

APPENDIX A. SUB-AREA PLANS

SUMMARY

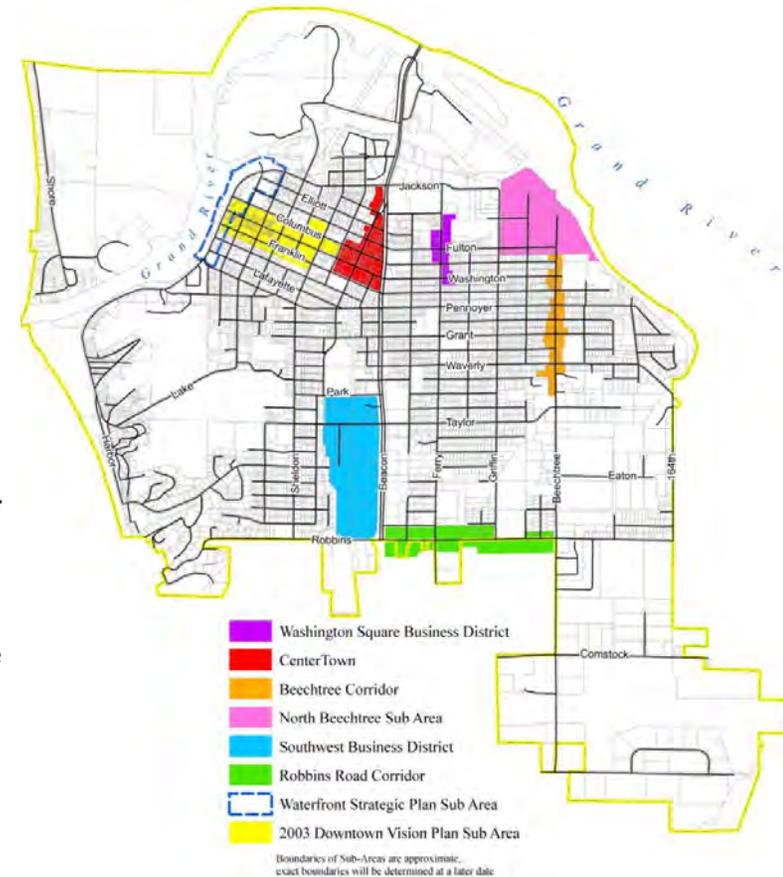
In the development of a Master Plan it is important to recognize broad patterns and to structure the plan's recommendations and objectives in accord with overall realities. Many land use and development challenges respond effectively to area-wide solutions and approaches. However, it is also likely that some portions of a community face a unique set of challenges or opportunities that respond best to focused attention.

In Grand Haven, eight such areas were identified:

1. The Southwest Business Corridor
2. The Robbins Road Corridor
3. The Washington Square Neighborhood
4. The Beechtree Corridor
5. The Centertown Neighborhood
6. North Beechtree
7. Downtown
8. The Waterfront

This section presents sub-area plans for each. The first six are the result of original planning efforts undertaken as part of the update to the City's Master Plan. The sub-area plans for Downtown and the Waterfront are summaries of other recent planning efforts and this plan consolidates those efforts into the Master Plan.

A sub-area plan outlines local liabilities and assets and presents an alternative approach to overcome liabilities and to maximize the value of peculiar assets. While each is treated as a distinct area, it is important that the role and relationship of each within the larger community be considered, as well. Therefore, this Chapter provides a detailed presentation of each area and a plan for its improvement which is consistent with local challenges and opportunities and appropriate in the context of the larger City of Grand



Haven Master Plan.

METHODOLOGY AND CITIZEN INPUT

The process to complete these sub-area plans began with extensive localized research. The consulting team walked and drove each area, developing an extensive photo inventory and noting key elements, development patterns, unique land uses, iconic features, and traffic patterns, as well as aesthetic and land use strengths and weaknesses. Based on this work, a series of six existing feature maps were prepared over aerial photos taken in 2004. In addition, six site analyses were developed. These were assembled into individual “walking audit packets” which the City staff and local residents used for self-guided walking reviews of each area. Each packet included instructions to the participants to maximize the use of this preliminary information.

Local residents and business owners were advised by mail, newspaper articles and through the Master Plan website of the sub-area planning process. They were invited to obtain the walking audit packet either at the Planning and Community Development Office or to download the packet directly from the website.

Each of the sub-area plans was the subject of a mini-charrette public input process. A charrette is a short-duration, intense effort that includes direct interaction between local stakeholders and the planning and design team. In Grand Haven, this process lasted one week with each of the sub-areas under consideration each day. At the outset, the consulting team led a community brainstorm session to obtain public input on the commonly held understanding of the neighborhood and its sensory impact on the area including positive and negative views, noise and odors that are prevalent. This portion of the process also involved a facilitated evaluation of the liabilities, assets, needs and desires for each area.

At the close of the brainstorm session, participants used dot-stickers to note their highest priorities. The results of this input are set forth in Appendix C. Participants were also invited to return to the charrette studio the next day (or several hours later) to view the design work in progress and to offer further input.

The charrette process allows the consulting team an opportunity to work in a focused manner with the immediate input from citizens and participants. As a result, a number of ideas are tested, re-worked and either embraced or rejected. The opportunity for immediate feedback creates a very dynamic atmosphere and it often results in innovation that might not



Using the input from the brainstorming sessions, the consulting team worked on alternative responses to each sub-area’s challenges



The open house offered an opportunity for residents and business owners to see the initial outlines of the sub-area plans

otherwise be possible.

At the close of the charrette week, the consulting team and city staff held an open house at which all draft sub-area plans were on display. This activity was intended to present each of the draft sub-area plans in an informal atmosphere to engage stakeholders and decision-makers in further dialog regarding some of the assumptions made in their development and to gather even further input for the remaining planning work before the master plan is completed.

The open house offered an opportunity for residents and business owners to see the initial outlines of the sub-area plans. Plans ultimately were finalized as the consolidated Master Plan was developed.

SOUTHWEST BUSINESS CORRIDOR

The Southwest Business Corridor is an area of about 80 acres located along and to the west of the Beacon Boulevard(US-31) right-of-way and extending westerly about 1,000 feet to the crest of the ridgeline. Its northerly boundary is Park Street and its southerly boundary is the City limits at Robbins Road. The ridgeline along the westerly sub-area boundary, especially in the northern portion of the sub-area provides an excellent natural break between the heavy commercial and industrial uses in the corridor and the residential areas to the west. In fact, a small wetland area which has been recognized in the City’s sensitive area overlay is located south of the Kooiman cul-de-sac and this feature together with the steep slopes in this vicinity help to define the sub-area.



Access to adjoining parcels along Beacon Boulevard is fairly well managed with limited curb cuts and several shared points of access

CHALLENGES AND ASSETS

Overall, the sub-area is comprised of two areas with significantly different challenges. The area is dominated by the heavy traffic along Beacon Boulevard and the highway commercial uses there. The Kooiman Avenue cul-de-sac and Taylor Avenue are characterized by a range of industrial and service uses with a broad range of viability in the current marketplace, but relatively limited visibility to the high traffic volumes only a few hundred feet to the east. The area is traversed north-south by a rail line which typically carries two small freight runs daily. Few, if any, of the local businesses appear to take advantage of the access to the rail line.

Although the Beacon Boulevard corridor is formed in a traditional suburban strip commercial pattern with many very large parcels and front side parking, the boulevard cross-section and extensive landscaping in many areas provide strong aesthetics for much of the corridor. In addition, with its boulevard configuration, access to adjoining parcels is fairly well managed with limited curb cuts and several shared points of access. Thus, even though the corridor carries high volumes of traffic, generally the flow and speeds are adequate. Interconnections between commercial uses vary along the corridor with some offering good connections while others do not.

The Southwest Business Corridor sub-area includes one of the larger vacant parcels in the City, with approximately 7.5 acres found south of the wetland and west of the railroad. This site includes about 300 feet of frontage on Robbins Road and is sufficiently isolated and buffered from nearby industrial commercial uses to allow this parcel to potentially accommodate office, institutional or possibly high-density residential uses.

The area is challenged with a few marginal industrial operations and the railroad. While some facilities are well kept others appear to be suffering from disinvestments. Given the former industrial nature of the uses along the railroad, areas of contamination are possible. In addition, while some of the uses along Beacon Boulevard provide reasonable interconnectivity, others do not. Some interconnections are poorly defined in terms of signage or other traffic control measures. Finally, the area lacks pedestrian facilities and even though it exists in relatively close proximity to nearby residential areas, the corridor is designed and configured only for auto travel. Sidewalks are provided along Beacon Boulevard but pedestrian crossings are limited and daunting.

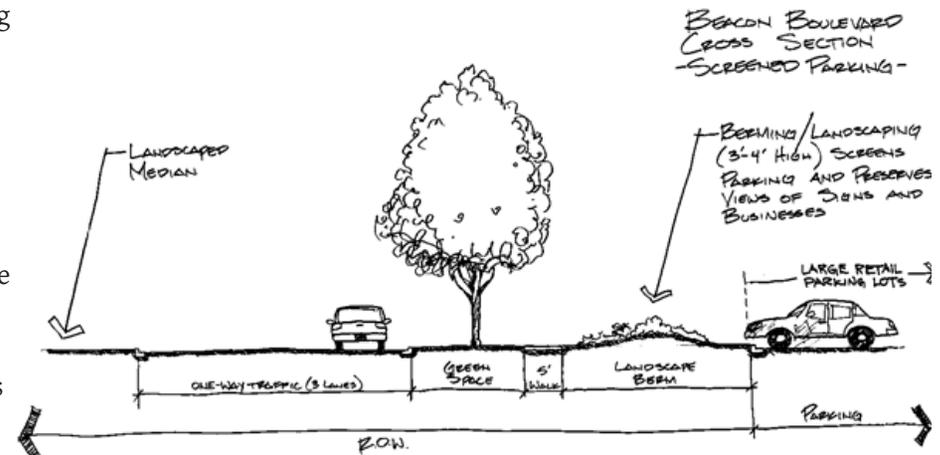
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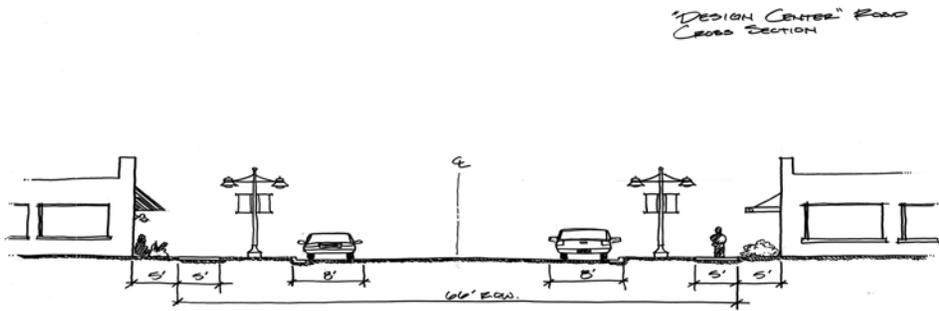
THE PLAN DESIGN AND POLICIES

The charrette process identified several design and policy changes that would enhance the assets of the sub-area and work to overcome some of its challenges.

- A Design Center.** This entails building on the existing home design and home improvement land uses to create a “one-stop” design center to serve regional needs. The Kowalski Design Center, with its adaptive re-use of a former industrial structure and its emphasis on high quality interior design, is an excellent catalyst for other, similar businesses. The other transitional industrial buildings in the vicinity may offer similar opportunities and could include both showroom and interior sales and assembly spaces as well as outdoor storage of building materials and contractor equipment to serve the home improvement and construction marketplace.
- A Business Incubator.** On the east side of the railroad tracks and north of Taylor, existing industrial operations should be encouraged. Given the limited area of this site and the surrounding commercial and residential land uses, the long term viability of large scale industrial operations here may be restricted. However, this site may be appropriate for small-scale assembly and manufacturing operations and/or service businesses, with an emphasis on start-ups and incubator space. As business incubator space, the industrial area has good potential due to its ready access to US-31 for deliveries, rail access and buildings that might well accommodate industrial or commercial services. Uses that do not require high ceilings or high-visibility locations may thrive in this area. Policies that advance the location of such uses and even start-up businesses should be undertaken by the City working in conjunction with existing building owners, the Chamber of Commerce and local businesses.
- Beacon Boulevard Landscaping.** Although the boulevard landscaping along Beacon Boulevard is fairly strong, for much of the westerly side of the road, the front yard parking creates an oppressive impression of asphalt and automobiles that diminish otherwise strong landscape aesthetic. Certainly, more could be done along the right-of-way to enhance landscaping. However, dense plantings that block views to businesses would be counter-productive. Nevertheless, low-level plantings and modest berms along the roadway and internal landscape islands could soften the expansive predominance of asphalt parking lots without limiting the visibility of businesses.
- Kooiman Streetscape.** Kooiman Avenue is clearly an industrial access

Given the limited area of this site and the surrounding commercial and residential land uses, the long term viability of large scale industrial operations here may be restricted.





Design Center Road Cross Section

road and its uses and existing improvements reflect this. It is possible, however, to enhance the aesthetics of the corridor with a few improvements to better direct truck and auto traffic and strengthen landscaping along the road. Several of the buildings are oriented to front on the railroad and with loading areas facing Kooiman. It is unrealistic to expect this to change in the short term, but improved landscaping and streetscape improvements would enhance the overall presentation of the corridor, especially as its uses begin to shift toward the design center concept with more retail and service uses in that industry.

- **Senior Living Facility.** The 7.5-acre site off Robbins Road and west of the railroad would effectively accommodate an

assisted living facility. The site is near to professional offices and the hospital and it has direct access to Robbins Road. While the presence of the railroad may seem detrimental, the site could be configured with service uses (i.e., laundry and kitchen) nearest the rail line and with effective sound attenuation, this should not present a major obstacle. The aging population in West Michigan suggests a strong market for such a facility well into the future.

- **Beacon Boulevard Internal Circulation.** Some of the commercial land uses along the west side of Beacon provide good cross-access with neighboring uses, while some do not and yet others provide connections, but they are not well laid out. With more interconnectivity, there is greater synergy among the uses. Therefore, this plan suggests that each of the uses be evaluated in terms of the ability for motorists to move at a safe pace with improved signage and logical channelization from one use to the next along this corridor.

IMPLEMENTATION STRATEGIES

The recommendations developed during the charrette process and outlined in this plan will require significant effort to implement. Some tasks may be undertaken by the City, but many will require the active support and involvement of local property owners. The following paragraphs suggest specific next steps to move the above recommendations from concept to action.

- **Zoning Adjustments.** The sub-area falls within the Transitional Industrial, the Office Service and the Commercial zoning districts. Several adjustments to these zoning standards will advance the vision outlined here.

- The Transitional Industrial district covers the northwest portion of the sub-area. It is also found at the northeast part of the city and in the east side industrial park, off Beechtree Avenue. This district includes a number of permitted and special land uses that are very compatible with this area. However, a few uses (e.g., Live/Work units, Marina, Place of Public Assembly) may not be a good fit in this area. Certainly a marina would not locate in

A few uses permitted by the zoning ordinance may not be a good fit in the Southwest Business Corridor.

this area, but other non-compatible uses fall in the Special Land Use category and could be restricted under the general approval standards of the Zoning Ordinance. The Transitional Industrial district should be evaluated to determine whether special land use provisions for some uses ought to be refined to direct those uses to the portions of the district where they are best suited. This may result in some uses currently permitted in the SW Business Corridor being limited in the future.

- The Beacon Boulevard frontage of the sub-area falls in Commercial District. This district is intended to accommodate regional commercial land uses typically accessed by automobile. The requirements of the district include relatively deep front yard setbacks along Beacon Boulevard and in most instances these requirements are met. However, there are no specific standards in the ordinance relating to shared access or cross-access arrangements other than as provided in the parking design requirements. The general site plan review criteria offer general guidance, but reference to cross access requirements in the Commercial District would help to ultimately create the needed interconnections among all the uses. The requirement for a small berm and landscaping along Beacon Boulevard described in the plan is consistent with existing requirements of the Zoning Ordinance and will be implemented when any of the parcels along the corridor are modified.
- The Office Service district regulates the southern portion of the sub-area, west of the tracks. This portion of the sub-area is isolated from the balance by the railroad tracks on the east the sensitive area and topography on the north and west. The uses permitted in the Office Service are largely compatible with the policies outlined in this plan, including adult foster care facilities. It does not, however, include either nursing care facilities or multiple-unit dwellings. Therefore, to implement a large elderly housing development, especially one that offers a range of residential care options, either the uses in the OS district will need to be addressed, or a rezoning to PD will be required.
- **Building Reuse Strategies.** The sub-area plan contemplates that some of the existing or former industrial buildings in the area will shift to other uses, such as display and fabrication space for emerging design center businesses. Also, the concept of a new business incubator is contemplated in the plan. However, each of these buildings is privately-owned and not all building owners participated in the sub-area planning charrettes. Therefore, it will be important for the City to meet individually with building owners and business operators to gain an even more detailed understanding of their long- and short-term development objectives. This may include a discussion of potential brownfield redevelopment incentives for obsolete and/or contaminated properties. Where their private plans are consistent with the vision of the sub-area plan, the City can work actively to support the implementation of those plans. If there is some conflict between this plan and private plans, it would not be appropriate to resist those private plans; rather the implementation schedule for the public plan may need to be modified or deferred.

The City should meet individually with building owners and business operators to gain an even more detailed understanding of their long- and short-term development objectives.

- **Streetscape Improvements.** The design center streetscape may be implemented either on a piecemeal basis as site plans are presented by building owners, or at one time as a coordinated, City-sponsored activity. Either way, it will be important that the implementation follow a pre-determined pattern in terms of on-street and off-street parking, screening, landscaping, street lighting, etc. Such a pattern book should be developed by the City in conjunction with local business owners. If a coordinated implementation approach is desired, funding will need to be arranged. This could be developed through a Business Improvement District, possibly leveraging economic development grants.

Southwest Business Corridor Sub Area Site Analysis



Analysis Notes

Analysis of the corridor shows a mix of existing and potential future uses. The corridor is primarily composed of industrial and commercial buildings, with some residential areas interspersed. The corridor is bounded by Marion Street to the north and Beacon Street to the south. The corridor is primarily composed of industrial and commercial buildings, with some residential areas interspersed. The corridor is bounded by Marion Street to the north and Beacon Street to the south.



Southwest Business Corridor Sub Area

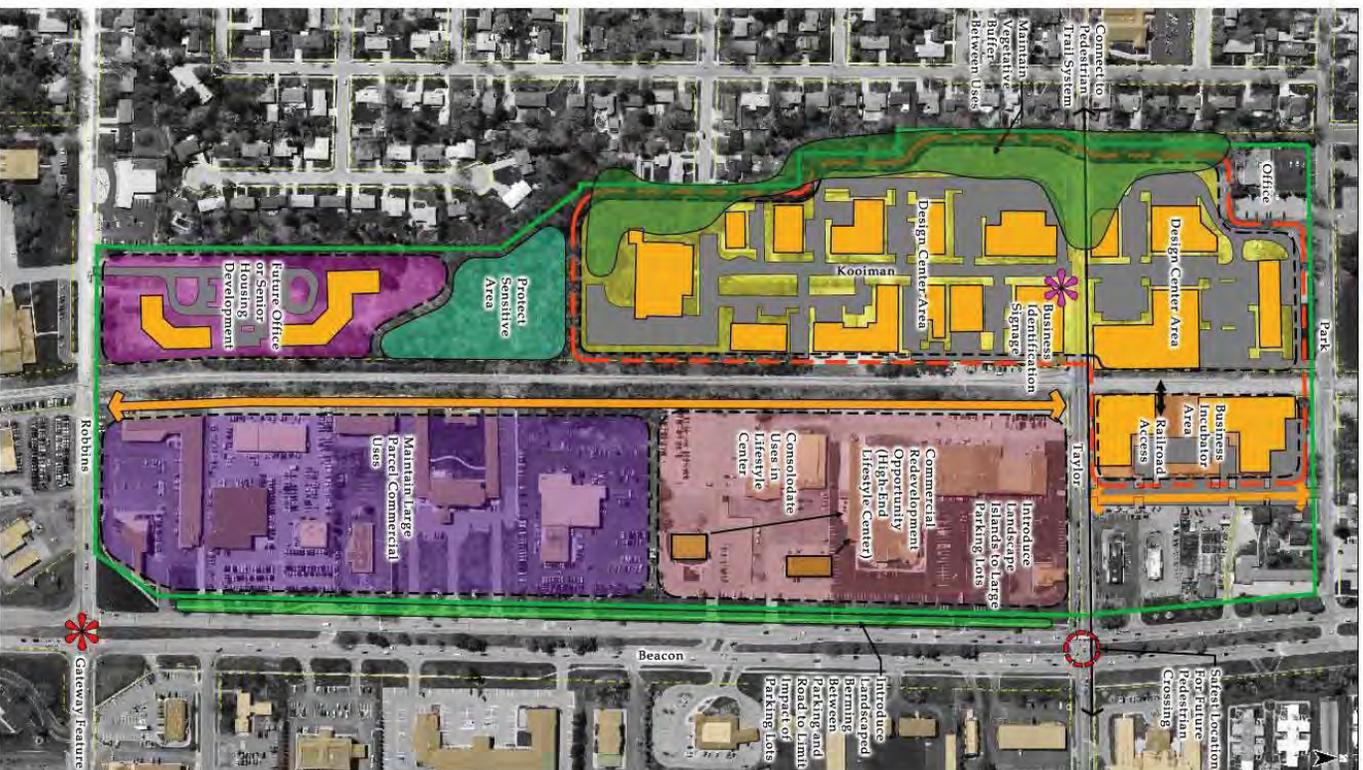
- Building Footprint
- Right-of-Way
- Parcel Boundary
- Sensitive Area
- Floodplain (approx)



Southwest Business Corridor Sub Area Plan

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ROBBINS ROAD CORRIDOR

Robbins Road generally forms the boundary between the City of Grand Haven and Grand Haven Charter Township. The northern portion of the corridor falls in the City of Grand Haven while the southern portion falls primarily in Grand Haven Charter Township. The original planning corridor extended about 250 - 300 feet north and south of the road and from US-31 to Beechtree. However, to gain a complete understanding of the land uses in the area, the consulting team broadened the southern edge of the corridor to take into account the vacant land to the south. Much of the recent development in and adjacent to the corridor has occurred in the Township. With this sub-area plan, the community seeks to minimize inefficient suburban sprawl with its degrading effect on the rural character of the community. It also seeks to avoid unneeded commercial competition for the retail and service uses in downtown Grand Haven, even while establishing a contained area close to the City in which modern retailing can be undertaken.

CHALLENGES AND ASSETS

The original planning corridor includes slightly more than 48 acres, most of which is developed in a wide variety of commercial land uses at the western end, with office and some residential uses found toward the eastern end of the corridor. With the inclusion of the vacant lands to the south, the entire planning area includes about 100 acres. During the planning activity, several challenges and assets were articulated and these are more fully developed here.

Perceptions of Traffic. Traffic is a major issue along the road, which carries upwards of 12,000 vehicle trips per day at the west end and about 9,800 toward the east. This greater volume is also reflected in vehicular accidents with 22 out of 25 reported accidents in the corridor in 2008 through August occurring between Beacon Boulevard and Ferry Street. The US-31 and Robbins Road intersection is controlled with a signal with indirect left turn movements for north- and south-bound traffic. The other traffic signals on the corridor are found at Ferry and at Beechtree.

Road Design and Access Control. The road is configured with two travel lanes in each direction with no dedicated left turn lane. Reportedly, many accidents in the vicinity are rear-end crashes generated by the four-lane configuration without a dedicated lane for left turn movements. With forty-nine access points on and off the road, left-turn movements are common and, as a result the inside two lanes are often encumbered with turning traffic, and dangerous traffic weaving is common as drivers change lanes to avoid left-turning vehicle queues. Many of the opposing access points are ineffectively aligned, creating seven potential left-turn lock-up situations. There is a lack of uniformity in access to and from the roadway, although this disorganized pattern is much more prevalent west of Ferry. In addition, on both the north and south sides of the road extending about 800 feet east of Beacon, parking lots extend right to the curb giving an oppressive, asphalt-dominated impression of this portion of the corridor. In a few locales, successive layers of pavement have nearly overtopped the curb, further exacerbating access control.



Successive layers of pavement have nearly overtopped the curb, further exacerbating access control in this area.



Ineffectively aligned opposing intersections create the potential for "left turn lock-up" situations



The existing entry signage misses an opportunity to make a more impactful statement

An Entry Opportunity. The US-31/Robbins Road intersection is a major entry point into the City to the north and into the Township to the south. The broad boulevard cross-section and indirect left turn movements work well to regulate traffic, but are a missed opportunity when it comes to the aesthetics of the area and the chance to create an “arrival experience” that enhances the individual character of the two communities.

Parking Lot Layout. Many of the private parking areas along the corridor adjoin, offering interconnectivity from one use to the next. While some of these interconnections are poorly defined, the overall connectivity of these parcels probably helps to reduce some local traffic on the road.

This could be enhanced with a reduction of access points to Robbins Road and better pavement marking and channelization. The lack of definition not only leads to confusion for drivers, it also makes walking in this area unfriendly, at best, and dangerous, at worst. This disorganized “sea of asphalt” presentation is intensified by what may be an excess of parking, especially in the plaza that serves the D&W store. It would appear that additional commercial development on this parcel would help strengthen the area and make more efficient use of the vast parking lot without overburdening the site. However, care must be taken not to significantly reduce visibility from 172nd or Robbins Road for existing uses.



The lack of definition within the parking areas may lead to confusion for drivers and an unsafe environment for pedestrians.

Pedestrian Access. The corridor has limited pedestrian facilities with sidewalk found consistently only along the north side of Robbins Road, in the City. On the Township side of the corridor, only about 500 feet of sidewalk has been provided immediately east of 172nd Avenue. Along both sides of the road, west of Ferry, there is little, if any, green interval between the road and parking areas, so pedestrians in this area are more exposed to nearby traffic. Of course, single family residential development and an elementary school are also found immediately north of the corridor in the City, while most land uses on the south side of the road in the Township are commercial, arguably making sidewalks less critical on the south than they are to the north. Nevertheless, given traffic volumes and turning movements, crossing Robbins Road on foot can be a daunting experience.

Site and Architectural Design. The design and aesthetic treatment of the private uses along the corridor varies from that of marginally obsolete mid-century commercial strip development to modern office campus. Some structures may be reaching functional obsolescence, in fact the Southtown Plaza, a 1960s vintage strip center is about to be replaced with a modern Walgreens pharmacy and convenience store. This variety of design and aesthetic presentation reinforces the demarcation between the western, older portions of the corridor, and the eastern portion.

An Area of Strong Potential. Despite the traffic and access issues, the area provides vital commercial and retail services to the southern end of the City and the northern portion of the Township. Immediately to the south of the corridor, the Meijer's and WalMart retail centers have developed and this portion of Grand Haven Charter Township rivals many other shopping areas in West Michigan, in terms of total sales volume. In addition, Pinewood Place, an elderly housing project, is undergoing an expansion on Ferry, just north of Robbins Road in the City, providing additional housing and some added employment along the corridor.

The corridor adjoins significant areas of vacant or underutilized lands to the south in the Township. Several large parcels in this area are planned and zoned for additional medium to high density residential development and office uses, creating the potential for additional traffic demand on Robbins Road and the limited network of intersecting roads. In addition, the Meijer's parcel just southeast of the busy Beacon Boulevard and Robbins Road intersection includes significant areas of land, which are planned to accommodate more commercial development. However, some argue that the limited access to the Meijer property from Robbins Road with its "right in, right out only" configuration limits the viability of those sites.



The quality and safety of sidewalks and pedestrian facilities vary significantly across the corridor



Nearby large parcels are planned and zoned for medium to high density residential development and office uses, creating the potential for additional Robbins Road traffic.

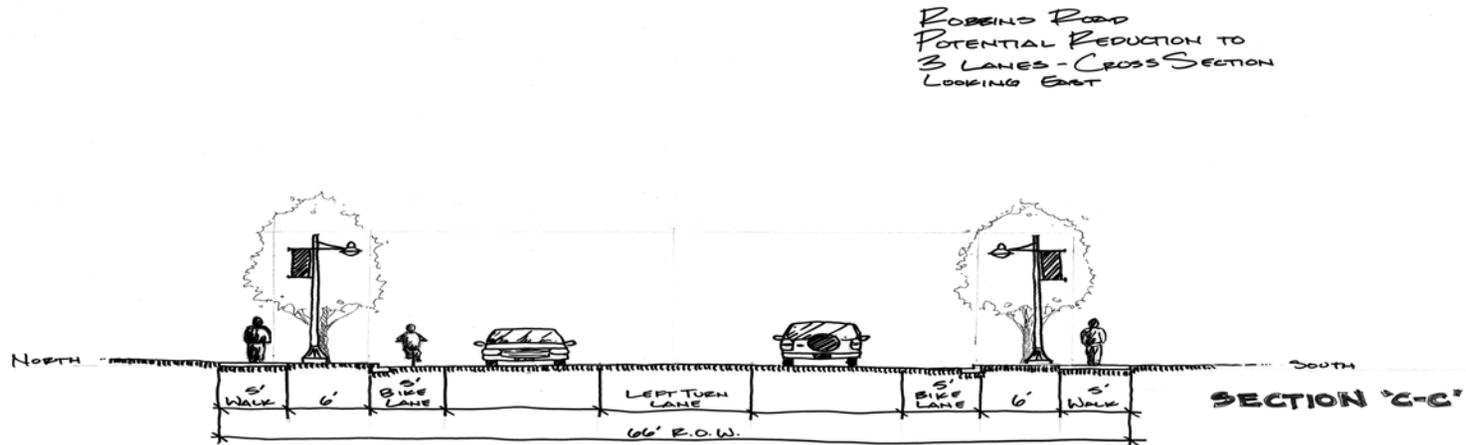
...several design and policy changes were identified that would overcome many of the Robbins Road Corridor limitations

PLAN DESIGN AND POLICIES

Through the charrette process, several design and policy changes were identified that would overcome many of the Robbins Road Corridor limitations and further enhance its ability to serve commercial and residential development in both the City and the Township.

- **Dedicated Left Turn Lane.** While Robbins Road traffic volumes are significant, they do vary considerably from the west end where the greatest traffic is found to the east end. Along the entire corridor, however, the lack of a dedicated left turn lane further encumbers existing traffic flows. This element was a priority from the community input and brainstorm session and the consulting team found the need for a dedicated left-turn lane, as well. The proposed solution would be the reconfiguration of the roadway as a three-lane facility, possibly with right-turn lanes at appropriate high-volume locations, such as Ferry and Whittaker Way/DeSpelder. A five-lane cross-section with a dedicated left turn lane was considered, but ultimately rejected based on the modest traffic volume and the relatively narrow right-of-way. A three-lane section provides one travel lane in each direction with a dedicated center left. At the low posted speeds, such a configuration would readily accommodate steady flow and still manage left turn movements better than the existing two lanes in each direction.

The figure below illustrates the three-lane section within a 66-foot wide right-of-way and it demonstrates sufficient area for the two travel lanes, the center left turn lane, two, five-foot wide bicycle lanes, 6-foot planting strips and five-foot wide sidewalks on both sides of the road.

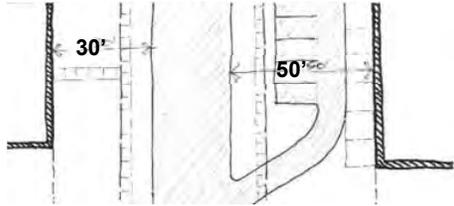
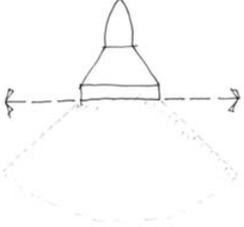
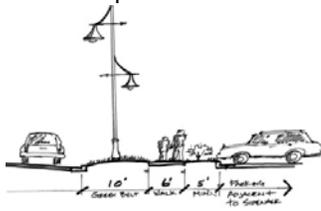
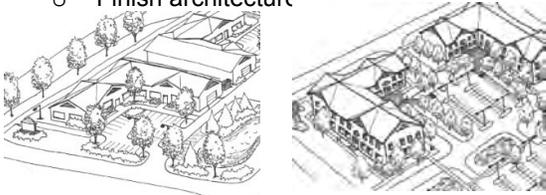
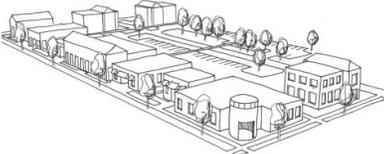


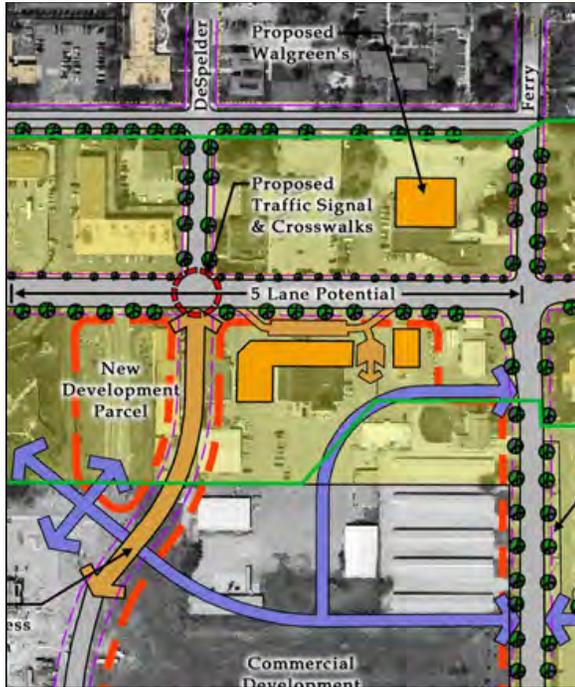
Robbins Road – Potential Reduction to 3-Lane Cross Section Looking East

•Uniformity and consistency of design.

With some of the properties along the corridor reaching a degree of obsolescence and others being redeveloped proactively, there is an opportunity to improve the aesthetics and functionality of the corridor with consistent site and building design, or architectural standards. At the brainstorm session, participants ranked a desire for greater uniformity and consistence of design as the highest priority. It would benefit both municipalities by assuring that development on either side of the roadway will be consistent and compatible. Of course, not all parcels are poised for new development or redevelopment, so standards will need to be developed in keeping with the current patterns while anticipating stronger design standards as new investment occurs. Such design standards will also need to recognize the transition in existing uses from west to east, shifting from relatively intense regional commercial on the west, to office park and residential on the east. Yet this transition should be accomplished in the context of a coordinated site and building design scheme that may be incorporated in both the City and Township Zoning Ordinances. This plan anticipates either mandatory site development standards, or site plan review guidelines to address the following, at a minimum:

Robbins Road Conceptual Uniform Design Standards

<ul style="list-style-type: none"> ▪ Setbacks, variable <ul style="list-style-type: none"> ○ Without front parking ○ With front parking (and screening) 	<ul style="list-style-type: none"> ▪ Landscape Treatment <ul style="list-style-type: none"> ○ Buffer depth along roads ○ Trees, size and quantities ○ Shrub screens for parking lots 
<ul style="list-style-type: none"> ▪ Signage <ul style="list-style-type: none"> ○ Size (area and height) ○ Illumination ○ Freestanding and Building 	<ul style="list-style-type: none"> ▪ Lighting Standards <ul style="list-style-type: none"> ○ Night skies (cutoff and height) ○ Fixture types <p>Light should not be cast above the horizontal plane of the fixture</p> 
<ul style="list-style-type: none"> ▪ Sidewalks <ul style="list-style-type: none"> ○ Size ○ Location options 	<ul style="list-style-type: none"> ▪ Building Design, by type <ul style="list-style-type: none"> ○ Height, Roofline ○ Minimum/Maximum footprint ○ Finish architecture 
<ul style="list-style-type: none"> ▪ Site Layout <ul style="list-style-type: none"> ○ Access management (spacing and offsets) ○ Shared drives, parking & Cross Access 	<ul style="list-style-type: none"> ▪ Low Impact Stormwater Management <ul style="list-style-type: none"> ○ Landscape for detention ○ Rain gardens 



Aligning Whittaker Way and Despelder would improve the efficiency of the intersection and create a new development parcel

- New Roads and Interconnections.** The vacant lands to the south of the corridor present an important opportunity for the community. But without careful planning, intense development in this area could cause further congestion along Robbins Road and undermine other efforts to manage growth. Some of this vacant land has limited frontage on Robbins Road while other parcels would need connections through 172nd or 168th. Participants in the charrette brainstorm session ranked “better connectors among all areas” as one of the top priorities and this element has been developed accordingly. It recommends the development of an expanded and planned system of roadways to open up the parcels to the south and provide a system of controlled routes designed to manage the traffic that will materialize. It illustrates an eventual east-west connection about 900 feet south of Robbins Road to extend eventually between 172nd and 168th and align with the Whittaker Way, the Meijer access road. In addition, Griffin should be extended south to intersect this new roadway and the plan illustrates a round-about at this intersection. Eventually, the community should consider a further southward extension of Griffin to intersect with Comstock Road.

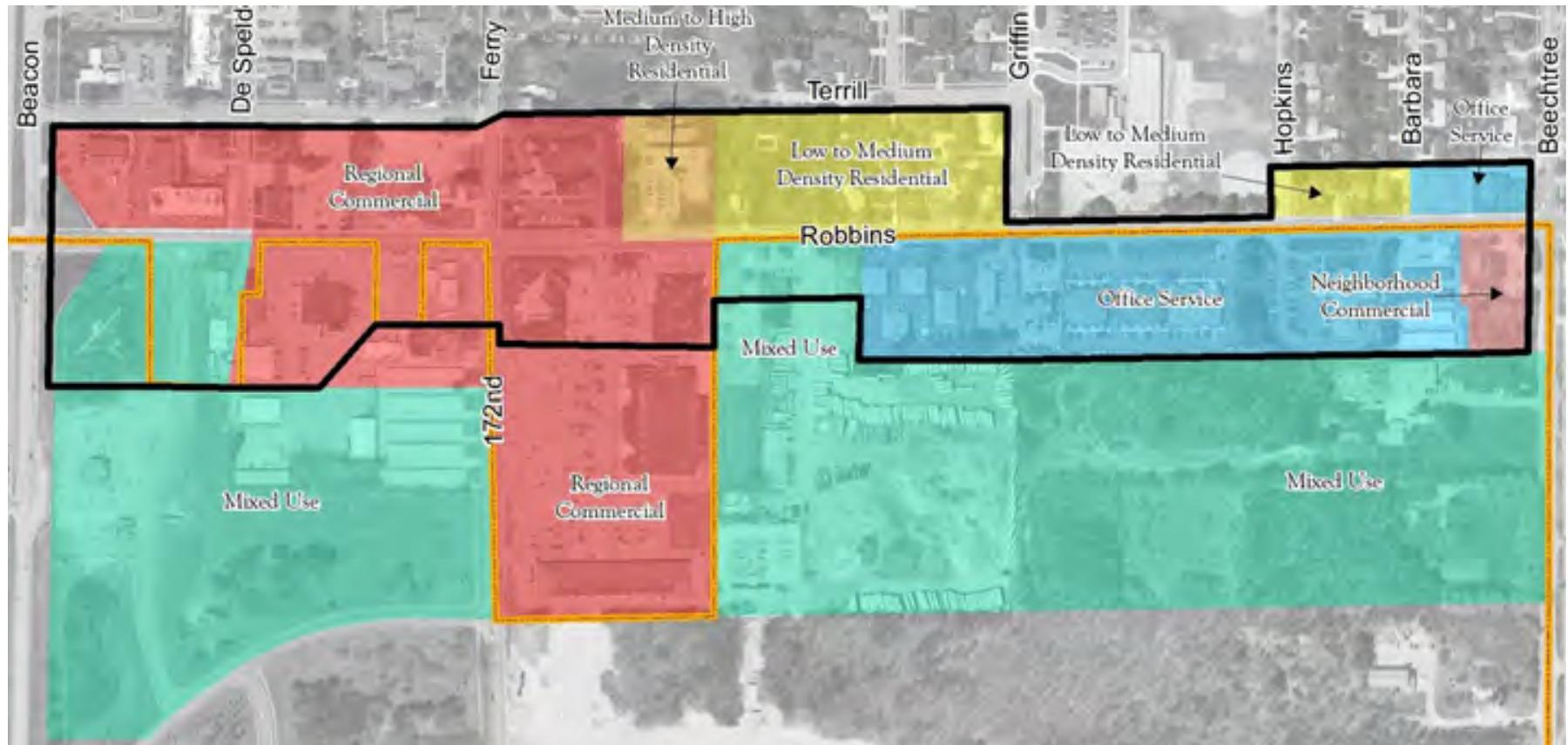
In addition to these new public roads, the sub-area plan illustrates improvements to the internal circulation patterns both on and adjacent to the Meijer Planned Unit Development (PUD) and the larger parcels to the east. Most importantly, this includes a re-alignment of the Whittaker Way (Meijer access road) with Despelder to the north. This would necessitate the removal of some of the buildings east of the existing Whittaker Way, with the affected businesses relocated into new facilities in the area.

- Pedestrian Connections.** The neighborhood adjacent to the Robbins Road corridor currently includes a significant area of residential development, both in the City and in the Township. However, other than the sidewalks along the northern side of the road, the corridor lacks crosswalks or crossing signals. This lack of sidewalks and overall pedestrian safety concerns were among the highest ranked “liabilities” identified during the charrette brainstorm session. This plan recommends the addition of crosswalks at Robbins and Griffin, possibly including alternative pavement surface to further delineate the pedestrian area. The plan also calls for an improved crossing at Griffin to accommodate walkers in the vicinity of Griffin School.
- Entry Feature.** The US-31 and Robbins Road intersection is the entry into the City from the south and into the Township from the north. The wide boulevard intersection offers an excellent opportunity for an entry feature to effectively demark the interface between the two communities. This feature would also include a re-configuration of the intersection with a round-about design. Such a design may create a strong aesthetic statement at this location, but further technical analysis is required in consultation with MDOT before this element should be endorsed by either jurisdiction and this improvement may need to be coordinated with the eventual US-31 by-pass. As a result it may be implemented over two or more phases as that alternate roadway becomes established. If the round-about proves not to be feasible, the area in the median just north of the intersection could still accommodate a much more impactful entry feature than is currently in place.

