to Butternut Drive, in partnership with Park Township
- Both sides of 136th Avenue
- 128th Avenue from Ransom Street to New Holland Street
- New Holland Street
- Quincy Street
- Entirety of 104th Avenue
- Entirety of 112th Avenue
- Macatawa Greenway Extensions

In addition to bike paths constructed along roadways, the Township should advocate for neighborhood connectivity by partnering with home owners associations or neighborhood groups to assess opportunities to plan and construct bike paths through woods, open spaces, utility corridors, and other areas to connect neighborhoods to one another.



Bike Path & Open Space Network

Charter Township of Holland, Ottawa County, MI

June 25, 2020

LEGEND

- Existing Bike Path
- Future Bike Path
- Macatawa Greenway
- Macatawa Greenway Extension
- Natural Beauty Corridor
- Natural Preservation Corridor
- Parks/Cemeteries/Open Space
- Rivers, Ponds, Lakes, Streams, Drains
- Railroads
- Other Municipal Boundaries

0 500 1,000
Feet



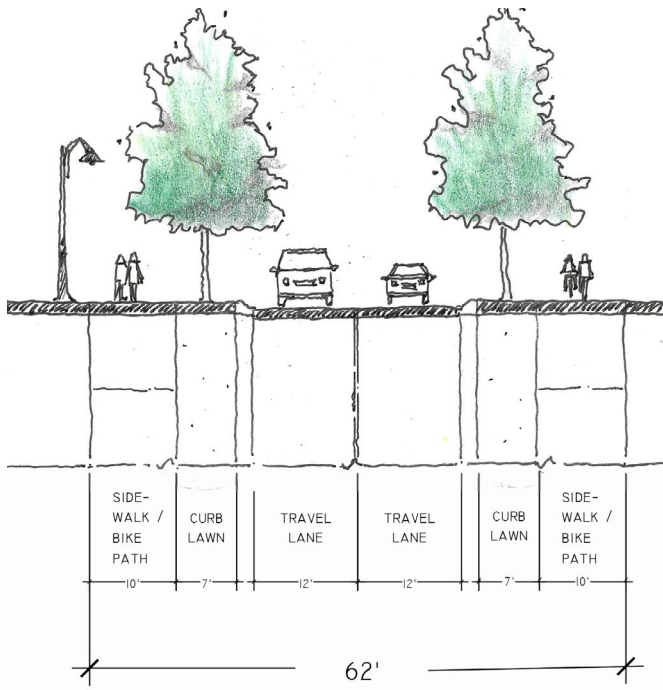
Basemap Source: Michigan Center for Geographic Information, Version 17a.
Data Source: Holland Charter Township 2020. McKenna 2020.

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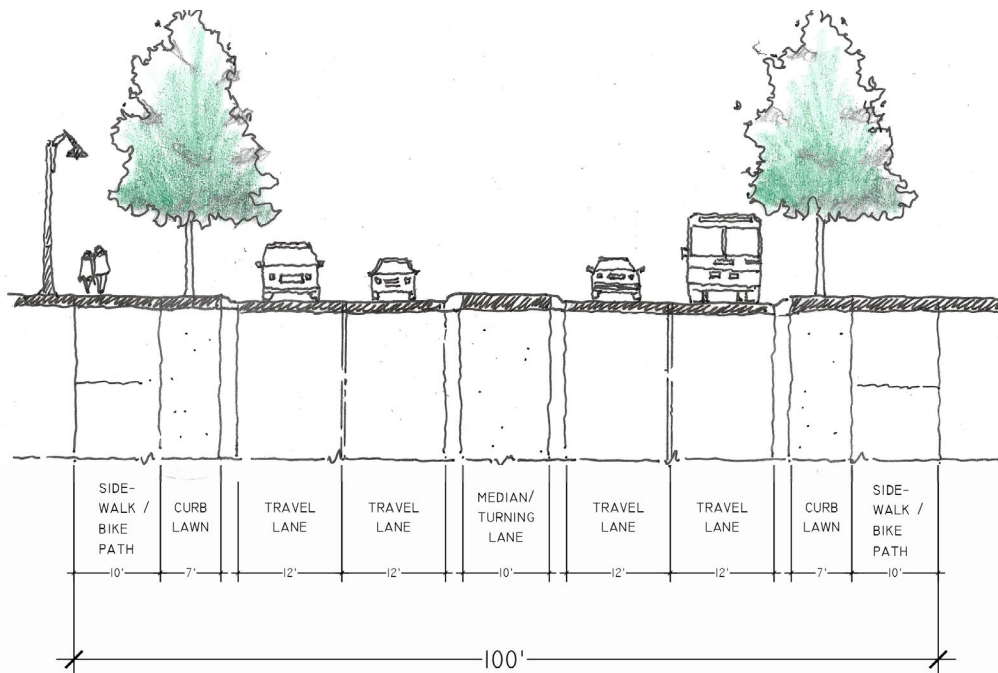
Natural Beauty Corridors

This Plan also recommends the recognition and dedication of Natural Beauty Corridors in the Township, specially along 13th Avenue, Quincy Street, 104th Avenue, Adams Street, Chicago Drive, Lakewood Boulevard, N. River avenue, and Howard Avenue.

The intent of the proposed Natural Beauty Corridors is not only to connect Township parks to one another, but also provide scenic routes fitted for both motorized and nonmotorized transportation, coupled with preserved vegetation and open space.



*Potential Section: Quincy Street, 104th Ave, Howard Ave
62' Right-of-Way, 2'-Wide Curbs*



*Potential Section: 136th Ave, North River Ave, Lakewood Boulevard, Adams Street
100' Right-of-Way, 2'-Wide Curbs*

Public Transit

Public transit has become an increasingly popular mode of transportation throughout recent years. As Holland Charter Township continues to grow in population and enhances commercial and industrial areas, considering the future of public transportation is significant to accommodate this growth. The Township should continue working relationships with the MAX to assess locations in which bus routes or stops should be added. For example, future stops can be assessed in industrial parks where many Township residents are employed. Additionally, MAX routes should be assessed where applicable in areas along the west side of the Township to the US-31 Corridor. MAX Transit routes should be re-assessed to identify future routes that which are linear and not large loops. In doing so, this would significantly reduce the length of time a ride or commute would take. The purpose of a linear route would directly and efficiently transport Township residents from residential areas to large employer areas, and back again.

In addition to MAX Transit, an emerging transportation system, the Bus Rapid Transit (BRT), is a bus line located in the City of Grand Rapids, about 30 miles east of Holland Charter Township. As bus transportation ridership rates continue to rise and population in the grater Holland area increases, the Township should continue and establish partnerships with the BRT to assess future routes to Holland Charter Township.

Likewise, the commuter bus transit system and potential future passenger light-rail, the West Michigan Express, provides access along the Chicago Drive/I-196 Corridor, from the Grand Rapids area to the Holland area, stopping in the City of Hudsonville, City of Zeeland, and City of Holland. Partnerships with these applicable transit agencies should continue to assess the potential of including bus/light-rail stops or hubs in Holland Charter Township, especially at key community nodes.

Ridesharing

As transportation trends continue to change in more recent years, ridesharing has increased in popularity in both urban and suburban communities. Sustainable transportation modes such as ridesharing and carpooling should also be considered as transportation network enhancement opportunities arise throughout the duration of this Plan.