IMPLEMENTATION STRATEGIES

The recommendations developed during the charrette process and outlined in this plan establish an agenda for further action by the City and the Township working separately and jointly.

1 Future Land Use and Zoning Adjustments. Recommended future uses are reflected in the map below.



The Township's Master Plan recognized the need to develop a more refined plan for the Robbins Road Corridor and the proposed 2008 plan reflects the current effort. The map on the previous page is consistent with that and with the City's 2001 City Master Plan as adjusted with the new Zoning Ordinance. The Township's planning process began in 2007 and, as of this writing, is more fully complete than the process in the City. Therefore, it is possible that the final plan prepared for the City may include future land use designations that vary slightly from those reflected in the above map. However, given the fact that the City's portion of the corridor is virtually fully built-out, and the land use patterns are well established, a significant departure is unlikely.



Strong landscaping will characterize this land use to soften the regional scale of the structures



Buildings should generally be residential in character with pitched roofs

A planned, interconnected network of private roads will offer convenient and safe connections among uses, to shared parking areas and with planned and controlled access points to nearby roads.



Residential densities may range from three to ten dwelling units per acre including a mix of rental and owner-occupied units.

The following future land use designations are proposed as illustrated on the map on the previous page:

- **Regional Commercial.** This designation recognizes the destination commercial nature of the westerly portion of the corridor. Land uses in this area will generally be larger single- or multi-occupant structures providing retail and auto-oriented products and services. Although the bulk of patrons will arrive by private auto, development will be designed to provide a safe and inviting environment for both pedestrians and drivers. Sites will incorporate well-defined cross access arrangements to enable patrons to access more than one use without returning to the road network and many uses will share access to the roads using existing and planned access routes. Strong landscaping will characterize this land use to soften the regional scale of the structures and to offer an inviting and sustainable environment for patrons.
- **Neighborhood Commercial.** This designation offers a location for small-scale retail and service facilities intended to primarily serve nearby residents. Buildings should generally be residential in character with pitched roofs and sites should be carefully designed to offer safe and inviting provisions for pedestrians and bicyclists, as well as for motorists. Parking should be convenient, but not prominent in the general presentation of the uses to the sidewalk or street.
- **Mixed Use.** This designation will build on the emerging patterns associated with the Meijer planned unit development, offering locations for regional commercial uses, hospitality uses, professional offices and other complimentary uses arranged in planned and mutually-supportive patterns. In the eastern portion of the sub-area, east of the southerly extension of Griffin, developments may also include moderate density residential uses including attached and detached single-family dwellings and garden-style multiple unit buildings with densities of up to five dwellings per acre. A planned, interconnected network of private roads will offer convenient and safe connections among uses, to shared parking areas and with planned and controlled access points to Robbins Road, 172nd and 168th Avenues and to a new public road aligned with Griffin Street. Strong landscaping will characterize this land use to soften the regional scale of the structures and to offer an inviting and sustainable environment for patrons.
- **Moderate – High Density Residential.** This land use designation supports single-family, attached and garden-style and mid-rise multi-family neighborhoods arranged to encourage walking with strong landscaping and pocket green areas. Residential densities may range from three to ten dwelling units per acre including a mix of rental and owner-occupied units as well as developments that offer residential and personal care services to special needs populations.
- **Low to Moderate Density Residential.** This land use designation will accommodate suburban and urban scale single-family neighborhoods arranged primarily for family living with strong pedestrian facilities, parks and playgrounds. Residential densities will range from three to five dwelling units per acre. Structures will generally be single unit detached in form although some planned developments of attached units may be welcomed if arranged with some common green space to serve the residents of the development.

In terms of zoning, the portion of the Robbins Road sub-area in the City is regulated by four zoning districts (Commercial, Multiple-family Residential, Single-Family Residential and Office Service). In the Township, the sub-area is regulated by the C-1 and SP (service professional) districts. However, in the western portion of the sub-area (west of the D&W center) zoning in both jurisdictions is very consistent – “C” in the City and “C-1” in the Township. Permitted and special land uses are comparable in both ordinances. The minimum lot area and width in the Township are 35,000 sq. ft. and 110 lineal feet respectively, while the City’s ordinance relies on setback and lot coverage standards to regulate parcel dimensions. Front setback in the Township is 50 feet while it is 25 feet in the City.

To achieve this plan’s goals with respect to uniformity and consistency, consideration should be given to some adjustments to the ordinance standards. This may be accomplished through specific amendments of the existing districts. However, since the applicable zoning districts are also applied elsewhere in both jurisdictions, care must be taken to avoid unintended conflicts with other neighborhoods. For example, a new mixed use zoning district may be considered in the Township tailored specifically to the objectives of this plan or the Township’s PUD provisions should be evaluated to enable the realization of the land use objectives of this Plan, especially in the Mixed Use designation. Alternative approaches to incorporating design standards include adoption of a uniform set of design standards by reference as an overlay in both ordinances, or a corridor pattern book could be adopted as a guidance document by both communities. Either approach would provide uniform standards in the areas outlined above and each jurisdiction would be able to apply them in the context of existing zoning standards as part of site plan review.

2. Road Reconstruction. The redesign of the Robbins Road cross-section is recommended to better manage traffic and left-turn movements along its entire length. The roadway is located within the City’s corporate limits and, as such, the City is in the best position to take leadership on this improvement. But it will be important to involve adjoining property owners and the City and Township should collaborate in bringing the Road Commission and MDOT to achieve consensus regarding the road cross-section, roadway landscaping, the configuration of intersections with existing and proposed county roads and, ultimately, the potential redesign of the US-31 intersection. A combination of funding sources will certainly be necessary to accomplish this, but the initial step would be to move from the concepts outlined in this sub-area plan to feasibility planning and preliminary design.

3. Planned New Roads. Immediately south of the sub-area, this plan contemplates an expanded roadway network to better channel traffic from emerging development to key intersections and to permit the more efficient use of the lands adjoining the corridor. This area is in the Township and outside the boundaries of this the sub-area plan. However, attention must be paid to the implications of anticipated development along and adjoining the Robbins Road corridor. The Township should work with the affected property owners as the new Township Master Plan is being finalized to evaluate the new roadway options and curb cut and access management considerations and to memorialize those in the Plan. This may include a discussion of potential brownfield redevelopment incentives for obsolete and/or contaminated properties. Then as new development proposals are received for lands in this

To achieve this plan’s goals with respect to uniformity and consistency, consideration should be given to some adjustments to the ordinance standards.

The City is in the best position to take leadership on improvements to Robbins Road



Shift the Whittaker Way, Robbins, Despelder intersection for better alignment

A corridor improvement authority provides a funding source that is locally generated for a broad range of public improvements.

area, the Township Planning Commission will be able to use the Master Plan as a guide to eventually result in the installation of those roadway connections.

4. Realigned Whittaker Way and Despelder Intersection. The plan calls for an adjustment to the Meijer PUD to shift Whittaker Way (the northerly access road) to the east about 150 feet to align with Despelder. This change, together with the three-lane cross section proposed in this location, will significantly improve access to the PUD and may make the currently vacant portions of the site more marketable. It will also make possible a signal at this intersection and crosswalks to improve pedestrian access into the PUD, and it may be designed to accommodate more stacking and left-turn movements. Of course, this alignment will require property acquisition and the removal of some existing buildings, but it also creates a new development parcel to the west of the current access driveway with good exposure to Robbins Road. Any affected businesses must be accommodated in new or replacement facilities in the neighborhood as permanent relocation out of the area would be at cross-purposes to this sub-area plan objectives.

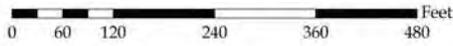
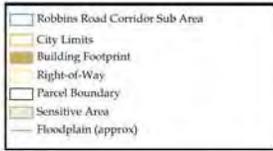
5. Consider a Corridor Improvement Authority. Act 280 of 2005 authorizes the establishment of a municipal entity with tax increment finance authorities to plan and implement a program of improvement along a defined commercial corridor. A unique aspect of this statute is it specifically contemplates cooperative inter-municipal Authorities to address the challenges of roadways that impact more than one jurisdiction. Two such entities would need to be established individually by the City and Township, but they could work jointly on a development and financing plan. The tax increment financing aspects of the act provide a funding source that is locally generated to be used to implement a broad range of public improvements. This could include some or all of the costs of road reconstruction, improved streetscape, land acquisition, site redevelopment and other related improvements. The tax increment captured by the Authority would include the City and Township levies as well as the levies of other taxing jurisdictions that agree to participate.

6. Work with MDOT on Entry Feature in Intersection. As indicated above, the US-31 and Robbins Road intersection offers a unique opportunity to create a very compelling “arrival experience” for motorists entering both jurisdictions. The round-about feature illustrated in the plan could create space in the interior radius for a significant landscaped feature. In addition, properly designed roundabouts have been shown to smooth traffic flow and reduce the number and severity of accidents. A thorough traffic analysis is needed to determine whether a round-about is appropriate in this location and such an analysis should be undertaken with appropriate County and State authorities. Without the round-about, the existing median provides a viable alternative location for a more modest landscaped entry feature. The City will need to work with MDOT to evaluate design and maintenance aspects of such an entry feature.



A thorough traffic analysis is needed to determine whether a round-about is appropriate in this location.

Robbins Road Corridor Sub Area - West Site Analysis

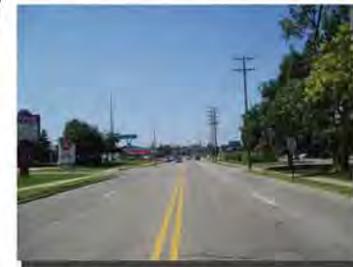


Inventory Notes:

- Power lines are located primarily on the north side of Robbins Rd.
- Continuous sidewalk on the north side of Robbins Rd. only. The south side of Robbins Rd. has two unconnected sections of sidewalk

Analysis Notes:

- Mixture of land uses throughout the corridor
- Large variety of building scales and setbacks
- High volume traffic flows (4 lanes) - no left turn lane
- Large variety of sign sizes



A - Road Profile

Williams & Works

R. CLARK ASSOCIATES, INC.
Landscape Architecture & Planning
1010 N. South Street, Suite 100, Columbus, OH 43260
(614) 441-1111



A - Road Profile

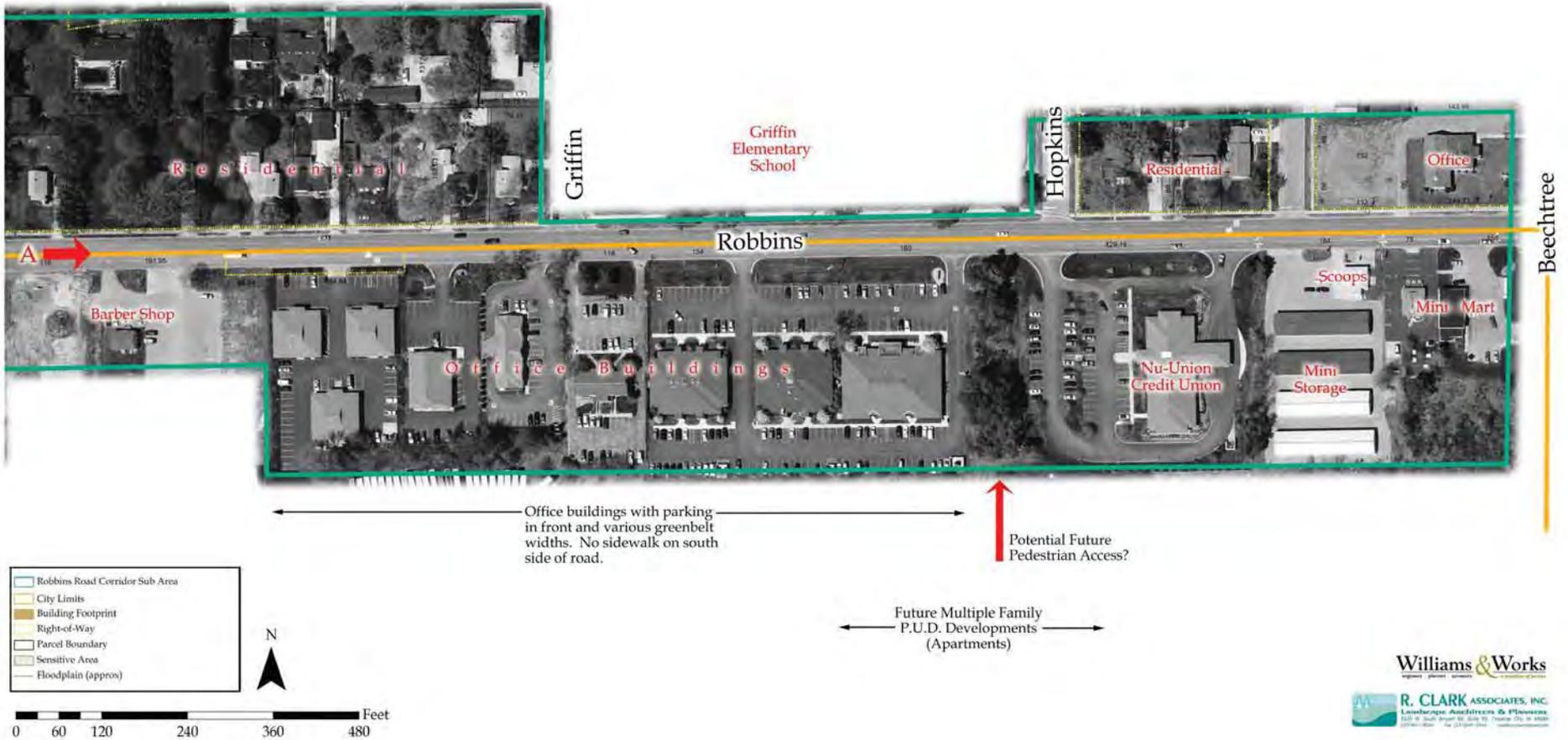
Robbins Road Corridor Sub Area - East Site Analysis

Inventory Notes:

- Power lines are located primarily on the north side of Robbins Rd.
- Continuous sidewalk on the north side of Robbins Rd. only.
- No crosswalks provided on Robbins Rd.

Analysis Notes:

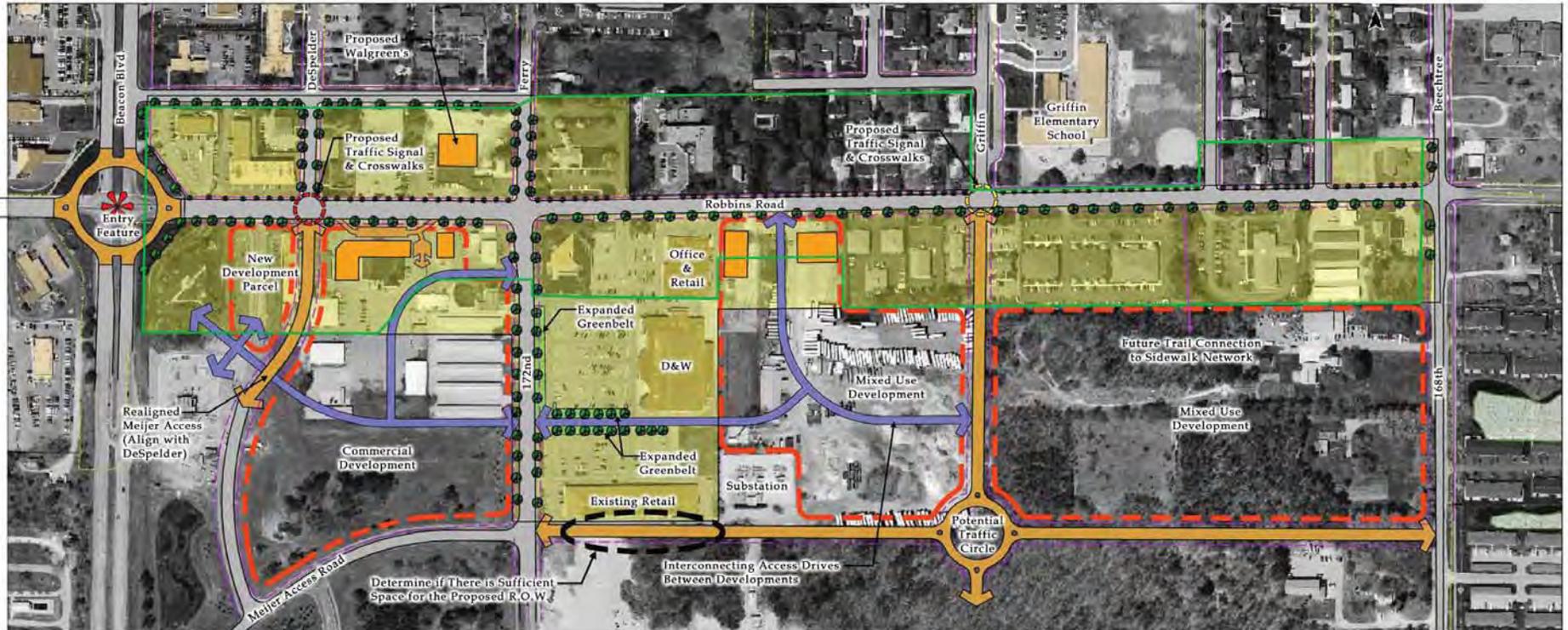
- Parcels on the south side of Robbins Rd. are typically larger and deeper than the lots on the north side of the street
- Corridor provides services for a large area (city and township)



Robbins Road Corridor Sub Area Plan

Williams & Works
engineers · planners · surveyors

R. CLARK ASSOCIATES, INC.
Landscape Architecture & Planning
100 N. Main Street, Suite 200, Mount Pleasant, SC 29521
803.686.1111



Legend

- Future Development Areas
- Existing Sidewalks
- Proposed Sidewalks
- Existing Roads
- Proposed Roads
- Unification Guidelines Area
- Conceptual Alignment of Future Connections
- ⊙ Relocated Intersection with Signal
- ⊙ Future Traffic Signal and Crosswalks
- ✻ New Entry Feature
- Potential New Development Sites
- Proposed Street Trees



Scale:
0' 150' 300' 600'

CENTERTOWN

CHALLENGES AND ASSETS

Centertown is advantageously nestled between historic downtown Grand Haven and Beacon Boulevard, the community's most-traveled corridor. As such, Centertown is thought of as the doorway to downtown and the lakeshore. The Centertown district is generally characterized by small, walkable blocks, mixed-use buildings and an eclectic mix of personal services located in older buildings. Even though Centertown is adjacent to downtown and a part of the Downtown Development Authority, the two are visually distinct and physically separated.

Grand Haven municipal buildings, the Ottawa County complex, and churches interrupt the visual connection between Centertown and downtown. While Centertown's unique and charming personality should be preserved, there is a strong desire for more aesthetic uniformity with the downtown district. This equivalence in streetscape can be applied to more consistent building designs, lighting fixtures, retail uses, seasonal decorations and pedestrian furniture. In addition, several blocks utilize taller street lights, but the shorter pedestrian lights – like those in downtown – are desired throughout all of Centertown.

Centertown itself is a gateway and has been recently updated to better serve this purpose. The updated site, home to new landscaping and the Coast Guard boat at Beacon Boulevard and 7th Street is valued by the community, and the marine theme is viewed as a positive for the community and should be expanded.

An expansion of the gateway concept can be extended to the site where a derelict automobile service station sits prominently to the south of the boat, visible from Beacon Boulevard. The vacant service station is functionally obsolete offering a dismal welcome to the community. It could potentially be converted into an entry feature or open space. This could be a logical location for a visitor's information center or another small office/service use. Additional gateway improvements are also needed at the minor street intersections with Beacon Boulevard.

Certain land uses can enhance the entry experience or detract from it. Some in the community feel that chain-store restaurants and auto-oriented, light industrial-type uses frustrate efforts to enhance the local unique retailing personality and a pedestrian-friendly streetscape. These uses are especially disruptive when flamboyant chain-store architecture undermines the established historic character of the neighborhood.

Additionally, parking and storage areas for light industrial uses, when not properly screened or separated from the sidewalk, are visually unpleasant and even pose a danger to pedestrians. Centertown would benefit from land uses that are more distinctive and exclusive to Grand Haven, with context-sensitive building placement and screening. This is particularly important at the Beacon Boulevard intersections with 7th Street, Elliot Street, Fulton Street, Columbus Street, Washington Street, and Franklin Street.



Centertown is thought of as the doorway to downtown and the lakeshore

Centertown itself is a gateway, and it deserves its own prominent gateway feature.

Centertown would benefit from land uses that are more distinctive and exclusive to Grand Haven, with context-sensitive building placement and screening.

THE PLAN DESIGN AND POLICIES

The charrette process identified several design and policy changes that would overcome many of the challenges and limitations of Centertown to strengthen its character, while creating better unity with the downtown.

- **Unification.** Centertown should be more unified and interconnected with downtown. Specifically, the Washington Street and 7th Street streetscapes should be matched with that of the downtown.
- **Consistency.** Buildings and the design of the streetscape should be more consistent within Centertown's boundaries. Elliot, Fulton, Columbus, Franklin and 8th streets should be improved with new sidewalks and new streetscape design features.
- **Character Protection.** Chain stores and auto-oriented, light industrial uses should be limited and regulated to complement the desired community character.
- **Screening and Design.** Effective parking area and outdoor storage screening is needed.
- **Gateways.** Visitors should be drawn to the unique personal services district with well-maintained, character-sensitive and dramatic entries.

IMPLEMENTATION STRATEGIES AND PHASING

The recommendations developed during the charrette process and outlined in this plan establish an agenda for further action by the City and local businesses.

Unification. Centertown should be more unified and interconnected with downtown.

- The Downtown District and Development Area for the Main Street Downtown Development Authority (MSDDA) should be extended to include all of Centertown, including the area along Elliot Street between 6th Street and 7th Street, Washington from 6th to US-31 and 7th from Franklin to US-31. This will establish a formal, joint management structure for the two districts and will provide an instrument for installation of consistent seasonal decorations and pedestrian furniture that is in scale with the small buildings.
- Functional, small-scale and decorative light poles and fixtures should be installed throughout Centertown to match the lighting in the downtown. The City Department of Public Works and the DDA can collaborate to help ensure that adequate and attractive lighting is consistently serving both the downtown and Centertown.
- Zoning and other mechanisms should be explored to regulate chain stores seeking to move into Centertown. Centertown lies largely in the Neighborhood Mixed Use district, with portions falling into Old Town and the US-31 frontage in the Commercial district. Concepts to investigate include requiring special land use approval for commercial uses over a certain square footage or only allowing new uses that meet design criteria. The focus should be on requiring that new buildings be configured and designed to reflect the existing patterns in the neighborhood while achieving an economically-sound use. Working with property owners on redevelopment concepts should include consideration of potential brownfield redevelopment incentives for obsolete and/or contaminated properties.

The focus should be on requiring that new buildings be configured and designed to reflect the existing patterns in the neighborhood.

- The Zoning Ordinance can be reviewed and possibly revised with the goal of ensuring greater congruence between the Centertown and downtown districts. Specifically, zoning provisions that require considerably different building setbacks, building placement, and facade design and materials should be evaluated to allow Centertown to retain its unique identity even as new development may take on some of the characteristics of the downtown.
- A comprehensive traffic study is recommended for the Centertown neighborhood to evaluate alternative entries to the downtown, traffic flow and potential traffic signals at such key intersections as Columbus Street and 7th Street.

Consistency. Buildings and the design of the streetscape should be more consistent within Centertown's boundaries.

- The City Department of Public Works should investigate the condition of sidewalks along Elliot, Fulton, Columbus, Franklin and 8th streets and complete improvements necessary to ensure a safe, inviting environment for pedestrians.
- New development in this neighborhood should be consistent with the vision expressed for Centertown in terms of uses, site utilization and parking placement, and building design.

Character Protection. Chain stores and auto-oriented, light industrial uses should be limited and regulated to complement the desired community character. The Neighborhood Mixed Use building and site form standards in the Zoning Ordinance should be reviewed to confirm that the desired building materials, facade treatments, entrance locations, permitted land uses, build-to lines and roof lines are required to ensure the preferred neighborhood pattern. In addition, an expansion of the NMU district to include some portions of Centertown that are included in Old Town or in the Commercial district should be considered.

Screening and Design. Effective parking area and outdoor storage screening is needed.

- Shared parking area entrances should be identified with stone monuments. The monument signage can be funded privately or potentially with grant dollars.
- The City's Zoning Ordinance includes parking area screening standards, but the existing built environment was in place prior to adoption of the Zoning Ordinance and is not reflective of these requirements. In addition to requiring parking area screening for new development, the community should explore methods to fund the planning and installation of effective and attractive screening of parking that would not reduce total parking capacity and outdoor storage.

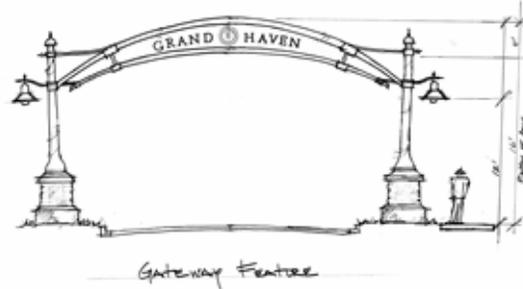
Gateways. Visitors should be drawn to the unique personal services district with well-maintained, character-sensitive and dramatic entries.

- Enhanced gateway features should be installed at 7th Street and Beacon Boulevard; and at Franklin Street and Beacon Boulevard, or at Washington and Beacon as outlined below. This may include overhead archway signage and an expansion of the current nautical display at 7th Street and Beacon Boulevard. Another opportunity would be the replacement of the existing vacant gas station

with a welcome center.

- The traffic signal regulating eastbound Columbus Street traffic at Beacon Boulevard may be timed poorly and should be studied. Access out of Centertown onto Beacon Boulevard should be straightforward so motorists are not discouraged from visiting.
- Northbound traffic on Beacon that desires to enter the downtown is currently routed along Franklin, at the south end of Centertown. This is largely residential in character and this routing misses the opportunity for Centertown to play the gateway role in the community and it also diverts traffic from the “main street” in the downtown area. Consideration should be given to whether this traffic could be diverted to Washington, with appropriate signage and lane marking to direct those looking to park to the lots along Franklin.

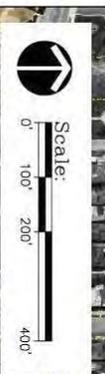
Alternative possible entry features include an overhead arch and/or a new visitor center at 7th and Beacon



Center Town Sub Area Plan

Williams & Works
planning | design | urbanism

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LANDSCAPE ARCHITECTURE, ARCHITECTURE, PLANNING & ENGINEERING



Legend

- Potential Redevelopment Areas
- Sub Area Expansion Locations
- Existing Railroad Tracks
- Potential Traffic Signal
- Streetscape Redevelopment to Match New Downtown Character
- Repair and Enhance Existing Sidewalks and Streetscape
- Sub Area Boundary
- Public Transit Stop / Shelter
- Identify Shared Parking Area Entrances with Stone Monuments
- Entry Signage or Gateway Feature

WASHINGTON SQUARE

CHALLENGES AND ASSETS

The heart of Washington Square is located at Ferry Street and Washington Street. Radiating from the square is a linear commercial corridor along Ferry Street north to Jackson Street. Washington Square includes a diverse land use mix of retail, office, and light industrial. Likely developed around the 1920s, concurrent with the expansion of industrial uses along the Grand River, Washington Square has always served commercial needs at a neighborhood-scale. Supporting the commercial uses was, and continues to be, strong residential neighborhoods from US-31 east to Beechtree Avenue.

With primarily one-story commercial storefronts, Washington Square is modest in terms of scale and architectural style. Several storefronts appear to have undergone façade improvements in the late 1970s and early 1980s to include mansard style roof applications and wood siding, extending beyond the front building line. Behind the facades are the original brick storefronts, display windows, and sign bands beneath brick cornices. An example of the probable look of these commercial storefronts is the former Crescent Theater, at the northeast corner of Ferry Street and Washington Street; an anchor building in terms of scale and potential future land use.

The historic architecture results in a walkable, pedestrian-friendly shopping atmosphere within the commercial node. These assets, combined with a strong and active Eastown Neighborhood Association contribute to the likelihood of retaining key businesses, such as Phaffs Pharmacy and Franks Market, and the potential for redevelopment (including Brownfield redevelopment) along the highly-traveled Ferry Street corridor north towards Jackson Street.

The northern corridor along Ferry Street is distinct from the commercial node at Washington Street. A poorly defined public realm, combined with suburban-style development of deep front yard setbacks and parking in front of buildings, has fostered a more automobile-oriented mixed use area. A cut-through to bypass US-31, Ferry Street experiences high traffic volumes, including truck traffic, which are both assets and challenges for adjacent residential neighborhoods.

The challenge in Washington Square is establishing an identity that draws potential customers from the tourist-oriented downtown area to Washington Square. Identifiable gateways, consistent streetscaping through plantings, street trees, lighting, and banners, coupled with clearly delineated parking areas will help provide the foundation for private investment focusing on revitalization through in-fill development, redevelopment, and façade/structural improvements to buildings.



An example of an applied mansard roof frequently used to update older commercial buildings in the mid 20th century.

The challenge in Washington Square is establishing an identity that draws potential customers from the tourist-oriented downtown area to Washington Square.

Identifiable gateways, consistent streetscaping through plantings, street trees, lighting, and banners, coupled with clearly delineated parking areas will help provide the foundation for private investment

THE PLAN DESIGN AND POLICIES

The charrette process identified several design and policy changes that would enhance the assets of the sub-area and work to overcome some of its challenges.

- **Expand Land Uses.** Expand range of uses to increase flexibility without undermining existing residential neighborhoods.
- **Gateway Improvements.** Provide entry features, such as monuments, sculptures or signage at prominent gateways on Ferry Street and Washington Street.
- **Streetscaping.** Refine and improve streetscaping to help delineate the public and private realm and provide a consistent image along the Ferry Street corridor, the Washington Square commercial node and Washington Street west to US 31.
- **Shared Parking.** Enhance shared parking opportunities through signage.
- **District Expansion.** Expand the area and zoning slightly to the east of the current Washington Square sub-area boundaries.
- **Infill Development.** The immediate Washington Square area (Washington and Ferry) is in need of additional retail space and residential space to diversify the business mix and offer more street-level shopping opportunities. A neighborhood-scale retail anchor is needed east of the Crescent Theater to attract foot traffic east and west along Washington Avenue.

IMPLEMENTATION STRATEGIES AND PHASING

The recommendations developed during the charrette process and outlined in this plan establish an agenda for further action by the City and local businesses.

Expand Land Uses. Amend the zoning ordinance to include certain low-impact, neighborhood-scale commercial uses, such as art galleries and cafes along key street segments as special land uses. Special land use considerations may include:

- Impact to residential uses
- Impact of lighting and noise
- Level of traffic generation
- Availability of parking
- Hours of operation
- Proximity to Washington Square commercial node

Wayfinding and Gateway Improvements. The primary access into Washington Square are connections at Ferry Street and Jackson and Washington Street and US 31. However, the neighborhood is somewhat isolated from these access points and stronger wayfinding markers would help to draw visitors to the area. Wayfinding markers could include signage, landscaping and monumentation. Providing an intense level of streetscape improvements at the actual entries to the neighborhood gives a sense of arrival to motorists and helps to build a “sense-of-place” in Washington Square. Entry features on Ferry north of Fulton, and on Washington about one block east and west of the

...streetscape improvements at the actual entries to the neighborhood gives a sense of arrival to motorists and helps to build a “sense-of-place” in Washington Square.

Washington/Ferry intersection should delineate the approach to the commercial area. Additional improvements in the commercial node itself will be important to further delineate the commercial uses from the nearby residential uses. Decorative street signs, landscaping, and low plantings, especially near the curb-corners provide a more interesting experience for pedestrians and encourage lingering in the primary retail area.

Streetscaping. Develop streetscape plan for Washington Square, which would include recommended street furniture, pavement treatments, lighting, plant materials, and neighborhood identification. A design palette similar to other commercial areas may be used and the common light fixtures used by the BLP would be appropriate. However, some unique features should be incorporated to give the area a distinct identity. This might include banners, container plantings or textured pavement or other elements to add character to the area.

Shared Parking.

- Review any approved site plans for the commercial uses along Washington Street to determine if any shared driveways, shared access or shared parking was approved. If so, verify that such allowances are being respected.
- Work with the Eastown Association to conduct a parking study of the commercial properties along Washington. Determine current uses, hours of operation and reasonable parking demand based on the most recent version of Parking Generation by the Institute of Transportation Engineers compared with the parking requirements and allowances in the Zoning Ordinance. Use the results as the foundation of a discussion with business and property owners about the merits of shared parking for the viability of the commercial district as a whole.

District Expansion. Include the entire Washington Square sub-area, as its own specific land use category in the proposed future land use plan. Such an expansion would include Phaff's Pharmacy along the north side of Washington so that the planning areas and the NMU zoning district have common boundaries that extend about five or six parcels east of Ferry.

Infill Development. Infill development opportunities within the Washington Square sub-area include:

- Infill along Washington to turn one of the three parking lots into a new, 2-story retail/residential building. Locations may include the parking lot located east of Frank's Market which would help to anchor the Crescent Theater at the opposite corner. After parking is better delineated on Washington and Ferry Streets, and the two existing large parking lots become public or private shared lots, there would be sufficient parking to accommodate new infill development. Discussions on new and redeveloped properties should consider potential brownfield redevelopment incentives for obsolete and/or contaminated properties.
- Infill at northwest corner of Columbus and Ferry, in front of proposed teen center.

Washington Square Business Sub Area Site Analysis

Inventory Notes:

- Power lines are located on the east side of Ferry St.
- Sheet pile opportunities exist on the west side of Ferry St.
- Building setbacks on Washington Ave. are consistent



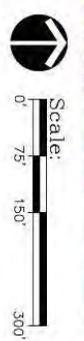
Washington Square Sub Area Plan



Legend

- Sub Area Boundary
- Unified and Enhanced Streetscape
- Subarea Expansion Areas
- Redevelopment Area
- Neighborhood Information Kiosk
- Neighborhood Entry Gateway / Identification Feature

- Future Park Location
- Potential Infill Development Areas



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Engineering Planning Architecture

R. CLARK ASSOCIATES, INC.
Landscape Architecture Planning & Production

BEECHTREE CORRIDOR

CHALLENGES AND ASSETS

The Beechtree Corridor runs north/south from Robbins Road to Fulton Street. The auto-oriented corridor is home to multiple vehicle service businesses, former and existing industrial uses, and a varying array of one story retail buildings. Flanked on both sides by single-family residential neighborhoods, the corridor has a range of challenges and assets.

The nearby wastewater treatment plant and the variety of eclectic building styles and uses present unique challenges to the Beechtree Corridor. The corridor is characterized by a lack of consistent form from one block to the next and, due to the relatively shallow parcel depth, on-site parking is at a premium for many of the business along Beechtree. Some feel a need for more off-street parking through a municipal lot or shared arrangements.

There is a notable contrast between the auto-oriented uses that front Beechtree and the surrounding residential uses. This contrast is emphasized by a lack of a buffer, an abundance of access drives for the commercial uses, and varied building setbacks along the street. Bolt and East Grand River Parks soften the feel of the corridor and act as a green oasis; however they appear to be underutilized. These are not well signed, can be difficult to access, and are not highlighted as principle features along the corridor.

Beechtree's only direct connection to a major road is to Robbins Road at the south end. Traffic is filtered through many of the residential streets possibly reducing the exposure of businesses further north. Additionally, with over 40 curb cuts within nine blocks, there is little connectivity between business parking lots, opposing curb cuts are not aligned, and traffic can become congested and even dangerous.

In 2010 and 2011, the City rebuilt Beechtree Avenue as part of a larger effort to enhance utility and stormwater systems. This reconstruction included the complete reconstruction of the roadway from sidewalk to sidewalk for the segment from Waverly to Fulton. To the south of Waverly, extending to Robbins Road, the watermain replacement entailed a significant improvement of the restored travel surface. The reconstruction of the roadway improved both the streetscape and access control.

Due to the wide variety of land uses, there is little to suggest a unifying identity for the corridor. This, combined with the limited connectivity to other major streets, reduces visibility for potential customers, inhibits residents from finding valuable resources such as parks, and decreases the opportunity for redevelopment along the north section of Beechtree. Finally, the shallow frontage parcels can also inhibit future redevelopment possibilities with inadequate depth to accommodate larger buildings, landscaping and on-site parking.



Many auto-oriented businesses are found on relatively shallow parcels, requiring parking lots and drive lanes to virtually merge with the roadway.

Beechtree's only direct connection to a major road is to Robbins Road at the south end.

The reconstruction of the Beechtree roadway in 2010 for utility improvements presents an opportunity to improve the streetscape and access control.

THE PLAN DESIGN AND POLICIES

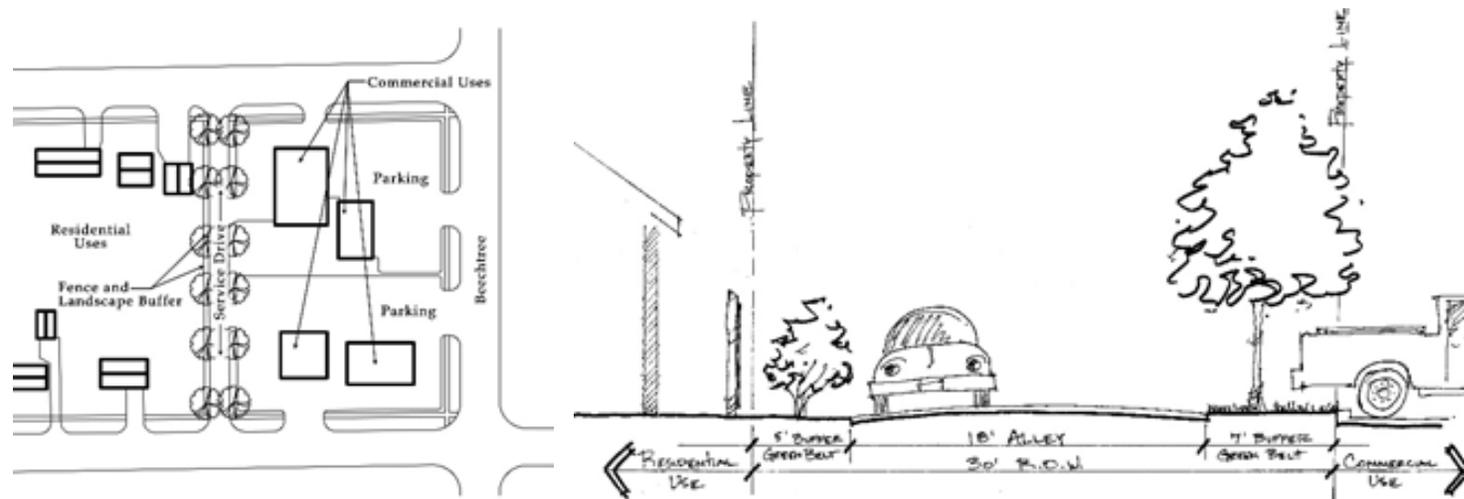
- **Expand Boundaries:** Carefully enlarge the sub-area and zoning to permit reasonable business expansions.
- **Buffers:** Use service lanes as buffers between commercial and residential uses.
- **Parking:** Create shared public parking in East End Park and Sluka Field and in applicable areas along the corridor.
- **Connectivity and Access:** Plan for future access to Jackson at the North End. Evaluate opportunities to combine curb cuts and reduce the number of access points on Beechtree.
- **Way Finding Signage:** Expansion of the City's way finding signage program using a consistent design to help draw people to businesses and community facilities.

IMPLEMENTATION STRATEGIES AND PHASING

District Expansion: Carefully expand the sub-area and Beechtree Zoning District to permit reasonable expansions of commercial uses into adjoining residential. The boundaries of the Beechtree sub-area are based on the existing Beechtree Zoning District. These areas could be expanded to improve connectivity with the surrounding areas but with careful attention to the integrity of the surrounding residential areas. Caution should be taken to recognize unique uses such as the Municipal Wastewater Plant as these uses have characteristics, challenges, and opportunities that may not be consistent with the nearby Beechtree sub-area.

- Expand the boundaries to include the nonresidential properties between Colfax and Waverly on the west side of Beechtree. These properties have gradually become commercial in nature, taking on the characteristics of the adjacent properties on Beechtree. This will also support the redevelopment of the entire area where the evident piecemeal expansion of the past has further limited interconnectivity between properties. Furthermore, an important aspect of any redevelopment project will be a discussion of potential brownfield redevelopment incentives for obsolete and/or contaminated properties.
- Expand the sub-area boundaries to include properties contiguous to those fronting the west side of Beechtree between Columbus and Washington, and Franklin to Slayton, to maintain commercial viability by increasing the depth of the Zoning District.
- The exact boundary lines need to be established in a way to protect the residential character and whenever possible, create a buffer or transition area between the commercial and residential uses.

Buffers: As a way to reduce the impact of expanding commercial uses on the surrounding residential uses, private service drives could be established in conjunction with the limited expansion of commercial sites. The inclusion of hedge rows, knee walls, or similar physical separation would further soften the transition. In addition, the excess degree of access along Beechtree, especially for corner lots, may be reduced by providing alternative service drive access.



Private service drives could be established in conjunction with the limited expansion of commercial sites

- To reduce noise and impacts of the commercial uses along Beechtree, site design standards should require knee walls, hedgerows or larger trees to improve privacy for residential uses adjacent to the commercial uses on Beechtree. These should be large enough to block the views for the building without inhibiting access down the service drive.

Parking: With parking being a concern for many of the residents and business owners, shared parking at East End Park and Sluka Field would decrease the demand for parking at the business locations, promote pedestrian traffic along Beechtree and potentially increase the usage of the parks. This is probably best suited for long-term parking by employees, not for shoppers, however, and it should be located along the easterly portion of these facilities, as close as possible to the business corridor. Furthermore, it must not diminish the function of these facilities for recreation use but may also reduce the demand for on-street parking in the first residential blocks off of Beechtree.

- The City should explore the possibility of creating shared parking between the commercial uses and the parks. The parks are located close enough to the corridor that they would provide easy pedestrian access to businesses and could serve for employee parking, relieving nearby parking requirements.
- The City should work with existing businesses to provide shared parking and allow for flexible parking requirements. When possible, shared parking areas should be designed to take advantage of interconnectivity between businesses, align curb cuts as to not create left turn conflicts, and maintain a character consistent with the entire corridor.

Connectivity and Access: The Beechtree corridor has good connectivity on the south end where it meets Robbins Road but the residential streets, especially to the west of Beechtree, see increased vehicular traffic along the northern sections. At the north end of the corridor, a more direct connection to Jackson and US-31 would help channel traffic away from many of the residential streets and improve exposure for businesses further north, and promote better traffic flow along the entire corridor extending to Beacon Boulevard. A likely increase in traffic that would result will help promote redevelopment possibilities for vacant industrial properties along the north.

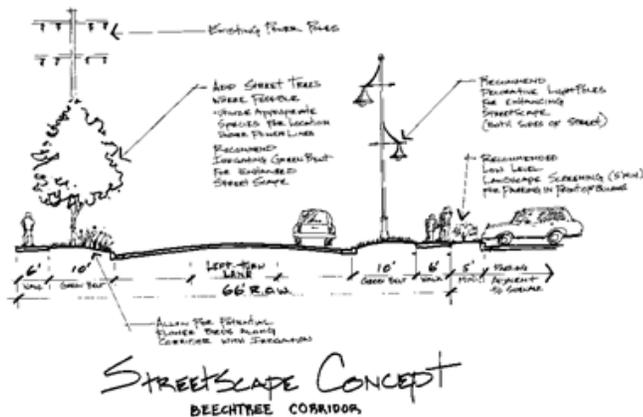
- Such a connection falls outside the sub-area plan boundaries, but is addressed as part of the North Beechtree sub-area plan. One objective should be to promote a preferred route for easy access to US-31. This could improve the visibility of the businesses along the north end of the corridor, promote a transition into the other sub-area, and provide improved development opportunities for properties at major intersections.

With more than 40 driveways and curb cuts, the neighborhood and the roadway would benefit from a selective reduction of points of access, especially at intersections where many properties have an excessive number of access drives. At the same time, planning and providing some new points of access to parking lots and business from the alleys and from the parking lots of adjacent business would improve interconnectivity between business, reduce the need for additional curb cuts, and potentially improve traffic flow throughout the entire corridor. The reconstruction of Beechtree Avenue as part of the underground utility work will offer an excellent opportunity to evaluate curb cuts on a parcel-by-parcel basis and identify those that may be closed to improve access management while protecting the economic interests of abutting businesses.

- Establish unified streetscape features including consistent decorative light posts, tree and streetscape patterns, roadway cross section, crosswalks and landscape standards for the corridor. Again, the reconstruction of the Beechtree roadway utilities offers an important opportunity for strong streetscape improvements.

Way Finding, Streetscape and Signage: One way to improve connectivity along all of Beechtree is with improved signage and way finding systems as part of a streetscape improvement program. The City’s existing way finding program may be expanded to strengthen the prominence of the Beechtree corridor and to direct visitors to parking and community facilities.

- The City should work with the business leaders along the corridor to work within the existing way finding theme to identify important features such as the location of parks, preferable access to US-31, and the location of shared parking.
- Entrances to the shared parking should be made visible with easy to find signage.
- Improved landscaping and street furniture could offer better screening of parking areas, improved pedestrian lighting and help to screen overhead wires.



Explore forming a Corridor Improvement Authority. Act 280 of 2005 authorizes the establishment of a municipal entity with tax increment finance authorities to plan and implement a program of improvement along a defined commercial corridor. The tax increment financing aspects of the act provide a funding source that is locally generated to be used to implement a broad range of public improvements. This could include some or all of the costs of road improvements, improved streetscape, land acquisition, site redevelopment and other related improvements. The tax increment captured by the Authority would include the City levies as well as the levies of other taxing jurisdictions that agree to participate.

Beechtree Corridor Sub Area - North Site Analysis



All parking is in front of the building

Parking with some landscaping screening along the road

Parking behind & on the side of buildings

Cluster of retail buildings on the edge of the sidewalk with parking behind

Older building close to sidewalk

Analysis Notes:
-Predominantly auto oriented land uses, sales services & repair facilities.

-The majority of the buildings are set back off of the road with parking in front (commercial uses)

-Very few parking areas are interconnected or serve multiple parcels

-The majority of the parcels area accessed from Beechtree Road



Bechtree Corridor Sub Area - South Site Analysis



0 60 120 240 360 480 Feet

Beechtree Corridor Sub Area Plan



Legend

- Sub Area Boundary
- Sub Area Expansion Areas
- Shared Parking Areas (To Help Eliminate Excess Curb Cuts)
- Street Trees (Small Trees Under Utility Lines)
- Traffic Signal for Crosswalk
- Potential Improvements to Fulton / Beechtree Intersection
- Enhance and Unify Corridor Streetscape
- Potential Service Drive Locations
- Connect Corridor to Future Development on Properties to the North

Scale:
 0' 150' 300' 600'

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 LANDSCAPE ARCHITECTURE & PLANNING
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NORTH BEECHTREE

The North Beechtree sub-area is located in the northeast portion of the City, immediately north of the Beechtree Corridor along the Grand River. The existing land uses include the former Eagle Ottawa tannery facility (now an RV park), the former Challenge Machinery manufacturing and foundry facility (now home to Glassource Inc. manufacturing and office space), the former Bastien-Blessing foundry (now the boat storage facility) and similar “heavy” industrial facilities. These were traditionally some of the largest employers in the area and a brief history is in order to put the economic and social background of the sub-area in context.

Eagle Ottawa Leather Company has occupied portions of the sub-area since 1868, when Clark Albee completed construction of a new plant on this site. In 1916 the Eagle and Ottawa companies were combined under the name of Eagle Ottawa Leather Company and established a cutsole plant in the former Van Motors building at W 230 North Hopkins Street. In 1926 Eagle Ottawa bought the Hayes Body Company plant at 1301 Fulton Street for use as a cutsole division. By 1927 the company had 500 employees. In November, 1942 Hatton Leather, a local company, bought out the Eagle Ottawa Leather Company and combined operations, but continued the company name. In 1961 Albert Trostel & Sons acquired Eagle Ottawa.

Eagle Ottawa had become a worldwide leader in the manufacture of quality leather upholstery and the largest producer of automotive leather in the United States. The Grand Haven facility performed complete leather processing, from bovine hides through finished leather. Eagle Ottawa also operated Eagle Tanning Co. in Waterloo, Iowa, and Pierpoint & Bryant, Ltd., in Warrington, England. These plants processed hides only through the first two stages of production. The hides were then shipped to Grand Haven to complete the processing.

In 1961 the facility had over 330,000 square feet of manufacturing and support space on 17 acres. Over a 10-year period, Eagle Ottawa had invested more than \$20 million in building improvements and equipment. In the last five years, production had increased 75 percent. With up to 800 employees, Eagle Ottawa was Grand Haven’s largest employer, and one of the largest in West Michigan. A long-standing company objective was to reduce the environmental impact of its operations. Eagle Ottawa was a world leader in developing new technology and processes that continually reduced manufacturing emissions into the water and air.

The company remains active in upholstery production worldwide, but ceased operations at the Grand Haven plant in 2007. In 2014, the site was redeveloped to house an RV resort for campers and visitors to the area.

1400 Fulton Avenue. Most recently known as Fricano’s Pizza Tavern, this two-story frame building originally served as a boarding house for factory workers. Known in its early days as the Fulton House and then as Ottawa Tavern, the business opened in this location in 1910. The tavern was on the first floor, and hotel rooms were available on the upper floor. The building was one of several moved by Eagle Ottawa from downtown Grand Haven to this neighborhood to house hundreds of employees hired

A brief history is in order to put the economic and social background of the sub-area in context.

to work at the tannery.

Challenge Machinery Company broke ground on a 55,000 sq ft facility on February 1, 1903, on a nine-acre site at 1433 Fulton for a new manufacturing business. It started with about 30 employees and manufactured printers' equipment and precision parts along with a grey-iron foundry. The Challenge Machinery Company was recognized as one of the world's largest manufacturers of printing machinery and accessories, as well as the leading producer of precision surface equipment for the machine industry. From the beginning, the chief products of Challenge were machinery and equipment for the printing industry. In 1907, management added an on-site foundry so that paper cutters could be made from start to finish at the same facility. In 1970, the Challenge Machinery celebrated its 100th anniversary of continuous operation. The building was renovated in 2014 to accommodate Glassource Inc., a local glass fabricator, and the remaining building at the corner of Beechtree and Fulton Streets is being renovated into office space for a local construction company.

Fountain Specialty Company/Bastian Blessing Company was induced by the Grand Haven Board of Trade in 1910 to move from Indiana to Northwest Ottawa County. The company specialized in producing soda fountain fixtures and accessories. Nash, originally of Chicago, in 1918 helped bring about a merger of Fountain Specialty with Bastian-Blessing of Chicago. Combining the companies resulted in 75,000 sq. ft. of manufacturing space, making the new firm the world's largest producer of soda fountains and food service equipment at that time.

Grand Haven Brass Foundry was started by William Zoerner in a barn at 507 Monroe near Sixth Street. The Grand Haven Brass Foundry was taken over on February 20, 1919 by Alvin E. Jacobson I and Paul Johnson I. On December 23, 1919 the plant burned down for a total loss. The Cut Sole Plant at 230 North Hopkins Street was immediately purchased from the Eagle Ottawa Leather Company and construction began January 1, 1920. The company employed six persons with an original floor space of 2,000 sq. ft. making toilet seat hinges, plumbers' brass goods, automobile brass parts, brass, and aluminum castings. In 1927 Jacobson and Johnson bought out two metal working plants, Grand Haven Stamped Products and one in New Jersey. In 1965 the company, with its modern foundry and machine shop was considered one of the largest in the brass goods field. Diversification of products was the backbone of the firm. The firm produced a wide variety of plumbing brass goods, castings, and electrical service fittings, along with castings and fittings for water services, water softeners and water meters.

Unlike many waterfront industrial areas in the Midwest, this area is not characterized by insurmountable environmental challenges.

CHALLENGES AND ASSETS

Clearly, the strong industrial heritage is represented in the remaining structures in the sub-area and in some of the remaining uses. Its remnants can also be found in the soils and groundwater, but unlike many waterfront industrial areas in the Midwest, this area is not characterized by insurmountable environmental challenges that might inhibit a transition to other uses.

In terms of location, the sub-area separates commercial uses from marine and waterfront uses

along the river and suburban service and commercial uses to the west. The municipal wastewater treatment plant is located immediately to the southeast of the sub-area and a fairly stable residential neighborhood contains the sub-area directly to the south.

Thus, the North Beechtree sub-area plays a transitional role in the community, in a variety of ways. Land uses in the sub-area are in transition as the older plants and facilities either find new uses or are removed in favor of new development. The location of the sub-area is characterized by the transition from the commercial Beechtree Corridor to waterfront uses to the north and regional commercial to the west. Many property owners see greater potential in the area if it is allowed to capitalize on its waterfront location by shifting toward residential and commercial land uses. The Zoning Ordinance recognizes this aspect of the area by placing it in the Transitional Industrial zoning district. Finally, as the area's economy adjusts to new market realities, there is a potential that this sub-area may play a role in the transition of the local employment base.

This transitional nature creates both challenges and opportunities for the area, and this is embodied in the existing built environment. Many of the older industrial buildings are structurally or architecturally significant. As is common in older industrial areas, some environmental contamination is likely present. This may inhibit reuse but it can also result in brownfield redevelopment incentives that would not otherwise be available. The area is still home to many viable industrial, warehouse or heavy service facilities and may provide ideal conditions for start-up businesses. Taking advantage of the nearby waterfront, boat storage and marine service businesses are expanding, providing new investment, but consuming large portions of the sub-area in relatively lifeless development patterns.

In addition to the form and function of the existing buildings, the area is challenged by traffic and connections to the larger community. North-south traffic on Beechtree Road must find its way through the sub-area to connect to Jackson Street and eventually to US-31 to the north and west or to Robbins Road to the south. The preferred route (Beechtree-Fulton-Griffin-Jackson) includes three 90-degree turns in relatively close proximity to existing buildings. This slows traffic and can result in congestion at these intersections.

Since the nearly ½ mile of Grand River frontage has been privately owned for a number of years, public access to this important community asset has been denied. Beyond access to the river, the area also lacks good pedestrian and non-motorized connections to the remainder of the community. Certainly there are sidewalks along most roads, but there is a strong desire to offer greater accommodation for bicycle travel which is not readily addressed. The high volume of truck and commercial traffic that must use the Beechtree-Fulton-Griffin-Jackson route makes this a poor location for cycle travel. Steps were taken when the RV park was approved to provide pedestrian facilities along the waterfront, and the property owner was receptive at the time to consider allowing public access through the RV park.

The North Beechtree sub-area plays a transitional role in the community, in a variety of ways.

IMPLEMENTATION STRATEGIES

Waterfront Features. This capitalizes on the Grand River frontage with the establishment of a linear park. Conceptually, this would include walking and bicycle trails, including a trail loop in the wetland area north of the boat storage buildings. There are several potential locations for pavilions and overlooks and the trail network would be connected to sidewalks along the northerly extension of Beechtree and to the existing sidewalks south of Fulton.

An important feature of this plan is the potential for a new boat launch facility at the southeast corner of the site. This area adjoins the Wastewater Treatment Plant and, as such, it is not a place people would normally desire to linger, but it can function for the transitory use of launching and retrieving a boat.

Streetscape Improvements. In addition to streetscape improvements on the northerly extension of Beechtree, this area would benefit from the addition of street trees along Fulton and Griffin to make this primary access route as attractive as possible. There are numerous trees along portions of the Fulton Street frontage, but the Griffin Street streetscape is dominated by hard surface with broad parking areas and driveways. A detailed landscape plan for this area must take into account the needs of the existing businesses and the light industrial and heavy commercial/service nature of the uses. However, it is possible that in many locations this “hardscape” can be improved without unnecessarily encumbering the businesses there.

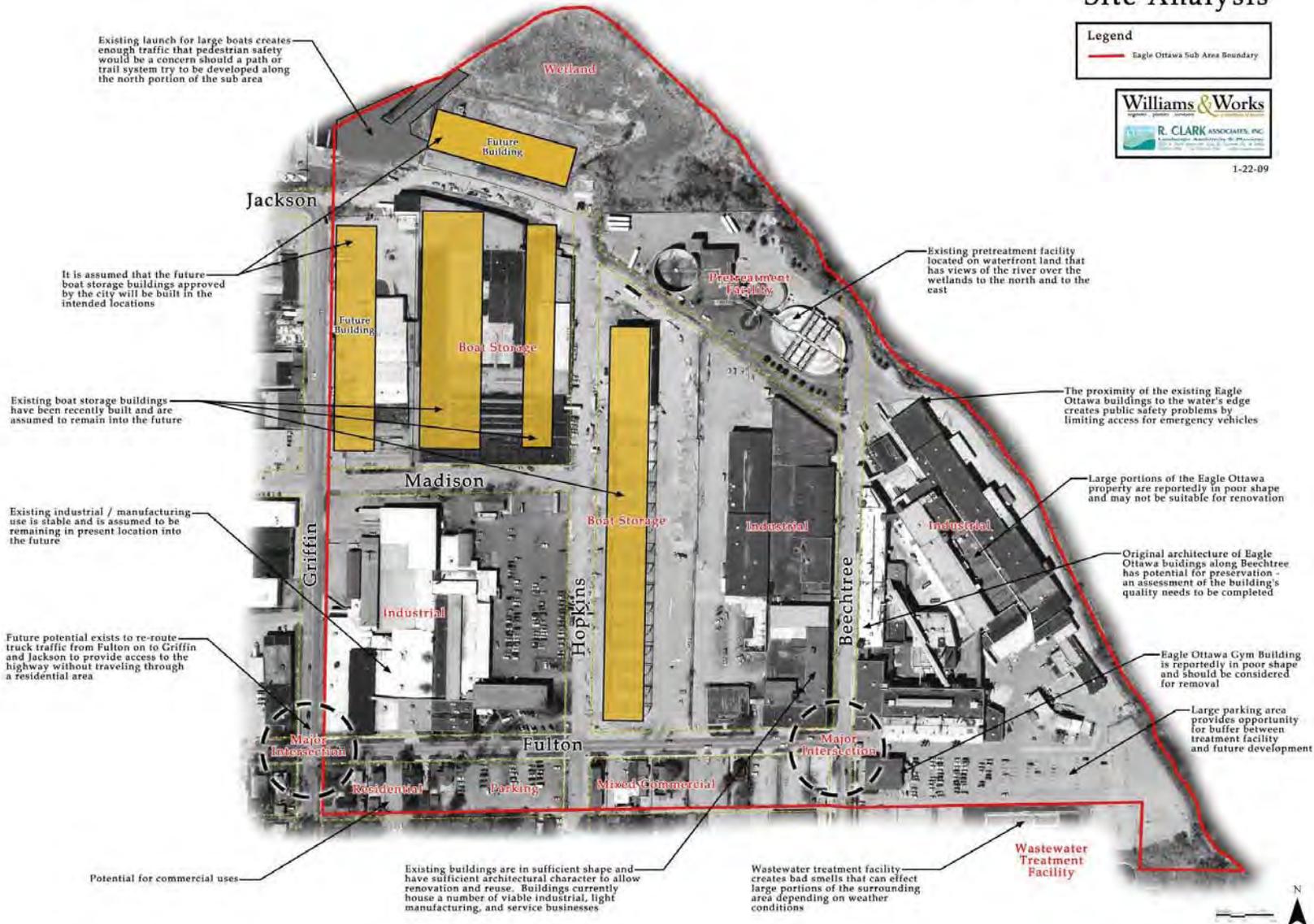


The concept envisions the reuse and renovation of portions of the facility as well as new construction of a small campus of institutional or office buildings, a public waterfront park, boat launch and a wide mix of uses.

North Beechtree Sub Area Site Analysis

Legend
 Eagle Ottawa Sub Area Boundary

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 1-22-09



Existing launch for large boats creates enough traffic that pedestrian safety would be a concern should a path or trail system try to be developed along the north portion of the sub area

Wetland

Future Building

Jackson

It is assumed that the future boat storage buildings approved by the city will be built in the intended locations

Future Building

Boat Storage

Existing boat storage buildings have been recently built and are assumed to remain into the future

Pretreatment Facility

Existing pretreatment facility located on waterfront land that has views of the river over the wetlands to the north and to the east

The proximity of the existing Eagle Ottawa buildings to the water's edge creates public safety problems by limiting access for emergency vehicles

Madison

Boat Storage

Existing industrial / manufacturing use is stable and is assumed to be remaining in present location into the future

Industrial

Industrial

Large portions of the Eagle Ottawa property are reportedly in poor shape and may not be suitable for renovation

Griffin

Industrial

Original architecture of Eagle Ottawa buildings along Beechtree has potential for preservation - an assessment of the building's quality needs to be completed

Future potential exists to re-route truck traffic from Fulton on to Griffin and Jackson to provide access to the highway without traveling through a residential area

Hopkins

Beechtree

Eagle Ottawa Gym Building is reportedly in poor shape and should be considered for removal

Major Intersection

Fulton

Major Intersection

Large parking area provides opportunity for buffer between treatment facility and future development

Residential

Parking

Mixed Commercial

Potential for commercial uses

Existing buildings are in sufficient shape and have sufficient architectural character to allow renovation and reuse. Buildings currently house a number of viable industrial, light manufacturing, and service businesses

Wastewater treatment facility creates bad smells that can effect large portions of the surrounding area depending on weather conditions

Wastewater Treatment Facility



North Beechtree Sub Area Plan

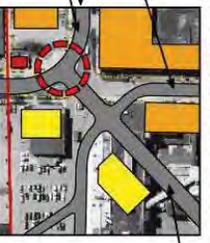
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- Legend**
- Sub Area Boundary
 - ← - - - Future Pedestrian Connections
 - ⊖ Intersection Improvements
 - ✳ Gateway / Entrance Features
 - Existing Buildings to Remain
 - Future Boat Storage Buildings
 - Future Buildings
 - Park Areas
 - Parking Areas
 - Existing Sidewalks
 - Pavillion in Public Space
 - Street Trees

Alternate Beechtree Fulton Intersection



3 Lane Angled Access Road Into New Development With Dedicated Left Turn Lane

Gallery Walk Between Renovated Buildings

Flatten Existing Curve

Fulton

Beechtree

DOWNTOWN

The following paragraphs present a summary of the Downtown Vision Plan developed by the City in 2004. The reader is referred to the text of the original plan for a full presentation of its findings and recommendations. However, this summary is presented here to incorporate the Downtown Vision Plan as a part of this Master Plan.

The Downtown Vision Plan focused on an area of approximately fifteen blocks centered on Washington Avenue and extending from Sixth Street to Harbor Drive. This area incorporates the traditional “downtown” of Grand Haven, but the study also considered the “Hilltop Neighborhood” which is comprised largely of the civic uses surrounding central park, the waterfront (see below), Centertown and the Old Town neighborhood. The planning process involved a steering committee comprised of downtown business owners, economic development professionals and City officials. It also took into account earlier efforts including the Hyatt-Palma Downtown Blueprint of 2003 and a downtown traffic and parking study conducted by Wade-Trim.



CHALLENGES AND ASSETS

The Downtown Vision Plan identified many key elements of the neighborhood that will affect future growth and development. These are summarized and paraphrased below:

- The proposed Grand Water development (now Grand Landing) will be an important anchor to the northern portion of the downtown coherently integrated with the Central Business District along Washington and with the adjacent Old Town neighborhood.
- One of the challenges and opportunities for revitalizing downtown Grand Haven will be attracting more of the US-31 traffic to the downtown.
- Both public leadership and private capital will be needed to transform deteriorated public infrastructure and under-performing private properties.
- There needs to be stronger visual and physical connections between the Grand River waterfront and the Downtown, especially at the Washington Ave and Harbor Drive intersection.
- Under-developed portions of the downtown include the northeast corner of Washington and Harbor and the Stanco property.
- Public infrastructure includes a wide variety of street and sidewalk surfaces, uncoordinated plantings and tired street furniture.
- Vacant lots and un-utilized upper story spaces undermine the vitality of the downtown.

THE PLAN DESIGN AND POLICIES

The Downtown Vision Plan calls for a number of policy shifts and it suggests several design improvements for the Downtown. The following are selected policies (or vision) statements excerpted from the Plan:

- Washington Avenue is the heart of Downtown Grand Haven and contains great vitality and also great potential for improvement. Both public and private leadership and capital will be needed to transform deteriorating public infrastructure and under-performing private properties into more desirable Downtown assets.

Key opportunities for the Downtown District include:

- Washington Avenue at Harbor Drive Intersection
- First and Second Street Corridors
- Alley Improvements and Mid-block Access
- Beautification
- Infill Opportunities

Strengthen Washington Avenue through a coordinated, comprehensive program of new public and private sector improvement projects, revitalized and new business ventures, and infill projects which increase vitality, raise community spirit, and increase the tax base of Downtown.

- Add new building(s) containing a mix of retail and residential uses in order to create a stronger connection with Harbor Drive and intensify the physical continuity along Washington Avenue; add components which create public gathering spaces and foster the year-round appeal of Downtown.
- New, mixed use projects including residential, lodging, and supportive retail and service businesses. There are also important, complimentary infrastructure improvements to be undertaken to the street, sidewalk, and utility systems.
- Update and freshen public street and sidewalk finishes in a comprehensive program. Similarly, improve street trees and consider adding flower planters with irrigation to the street. Provide clear wayfinding signage directing visitors to parking locations, the waterfront, and other key areas in the Downtown District. Improve sub-surface utilities to serve robust redevelopment.
- A vibrant retail business district characterized by full store fronts and complementary businesses. A vital upper floor environment, which includes service businesses and residences, adds depth and market opportunities to the entire district.
- Enhance the “jewel of the community” through improved public access and usability, protection of key views and vistas, additional residential, lodging, and commercial re-development project opportunities.

QUALITIES OF THE VISION

The Downtown Vision Plan articulates an attractive future for the vital heart of the City. In addition to the graphic elements of the plan, the text describes the future vision with the following qualities:

- **Authenticity:** Projects should be true to Downtown Grand Haven, with unique, one-of-a-kind, solutions to particular design and marketing opportunities. Projects should celebrate the roots of the community; including its extraordinary natural assets and Great Lakes cultural history.
- **Family Focus:** Downtown and its events should be attractive to both local and visiting families. Projects should be personal and intimate in scale and provide safe walkable conditions.
- **Quality Outcomes:** Down town should foster and encourage quality developments that provide long-term stability and lasting value to the community as reflected in their design, choice of construction materials, and integration with the rest of Downtown.
- **Smart Development:** Projects should have synergetic qualities that strengthen Downtown as a whole. They should address the public street and sidewalk and encourage an overall healthy mix of businesses and activities. Each individual project should reinforce the Vision and Framework of actions and projects.

IMPLEMENTATION STRATEGIES

The Downtown Vision Plan was more than an effort to express a vision for the core of the community. An important part of the plan is the Strategic Work Program Matrix, which is reproduced on the following page. The matrix identifies 42 projects or programs intended to advance the vision and establish a timeline, assign responsibilities and set forth priorities for their implementation.

Grand Haven Strategic Work Program Matrix

KEY	AREA	PROJECT	IMPORTANCE	TIMEFRAME			PUBLIC RESPONSIBILITIES				PRIVATE RESPONSIBILITIES				APPROVALS			FUNDING OPPORTUNITIES			PROJECT
				Plan/Design	Implement	CBD/DA	TaskForce	CityMgr	Plan/Dev	Other	County/ State/ Federal	Property Owner	Downtown GrandHavenInc.	Other	City Council	Plan, Comm.	Harbor Bd.	Other...	Public	TIF/SA	
Importance																					
1	1. Catalytic/Very Important																				
2	2. Very important																				
3	3. Important																				
Time Frame																					
1	1. Now																				
2	2. Soon: 1 - 3 years.																				
3	3. 3 - 5 years																				
4	4. Ongoing/As Available																				
5	5. Under Construction																				
6	6. Complete																				
Responsibilities																					
1	1. Lead or Coordinating																				
2	2. Key Participant																				
3	3. Task Force Opportunity																				
Other / Private Responsibility																					
LF - Loutit Foundation																					
CC - Chamber of Commerce																					
VB - Visitors Bureau																					
CF - Community Foundation																					
AC - Arts Council																					
OTNA - Olde Towne Neighborhood Asso																					
Other / Public Responsibility																					
DPW - Public Works																					
BLP - Brd. Of Light and Power																					
P - Parks																					
CS - Community Services																					
PS - Public Safety																					
HB - Harbor Board																					
■	Significant Involvement																				
Downtown District																					
<i>Washington / Harbor Drive Intersection</i>																					
2	4	4				1	DPW													Washington / Harbor Drive	
1	4	4				1	DPW													Expand green and open space	
2	4	4				1	P													Eliminate / minimize intrusions	
1	1 or 2	2		3	2	1	DPW													Create more gathering places	
1	1 or 2	2																		Redesign intersection to make more pedestrian friendly	
<i>First and Second Street Corridors</i>																					
2	2	2	2		2	1	DPW					LF / CF								First and Second Street	
1	2	2	2			1					1									Beautification program	
2	2	2	2			1	DPW / P													Infill projects	
2	2	2	2			1														Gateway enhancements (see below)	
2	2	2	2			1														Improve integration w/ Downtown	
1	1 or 2	2	2		2	1		MEDC		1		CC								Stanco property re-development	
<i>Beautification</i>																					
1	1	2	1	3	2	1	DPW					LF / CF								Beautification	
2	1	2	1		2	1	DPW					LF / CF								Street landscape program	
1	1	2	1		2	1	DPW					LF / CF								Street furniture	
2	1	2	1		2	1	DPW / BLP					LF / CF								Flowers / planters	
1 or 2	1 or 2	3	1		2	1	DPW/BLP/PS					LF / CF								Light fixtures	
2	1	2	1		2	1	DPW / CC					LF / CF								Traffic signals	
1	1	2	1		2	1	DPW													Banners / flags / poles	
		2	1		2	1	DPW / CS					LF / CF								Ground surfaces	
		2	1		2	1														Snowmelt system	
<i>Infill Opportunities</i>																					
1	4	4				2				1										Infill Opportunities	
2	4	4				2				1										One-story buildings	
2	4	4				1 or 2				1										Vacant / Underutilized bldgs.	
3	4	4			2	1	DPW			1										Vacant / Underutilized lots	
		4																		Parking lots	
<i>Alley Improvements and Mid-block Access</i>																					
2	1 or 2	2	2	3		1	DPW													Alley Improvements	
2	1 or 2	2	2			1	DPW													Surface / beautification	
2	1 or 2	2	1			1														Underground utilities	
2	1 or 2	2	1			1														Trash / enclosures	
2	1 or 2	2	2			1														Rear entrances program	
<i>Parking Lots</i>																					
2	2	2	2		2	1	DPW													Parking lots	
2	2	2	2		2	1	DPW	County												Configurations / nos.	
2	2	2	2		2	1	DPW													Signage / function	
1	1	1	1		2	1														Beautification	
		1																		Resident parking opps	
<i>Gathering Places</i>																					
3	4	4	2	3		2				1										Gathering Places	
2	4	4	2			1 or 2	DPW / P			1										Intra-block passages	
1	2	4	2			1	CS													Pocket parks	
1	1	2	2		2	1	CS													Corner lots/Harbor	
		2	2																	Stadium (see above)	
Hilltop Neighborhood																					
<i>Enliven Central Park</i>																					
2	1 or 2	2	2			1	DPW / P					CF								Enliven Central Park	
2	1 or 2	2	2			1	DPW / P					CF								Consider stage, gazebo....	
1	1 or 2	2	2		2	1	DPW / P					AC / CC								Add benches, picnic tables.	
2	1 or 2	2	2		2	1	P	County				AC / CC / VB / CF								Encourage public use	
		2	2																	Community input on changes	
<i>Encourage new / infill projects</i>																					
2	1	2	2		1	2		County												Encourage new / infill projects	
1	1	2	2		1	2	CS													Ottawa County court expansion	
1	1	2	2		1	2														Re-vitalization of Comm. Center	
2	1	2	2			2														Re-vitalization/repurposing of Lib.	
3	2	3				1														Re-use of Council on Aging	
		3																		Study corners for re-devel. opps	

of the riverfront, proximity to the downtown and offer informal seating for the Musical Fountain attraction.

- There is an opportunity to expand waterfront activity and usage beyond the summer months to include the “shoulder seasons” increasing commercial and recreational use through most of the year.

THE PLAN DESIGN AND POLICIES

The Waterfront Strategic Plan calls for a number of policy shifts and implementation strategies to advance its vision. The following lists represent selected strategies excerpted from the Plan, however, the reader is directed to the entire plan document for a complete presentation of this material:

1. Principals and Goals

- Revitalize the Entire Waterfront Area
- Enhance Public, Green and Open Space
- Promote Recreation and Health
- Expand Year-round Capacity and Appeal
- Strengthen the Economic Mix
- Develop Appropriate Building Character and Scale
- Protect and Strengthen Connections to the Water
- Strengthen the Appeal to People of All Ages
- Protect Dewey Hill
- Express the History, Heritage and Ecology
- Develop Appropriate Infrastructure and Facilities

2. Public Leadership

- Complete Recommended Rezoning
- Develop Building, Street and Park Design Guidelines
- Take Steps to Encourage and Enable the Private Sector

3. Public Sector Projects

- Waterfront Stadium Redesign
- Depot Relocation or Rehabilitation
- Waterfront Center
- Harbor Drive Improvements
- Landscape Changes
- Parking Capacity and Utilization Improvements and Driving Alternatives
- Public Art and Memorials
- Musical Fountain
- Ice Skating and Ice Sculptures

- Small Boat Launch Facility
- Improved Children’s Play Area
- Enhance the Farmer’s Market
- Information/Interpretation Kiosks

4. Private Sector Projects

5. Public/Private Cooperation

Goals. The Waterfront Strategic Plan included four broad goal (or “vision”) statements that present a compelling image of the desired future for the Grand Haven Waterfront:

- The east side of Harbor Drive will be considered the “front porch” of the community and new building designs will gracefully embody the transition from private neighborhoods to the public “front yard” overlooking the Grand River.
- Throughout the central waterfront area, the community will foster the perpetual improvement of the established ribbon of green and open space that adorns the water’s edge.
- For generations to come, the waterfront will be an inviting respite, a place for celebration and a constant fixture for citizens of all ages to view and appreciate the impressive panorama of Michigan’s grandest river.
- Over time, this public open space will increasingly reflect our local civic spirit and symbolize our commitment to environmental and community stewardship.

APPENDIX B. COASTAL PROCESSES DOCUMENTATION

This appendix is a guide to the coastal dynamics present in the Grand Haven Community. It expands on the information presented in Chapter 10 of this Master Plan and includes an overview of the regulation that applies to Grand Haven shorelines and results from the research study conducted by the University of Michigan project teams. It is useful for professional planning staff, local officials, and the public in the Grand Haven Community.

This Appendix includes:

1. Overview of The University of Michigan Project
2. Government Regulation of Coastal Shoreline Resources
3. Research Framework and Key Methods

In an effort to make planning decisions based on known information about the Great Lakes systems, a project team from the University of Michigan has collaborated with LIAA, with funding from the University of Michigan Water Center, to identify and analyze hazard areas and work with community groups to plan for better coastline management. The multi-disciplinary project team has integrated scientific knowledge and research with local planning processes in Grand Haven Charter Township and the City of Grand Haven.

Multi-disciplinary project team. The project team includes University of Michigan researchers and community planning staff from LIAA. The Principal Investigator is Richard K. Norton (UM Urban and Regional Planning). Co-investigators include Maria Arquero (UM Urban and Regional Planning); Jennifer Maigret (UM Architecture); Guy Meadows (Michigan Tech Great Lakes Research Center); Paul Webb (UM School of Natural Resources and Environment); Lan Deng (UM Urban and Regional Planning); Zach Rable (UM Research Associate)

Funding overview. Funding for the project came from the University of Michigan Water Center and the Michigan Department of Environmental Quality's Coastal Zone Management Program. The local governments of the City of Grand Haven and Grand Haven Charter Township also provided a local match.

Research questions and scope of work. The project sought to answer several key questions. First, what data is readily available for coastal planning, and how well does this data reflect current and future climate conditions? Second, does increasing access to coastal research help local jurisdictions plan for coastal changes? These questions are addressed using a scenario planning framework. Environmental and land use ramifications of increased flooding are considered.

The project team chose the jurisdictions of the City of Grand Haven and Grand Haven Charter Township as candidates for this work. LIAA's ongoing work with the *Joint Planning Commission* and the dynamic

coastline in each community made the Grand Haven community a strong partner for this research. Over the course of 18 months, the project team held several meetings with the Grand Haven *Joint Planning Commission* and was present for the Leadership Summit. The project team also held several public meetings to better inform the research and communicate progress.

GOVERNMENT REGULATIONS

Federal, state, and local policies play an important role in shaping land use and development along the shoreline. Here, the Federal Emergency Management Agency's National Flood Insurance Program is discussed, in addition to Michigan policies to protect wetlands, High Risk Erosion Areas, Critical Dune Areas, and the shoreline. Possible actions local governments can take to supplement state and federal regulations are outlined as well.

FEDERAL: NATIONAL FLOOD INSURANCE PROGRAM

The National Flood Insurance Program (NFIP) is an optional program from which communities can receive flood insurance for disaster relief by agreeing to regulate development in the floodplain. The NFIP was created in 1968 under the National Flood Insurance Act. The NFIP is currently administered by FEMA and has four major goals:

- To charge flood insurance premiums to private property owners, ensuring taxpayers do not bear the sole burden of private property flood losses
- To provide residents with aid after flooding
- To guide development away from hazard areas
- To require building construction to minimize or prevent flood damage

Flood Insurance Rate Maps. The floodplain must be locally regulated to qualify for the NFIP, but Flood Insurance Rate Maps. The floodplain must be locally regulated to qualify for the NFIP, but FEMA defines what land is considered eligible in a floodplain for the NFIP. Floodplains are mapped in either a Flood Hazard Boundary Map (FHBM) or, more commonly, a Flood Insurance Rate Map (FIRM).

FIRMs are created and released by FEMA. FIRMs are generated for various return periods, like the 50-year storm, 100-year storm, and 500-year storm.¹ It is important to note that individual property owners can petition to change the flood zone designation for their property, so FIRMs may not be fully derived from scientific analysis.

The FIRMs for Ottawa County were adopted in 2011 by the City of Grand Haven and Grand Haven Charter Township.

In 1973, the Flood Disaster Protection Act was passed, which penalized communities that did not participate in the NFIP by limiting federal money to acquire floodplain property available to non-participating communities. This act also mandated buildings in floodplains must have flood insurance

¹FEMA (2013). Great Lakes Coastal Flood Hazard Studies. Web. Accessed July 2015.

coverage in order to receive any federal financing, loans, or disaster relief.²

Community Rating System. In 1994, the Community Rating System (CRS) was added to the NFIP through the National Flood Insurance Reform Act of 1994. The CRS offers discounts in the premium a property owner must pay if a community's floodplain management exceeds the minimum NFIP regulations. A community can receive credit toward premium reductions by educating the public, increasing mapping and regulation, reducing flood likeliness by relocating and retrofitting flood-prone structures, maintaining drainage systems, and creating flood warning and response programs. Currently, 22 Michigan communities participate in the CRS.³ The City of Grand Haven does not currently participate.

Local Government Role. A participating community has a number of responsibilities to remain compliant with NFIP regulations. These include monitoring floodplain development and building permits, inspecting development, maintaining records, revising and assisting in floodplain mapping, and providing information to the local public about the requirements of the program. Once a community's FEMA region releases updated FIRMs, a community has a period to review and appeal the drafted map. After that point, the community has six months to adopt the new FIRM through an ordinance.⁴

GREAT LAKES COASTAL FLOOD STUDY

In 2010, FEMA and the United States Army Corps of Engineers (USACE) began the Great Lakes Coastal Flood Study. The project seeks to update existing FIRMs to account for revised lake levels, wave setup, and wave energy. The process to create the drafted maps differs significantly from the process to create existing FIRMs. The existing FIRMs are determined using event-based modeling, where the projected flooding impacts are derived from a selected historical storm.⁵ The updated approach is statistically based, where the influences of wave energy and wave setup are modeled using refined 100-year lake level elevations provided by the USACE.

The Great Lakes Coastal Flood Study is scheduled to release maps for public comment and adoption in 2016. Preliminary draft maps are available for Ottawa County and are used in the analysis further described in this chapter.

Local Opportunity. Both Grand Haven jurisdictions participate in the NFIP. The City of Grand Haven joined the NFIP in 1978 and the Township followed in 1981. Since that time, each jurisdiction has submitted claims as seen in Table B.1. The City has received over \$309,000 for 19 claims.

Under the Community Rating System, the Grand Haven community can receive credit for implementing several of the changes recommended in this report (see recommendations at the end of this chapter). As times of high intensity waves and inundation are Expected to increase, the Grand Haven Community might consider making changes to zoning ordinances, building codes, and other

² FEMA (2005). Floodplain Management Requirements: A Study Guide and Desk Reference for Local Officials. Web. Accessed July 2015.

³ FEMA. <https://www.fema.gov/media-library/assets/documents/26319>

⁴ Ibid.

⁵ FEMA (2013). Great Lakes Coastal Flood Hazard Studies. Web. Accessed July 2015.

policies to better manage floodplain development. Additionally, NFIP flood insurance premiums are rising nationwide, as storms increase and payouts rise.⁶ Participating in the CRS is a proactive approach to keeping costs low while protecting both man-made, and natural, resources near the shoreline.

Table B.1 NFIP Claims

	Total Number of Claims	Total Value of Claims
Grand Haven Charter Township	17	229,374
City of Grand Haven	19	309,623
Ottawa County	255	2,562,999
Statewide	11,183	66,748,379

Source: <http://bsa.nfipstat.fema.gov/reports/1040.htm#26>; current as of April 2015

WETLANDS

BENEFITS OF COASTAL WETLANDS

Wetlands help to reduce flood damage by absorbing flood water and then slowly releasing it. One acre of the typical wetland is able to absorb one million gallons of water,⁷ protect adjacent and downstream land from damage,⁸ and slow the speed of flooding across an area.⁹ The storage capacity of a specific wetland varies by its size, slope, type of vegetation, location relative to the flooding path, and water levels in the wetland prior to flooding.¹⁰ Coastal wetlands also alleviate the severity of erosion along a shoreline during a storm.¹¹ Perhaps more than any other environmental asset, wetlands buffer the coast by absorbing high energy waves and disrupting the flow of currents.¹²

EXISTING REGULATION FOR WETLANDS

The Clean Water Act of 1972 mandated permits be granted for development on regulated wetlands. This federal act gives the United States Army Corps of Engineers (USACE) the authority to grant permits to build on regulated wetlands, with the Environmental Protection Agency (EPA) having the authority to veto permits issued to fill wetlands. The Michigan Department of Environmental Quality (MDEQ) is the co-administrator of the permitting process, sharing joint regulation with the Army Corps of Engineers.¹³ Michigan was the first state, and is one of only two states, to assume a role in the permitting process for wetlands.¹⁴ Here, the MDEQ issues a permit to build on wetlands if the applicant meets qualifications. Permitting decisions are subject to public comment, including those made by local

⁶ EDEN Inc. (201v4). Flood Premiums Rising Dramatically. Web. Accessed July 2015.

⁷ Environmental Protection Agency (2001). Functions and Values of Wetlands: Wetland Fact Sheet. Web. Accessed July 2015.

⁸ Ibid.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ardizzone, Katherina A. and Mark A. Wyckoff, FAICP. Filling the Gaps: Environmental Protection Options for Local Governments, 2nd Edition. 2010.

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

governments.

A property owner must obtain a permit from the State before building on a regulated wetland. A wetland is regulated if it:¹⁵

- Is connected to or within 1000 feet of a Great Lake shoreline
- Is connected to or within 500 feet of an inland lake, pond, or river
- Is equal to or greater than 5 acres in size
- Is essential to the preservation of the state's natural resources, as designated by the MDEQ

Michigan has coastal, forested, and shrub wetlands, each inundated with water either all or part of the year.¹⁶ The function and diversity of wetlands was misunderstood as European settlement began, and many wetlands were dredged, drained, and converted to serve industry and agriculture.¹⁷ Today, less than half of the state's wetlands remain, and in a time of changing climate, the need to conserve and restore wetlands is paramount.¹⁸

Wetlands face a number of challenges related to climate variability:

- Rising water levels will actually increase the number of naturally occurring wetlands on low-lying uplands. However, wetlands cannot expand where structures like bulkheads, dikes, and other structures block their advance.¹⁹
- As precipitation and storminess increase, runoff water and draining can increase sedimentation and nutrient input in wetlands. This can lead to algae blooms and invasive species.²⁰
- Consistent high water levels endanger vegetation and animals that depend on the naturally fluctuating water levels in wetlands.

Local Opportunity. Local governments in Michigan can protect additional wetlands not regulated by the state.²¹ Under Michigan's Natural Resources and Environmental Protection Act (NREPA), local governments can require wetlands less than 5 acres in size be regulated by a permitting process.²² A local government must possess an inventory of existing wetlands to adopt a wetland ordinance. The MDEQ must be notified of a local wetland ordinance, though the State does not need to review or approve.²³

Local governments can also protect wetlands through site plan review provisions and zoning

¹⁵ NREPA PA 451 of 1994, Part 303

¹⁶ Michigan Department of Environmental Quality. Wetlands Protection: Protecting Michigan's Wetlands. Web. Accessed July 2015.

¹⁷ NREPA PA 451 of 1994, Part 303

¹⁸ LIAA (2014). Climate Change Adaptation & Local Planning for Michigan's Coastal Wetland Resources. Web. Accessed July 2015.

¹⁹ Maryland Department of the Environment. Wetland Disturbance and Impact. Web. Accessed July 2015.

²⁰ Ibid.

²¹ Ardzone, Katherina A. and Mark A. Wyckoff, FAICP. Filling the Gaps: Environmental Protection Options for Local Governments, 2nd Edition. 2010.

²² Ibid.

²³ NREPA, Michigan Public Act 303, 324.30307

ordinances.²⁴ Under the Michigan Zoning Enabling Act, protecting the natural environment is a justification for zoning requirements like buffers and other tools.²⁵ Site plan review provisions in the zoning ordinance can require wetland permits be obtained from the MDEQ as a condition of local zoning approval.²⁶

HIGH RISK EROSION AREAS

The State of Michigan regulates development in what it designates as High Risk Erosion Areas (HREAs). The purpose of this regulation is to prevent costly clean up, mitigation, and hazards to residents, while keeping insurance costs down. Preventing buildings in HREAs also protects the Great Lakes from pollutants from structure debris and septic fields.²⁷ The authority for this regulation comes from the Shoreline Protection and Management statute.²⁸

The MDEQ compares new and historic imagery to designate areas of coastline that have eroded by more than 1 foot per year as HREAs. The MDEQ then uses erosion rates to calculate 30- and 60-year setbacks from the “erosion hazard line,” or generally, the line of stable vegetation. Usually, new structures must be built landward of the erosion hazard line by either 30 times or 60 times the erosion rate, as designated by MDEQ. While some small permanent structures may be permitted within the 30-year setback, all new structures must be built landward of the erosion hazard line. MDEQ is in the process of updating HREAs in some areas of Michigan.²⁹

Local opportunity. Local governments can assume MDEQ’s permitting responsibilities for HREAs through an ordinance. To do so, the ordinance cannot be less restrictive than the State’s regulations and the MDEQ must approve the ordinance. A local government can adopt an ordinance requiring greater and more uniform setbacks in HREAs than the MDEQ.³⁰

Other actions can be taken through a local zoning ordinance, including performance standards for soil and vegetation, clustering development away from vulnerable erosion areas, and instituting site plan review processes for any development in HREAs.³¹

SOIL EROSION AND SEDIMENT CONTROL

Eroding soil and sediment deposition into Michigan waterways damage wildlife habitats, pollute water, and decrease water depth. Sedimentation can also carry nutrients and toxic pollutants, mainly from agriculture and construction activities, directly into water systems.³² Soil erosion and sediment control

²⁴ Ardizone, Katherina A. and Mark A. Wyckoff, FAICP. Filling the Gaps: Environmental Protection Options for Local Governments, 2nd Edition. 2010.

²⁵ NREPA, Michigan Public Act 303, 324.30307

²⁶ Ardizone, Katherina A. and Mark A. Wyckoff, FAICP. Filling the Gaps: Environmental Protection Options for Local Governments, 2nd Edition. Michigan Department of Environmental Quality, Coastal Zone Management Program with financial assistance from the National Oceanic and Atmospheric Administration, authorized by the Coastal Zone Management Act of 1972. 2010.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Ibid.

³⁰ NREPA, 1994 Michigan PA 451, Part 323.

³¹ Michigan Department of Environmental Quality. High Risk Erosion Areas: Program and Maps. Web. Accessed July 2015.

³² Ardizone, Katherina A. and Mark A. Wyckoff, FAICP. Filling the Gaps: Environmental Protection Options for Local Governments, 2nd Edition. 2010.

comes from a variety of activities, but construction and earth change is specifically monitored by the State under Part 91 of NREPA.³³ A permit is required for earth changes that disturb 1 or more acres of land or are within 500 feet of the water's edge of a lake or stream.

Local Opportunity. County governments can administer Soil Erosion and Sediment Control programs by adopting an ordinance. Ottawa County has done so and currently administers permits through the Ottawa County Water Resources Commission.³⁴ Local monitoring can be more restrictive than the state by permitting for earth changes adjacent to wetlands, storm drains, or environmentally sensitive areas, or earth changes on less than 1 acre.³⁵ Local governments, however, cannot expand Part 91 to monitor stormwater management control outside of soil erosion control.³⁶ Any local control program must be approved by the MDEQ, and the MDEQ offers assistance to communities looking to implement stricter regulation under NREPA.³⁷

Outside of NREPA, local governments can adopt stormwater control ordinances, impervious surface limitations, or require street sweeping to reduce pollutants in water runoff.³⁸

CRITICAL DUNE AREAS

Michigan's dunes are one of the most striking environmental features in the nation. Together, they represent the largest freshwater dune ecosystem in the world.³⁹ The dunes provide unique habitats for rare and endangered species and hold priceless environmental and recreation value.⁴⁰

Michigan's Sand Dune Protection and Management statute calls for the protection of Critical Dune Areas (CDAs) through state regulation.⁴¹ MDEQ determines whether a dune is designated a Critical Dune Area.⁴² Under the statute, a property owner must receive a permit for any activity that alters the appearance or contour of a Critical Dune.

Generally, CDA regulation states development:

- should not occur lakeward of the crest of the dune
- should plan for soil erosion and water runoff
- should not alter the elevation or slope of the dune

Recent updates to the Sand Dune Protection and Management Act. In 2012, Governor Snyder signed Public Act 297. This Act updates the Critical Dune regulation in several ways, which all make acquiring permits to build on the dunes easier. The amendment clarifies that MDEQ cannot deny a

³³ Ibid.

³⁴ Ibid.

³⁵ Soil Erosion and Sedimentation Control of the Natural Resources and Environmental Protection Act 1995 PA 451, as amended: R 323.1704.

³⁶ Ardzone, Katherina A. and Mark A. Wyckoff, FAICP. Filling the Gaps: Environmental Protection Options for Local Governments, 2nd Edition. 2010.

³⁷ Ibid.

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Ibid.

permit solely because “public interest” would be violated by the proposed development. It also limits who is able to challenge a permit to just property owners and those living nearby. The Act no longer requires an analysis of alternative placements for buildings and requires the MDEQ to issue permits for driveways and other paved pathways to permanent structures in a CDA. Additionally, the Act now permits building on the lakeward-facing slope of the first foredune.⁴³

Local Opportunity. Local opportunity under the updated Sand Dune Protection and Management Act is limited. While Part 353 allows the local government to assume the permitting process for CDAs, local governments can no longer be more restrictive than the State. As a result, adopting the permitting power of the State through the Sand Dune Protection and Management Act will not increase regulation on Critical Dune Areas. A local government can do much more to protect the dunes through zoning ordinances and other planning efforts.⁴⁴ Only 30% of the State’s dunes are considered Critical Dune Areas and are subject to state regulation, unless wetlands, High Risk Erosion Areas, or other environmental areas are located on the property.⁴⁵ Local government administration of the permitting process has been met with mixed results, especially in areas with small coastal lot sizes, where the requirements of Part 353 may trigger a regulatory takings claim.

WATER MARK LINES

In addition to the above regulatory powers, there are also three water marks used by different entities to regulate activities along the shoreline.

First, the United States Army Corps of Engineers uses a high water mark line (called the Ordinary High Water Mark or OHWM) to determine the extent of navigational waters they regulate. This boundary is set based on a 581.5-foot water level above sea level for Lake Michigan. Second, the MDEQ regulates development below a separately determined water line. This is sometimes referred to as the Elevation Ordinary High Water Mark Line (or EOHWM). This water line is elevation based and is determined using a 580.5-foot water level above sea level for Lake Michigan.

There is only a 1-foot difference between the water level used to determine the regulatory authority of the USACE and the MDEQ. Because of this, the two bodies co-administer a joint permitting process for activities taking place below either water mark line. These include dredging, placing seawalls or rock revetment, or building of permanent docks.

Lastly, Michigan uses a water mark line sometimes referred to as the Natural Ordinary High Water Mark (or NOHWM) to determine the extent of the public trust with regard to access along the shore. The NOHWM comes from the 2005 Michigan Supreme Court case *Glass v. Goeckel*, which determined the public has a valid right to walk below the NOHWM, defined as the point where natural vegetation begins or evidence of past high water levels exist.⁴⁶ This case also determined the NOWHM line is not equal to, or dependent on, the State’s regulatory power defined by the Elevation Ordinary High Water

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ *Glass v. Goeckel*. Michigan Supreme Court. 29 July 2009

Mark.

TECHNICAL DOCUMENTATION FOR SCENARIO ANALYSIS

The remainder of this appendix summarizes the project team’s technical analysis. The results from the analysis are presented in Chapter 9. First, this appendix defines the climate futures in greater technical detail and provides method information for the management options. Second, this appendix lists the key data sources, methods, and limitations for each of the land use and environmental categories discussed in Chapter 9.

CLIMATE FUTURE TECHNICAL DEFINITIONS

- “Lucky” Future – Under the Lucky Climate Future, Great Lakes water levels will continue to stay relatively low. Although there will be wave and wind action, major storm events and wave impacts will not encroach on properties landward of current beaches. Potentially flooded inland areas will remain as currently delineated by FEMA under effective FIRMs (specifically, zones A and AE). Other climactic conditions (e.g., storm frequency and intensity, heat waves) will remain consistent with patterns in recent history. The Lucky Climate Future also accounts for flooding along rivers.
- “Expected” Future – Under the Expected Climate Future, Great Lakes water levels will continue to fluctuate according to long-term decadal patterns, including recent extreme storm events incorporated into FEMA’s ongoing Great Lakes Coastal Flood Study. There will be periods of high water levels similar to the long-term highs recorded in 1986, with Great Lakes still-water elevation closer to that of long-term average (580 feet). There will also be more frequent large storm events than in the past. During these high water periods, waves from a “100-year” storm event will encroach on properties, with areas subject to wave action as delineated by FEMA’s proposed coastal high velocity (VE) zones; areas subject to sheet flow as delineated by FEMA’s proposed AO zones; and nearshore areas subject to inundation as delineated by FEMA’s proposed AE zones. During the “100-year” storm, areas located within the high velocity (VE) zone will be completely destroyed, while areas of the community within the AO and AE zones will be severely damaged by inundation. The Expected Climate Future also accounts for flooding along rivers.
- “Perfect Storm” Future – Under the Perfect Storm Climate Future, Great Lakes water levels will continue to fluctuate according to decadal patterns, consistent with assumptions made for the Expected future. However, still-water elevation will be higher than the long-term average and closer to the long-term high (583 feet). In addition to that assumption, because of increased frequency and intensity of storms, the shoreland areas subject to high velocity (VE) zones, as well as inundation as delineated by FEMA’s proposed 500-year storm event (shaded-x zones), will essentially become the 100-year storm event (i.e., much more likely to occur), such that properties within these areas (i.e., in addition to the proposed AE and AO zones) will be severely damaged by inundation. Similar to the Expected Climate Future, during the “100-year” storm, areas located

within the high velocity (VE) zone will be completely destroyed. The Perfect Storm Climate Future also accounts for flooding along rivers.

MANAGEMENT OPTIONS

To define the management options, the project team used CommunityViz in conjunction with Master Plan and Zoning Ordinance evaluation to create the management options.

CommunityViz is a scenario planning tool created for planners, and works in conjunction with Esri's ArcGIS platform as an extension. The team used this tool to answer two questions:

1. What would the Grand Haven Community look like if the community grew to maximum capacity under its current zoning ordinance and master plan?
2. What could the Grand Haven Community look like if best management practices were used to not only protect natural resources and restrict future development in high-risk flood areas?

CommunityViz calculates the development capacity of the land in the city and township using projection and zoning classifications. The team worked closely with the planners from the City and the Township to clarify assumptions and produce a realistic projection for the City and the Township.

This method was used to define the management options as follows:

- Current Practices

Under this option, the Grand Haven Community will continue to manage land in the same manner it currently employs, in accordance with adopted plans, zoning ordinances, and relevant local ordinances.

- Build-out According to Current Zoning

Under this option, the community will undergo a full build-out of residential development according to its existing zoning code. Additional homes are built in areas at the base flood elevation and are at risk for flooding. This is not an exact picture of the development capacity in the community; rather, this work equates to an estimate of where development may possibly occur under the current zoning, with additional land set aside for open space, driveways, streets, and yards. See Map 9.4 in Appendix C for a visual of where these points are located.

- Build-out According to Master Plan

Under this option, the community will achieve a full build-out in accordance with guidelines set forth in its master plan. This experimental option was intended to capture measurable differences between a master plan and a zoning ordinance, which could help local jurisdictions identify opportunities to improve both documents.

- **Build-out According to Best Management Practices (BMPs)**

Under this option, the Grand Haven Community will adopt and implement Best Management Practices to preserve natural resources and protect private property. See Map 9.4 in Appendix C for a visual of where these points are located. For this study, only several Best Management Practices are modeled. The selected BMPs were chosen as they have a significant spatial effect that can be easily modeled using CommunityViz software. Additionally, each has a policy or regulatory impact achieved through a zoning ordinance.

The intent of including this management option is to present several amendments that could be adopted that may influence the impact on land use, fiscal conditions, and the environment in the community.

The BMPs modeled in this management option are:

- 50-foot buffers around any inland water like rivers, lakes, and streams.
- 50-foot buffers around any wetland 5 or more acres in size, as defined by the State of Michigan’s Final Wetland Inventory data.
- A complete restriction of any development within a wetland 5 or more acres in size, as defined by the State of Michigan’s Final Wetland Inventory data.

Scope of analysis. Each Climate Future was tested against each management option for its impact on the land use and environmental conditions in the Grand Haven Community. The experimental “Build-out According to Master Plan” management option served as a useful conceptual aid during the planning process, but it did not yield enough measurable data to be effectively modeled. Therefore, only the results of the “Current Practices,” “Build-out According to Current Zoning,” and “Build-out According to Best Management Practices” management options are discussed in this Appendix.

SCENARIO PLANNING TO ASSESS LAND USE AND ENVIRONMENTAL CONDITIONS

Each management option can be analyzed in each of the three Climate Futures. This creates an array of scenarios the Township could reasonably encounter in the foreseeable future regarding flooding and local government management options. Each scenario has a different impact on the land use and environmental conditions in Grand Haven Township. The remainder of this chapter presents the results of the modeling, derived by pairing each management option with each Climate Future. Land use impacts include the acreage, parcels, structures, and critical facilities that would be impacted under different Climate Futures for each management option. Fiscal conditions are not included in this draft, but will be in the final document. Environmental conditions include the acreage of wetlands, tree canopy, impervious surface, Critical Dune Areas, and High Risk Erosion Areas impacted in each Climate Future for each management option.

DATA SOURCES, KEY METHODS, LIMITATIONS

LAND USE CONDITIONS

The project team considered the total acres of land, the number of structures, the number of parcels by zoning classification under the ordinance's current zoning, and any critical facilities impacted under each future climate and management scenario in the land use analysis.

Data Sources:

- The total acres of land were determined by removing inland water from each of the jurisdictions using GIS. A projection that preserves area was used to ensure accurate calculations.
- Defined on the current ordinances in place.
- Under the current management option, digitized building footprints were used to determine where structures exist. Under the remaining management options, CommunityViz was used to project the number of structures according to criteria outlined above.
- The critical facilities were analyzed using internet search results for police and fire stations, schools, places of worship, utilities, and public facilities.

ENVIRONMENTAL CONDITIONS

Wetlands, pervious surface, tree canopy, Critical Dune Areas, and High Risk Erosion Areas are considered environmental assets for this analysis. Because of data limitations and a desire to make this process both spatial and simple, each environmental asset has its own methodology. As much as possible, the analysis uses freely available GIS data with minor modifications.

WETLANDS

GIS was used to compare the existing wetlands to areas of potential wetland restoration in each climate future. Additionally, wetlands under 5 acres in size were counted using GIS.

Data for the existing wetlands came from the National Wetland Inventory and the MDEQ. The team included all wetland types and subtracted impervious surface, building footprints, and inland water to accurately locate where wetlands are most likely to exist.

Potential areas for wetland restoration also came from the National Wetland Inventory, a GIS delineation of areas identified as suitable for wetlands based on soil type and presettlement vegetation data to the extent possible. The research team created a map of potential wetlands by subtracting current wetlands, building footprints, impervious surface, and inland water to identify areas where a number of wetland types, in addition to coastal wetlands, could be restored.

It is important to note that this data is collected at a national level and likely includes a number of erroneous wetland locations. Therefore, this analysis should be considered an overall, generalizable study useful to compare one scenario to another. It should not be used to identify individual wetlands or areas of private property suitable to wetland restoration.

Because wetlands are currently regulated by a permitting process, exact predictions of what may

happen to wetlands under the build-out management option were not possible. However, using the build-out analysis for the City of Grand Haven, the team did identify existing wetlands that may be at risk under the community's current zoning.

TREE CANOPY

GIS was used to compare the existing tree canopy to areas of potential tree canopy across the entire jurisdiction and within each flood zone. The purpose of this analysis is to roughly estimate the area within the public right of way that might be forested to better mitigate increased flooding and its associated impacts. Additionally, this method was chosen to identify interesting patterns or trends or highlight areas for future, more-detailed research. It may lay groundwork for future research into areas that could be strategically reforested to help reduce flood risk. Data for the existing tree canopy was digitized based on aerial imagery.

Potential Tree Canopy was defined as an area that meets the below criteria:

- Is not currently covered by water, a road, a building, impervious surface, or existing tree canopy
- Is not sand, in a high risk erosion area, or in a Critical Dune Area
- Is not on private property
- Is not in areas zoned for agricultural use

IMPERVIOUS SURFACE

GIS was used to compare the existing acreage of paved surface to the overall land mass in each flood zone. The purpose of this analysis is to roughly estimate the percentage of the land that is paved under each future flood forecast.

Data for impervious surface was digitized based on aerial imagery. Impervious surface includes building footprints as well as sidewalks, driveways, and roads.

We were not able to account for “under a full build-out” and “best management practices” scenarios in this analysis, as current models do not project impervious surface. It should be noted that new development in the future will be associated with an increase in impervious surfaces. Therefore, these numbers only reflect current conditions and can be seen as conservative in light of inevitable, future growth.

The City of Grand Haven has 1,144 acres of impervious surface, about 28% of its total land area. Table 9.7 shows that each climate future's flood area is around 10% paved. Studies recommend that the percentage of impervious surface in any general area be below 10% to remain protected from harmful amounts of runoff.⁴⁷ This analysis suggests that any increases in the amount of impervious surface should be carefully considered, and the City should take steps to reduce the amount of impervious surface, especially in the climate future flood areas. Map 9.19 in Appendix C shows the impervious

⁴⁷ 47 Flinker, AICP (2010). The Need to Reduce Impervious Cover to Protect Water Quality. Web. Accessed July 2015.

surface analysis.

CRITICAL DUNES

GIS was used to analyze the percentage of areas designated as Critical Dune Areas that are within each climate future. Data for Critical Dune Areas was retrieved from the Michigan Department of Environmental Quality.

While it is impossible to predict the number and scope of permits that may be granted in the “under a full build-out” and “best management practice” scenarios, the project team was able to provide some insight into parcels that may be developed in the future in/near Critical Dune Areas.

Additionally, it is unclear whether all the dunes in the Grand Haven Community are designated Critical Dune Areas. Across the state, only an estimated 30% of dunes are considered Critical Dune Areas. Therefore, it is possible that some dunes are not designated CDAs and are not considered in this analysis.

HIGH RISK EROSION AREAS

GIS was used to highlight High Risk Erosion Areas currently in the City of Grand Haven. This was compared to the VE Zones, or the zones FEMA has designated, in their Great Lakes Coastal Flood Study, as having strong, high velocity waves that could further the pace of erosion.

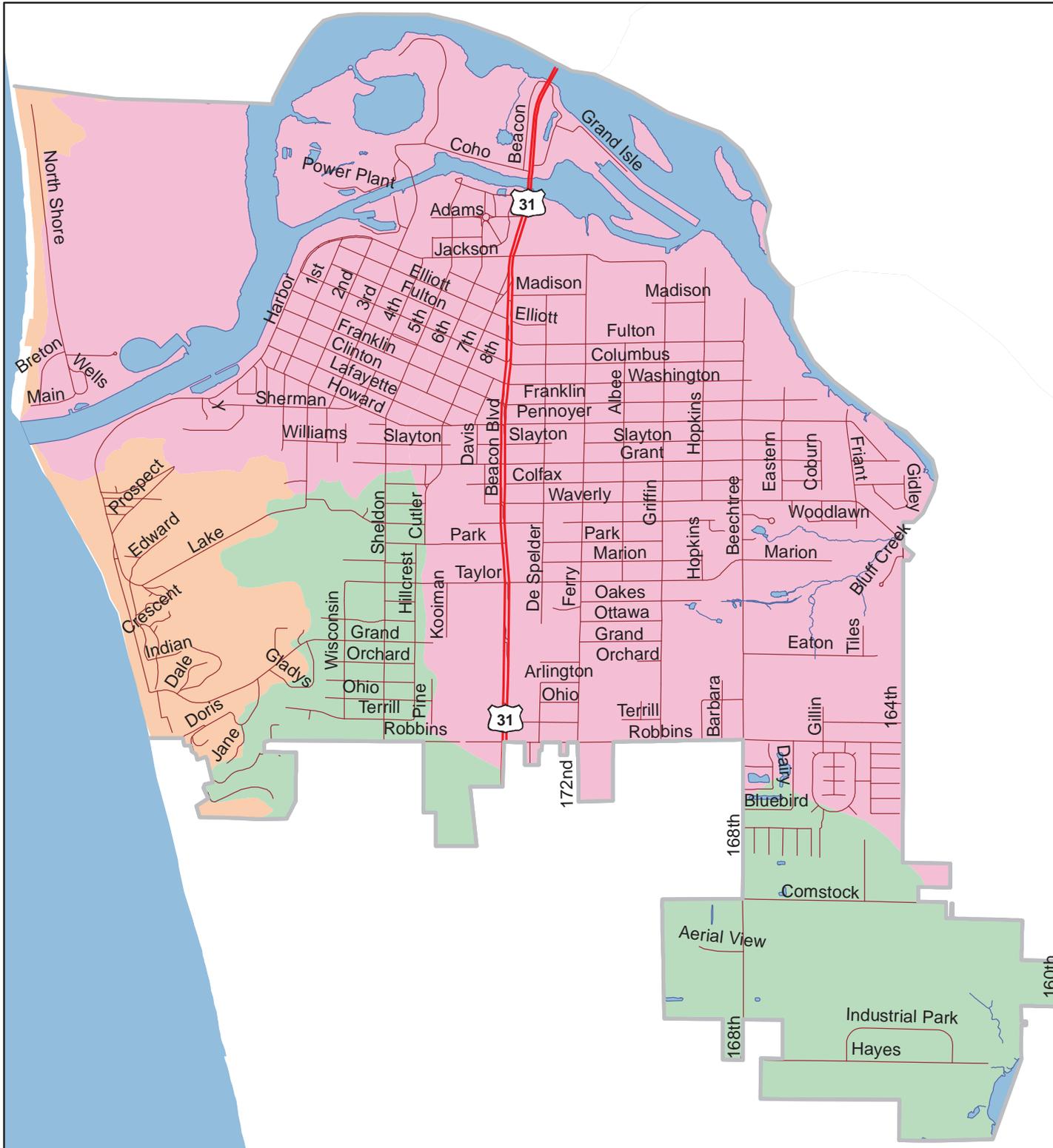
The State’s High Risk Erosion Areas were digitized based on the published regulation. Due to mapping discrepancies, it is possible that the erosion hazard line is not exact. Setback limits are included on the map as either a 30-year or 60-year setback limit. This exercise serves as a visualization of the impervious surface and development taking place in and near HREAs.

APPENDIX C. MAPS

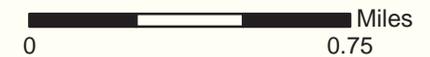
MAP LIST

- 2.1 Watersheds
- 2.2 Critical Dunes
- 2.3 Existing Wetlands and Potential Wetlands
- 2.4 Soil Classifications
- 2.5 FEMA- 100 & 500 Year Flood Zones
- 2.6 Sensitive Overlay District
- 5.1 Parks and Trails
- 5.2 Water Distribution
- 5.3 Sanitary Sewer System
- 6.1 Road Classifications
- 7.1 Current Land Use
- 7.2 Historic Districts
- 7.3 Zoning
- 9.1 “Lucky” Climate Future
- 9.2 “Expected” Climate Future
- 9.3 “Perfect Storm” Climate Future
- 9.4 Build-out Management Options and Climate Futures
- 9.5 Parcels Affected in the “Lucky” Climate Future
- 9.6 Parcels Affected in the “Expected” Climate Future
- 9.7 Parcels Affected in the “Perfect Storm” Climate Future
- 9.8 Existing Wetlands under “Lucky” Climate Future
- 9.9 Existing Wetlands under “Expected” Climate Future
- 9.10 Existing Wetlands under “Perfect Storm” Climate Future
- 9.11 Potential Wetlands under “Lucky” Climate Future
- 9.12 Potential Wetlands under “Expected” Climate Future
- 9.13 Potential Wetlands under “Perfect Storm” Climate Future
- 9.14 Existing Wetlands under “Lucky” Climate Future
- 9.15 Existing Wetlands under “Expected” Climate Future
- 9.16 Existing Wetlands under “Perfect Storm” Climate Future
- 9.17 Existing Wetlands with Climate Futures and Management Options
- 9.18 Existing and Potential Tree Canopy
- 9.19 Impervious Surface Under Climate Futures
- 9.20 Build-out According to Current Zoning and Critical Dune Areas
- 9.21 Build-out According to Best Management Practices and Critical Dune Areas
- 9.22 High Risk Erosion Areas and Climate Futures
- 10.1 Percent of Population 65 Years and Old
- 10.2 Percent of Households with People Living Alone
- 10.3 Percent of Non-white Population
- 10.4 Percent of Households Living Below the Poverty Threshold
- 10.5 Percent of Population 25 Years and Older With Less than a High School Education
- 10.6 Relative Sensitivity of Population to Extreme Heat Events
- 10.7 Percent Impervious Surface Exposure
- 10.8 Percent Tree Canopy
- 10.9 Tree Canopy
- 10.10 Relative Exposure of Populations to Extreme Heat Events
- 10.11 Population Vulnerable to Extreme Heat Events
- 10.12 Digital Elevation Model
- 10.13 Year Home was Built
- 10.14 Household Sensitivity to Flooding
- 10.15 Flooding Sensitive Homes
- 10.16 Critical Facilities
- 10.17 Community Services
- 10.18 Food Availability
- 13.1 Future Land Use

Watersheds Map #2.1



- Grand River
- Lake Drainage
- Pottawattomie Bayou
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
Michigan Geo. Data Library
Ottawa County GIS



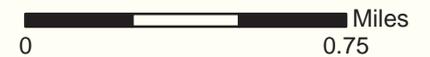
Prepared August 2015 by:



Critical Dunes Map #2.2



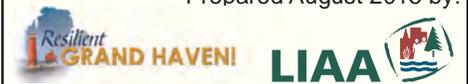
- Barrier dunes
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
Michigan Geo. Data Library
Ottawa County GIS



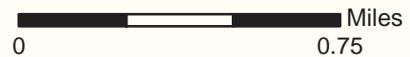
Prepared August 2015 by:



FEMA - 100 & 500 Year Flood Zones Map #2.5



- 500 year Flood Zone
- 100 year Flood Zone
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



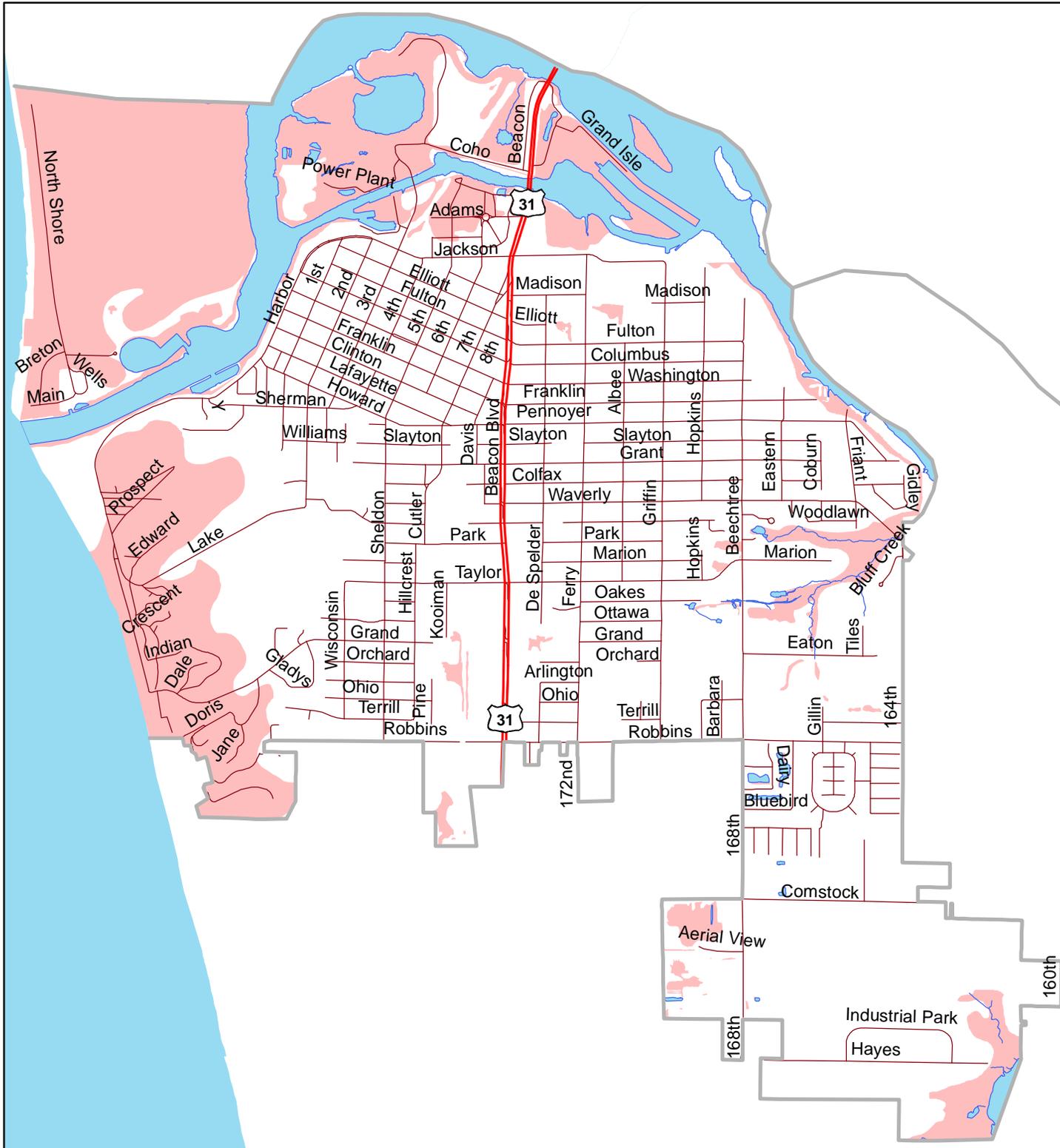
Data Sources:
 FEMA
 Michigan Geo. Data Library
 City of Grand Haven
 Ottawa County GIS



Prepared August 2015 by:



Sensitive Overlay District Map #2.6



- Sensitive Areas
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
Michigan Geo. Data Library
Ottawa County GIS



Prepared August 2015 by:

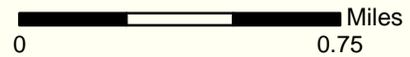


Parks and Trails Map #5.1

- Local Parks
- State Parks
- Schools
- Private
- Trails-Pathways
- Boat Launch
- Marinas
- Jurisdiction Boundary
- Highways
- Roads
- Property Boundaries

- Local Parks**
- 1 - Bolt Park
 - 2 - Central Park
 - 3 - Chinook Pier Park
 - 4 - Duncan Woods
 - 5 - East End Park
 - 6 - East Grand River Park
 - 7 - Escanaba/John Kelly Park
 - 8 - Grand Haven City Beach
 - 9 - Harbor Island
 - 10 - William Hatton Park
 - 11 - Johnston Park
 - 12 - Kitchel-Lindquist Dunes Preserve
 - 13 - Klaver Park
 - 14 - Klempel Park
 - 15 - Mulligan's Hollow
 - 16 - Musical Fountain
 - 17 - North Pier Fisherman Access
 - 18 - Riverview/Bicentennial Park
 - 19 - Sluka Field
 - 20 - Veterans Memorial Park
 - 21 - Waterfront Stadium
- Marinas**
- 1 - City Marina
 - 2 - Craw Isle Manna
 - 3 - North Shore Marina
 - 4 - Rycengas Marina
 - 5 - SkipperBud's
 - 6 - The Wharf Marina
- Private**
- 1 - Starlite Lanes Bowling
 - 2 - YMCA
- State Parks**
- 1 - Grand Haven State Park
- Boat Launch**
- 1 - East End Park
 - 2 - Grand Haven Municipal
- Schools**
- 6 - Central High
 - 5 - Ferry Elementary/Voyagers
 - 3 - Grand Haven Christian
 - 2 - Griffin Elem./White Pines Middle
 - 4 - Lakeshore Middle
 - 1 - Mary A White Elementary
 - 13 - St. John's Lutheran

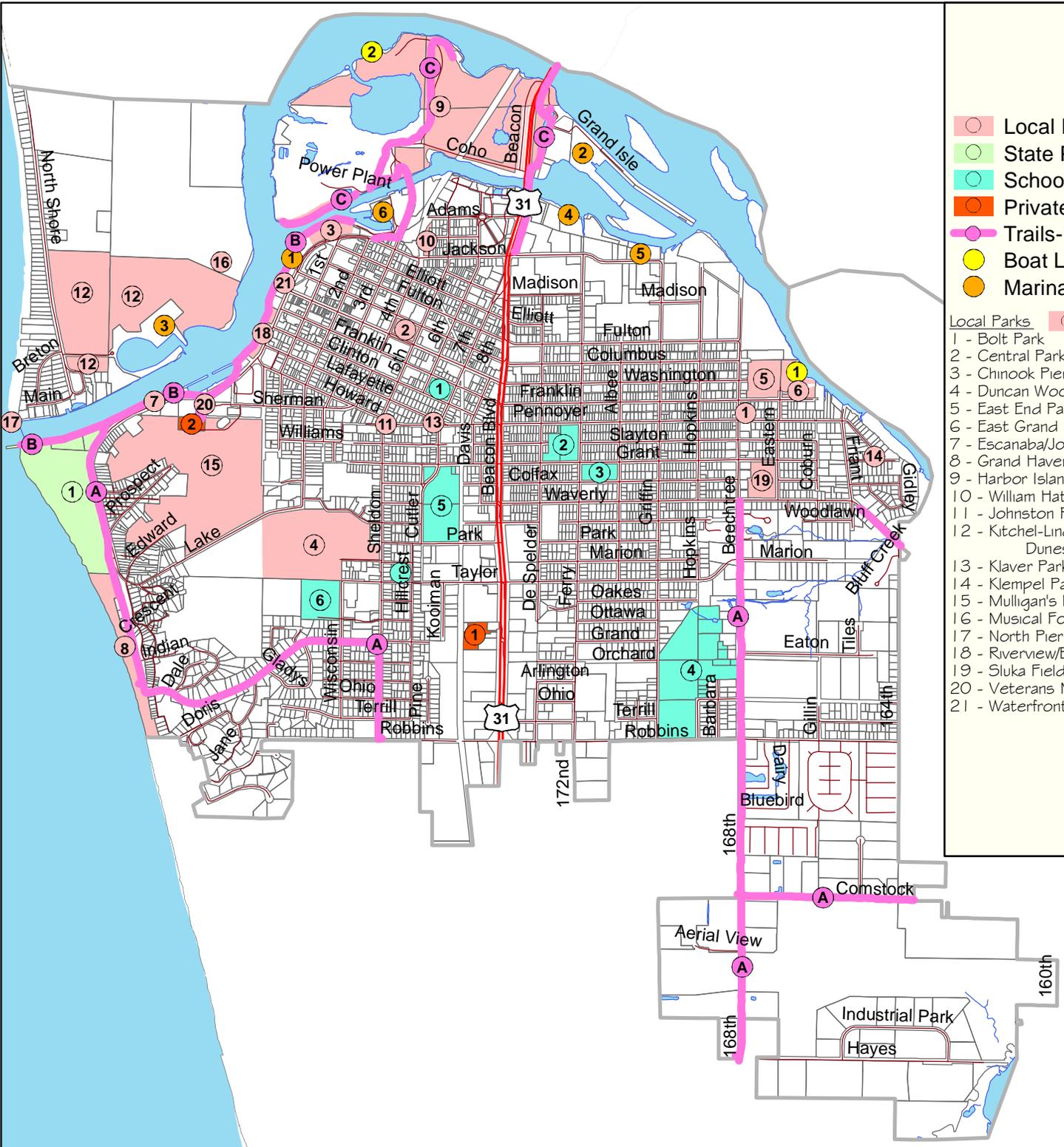
- Non-Motorized Trails/Pathways**
- A - City of Grand Haven
 - B - City of Grand Haven - Boardwalk
 - C - City of Grand Haven - Harbor Island



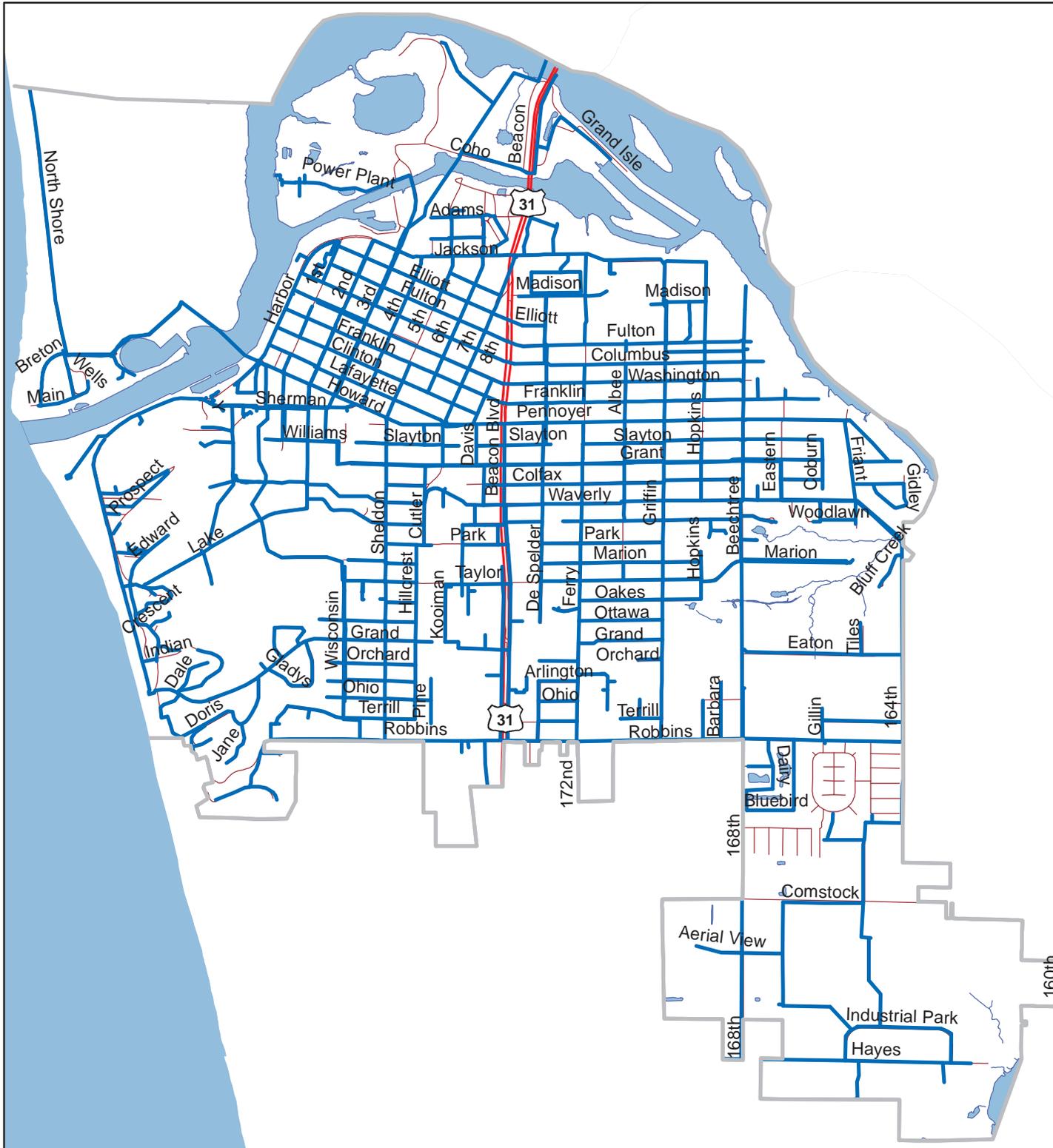
Data Sources:
Michigan Geo. Data Library
Ottawa County GIS



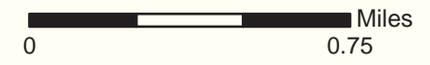
Prepared August 2015 by:



Water Distribution Map #5.2



- Watermains
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



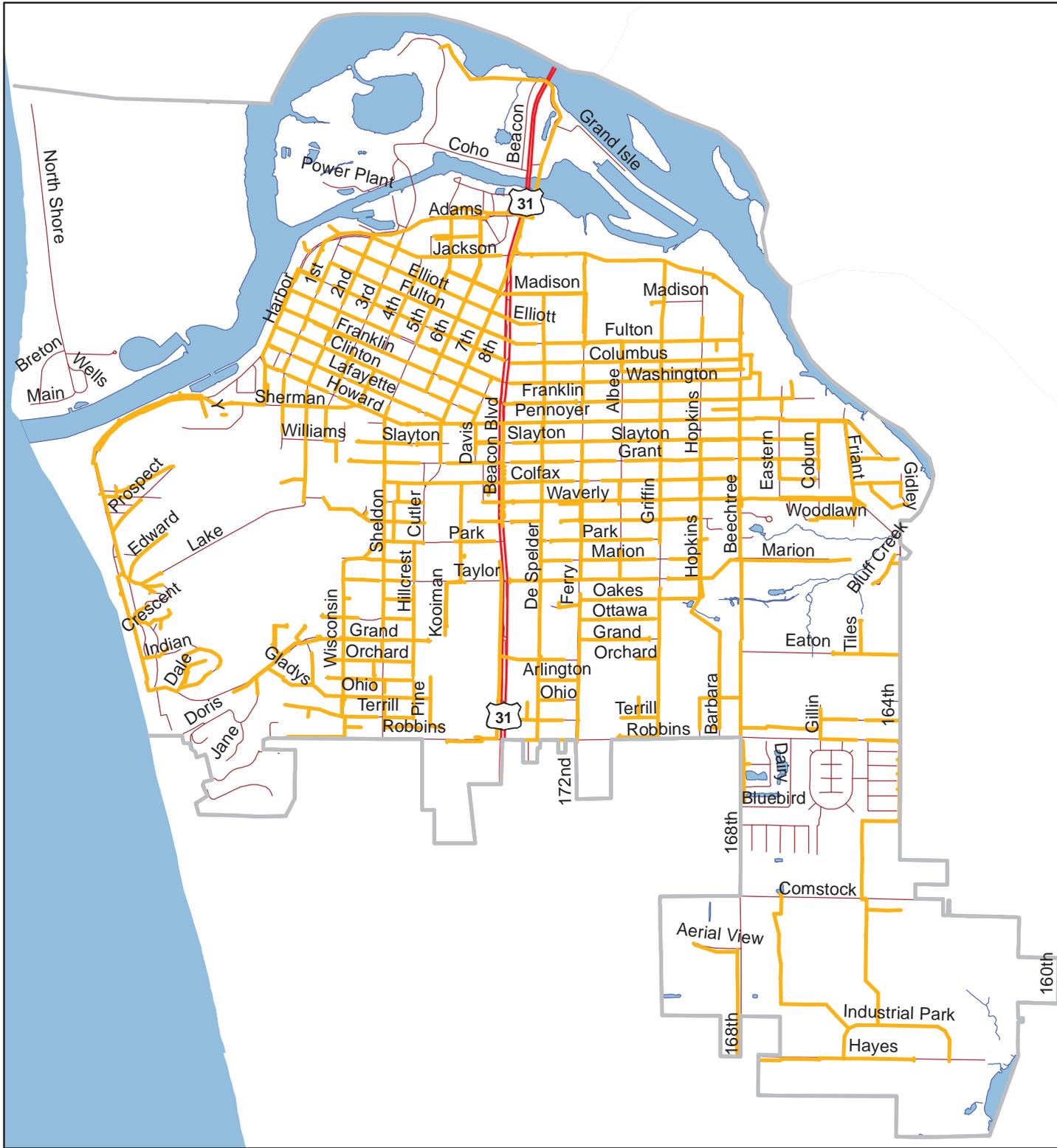
Data Sources:
Michigan Geo. Data Library
Ottawa County GIS



Prepared August 2015 by:



Sanitary Sewer System Map #5.3



- Sewer Mains
- Jurisdiction Boundary
- Highways
- Roads
- █ Lakes
- Streams



Data Sources:
Michigan Geo. Data Library
Ottawa County GIS

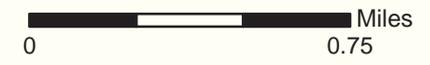
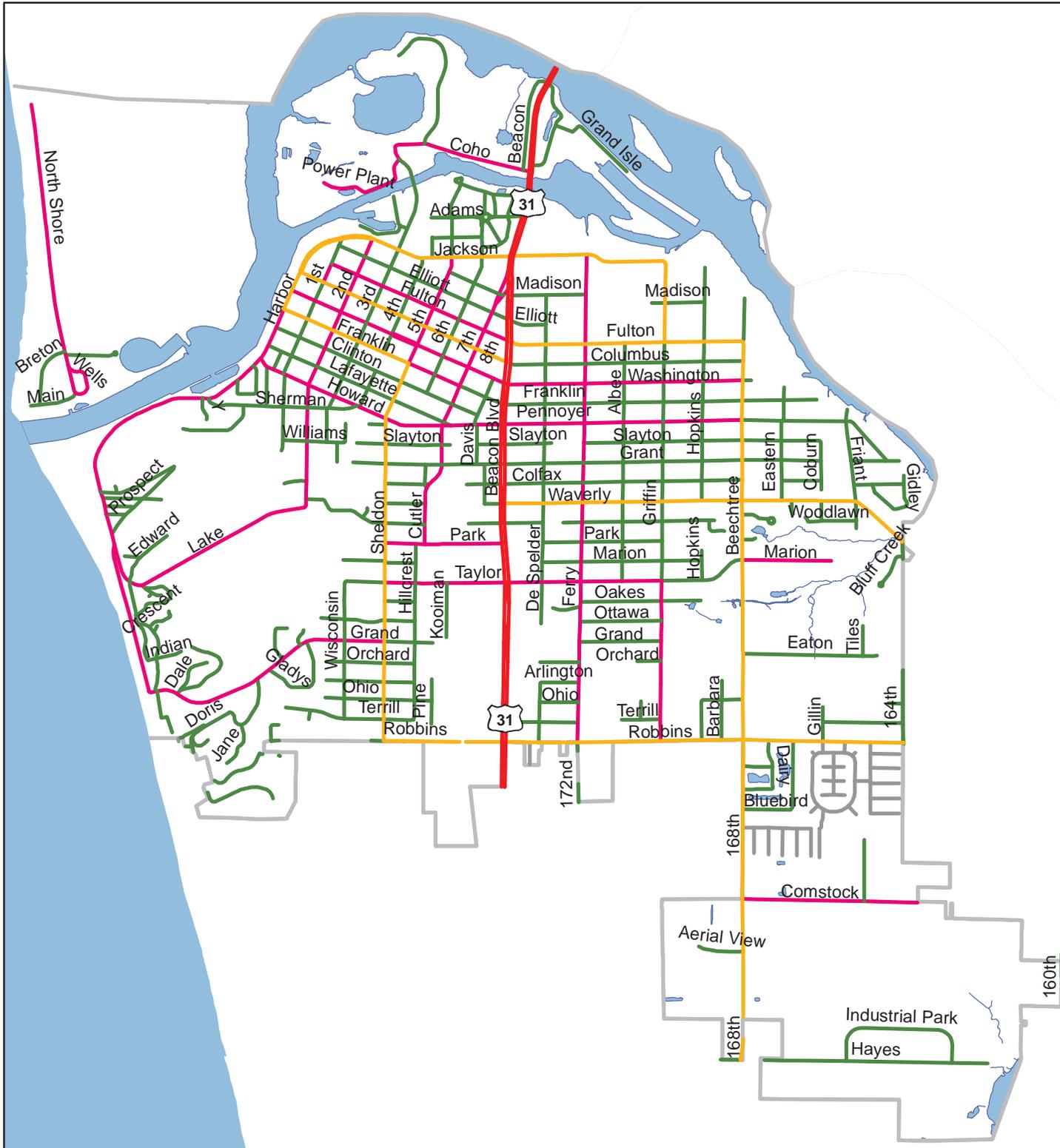


Prepared August 2015 by:



Road Classification Map #6.1

- Other Principal Arterials
- Minor Arterials
- Major Collectors
- Local
- Not a certified public road
- Jurisdiction Boundary
- Lakes
- Streams



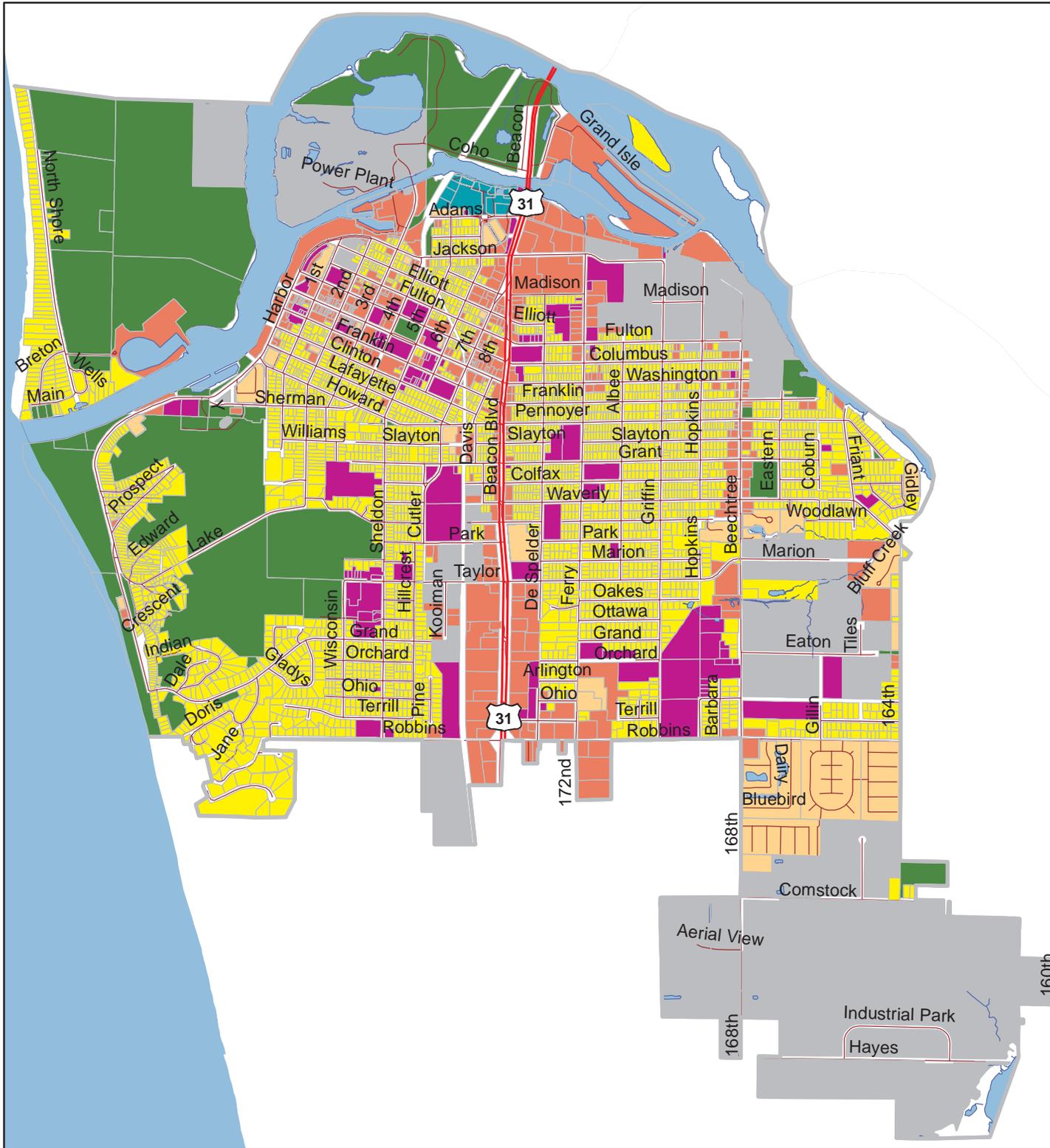
Data Sources:
Michigan Geo. Data Library
Ottawa County GIS



Prepared August 2015 by:



Current Land Use Map #7.1



- Commercial
- Industrial
- Institutional
- Mixed Use
- Multi-Family
- Recreational
- Residential
- Jurisdiction Boundary
- Property Boundaries
- Highways
- Roads
- Lakes
- Streams

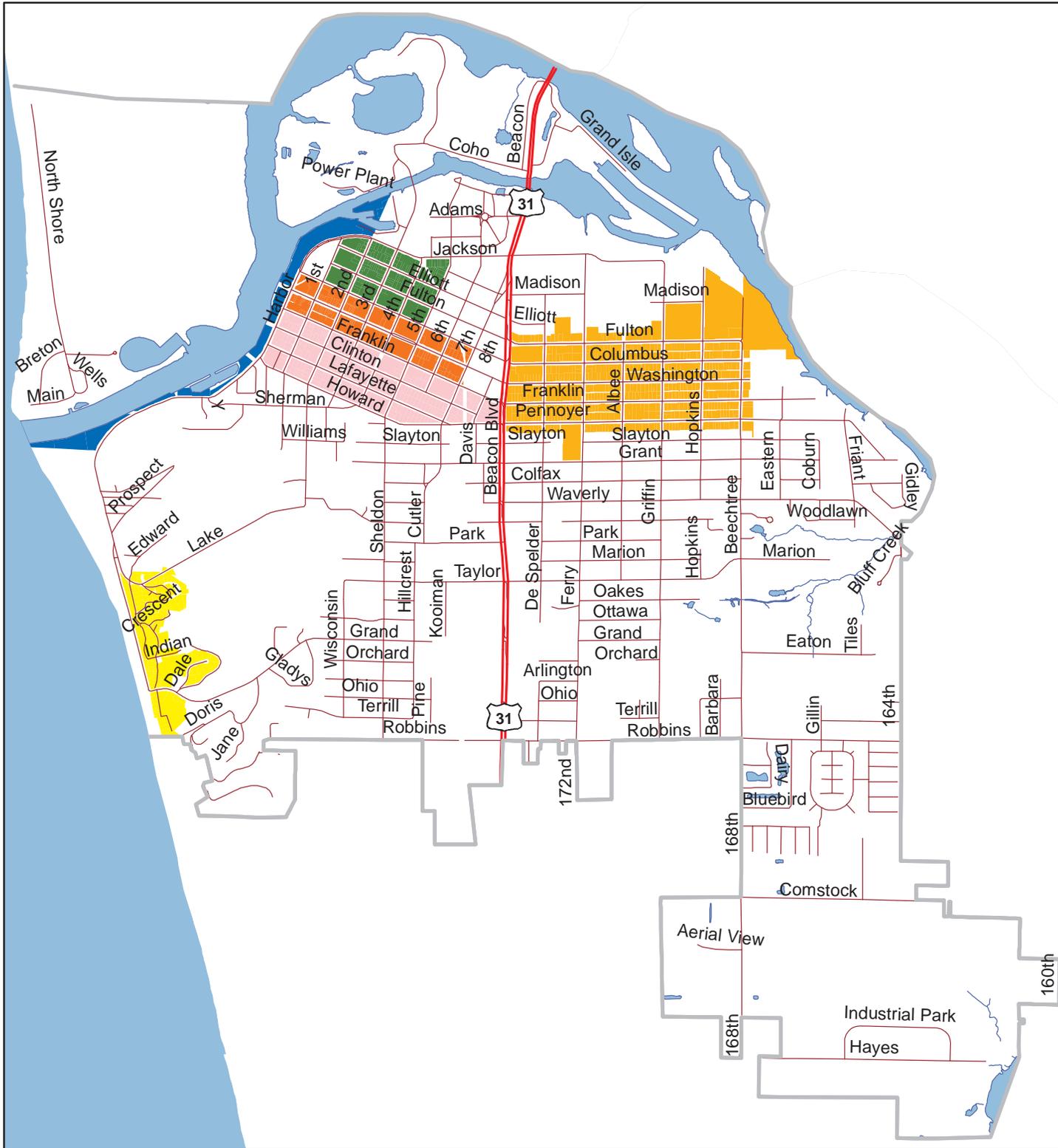
0 0.75 Miles

Data Sources:
Michigan Geo. Data Library
Ottawa County GIS



Prepared August 2015 by:

Historic Districts Map #7.2



- Downtown
- East End
- Highland Park
- Northwest
- Riverfront
- Southwest
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams

0 0.75 Miles

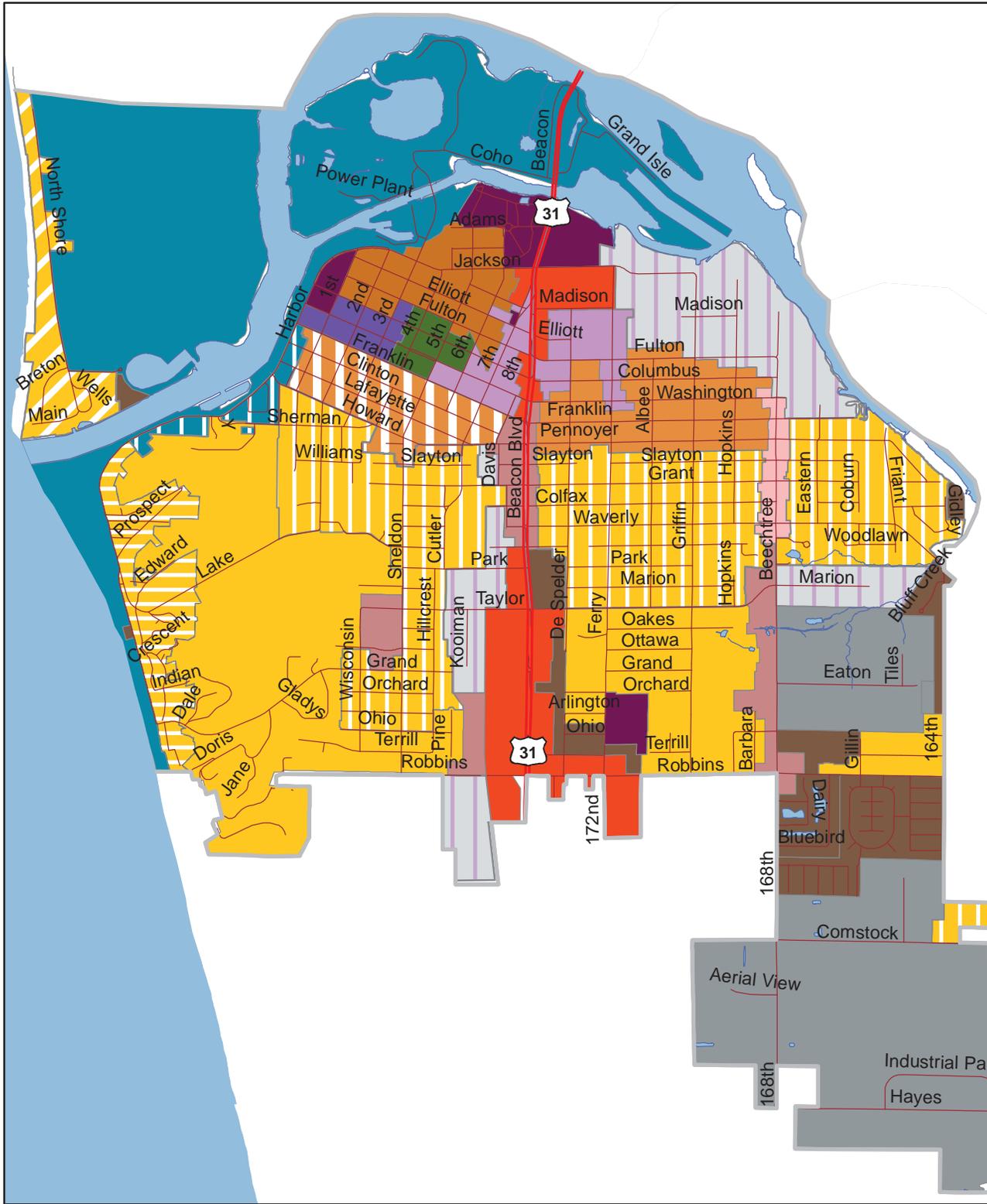
Data Sources:
Michigan Geo. Data Library
City of Grand Haven
Ottawa County GIS



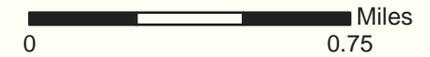
Prepared August 2015 by:



Zoning Map #7.3



- B - Beechtree
- CB - Central Business
- CC - Civic Center
- C - Commercial
- DR - Dune Residential
- E - Eastown
- I - Industrial
- MDR - Moderate Density Residential
- MFR - Multiple Family Residential
- NMU - Neighborhood Mixed Use
- NS - North Shore
- OS - Office Service
- OT - Old Town
- PD - Planned Development
- SFR - Single Family Residential
- S - Southside
- TI - Transitional Industrial
- WF - Waterfront
- WF-2 - Waterfront 2
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
Michigan Geo. Data Library
Ottawa County GIS



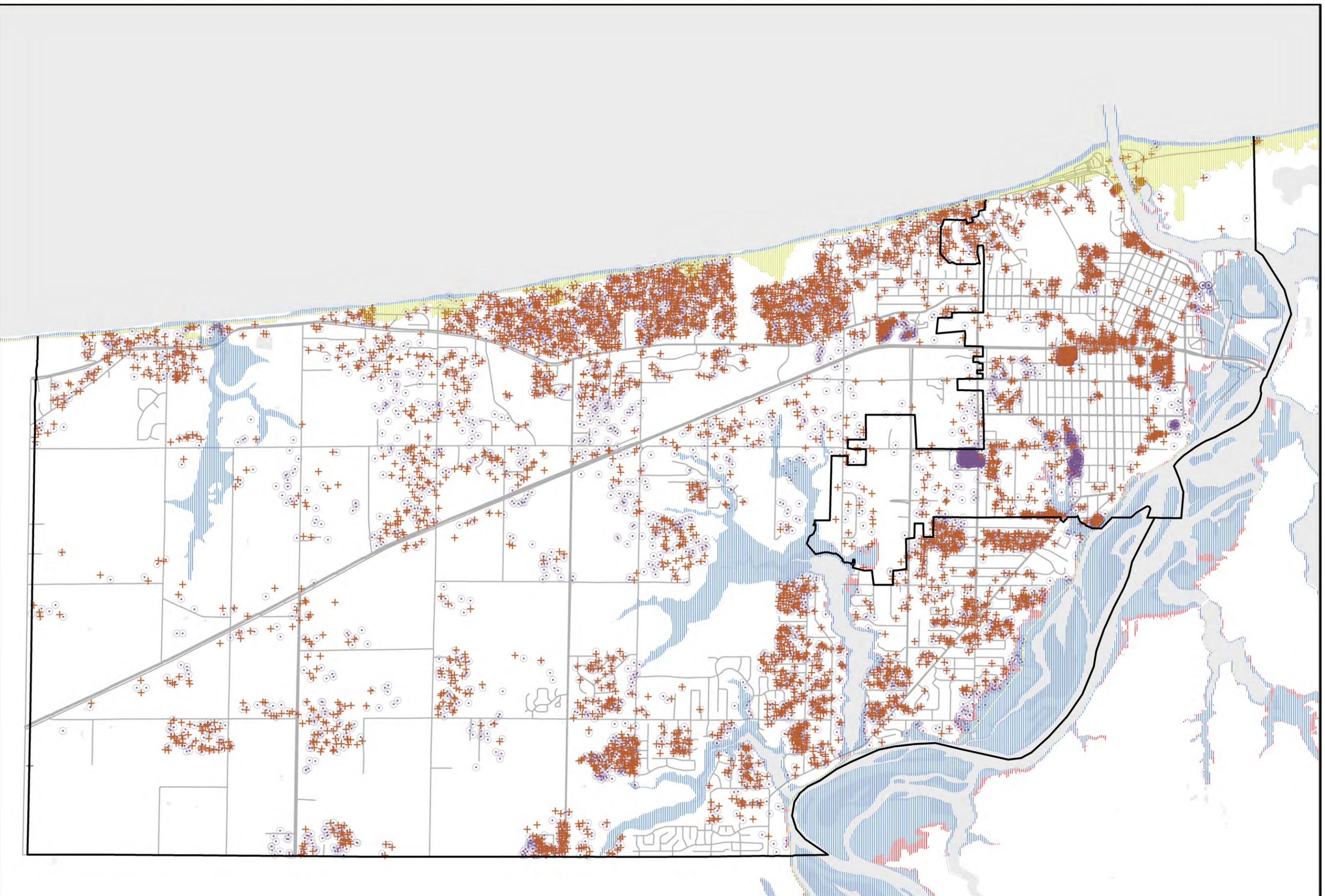
Prepared August 2015 by:



Map 9. 2 "Expected" Climate Future



9.4 Build-out Management Options and Climate Futures

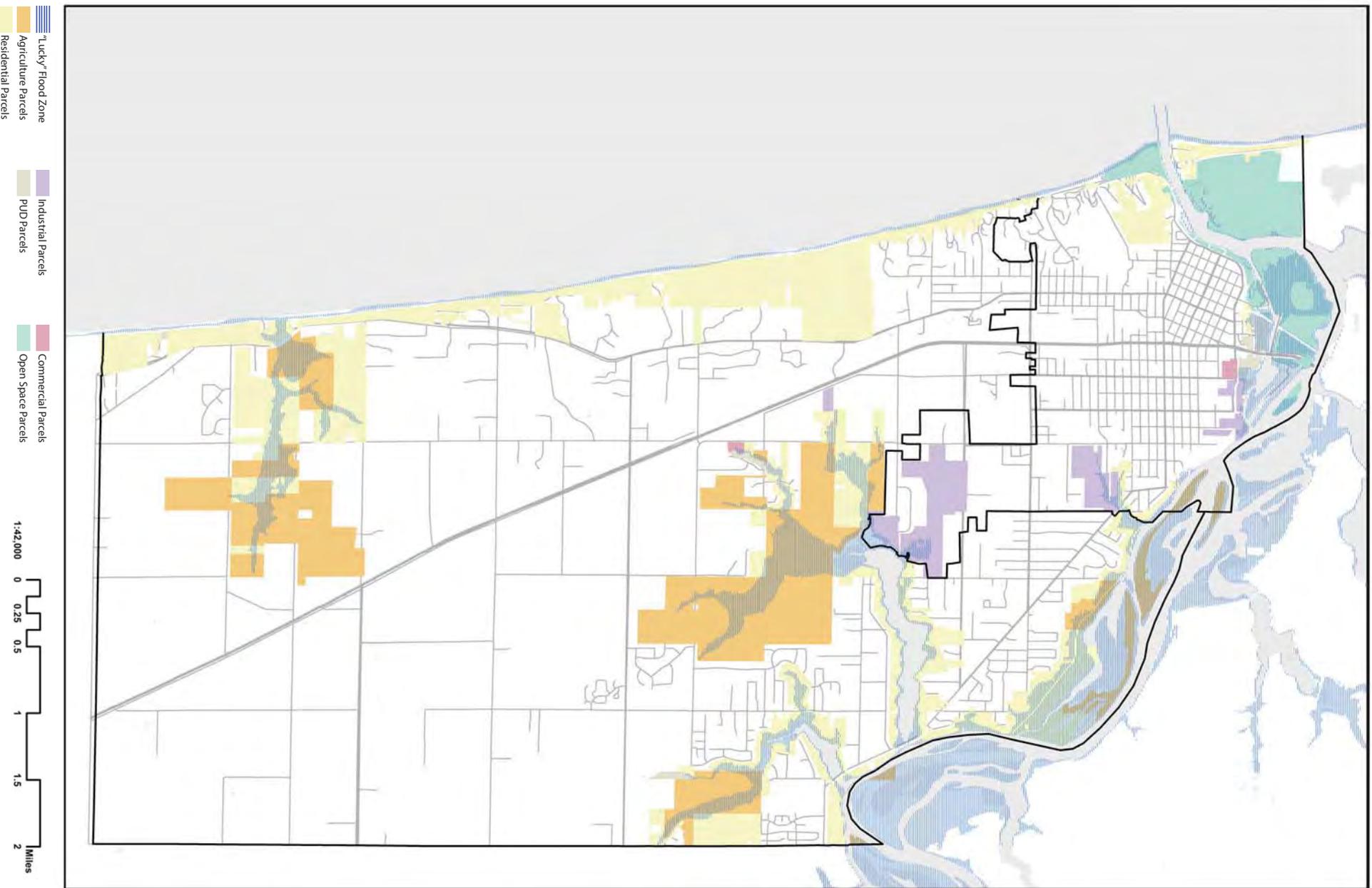


"Lucky" Flood Zone
"Expected" Flood Zone
"Perfect Storm" Flood Zone

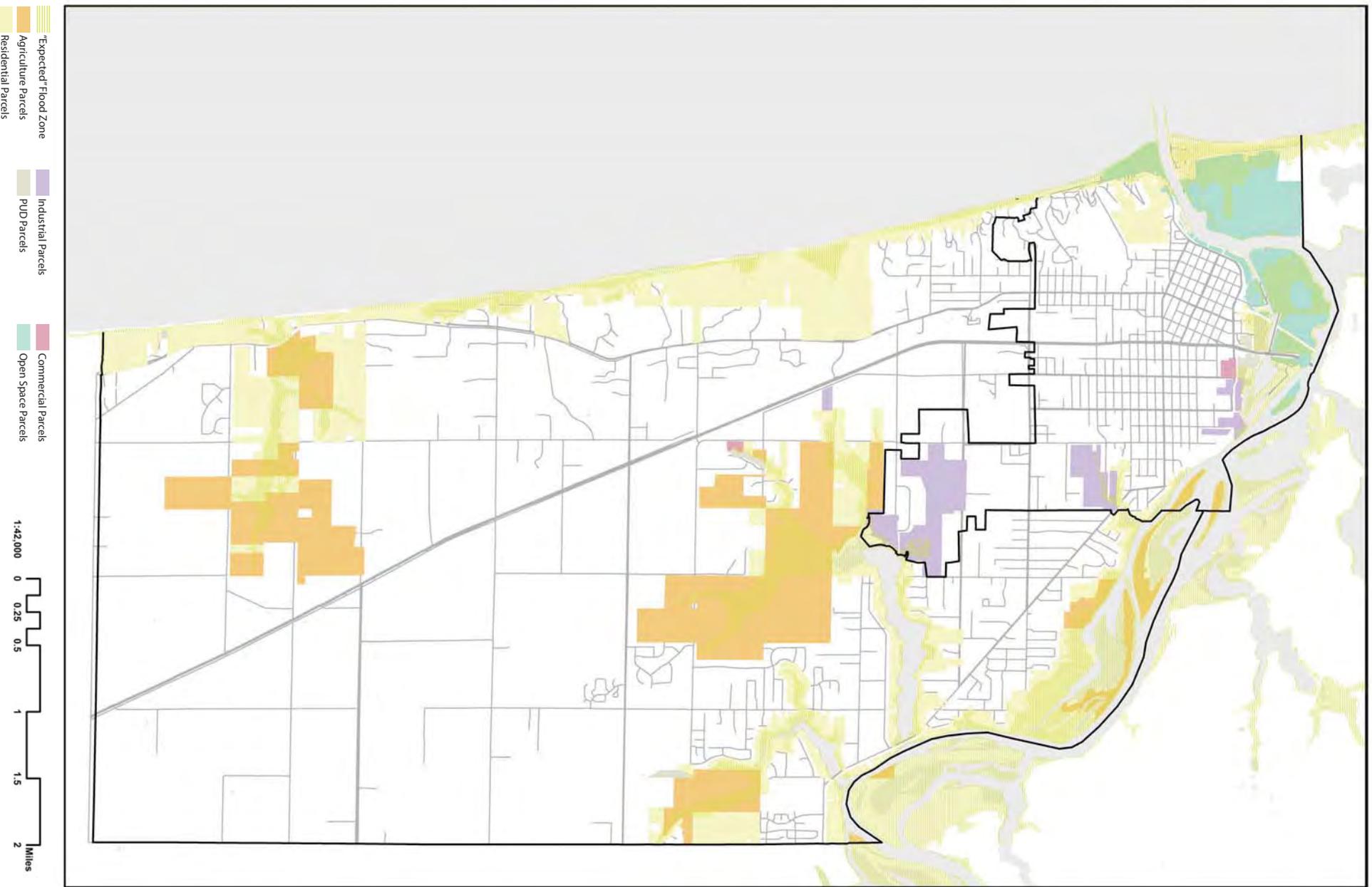
Build-out According to Current Zoning
Build-out According to Best Management Practices

1:42,000 0 0.25 0.5 1 1.5 2 Miles

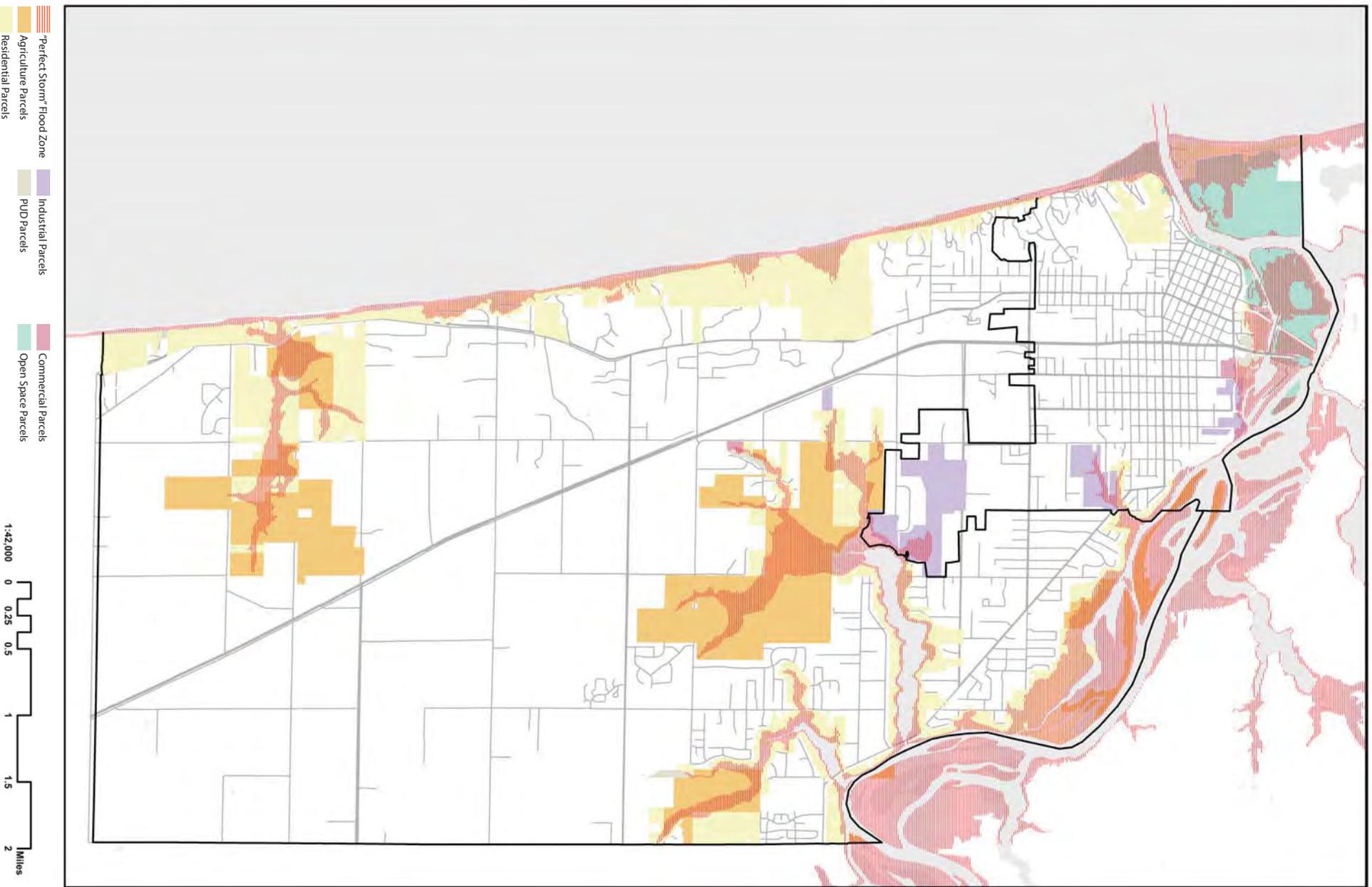
Map 9.5 Parcels Affected in the "Lucky" Climate Future



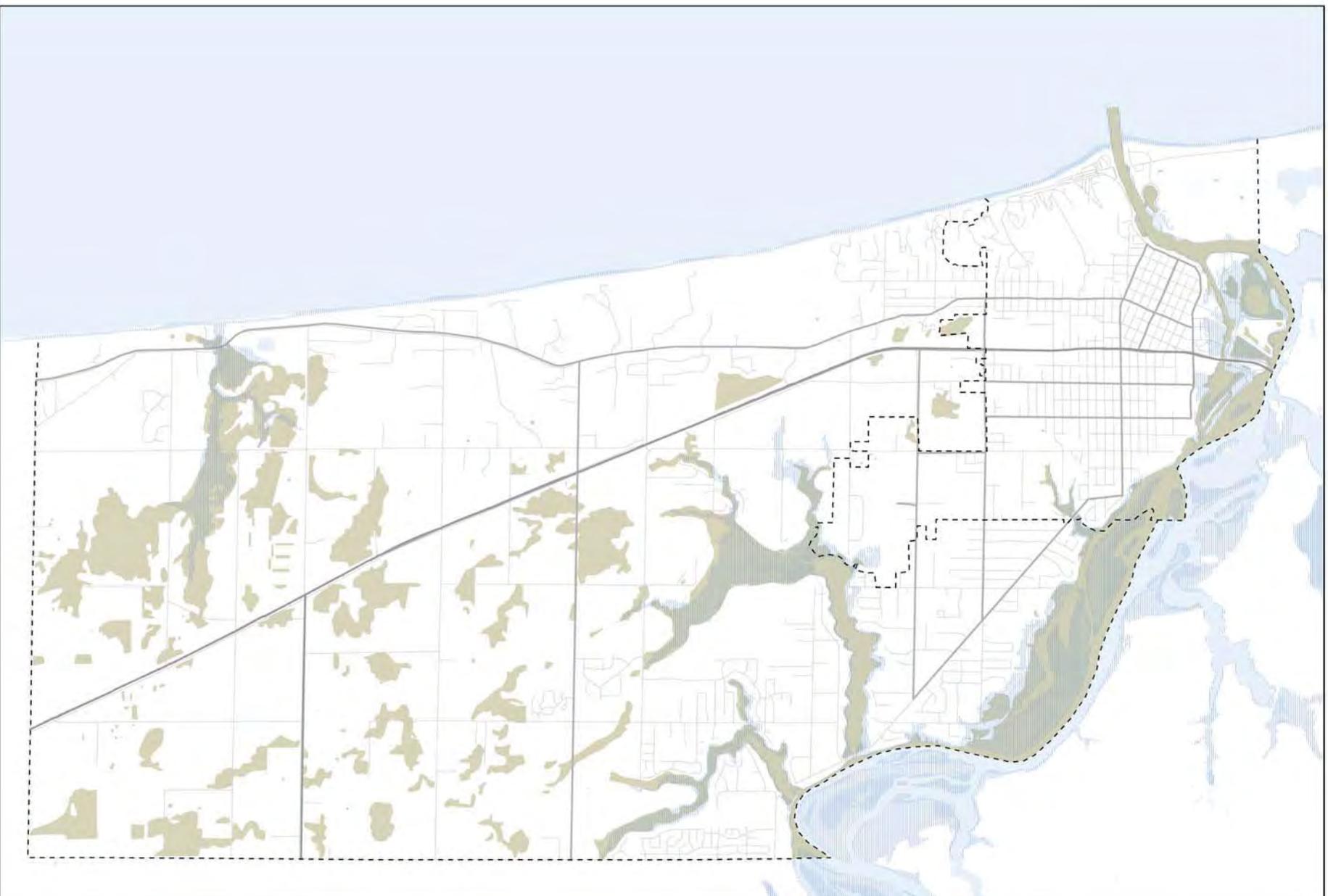
Map 9.6 Parcels Affected in the "Expected" Climate Future



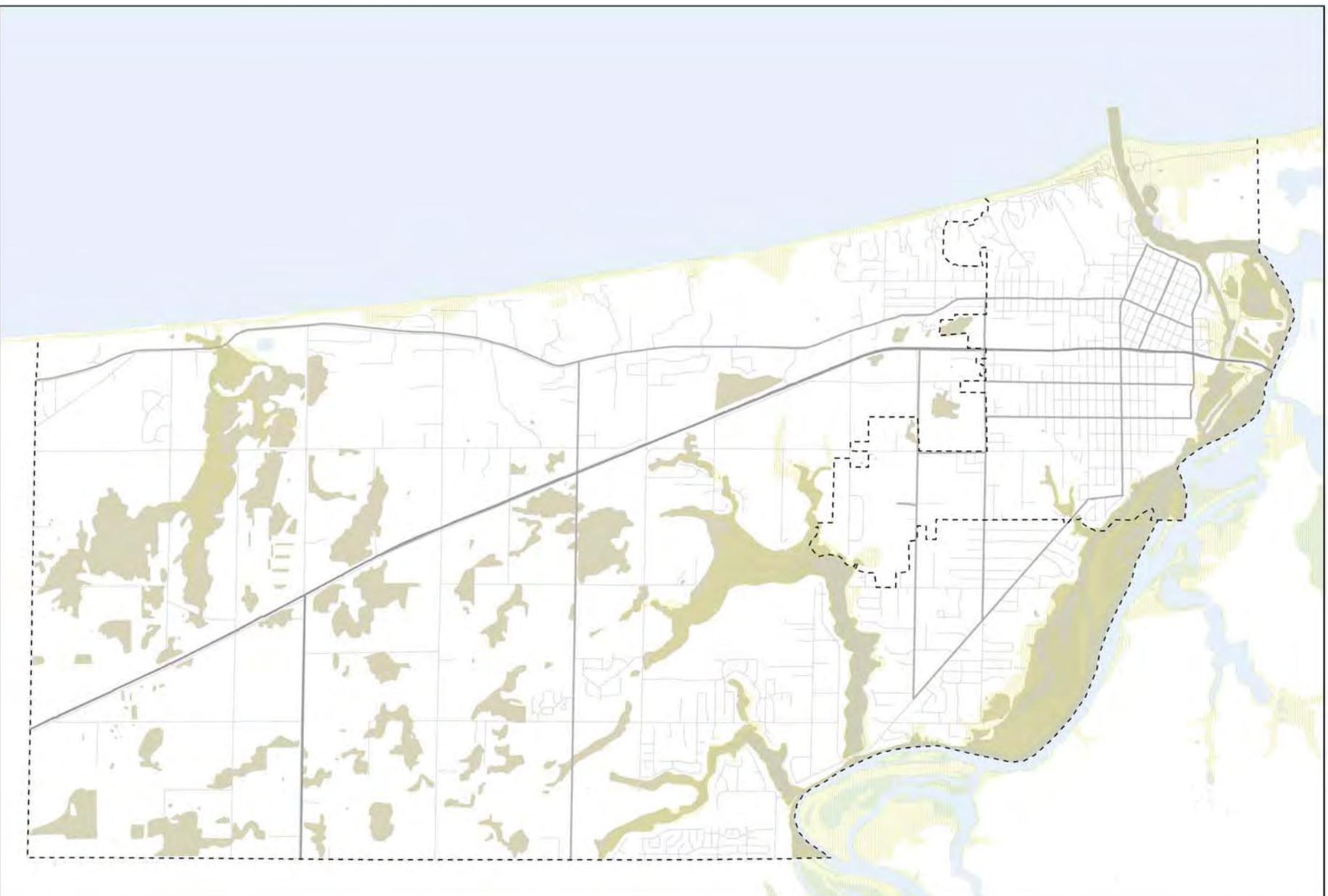
Map 9.7 Parcels Affected in the "Perfect Storm" Climate Future



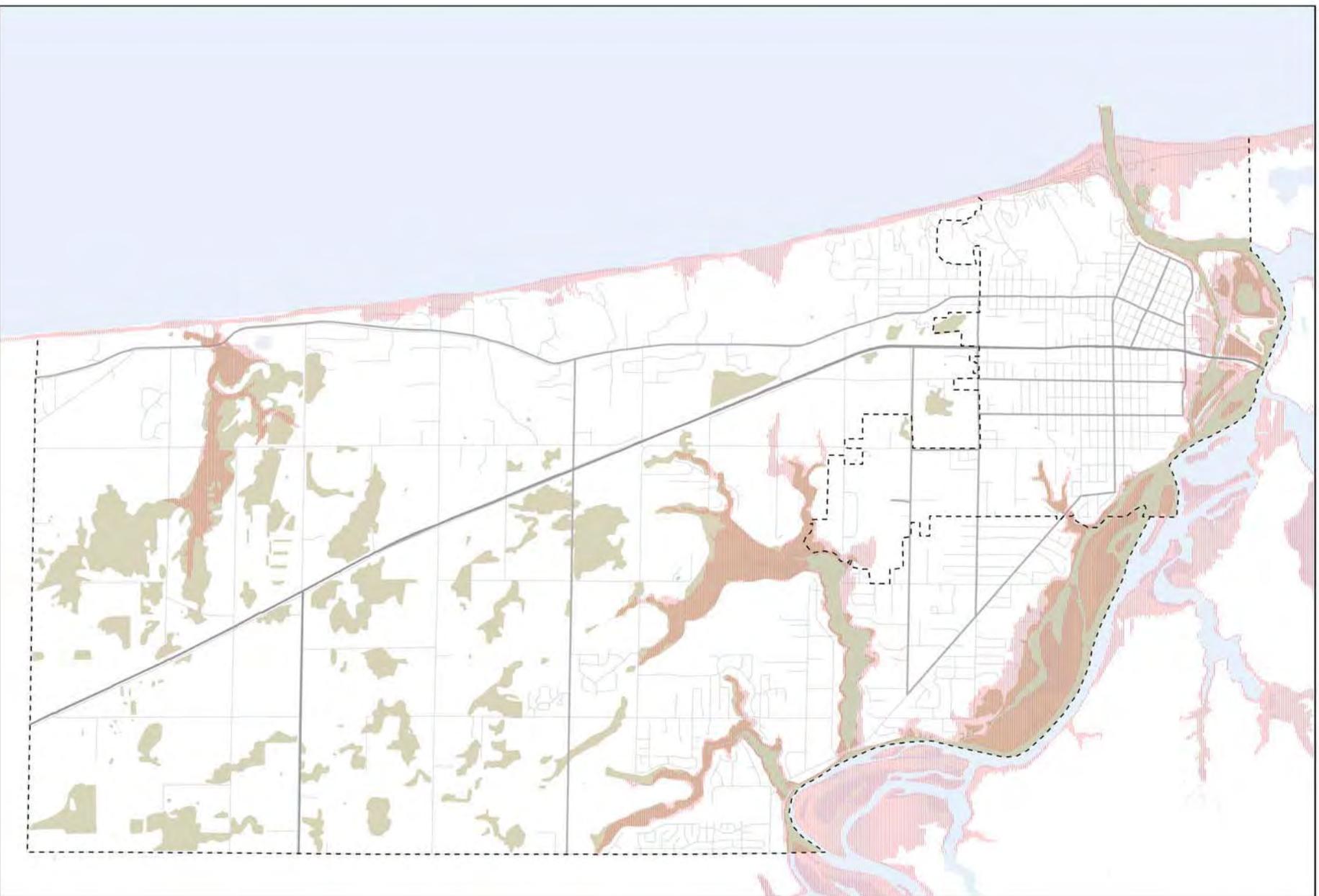
Map 9.8 Existing Wetlands under "Lucky" Climate Future



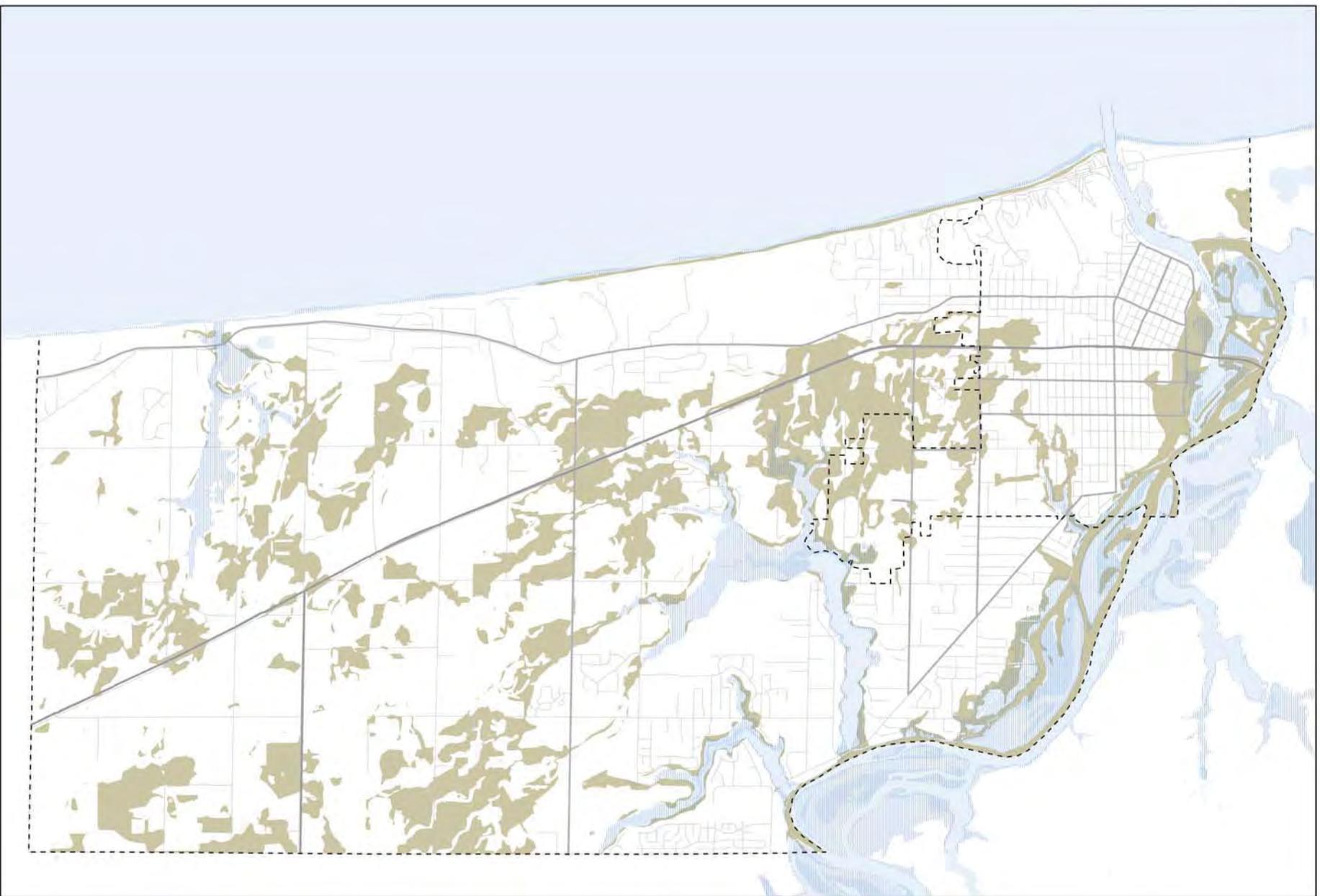
Map 9.9 Existing Wetlands under "Expected" Climate Future



Map 9.10 Existing Wetlands under "Perfect Storm" Climate Future



Map 9.11 Potential Wetlands under "Lucky" Climate Future

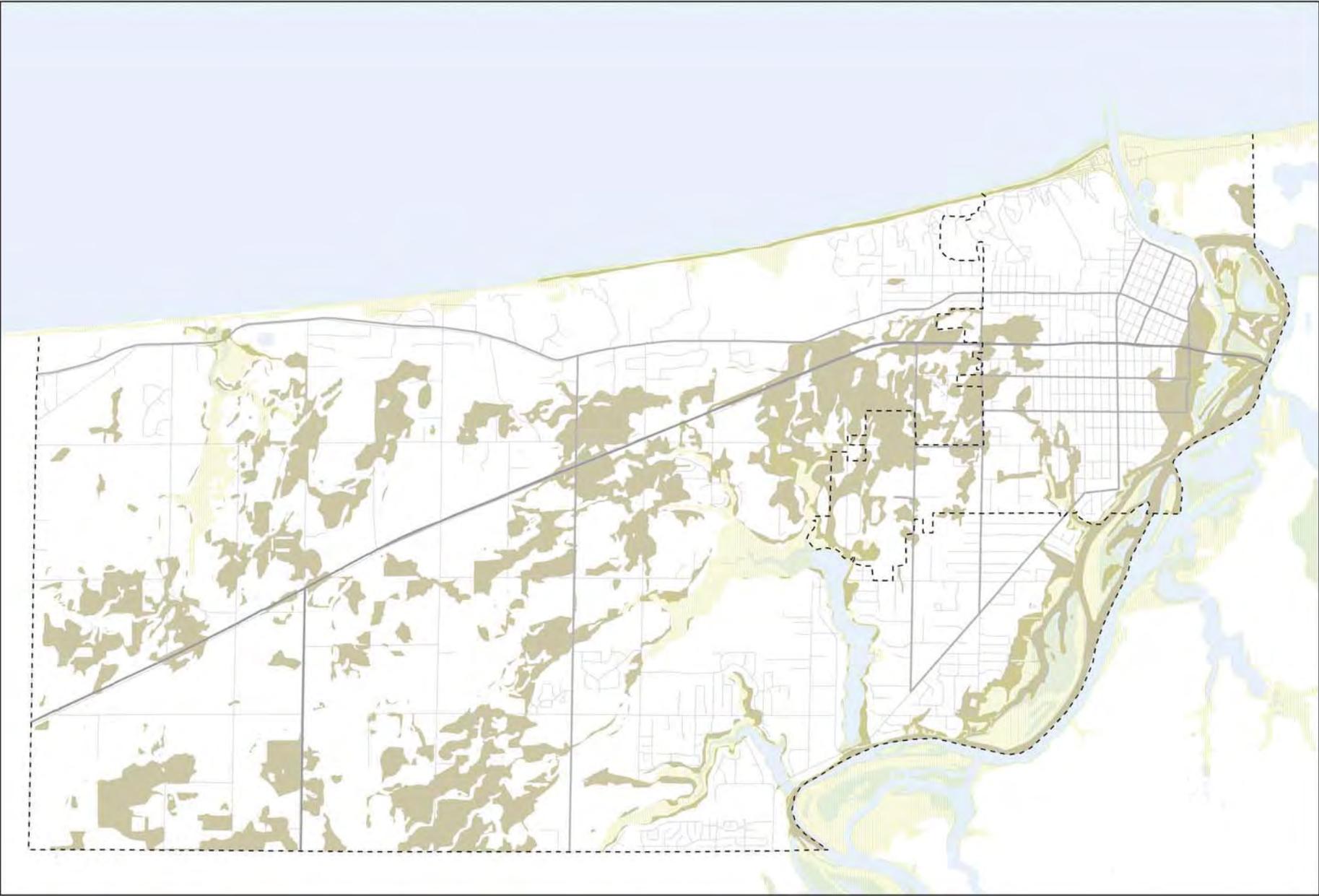


||| "Lucky" Flood Zone

■ Potential Wetlands

1:42,000 0 0.25 0.5 1 1.5 2 Miles

Map 9.12 Potential Wetlands under "Expected" Climate Future

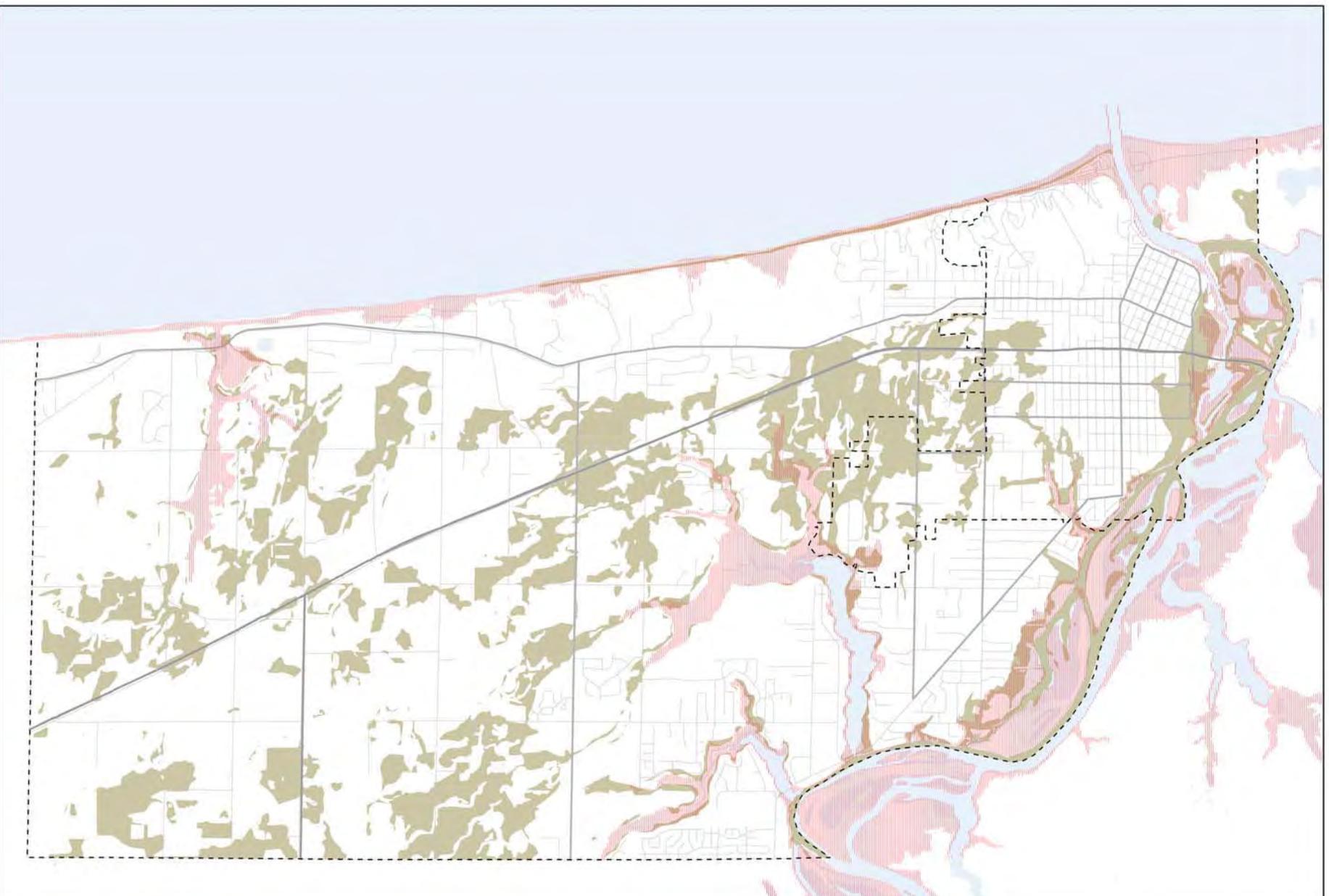


Expected Flood Zone

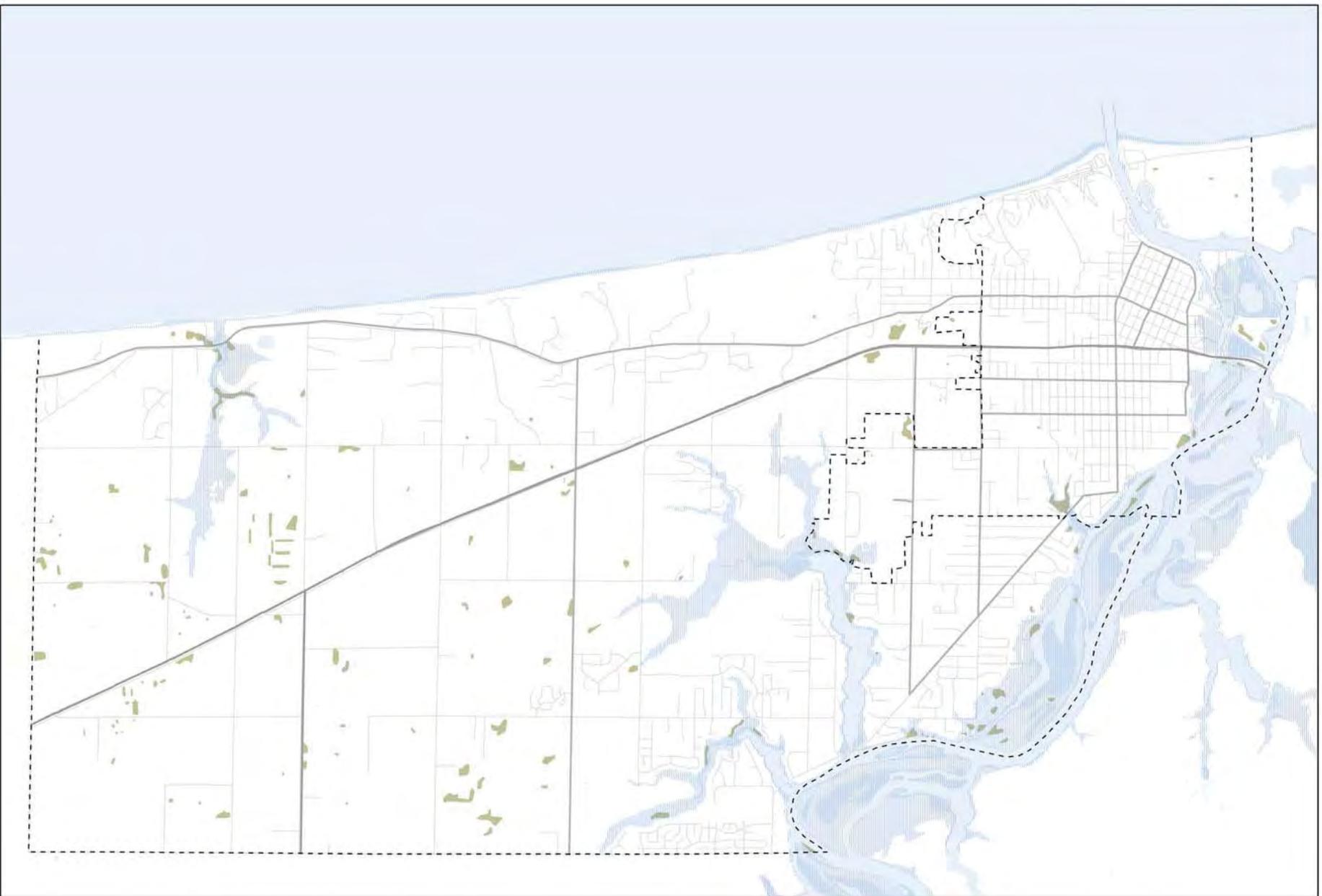
Potential Wetlands

1:42,000 0 0.25 0.5 1 1.5 2 Miles

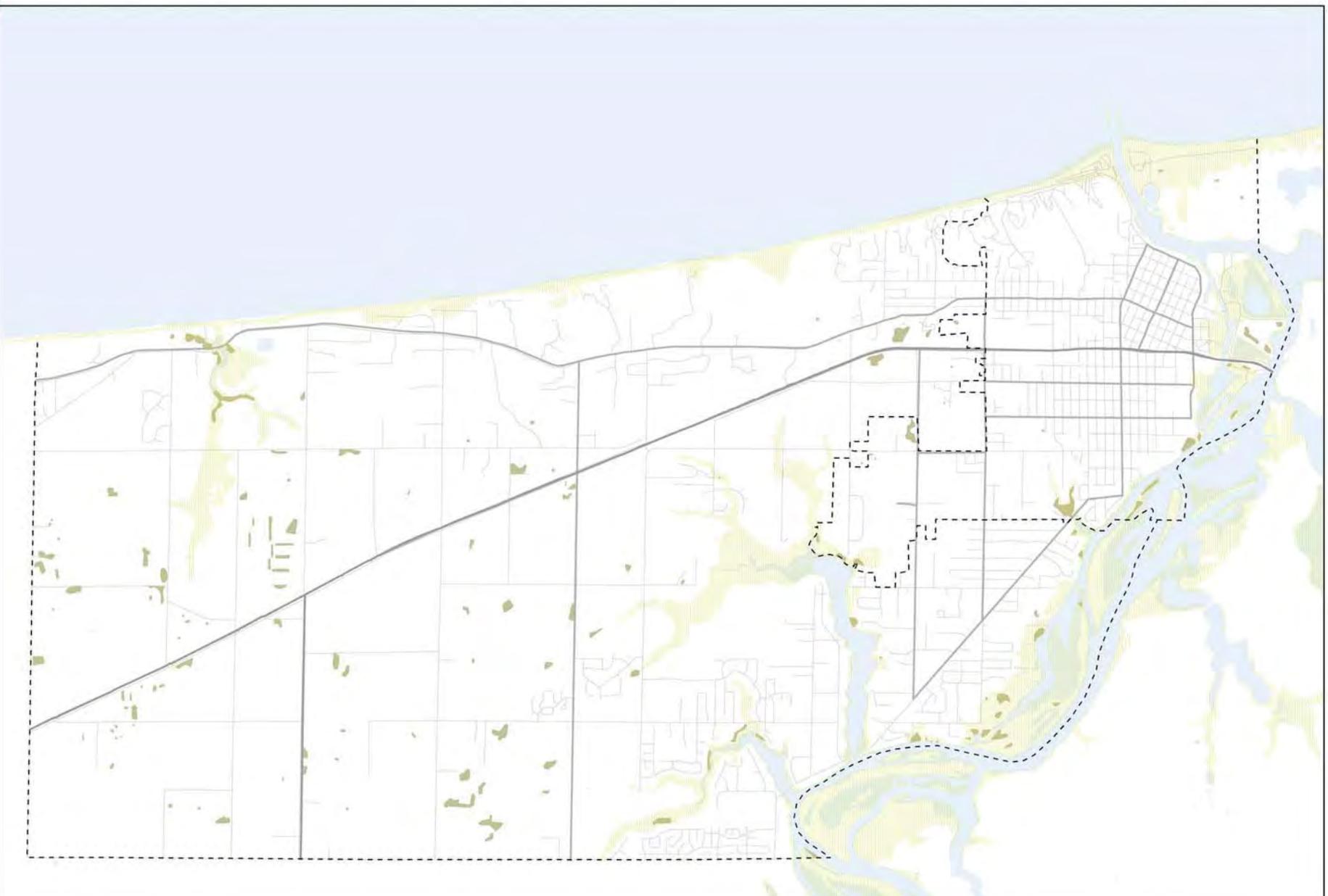
Map 9.13 Potential Wetlands under "Perfect Storm" Climate Future



Map 9.14 Existing Wetlands under 5 Acres under "Lucky" Climate Future



Map 9.15 Existing Wetlands under 5 Acres under "Expected" Climate Future

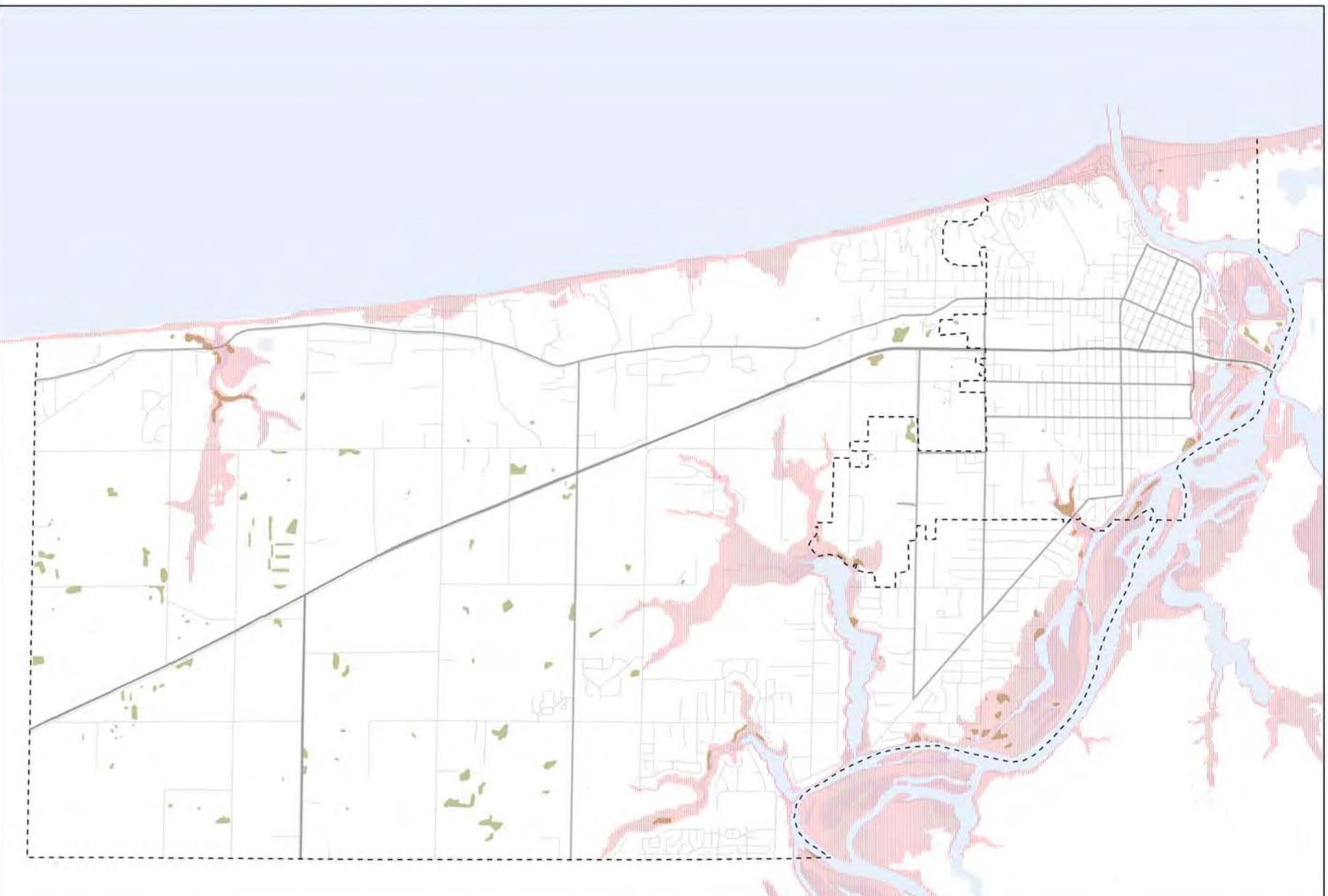


Expected Flood Zone

Existing Wetlands under 5 Acres

1:42,000 0 0.25 0.5 1 1.5 2 Miles

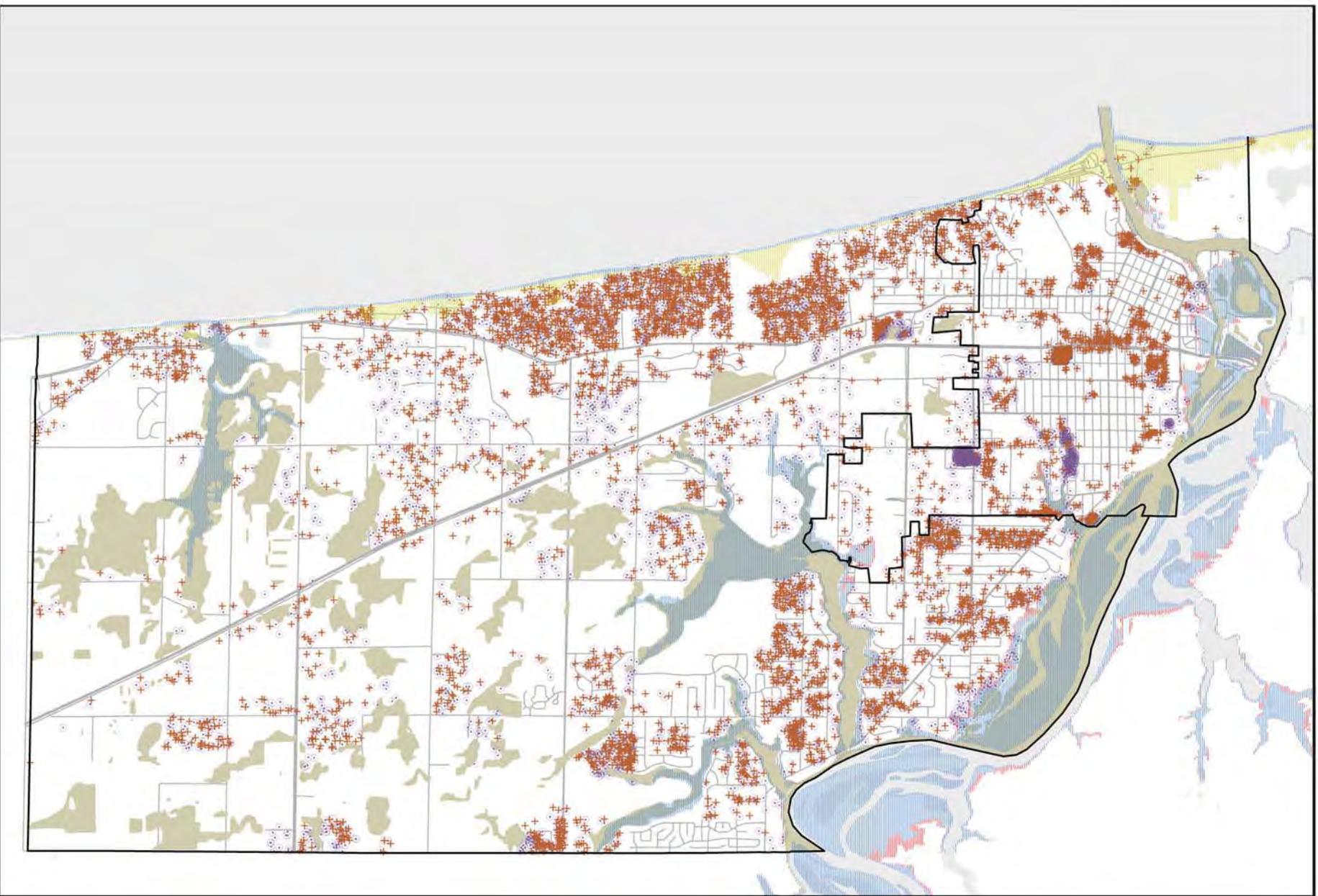
Map 9.16 Existing Wetlands under 5 Acres under "Perfect Storm" Climate Future



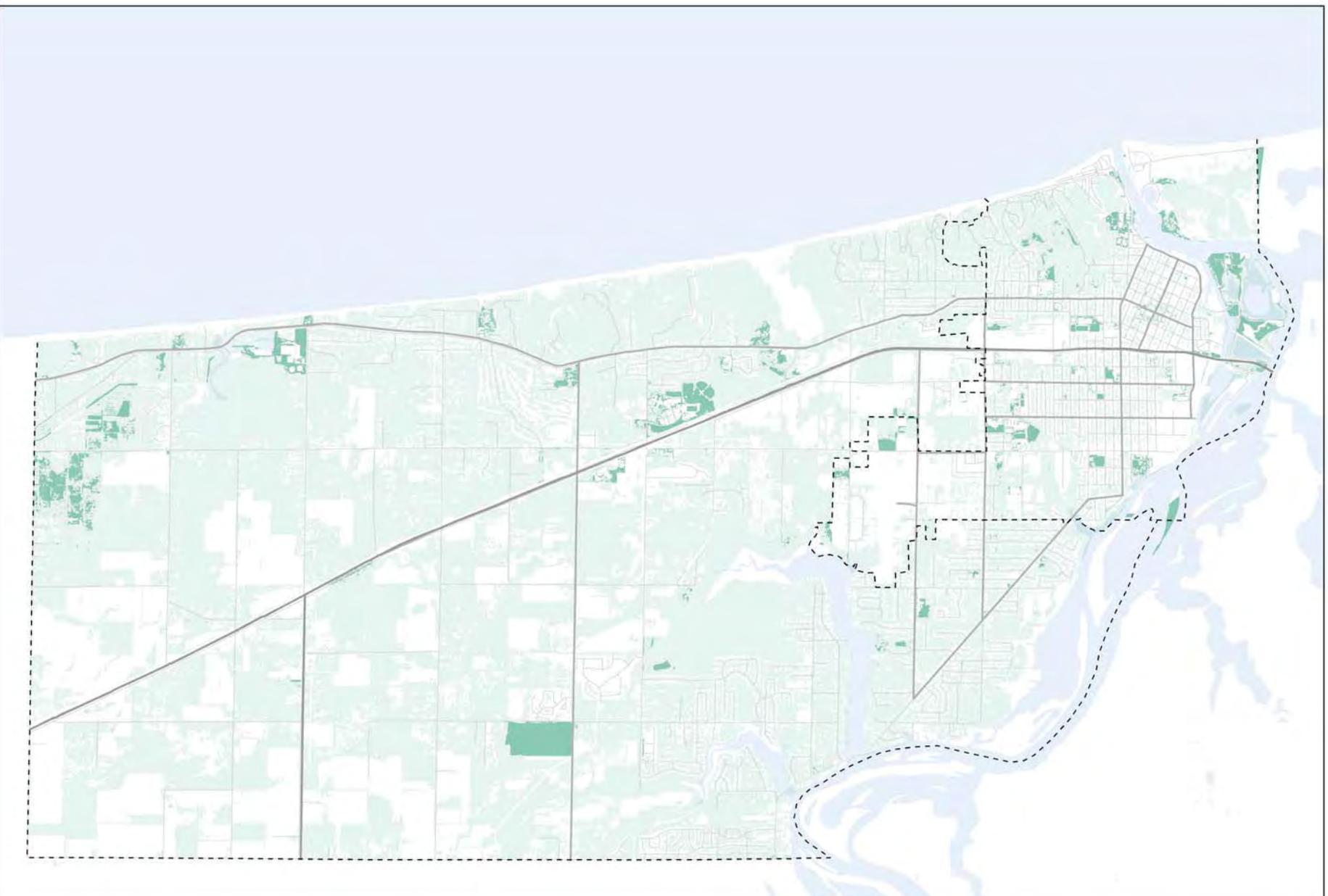
Perfect Storm Flood Zone Existing Wetlands under 5 Acres

1:42,000 0 0.25 0.5 1 1.5 2 Miles

Map 9.17 Existing Wetlands with Climate Futures and Management Options



Map 9.18 Existing and Potential Tree Canopy



Potential Tree Canopy

Existing Tree Canopy

1:42,000

0

0.25

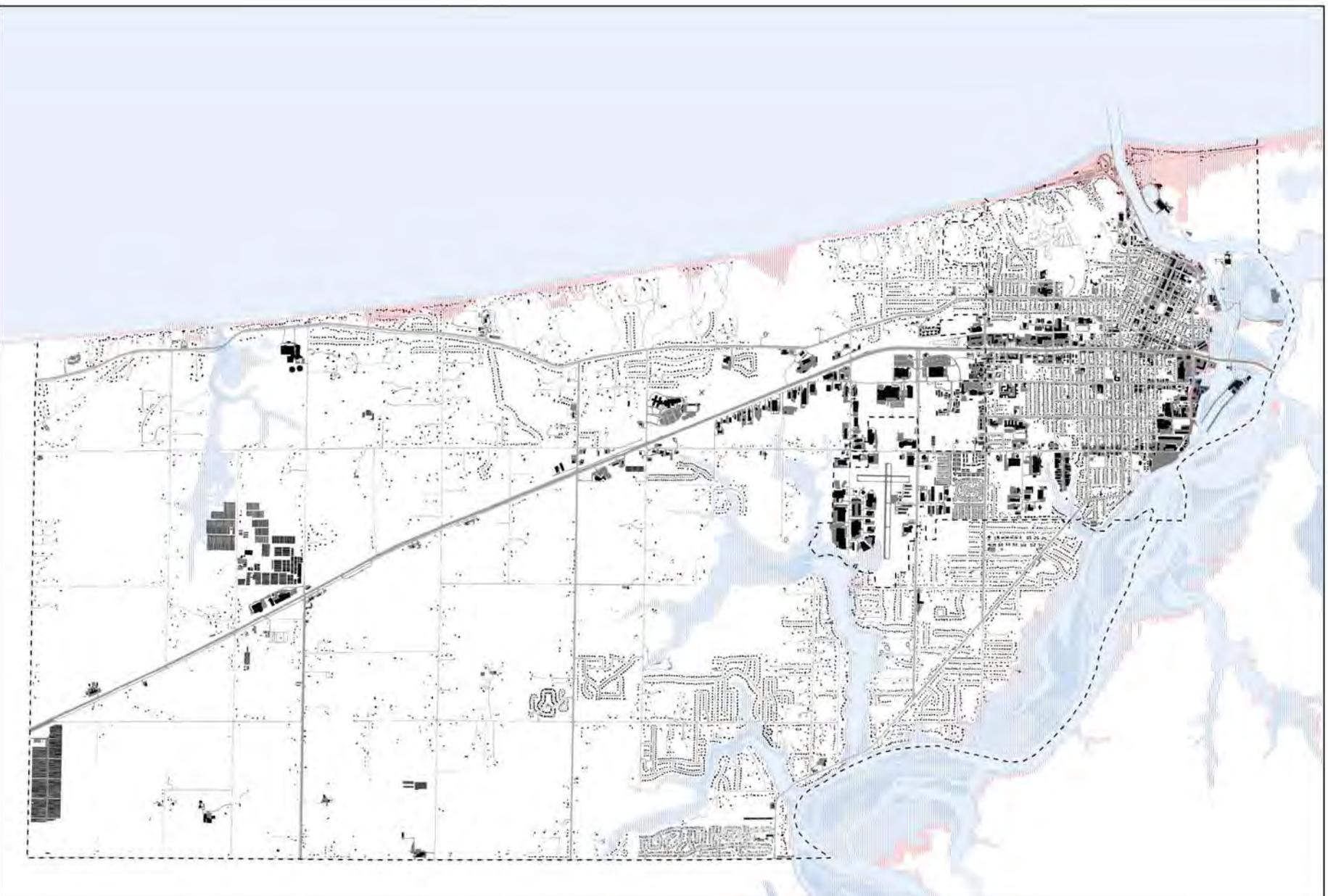
0.5

1

1.5

2
Miles

Map 9.19 Impervious Surfaces and Climate Futures



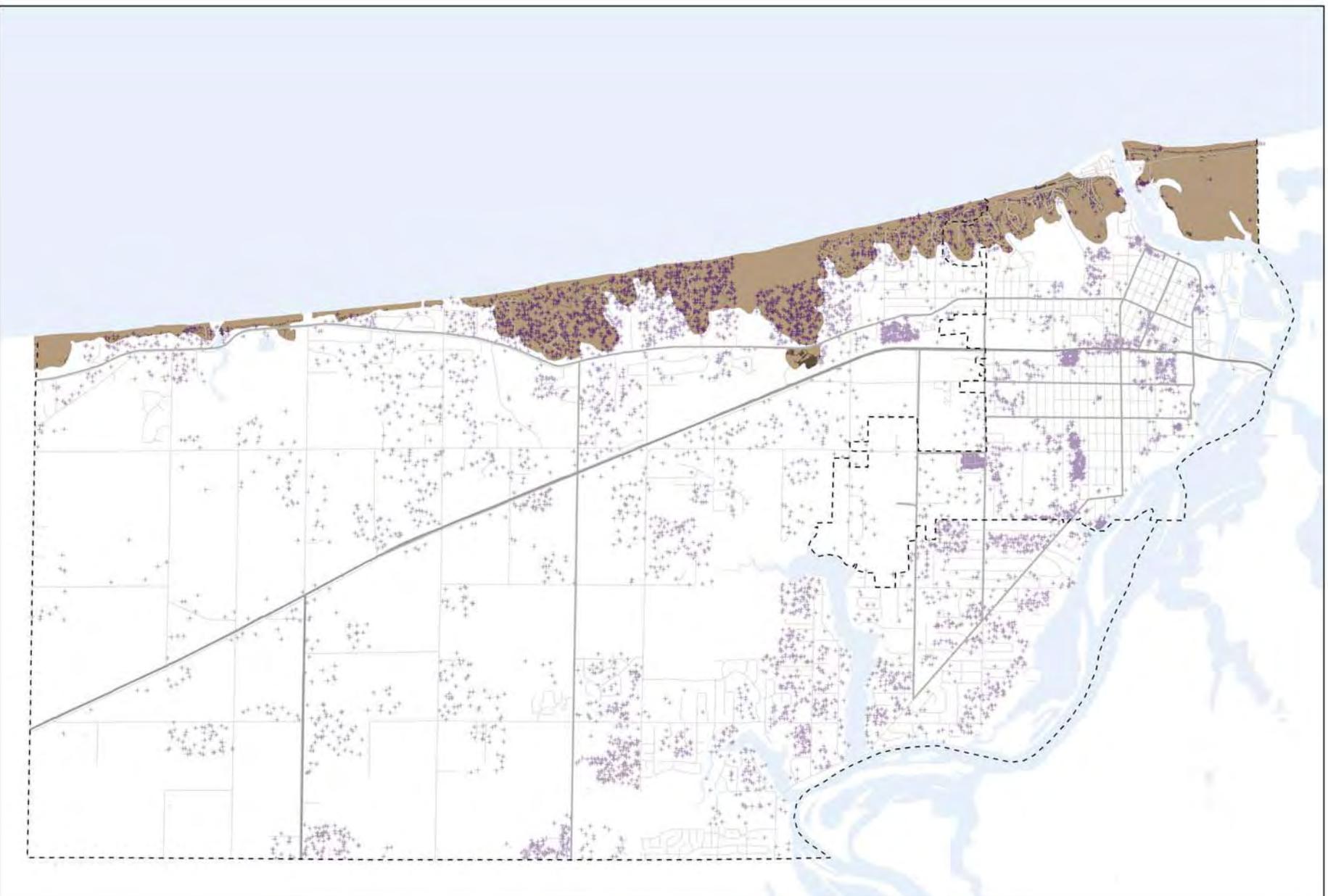
"Lucky" Flood Zone
"Perfect Storm" Flood Zone

Expected Flood Zone
Building Footprints

Impervious Surface

1:42,000 0 0.25 0.5 1 1.5 2 Miles

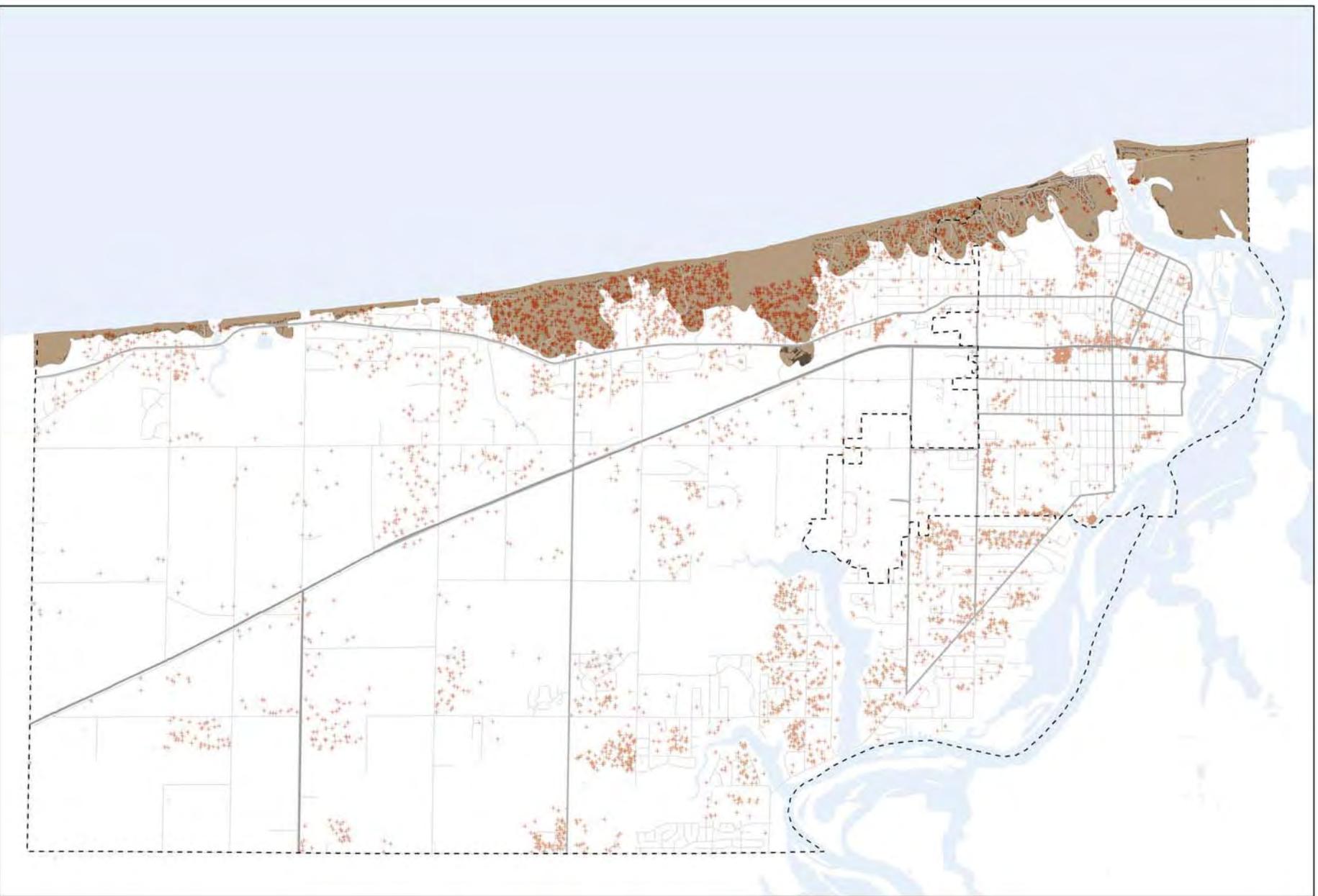
Map 9.20 Build-out According to Current Zoning and Critical Dune Areas



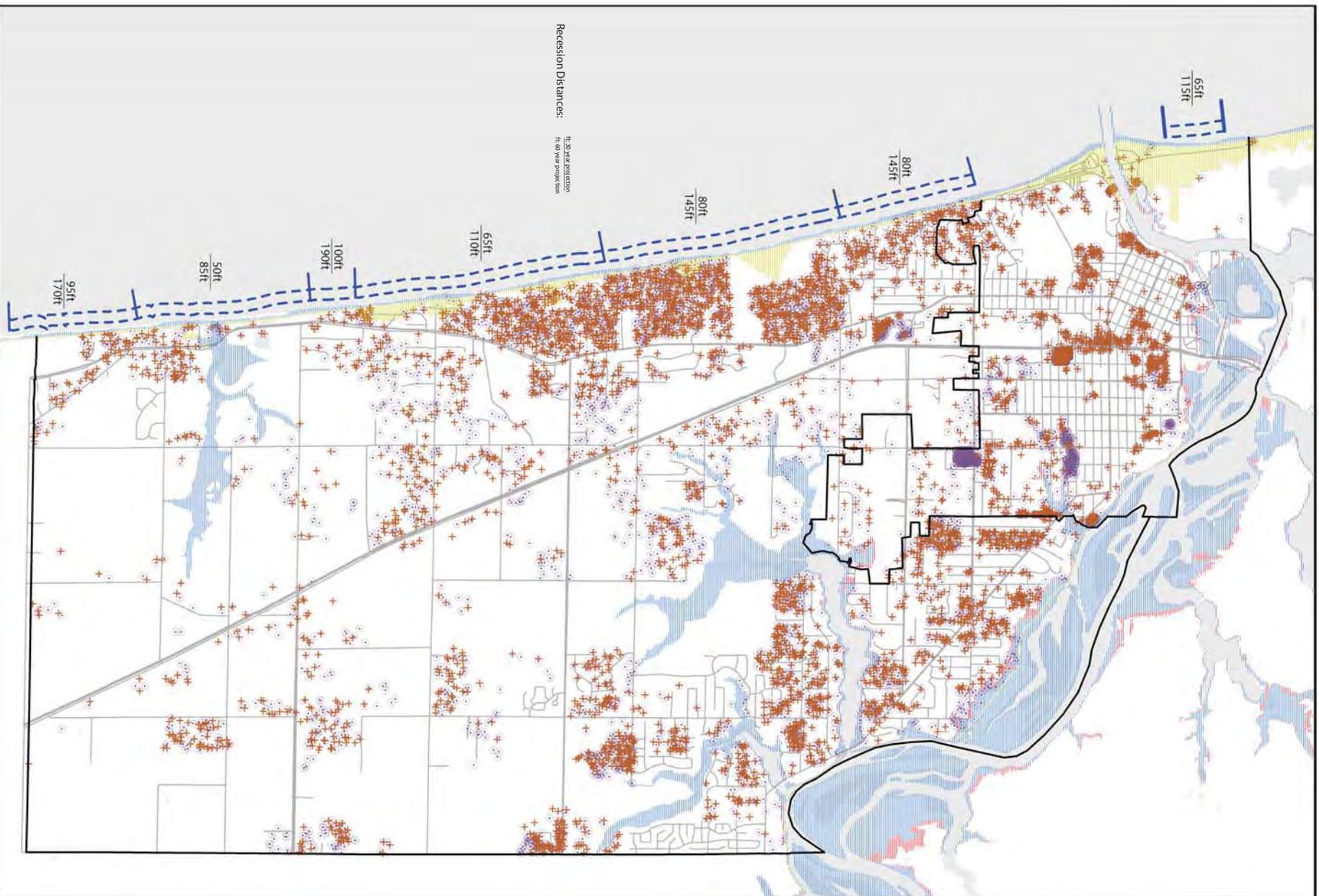
■ Critical Dunes
+ Build-outs According to Current Zoning

1:42,000 0 0.25 0.5 1 1.5 2 Miles

Map 9.21 Build-out According to Best Management Practices and Critical Dune Areas

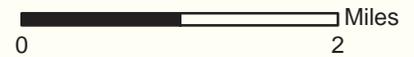
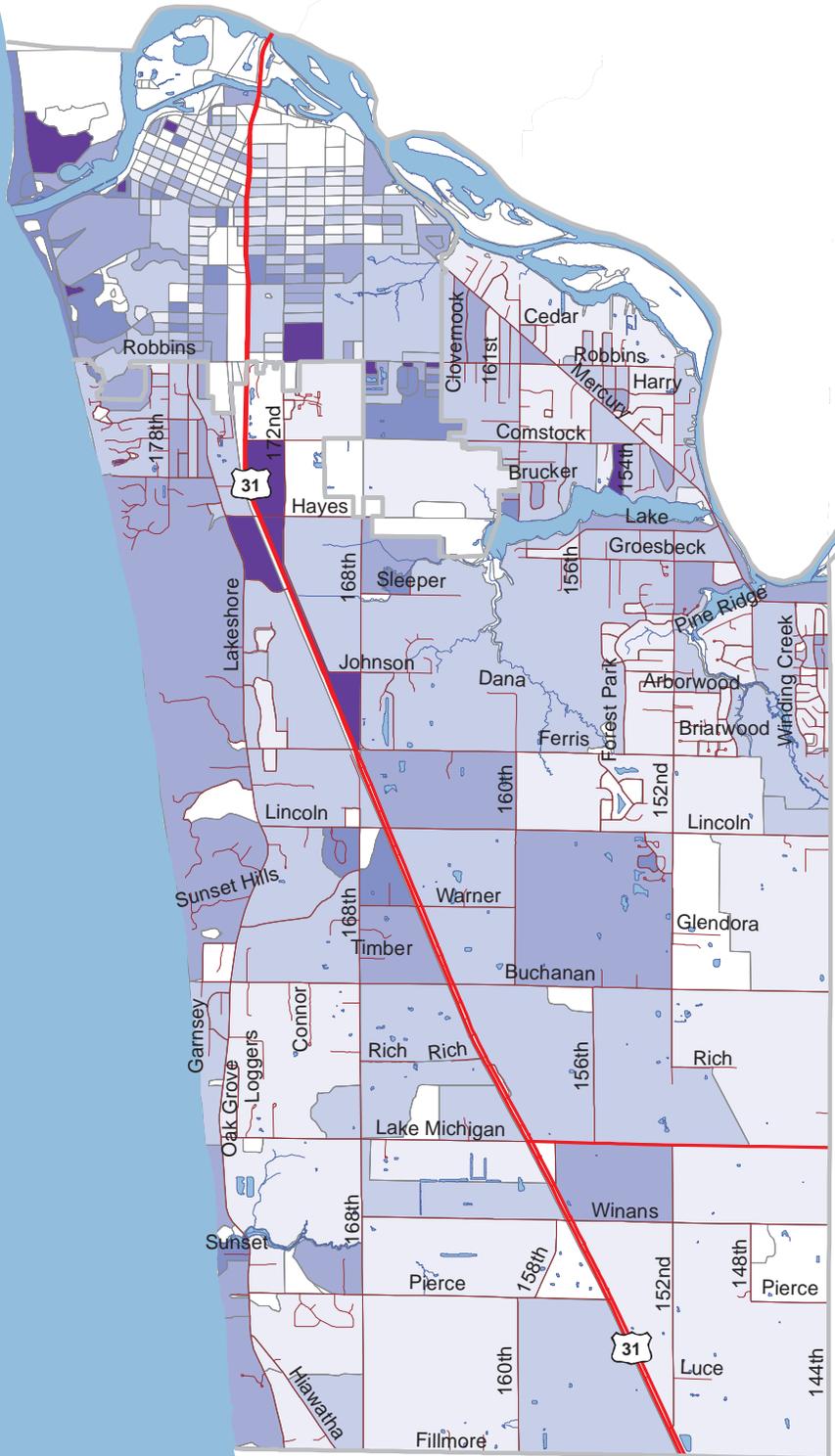


Map 9.22 High Risk Erosion Areas and Climate Futures



**Percent of Population 65 Years and Older (male and female)
Map #10.1**

- 61.55 - 100.00% (5)
- 33.34 - 61.54% (4)
- 19.29 - 33.33% (3)
- 9.56 - 19.28% (2)
- 1.22 - 9.55% (1)
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
 U.S. Census Bureau, Block Level Data (2010),
 ACS data (2009-2013)
 Grand Haven Charter Township
 Michigan Geo. Data Library
 Ottawa County GIS

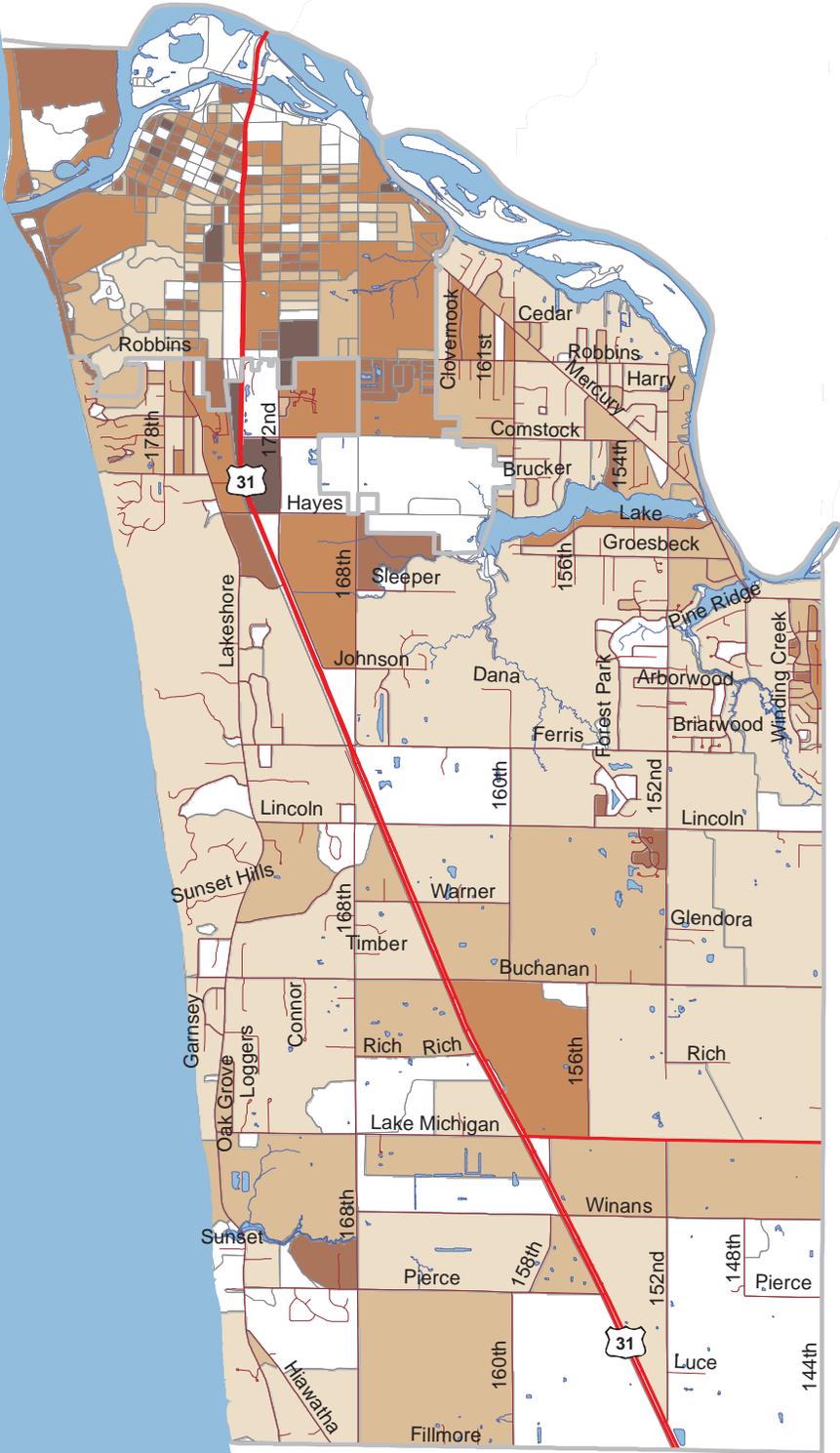


Prepared August 2015 by:



Percent of Households with People Living Alone Map #10.2

- 72.23 - 100.00% (5)
- 45.46 - 72.22% (4)
- 30.01 - 45.45% (3)
- 17.40 - 30.00% (2)
- 3.03 - 17.39% (1)
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



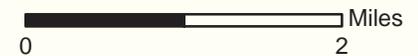
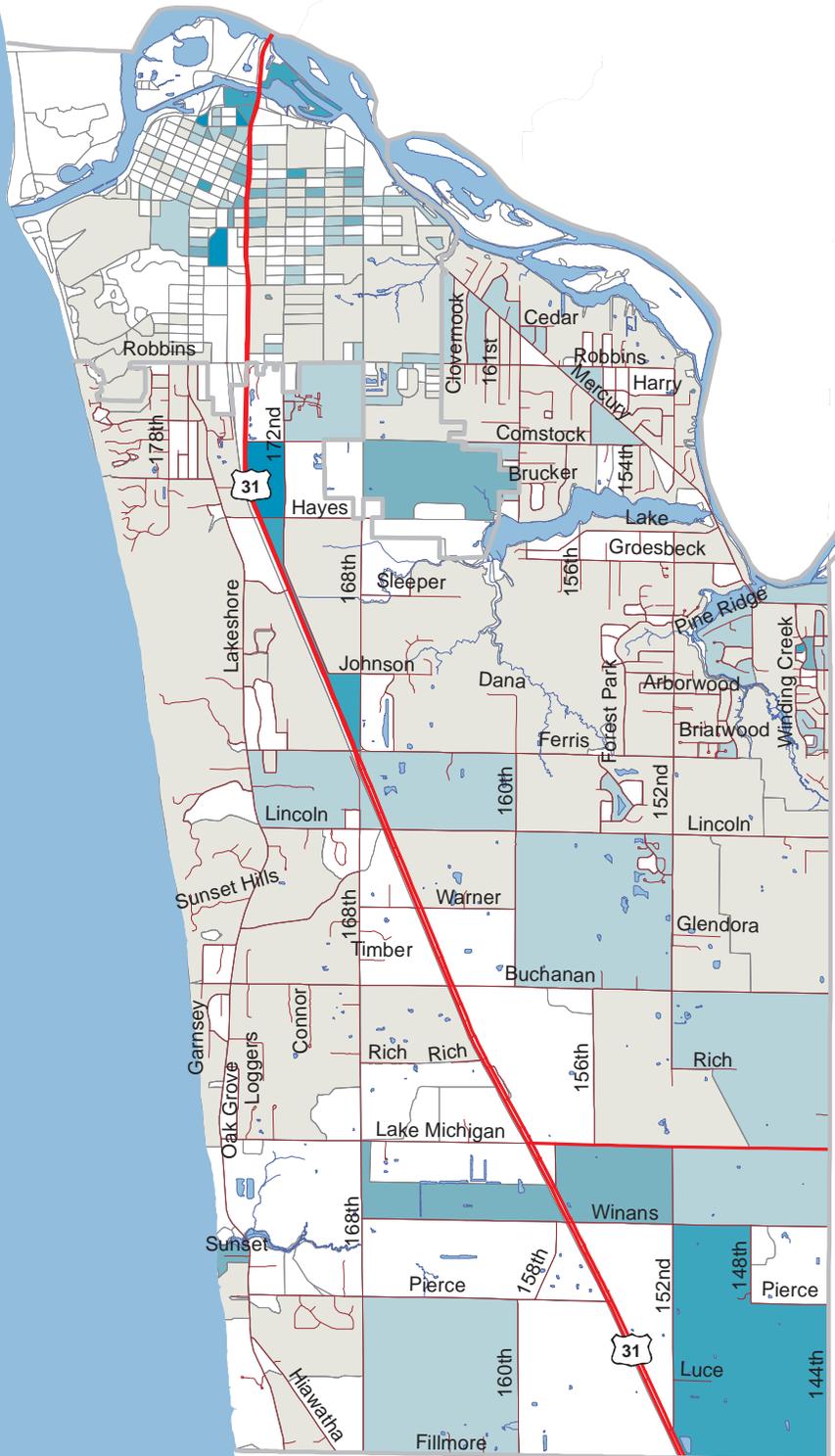
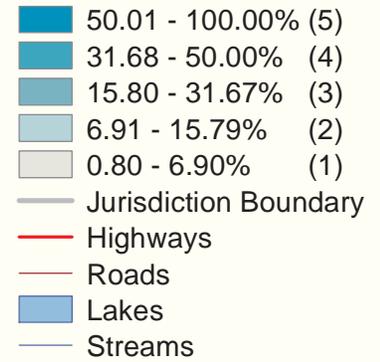
Data Sources:
 U.S. Census Bureau, Block Level Data (2010),
 ACS data (2009-2013)
 Grand Haven Charter Township
 Michigan Geo. Data Library
 Ottawa County GIS



Prepared August 2015 by:



Percent of Non-white Population Map #10.3



Data Sources:
 U.S. Census Bureau, Block Level Data (2010),
 ACS data (2009-2013)
 Grand Haven Charter Township
 Michigan Geo. Data Library
 Ottawa County GIS

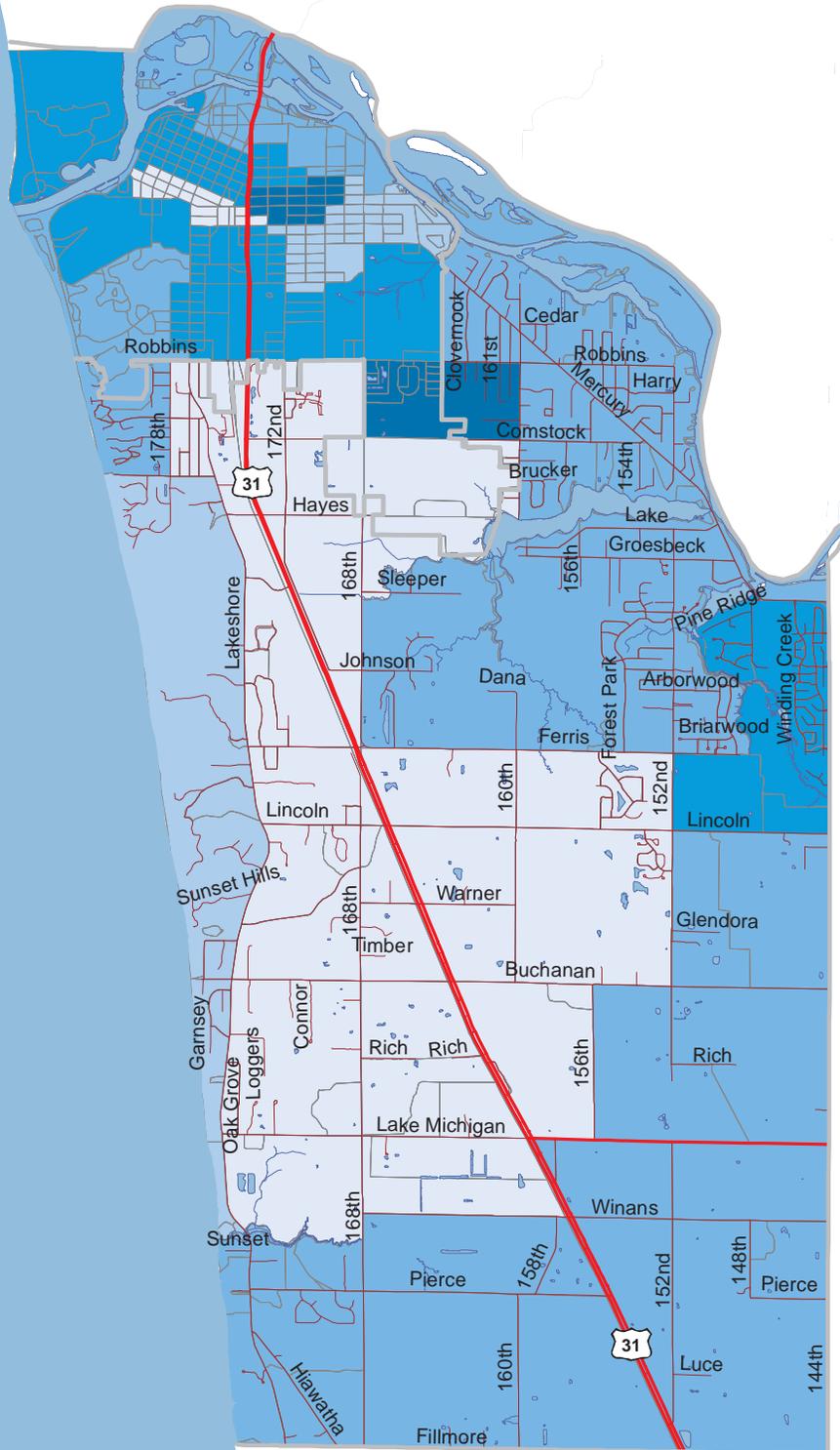


Prepared August 2015 by:



Percent of Households Living Below the Poverty Threshold Map #10.4

- 17.2 - 22.8% (5)
- 9.0 - 17.1% (4)
- 6.9 - 8.9% (3)
- 3.9 - 6.8% (2)
- 2.0 - 3.8% (1)
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
 U.S. Census Bureau, Block Level Data (2010),
 ACS data (2009-2013)
 Grand Haven Charter Township
 Michigan Geo. Data Library
 Ottawa County GIS

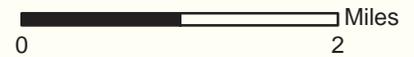
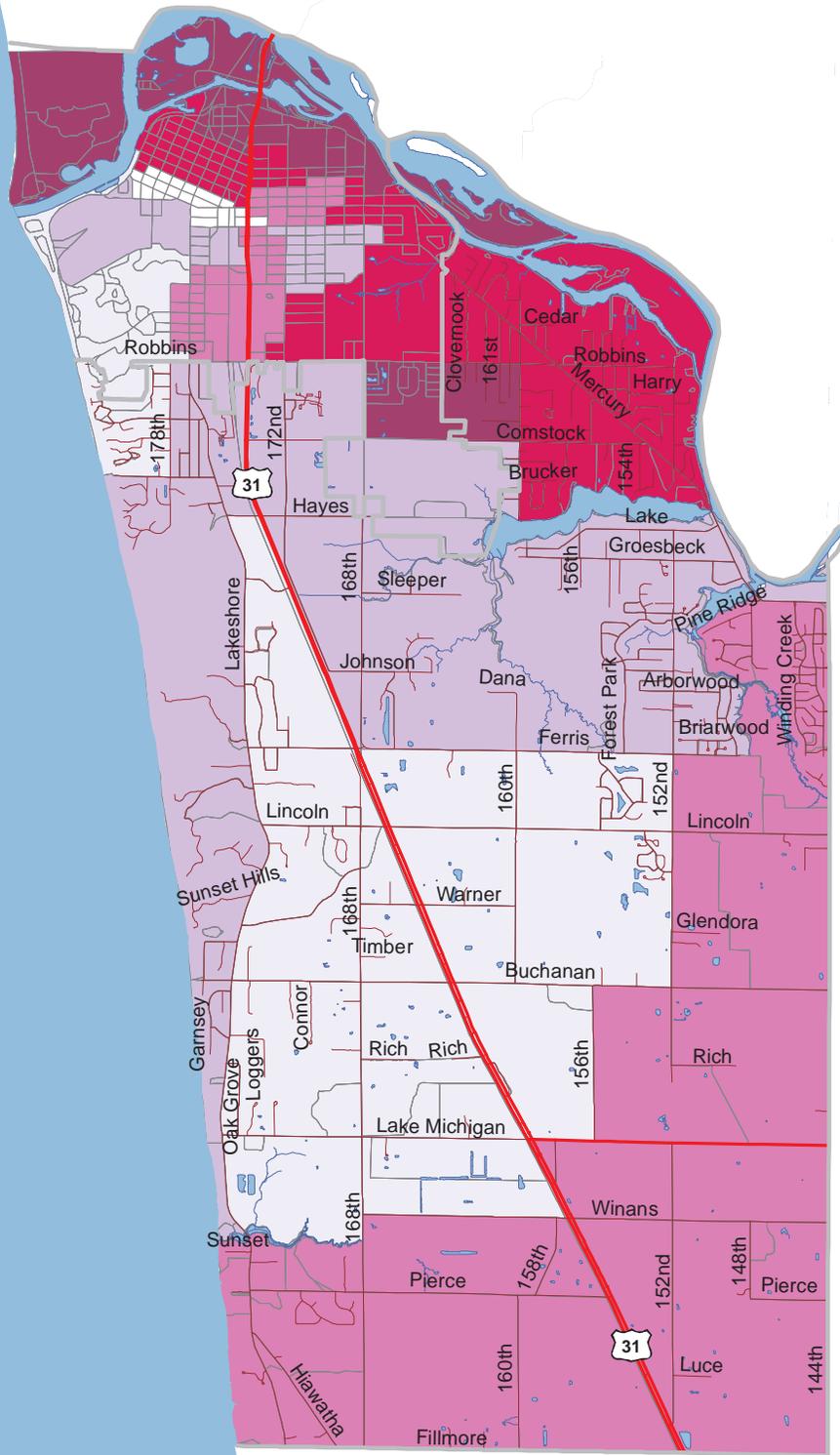


Prepared August 2015 by:



**Percent of Population 25 years and Older with less than a High School Education
Map #10.5**

- 10.31 - 16.40% (5)
- 8.11 - 10.30% (4)
- 4.01 - 8.10% (3)
- 1.11 - 4.00% (2)
- 0.80 - 1.10% (1)
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
 U.S. Census Bureau, Block Level Data (2010),
 ACS data (2009-2013)
 Grand Haven Charter Township
 Michigan Geo. Data Library
 Ottawa County GIS



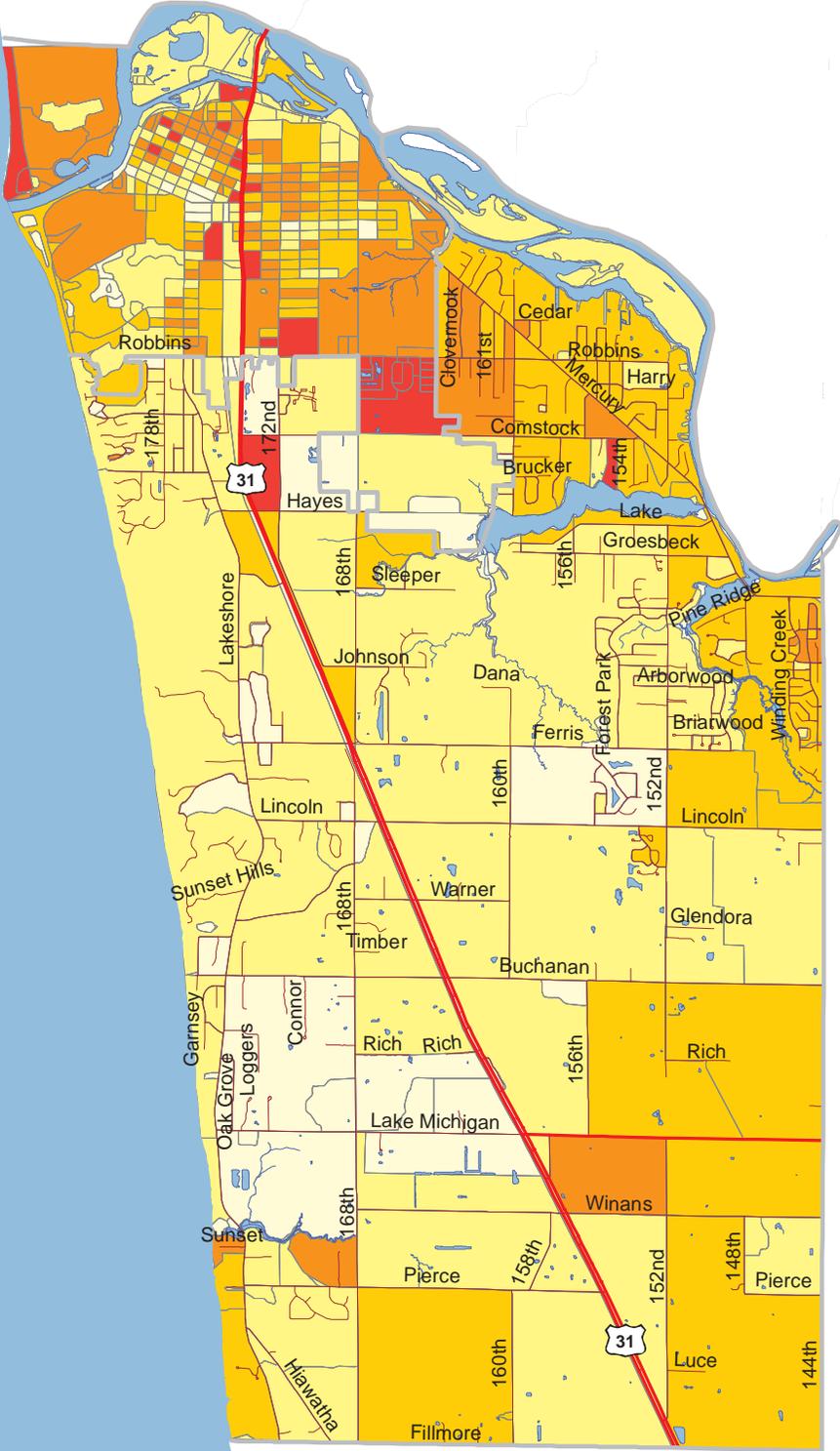
Prepared August 2015 by:



Relative Sensitivity of Populations to Extreme Heat Events Map #10.6

additive score	re-score
16 - 21	(5)
13 - 15	(4)
10 - 12	(3)
6 - 9	(2)
1 - 5	(1)

- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
 U.S. Census Bureau, Block Level Data (2010),
 ACS data (2009-2013)
 Grand Haven Charter Township
 Michigan Geo. Data Library
 Ottawa County GIS

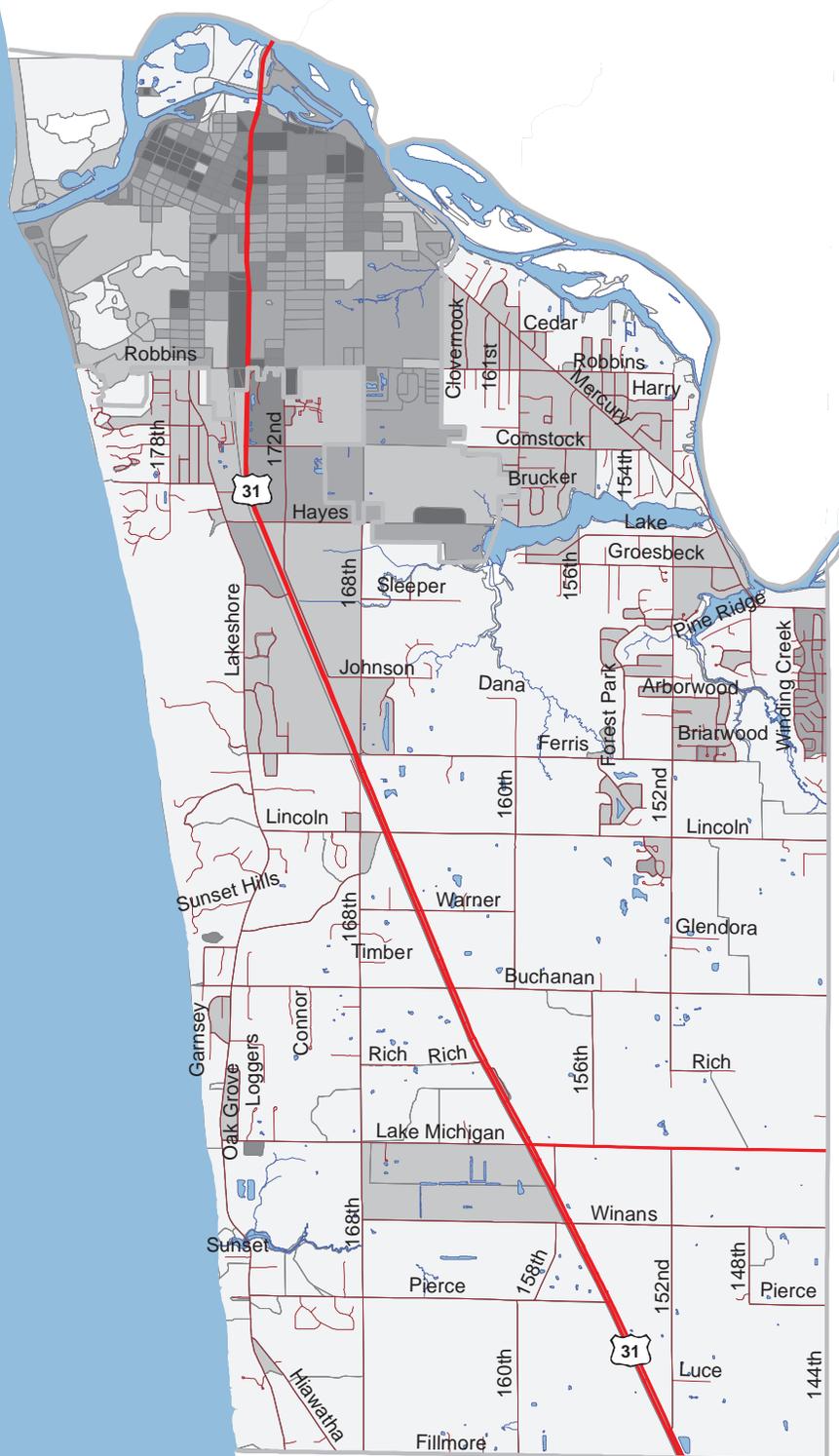


Prepared August 2015 by:



Percent Impervious Surface Exposure Map #10.7

- 67.0 - 99.1% (5)
- 44.4 - 66.9% (4)
- 26.3 - 44.3% (3)
- 11.5 - 26.2% (2)
- 0.1 - 11.4% (1)
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
 U.S. Census Bureau, Block Level Data (2010),
 ACS data (2009-2013)
 Grand Haven Charter Township
 Michigan Geo. Data Library
 Ottawa County GIS

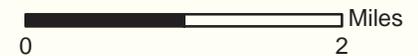
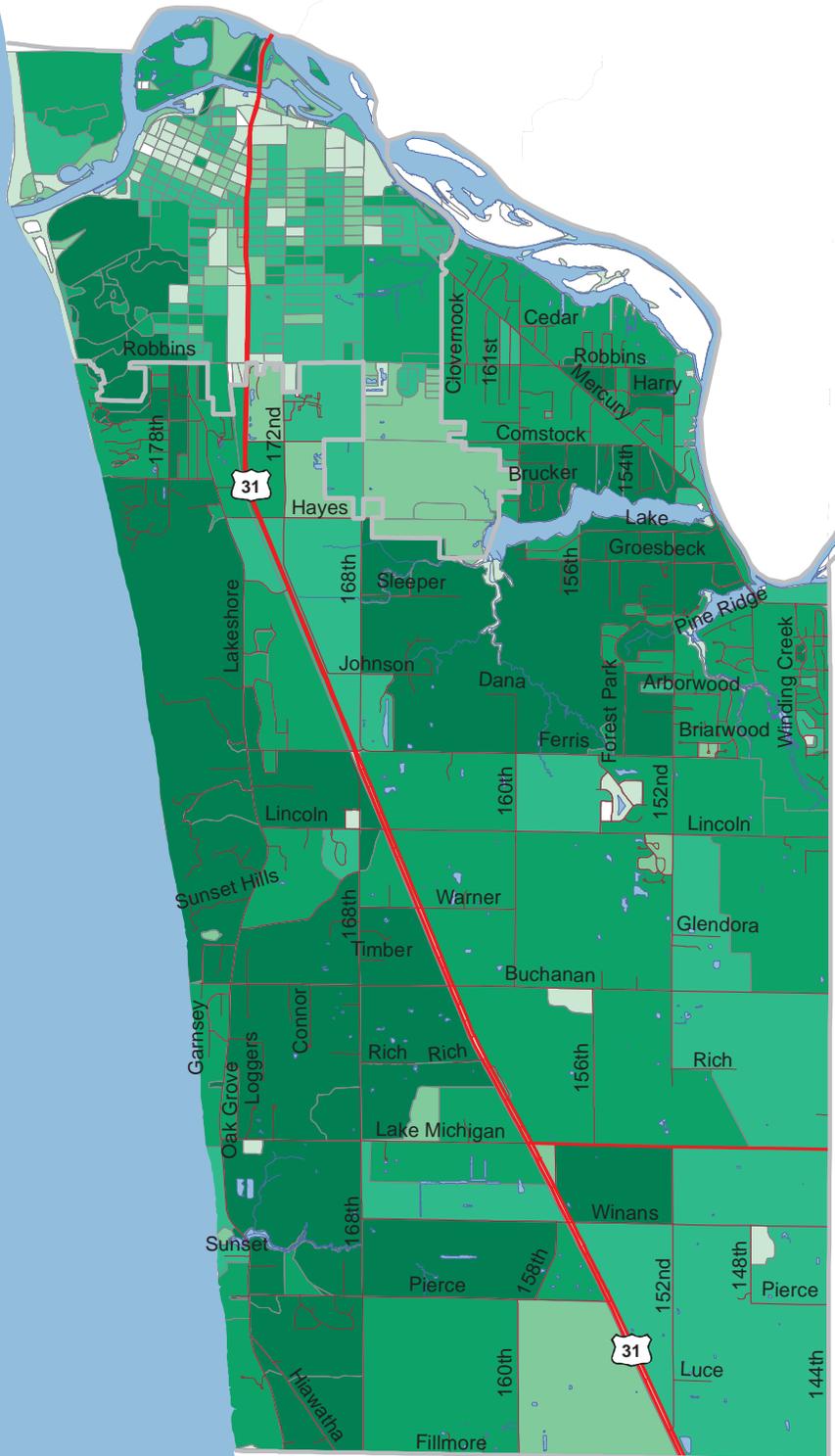


Prepared August 2015 by:



Percent Tree Canopy Map #10.8

- 0.4 - 14.7% (5)
- 14.8 - 32.4% (4)
- 32.5 - 50.6% (3)
- 50.7 - 69.9% (2)
- 70.0 - 98.9% (1)
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



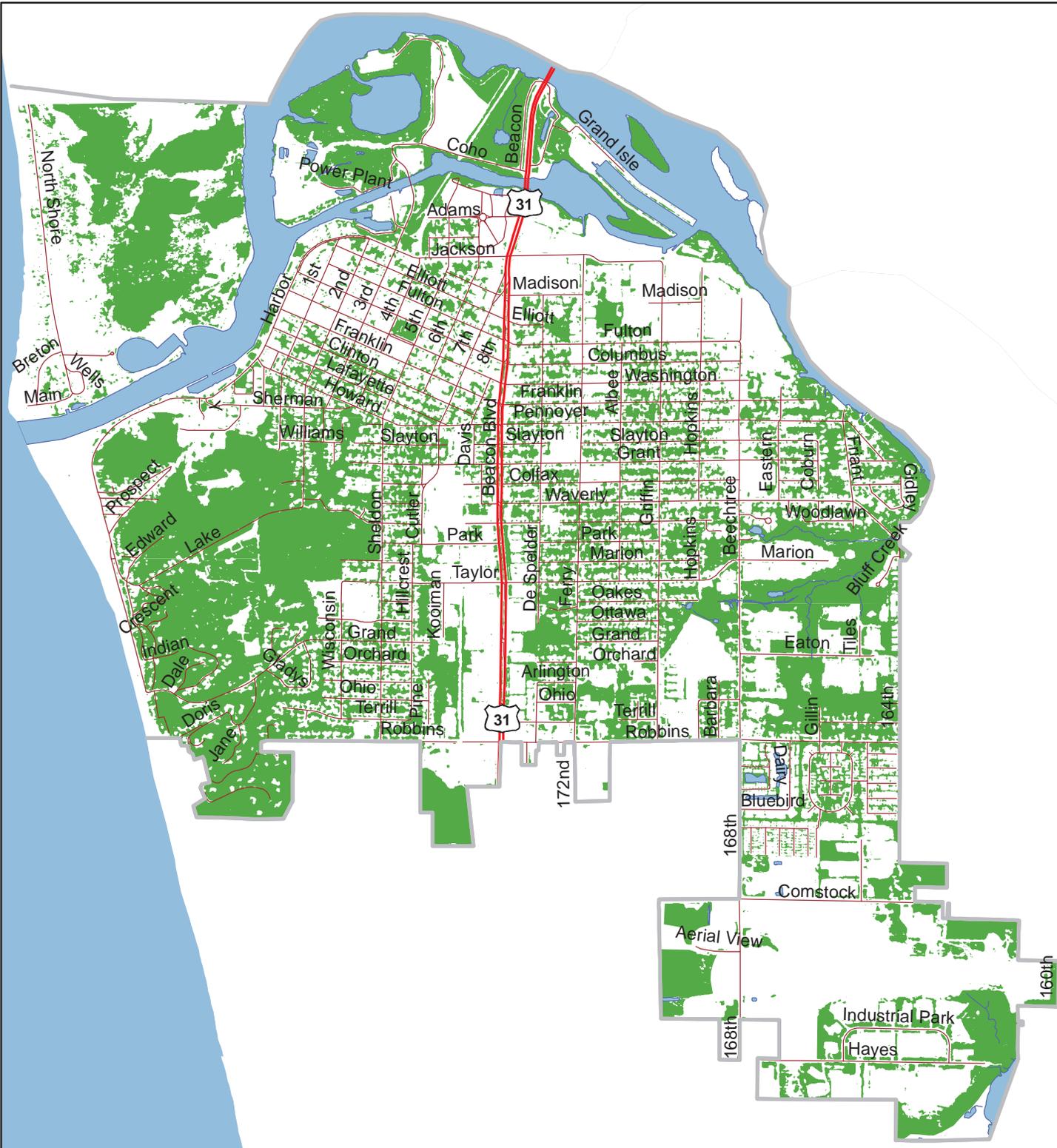
Data Sources:
 U.S. Census Bureau, Block Level Data (2010),
 ACS data (2009-2013)
 Grand Haven Charter Township
 Michigan Geo. Data Library
 Ottawa County GIS



Prepared August 2015 by:



Tree Canopy Map #10.9



- Tree Canopy
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
 USDA-NRCS Geospatial Data Gateway,
 2009 CIR Image
 Michigan Geo. Data Library
 City of Grand Haven
 Ottawa County GIS

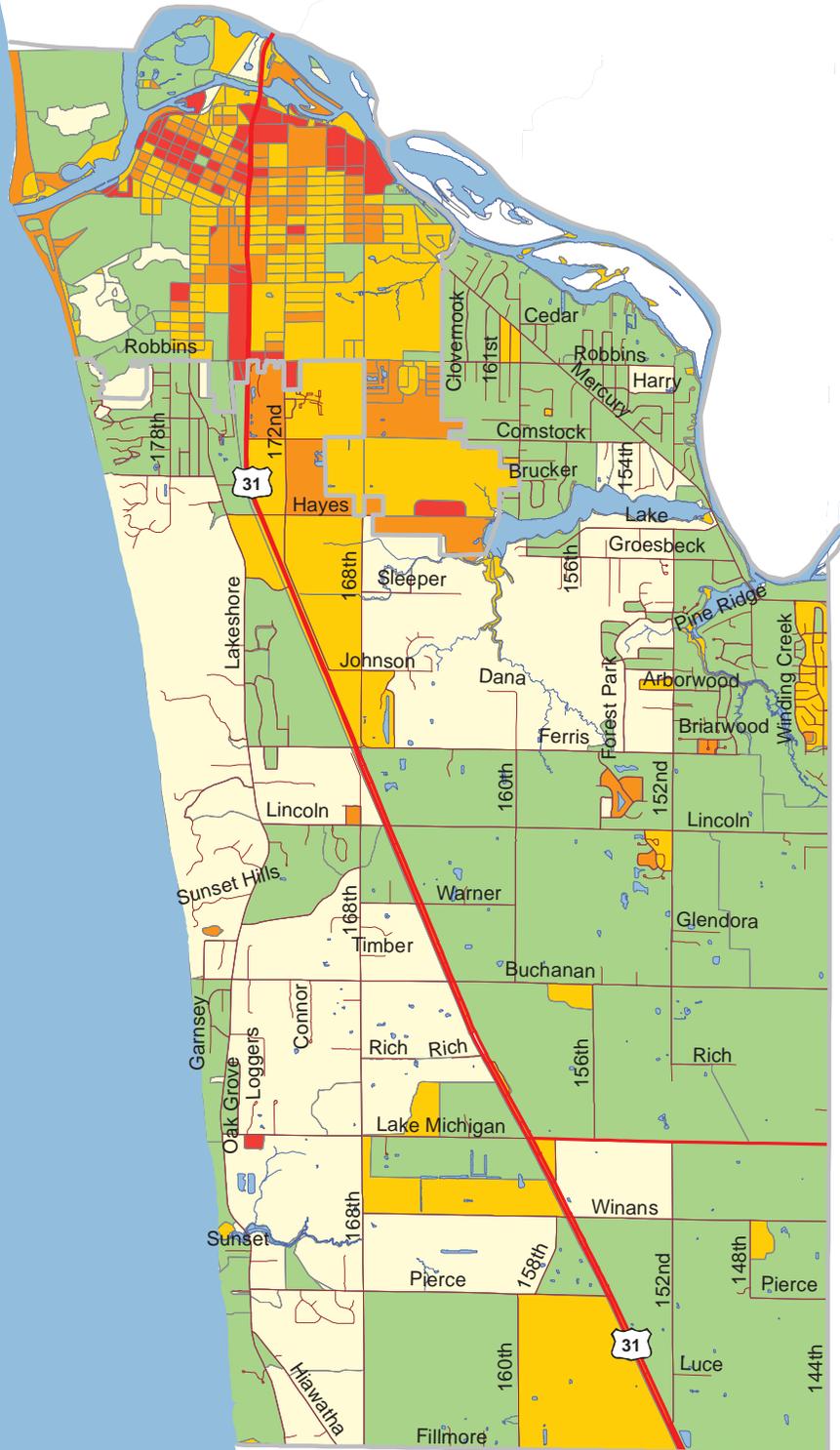


Prepared August 2015 by:

Relative Exposure of Populations to Extreme Heat Events Map #10.10

additive score	re-score
9 - 10	(5)
7 - 8	(4)
5 - 6	(3)
3 - 4	(2)
1 - 2	(1)

- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
 U.S. Census Bureau, Block Level Data (2010),
 ACS data (2009-2013)
 Grand Haven Charter Township
 Michigan Geo. Data Library
 Ottawa County GIS

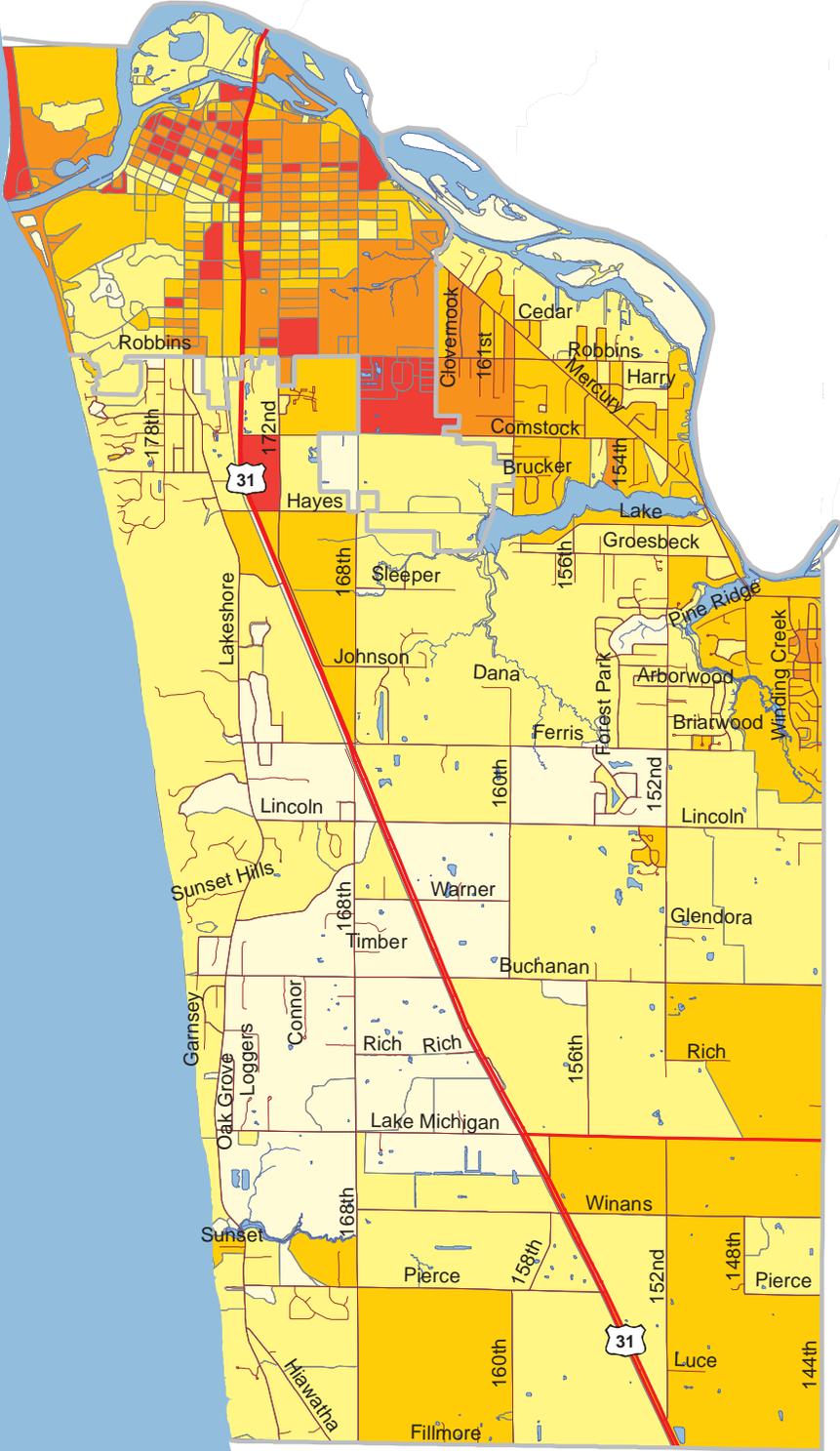


Prepared August 2015 by:



Population Vulnerable to Extreme Heat Events Map #10.11

additive score	re-score
22 - 27	(5)
18 - 21	(4)
14 - 17	(3)
10 - 13	(2)
3 - 9	(1)
— Jurisdiction Boundary	
— Highways	
— Roads	
— Lakes	
— Streams	



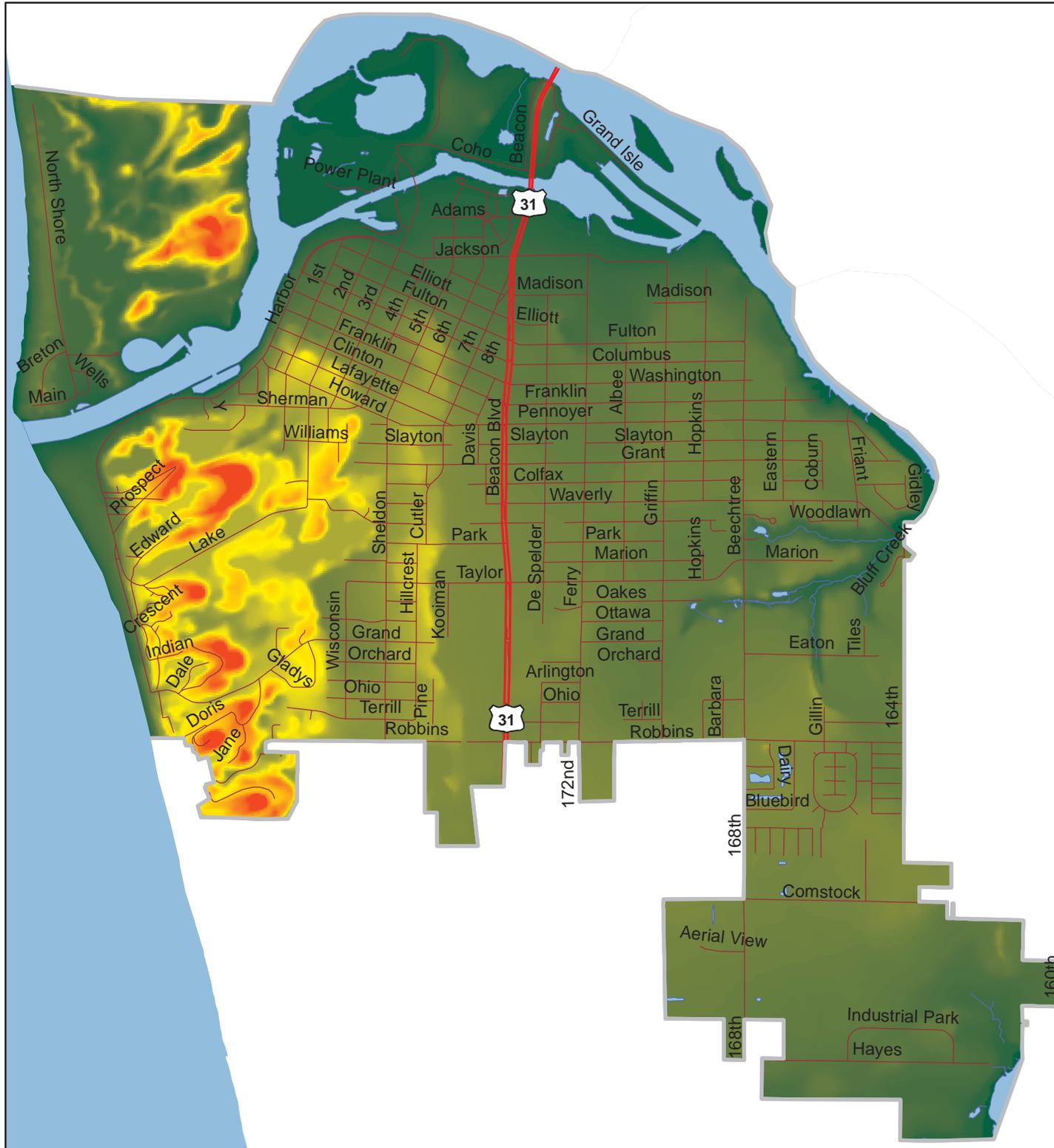
Data Sources:
 U.S. Census Bureau, Block Level Data (2010),
 ACS data (2009-2013)
 Grand Haven Charter Township
 Michigan Geo. Data Library
 Ottawa County GIS



Prepared August 2015 by:



Digital Elevation Model Map #10.12



High : 793.0 ft
Low : 578.9 ft

-  Jurisdiction Boundary
-  Highways
-  Roads
-  Lakes
-  Streams

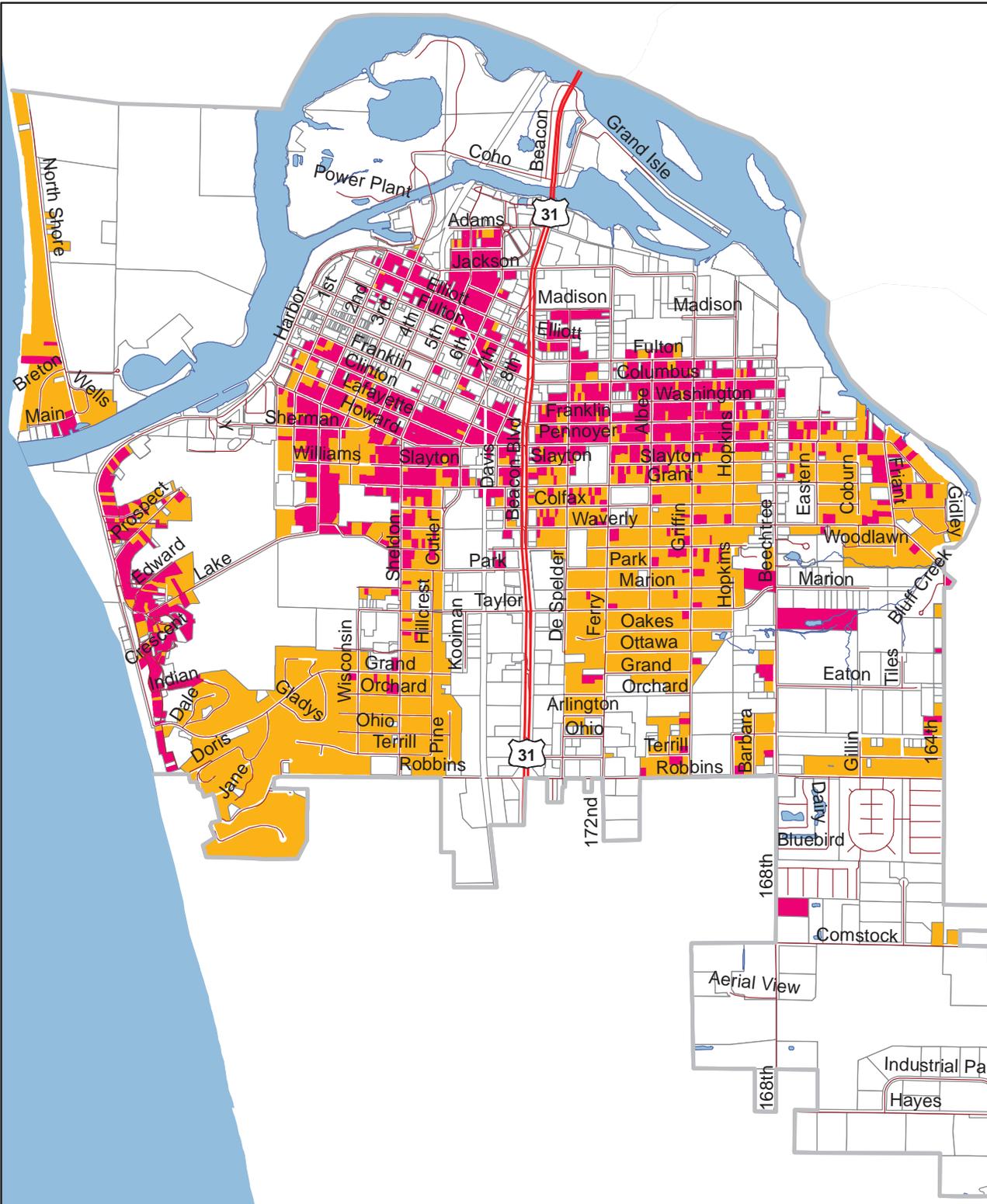
0 0.75 Miles

Data Sources:
USDA-NRCS Geospatial Data Gateway
Michigan Geo. Data Library
Ottawa County GIS



Prepared August 2015 by:

Year Home was Built Map #10.13



- Home built 1940 & earlier
- Home built after 1940
- No data available
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
 City of Grand Haven
 Michigan Geo. Data Library
 Ottawa County GIS

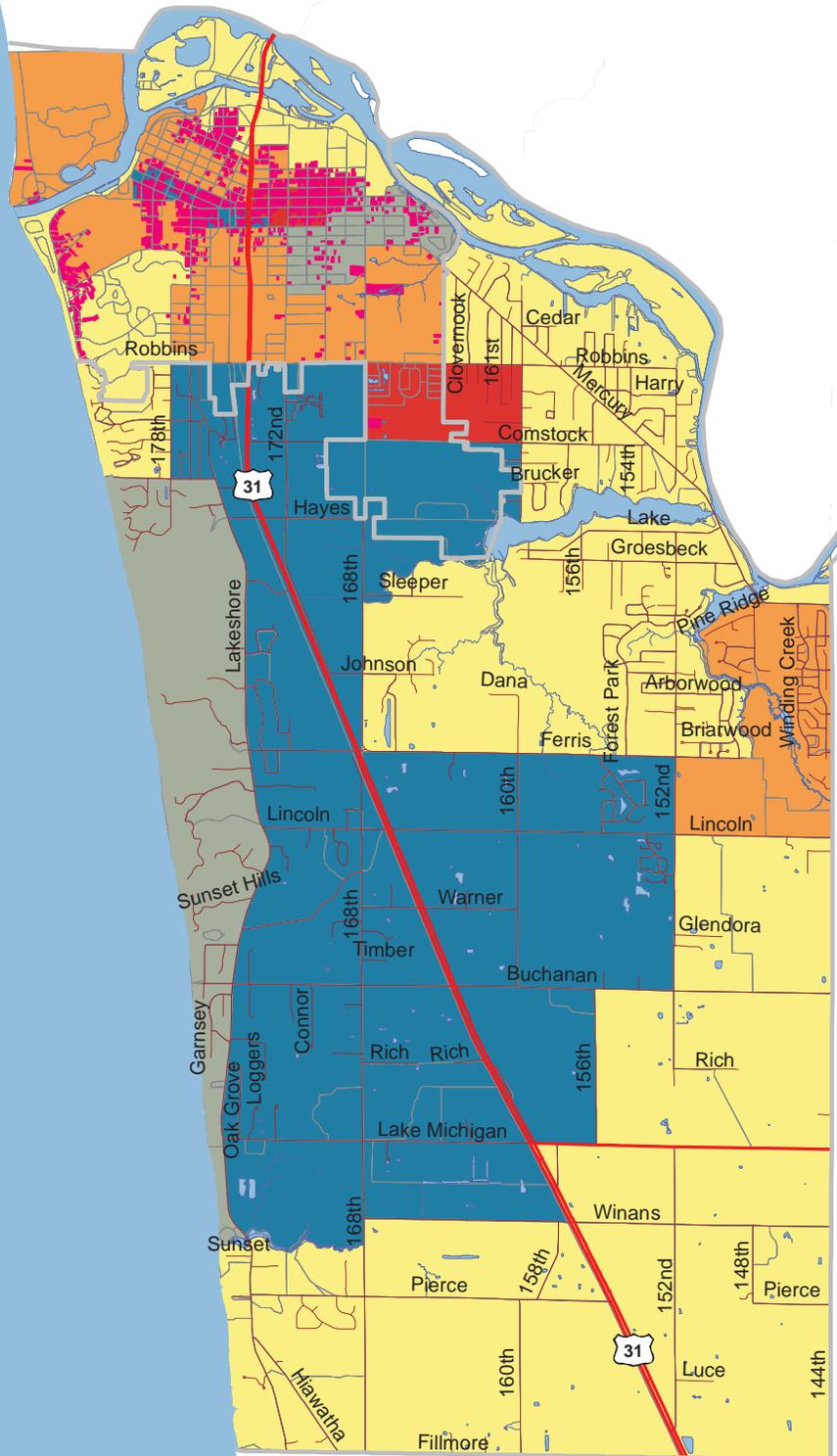


Prepared August 2015 by:



Household Sensitivity Map #10.14

- 17.2 - 22.8%
- 9.0 - 17.1%
- 6.9 - 8.9%
- 3.9 - 6.8%
- 2.0 - 3.8%
- Home built 1940 & earlier
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



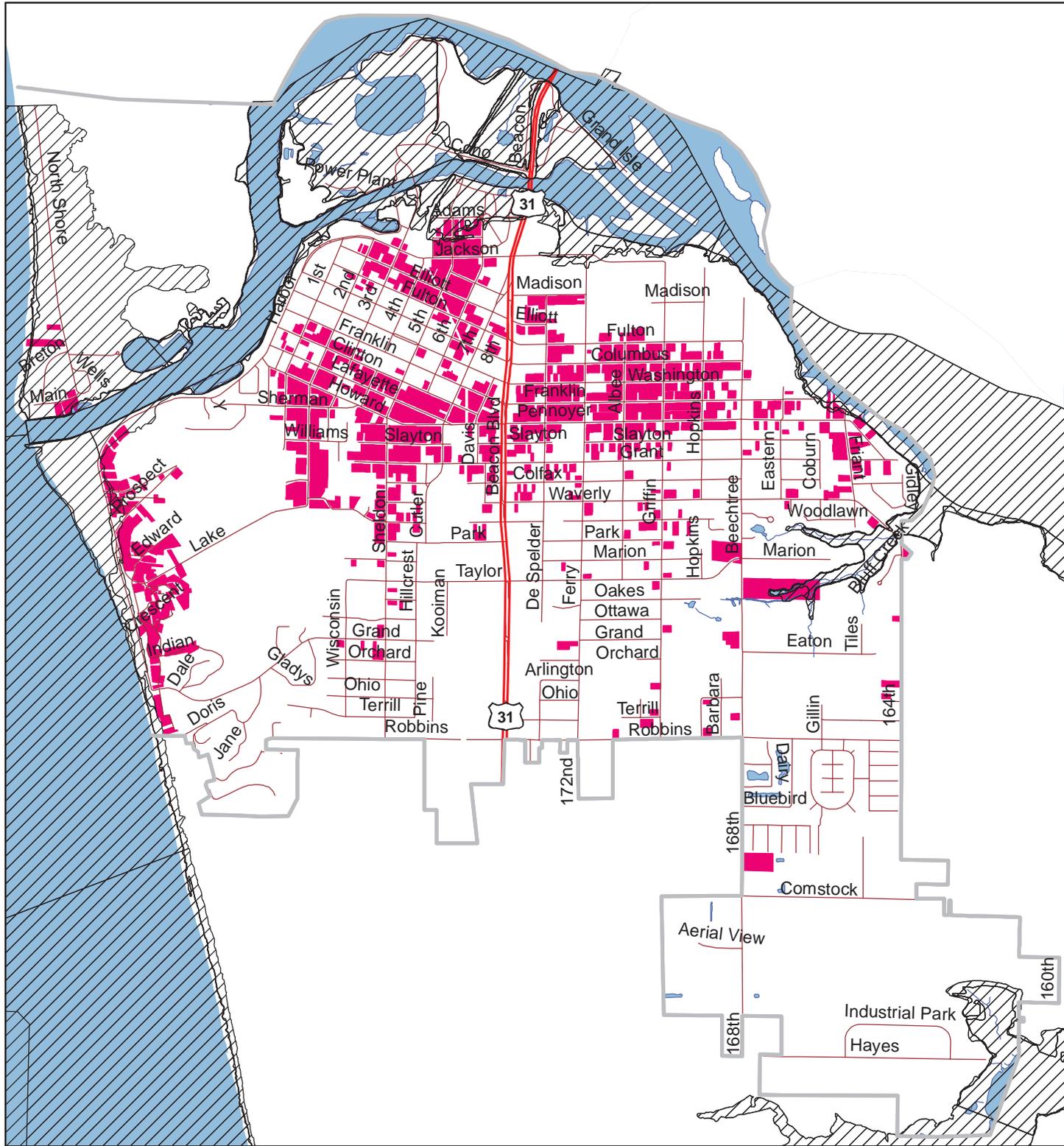
Data Sources:
 U.S. Census Bureau, Block Level Data (2010)
 Grand Haven Charter Township
 Michigan Geo. Data Library
 Ottawa County GIS



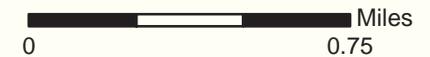
Prepared August 2015 by:



Flooding Sensitive Homes Map #10.15



- Home built 1940 & earlier
- FEMA Flood Zones
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams



Data Sources:
 FEMA
 Michigan Geo. Data Library
 City of Grand Haven
 Ottawa County GIS



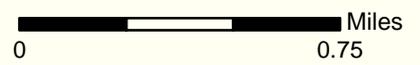
Prepared August 2015 by:



Community Services Map #10.17



- Grocery-Convenience
- Grocery-Full Service
- Healthcare Facility
- Place of Worship
- Public Facility
- School
- Social Service
- Jurisdiction Boundary
- Streams
- Highways
- Roads
- Lakes



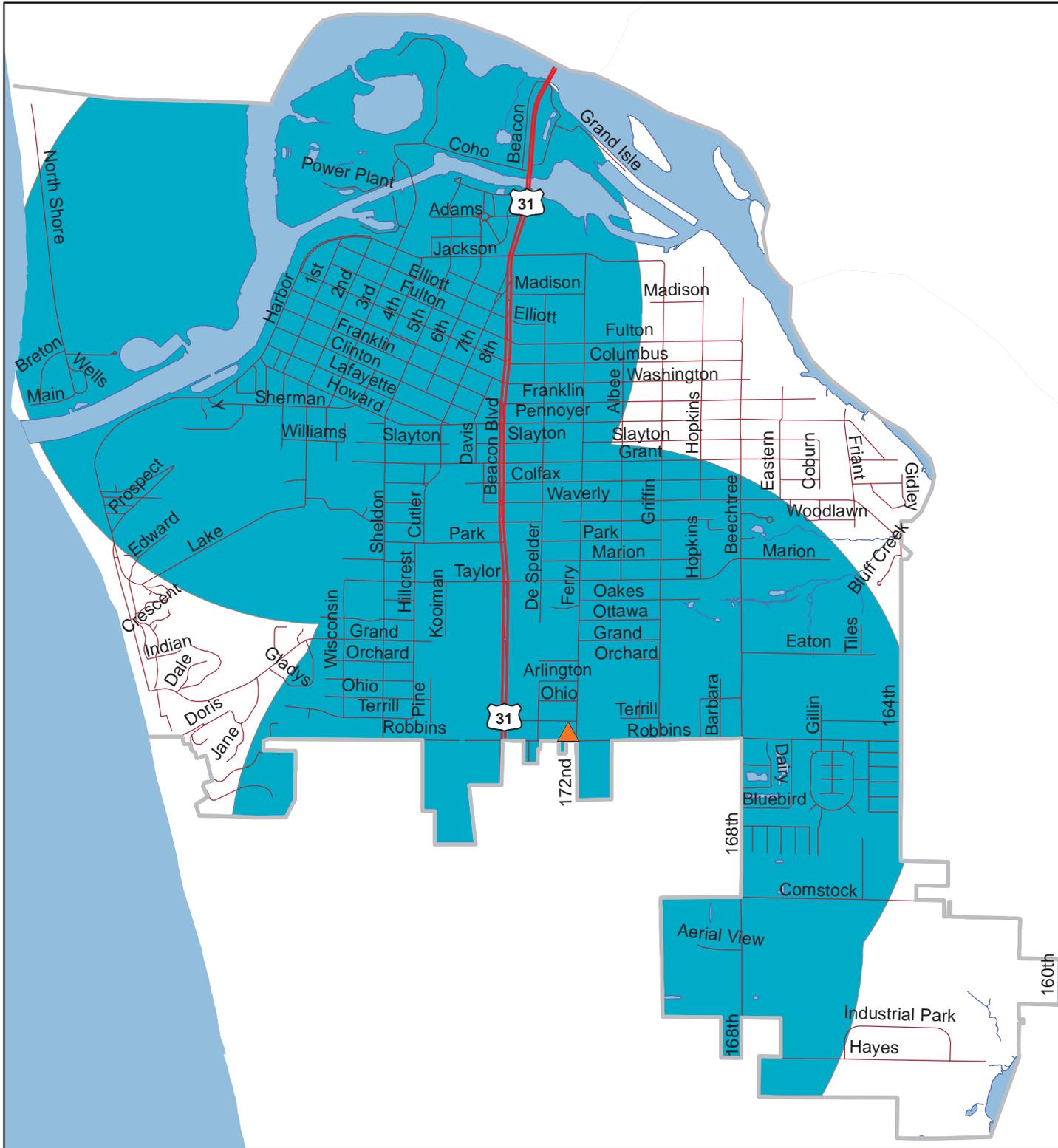
Data Sources:
Michigan Geo. Data Library
Ottawa County GIS



Prepared August 2015 by:



Food Availability Map #10.18



- Grocery-Full Service (1 mile radius)
- ▲ Grocery-Convenience
- Jurisdiction Boundary
- Highways
- Roads
- Lakes
- Streams

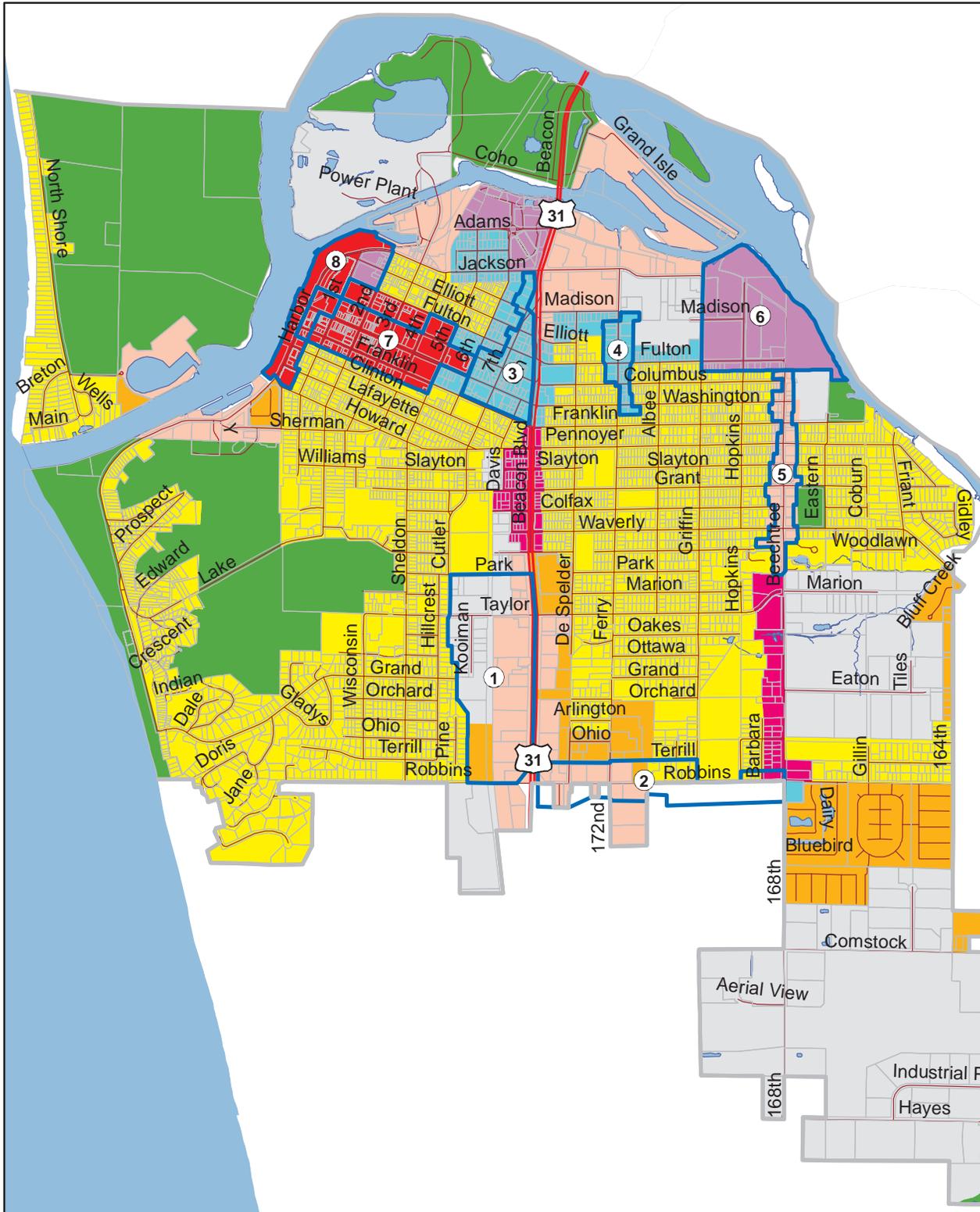
0 0.75 Miles

Data Sources:
Michigan Geo. Data Library
Ottawa County GIS



Prepared August 2015 by:

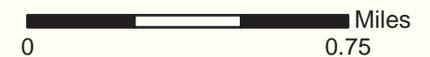
Future Land Use Map #13.1



- Natural Area / Open Space
- Low to Moderate Density Residential
- Moderate to High Density Residential
- Traditional Neighborhood Mixed Use
- Service / Residential
- Service / Commercial
- Downtown
- Industrial
- Mixed Use Redevelopment
- Sub Areas
- Jurisdiction Boundary
- Property Boundaries
- Highways
- Roads
- Lakes
- Streams

Sub Areas:

- ① Southwest Business District
- ② Robbins Road
- ③ Centertown
- ④ Washington Square
- ⑤ Beechtree
- ⑥ North Beechtree
- ⑦ 2003 Downtown Vision Plan
- ⑧ Waterfront Strategic Plan



Data Sources:
 City of Grand Haven
 Ottawa County GIS
 Michigan Geo. Data Library



Prepared August 2015 by:

