Village of Port Austin

Master Plan

2023

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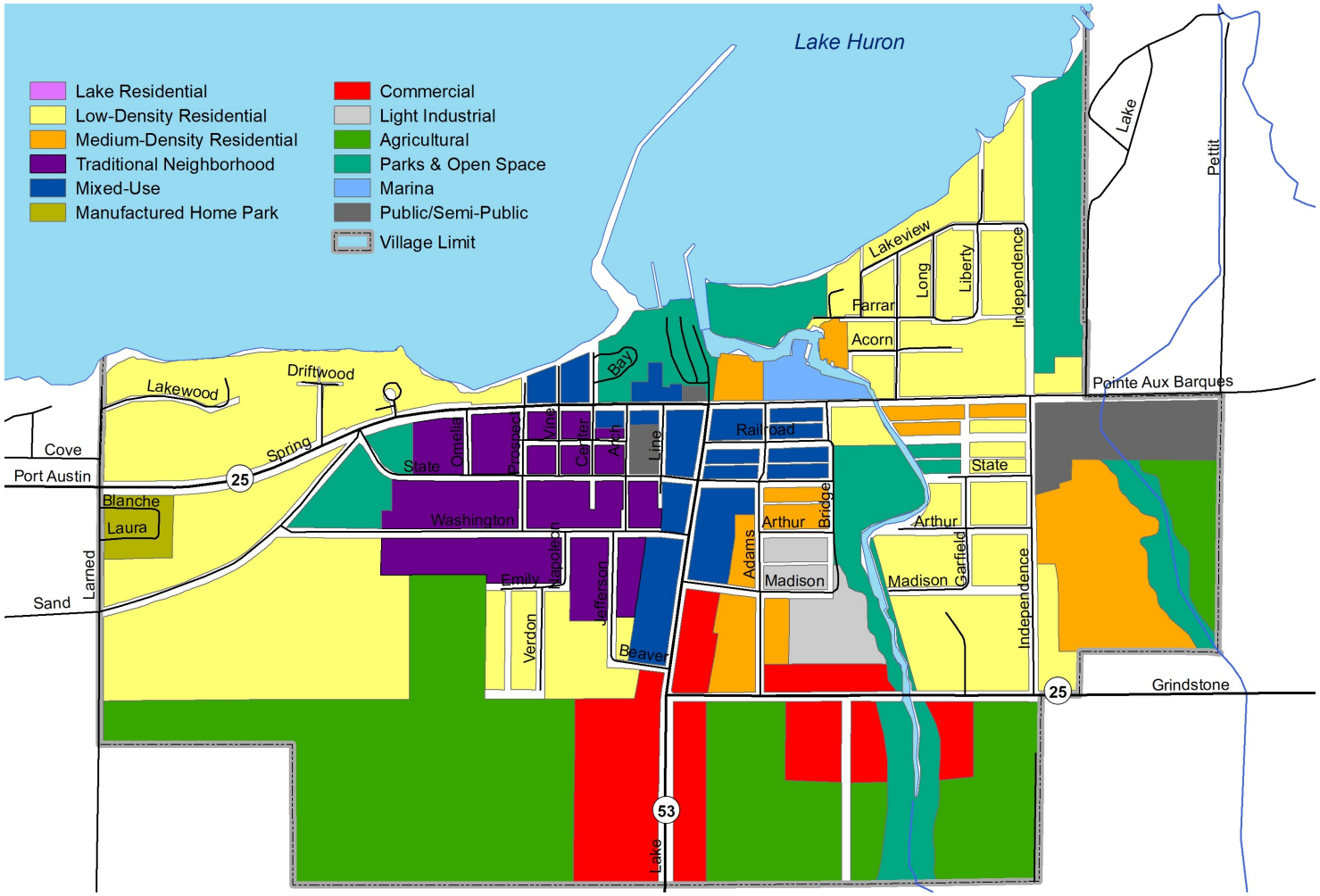

Data Sources:
Village of Port Austin,
Huron County GIS,
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Port Austin Community.

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Chapter 1: Introduction

Introduction

Purpose of the Master Plan

Port Austin is located in Huron County at the northern tip of Michigan's "Thumb", 17 miles north of the City of Bad Axe and 66 miles northeast of Bay City. The community has a rich agricultural history and is a vacation destination due to its coastal features along Lake Huron. This Master Plan Update represents an opportunity to reassess Port Austin's past planning efforts and charter an updated vision for the community's future.

This Plan contains the community's vision, goals, objectives and action steps for implementation. The Master Plan coordinates future land uses with community development and other community features.

The Master Plan is long-range in its view and intended to guide development in the village over a period of 10 to 20 years. It is intended that this document will be reviewed by the Village and/or updated every five years, consistent with state law (Michigan Planning Enabling Act of 2008).

The information and concepts presented in the Master Plan are used to guide local decisions on public and private uses of land and the provision of public facilities and services. A sound Master Plan promotes a land use pattern that reflects a community's goals. This document should act as the main reference during community decision making processes.

For the purposes of this plan, "Port Austin" refers to both the Village of Port Austin and Port Austin Township unless otherwise specified. This plan was developed in conjunction with the Port Austin Township Master Plan (2020). Because of this, the Village and Township's respective 2020 Master Plans vary minimally in their content.

Planning for Resilience

What is a Resilient Port Austin?

The purpose of this Master Plan update is to mitigate the economic, social and environmental threats that many Michigan communities face now and in the future. Community resilience in this plan refers to the Urban Sustainability Directors Network definition: "The ability of a community to anticipate, accommodate and positively adapt to or thrive amidst changing climate conditions or hazard events and enhance quality of life, reliable systems, economic vitality and conservation of resources for present and future generations." Port Austin, like many other communities is susceptible to the impacts of climate futures, as well as changes in global markets and everchanging social conditions. This Master Plan serves as the community's identification of those potential shocks and stressors and how Port Austin can meet these challenges and flourish despite them.

Photo: Justin Schnettler

Sustainability

"The ability of a community to anticipate, accommodate and positively adapt to or thrive amidst changing climate conditions or hazard events and enhance quality of life, reliable systems, economic vitality and conservation of resources for present and future generations."

Community Engagement Process

Master Planning Process

Port Austin's planning process began in September, 2019 when members of the Village and Township Planning Commissions, along with public participants, were asked to describe the existing conditions for the following categories: coastal resilience, economic development, housing, community amenities & services and transportation. Much of the input received focused on preserving Port Austin's small-town coastal sense of place, creating year-round activity for residents and visitors and planning for hazards related to the Lake Huron coastline. This initial input meeting helped inform the content of the larger public kickoff meeting. The resulting input for this initial meeting can be seen in Appendix A.

Public Kickoff

Port Austin's wider community engagement process kicked off on October 15, 2019 when the two Planning Commissions, interested stakeholders and the community at large were invited to attend a joint Planning Commission meeting. The meeting began with presentations by LIAA and the University of Michigan, both part of the state's Coastal Resilience Team. These presentations focused on coastal dynamics, the threats that these dynamics pose to municipalities and the issues surrounding zoning and how to plan for these dynamics. The presentation also included an introduction to the concept of Placemaking and its ability to support the "Triple-Bottom Line" of sustainability (economic, social and environmental).

Photo: LIAA

Between presentations, meeting attendees participated in various workshops to help the planning team better understand the existing conditions of the community. First, community members were asked to work with others at their table to identify sites in the community that they would consider an

Asset and those they would consider an Opportunity. Results of this mapping exercise can be seen in Appendix B.

Next, attendees were asked to write down responses to the following questions and then discuss these responses with their group:

- **Preserve**—What is working well in Port Austin and should be kept the same as it is now?
- **Improve**—What aspects of Port Austin could be made better?
- **Create**—What is missing in Port Austin that you would like to see brought in over the next 10-20 years?

The results of the Preserve, Improve, Create input session echoed similar results to those gathered during the initial joint Planning Commission meeting. Attendees primarily wanted to see more year-round activities for residents and visitors. In addition, residents largely wanted the built environment to remain relatively the same over the next 10-20 years due to the community's stagnant population growth during the past few decades. This community engagement meeting also helped to identify the areas of Port Austin's quality of life that should be improved in the coming decades, including:

Photo: LIAA

- Overcoming the community's seasonal economy;
- Planning for an aging community;
- Attracting and retaining a talented workforce to the area;
- Improving recreational opportunities for residents; and
- Preserving the natural features of Port Austin that contribute to the local economy and the area's unique sense of place (views of Lake Huron, the agricultural industry, parks and animal populations).

The remaining meetings utilized these public sentiments to help Port Austin draft its goals, objectives and action steps, as well as its Future Land Use map and zoning plan.

Preserve, Improve, Create Summary

The following concepts summarize the input gathered during the initial community engagement meeting. A complete list of what we heard can be found in Appendix C.

Preserve

- Local economic contributors (small businesses, agriculture, farmers market)
- Recreational amenities (parks, beaches, fishing, boating, lighthouse, access sites)
- Natural amenities (shoreline views, coastline, water quality)
- Transportation (Thumb Area Transportation, road quality)
- Cultural amenities (arts community, downtown, Welcome Center, churches, restaurants/bars, library)
- Aesthetic quality (rural, agricultural, small town, close-knit)

Improve

- Structural and aesthetic quality of the built environment (blight, vacancy, underutilized spaces, design of new developments)
- Recreational assets (amenities at parks and beaches, water quality)
- Non-motorized connections (sidewalks, trails, bike routes)
- Infrastructure (broadband connection, sidewalks, roads, water plant location)
- Cultural opportunities (community events, diverse recreation opportunities, highlighting local history)
- Local economy (full-time jobs, talent attraction and retention, year-round tourism, parking, small business attraction & expansion)
- Population age diversity (youth activities, aging in place, attractiveness to families)

Create

- Wider range of recreational amenities (ice/skate rink, dog park, separated paths, splash pad, indoor recreation center, swimming pool, non-motorized route plan)
- Business diversification (commercial kitchen, agricultural tourism, college internship program)
- Public health amenities (pharmacy, healthy living initiatives, urgent care facility)
- Higher quality built environment (town center, signage, street lighting, coastline water and sewer protection, public restrooms)
- Age-friendly community (teen center, senior living community, family activities)

Chapter 2:
Existing Conditions

Existing Conditions

Regional Setting

The Village of Port Austin is located in Huron County at the northern tip of Michigan's "Thumb," which for the purposes of this document consists of Huron, Sanilac and Tuscola Counties. The Village's compact area contains a variety of development features unique to smaller coastal communities along Michigan's waterfront. The community is largely defined by its agricultural and maritime history, as well as its attraction as a recreation destination during the summer and fall months.

Port Austin is intersected by State Highways M-25 (east-west) and M-53 (north-south) and is bordered to the north by Lake Huron. The Port Austin community is adjacent to nearby Pointe Aux Barques Township to the north and Hume Township, Dwight Township and Huron Township to the south.

Planning in Neighboring Communities

Point Aux Barques Township

Point Aux Barques is a township in Huron County surrounded by Port Austin Township and Lake Huron. The municipality is largely undeveloped to maintain its natural character. The population, according to the 2010 US Census is 10 people. Nearly all of the development is residential and located along the Lake Huron shoreline.

Note on the data: Much of the demographic data in this document were taken from forecasts published by Esri (Environmental Systems Research Institute), a private corporation based in California that provides Geographic Information Systems software and data forecasting. This data was provided through Business Analyst Online.

Hume Township

Huron County's Master Plan (draft version, 2018) provides a Future Land Use Map for Hume Township and Dwight Township, both zoned by the County. Plans for Hume are to maintain the Township as primarily agricultural with single family residential zoning along the Lake Huron shoreline. There is a small portion of land dedicated to Business use near the southwest corner of Port Austin Township.

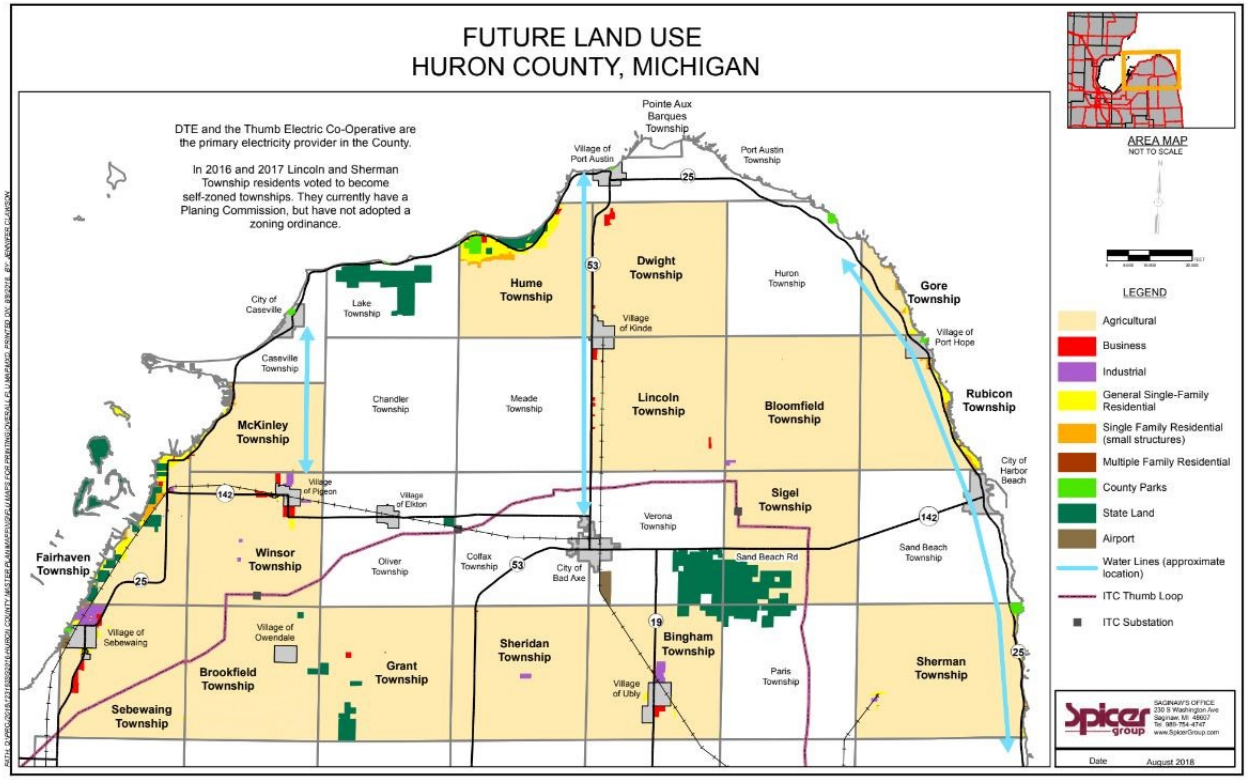
Huron Township

Huron Township is zoned by its municipal government, though a Future Land Use Map was not readily available for this plan's analysis. However, in a discussion with Huron Township's Zoning Administrator it was confirmed that nearly all of the land in proximity to Port Austin is agricultural in zoning and use with undeveloped woodland areas along the shoreline.

Dwight Township

Similar to Hume and the county as a whole, Dwight Township's future land use is planned to remain primarily agricultural. There is a small portion of land near M-53 and Port Austin Township's south end, as shown in Map 1, with a Business use classification.

Map 1. Future Land Use Map, Huron County



Source: Huron County Master Plan (draft, December 2019), prepared by Spicer Group

Demographics

Population

Port Austin's population has followed a pattern of steady decline since 2000. The Township's estimated 2019 population is 1,385 while the Village is at 647. As seen in Table 1, both of these populations are projected to continue to decline slightly by the year 2024. This trend is similar to population changes for Huron County, which has lost around 5,000 residents over the past two decades. This is in contrast to the growth that the State of Michigan has experienced during the same time period.

Table 1. Total Population

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
2000 Total Population	747	1,602	36,079	9,938,444
2010 Total Population	664	1,424	33,118	9,883,640
2019 Total Population	647	1,385	31,907	10,097,897
2024 Total Population	632	1,353	30,970	10,233,588

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography

Table 2. Median Age

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
2010	55.5	55.6	46.7	38.8
2019	59.3	59.2	49.4	40.4
2024	61.3	61.2	50.5	41.3

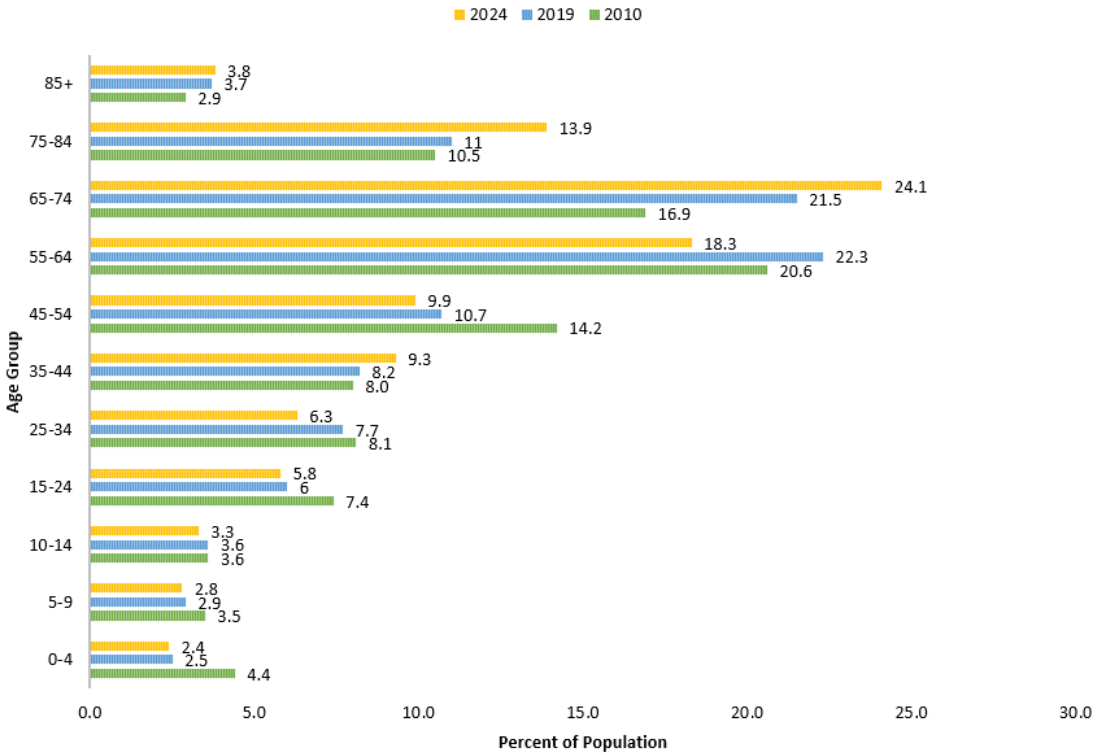
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography

Population by Age

The median age in Port Austin has been higher than that of Huron County and the State of Michigan since 2010 and is projected to continue in this way through 2024 (see Table 2). Port Austin's residents are about 10 years older than Huron County as a whole and 20 years older than Michigan residents' median age. The area's aging population calls for continued attention to "aging in place" initiatives to ensure that as the median age rises, a high quality of life is still provided by the community's amenities and services.

Figure 1 illustrates how demographic shifts in the community's age distribution are driving the median age up. In both the Township and Village, each of the age groups for residents under 24 have decreased since 2010. In addition, while both municipalities have seen a slight increase in the proportion of residents ages 35-44 in the past decade, both are expected to have a drastically increased population age 65+ in the next five years. In the Township, the 2010 population was 30.7% people 65+. In 2019, this number rose to an estimated 36.1% and is expected to reach 41.5% by 2024. In the Village, the population 65+ is projected to reach 41.8% by 2024, up from 30.3% in 2010. These demographic shifts are similar to trends experienced in Huron County.

Figure 1. Population by Age, Village of Port Austin



Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography

Population by Race

Port Austin and Huron County are relatively homogenous racially compared to the rest of Michigan. Table 3 shows that the Township and Village are both 96.8% white. The Village's population is 2.6% Hispanic compared to 3.0% in the Township. Just over 1% of people in Port Austin are two or more races.

Table 3. Population by Race/Ethnicity, 2019

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Total	647	1,385	31,907	10,097,897
White	96.8%	96.8%	96.8%	77.4%
Black	0.2%	0.2%	0.6%	13.9%
American Indian	0.2%	0.1%	0.4%	0.7%
Asian	0.6%	0.6%	0.6%	3.3%
Pacific Islander	0.3%	0.3%	0.0%	0.0%
Other	0.9%	1.0%	0.6%	1.8%
Two or More Races	1.1%	1.1%	1.1%	2.9%
Hispanic	2.6%	3.0%	2.5%	5.3%

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography

Educational Attainment

Estimates for Port Austin in 2019 show that the community has a greater percent of residents with a higher education degree than Huron County as a whole. 12.0% of Port Austin residents have a bachelor's degree while another 8.7% have earned a graduate or professional degree. These rates are lower than the State of Michigan, where 17.9% of people have completed a bachelor's degree and 11.8% have completed a Graduate/Professional Degree. 12.1% of Village residents 25 years and older do not have a high school diploma.

Table 4. Population 25+ by Educational Attainment, 2019

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Total	550	1,179	24,168	7,016,975
Less than 9th Grade	1.6%	1.6%	3.9%	2.7%
9th-12th Grade, No Diploma	10.5%	10.3%	6.6%	6.0%
High School Graduate	31.5%	31.6%	39.3%	24.8%
GED/Alternative Credential	2.7%	2.7%	2.8%	3.8%
Some College, No Degree	25.3%	25.4%	21.1%	23.2%
Associate Degree	7.6%	7.6%	10.0%	9.7%
Bachelor's Degree	12.0%	12.0%	10.8%	17.9%
Graduate/Professional Degree	8.7%	8.7%	5.5%	11.8%

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography

School Enrollment

Port Austin is served by North Huron School District, which covers parts of 11 jurisdictions in Huron County. Map 2 illustrates the school district makeup of Huron County. A small portion of the Township's east side was part of Port Hope Community Schools before that school district closed and merged with North Huron Schools in 2015. North Huron Schools facilities are located in the Village of Kinde, approximately 8 miles south of the Village of Port Austin by way of M-53.

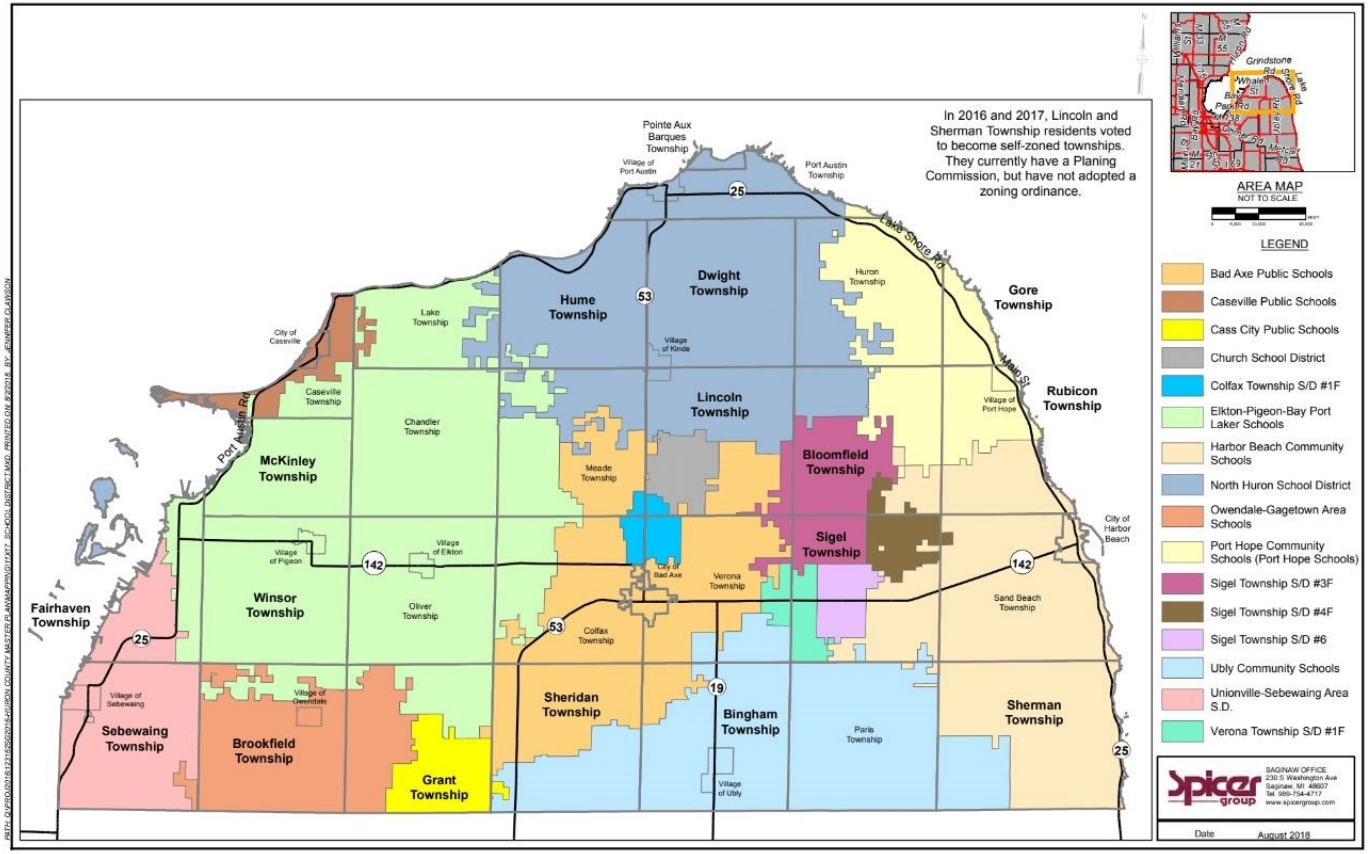
Enrollment in North Huron schools has remained relatively stable over the past decade, although as shown in Table 5, student counts dropped by around 19% between the 2016-17 and 2018-19 school year. This is a likely result of the tapering off of the Millennial generation nationwide and a reflection of Huron County's population loss in recent decades.

Table 5. North Huron School District Enrollment

North Huron School District											
School Year	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Enrollment	453	435	450	451	464	434	472	463	453	417	367

Mischooldata.org

Map 2. Huron County School Districts



Source: Huron County Master Plan (draft, 2018), prepared by Spicer Group

Local Economy

Employment

Port Austin's residents are primarily employed in the services industry, manufacturing and retail trade jobs. At a rate higher than the rest of Huron County, nearly half of Port Austin's employed population works in the services industry (see Table 6). The 2019 unemployment rates in the Village and Township are both around 6%, which is double the rate of Huron County and just under 2% more than the State of Michigan rate (see Table 7). During the public engagement process that involved both planning commissions and members of the public, the community expressed a need for full-time jobs that attract and retain young talent, as well as a local economy less reliant on seasonal tourism. For years, Port Austin's economy has been largely based on tourism, reflected by the community's export advantage for food and drink places, miscellaneous retail and clothing stores (see Appendix E).

Export Industry (red text in Appendix E)

Goods and services that Port Austin residents and visitors purchase in the Port Austin community.

Import Industry (green text in Appendix E)

Goods and services that Port Austin residents have to leave the community to purchase.

The following pages evaluate Port Austin's retail potential and its economic shifts over time by using two common methods of local economic analysis: a Location Quotient Analysis and a Shift-Share analysis. These two methods, along with community input, lead to some overarching observations for Port Austin:

- Local employment has been steadily shifting away from the manufacturing sector;
- Huron County is a hub for agriculture and can incorporate new and creative initiatives to capitalize on this; and
- Port Austin is largely a seasonal economy with many local businesses catering to tourism-driven services.

Photo: LIAA

Table 6. Employed Population 16+ by Industry, 2019

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Total	244	527	15,243	4,871,716
Agriculture/Mining	2.0%	2.3%	7.4%	1.0%
Construction	8.6%	8.9%	7.1%	5.7%
Manufacturing	13.5%	13.5%	20.9%	19.1%
Wholesale Trade	1.2%	1.1%	2.8%	2.6%
Retail Trade	10.2%	10.4%	10.7%	10.7%
Transportation/Utilities	1.2%	1.5%	4.0%	4.5%
Information	0.4%	0.6%	1.2%	1.3%
Finance/Insurance/Real Estate	6.6%	6.3%	3.4%	5.4%
Services	49.2%	48.6%	38.5%	46.1%
Public Administration	7.0%	6.8%	3.9%	3.7%

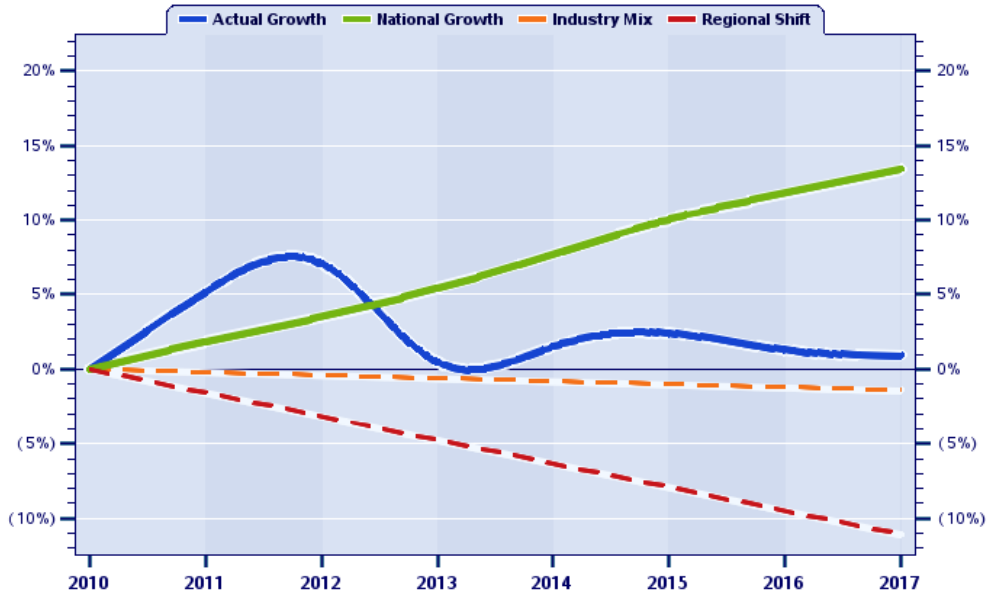
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography

Table 7. Civilian Population 16+ in Labor Force, 2019

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Civilian Employed	93.8%	94.1%	97.0%	95.7%
Civilian Unemployed (Unemployment Rate)	6.2%	5.9%	3.0%	4.3%

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography

Figure 2. Shift-Share, Huron County



Shift-Share Analysis

Shift-share analyses help to explain whether industry growth or decline in a local economy can be explained by unique community characteristics or if these trends simply reflect an industry's growth or decline at the national level. This can help determine the performance of a particular industry in Huron County compared to the rest of the US. For example, Table 8 shows that Farm Employment made up 10% of Huron County's workforce in 2010 and 10.5% in 2017. Although this may appear a small increase (102 jobs gained), the County is outperforming national trends, which predicted hypothetically that the County would have lost 3 jobs in Farm Employment if it had followed national trends.

In contrast, Huron County is underperforming in three of its largest industry employers: Construction, Manufacturing and Retail Trade. The manufacturing and retail trade industries each saw employment losses from 2010 to 2017, resulting in an estimated 574 jobs leaving the region. Huron County's construction employment saw an increase in 113 jobs in the same time period, though this number would have been 179 had the industry grown at the same rate as construction nationwide. In summary, Huron County outperformed nationwide employment growth between 2010 and 2012, but has remained relatively stagnant since that time (see Figure 2). The manufacturing industry has lost the most influence on the regional economy, decreasing from 13.8% of all employment in 2010 down to 10.9% in 2017. Port Austin's strong agricultural industry, tourism and innovative economic development strategies, namely its growing arts culture, will have to play a role in making up for manufacturing's declining share in the regional economy.

Table 8. Huron County Shift-Share Analysis

	Employment						Standardized		
	2010		2017		Actual Growth		Growth		Employment
Major Industry	Level	Share	Level	Share	Percent	Net	Percent	Net	2017
Farm Employment	1,651	10.0	1,753	10.5	6.18	102	-0.19	-3	1,648
Construction	844	5.1	957	5.7	13.39	113	21.25	179	1,023
Manufacturing	2,286	13.8	1,816	10.9	-20.56	-470	10.02	229	2,515
Wholesale Trade	328	2.0	434	2.6	32.32	106	7.62	25	353
Retail Trade	1,796	10.8	1,692	10.1	-5.79	-104	9.39	169	1,965
Information	143	0.9	188	1.1	31.47	45	5.02	7	150
Finance and Insurance	759	4.6	795	4.8	4.74	36	14.24	108	867
Real Estate and Rental and Leasing	543	3.3	575	3.4	5.89	32	18.40	100	643
Administrative and Waste Services	644	3.9	620	3.7	-3.73	-24	16.27	105	749
Arts, Entertainment, and Recreation	233	1.4	250	1.5	7.30	17	17.67	41	274
Accommodation and Food Services	882	5.3	919	5.5	4.20	37	22.73	200	1,082
Other Services (except Public Administration)	934	5.6	966	5.8	3.43	32	14.60	136	1,070
Federal Civilian	118	0.7	99	0.6	-16.10	-19	-5.86	-7	111
Military	77	0.5	65	0.4	-15.58	-12	-8.14	-6	71
State Government	181	1.1	226	1.4	24.86	45	0.51	1	182
Local Government	1,592	9.6	1,515	9.1	-4.84	-77	0.39	6	1,598
Other/Suppressed Industries	3,564	21.5	3,864	23.1	8.42	300	19.78	705	4,269
Total Employment	**16,575**	**100.0**	**16,734**	**100.0**	**0.96**	**159**	**12.04**	**1,996**	**18,571**

Source: Michigan Regional Economic Analysis Project

Location Quotient Analysis

The location quotient (LQ) analysis is a measure of how concentrated an industry is in the local economy. Knowing the LQ score for various industries can help the municipality:

1. to determine which industries make the regional economy unique;
2. to identify which industries the locality is exporting;
3. to identify emerging export industries that are starting to bring economic activity into the local market; and
4. to identify export industries that have the potential to threaten the region's economic base.

A score of 1 or higher indicates that an industry sector, or sub-sector, is a key part of the local economic base and that the municipality is likely exporting that industry outside of the municipality. A score between 0.85 and 1 indicates that it is part of the economic base with room to grow (i.e. that the municipality could support more of that industry). When evaluating whether or not a certain industry is part of the economic base, it its also important to look at the annual average employment, shown in dollar amounts.

Shown in Appendix D, Huron County's economic base is primarily made up of manufacturing, utilities, finance and insurance and retail trade. Manufacturing is nearly twice as concentrated in Huron County than in the rest of the U.S., making it a main export for the region; however, mentioned previously, manufacturing jobs in 2017 made up a smaller percentage of the local workforce than it did in 2010. This shows that while manufacturing is still a key industry for Huron County, it has started to see employment declines in the region, indicating that other industries will have to make up for these losses.

Defining Huron County's Economy

The 2018 NAICS (North American Industry Classification System) Sectors that make up Huron County's economic base (LQ score higher than 1) include Manufacturing, Utilities, Finance and Insurance and Retail Trade.

Breaking this down further, the most concentrated sub-sectors include Animal Production and Aquaculture, Crop Production, Food Manufacturing, Machinery Manufacturing, Truck Transportation, Agriculture and Forestry Support Activities and Hospitals.

Retail Profile

The Retail Market Profile, provided by Esri (see note on the data, page 8) , details which goods and services Port Austin exports, as well as those that the project area imports. Appendix E shows the retail gaps for Port Austin (Township and Village). Retail gaps illustrate the extent to which people are either leaving the study area to have their consumer needs met (shown in green text) and the extent to which people outside of the community are meeting their consumer needs in Port Austin and Huron County (shown in red text).

The Port Austin community exports (i.e. local supply is higher than local demand) the following retail goods: Other Motor Vehicle Dealers (likely boats and/or snowmobiles), Specialty Food Stores, Clothing Stores and Used Merchandise Stores. Consistent with many tourism-oriented economies, Port Austin also exports from Food Services & Drinking Places, as well as Drinking Places—Alcoholic Beverages. Most other retail needs that Port Austin residents have are met outside of the community. The growth of online retail plays a large role in this factor. However, certain services that cannot be provided online are currently lacking in the project area. For example, the demand for Restaurants/Other Eating Places in Port Austin is higher than the current supply. This indicates that residents are traveling to nearby communities to meet this need. The same is true for Grocery Stores, wherein over $1 million was spent by residents on groceries outside of Port Austin. Going forward, Port Austin should assess which industry groups have a demand that local businesses can help to meet, and should strategize on how to grow businesses that keep money spent by residents in the local economy.

Photo: LIAA

Income & Poverty

Compared to the rest of the state and Huron County, Port Austin has a lower median household income (see Table 9). While the median income is projected to steadily rise by around $4,000 over the next 5 years, up to approximately $45,000 in 2024, the area's population earns nearly $20,000 less than households around the state. This is, in part, a reflection of the community's service industry and greater percentage of part-time labor, as opposed to the full-time positions that pay higher wages.

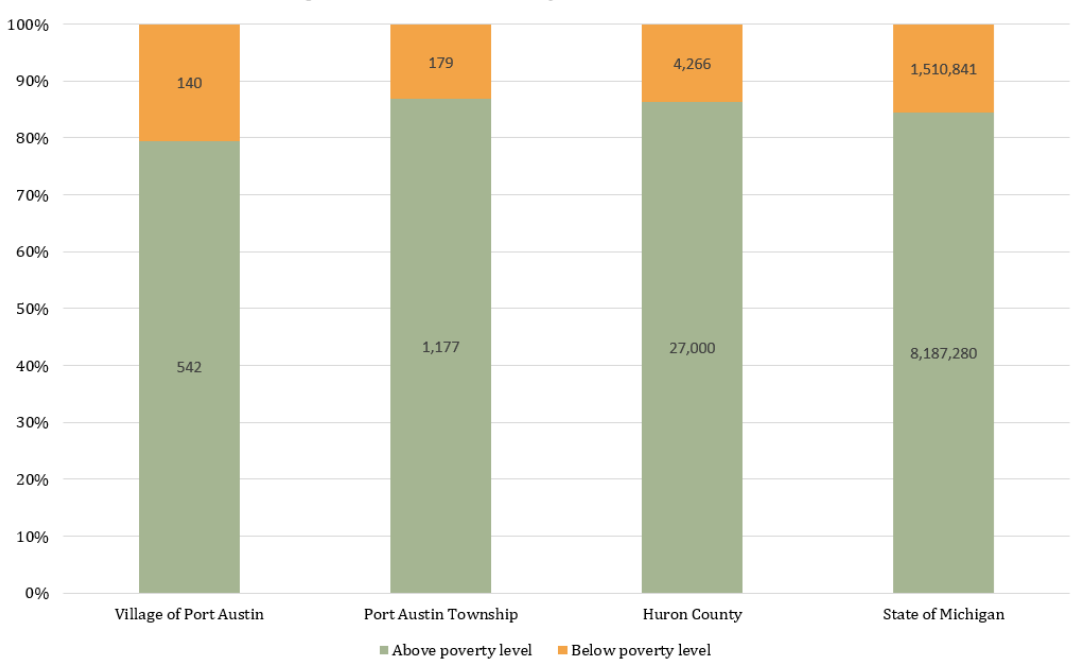
Although median household incomes in Port Austin are lower relative to state estimates, the community's lower cost of living places its poverty rates similar to those of Huron County and Michigan. Approximately 20.5% of the Village and 13.2% of the Township's residents live below the poverty threshold (see Figure 3).

Table 9. Median Household Income

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
2019	$40,662	$41,001	$44,177	$55,885
2024	$44,961	$45,136	$49,663	$63,460

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography

Figure 3. Population Below Poverty Level, 2017 Estimates



Source: American Community Survey, 2013-2017

Housing

Household Characteristics

Consistent with national household trends and trends related to an aging population, Port Austin and Huron County have seen their average household size decrease over the past two decades (see Table 10). Since 2010, the average household size in Port Austin has been fewer than two people, indicating a larger share of residents living alone. Both the Village and the Township have higher rates of people living alone (43.6% and 38.0%, respectively) and householders over the age of 65 (27.2% and 25.1%, respectively) than state averages (see Table 11). These trends may indicate that Port Austin should reevaluate its existing housing stock to ensure that it is meeting the current and future needs of its residents.

With fewer family households and more people living alone, the community may consider adding housing with smaller square footage, compact designs and in closer proximity to local amenities. Port Austin's large stock of single-family detached units may not support the community's need for housing that contributes to aging in place, as well as the housing demands that a younger demographic may desire (see Table 12). This need for "missing middle" housing is also reflected in the community's higher percentage of nonfamily households and the demand for rental/vacation housing units (see Appendix F).

Regarding householder tenure, roughly 22.5% of Port Austin's homeowners moved into the community between 2010 or later. Around half of the community's homeowners have lived in Port Austin since before the year 2000. A key aspect of supporting a strong sense of place is to have a high number of year-round residents with a long tenure in the community (see Appendix F).

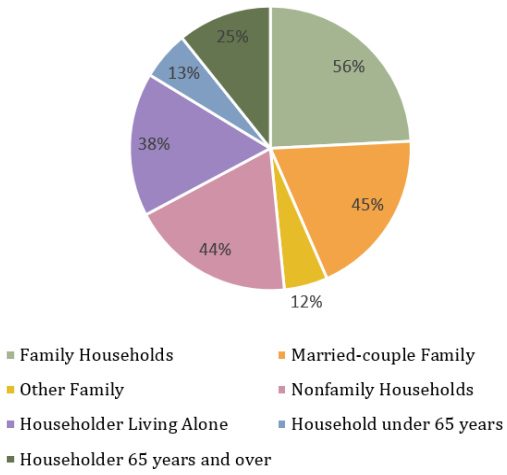
Table 10. Average Household Size

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
2000 Average Household Size	2.05	2.08	2.42	2.56
2010 Average Household Size	1.91	1.96	2.27	2.49
2019 Average Household Size	1.90	1.93	2.23	2.48
2024 Average Household Size	1.88	1.91	2.21	2.47

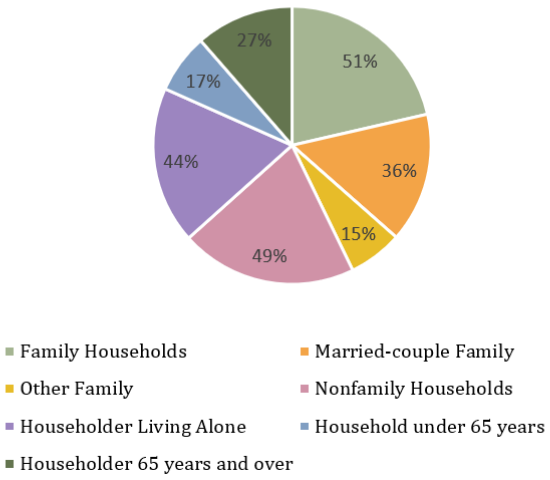
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography.

Figure 4. Household Types

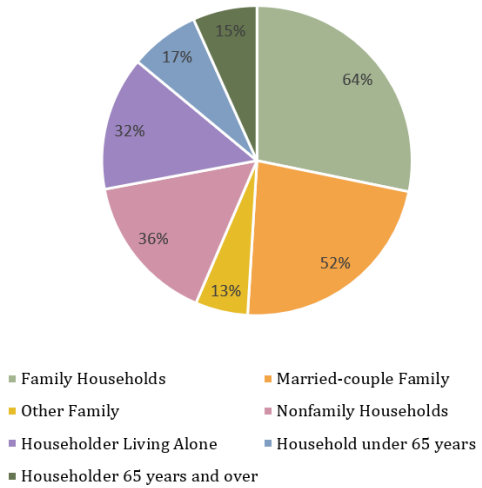
Port Austin Township



Village of Port Austin



Huron County



State of Michigan

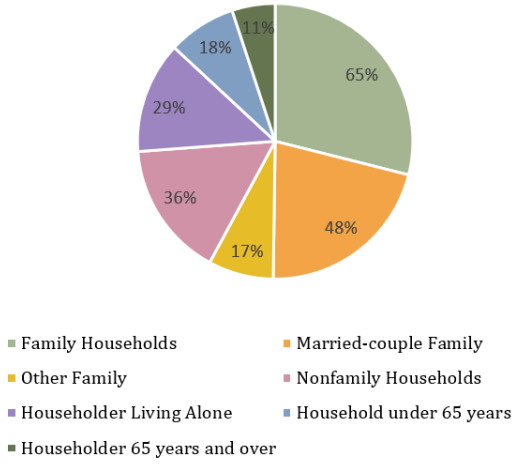


Table 11. Household Characteristics of Occupied Housing Units, 2017

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Family Households	180 (51.0%)	388 (56.2%)	8,940 (64.4%)	2,509,610 (64.5%)
Married-couple Family	127 (36.0%)	308 (44.6%)	7,207 (51.9%)	1,846,259 (47.5%)
Other Family	53 (15.0%)	80 (11.6%)	1,733 (12.5%)	663,351 (17.1%)
Nonfamily Households	173 (49.0%)	302 (43.8%)	4,940 (35.6%)	1.379.036 (35.5%)
Householder Living Alone	154 (43.6%)	262 (38.0%)	4,429 (31.9%)	1,134,862 (29.2%)
Household under 65 years	58 (16.5%)	89 (12.9%)	2,303 (16.6%)	693,963 (17.9%)
Householder 65 years and over	96 (27.2%)	173 (25.1%)	2,126 (15.3%)	440,899 (11.3%)

Source: U.S. Census Bureau, 2013-2017 American Community Survey

Table 12: Housing Units by Units in Structure

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Total	770 (100.0%)	1,748 (100.0%)	21,240 (100.0%)	4,568,200 (100.0%)
1, detached	500 (64.9%)	1,322 (75.6%)	17,644 (83.1%)	3,304,372 (72.3%)
1, attached	77 (10.0%)	98 (5.6%)	264 (1.2%)	211,705 (4.6%)
2	23 (3.0%)	23 (1.3%)	322 (1.5%)	108,453 (2.4%)
3 or 4	28 (3.6%)	28 (1.6%)	226 (1.1%)	116,585 (2.6%)
5 to 9	47 (6.1%)	56 (3.2%)	451 (2.1%)	191,398 (4.2%)
10 to 19	59 (7.7%)	62 (3.5%)	275 (1.3%)	163,853 (3.6%)
20 to 49	0 (0.0%)	0 (0.0%)	202 (1.0%)	93,465 (2.0%)
50 or more	0 (0.0%)	0 (0.0%)	57 (0.3%)	136,452 (3.0%)
Mobile home	36 (4.7%)	159 (9.1%)	1,795 (8.5%)	240,784 (5.3%)
Boat, RV, van, etc.	0 (0.0%)	0 (0.0%)	4 (0.0%)	1,133 (0.0%)

Source: U.S. Census Bureau, 2013-2017 American Community Survey

Table 13: Median Home Value

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Median Home Value—2019	$152,500	$154,070	$113,758	$172,136
Median Home Value—2024	$179,375	$178,529	$125,972	$194,113

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography.

Housing Unit Characteristics

Port Austin's housing stock is largely defined by single family detached units with most development situated along the Lake Huron waterfront. The community saw much of its growth occur during the 1990's when 466 new housing units were constructed (see Appendix F). Because of this more recent surge in development, Port Austin's median age of housing structures is nearly 10 years newer than housing in Huron County and the State of Michigan. However, mentioned in this master planning process by residents, Port Austin is finding it difficult to uphold the quality of its housing stock as the high proportion of units used for vacation rentals combined with lacking code enforcement have led to the presence of blight. Despite this, Port Austin's median housing value is expected to increase by over $20,000 between 2019 and 2024 (see Table 13).

The number of 'vacant housing units', as defined by the U.S. Census Bureau, has steadily risen in Port Austin since the year 2000 and is expected to continue growing through 2024. Shown in Appendix F, an estimated 54.1% of the Village's housing units and 59.7% of the Township's housing units are considered vacant. Most of these vacancies (77.5% in the Village and 87.2% in the Township) are considered seasonal/recreational/ occasional use. Much of the Port Austin community is inactive during the winter months, while the summer and fall experiences an influx of tourism visitation. As previously mentioned, part of this master planning process involved strategies to make Port Austin a place of year round livability and tourism.

Photo: Google Earth

Transportation

Due to its remote position at the northern edge of Michigan's Lower Peninsula, Port Austin experiences very little regional through traffic. This circumstance carries a mix of advantages and disadvantages for the locality in that it serves to limit the amount of infrastructure strain caused by noncontributing travelers. Noncontributing travelers are those moving from point A to point B via a route through the community, who do not commonly seek Port Austin as a destination, nor do they necessarily contribute to the local economy. Adversely, however, the lack of through traffic limits the Village's regional and statewide exposure to tourism and other forms of commerce. This geographic limitation to regional transportation results in a low demand for large scale surface streets and, therefore, only a simple, efficient grid network of local roads serves the majority of areas within the Village.

Roads and Sidewalks

Two significant State of Michigan Highways service the Port Austin community. M-25 extends from Bay City along the Lake Huron coastline to Port Huron, where it turns toward metropolitan Detroit and eventually becomes Gratiot Avenue. The other State Highway in the community is M-53. M-53 originates in Port Austin, extending south through Bad Axe, Marlette, Imlay City and on to metropolitan Detroit where it turns into Van Dyke Road, later terminating where it merges with Gratiot near the City of Hamtramck.

While geographically limited by its location, Port Austin is relatively close to a number of metropolitan communities and larger urban centers. Within approximately one to one and a half hours, these State Highways provide access to Interstates 75, 69 and 94, and, therefore, quick travel routes to Flint, Ann Arbor and greater Detroit. In addition, the Tri-City communities of Bay City, Midland and Saginaw all lie within one and a half hours of Port Austin.

Map 3. Local Road Network

Non-Motorized Transportation

The Village of Port Austin is well-connected by a network of sidewalks that link residences with downtown businesses, the waterfront, parks and cultural sites. The Township, in contrast, is primarily auto-oriented. Residences, businesses and points of interest are spaced further apart and are not connected by a network of paths or sidewalks. The Planning Commissions and residents of both the Village and the Township identified a need for improved non-motorized transportation in the community, either through trails or shared-use road designations.

Tables 14 and 15 describe how residents in Port Austin travel to work. Although the largest percentage of workers need just 10 minutes or less to arrive to their place of work, 78% of residents use a personal vehicle and drive alone. Part of Port Austin's efforts to become more sustainable will include the need to add transportation alternatives to the personal vehicle. Objectives and Action Steps related to this concept are described in Chapter 5.

Map 4. Sidewalks in the Village of Port Austin

Mass Transit and Air Travel

Bus service is available throughout Port Austin through Thumb Area Transit. For long-distance needs, the Greyhound national bus network has buses originating in Bay City, allowing users to access the nationwide communities within the system. Rail travel via Amtrak does not service Port Austin directly and there are no rail lines found in the Thumb Region north of the Huron and Eastern Railroad, which passes through Bad Axe. The nearest Amtrak stations are located in Flint and Port Huron.

Commercial air travel is within easy reach of the Port Austin community. MBS International Airport in Freeland, in north central Saginaw County, provides many regional flights to Detroit and a variety of destinations outside of Michigan. Direct flights to a greater number of locations nationwide and internationally can be taken from Bishop International Airport in Flint and Detroit Wayne County Metropolitan Airport in Romulus, Michigan.

Table 14: Mode of Transportation to Work

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Workers 16 years and over	227	460	13,730	4,430,991
Car, truck, or van	85.9%	87.6%	91.1%	91.3%
Drove alone	78.4%	78.7%	82.7%	82.5%
Carpooled	7.5%	8.9%	8.4%	8.8%
Public transportation	0.0%	0.0%	0.4%	1.4%
Walked	9.3%	4.6%	3.5%	2.2%
Bicycle	0.0%	0.4%	0.4%	0.4%
Taxicab, motorcycle, or other means	0.9%	1.7%	1.1%	0.8%
Worked at home	4.0%	5.7%	3.5%	3.8%

Source: U.S. Census Bureau, 2013-2017 American Community Survey

Table 15: Travel Time to Work

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Workers 16 years and over	227	460	13,730	4,430,991
Less than 10 minutes	39.0%	31.1%	29.3%	14.0%
10 to 14 minutes	4.6%	6.2%	14.3%	14.7%
15 to 19 minutes	2.8%	3.9%	15.3%	16.1%
20 to 24 minutes	24.8%	17.3%	12.1%	15.3%
25 to 29 minutes	11.5%	15.0%	6.1%	7.1%
30 to 34 minutes	10.1%	14.3%	9.1%	12.3%
35 to 44 minutes	4.1%	5.5%	4.1%	7.1%
45 to 59 minutes	0.0%	3.0%	3.8%	7.3%
60 or more minutes	3.2%	3.7%	6.0%	6.2%
Mean travel time to work (minutes)	19.6	22.2	21.0	24.3

Source: U.S. Census Bureau, 2013-2017 American Community Survey

Community Facilities & Infrastructure

Municipal Offices. Village of Port Austin municipal offices are located at the corner of West State Street and Lake Street. Meetings for Council and other commissions utilize the space provided at the offices, as well as the Welcome Center.

Welcome Center. New in 2010, the building is being used as an office/ information center for the Port Austin Chamber of Commerce and a meeting place for non-profit organizations and private gatherings of up to 50 people.

Fire Services. Fire protection services for the Village of Port Austin is provided by the Port Austin Fire Department, locate at 8633 Lake Street, in the center of the Village.

Police Services. Police service is provided by the Village of Port Austin Police Department, located within the Village Hall building at 17 West State Street. Both fire and police emergency services can be reached via 911 emergency service.

Public Water. Public water in Port Austin is provided through the Huron Regional Water Authority. The Authority serves the Village of Port Austin and Port Austin Township. The water system consists of a conventional water filtration treatment plant with a submerged intake into Lake Huron.

Public Sewer. Public sewer in Port Austin is provided through the Port Austin Area Sewer and Water Authority. Similar to the water network, the majority of the Village has access to sanitary sewer lines.

Broadband Connections. According to BroadbandNow, Port Austin's internet connectivity is served primarily by Xfinity, CenturyLink and Air Advantage. The site notes that 31% of Port Austin residents are severely limited in wired broadband choices.

Photo of Fire Department

Photo of Village Hall

Other Utilities. Electricity in Port Austin and the Thumb area is provided by DTE energy, while gas is provided through Consumers Energy.

Schools. Port Austin is served by the North Huron School District. Facilities are located in nearby Kinde, about 8 miles south of the Village.

Parks & Recreation

Bird Creek County Park. This scenic peninsula, flanked by Lake Huron and Bird Creek is a perfect location for family recreation. The beach offers opportunities for swimming and recreating. The gazebo and boardwalk are great for capturing views of the lake. Playground equipment has been provided by the local Lion's club. There is a half-court basketball court, bathhouse facility and private paddle boat/ concession stand. This park is owned and maintained by the Huron County Road Commission.

Veterans Waterfront Park. Completely redesigned and finished in 2010, the park is approximately two acres in size and is located at the foot of the pedestrian walkway which connects to the breakwater. A landscaped walkway was added to carry foot traffic through the park from West Spring Street to the walkway. The park features a pavilion which offers a magnificent view of the lake. There are also picnic tables, playground equipment and a Veteran's Memorial that honors individuals who have served the U.S. in all branches of the military. This park is owned and operated by the Village.

Gallup Park. Encompassing nearly seven acres, this park provides one baseball and one softball field, three tennis courts, one basketball court, a pavilion for picnics, a sloping hill providing sledding and snowboarding fun in the winter and beautiful trees and grassy knolls for year-round relaxation and enjoyment for everyone. This park is also owned and operated by the Village.

Photos: Justin Schnettler

Water Tower Park. Recently acquired property located next to the Water Tower is slated to be developed into a modern midtown park. It is made of approximately 1.4 acres of open space and currently features a butterfly house, as well as a community garden.

Port Austin History Center. Located in Port Austin Township, the History Center features exhibits and educational information on historic community features such as Port Crescent, the Fire of 1881 and St. Michaels Catholic Church.

Nearby Natural Assets

Port Crescent State Park. The park is home to a dark sky preserve, three miles of sandy shoreline, a modern campground and a boardwalk. It also offers visitors ample opportunities for fishing, canoeing, hiking, cross-country skiing, birding and hunting.

Sleeper State Park. Sleeper State Park is 723 acres of forest, wetlands, sandy beach and dunes located on the Saginaw Bay of Lake Huron. Visitors can watch both sunrises and sunsets on the bay, relax in the shade and seclusion of the campground or roam the trails of the ancient dune forests.

-Source: Michigan DNR

Huron County Nature Center & Wilderness Arboretum

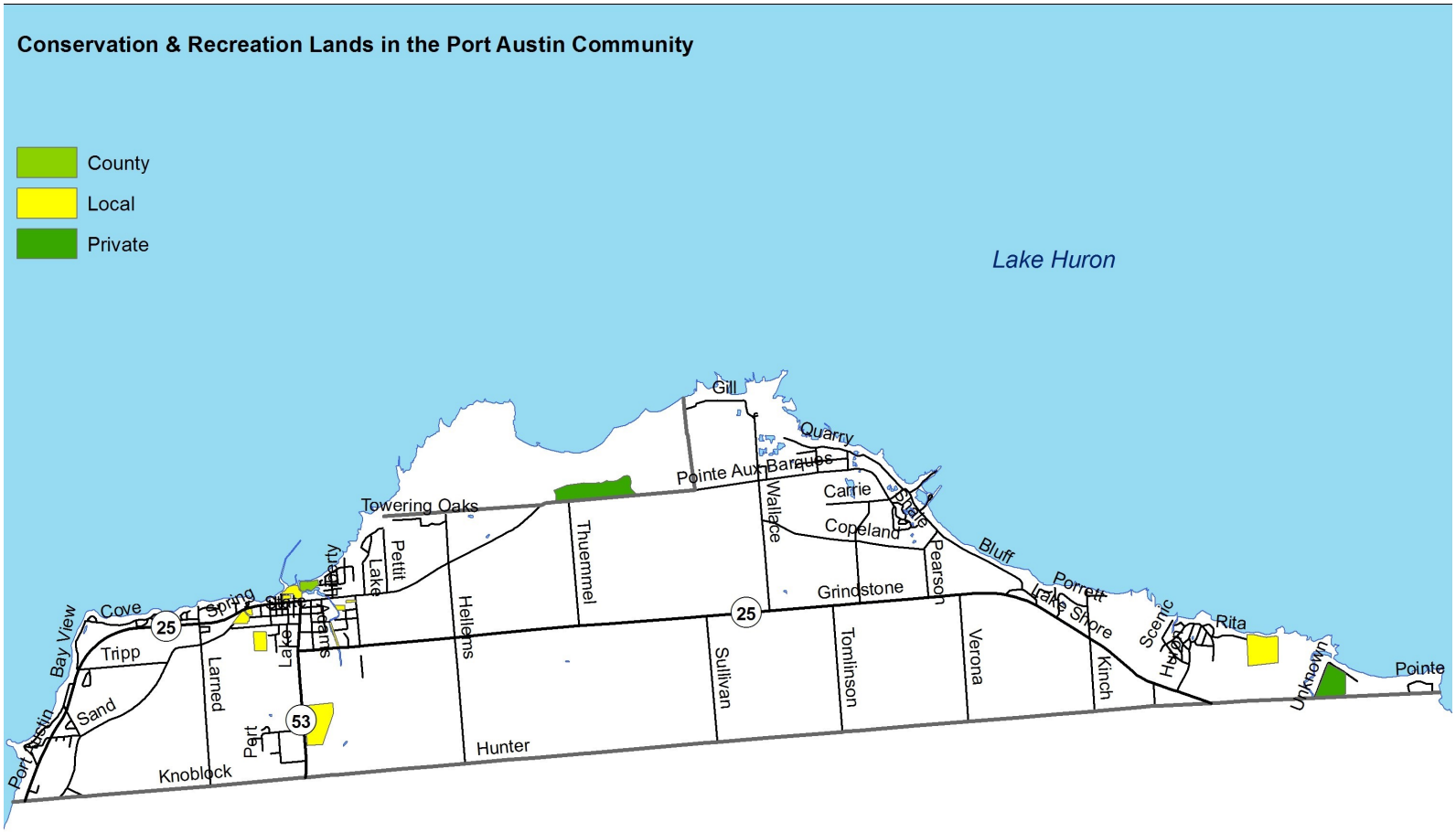
Located west of Port Austin, in between Sleeper State Park and Port Crescent State Park, the Huron County Nature Center & Wilderness Arboretum features 280 acres of preserved wilderness. The site is open year-round and offers visitors trails, bird watching and programmed educational opportunities.

A map of all conservation and public lands locations in Port Austin is provided on the following page.

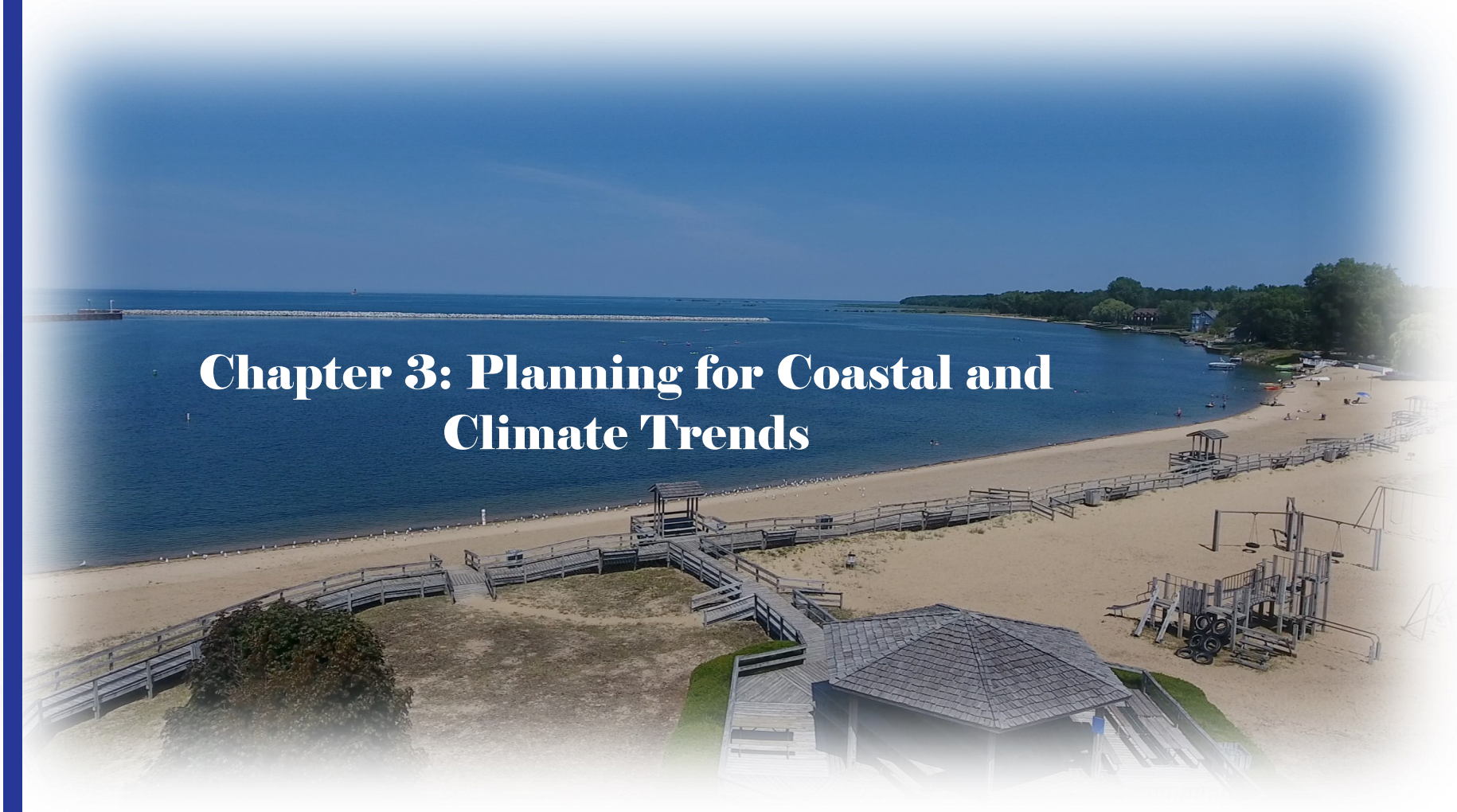
Photos: Michigan DNR

Photo: Huron Nature Center

Map 5. Conservation & Recreation Lands in the Port Austin Community



Chapter 3: Planning for Coastal and Climate Trends



Planning for Coastal and Climate Trends

The Importance of Planning in Coastal Communities

It is no secret that the Great Lakes are one of the most unique and precious environmental systems in the world. In fact, "the Great Lakes basin contains more than 20% of the world's surface freshwater supplies and supports a population of more than 30 million people."[1] Michigan is home to nearly 3,300 miles of Great Lakes shoreline, along with 36,000 miles of rivers and streams, and 11,000 inland lakes.[2]

Yet in general, riparian land (land adjacent to a water body) throughout Michigan is not adequately protected from development pressures.[3] Coastal communities especially have an important role to play in protecting the Great Lakes. In 2001, the Michigan Department of Environmental Quality (DEQ) acknowledged "fragmentation of coastal habitats, loss of agricultural and forest lands, increased impervious surfaces and resulting stormwater runoff, and the increased development in coastal hazard areas, wetlands, and Great Lakes Islands, could be improved through better coastal land-use planning."[4]

Planning for coastal areas at the local level requires knowledge of both local conditions and state and federal regulations. This chapter aims to address these needs for Port Austin and provide clear, well-founded recommendations for future land-use planning.

Overview of Coastal Dynamics and the Great Lakes

The Great Lakes function differently than other inland water bodies and tidal oceans. Understanding these dynamics can help Port Austin plan for naturally occurring changes along the shoreline.

How are Great Lakes Water Levels Measured?

Great Lakes water levels are measured via the International Great Lakes Datum (IGLD), a reference system of benchmarks at various locations on the lakes that approximate sea level. Great Lakes water levels are expressed as measurements above this reference elevation.

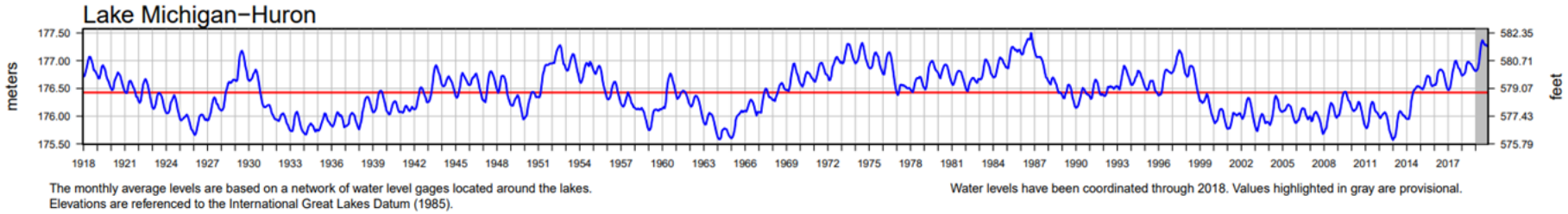
[1] Mackey, S.D. 2012: Great Lakes Nearshore and Coastal Systems. In: U.S. National Climate Assessment Midwest Technical Input Report. J. Winkler, J. Andresen, J. Hatfield, D. Bidwell, and D. Brown, coordinators

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

[3] As cited by Norton 2007 – Michigan Department of Environmental Quality. 2001. 309 Enhancement Grants Assessment/Strategy. Lansing, MI: DEQ Coastal Management Program.

[4] Ibid

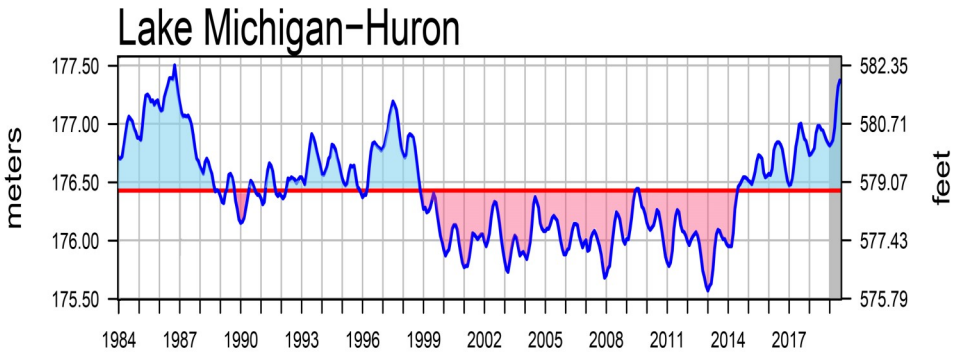
Figure 5: Lake Michigan-Huron Water Level Changes, 1918-2019



Changing Water Levels of the Great Lakes

Great Lakes water level changes result not from the moon's gravitational pull, but from cyclical changes in rainfall, evaporation, and river and groundwater inflows.[5] These factors work together to raise and lower the water levels of the Great Lakes in small increments daily, and larger increments seasonally and over the course of years and decades. Long-term water levels fluctuate by multiple feet. Figure 5 illustrates the water level of Lake Huron from 1918 to 2019 (Lake Michigan and Lake Huron are technically considered one lake). However, under certain climate conditions, water levels can dramatically fluctuate over short periods of time. For example, following the extreme winters of 2014 and 2015, water levels in Lake Huron rose between three to four feet from an all-time low (576 feet) set just a year earlier.

Figure 6: Lake Michigan-Huron Water Levels



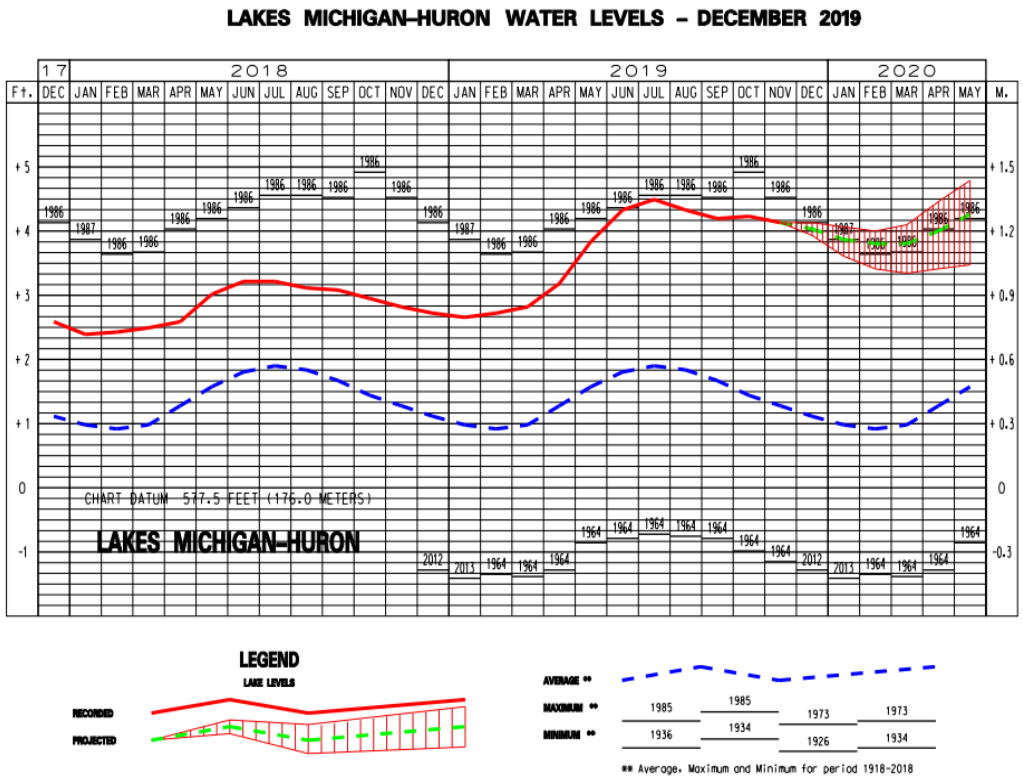
The Great Lakes are in a period of rising lake levels (see Figure 6). Since the early 2000s, water levels had remained low, but historical patterns over the last century indicated that higher water

[5]Norton, Richard K., Meadows, Lorelle A. and Meadows, Guy A. (2011) "Drawing Lines in Books and on Sandy Beaches; Marking Ordinary High Water on Michigan's Great Lakes Shorelines under the Public Trust Doctrine." Coastal Management, 39: 2, 133 – 157, First published on 19 February 2001 (iFirst).

levels were sure to return.[6] Lake Huron's water level in November of 2019 averaged 581.58 feet, which is nearly 16 inches above its level from last year and 34 inches above its long-term average level for the month. According to a recent U.S. Army Corps of Engineers summary, based on current conditions, Lake Huron is expected to continue its seasonal rise again in July, 2020, decreasing slightly in August and September. During the month of July, 2020, water levels on Lake Huron are predicted to reach 583.15 ft, which is 30 inches above the lake's July 2018 levels and almost four feet (45 inches) above the month's long-term average[7] (see Figure 7).

It is important to note that changes in water levels are not solely responsible for the movement of the shoreline landward and lakeward over time. The velocity and height of waves, erosion of shorelines, and the pace of fluctuating water levels also contribute to coastal dynamics on the Great Lakes.

Figure 7:



Wave Energy and Height

The Great Lakes experience high-energy waves and wave setup along the coastline. High-energy waves are high in speed and strong in intensity and are primarily created as fast winds move across the surface of the water for extended distances.[8] "Wave setup" is the

[6]Meadows, Guy A., and Meadows, Lorelle, A., Wood, W.L., Hubertz, J.M., Perlin, M. "The Relationship between Great Lakes Water Levels, Wave Energies, and Shoreline Damage." Bulletin of the American Meteorological Society Series 78:4. (1997): 678-683. Print.
[7]http://www.lre.usace.army.mil
[8]National Oceanic and Atmospheric Administration. "Coastal Currents" Ocean Services Education, NOAA, 25 March 2008. Web. Accessed July 2015.

height of the water as waves reach the shore. High wave setup results as regional storms create high winds on the Great Lakes.[9] Powerful and tall waves can quicken the rate of erosion and damage structures near the shoreline.[10] In Port Austin, the prevailing winds are predominantly from the west (June to August and October to March) and north (March to June).

Erosion

The shorelines of Lake Huron are mostly made of gravel and sands that easily erode during times of high-energy waves.[11] Coastal erosion can cause flooding and damage infrastructure along bluffs and beaches. Erosion is caused mainly by storms and winds, and is exacerbated when lake levels are high.[12]

Quickly Changing Conditions

The Great Lakes are contained in gradually shifting and tilting basins. This tilting results as the Earth slowly decompresses and rebounds from the immense weight of the glaciers that created the Great Lakes.[13] This shifting causes water levels to change more quickly in some places than others, because the shape of the water basin varies along the coast.[14] This attribute of the Great Lakes makes it difficult to predict the pace of shoreline movement. Therefore, it is safest to plan for great variability and rapid change in water levels.[15]

Climate Change and the Great Lakes

Powerful waves, erosion, and changing shorelines on the Great Lakes have been well-documented throughout history, and each has implications for planning efforts along the coast. Climate change exacerbates these natural processes and requires preemptive planning in coastal communities. This section will discuss climatologist predictions of increased precipitation and storminess in the Great Lakes region, variable lake water levels, and rising water temperatures. First, it is important to understand the global context of climate disruption.

Global Changes in Climate

Climate and weather are directly related, but not the same thing. Weather refers to the day-to-day conditions in a particular place, like sunny or rainy, hot or cold. Climate refers to the long-term patterns of weather over large areas. When scientists speak of global climate

[9]Norton, Richard K, Meadows, Lorelle A. and Meadows, Guy A. (2011) "Drawing Lines in Law Books on Sand Beaches: Marking Ordinary High Water on Michigan's Great lakes Shorelines under the Public Trust Doctrine', Coastal Management, 39: 2, 133 – 157, First published on: 19 February 2001 (iFirst)
[10]Ibid.
[11]Ibid.
[12]Meadows, Guy A., and Meadows, Lorelle, A., Wood, W.L., Hubertz, J.M., Perlin, M. "The Relationship between Great Lakes Water Levels, Wave Energies, and Shoreline Damage." Bulletin of the American Meteorological Society Series 78:4. (1997): 675-683. Print.
[13]Dorr, J. A. and D. F. Eschman. 1970. Geology of the Great Lakes. Ann Arbor: University of Michigan Press.
[14]Wilcox, D. A, Thompson, T.A., Booth, R.K., and Nicholas, J. R., 2007, Lake-level variability and water availability in the Great Lakes: U.S. Geological Survey Circular 1311, 25 p
[15]Ibid.

change, they are referring to changes in the generalized, regional patterns of weather over months, years and decades. Climate change is the ongoing change in a region's general weather characteristics or averages. In the long term, a changing climate will have more substantial effects on the Great Lakes than individual weather events.

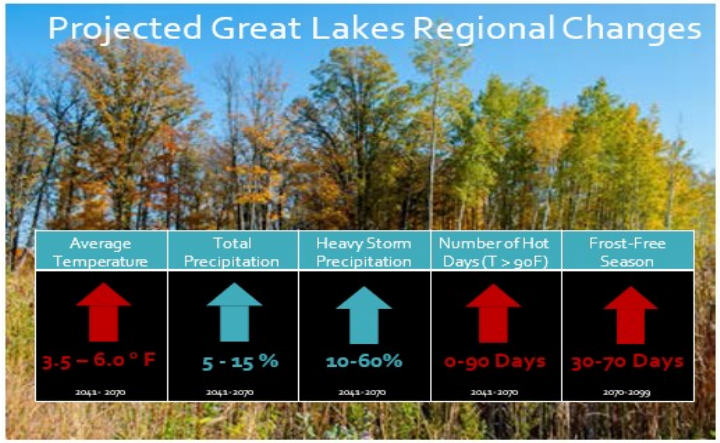
Evidence collected over the last century shows a trend toward warmer global temperatures, higher sea levels, and less snow cover in the Northern Hemisphere. Scientists from many fields have observed and documented significant changes in the Earth's climate.[16] Warming of the climate system is unequivocal and is now expressed in higher air and ocean temperatures, rising sea levels, and melting ice.[17]

To help predict what the climate will be in the future, scientists use computer models of the Earth to predict large-scale changes in climate. These General Circulation Models (GCMs) have been improved and verified in recent years, resulting in relatively reliable predictions for climate changes over large regions.[18] Scientists downscale these techniques to predict climate change for smaller regions.

Climate Change on the Great Lakes

The Great Lakes Integrated Sciences and Assessments Program (GLISA) is a consortium of scientists and educators from the University of Michigan and Michigan State University that provides climate models for the Great Lakes region in support of community planning efforts like this Master Plan. Figure 8 illustrates the historical and predicted climate changes from GLISA for the Great Lakes region. According to GLISA, the Great Lakes region experienced a 2.3° Fahrenheit increase in average air temperatures from 1951 to 2017.[19] An additional increase of 3° to 6° F in average air temperatures is projected by 2050. Although these

Figure 8: Great Lakes Climate Changes

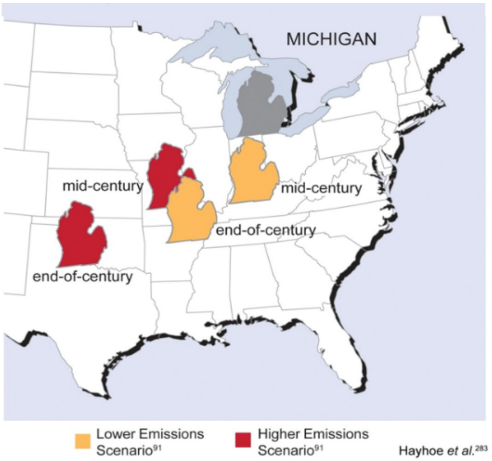


[16]Intergovernmental Panel on Climate Change. (2007). Observed changes in the climate and their effects. Eb. Accessed July 2015.
[17]Ibid.
[18]Intergovernmental Panel on Climate Change (2013). What is a GCM? Web. Access July 2015
[19]Great Lakes Integrated Sciences and Assessments (2019) Temperature. Web. Accessed April 2019.

numbers appear relatively small, they are driving very dramatic changes in Michigan's climate and greatly impact the Great Lakes.

The National Climate Assessment for 2009 included a number of illustrations to help us understand the extent and character of anticipated climate change impacts.[20] One of these illustrations, Figure 9, shows Michigan under several emissions scenarios, each leading to changes in Michigan's climate. Just by maintaining current emission levels, Michigan's climate will feel more like present-day Arkansas or Oklahoma by the end of the century.[21]

Figure 9: Temperature Changes in the U.S.



Model projections of summer average temperature and precipitation changes in Illinois and Michigan for mid-century (2040-2059), and end-of-century (2080-2099), indicate that summers in these states are expected to feel progressively more like summers currently experienced in states south and west. Both states are projected to get considerably warmer and have less summer precipitation.

Increased Precipitation and Storminess

There is strong consensus among climate experts that storms greater in number and intensity will occur in the Great Lakes region as a result of climate change.[22] This is already happening as "the amount of precipitation falling in the heaviest 1% of storms increased by 35% in the Midwest from 1951 to 2017."[23] As storms drop more precipitation and generate stronger sustained winds, the Great Lakes will see stronger and higher waves. In addition to direct damage caused by storms, sustained increases in the number of storms and their intensity can both directly and indirectly pollute waters by overloading sewage and stormwater capabilities.[24] Increases in the intensity of storms also quickens the pace of erosion on Great Lakes shorelines. In fact, the Federal Emergency Management Agency (FEMA) projects approximately 28% of structures within 500 feet of a Great Lake shoreline are susceptible to erosion by 2060.[25]

Variability of Lake Water Levels

The natural ups and downs in the water levels of Lake Huron will continue regardless of the impacts of climate change.[26] However, climate change is likely to augment this natural process, resulting in more variable water levels as warmer air temperatures result in fewer days of ice cover and faster evaporation.[27] In other words, lake levels will rise and fall faster and with less predictability than in the past. Fortunately, much of Michigan's coastal

[20]U.S. Global Change Research Program. Global Climate Change in the United States, 2009. Cambridge University Press, Cambridge, MA.
[21]Ibid.
[22]Great Lakes Integrated Sciences and Assessments (2019) Temperature. Web. Accessed December 2019.
[23]Ibid.
[24]Crice, T., & Yurkovich, E. (2011). Adapting to climate change: A planning guide for state coastal managers – a Great Lakes supplement. Silver Springs, MD: NOAA Office of Ocean and Coastal Resource Management.
[25]The Heinz Center. (2000). Evaluation of Erosion Hazards. Web. Accessed July 2015.
[26]Dinse, Keely. Preparing for extremes: The Dynamic Great Lakes. Michigan Sea Grant. Web. Accessed July 2015.
[27]Cruce, T., & Yurkovich, E. (2011). Adapting to climate change: A planning guide for state coastal managers – a Great Lakes supplement. Silver Springs, MD: NOAA Office of Ocean and Coastal Resource Management.

infrastructure was built in previous decades during times of high water levels.[28] However, fast-rising waters can erode shorelines, damage infrastructure, and cause extensive flooding in inland rivers.[29] When lake levels fall, access to infrastructure like docks may be restricted and navigation hazards in shallow waters may be exposed. Low lake levels pose a threat to coastal vegetation and can reduce the pumping efficiency of drinking water intake pipes.[30] Additional ramifications of changing lake levels include a drop in water supply,[31] restricted fish habitats,[32] more invasive species,[33] faster erosion, and an overall decline in beach health.[34] Climate change is likely to augment the natural highs and lows of lake levels, causing more variability and a faster rate of change, making each of these potential ramifications both more likely and less predictable.

Figure 10.

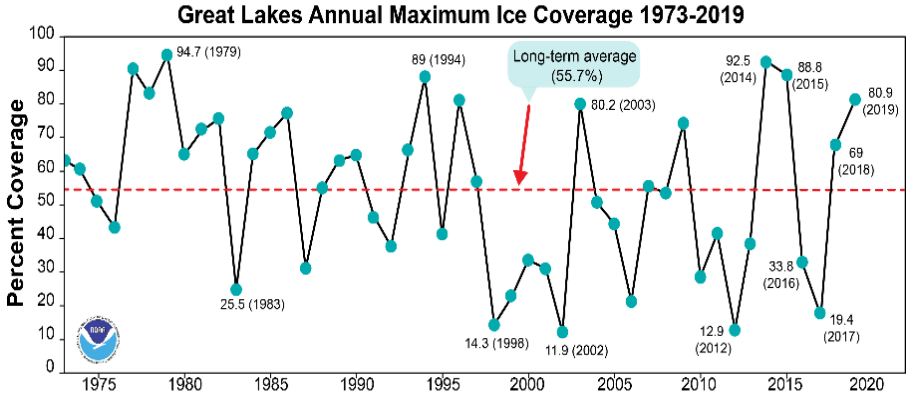


Photo: Justin Schnettler

Water Temperature

Climatologists predict there will be fewer days below freezing in Michigan and other Great Lakes states. As temperatures remain warm for a greater part of the year, the winter season will shorten and the lake ice cover that accompanies winter weather will decline. In general, annual average ice cover on the Great Lakes underwent a shift from higher amounts prior to the 1990s to lower

[28]Dinse, Keely. Preparing for extremes: The Dynamic Great Lakes. Michigan Sea Grant. Web. Accessed July 2015.
[29]Ibid.
[30]Ibid.
[31]Cruce, T., & Yurkovich, E. (2011). Adapting to climate change: A planning guide for state coastal managers – a Great Lakes supplement. Silver Springs, MD: NOAA Office of Ocean and Coastal Resource Management.
[32]Ibid.
[33]Ibid.
[34]Dinse, Keely. Preparing for extremes: The Dynamic Great Lakes. Michigan Sea Grant. Web. Accessed July 2015.

amounts in recent decades. However, there remains strong year-to-year variability, and high ice years are still possible.[35] Figure 10 illustrates the variability in ice coverage in the Great Lakes between 1973 and 2019.

Lake ice cover allows heat radiation from the sun to be reflected, so when ice declines, the surface water temperature will increase as more heat is absorbed by the water. In the Great Lakes, average summer lake surface temperatures have been increasing faster than the surrounding air temperatures, with Lake Superior surface temperatures increasing by 4.5°F between 1979 and 2006.[36]

The associated impacts of rising water temperatures include changes to where fish and other aquatic animals can live, increased vulnerability to invasive species, and increased risk of algae blooms.[37] Rising water temperatures also enable winds to travel faster across the surface of the lake, increasing the vulnerability of coastal communities to damaging waves as storms and winds increase.[38] Lastly, ice cover protects the shoreline during winter storms. With less ice cover, the shoreline is more susceptible to erosion and habitat disruption.

According to the Rockefeller Foundation's City Resilience Index, a Resilient Community has...

1. *Minimal human vulnerability*
2. *Diverse livelihoods and employment*
3. *Effective safeguards to human life and health*
4. *A collective identity and mutual support*
5. *Comprehensive security and rule of law*
6. *A sustainable economy*
7. *Reduced exposure and fragility*
8. *Effective provision of critical services*
9. *Reliable mobility and communication*
10. *Effective leadership and management*
11. *Empowered stakeholders*
12. *Integrated development planning*

[35]Great Lakes Integrated Sciences and Assessments (2019) Temperature. Web. Accessed April 2019.
[36]Ibid.
[37]Dinse, Keely. Preparing for extremes: The Dynamic Great Lakes. Michigan Sea Grant. Web. Accessed July 2015.
[38]Cruce, T., & Yurkovich, E. (2011). Adapting to climate change: A planning guide for state coastal managers – a Great Lakes supplement. Silver Springs, MD: NOAA Office of Ocean and Coastal Resource Management.

Defining Vulnerability in Port Austin

The effects of climate change have been felt by everyone. With planning and preparation, communities can weather the storms and recover, becoming even better places to live and thrive. Through community-wide planning, resilient communities actively cultivate their abilities to recover from adverse situations and events, working to strengthen and diversify their local economies and communication networks, increase social capital and civic engagement, enhance ecosystem services, improve human health and social systems, and build local adaptive capacity.

Building Community Resilience

As defined by the Urban Sustainability Directors Network, community resilience is the ability of a community to anticipate, accommodate and positively adapt to or thrive amidst changing climate conditions or hazard events and enhance quality of life, reliable systems, economic vitality and conservation of resources for present and future generations. The Rockefeller Foundation emphasizes equity as an important component of resilience, stating that community resilience is the capacity of people — particularly the poor and vulnerable — to survive and thrive no matter what stresses or shocks they encounter. Communities that are resilient are able to learn from adversity and adapt quickly to change. In general, the most important qualities of resilient communities are: (1) Reflective, (2) Flexible, (3) Integrated, (4) Robust, (5) Resourceful, (6) Redundant and (7) Inclusive. The Rockefeller Foundation has identified 12 indicators within these qualities that make for a resilient community. However, it is important to acknowledge that Port Austin is unique, and not all of these indicators or characteristics may be necessary for the community to be "resilient."

There are three key rationales to support regulation of floodprone areas: "(1) to protect the unwary from investing in or occupying floodprone property; (2) to protect other riparian landowners (upstream, downstream, or cross-stream) from higher flood levels due to ill-considered encroachment on floodplains by their neighbors; and (3) to protect the community from the costs of rescue and disaster assistance. The first two related to classical nuisance law while the third more closely related to public resource protection."

-From Rutherford H. Platt's Disasters and Democracy: The Politics of Extreme Natural Events. Three rationales originally proposed by University of Chicago Law Professor Allison Dunham in 1959.

The following is a community vulnerability assessment focused on Port Austin. This assessment begins with an overview of regional climate trends and predicts societal impacts, then transitions to detailed assessments of the community's vulnerabilities to extreme heat and flooding events. Although the assessment is concentrated on these two specific types of events, many of the considerations and societal impacts identified would be present in other stresses and shocks within the community (e.g., a winter storm).

In completing the assessment, a variety of factors are considered, such as demographics, environmental conditions, locations of critical facilities and essential services and the built environment. This assessment informs recommendations for reducing identified

community vulnerabilities through policies, programs and projects, which will inevitably lead to a more resilient community.

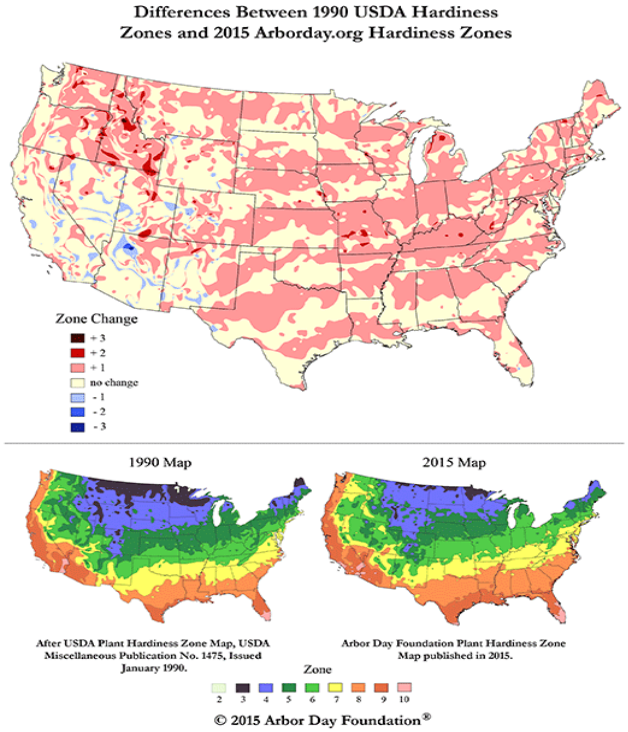
Climate Variability

Based on the most recent models, the climate of Port Austin will continue to warm, with greater increases in average temperatures during the winter months and at night. There are a variety of weather impacts expected with this change in average temperatures. Some of the potential impacts of climate change in the township are listed below:

- Storms are expected to become more frequent and more severe
- Increases in winter and spring precipitation
- Less precipitation as snow and more as rain
- Less winter ice on lakes
- Extended growing season (earlier spring/later fall)
- More flooding events with risks of erosion
- Increases in frequency and length of severe heat events (heat waves)
- Increased risk of drought, particularly in summer

It is important to note that increased flooding and more intense drought are not mutually exclusive nor contradictory. In the Great Lakes region, scientists are predicting more intense rain events in the fall and winter along with more intense droughts in the summer months.

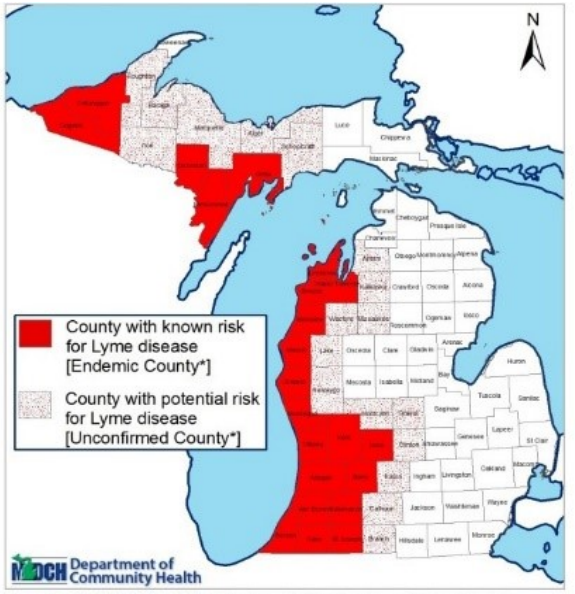
Figure 11.



These changes in climate could have a number of both positive and negative effects in Port Austin. For example, an extended growing season could help support new crops and increase crop yields for area farmers. On the other hand, the highly variable weather conditions — such as severe storms and flooding mixed with summer droughts — present big challenges to farming. Much of the U.S. has been warmer in recent years, and that affects which plants grow best in various regions. The Arbor Day Foundation completed an extensive update of U.S. Hardiness Zones based

on data from 5,000 National Climatic Data Center cooperative stations across the continental United States. As illustrated in Figure 11, zones in the thumb of Lower Michigan are shifting northward. A few decades ago, Huron County was solidly in Zone 5; today, Zone 6 plants that once thrived in the southern reaches of the state can now successfully survive in Huron County. It is worth noting that the Port Austin area has remained in Zone 5 from 1990 to 2015, though this may change in the coming decades if climate change continues on its current trajectory.

Figure 12. Lyme Disease Risk by Michigan County



Public Health and Climate

Major health effects of long-term climatic change are predicted for the U.S. Midwest. Already, people in Michigan are experiencing higher rates of skin and eye damage from increased exposure to ultraviolet radiation, increased incidence of respiratory and cardiovascular diseases, and increased incidence of vector-borne and water-borne diseases.[39] Weather conditions and high heat events exacerbate health conditions like allergies, asthma and obesity.

The Michigan Department of Health and Human Services (MDHHS) published the Michigan Climate and Health Adaptation Plan in 2011. The Plan indicates there is an increase in the number of illnesses and deaths as a result of extreme heat events; declining air quality as a result of increased production of ozone and particulate matter from heat and drought events; and adverse changes to water quality and availability following severe weather events. In the long term, health experts are most concerned with a rising incidence of infectious diseases and outbreaks of new diseases not currently endemic to Michigan; increasing numbers of disease vectors and the appearance of new vectors not currently established in Michigan; and a degradation of food safety, security and supply. For example, blacklegged ticks are one disease vector that has increased in recent years. According to the MDHHS, the first official reported human case of Lyme disease in Michigan was in 1985. Cases have now been reported in both the Upper and Lower Peninsula and are increasing. It is anticipated that the number of cases reported will continue to increase due to public and medical personnel education and expanding tick ranges.

[39]National Research Council. Reconciling observations of global temperature change. Washington, DC: National Academy Press, 2000:86.

Vulnerability Assessments

Communities interested in becoming more resilient assess their vulnerabilities and make action plans to reduce their sensitivities and exposures to hazards of all kinds. This Community Vulnerability Assessment has been compiled by the Land Information Access Association to provide a wide variety of useful information aimed at improving climate resilience by reducing human and community vulnerabilities.

Vulnerability = Exposure + Sensitivity

A Vulnerability Assessment is designed to identify and help prioritize adaptation strategies in the community planning process. A model that defines vulnerability as "exposure plus sensitivity" is used to complete the assessment.[40] "Exposure" refers to hazards in the natural or built environment, while "sensitivity" refers to the degree to which a community or certain segments of a community could be impacted by an event. This concept has been used recently in a variety of studies, such as equity and adaptation assessments conducted by the NAACP,[41] vulnerability and its relationship to adaptation,[42] and hazard-specific vulnerability assessments aimed at measuring exposure, sensitivity, and resilience.[43]

By assessing the potential for exposure to a hazard and the sensitivities of specific populations, maps are generated that identify the community's areas with relatively greater vulnerability (that is, where exposure and sensitivity overlap). This tool provides direction for community planners and public health workers in reducing risks to human health by understanding where the areas of vulnerability lie and why the vulnerability exists.

Vulnerability = Sensitivity + Exposure

Exposure refers to hazards in the natural or built environment, while *sensitivity* refers to the degree to which a community or certain segments of a community could be impacted by an adverse event.

Figure 13: Relationship Between Natural Hazards, Built Environment & Legal System

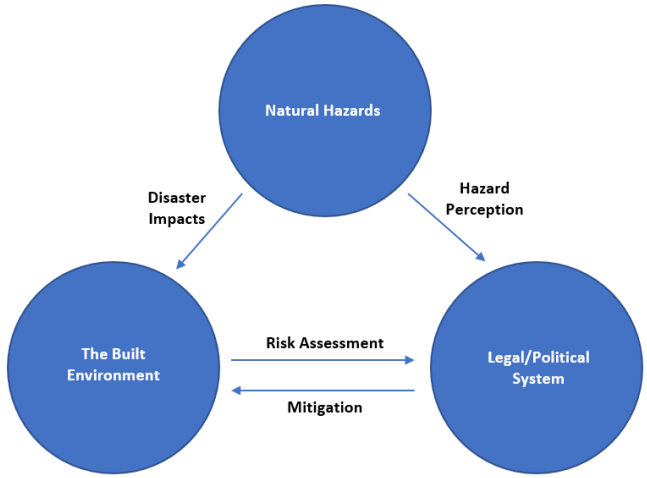


Figure from Disasters and Democracy (Platt, 1999)

[40]Foundations for Community Climate Action; Definition Climate change Vulnerability in Detroit. University of Michigan. December 2012.
[41]Equity in Building Resilience in Adaptation Planning. National Association for the Advancement of Colored People (NAACP).
[42]Adger, W.N. (2006). "Vulnerability." Global Environmental Change 16 (3): 268-281. Adger, W.N., N. Arnell, and E. Tompkins (2005). "Adapting to climate change-perspectives across scales." Global Environmental Change 15(2): 77-86.
[43]Polsky, C., R. Neff, and B. Yarnal (2007). "building comparable global change vulnerability assessments: the vulnerability scoping diagram." Global Environmental Change 17(3-4): 472-485.

For the purposes of this tool, based on the greatest risks in Michigan and most likely predicted climate changes, the vulnerability assessments for Port Austin were limited to extreme heat waves and flooding. However, climate change is predicted to result in increases of other exposures that should also be considered in community planning and development (e.g., high winds, severe winter storms).

Our assessments were based in part on data obtained from the American Community Survey (ACS), a continuing survey program operated by the U.S. Census Bureau. This data includes information on housing, income and education characteristics of the population in geographic areas called "Block Groups," which contain between 600 and 3,000 individuals. Data from the 2010 Census was also used, including population age and racial composition collected at the Census "Block" level, which is the smallest available geographic area for demographic data.

Heat Vulnerability

Community vulnerability to heat events varies spatially on local, regional and national scales. In Michigan communities, there are varying degrees of vulnerability to heat based on proximity to the Great Lakes, access to air conditioning, and surrounding environmental factors like tree canopy and impervious surfaces.

Studies have shown that heat-related mortality generally occurs in areas of the community that are warmer, less stable, and are home to more disadvantaged populations.[44] One study found that neighborhoods with the highest temperatures and the least amount of open space and vegetation were also likely to be the most socioeconomically disadvantaged.[45] The same study also found the strongest protective factor for residents was access to air conditioning in the home and in other places, as well as having access to transportation.

A 2012 literature review conducted by researchers at the University of Michigan indicates that children under five and persons over age 65 are highly sensitive to heat events, as are persons living in lower-income Census tracts and minority populations. Living alone, being confined to bed, having a mental illness, not leaving home daily, living on higher floors of multistory buildings, and suffering from alcoholism are additional factors that are associated with increased risk of heat-related mortality.

Many Michigan communities are rural and suburban. There have been limited studies conducted on how heat events impact rural and suburban communities, but one study notes that rural populations may exhibit patterns of vulnerability different from those of urban populations.[46]

[44]Foundations for Community Climate Action: Defining Climate Change Vulnerabilities in Detroit. University of Michigan. December 2012.
[45]Semenza JC, Rubin CH, Falter KH, et al. Heat=related deaths during July 1995 heat wave in Chicago. N Engl J Med 1996; 335:84-90.
[46]Mapping Community Determinants of Heat Vulnerability. Environ Health Perspectives 117: 1730-1736 (2009). Doi:10.1289/ehp.0900683 available via http://dx.fdoi.org/[Online 10 June 2009]

Table 16. Needs of Stakeholders and Participants in Disaster Recover

	Immediate and long-term needs
Individuals and families	Housing
	Restoration of employment
	Health and welfare
	Restoration of schools and other educational facilities
Business and industry	Reconstitution of business, business recovery
	Rehiring of workers
	Insurance supplementation or coverage of uninsured losses
	Business altruistic activity
Communities and local government	Restoration of utilities and lifeline services
	Support of nonprofit charitable organizations
	Infrastructure repair and replacement
	Supervision of local recovery
	Debris removal
	Postdisaster planning
State and federal government	Repair or replacement of state-owned infrastructure or facilities
	Repair or replacement of federally owned infrastructure or facilities

Cited in Disaster Policy & Politics (Sylves, 2008). Original source: Introduction to Emergency Management (Haddow & Bullock, 2006).

Heat Sensitivity Assessment

To create the sensitivity and exposure maps, as well as the resulting vulnerability maps, the project team relied on methodologies developed at the University of Michigan's Taubman College of Architecture and Urban Planning in a 2012 report.[47]

To conduct the heat sensitivity assessment of Port Austin, the project team used a geographic information system (GIS) for spatial data analyses to show the relative distribution of people most at risk. Five factors have been identified as primary contributors to the sensitivities and risks of people exposed to a heat wave, including: people over 65 years of age; people living alone; people over 25 with less than a high school education; minority populations; and people living below the poverty line. Using U.S. Census data, the project team identified the percentages of people living in each area (by Block Group or Block) for each sensitivity factor. Maps depicting the locations of Port Austin's vulnerable populations can be found in Appendix G.

People who are older have greater sensitivity to extreme heat events. The technical literature also indicates that older age is associated with higher hospital admission rates in heat waves. The Percent of Population 65 and Older (Map G.5) depicts the relative concentration of older adults in the community by Census Block.

Another sensitivity factor is living alone, which serves as a measure of social isolation. Although living alone is not necessarily a risky thing, people who are socially isolated are at greater risk during an extreme heat event. Isolated people may not be able to recognize symptoms of heat-related illness and take proper action. In this case, the project team used the American Community Survey data for Census Block Groups, broken out into

[47]Foundation for Community Climate Action: Defining Climate Change Vulnerability in Detroit (December 2012) University of Michigan's Taubman College of Architecture and Urban Planning.

individual Census Blocks for geographic representation (Blocks with no population were not included). Map G.6 depicts the concentrations of people living alone.

Literature suggests that minorities are at greater risk during extreme heat events for various reasons, including less reliable access to health care, transportation and other social supports needed to reduce heat exposures.[48] Census Blocks were used to map the relative percentages of non-white populations in the township (see Map G.7).

Two socioeconomic factors associated with increased heat-related morbidity and mortality are the percentage of the people living in poverty and percentage of people without a high school diploma. In general, persons living at or below the poverty line have less access to air conditioning or cooling options for their residences. This could limit a person's access to relief from an extreme heat event. Census Block Groups were used to map the relative percentages of households living below the poverty threshold in Port Austin (see Map G.8).

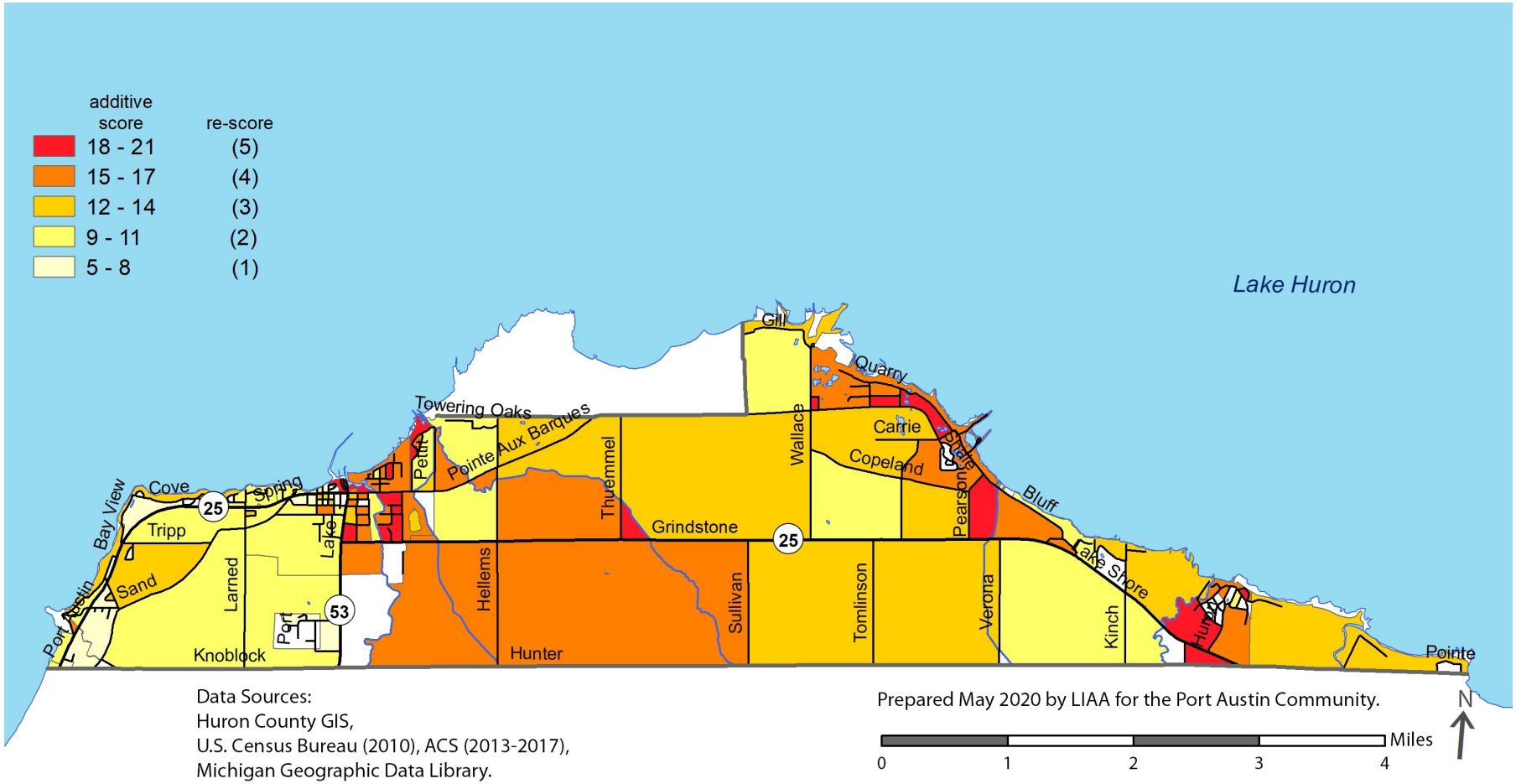
Similarly, University of Michigan researchers found studies that demonstrate a direct link between low education attainment and poor health as well as income.[49] There is also an established correlation between lower educational attainment and income. Based on these findings, Census Block Groups were used to map the relative percent of persons 25 years and older with less than a high school education in Port Austin (see Map G.9).

To complete the heat sensitivity assessment, a cumulative score for all five sensitivity factors for each Census Block was created. In each of the sensitivity factors, the percentages were grouped into five categories (ranging from a very low percentage of people to a relatively high percentage living with the identified sensitivity). The five categorical groupings were generated by the GIS software ArcMap using natural breaks in the data (groupings). A ranking of 1 to 5 was assigned to each of the categories, ranging from 1 for the lowest percentage to 5 for the highest. Finally, the team combined the scores within each Census Block. Thus, the most sensitive Census Blocks could be scored up to 25. The sensitivity is color coded for ease of identifying areas with the greatest sensitivity.

The Port Austin Sensitivity of Populations to Extreme Heat Events Map (Map 6) provides a reasonably detailed map of locations where the highest percentages of at-risk residents live. This does not mean these community residents are in immediate danger. Rather, the map provides planning officials a new way of identifying areas where heat waves could present serious problems for a significant number of citizens. These are populations that could be sensitive to extreme heat events.

[48]Waugh and Tierney (eds.) Emergency Management: Principles and Practices for Local Government. Chapter 13: Identifying and addressing social vulnerabilities by Elaine Enarson.
[49]Currierp FC, Heiner KS, Samet JM, et al. Temperature and mortality in 11 cities of the eastern United States. American Journal of Epidemiology. 30 (2001): 1126-8.

Map 6. Relative Sensitivity of Populations to Extreme Heat Events



The Census data used likely double-counts some people, such as in cases where a person is both a minority and over 65; this may overestimate the severity of the sensitivities in some locations. Conversely, the sensitivity analysis may underestimate risk in some areas because it leaves out several key sensitive populations, such as those with preexisting health concerns that denote vulnerability to heat (for example, cardiovascular disease or psychiatric disorders), since such health data is not often available publicly. Emergency managers, hospitals, and community health departments may have additional data available that can be considered as the community looks to better understand its sensitive populations. To further improve the analysis, additional variables could be collected through local surveys and observations, such as the degree of social connections among individuals within a community, or materials used in housing.[50]

Heat Exposure Assessment

When larger communities experience heat waves, air temperatures can vary significantly from place to place both during the day and at night. Some of these differences can be attributed to the varying types of land cover found throughout the community. For example, temperatures can be significantly lower at night in locations with a heavy tree canopy and very little pavement, versus locations with little greenery and lots of pavement.

Four Phases of Emergency Management

Mitigation

Mitigation involves deciding what to do where a risk to the health, safety, and welfare of society has been determined to exist and then implementing a risk reduction program.

Preparedness

Preparedness involves developing a response plan and training first responders to save lives and reduce disaster damage, identifying critical resources, and developing necessary agreements among responding agencies, both within the jurisdiction and with other jurisdictions.

Response

Response entails providing emergency aid and assistance, reducing the probability of secondary damage, and minimizing problems for recovery operations.

Recovery

Recovery involves providing the immediate support during the early postdisaster period necessary to return vital life-support systems to minimum operational levels and continuing to provide support until the community returns to normal.

From Disaster Policy & Politics (Sylves, 2008)

[50]Mapping Community Determinants of Heat Vulnerability. Environ Health Perspectives 117: 1730-1736 (2009). Doi:10.1289/ehp.0900683 available via http://dx.fdoi.org/[Online 10 June 2009]

Impervious surfaces such as paved parking lots, roadways, and buildings absorb large amounts of heat from the air and from sunshine that is then radiated back into the surroundings, and this heat continues to radiate even after the sun has set. Conversely, tree canopy and other vegetation tend to help cool an area through evaporation and transpiration of water, and by providing shade. In places with a high percentage of impervious surface and little tree canopy, the immediate surroundings can be much warmer. Urban areas typically have higher heat indexes (combinations of temperature and humidity) than surrounding suburban or rural areas. This condition has been termed the Urban Heat Island Effect.[51]

People living in settings with an Urban Heat Island Effect suffer greater exposures to heat over longer periods of time (e.g., warmer nights), making them more vulnerable to health impacts. Studies of the Urban Heat Island Effect (whereby air temperatures in an urban area are 2° to 9° F higher than in a nearby rural area) have shown that the albedo, or reflectivity, of an urban area is one of the most important determinants in reducing the magnitude of the heat island.[52] Increasing the tree canopy cover can also reduce air temperature by 2° to 5° F. Green roofs (vegetative plantings on roofs) may also decrease the Urban Heat Island Effect and decrease stormwater runoff and building energy use. Added benefits from increasing albedo and vegetation include reductions in ground level ozone pollution and reduced energy costs associated with air conditioning use.[53]

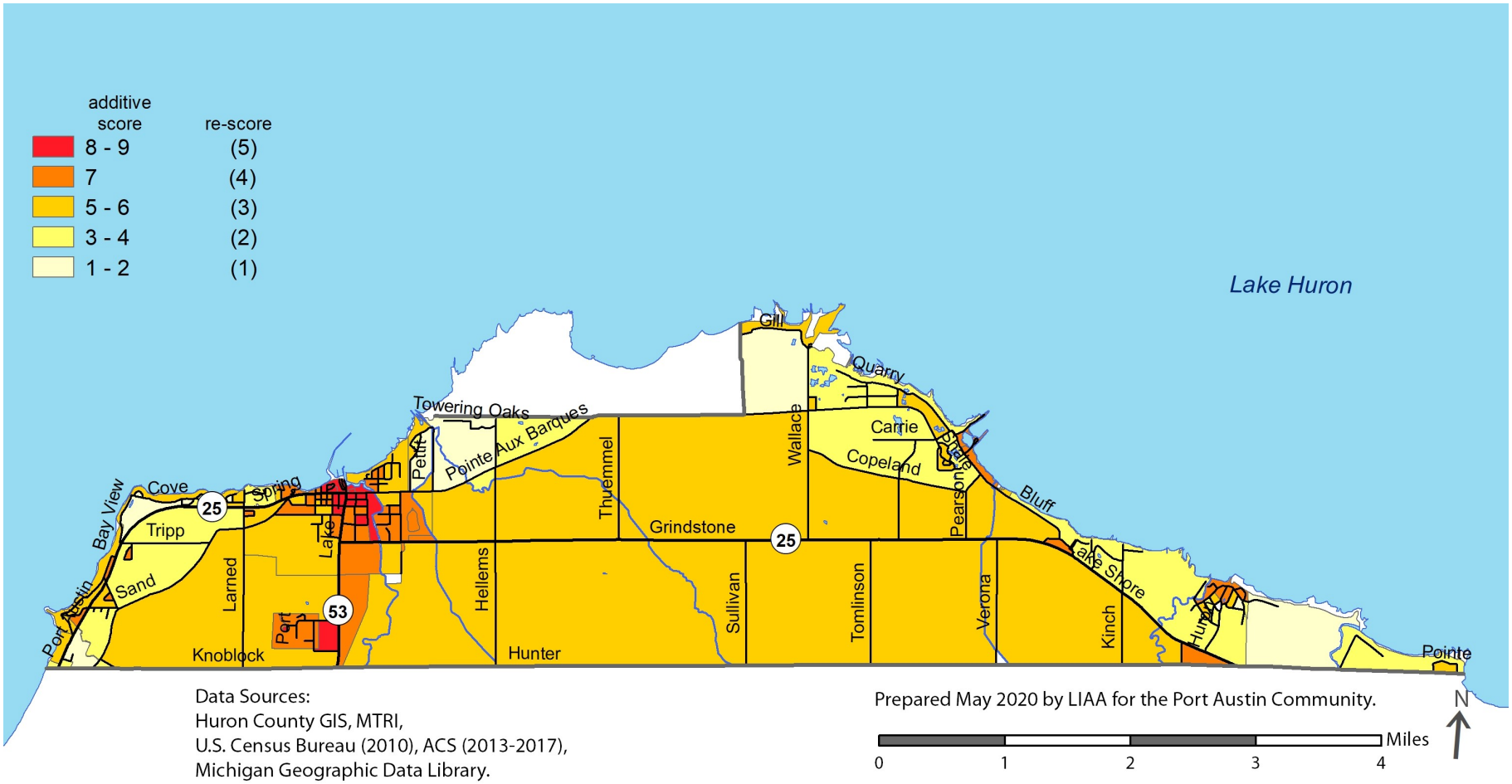
To complete a heat exposure assessment, the project team focused on the Urban Heat Island Effect, and two separate exposure maps were created. The first exposure map depicts the percentage of impervious surfaces within each Census Block, as used in the sensitivity assessment (Map G.10). These percentages are divided into five categories using the GIS software's natural breaks calculation. Since exposure is lowest in areas with the lowest percentage of impervious surfaces, those scored a 1, with a rating of 5 assigned to areas with the highest percentage of impervious surfaces.

The second exposure factor is percentage of tree canopy. Here, tree canopy is mapped within each Census Block (Map G.11) and scored using a similar five-category process. On Map G.11, the highest percentage of tree canopy (and therefore the lowest heat exposure) received a score of 1, and the areas with the least amount of tree canopy received a 5.

The project team combined the results of the two exposure maps to provide a single Relative Environmental Exposure to Extreme Heat Events Map (Map 7), which provides a reliable depiction of where the Urban Heat Island Effect would be most or least intense during a heat wave. Officials in Port Austin can use this map to better assess where new vegetation and tree canopy would be helpful to reduce the heat impact.

[51]Basu and Samet. (2002) Relation between Elevated Ambient Temperature and Mortality: A Review from the Department g Epidemiology, Bloomberg School of Public Health, John Hopkins University, Baltimore, MD.
[52]Kolokotroni M, Giridharan R. Urban heat island intensity in London: An investigation of the impact of physical characteristics on changes in outdoor air temperature during summer. Solar Energy 2008;82(11):986–998.
[53]Akbari H. Shade trees reduce building energy use and CO2 emissions from power plants. Environmental Pollution 2002;116:S119–S126. [PubMed: 11833899]

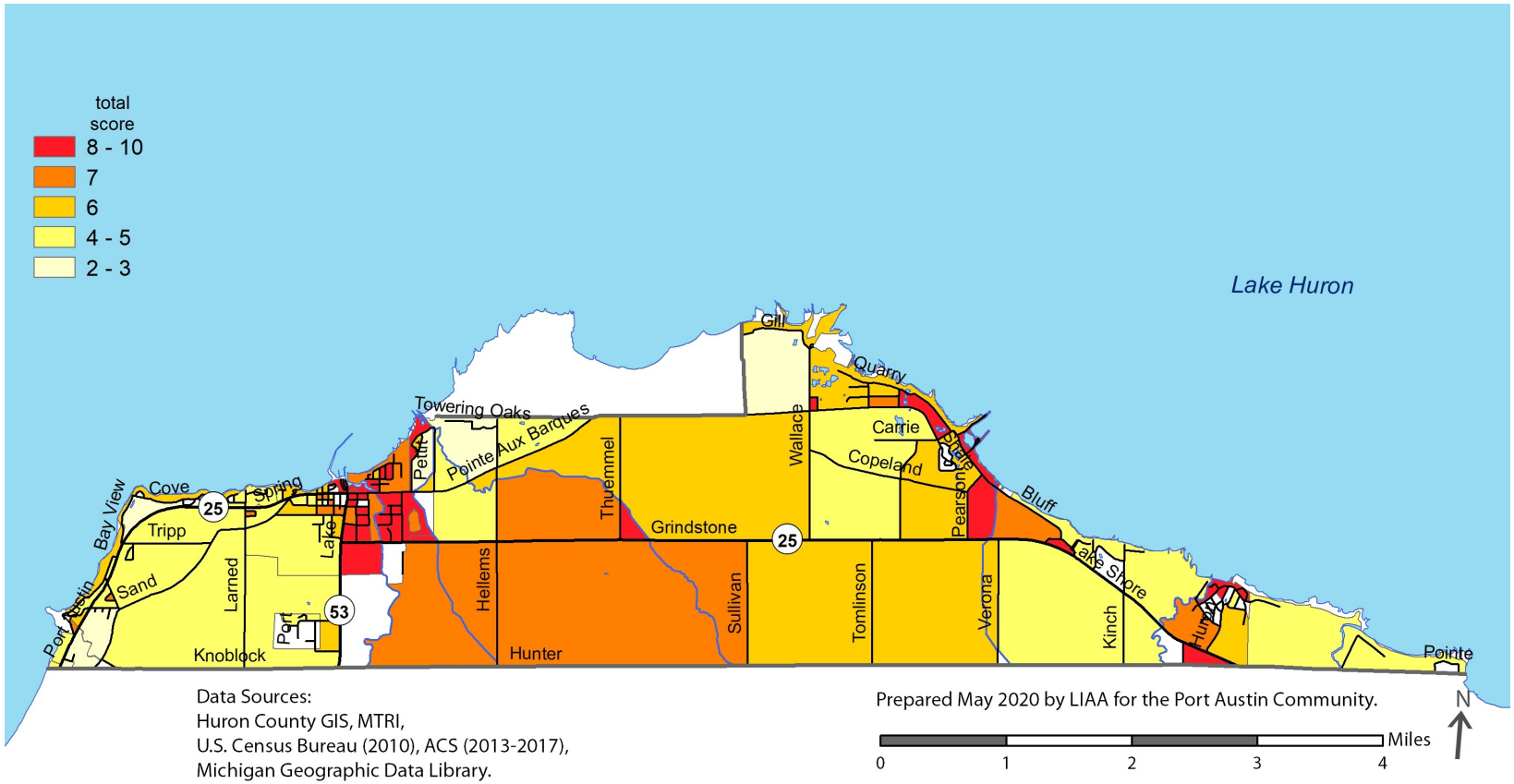
Map 7. Relative Environmental Exposure to Extreme Heat Events



Composite Heat Vulnerability Map

The Port Austin Heat Vulnerability Map is a simple additive combination of the overall sensitivity map and the overall exposures map (see Map 8). The resulting vulnerability index depicts where concentrations of exposures and sensitive populations create a higher risk for community residents. In general, those areas with a composite score of 8-10 (red) have residential populations that may be particularly vulnerable to extreme heat events.

Map 8. Port Austin Heat Vulnerability



Heavy Rain and Flooding

Climate scientists say that Port Austin and east Lower Michigan can expect more frequent storms of increasing severity in the decades ahead. The total amount of rainfall per year is also likely to increase. However, climate models suggest the precipitation will be more concentrated in the winter, spring and fall seasons and there will be more localized, intense storms at almost any time of year. The potential for substantially larger rain events raises concerns over the potential for harm to human health and damage to buildings and infrastructure.

In assessing vulnerability, community planners evaluate potential exposures as well as sensitivity to flooding. Buildings, roads, bridges, sewer lines and other infrastructure located in a flood zone are exposed to greater risks. Where flowing floodwaters have the greatest energy, structures may be undercut, collapse or move, and soils will erode. Even areas outside of an identified floodplain are subject to flooding from heavy downpours. Where the soils have low permeability and physical drainage is inadequate, water will accumulate and cause ponding during large storm events. Appropriate planning and land-use regulations can help reduce exposures caused by poor site selection. The sensitivity of structures can be modified to reduce risk of damage by applying flood-resistant design standards.

Exposure to Flooding Hazards

The Digital Elevation Model Map (Map G.4) offers a useful view of the topography of Port Austin, including the most prominent drainage patterns. On this map, the darkest green colors identify the lowest elevations, while the darkest brown colors identify the highest elevations.

Coastal Hazard Analysis

As part of this master planning process, LIAA and the University of Michigan analyzed shoreline and riverine ecosystem and physical dynamics to help Port Austin manage its shoreline and riverine areas. This chapter presents a brief summary of the team's framework, results and recommendations.

Overview of Research Framework

The Research Framework for this analysis employs scenario planning to assess environmental and land-use conditions under different climate futures. Scenario planning, in general, identifies driving forces to inform a range of scenarios that are then analyzed and evaluated. In this context, the project team identified natural forces, especially increasing storminess and lake-level fluctuations causing increased problems with flooding. These forces informed the creation of multiple climate futures. Each climate future was tested and evaluated for impacts on the environment and land use in the community.

Climate Future Definitions

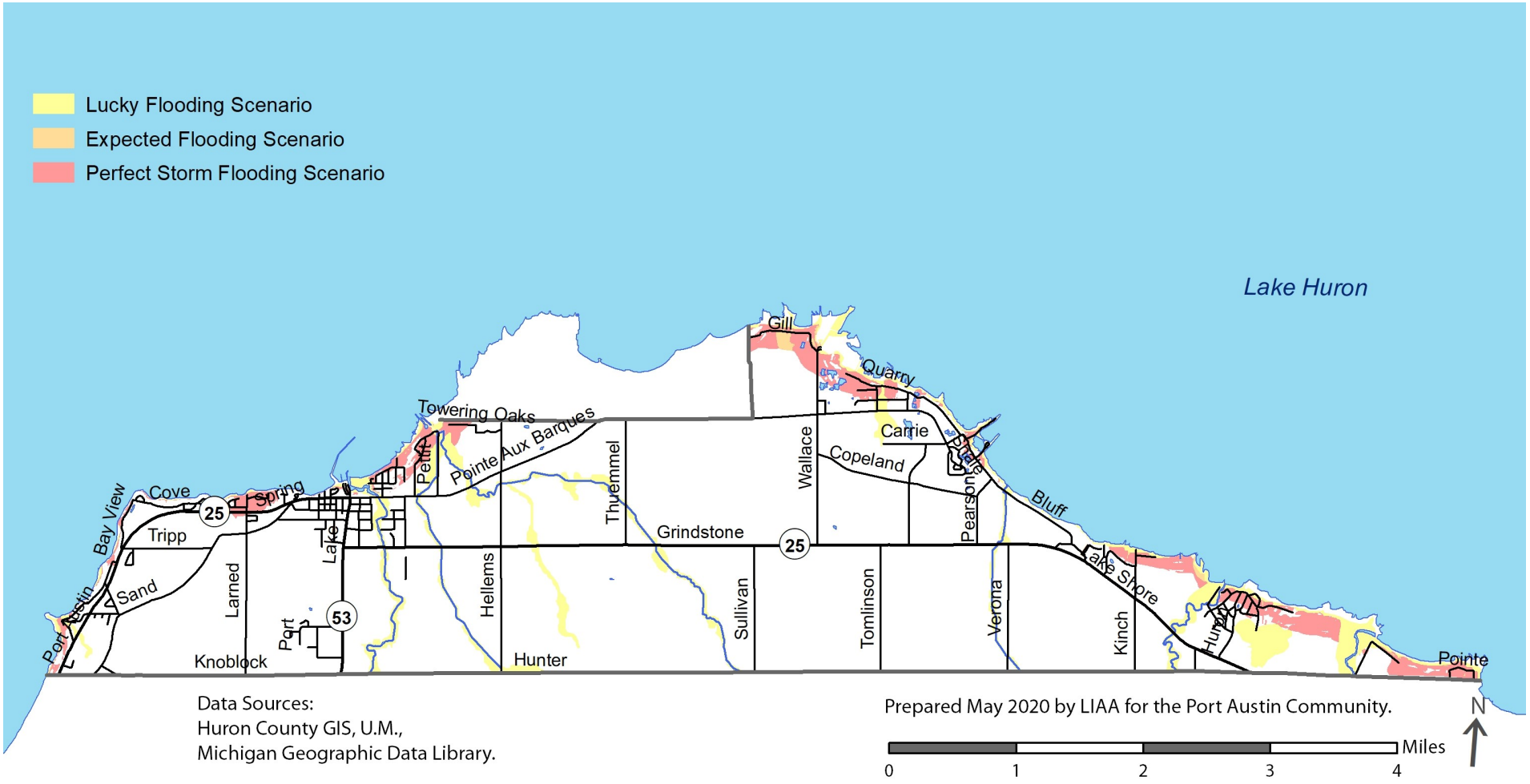
Rather than presenting a prediction of what the future will bring, each of the following "climate futures" lays out a possible future that might occur. These varying climate futures — all of which are reasonably anticipated possibilities — are arranged from a least impactful to a most impactful condition in terms of the potential for wave damage and flooding hazards they would bring. The following descriptions outline the key assumptions made in defining each of the climate futures as compared to the others. Map 9 shows the estimated land areas that would be affected by waves and flooding under these three climate futures.

"Lucky" Future. Under the Lucky Climate Future, Great Lakes water levels will 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. A Lucky Future projection, indicating the land areas that would be affected by high-energy waves along the shorefront and/or adjacent riverine flooding under these conditions, is shown in green on Map 9.

"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 the Federal Emergency Management Agency's (FEMA) ongoing Great Lakes Coast Flood Study. Given those ongoing fluctuations, this Climate Future accounts for periods when Great Lakes still-water elevations are closer to the long-term average. In addition, this Climate Future anticipates the so-called "100-year storm event" (or 1% storm) becoming more like a 20- or 50-year storm event (i.e., an expected storm within the normal community planning time horizon) because of increased storminess. The Expected Future projection is shown in purple on Map 9.

"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, for this Perfect Storm Climate Future, the estimated still-water elevation is set higher than the long-term average and closer to the long-term high (583 feet). In addition, this Climate Future anticipates the occurrence of a so-called "500-year storm event" (or 0.2% storm) occurring within the planning time horizon while lake levels are high. The Perfect Storm Future projection is shown in red on Map 9.

Map 9. Port Austin Flooding Scenarios



Management Options

The management options used for this scenario-based planning analysis are designed to represent feasible arrays of options a community might reasonably address, ranging from making no changes to current programs to adopting "best management practices" (BMPs) designed to mitigate potential harms from flooding conditions. Each of the following descriptions outline the key assumptions made in defining each of the management options compared to the others.

Current Practices. Under this option, the assumption is made that the Port Austin Community will continue to manage land in the same manner it currently employs, in accordance with adopted plans, zoning ordinances, and relevant local ordinances.

Buildout According to Current Zoning. Under this option, the community will experience a full buildout 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. See Map 7.19 for a visual of where these potential development areas are located. 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 current zoning, with additional land set aside for open space, driveways, streets and yards. The dots on the map do not represent actual physical locations of structures. Rather, the dots are randomly placed by the CommunityViz software to provide a quick visual representation of the potential for additional buildout in Port Austin under current zoning. A greater number of dots in an area indicates a greater potential for buildout in that area.

Built-Out According to Best Management Practices (BMPs) . Under this option, the Port Austin Community will adopt and implement Best Management Practices to preserve natural resources and protect private property, and then experience full development under the revised zoning provisions.

For this study, only a handful of best management practices are modeled, as described below. The selected BMPs were chosen because each can have a significant spatial effect and a policy or regulatory effect that can be achieved through a zoning ordinance. These BMPs are easily modeled using CommunityViz software. The intent of including this management option is to present several amendments that could be adopted that may influence the impact on land use and the environment in the community.

The BMPs modeled in this management option are:

- 50-foot buffers around any inland water (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.

Scenario Planning to Assess Land Use and Environmental Conditions

Each management option can be combined with each of the three Climate Futures to create distinct scenarios, which can then be analyzed for selected conditions, as noted above. This array of scenarios represents a range of conditions the Village could reasonably encounter in the foreseeable future regarding potential wave and flooding impacts, given changing natural conditions and the development management decisions made in response. For analysis here, each scenario focuses on potential impacts to land use and environmental conditions in Port Austin. Land-use impacts include the acreage, parcels, structures and critical facilities that would be at risk under different Climate Futures for each management option. Environmental conditions include the acreage of wetlands, impervious surfaces, and high-risk erosion areas impacted in each Climate Future for each management option.

Land Use Results

Total Acres

The total acres of land impacted by flooding increases from the Lucky Climate Future to the Perfect Storm Climate Future. The number of acres impacted increases the most between the Expected and Perfect Storm forecasts (a 72.6% increase in land area). Between the Lucky and Expected scenarios, the total acres impacted essentially double. Table 17 shows the total acres of land impacted under each future flood forecast in the Village of Port Austin.

Table 17. Total Land Acres Impacted by Flooding

	Lucky	Expected	Perfect Storm
Port Austin	1,436	1,535	2,479

Parcels

As Table 18 shows, between 34 and 95 parcels are impacted depending on the severity of the Climate Future in Port Austin. Map 12 illustrates the extent of inundation for each Climate Future.

Table 18. Total Number of Parcels Impacted by Flooding, by Zoning District

Use Type	Lucky	Expected	Perfect Storm
Residential	23	23	79
Non-Residential	11	11	16
Total	34	34	95

Structures

Up to 95 structures may be impacted in the Village depending on the severity of the Climate Future experienced. Table 19 summarizes the total number of structures impacted under the varying Climate Futures.

Table 19. Number of Structures Impacted by Flooding

	Lucky	Expected	Perfect Storm
Current Development	34	34	95
Build-out According to Current Zoning Ordinance (Additional Structures Impacted)	+112	+112	+133
Build-out According to Best Management Practices (Additional Structures Impacted)	+2	+2	+3

Financial Impacts in Each of the Flooding Scenarios

Tables 20 and 21 show the potential negative financial impacts that the various flooding scenarios may present to the Port Austin community. Shown in Table 20, the Village currently generates $1.1 million in tax revenue. The remainder of the table illustrates how implementing best management practices, namely including 50-foot buffers from flood-prone areas, can reduce the proportion of tax revenue lost in the case of a particular flood scenario. For example, if a Perfect Storm flood scenario in which the community is completely built out according to its current zoning, around 19.5% of the municipality's tax revenue would be lost. However, if built out according to BMP's the Village would only lose 15.4% of its tax revenue. The same pattern reveals itself in regard to potential property damage coasts. The additional projected damages during a Perfect Storm event are $3.19 million if the community is built out according to current zoning, compared to a much lesser $744,374 if the community implements best practices. Both of these tables serve to highlight the financial implications for different zoning and flood management practices in the Village of Port Austin.

Table 20. Tax Revenue of Affected Properties

Use Type	Total	Lucky	Expected	Perfect Storm
Tax Revenue	$1.1 million	$63, 564	$63, 564	$195,561
Build-out According to Current Zoning Ordinance (Potential Additional Tax Revenue Impacted)	$2.6 million	$252,767	$252,767	$507,653
Build-out According to Best Management Practices (Potential Additional Tax Revenue Impacted)	$2.1 million	$112,950	$112,950	$323,455

Table 21. Potential Property Damages for Different Flooding Scenarios

Use Type	Lucky	Expected	Perfect Storm
Damages	$105,018	$149,940	$1,395,864
Build-out According to Current Zoning Ordinance (Additional Damages)	-	-	$3,192,550
Build-out According to Best Management Practices (Additional Damages)	-	-	$744,374

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Chapter 4: Placemaking in the Greater Port Austin Community

Placemaking for a Sustainable Future

What is Placemaking?

Placemaking has emerged as a planning concept that emphasizes the importance of attractive public spaces. It is the process of creating quality places where people want to live, work, play, shop, learn or visit. Projects that support placemaking help to meet the "triple-bottom line" of sustainability (profit, people and planet). Businesses want to locate in pedestrian-oriented places; interesting, bustling spaces help to attract and retain a talented workforce. Well-designed public spaces provide for spontaneous social interactions, helping to bring neighbors together. In addition to these benefits, Port Austin can also look for opportunities to incorporate green features that improve visual quality, provide shade to pedestrians and help to reduce runoff from storm events.

What are Quality Places?

Quality places consider form, function and social opportunity. They act as a "stage" for people to interact with each other. Often, this means implementing projects that place less of an emphasis on the automobile, and create more places for people. The following principles typically define quality public places:

Walkable and bikeable. Quality places are safe for walkers and bikers. Residents and visitors of all ages are able to reach parks, shops and other points of interest by foot or bike comfortably. These places often contain bike racks, benches, clearly-marked crosswalks, wide sidewalks and shaded paths.

Photos: Michigan Municipal League; Boyne City Downtown (bottom right)

Pedestrians first. Quality places are designed for pedestrians to enjoy. Buildings are constructed at an appropriate height, facades are well-maintained, storefronts are engaging and light fixtures are scaled for pedestrians. The streetscape and other public spaces feature greenery and artwork.

Mixed-use. Especially in downtowns, communities should allow and promote mixed-uses with retail on the first floor and housing units above. This adds to the area's walkability by locating residents closer to points of interest.

Transportation-friendly. Quality places support safe and efficient travel for automobile traffic, while also designing streetscapes and adding services that encourage other ways to get from Point A to Point B. One can often find public transportation options, bike lanes and reduced traffic speeds in transportation-friendly communities.

Housing for everyone. Quality places have housing options that provide for a diverse range of socioeconomic backgrounds and living preferences. Homeowners can upgrade or downsize from their current housing unit within the same neighborhood. Housing is located near amenities such as schools and grocery stores.

Placemaking Efforts in Port Austin

Port Austin has already developed many placemaking concepts throughout the community. The Village Green and the Farmers Market are active spaces throughout the summer months, both within walkable distances to many residences, the downtown and spots to view Lake Huron.

In addition, the Village now has a butterfly house at Tower Park open to the public with plans for a community garden nearby. Nearby, the Greater Port Austin area has seen the addition of new barn art and the "Emergency Ark" large-scale art piece. All of these strategies have helped to craft the community's artistic identity and have made the community's built environment more engaging.

Photos: LIAA (top 2); Port Austin Chamber of Commerce (bottom)

The Emergence of Art in Greater Port Austin

Port Austin's emerging identity as an arts community has been led by grassroots efforts. In collaboration with the municipalities, the Greater Port Austin Art & Placemaking initiative, a local non-profit organization, has resulted in a variety of placemaking projects, including:

- Placing paintings from the Detroit Institute of Art in various locations
- Creative crosswalks
- Orange "Gridmen" that people have clipped locks to
- Putting movable Adirondack chairs in public spaces
- Adding picnic tables in the downtown area
- Engaging artists to place murals on local barns

The community has also renovated a historic barn, shown in one of the images below, so that it is suitable to host visiting artists. These artists can live in the barn, which has ample work and living space, in exchange for contributions to Port Austin's stock of public art pieces.

Photos: LIAA

Current Land Use

Land Use Categories

Urban & Built Up

Urban and Built-Up Land comprises areas of intensive use with of the land covered by structures. Included in this category are cities, towns, villages, strip developments along highways, transportation, power, and communications facilities, and such isolated units as mills, mines, and quarries, shopping centers, and institutions. As development progresses, small blocks of land of less intensive and nonconforming use may be isolated in the midst of built-up areas and will generally be included in the Urban and Built-Up category. Agricultural, forest, or water areas on the fringe of urban and built-up areas will not be included except where they are a part of low-density urban development. The Urban and Built-Up land category takes precedence over others when the criteria for more than one category are met. Thus, residential areas that have sufficient tree cover to meet the forest land criteria will be placed in the residential category.

Agricultural

Agricultural Land may be broadly defined as land used primarily for production of farm commodities, including cropland; orchards, bush-fruits, vineyards and ornamental horticulture areas; confined feeding operations; and permanent pastures.

Grass and Shrub Lands

Grass and Shrub Lands are defined as areas supporting early stages of plant succession consisting of plant communities characterized by grasses or shrubs. In cases where there is obvious evidence of seeding, fertilizing or other cultural practices, these areas should be mapped as pasture.

Photo: LIAA

These land use category descriptions are from the Michigan Land Cover/Use Classification System (revised March, 2010). This system was electronically published by Remote Sensing & GIS Research and Outreach Services, Department of Geography, Michigan State University.

Forest Land

Forest Lands are lands that are at least 16.7 percent stocked (approximately 25% crown cover) by trees of any size, or formerly having such tree cover, and not currently developed for nonforest use.

Wetlands

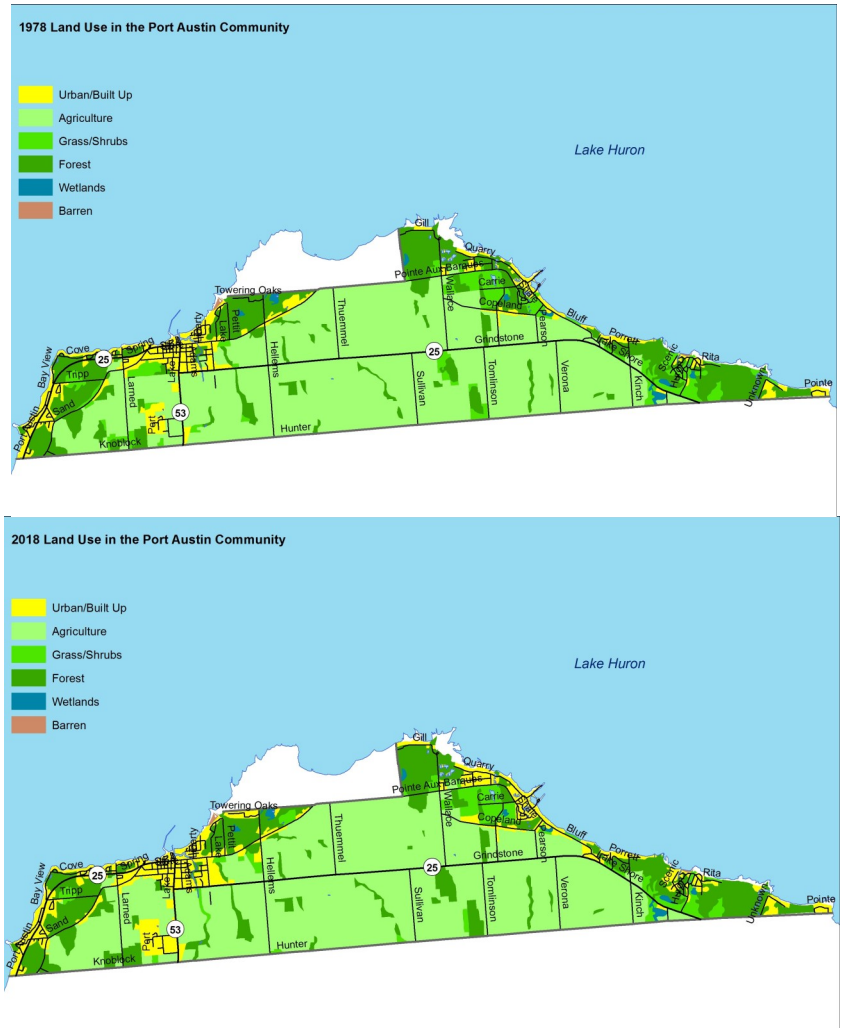
Wetlands are those areas where the water table is at, near or above the land surface for a significant part of most years. The hydrologic regime is such that aquatic or hydrophytic vegetation usually established, although alluvial and tidal flats can be nonvegetated. Wetlands are frequently associated with topographic lows. Examples of wetlands include marshes, mudflats, wooded swamps, and floating vegetation situated on the shallow margins of bays, lakes, rivers, ponds, streams, and man-made impoundments such as reservoirs. They include wet meadows or perched bogs and seasonally wet or flooded basins or potholes with no surface water outflow. Shallow water areas with submerged aquatic vegetation are classed as Water and are not included in the Wetland category.

Barren

Barren Land (non-vegetated) is land of limited ability to support life and little or no vegetation.

Photos: Kathy Kent, Port Austin Outdoor Adventure (left); Port Austin Outdoor Adventure (right)

Map 10. Land Use Change in Port Austin, 1978-2018



Land Use Change Over Time

Map 10 shows land use changes in the Port Austin community between the years 1978 and 2018. Table [...] describes these changes in greater detail. Both the Village and the Township have seen an increase in the Urban/Built Up category. Port Austin Township saw a 41% increase in developed land over the 40 year span, while the Village increased its Urban/Built Up category by almost 11%.

As a result of development, both municipalities have lost acreage from the categories Grass/Shrubs and Forest, otherwise considered 'open space.' The Township has lost 221.8 acres of open space, while the Village has developed 45.9 acres during the same timeframe. The community has remained relatively the same regarding its presence of agricultural lands and wetlands.

Considering the input gathered from the community engagement process, as well as the fact that Port Austin's population is not expected to increase in the near future, these land uses should remain relatively the same over the next 10-20 years. Discussed in the Goals, Objectives and Action Steps section, new developments should be sited near existing infrastructure and local amenities.

Table 22. Change in Land Use, 1978-2018

	Township Acreage Comparison			Village Acreage Comparison		
Land Use	1978 Acres	2018 Acres	% Change	1978 Acres	2018 Acres	% Change
Urban/Built Up	961.3	1,356.2	41.08	338.7	375.8	10.93
Agriculture	6,591.3	6,418.1	-2.63	192.4	201.3	4.63
Grass/Shrubs	657.0	500.9	-23.76	52.4	17.2	-67.19
Forest	2,089.1	2,023.4	-3.14	72.6	61.9	-14.81
Wetlands	62.1	62.1	0	0.0	0.0	0
Barren	8.0	8.0	0	0.3	0.3	0

Chapter 5: Goals, Objectives & Action Steps

Goals, Objectives & Action Steps

The primary function of the 2020 Village of Port Austin Master Plan is to guide future development and growth within the Village. The Master Plan identifies a vision for the future and a series of goals, objectives and action steps to guide decision making. Goals identify the desired end result or target to be reached, while objectives identify the significant accomplishments required to reach each goal. Action steps list the activities that are needed to achieve each identified objective. The goals, objectives and action steps in this chapter of the Master Plan provide guidance for the future planning of the Village, and are based on the input gathered during the master planning process.

While Port Austin may need to initiate most of the action steps, many require the support and cooperation of a broad range of additional participants. These other participants may include private land owners, neighboring jurisdictions, and county or state agencies. When appropriate, implementation measures may include new or amended ordinances, policies or operational procedures. Typically, these measures are within the scope of the Village's authority, while others may require support and cooperation. Some may be undertaken with little cost or effort, while others may imply sizable investment. The table at the end of this chapter attempts to summarize the possible partnerships and top priorities needed to implement each action step. It is important to note that just because an organization is listed as a possible partner, it does not necessarily mean the organization has committed to take on the responsibility associated with each task.

Photo: Justin Schnettler

The following pages list the goals, objectives and action steps by topic area. A summary of comments gathered at the first public meeting that discussed goals and objectives can be found in Appendix H.

Goal 1

Port Austin will maintain its attractiveness as a summer tourism destination while continuing to establish itself as a place of year-round activity.

Objective 1-1: Make people outside of the Port Austin aware of the community's unique character, its local attractions and its various opportunities for recreation.

Action Step 1-1.1: Increase the number of ways that the Tip of the Thumb Water Trail and Turnip Rock are advertised.

Action Step 1-1.2: Develop and implement a comprehensive branding strategy, emphasizing the "small coastal town" aesthetic. Continue to attract and retain businesses that support this local identity.

Action Step 1-1.3: Partner with neighboring municipalities and the Huron County Economic Development Corporation to identify winter marketing opportunities for the region.

Action Step 1-1.4: Provide additional off-season amenities to encourage more year-round tourism visitation such as small cabins, connected hiking and ski trails and walkable routes to points of interest.

Objective 1-2: Attract, retain and grow local businesses that help to diversify Port Austin's economy.

Action Step 1-2.1: Provide tours, programming and events at Port Austin's three art barns.

Action Step 1-2.2: Improve the community's walkability by mixing retail, restaurants and residential land uses in a compact manner.

Action Step 1-2.3: Convene business owners in Port Austin regularly to encourage collaboration and to listen to the business community's needs.

Action Step 1-2.4: Update the municipal website to clearly outline the processes that potential business owners would want to know prior to locating in Port Austin, such as how to acquire a business license, properties available to lease or purchase and regulations or incentives affecting local business operations.

Objective 1-3: Provide incentives for people in creative industries to contribute to the arts and culture in Port Austin.

Action Step 1-3.1: Engage community members to identify potential sites for creative improvements, such as murals, public art and temporary exhibitions.

Action Step 1-3.2: Provide work spaces for people who are employed remotely. Many people who work outside of an office setting choose where they want to live based on the availability of functional work spaces, amongst other factors such as living costs, location and entertainment.

Action Step 1-3.3: Increase the amount of studio space available for artists. Offer these spaces at a reduced rate in exchange for public art installations, art classes open to the public or other contributions to the local arts culture.

Objective 1-4: Provide Port Austin's residents with education and job training resources to contribute to the area's local economic needs.

Action Step 1-4.1: Partner with a local higher education institution to assess the feasibility of siting a satellite educational facility in Port Austin.

Action Step 1-4.2: Coordinate with North Huron Schools and the Huron County Economic Development Corporation to provide resources to the area's young entrepreneurs.

Action Step 1-4.3: Survey industry leaders in the region to determine gaps in employment. Connect residents with the resources needed to succeed in these fields.

Objective 1-5: Use public spaces for recreation and programming throughout all four seasons.

Action Step 1-5.1: Create a community calendar listing events occurring in Huron County. Encourage event planners in the county to reduce the number of overlapping events.

Action Step 1-5.2: Assign responsibility for implementing the concepts described in the Village's Recreation/Parks Plan.

Action Step 1-5.3: Develop a community center where residents and visitors can gather for events, meet-ups or passive recreation.

Action Step 1-5.4: Collaborate with Huron County and nearby municipalities to increase the amount of programming for community events, classes and recreation leagues in public spaces.

Action Step 1-5.5: Develop the open spaces at public easements, especially those that provide access to the Lake Huron shoreline.

Objective 1-6: Improve existing community amenities to encourage more visitation by residents and tourists.

Action Step 1-6.1: Implement the community's plan to improve Bird Creek Park and connect the park to the Village's downtown with a pedestrian bridge.

Action Step 1-6.2: Promote safe access to the waterfront, including safety features, handicap ramps and ADA-accessible launches.

Action Step 1-6.3: Renovate the Port Austin Gym so that it is suited to host community events, recreation programming and various other public uses.

Action Step 1-6.4: Evaluate parks, pedestrian infrastructure and public spaces to ensure that they are designed to accommodate all ages and abilities.

Goal 2

Transportation in Port Austin will be safe and efficient. The community's amenities will be well-connected with non-motorized routes as well as public transportation. Residents will be able to easily access nearby urban centers.

Objective 2-1: Expand Port Austin's ability to support non-motorized transportation and recreation by connecting community amenities with trails, shared-use paths and well-maintained sidewalks.

Action Step 2-1.1: Use markings and signage to designate roads that have adequate shoulder widths as shared-use for bikes and automobiles.

Action Step 2-1.2: Provide residents and visitors with a map of the designated routes.

Action Step 2-1.3: Partner with neighboring communities to develop a regional trails and non-motorized routes plan.

Action Step 2-1.4: Assess the feasibility of acquiring easements to develop paved recreational trails in the community.

Action Step 2-1.5: Implement public amenities such as wayfinding signs, wide sidewalks, well-marked crosswalks, public restrooms, drinking fountains and benches throughout the downtown and around points of interest.

Objective 2-2: Provide an interesting, engaging and safe experience for pedestrians in Port Austin.

Action Step 2-2.1: Create a vibrant pedestrian experience by placing art, greenery, seating and wayfinding throughout the community.

Action Step 2-2.2: Update the zoning ordinance to encourage retail and restaurants to include common placemaking elements such as outdoor dining, ground floor transparency requirements, open store fronts and streetscape elements (the Village's ordinance only has build-to lines).

Action Step 2-2.3: Clearly mark crosswalks and ensure that sidewalks are compliant with American's with Disabilities Act (ADA) standards.

Action Step 2-2.4: Adopt streetscape elements with a consistent theme throughout the Port Austin community. This may include uniform signage, similar design elements or the use of related materials.

Action Step 2-2.5: Develop and implement a Complete Streets ordinance for the Downtown area.

Action Step 2-2.6: Promote compact development patterns that appropriately mix residential and commercial land uses. This is an important aspect in supporting a walkable community.

Objective 2-3: Increase the number of opportunities for residents and visitors to navigate Port Austin, Huron County and other regional hubs without needing a personal vehicle, while ensuring that existing and future traffic needs are met.

Action Step 2-3.1: Partner with Huron County and the Michigan Department of Transportation to conduct a Traffic Demand Analysis to assess whether existing infrastructure is appropriate for current and future traffic needs.

Action Step 2-3.2: Work with the business community and property owners near areas with a high volume of activity to address parking concerns during the summer months.

Action Step 2-3.3: Evaluate the community's ability to support transit sharing services such as ride-sharing applications, scooter rentals or bike share.

Action Step 2-3.4: Continue to work with Thumb Area Transit and community members to identify ways to improve public transportation use in Port Austin.

Action Step 2-3.5: Partner with regional, state and national transportation entities, in addition to Thumb Area Transit, to increase the number of connections between Port Austin and neighboring metro areas and airports.

Action Step 2-3.6: Partner with Thumb Area Transit, nearby jurisdictions, Huron County and local hotels to establish arranged transportation to events county-wide.

Action Step 2-3.7: Assess the feasibility of introducing a seasonal trolley route connecting points of interest in Port Austin.

Goal 3

Port Austin will preserve its qualities that create a sense of place and beautify highly visible areas to promote an aesthetically pleasing community.

Objective 3-1: Ensure that Port Austin's residential and commercial standards are held to the standards set forth in the community's Code of Ordinances.

Action Step 3-1.1: Review the municipality's code violation remediation procedures to ensure they are clear in their intent and are widely understandable. Include these procedures on the municipal website, at the municipal office and in code violation notices that are sent to property owners.

Action Step 3-1.2: Work proactively with the owners of blighted properties to identify a rehabilitation plan that addresses code violations.

Action Step 3-1.3: Identify underutilized, obsolete or vacant commercial structures that the Village/Township could acquire, rehabilitate and sell.

Action Step 3-1.4: Create a program to maintain façade appearances in commercial areas. Consider the creation of a revolving loan fund, grant opportunities or other incentives to assist business owners with façade upkeep.

Action Step 3-1.5: Target underutilized, obsolete or vacant buildings or spaces for redevelopment. Create a redevelopment plan by engaging the community on a better use for specific sites.

Objective 3-2: Connect residents with healthy food choices that are easy to access, abundant and affordably priced.

Action Step 3-2.1: Engage the public to assess the feasibility of developing a community kitchen.

Action Step 3-2.2: Revise the zoning ordinance to encourage the development of community gardens in Port Austin's neighborhoods.

Action Step 3-2.3: Create a Farm to School Initiative and/or a Community Supported Agriculture Initiative to connect the agricultural industry's products to local schools, restaurants and food stores.

Objective 3-3: Promote community features that uphold Port Austin as an interesting and scenic place to live, work and play.

Action Step 3-3.1: Start a beautification initiative targeting improvements around points of interest and other areas with high visibility.

Action Step 3-3.2: Partner with local organizations and volunteers to add landscaping and greenery in targeted areas.

Action Step 3-3.3: Implement design standards for new developments and redevelopments that match the local character. Consider amending the zoning ordinance to include form-based zoning.

Action Step 3-3.4: Protect views of Lake Huron by discouraging multi-story developments along the shoreline.

Action Step 3-3.5: Inventory the community's historic structures, places and objects and work with the State Historic Preservation Office to register these local assets as historically significant. Consider implementing a historic preservation overlay district.

Action Step 3-3.6: Emphasize Port Austin's History Center by providing tours, improving non-motorized connections and marketing the site's features.

Goal 4

Port Austin will be prepared for the short and long-term risks related to the Lake Huron shoreline. The community will have initiatives and plans in places that support mitigation, preparedness, response and recovery for potential natural disasters.

Objective 4-1: Prepare the community's infrastructure, emergency response systems and risk mitigation planning to account for the increased frequency of major storm and flood events.

Action Step 4-1.1: Assess the Village's water management systems to determine whether they are well-suited to accommodate the expected increases in storm events and storm intensity.

Action Step 4-1.2: Create a Hazard Mitigation Plan, an Emergency Preparedness Plan or a similar plan for Port Austin.

Action Step 4-1.3: Coordinate with police, fire and ambulatory services to plan for different natural hazard scenarios.

Action Step 4-1.4: Add to the community's tree canopy to reduce the negative effects of runoff, flooding and the urban heat island effect.

Action Step 4-1.5: Especially along the coastline, incentivize or regulate site plans to preserve open space, add as little impervious surface as possible and maintain native vegetation.

Goal 5

Port Austin will continue to preserve the natural features of the community to be enjoyed now and by future generations. Natural areas will be protected with the understanding that these features contribute to ecological stability, they provide aesthetic value and opportunities for passive recreation and they support Port Austin's tourism-driven economy.

Objective 5-1: Reduce Port Austin's resource consumption through ongoing public education, policy initiatives and infrastructure improvements.

Action Step 5-1.1: Develop a program to educate homeowners and business owners on best practices to reduce energy consumption.

Action Step 5-1.2: Incentivize or regulate new developments and redevelopments to become certified as energy efficient (i.e. Leadership in Energy and Environmental Design).

Action Step 5-1.3: Assess the effectiveness of the community's current recycling program to identify opportunities for improvement.

Objective 5-2: Protect the quality of the community's natural resources through regulatory actions, programming and public education campaigns.

Action Step 5-2.1: Update the zoning ordinance to regulate or incentivize rain gardens, bioswales and other low-impact development techniques; green roofs; pervious pavement; native, non-invasive landscaping; and the preservation of existing trees.

Action Step 5-2.2: Work with business owners, especially those in the agricultural industry, to reduce the amount of runoff entering natural systems.

Action Step 5-2.3: Monitor water quality at the local level to ensure public safety at the community's public beaches, streams, drainage ditches, access sites and at various points along the shoreline.

Action Step 5-2.4: Improve the community's overall ratio of hardscape to softscape through additional tree canopy, landscaping requirements and maximum parking requirements.

Action Step 5-2.5: Improve "dark sky" conditions in Port Austin by regulating ambient light and light sources.

Action Step 5-2.6: Incentivize or regulate developments to include green features such as open space preservation, green roofs, rain gardens or native vegetation protections. These features can also be developed in public spaces.

Objective 5-3: Protect ecological diversity by managing invasive, endangered and overpopulated species.

Action Step 5-3.1: Collect data on animal species to address overpopulation or endangered populations. Create an action plan that specifies steps to ensure a stable ecosystem.

Action Step 5-3.2: Coordinate with the Michigan Department of Natural Resources and regional environmental groups to establish an invasive species management strategy.

Action Step 5-3.3: Work with community members to identify invasive species. Encourage the community to report invasive species on the Michigan Invasive Species Network (MISIN) application.

Goal 6

Port Austin's housing options will accommodate residents of various economic statuses, household types, age ranges and living preferences.

Objective 6-1: Port Austin's housing options will accommodate residents of various economic statuses, household types, age ranges and living preferences.

Action Step 6-1.1: Consider amending the zoning ordinance to allow accessory dwelling units in certain districts.

Action Step 6-1.2: Guide development closer to existing community amenities to support walkability and avoid the loss of greenfields.

Action Step 6-1.3: Survey residents to assess the community's need for housing features that support aging in place (ramps, railings, retrofitted living spaces, etc.).

Action Step 6-1.4: Allow for and encourage mixed-use developments with retail on the first floor and residential units above in Port Austin's downtown.

Action Step 6-1.5: Continue to meet the demand for single-family detached housing units while introducing "missing middle" housing options that are compatible in scale with existing housing and promote walkability.

Goal 7

Port Austin will seek representative civic participation by actively engaging the public through a variety of outreach methods and equitable practices.

Objective 7-1: Use a wide range of community engagement techniques to gather public sentiment for local projects and initiatives.

Action Step 7-1.1: Post information regarding public meetings in multiple public spaces and through a variety of mediums.

Action Step 7-1.2: Use a combination of in-person engagement and remote participation to accommodate more groups to have a voice in the community's decision making processes.

Action Step 7-1.3: Benchmark public participation to annually review what engagement techniques are working and which of these could be improved.

Action Step 7-1.4: Update/create the/a public participation strategy to include a description of different public engagement methods and when it is appropriate to use each one.

Chapter 6: Future Land Use

Future Land Use

Purpose of the Future Land Use Map

The Master Plan and Future Land Use Map are tools to be used by the Planning Commission and Village Council during land use decision-making, capital improvement planning, development review, and ongoing reevaluation and refinement of the Village's ordinances. Implementation of the general recommendations and specific action strategies will occur over time and will depend upon many factors, including the overall economic climate, changing development and demographic trends, availability of infrastructure, local budget constraints and political priorities. The Future Land Use Map (Map 11) is a representation of the Village's preferred long-range future land use arrangement. The map identifies general locations for various land uses envisioned by the Planning Commission.

What is the Future Land Use Map?

The Future Land Use Map, along with the entire Master Plan document, is a guide for local decisions regarding land use. The boundaries reflected on the map are not intended to indicate precise size, shape, dimensions or individual parcels. In addition, where the Future Land Use Map and the Zoning Map are not in alignment, the Future Land Use Map does not necessarily imply that rezoning is imminent; rather, the Future Land Use Map sets forward recommendations to achieve long-range planning goals.

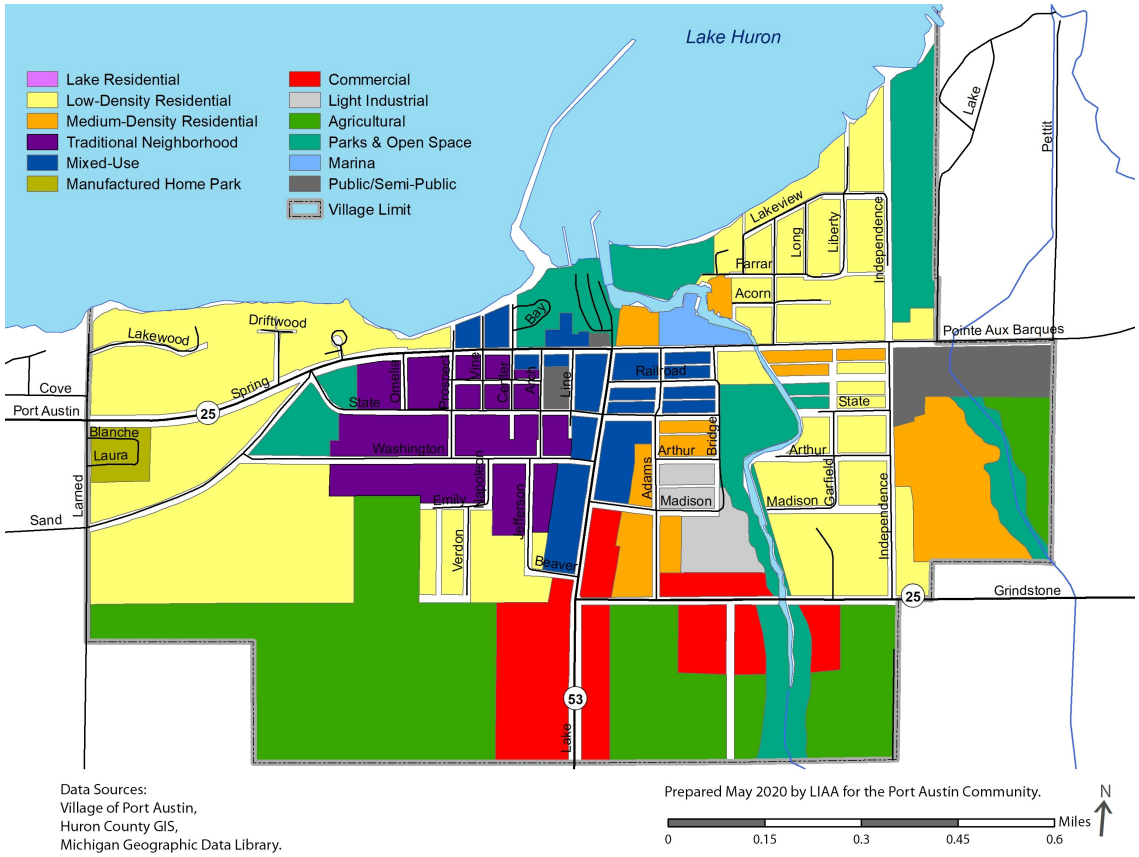
Developing the Future Land Use Plan

The Planning Commission updated the future land use recommendations for this Port Austin Master Plan Update with assistance from the planning consultant. Recommendations are based on an analysis of several factors including: existing land use patterns, social and economic characteristics, environmental conditions, available community services and facilities, property ownership, existing zoning, and community goals and objectives. Because the Planning Commission feels that the major land use recommendations were accomplished during the community's recent Zoning Map Update, this future land use plan varies only slightly from existing zoning and does not recommend major changes.

Comparisons were also made to existing land use, existing zoning, and future land use recommendations from communities adjacent to Port Austin's boundaries. In addition to the Planning Commission's participation, community members representing various stakeholder interests attended the public meetings.

The recommended Future Land Use plan identifies locations for eight different land use classifications: flood hazard overlay, low-density residential, medium-density residential, traditional neighborhood, mixed-use, manufactured home park, commercial, light industrial, agricultural, parks & open space, marina and public/semi-public. The Future Land Use Map (shown below) illustrates the distribution of future land uses by category. Activities anticipated within each of these land use categories are discussed on the following pages.

Map 11. Future Land Use



Future Land Use Categories

Low-Density Residential District

The intent of this district is to provide for the development, preservation and enhancement of Port Austin's low-density residential neighborhoods, which include primarily single-family housing. This area supports single-family detached residential developments that are designed as one home on one lot. Streets in this district do not necessarily need to follow a traditional grid pattern and accompanying uses should include parks and recreational areas. Pedestrian connections are encouraged within these areas and with adjacent neighborhoods.

Medium-Density Residential District

This land use category is defined by the existence of townhouses, multi-family apartment structures and other group living quarters on smaller lot sizes similar to those in the Traditional Neighborhood District. Port Austin should utilize these areas to identify opportunities to add "missing-middle" housing options.

Traditional Neighborhood District

The intent of this district is to maintain the traditional downtown neighborhoods in the Village of Port Austin. The Traditional Neighborhood residential district is primarily characterized by having a range of housing types, a network of well-connected streets and blocks, and a variety of public spaces, and should have amenities such as stores, schools and places of worship within walking distance of residences. Housing types may include smaller single-family residential uses, manufactured housing and medium-density housing options such as condominiums and townhomes, all with small lot sizes. Attached single-family residential units may also be appropriate within this district. Blocks in these areas are defined by traditional grid street patterns, and sidewalks are prevalent.

Mixed -Use District

The intent of this district is to provide an attractive and walkable area with a mix of commercial and medium-density residential land uses in the Village of Port Austin's downtown. Appropriate uses include row houses, multiplexes, office space and small retail stores. This district will emphasize developments with commercial uses on the first floor and residential uses above.

Commercial District

The intent of this district is to provide neighborhoods with commercial amenities outside the Village's downtown. Commercial land uses include but are not limited to: groceries, bakeries, banks, drugstores, hardware stores, gas stations and other service industries. Dedicated commercial areas are traditionally planned along major thoroughfares. In Port Austin, business district-planned areas are located primarily along M-25 and M-53. This district should also include land uses that contribute to the tourism industry such as accommodations and recreation equipment businesses.

Industrial District

The intent of this district is to accommodate and provide for a mix of traditional and emerging light-industrial uses as well as office and retail uses. The uses in these areas provide employment opportunities for area residents and generally require large lots, buildings, parking lots and loading areas. Sites and facilities should be developed with appropriate utility services and transportation links, shared parking where appropriate, consideration of access management, and buffers to limit any potential negative impacts on adjacent uses and natural resources. Depending on the light industrial activity's effect on nearby properties, this land use may also be appropriate in the Mixed-Use District.

Parks & Open Space District

The intent of this district is to preserve natural features, provide recreational uses and preserve areas devoted to open space. In areas where development occurs or is already present, emphasis will be placed on preserving natural features through the use of low-impact development tools, cluster development and maintaining low development density. This district will also help Port Austin direct development away from areas at a higher risk of flooding.

Agricultural

The intent of this district is to preserve farmland, especially in areas that are considered critical due to their soil and topographical composition. These areas will be maintained as primarily agricultural, but may also allow for certain commercial uses related to the agricultural industry depending on the use's impact on community infrastructure and social well-being.

Marina

This district is intended to permit and encourage those uses consisting of or related to marina facilities.

Public/Semi-Public

This category consists of all developed or undeveloped lands owned by various governmental and public agencies and institutions (including schools, municipal services and religious uses).

Zoning Plan

According to Section 2(d) of the Michigan Planning Enabling Act (Public Act 33 of 2008), a Master Plan must include a Zoning Plan that depicts the various zoning districts and their use, as well as standards for height, bulk, location, and use of buildings and premises. The Zoning Plan serves as the basis for the Zoning Ordinance and guides any changes made to the existing Zoning Ordinance as a result of a master planning process.

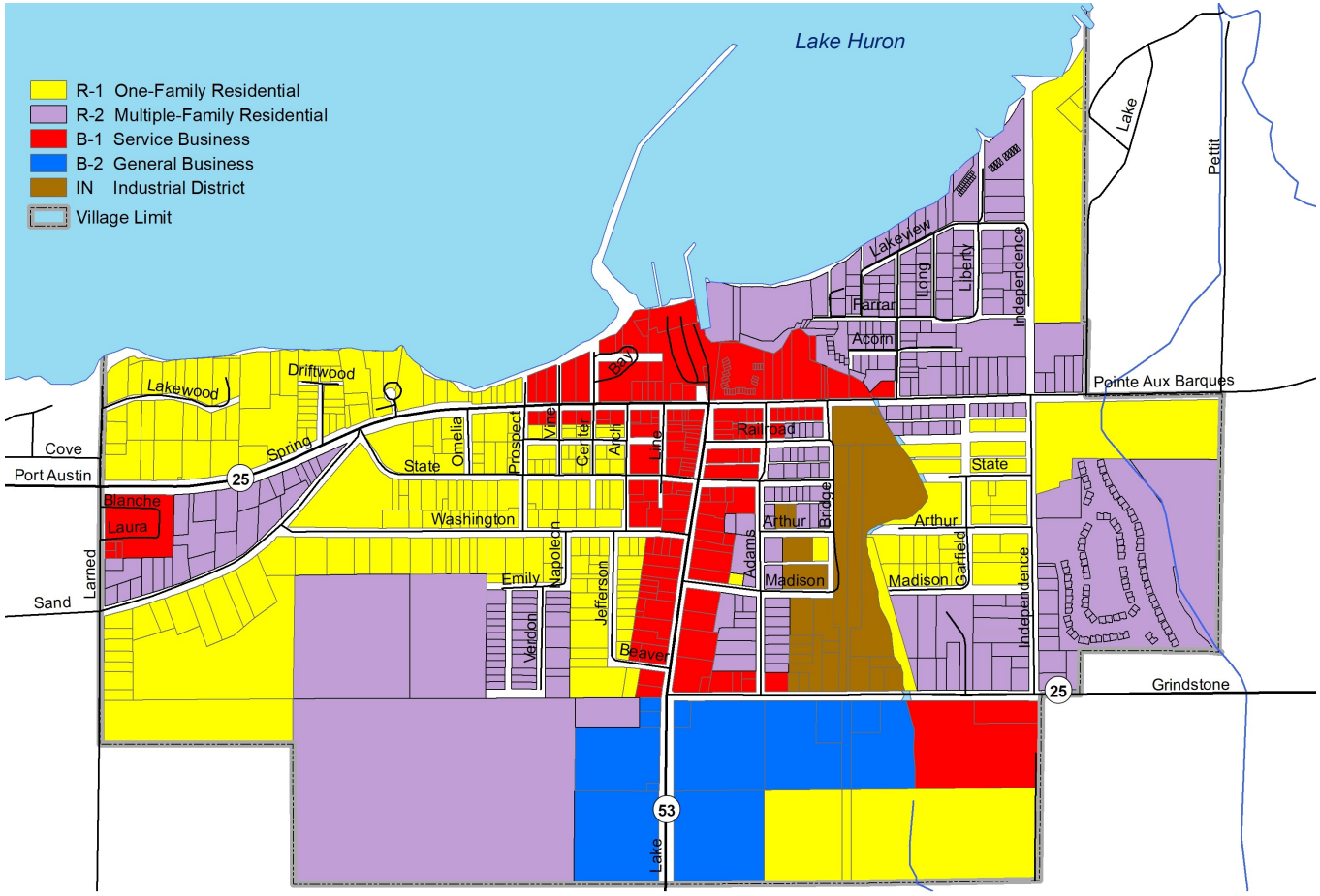
Relationship to the Master Plan

The Master Plan describes the Village's goals, objectives and action steps for future land use and community development. As a key component of the Master Plan, the Zoning Plan is based on the recommendations of the Master Plan and is intended to identify areas where existing zoning is inconsistent with the objectives and strategies of the Master Plan. The Zoning Ordinance is the primary implementation tool for the future development of the Village of Port Austin. The Zoning Ordinance contains written regulations and standards that define how properties in specific geographic zones can be used and how they can look. The Zoning Plan is designed to guide the development of the Zoning Ordinance, based on the recommendations of the Master Plan.

Current Zoning Districts

The Michigan Planning Enabling Act requires the Zoning Plan to inventory the community's existing zoning districts. The following section summarizes the existing zoning districts in Port Austin. Table 23 provides an overview of several key standards for new development in each zoning district. It is important to note that the Village has a cumulative zoning ordinance. This means that uses become less restrictive as they move from residential to industrial. In other words, the IN Industrial zoning classification allows all uses, including business and residential, while the R-1 One-Family Residential District only allows for this land use type.

Map 12. Current Zoning



Data Sources:
Village of Port Austin, Huron County GIS,
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Port Austin Community.

N

0 0.15 0.3 0.45 0.6 Miles

This section is meant to provide a general overview of the Village's zoning districts and standards. In order to review zoning definitions, standards, and regulations in full detail, please see the Village of Port Austin Zoning Ordinance.

R-1 One-Family Residential District.

This district classification is designed to be the most restrictive of the residential districts to encourage an environment of predominantly low-density single-family dwelling units together with a minimum of other residentially related facilities and activities primarily of service to the residents in the area.

R-2 Multiple-Family Residential District

This district classification is designed to permit the greatest density of residential uses allowed within the Village, which will generally serve as a zone of transition between non-residential districts and any R-1 District, together with other residentially related facilities designed to service the inhabitants of the area.

B-1 Service Business District

This district classification is designed to provide sales and commercial service uses dealing directly with consumers and general business and industrial customers.

B-2 General Business District

This district classification includes all of the uses permitted by right or by Special Use approval in the B-1 Service Business District. In addition, the B-2 zoning classification allows for uses that are more auto-oriented and that have a greater impact on surrounding infrastructure.

IN Industrial District

This district classification is designed so as to accommodate wholesale activities, warehouses, and manufacturing, assembling, fabricating, processing and compounding activities. It also is designed to accommodate agricultural and agricultural support enterprises.

Port Austin's Cumulative Zoning

Zoning District	Uses Permitted				
R-1 One-Family Residential	R-1				
R-2 Multiple-Family Residential	R-1	R-2			
B-1 Service Business District	R-1	R-2	B-1		
B-2 General Business District	R-1	R-2	B-1	B-2	
IN Industrial District	R-1	R-2	B-1	B-2	IN

Table 23. Summary of Existing Zoning Districts

Zoning District	% of Total Land	Minimum Lot Size		Maximum Height (ft)		Minimum Yard Setback per Lot in Feet for Main Building			Minimum Floor Area for Building (sq ft)	Maximum Lot Coverage (% of lot)
		Area (sq ft)	Width (ft)	Stories	Feet	Front	Each Side	Rear		
R-1	35.0%	10,000	60	2 1/2	35	20	6	20	960	45%
R-2	40.0%	10,000	60	2 1/2	35	20	6	20	960	45%
B-1	11.9%	15,000	100	3	40	20	10	20	1,500	75%
B-2	8.6%	25,000	100	3	40	20	15	20	1,500	75%
IN	4.6%	25,000	125	3 1/2	45	20	15	20	1,500	75%

Opportunities for Zoning Changes

In order to remain consistent with the community's vision for the future of Port Austin as identified in this Master Plan, a number of zoning ordinance amendments may be necessary. The Action Steps identified in Chapter 5 highlight several opportunities where the Village zoning ordinance could be amended to be more consistent with the goals and vision set forth in this Master Plan.

Appendix

Appendix A: Facilitator Notes from September 19, 2019 Workshop

Existing Conditions Roundtable

Coastal Resilience

- Community is accustomed to the fluctuating lake levels
- No data on septic systems in the Township, Village is on sewer
- Nothing in the zoning ordinance on setback requirements from water
- Seawalls are failing
- Ordinance does not address seawalls
- Invasive species potential
- Runoff into creeks, harbor from farms
- Health department closes beaches often after holiday weekend because of contamination

Economic Development

- Well-attended farmers market
- Seasonal economy
- Seasonal residents not looking for new development
- Low number of businesses
- Development in Bad Axe is drawing money away from Port Austin
- Many Port Austin residents are employed in Bad Axe
- Not enough seasonal workers in the summer because permanent job growth largely in Bad Axe
- "Great place to live, tough place to make a living"
- Older generation leaves during the winter
- Weather has a direct influence on the economy
- Port Austin is not currently capitalizing on the winter month – very few opportunities – no winter carnival, broom ball, fewer snowmobiles (they go up north bc there are not local trails)
- Manufacturing industry – difficult to find employees
- Manufacturing becoming more automated

Appendix A: Facilitator Notes from September 19, 2019 Workshop

Housing

- A lot of recent upgrading of the housing stock
- More new builds – demand is high for new housing
- Lack of affordable housing for young families
- Almost no affordable rental housing during peak tourism for seasonal workers
- County allowing pole structures to be built as housing
- Seasonal (older) residents want to stay in their home or downsize
- Local ownership (year-round) is increasing while non-local ownership is decreasing
- Cost of new construction is high
- Low number of permits applied for to build
- Blight (retail) – Owners are holding rather than selling, goes into decay
- Blight (housing) – Vacant properties at gateways, large structures. Resources for code enforcement is lacking and neglect is affecting neighboring property values.

Community Amenities & Services

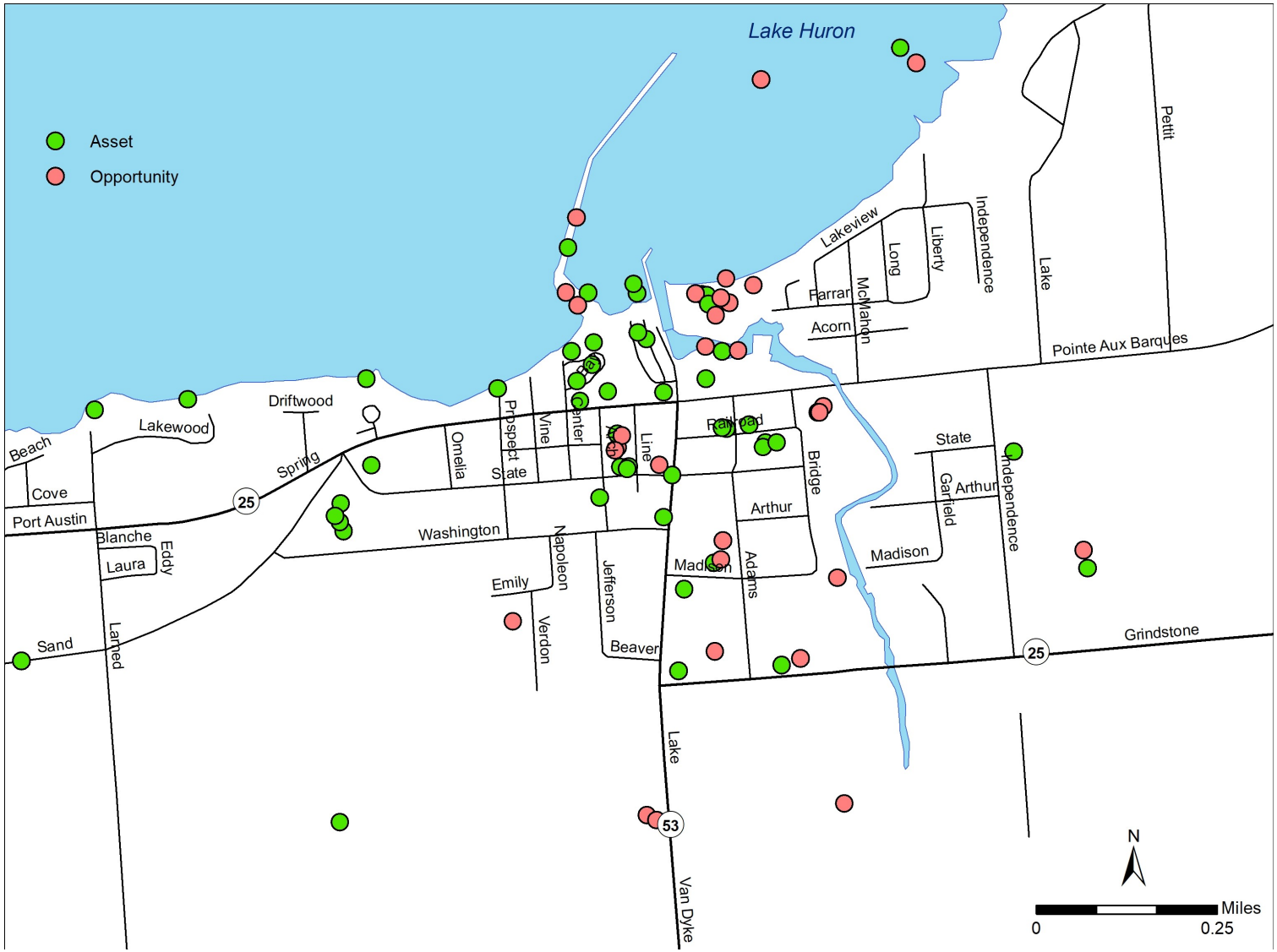
- Not enough staff for ambulatory services
- Ambulance is a satellite location; police is paid position; fire department is volunteer
- Community does not have many young people to staff emergency services
- Low civic participation from young people
- North Huron School recently redone/upgraded
- Strong non-resident tax base to support millages
- Community has strong recreational assets – beaches, ball fields, library, playhouse, museum, golf course, nature center, two harbors, two public access sites (one for yachts, one for fishermen), lighthouses
- Three hospitals within 30 miles
- Community lacks swimming pool, gym, sporting facilities
- Turnip Rock
- Two public art galleries
- DNR has potential to affect local economy by how it treats fish stocking
- Air bases are an issue – military wants to make county a combat training area for planes

Appendix A: Facilitator Notes from September 19, 2019 Workshop

Transportation

- Community connected by two state highways
- "Local public bus system is like Uber" – Thumb Area Transportation – over 380,000 rides/year
- Community wants to work with external transit agencies to make transfers outside the region easier
- Great road commission
- Repaving every year
- Huron County residents largely support road millages
- Lack of bicycle paths, trails
- Home to a number of trails – bird, water, preserve, Barn Quilts Trail

Appendix B: Assets & Opportunities Mapping



Appendix B: Assets & Opportunities Mapping

Assets	Tally
Veterans Park	4
Gallup Park	4
History Center	3
Library	3
Grindstone	3
Points - need to maintain	3
Farmers Market	2
New Township Hall	2
Port Austin Harbor	2
Eagle Bay	2
Community Playhouse	2
Breakwall	2
Bird Creek Park	2
Gym	2
Lighting on Main Street	1
Sidewalks downtown	1
Visitor Center	1
Waterfront Park	1
Old airbase	1
Fishing - Port Austin	1
Lighthouse	1
Reef light	1

Assets	Tally
Churches	1
Harbor	1
Butterfly House	1
Post office	1
Bird Creek shoreline	1
Larned Rd beach access	1
Prospect Rd beach access	1
Sand Rd	1
Air base	1
Knoblock Stable	1
Bird Creek Golf Course	1
Boat launch and fishing opportunities	1
Central ambulance	1
Garfield Inn	1
Stock Pot	1
Heinz Hardware	1
Forest Creek Condo	1
American Legion Hall	1
Questover Assisted Living	1
Harbor View Condos	1
Water treatment plant	1
Turnip Rock/Point Aux Barques	1

Opportunities	Tally
Bird Creek Park (bathrooms, cleanup, improve)	4
Breakwall filled in with sand	3
Old Port Austin school - demo	3
Gym	3
Points - Grindstone	2
Savlo property - revitalize	2
Rip rap wall	1
Kids playground equipment	1
Boardwalk - splinters	1
Landfill - Hellems Rd	1
Replane bathroom- outhouse at Eagle Bay	1
Water quality	1
Thuemmel Rd & Point Aux Barques Rd	1
Mae Rd & Point Aux Barques Rd	1
Breakwall - opening	1
Water tower park	1
More restaurants	1
Grindstone	1
Tip of Thumb Area roads	1
Old Lumber Rd (M-25)	1
Old air base area	1
Turnip Rock	1
Eagle Bay	1
Bird Creek waterway	1
PAASWA property	1
Railroad	1
Strozeske property	1

Appendix C: Preserve, Improve, Create

Preserve	Tally
Community small village feel	6
Farmers market	5
Harbor	5
Beaches	4
Parks	3
Thumb Area Transportation	3
Local festivities (Porch Fest)	3
Close geographic proximity to	2
Small businesses	2
Main street/Downtown	2
Welcome Center	2
Boating/boat launch	2
Roads	1
Port Austin – we are a number	1
Art community	1
Agriculture	1
Breakwall/Rockwall	1
Docks	1

Preserve	Tally
Lighthouse	1
Undeveloped areas	1
Family support	1
Tennis courts	1
Shoreline views	1
Fishing	1
Resorts	1
Restaurants/bars	1
Ice cream shops	1
Pilates studio	1
Gift shops	1
Preserve points in Grindstone	1
Shoreline	1
Library	1
IGA	1
Sewage system	1
Water quality	1

Improve	Tally
Number of small businesses/	5
Bird Creek Park	4
Beaches	3
Parking	3
Harbor water flow	3
Restaurants	3
Improve broadband connections	3
Parks	2
Sidewalks	2
Non-motorized transportation	2
Butterfly house area	2
Shoreline management	2
Grindstone	2
Year-round tourism/winter	2
Remove blight	2
Young business leaders	1
Move waterplant	1

Improve	Tally
Garfield	1
Gym	1
No more condominium	1
Water quality for recreation	1
M-53 to a 4 lane highway	1
Farmers market area	1
Public access sites (signage,	1
Landscaping/weed control	1
Political accountability	1
Roads in the Village	1
Expand history center	1
Fish plantings	1
Fishing opportunities	1
Community activities	1
History center	1
Adequate marking of channel	1
Medical emergency service	1

Appendix C: Preserve, Improve, Create

Create	Tally
New industry/jobs (full time)	6
More sidewalk connections	3
Signage	3
Separated bike paths	3
Rollerskating/ice rink	3
Community center	2
Electric charging stations	2
Recycling center & program	2
Splash pad	2
Winter activities	2
Agricultural tourism	1
Community swimming pool	1
Commercial kitchen	1
Snowmobile trails	1
Children's museum	1
Dog park	1
Activities for families	1
Movie theater	1
Non-motorized route plan	1

Create	Tally
Town center	1
College internships	1
Disc golf	1
New development around the gym	1
Remove blight/old school	1
Senior living community	1
Bridge to Bird Creek Park	1
Teen center	1
Indoor recreation center	1
Pharmacy	1
Public restrooms	1
Health wellness living activities	1
Hiking trails	1
Casino	1
Bike path to Grindstone	1
Urgent care facility	1
More federal and state jobs	1
Increase street lighting further out of town	1
Public water and sewer along shore	1

Appendix D: Location Quotient Analysis

By NAICS Sectors, 2015

NAICS Sector	Annual Establishments	Annual Average Employment	Total Annual Wages	Annual Wages per Employee	Annual Average Employment Location Quotient
NAICS 31-33 Manufacturing	57	1,739	$73,485,922	$42,264	1.79
NAICS 99 Unclassified	12	32	624,769	19,273	1.69
NAICS 22 Utilities	3	56	5,997,949	106,947	1.28
NAICS 44-45 Retail trade	128	1,255	31,650,601	25,216	1.02
NAICS 52 Finance and insurance	60	458	20,765,435	45,356	1.01
NAICS 23 Construction	120	488	18,618,837	38,147	0.96
NAICS 81 Other services, except public administration	97	324	8,192,950	25,319	0.95
NAICS 48-49 Transportation and warehousing	26	323	16,022,340	49,669	0.89
NAICS 72 Accommodation and food services	86	764	8,561,114	11,211	0.75
NAICS 42 Wholesale trade	33	342	17,381,208	50,872	0.74
NAICS 51 Information	9	156	8,662,962	55,561	0.72
NAICS 71 Arts, entertainment, and recreation	22	122	1,690,125	13,910	0.72
NAICS 56 Administrative and waste services	30	407	12,516,035	30,790	0.59
NAICS 53 Real estate and rental and leasing	5	26	474,203	18,008	0.16

Appendix D: Location Quotient Analysis

By NAICS Sectors, 2018

NAICS Sector	Annual Establishments	Annual Average Employment	Total Annual Wages	Annual Wages per Employee	Annual Average Employment Location Quotient
NAICS 31-33 Manufacturing	57	1,866	$86,756,748	$46,502	1.93
NAICS 99 Unclassified	11	18	513,826	29,084	1.84
NAICS 22 Utilities	3	58	6,556,594	113,698	1.38
NAICS 52 Finance and insurance	57	470	22,715,148	48,364	1.04
NAICS 44-45 Retail trade	120	1,206	32,932,434	27,298	1.00
NAICS 23 Construction	121	489	20,067,638	41,066	0.89
NAICS 81 Other services, except public administration	87	303	9,423,551	31,101	0.88
NAICS 48-49 Transportation and warehousing	35	345	18,362,343	53,173	0.87
NAICS 51 Information	11	175	12,098,264	68,969	0.81
NAICS 42 Wholesale trade	32	326	15,425,700	47,294	0.73
NAICS 72 Accommodation and food services	86	716	8,740,368	12,200	0.68
NAICS 71 Arts, entertainment, and recreation	21	104	1,689,945	16,289	0.58
NAICS 56 Administrative and waste services	30	372	13,190,128	35,449	0.53
NAICS 53 Real estate and rental and leasing	7	28	535,165	18,944	0.16

Appendix D: Location Quotient Analysis

By NAICS Sub-Sectors, 2015

NAICS Sub-Sector	Annual Establishments	Annual Average Employment	Total Annual Wages	Annual Average Weekly Wage	Annual Average Employment Location Quotient
NAICS 112 Animal production and aquaculture	29	601	$17,702,266	$566	29.93
NAICS 111 Crop production	29	174	6,167,589	680	3.93
NAICS 311 Food manufacturing	6	425	20,356,135	921	3.57
NAICS 333 Machinery manufacturing	13	213	8,566,655	775	2.42
NAICS 622 Hospitals	11	892	43,148,081	931	2.34
NAICS 484 Truck transportation	22	263	13,397,801	980	2.31
NAICS 332 Fabricated metal product manufacturing	16	221	8,182,707	714	1.93
NAICS 115 Agriculture and forestry support activities	8	55	2,104,849	730	1.89
NAICS 522 Credit intermediation and related activities	25	345	15,985,048	891	1.71
NAICS 999 Unclassified	12	32	624,769	371	1.69
NAICS 811 Repair and maintenance	37	169	5,973,129	681	1.68
NAICS 447 Gasoline stations	13	118	1,533,901	250	1.65
NAICS 327 Nonmetallic mineral product manufacturing	6	50	1,845,440	705	1.60
NAICS 517 Telecommunications	3	101	5,314,736	1,009	1.58
NAICS 446 Health and personal care stores	8	108	4,553,432	815	1.33
NAICS 452 General merchandise stores	10	331	7,850,549	457	1.32
NAICS 441 Motor vehicle and parts dealers	21	200	7,419,721	713	1.31
NAICS 236 Construction of buildings	44	146	5,692,588	749	1.30
NAICS 221 Utilities	3	56	5,997,949	2,057	1.28
NAICS 444 Building material and garden supply stores	16	107	3,474,099	623	1.10
NAICS 445 Food and beverage stores	23	263	3,980,946	291	1.09
NAICS 423 Merchant wholesalers, durable goods	17	223	11,518,783	995	0.96
NAICS 238 Specialty trade contractors	66	298	11,053,938	714	0.93
NAICS 623 Nursing and residential care facilities	8	239	5,742,569	463	0.92

Appendix D: Location Quotient Analysis

By NAICS Sub-Sectors, 2018

NAICS Sub-Sector	Annual Establishments	Annual Average Employment	Total Annual Wages	Annual Average Weekly Wage	Annual Average Employment Location Quotient
NAICS 112 Animal production and aquaculture	32	674	$22,480,038	$641	33.42
NAICS 111 Crop production	33	185	6,521,191	678	4.41
NAICS 311 Food manufacturing	6	412	21,867,595	1,020	3.36
NAICS 333 Machinery manufacturing	13	215	8,925,525	800	2.54
NAICS 484 Truck transportation	31	279	14,688,974	1,014	2.45
NAICS 115 Agriculture and forestry support activities	10	70	2,632,985	722	2.37
NAICS 622 Hospitals	11	916	45,840,261	962	2.37
NAICS 332 Fabricated metal product manufacturing	14	243	9,812,838	776	2.18
NAICS 517 Telecommunications	4	110	7,319,350	1,277	1.92
NAICS 999 Unclassified	11	18	513,826	559	1.84
NAICS 522 Credit intermediation and related activities	22	349	17,534,000	966	1.74
NAICS 811 Repair and maintenance	39	151	7,053,520	898	1.50
NAICS 452 General merchandise stores	12	334	8,831,132	509	1.41
NAICS 221 Utilities	3	58	6,556,594	2,187	1.38
NAICS 441 Motor vehicle and parts dealers	22	200	7,580,574	728	1.30
NAICS 446 Health and personal care stores	8	105	4,490,777	821	1.30
NAICS 447 Gasoline stations	12	85	1,234,628	281	1.20
NAICS 445 Food and beverage stores	21	265	4,371,717	317	1.13
NAICS 444 Building material and garden supply stores	16	112	3,759,271	644	1.12
NAICS 236 Construction of buildings	42	132	5,545,794	807	1.07
NAICS 623 Nursing and residential care facilities	9	238	7,026,858	569	0.93
NAICS 238 Specialty trade contractors	70	319	12,928,425	779	0.91
NAICS 814 Private households	11	20	223,772	214	0.90
NAICS 423 Merchant wholesalers, durable goods	19	214	9,713,847	873	0.89

Retail Profile for Huron County

	NAICS	Demand	Supply	Retail Gap	Leakage/ Surplus Factor
2017 Industry Summary		(Retail Potential)	(Retail Sales)		
Total Retail Trade and Food & Drink	44-45,722	$431,907,617	$385,868,832	$46,038,785	5.6
Total Retail Trade	44-45	$396,786,371	$354,365,087	$42,421,284	5.6
Total Food & Drink	722	$35,121,246	$31,503,745	$3,617,501	5.4
	NAICS	**Demand**	**Supply**	**Retail Gap**	**Leakage/ Surplus Factor**
2017 Industry Group		(Retail Potential)	(Retail Sales)		
Motor Vehicle & Parts Dealers	441	$91,670,735	$70,940,460	$20,730,275	12.7
Automobile Dealers	4411	$74,392,690	$56,849,679	$17,543,011	13.4
Other Motor Vehicle Dealers	4412	$8,763,626	$7,851,634	$911,992	5.5
Auto Parts, Accessories & Tire Stores	4413	$8,514,419	$6,239,147	$2,275,272	15.4
Furniture & Home Furnishings Stores	442	$11,127,799	$22,282,365	-$11,154,566	-33.4
Furniture Stores	4421	$6,698,489	$17,149,163	-$10,450,674	-43.8
Home Furnishings Stores	4422	$4,429,310	$5,133,202	-$703,892	-7.4
Electronics & Appliance Stores	443	$10,944,926	$4,143,491	$6,801,435	45.1
Bldg Materials, Garden Equip. & Supply Stores	444	$30,684,567	$27,762,155	$2,922,412	5.0
Bldg Material & Supplies Dealers	4441	$27,565,956	$22,649,297	$4,916,659	9.8
Lawn & Garden Equip & Supply Stores	4442	$3,118,611	$5,112,858	-$1,994,247	-24.2
Food & Beverage Stores	445	$68,906,908	$48,196,987	$20,709,921	17.7
Grocery Stores	4451	$60,759,160	$44,800,091	$15,959,069	15.1
Specialty Food Stores	4452	$3,377,080	$3,005,564	$371,516	5.8
Beer, Wine & Liquor Stores	4453	$4,770,668	$391,332	$4,379,336	84.8
Health & Personal Care Stores	446,4461	$29,766,646	$16,819,529	$12,947,117	27.8
Gasoline Stations	447,4471	$47,977,678	$101,096,005	-$53,118,327	-35.6
Clothing & Clothing Accessories Stores	448	$16,555,758	$3,601,226	$12,954,532	64.3
Clothing Stores	4481	$11,308,846	$2,583,886	$8,724,960	62.8
Shoe Stores	4482	$2,446,185	$235,982	$2,210,203	82.4
Jewelry, Luggage & Leather Goods Stores	4483	$2,800,727	$781,358	$2,019,369	56.4
Sporting Goods, Hobby, Book & Music Stores	451	$9,420,576	$5,564,072	$3,856,504	25.7
Sporting Goods/Hobby/Musical Instr Stores	4511	$8,021,692	$5,564,072	$2,457,620	18.1
Book, Periodical & Music Stores	4512	$1,398,884	$0	$1,398,884	100.0
General Merchandise Stores	452	$56,738,809	$42,108,996	$14,629,813	14.8
Department Stores Excluding Leased Depts.	4521	$37,636,111	$34,481,455	$3,154,656	4.4
Other General Merchandise Stores	4529	$19,102,698	$7,627,541	$11,475,157	42.9
Miscellaneous Store Retailers	453	$15,544,773	$10,616,371	$4,928,402	18.8
Florists	4531	$664,066	$614,091	$49,975	3.9
Office Supplies, Stationery & Gift Stores	4532	$2,596,557	$3,644,675	-$1,048,118	-16.8
Used Merchandise Stores	4533	$2,029,844	$1,480,720	$549,124	15.6
Other Miscellaneous Store Retailers	4539	$10,254,306	$4,876,885	$5,377,421	35.5
Nonstore Retailers	454	$7,447,196	$1,233,430	$6,213,766	71.6
Electronic Shopping & Mail-Order Houses	4541	$5,384,509	$0	$5,384,509	100.0
Vending Machine Operators	4542	$392,235	$0	$392,235	100.0
Direct Selling Establishments	4543	$1,670,452	$1,233,430	$437,022	15.0
Food Services & Drinking Places	722	$35,121,246	$31,503,745	$3,617,501	5.4
Special Food Services	7223	$1,097,043	$196,981	$900,062	69.6
Drinking Places - Alcoholic Beverages	7224	$1,727,651	$2,541,473	-$813,822	-19.1
Restaurants/Other Eating Places	7225	$32,296,552	$28,765,291	$3,531,261	5.8

Retail Profile for Port Austin

	NAICS	Demand	Supply	Retail Gap	Leakage/Surplus Factor
2017 Industry Summary		(Retail Potential)	(Retail Sales)		
Total Retail Trade and Food & Drink	44-45,722	$21,179,535	$11,117,107	$10,062,428	31.2
Total Retail Trade	44-45	$19,529,936	$8,792,708	$10,737,228	37.9
Total Food & Drink	722	$1,649,599	$2,324,399	-$674,800	-17.0
	NAICS	**Demand**	**Supply**	**Retail Gap**	**Leakage/Surplus Factor**
2017 Industry Group		(Retail Potential)	(Retail Sales)		
Motor Vehicle & Parts Dealers	441	$4,582,027	$2,487,883	$2,094,144	29.6
Automobile Dealers	4411	$3,711,082	$295,931	$3,415,151	85.2
Other Motor Vehicle Dealers	4412	$447,389	$2,191,952	-$1,744,563	-66.1
Auto Parts, Accessories & Tire Stores	4413	$423,556	$0	$423,556	100.0
Furniture & Home Furnishings Stores	442	$525,288	$0	$525,288	100.0
Furniture Stores	4421	$311,978	$0	$311,978	100.0
Home Furnishings Stores	4422	$213,310	$0	$213,310	100.0
Electronics & Appliance Stores	443	$525,441	$0	$525,441	100.0
Bldg Materials, Garden Equip. & Supply Stores	444	$1,575,001	$674,863	$900,138	40.0
Bldg Material & Supplies Dealers	4441	$1,410,242	$674,863	$735,379	35.3
Lawn & Garden Equip & Supply Stores	4442	$164,759	$0	$164,759	100.0
Food & Beverage Stores	445	$3,362,662	$2,134,865	$1,227,797	22.3
Grocery Stores	4451	$2,966,434	$1,925,673	$1,040,761	21.3
Specialty Food Stores	4452	$164,118	$209,192	-$45,074	-12.1
Beer, Wine & Liquor Stores	4453	$232,110	$0	$232,110	100.0
Health & Personal Care Stores	446,4461	$1,503,890	$232,600	$1,271,290	73.2
Gasoline Stations	447,4471	$2,366,937	$1,543,030	$823,907	21.1
Clothing & Clothing Accessories Stores	448	$770,985	$540,684	$230,301	17.6
Clothing Stores	4481	$523,125	$540,684	-$17,559	-1.7
Shoe Stores	4482	$111,516	$0	$111,516	100.0
Jewelry, Luggage & Leather Goods Stores	4483	$136,344	$0	$136,344	100.0
Sporting Goods, Hobby, Book & Music Stores	451	$446,187	$0	$446,187	100.0
Sporting Goods/Hobby/Musical Instr Stores	4511	$381,941	$0	$381,941	100.0
Book, Periodical & Music Stores	4512	$64,246	$0	$64,246	100.0
General Merchandise Stores	452	$2,714,388	$468,510	$2,245,878	70.6
Department Stores Excluding Leased Depts.	4521	$1,782,683	$0	$1,782,683	100.0
Other General Merchandise Stores	4529	$931,705	$468,510	$463,195	33.1
Miscellaneous Store Retailers	453	$784,616	$710,273	$74,343	5.0
Florists	4531	$33,239	$0	$33,239	100.0
Office Supplies, Stationery & Gift Stores	4532	$124,855	$122,886	$1,969	0.8
Used Merchandise Stores	4533	$94,115	$0	$94,115	100.0
Other Miscellaneous Store Retailers	4539	$532,407	$587,387	-$54,980	-4.9
Nonstore Retailers	454	$372,514	$0	$372,514	100.0
Electronic Shopping & Mail-Order Houses	4541	$260,981	$0	$260,981	100.0
Vending Machine Operators	4542	$18,908	$0	$18,908	100.0
Direct Selling Establishments	4543	$92,625	$0	$92,625	100.0
Food Services & Drinking Places	722	$1,649,599	$2,324,399	-$674,800	-17.0
Special Food Services	7223	$49,759	$0	$49,759	100.0
Drinking Places - Alcoholic Beverages	7224	$79,336	$846,900	-$767,564	-82.9
Restaurants/Other Eating Places	7225	$1,520,504	$1,477,499	$43,005	1.4

Appendix F: Housing Data

Table 14: Occu-

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Median Year Householder Moved into Unit	2007	2003	2001	2006
Total Housing Units	353 (100.0%)	690 (100.0%)	13,880 (100.0%)	4,568,200 (100.0%)
Owner occupied				
Moved in 2015 or later	6 (1.7%)	9 (1.3%)	434 (3.1%)	141,544 (3.6%)
Moved in 2010 to 2014	80 (22.7%)	133 (19.3%)	4,486 (10.7%)	542,453 (13.9%)
Moved in 2000 to 2009	96 (27.2%)	193 (28.0%)	3,148 (22.7%)	827,743 (21.3%)
Moved in 1990 to 1999	34 (9.6%)	124 (18.0%)	2,510 (18.1%)	571,220 (14.7%)
Moved in 1980 to 1989	25 (7.1%)	60 (8.7%)	1,446 (10.4%)	297,610 (7.7%)
Moved in 1979 or earlier	41 (11.6%)	85 (12.3%)	2,306 (16.6%)	379,586 (9.8%)
Renter occupied				
Moved in 2015 or later	9 (2.5%)	18 (2.6%)	442 (3.2%)	240,069 (6.2%)
Moved in 2010 to 2014	42 (11.9%)	45 (6.5%)	1,284 (9.3%)	625,460 (16.1%)
Moved in 2000 to 2009	20 (5.7%)	21 (3.0%)	545(3.9%)	194,671 (5.0%)
Moved in 1990 to 1999	0	0	150 (1.1%)	40,430 (1.0%)
Moved in 1980 to 1989	0	0	56 (0.4%)	14,861 (0.4%)
Moved in 1979 or earlier	0	2 (0.3%)	73 (0.5%)	12,999 (0.3%)

Source: U.S. Census Bureau, 2013-2017 American Community Survey

Appendix F: Housing Data

Year Housing Units Built

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Median Year Structure Built	1978	1977	1969	1970
Total	770 (100.0%)	1,748 (100.0%)	21,240 (100.0%)	4,568,200 (100.0%)
Built 2010 or later	2 (0.3%)	22 (1.2%)	216 (1.0%)	67,527 (1.4%)
Built 2000 to 2009	111 (14.4%)	251 (14.4%)	1,731 (8.1%)	457,143 (10.0%)
Built 1990 to 1999	149 (19.4%)	317 (18.1%)	2,779 (13.1%)	599,254 (13.1%)
Built 1980 to 1989	103 (13.4%)	218 (12.5%)	2,272 (10.7%)	453,788 (9.9%)
Built 1970 to 1979	88 (11.4%)	240 (13.7%)	3,328 (15.7%)	705,927 (15.5%)
Built 1960 to 1969	39 (5.1%)	177 (10.1%)	2,019 (9.5%)	547,833 (12.0%)
Built 1950 to 1959	102 (13.2%)	237 (13.6%)	3,226 (15.2%)	689,472 (15.1%)
Built 1940 to 1949	45 (5.8%)	94 (5.4%)	1,495 (7.0%)	357,926 (7.8%)
Built 1939 or earlier	131 (17.0%)	192 (11.0%)	4,174 (19.7%)	689,330 (15.1%)

Source: U.S. Census Bureau, 2013-2017 American Community Survey

Appendix F: Housing Data

Housing Unit Summary

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
2000 Housing Units	704	1,691	20,430	4,234,279
Owner Occupied Housing Units	43.6%	38.5%	59.6%	66.0%
Renter Occupied Housing Units	7.5%	6.5%	11.9%	23.4%
Vacant Housing Units	48.9%	55.0%	28.6%	10.6%
2010 Housing Units	724	1,741	21,199	4,532,233
Owner Occupied Housing Units	35.4%	34.2%	55.4%	61.6%
Renter Occupied Housing Units	11.3%	6.9%	12.3%	23.8%
Vacant Housing Units	53.3%	58.9%	32.3%	14.6%
2019 Housing Units	730	1,753	21,199	4,666,144
Owner Occupied Housing Units	37.1%	32.8%	53.0%	60.1%
Renter Occupied Housing Units	8.8%	7.5%	13.2%	25.2%
Vacant Housing Units	54.1%	59.7%	33.8%	14.6%
2024 Housing Units	733	1,761	21,296	4,754,954
Owner Occupied Housing Units	36.6%	32.3%	52.0%	60.5%
Renter Occupied Housing Units	8.5%	7.3%	12.6%	24.6%
Vacant Housing Units	55.0%	60.4%	35.4%	14.9%

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000

Appendix F: Housing Data

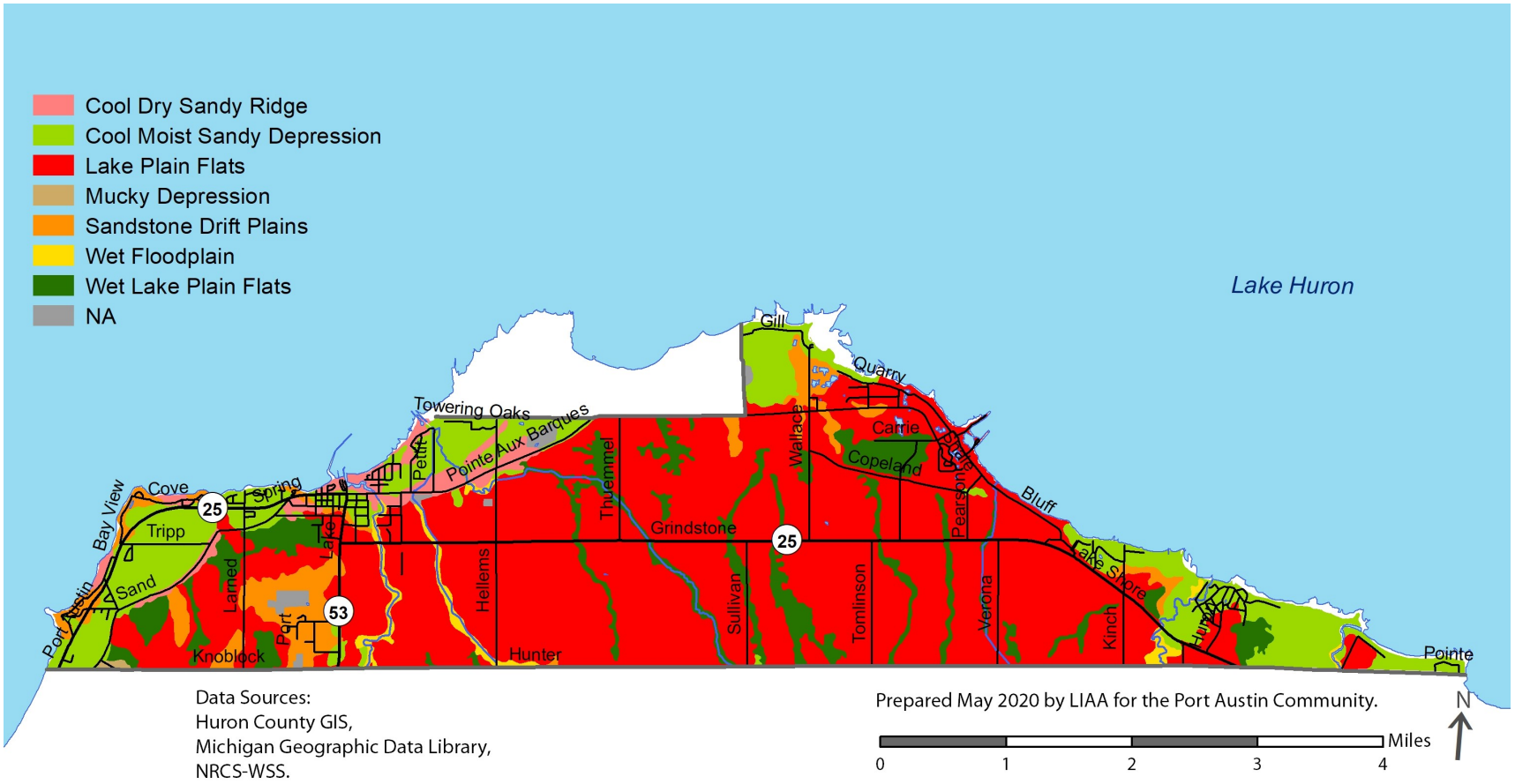
Census 2010 Vacant Housing Units by Status

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Total	386 (100%)	1,026	14,348	659,725
For Rent	23 (6.0%)	31 (3.0%)	388 (5.7%)	141,687 (21.5%)
Rented—Not Occupied	1 (0.3%)	1 (0.1%)	21 (0.3%)	6,684 (1.0%)
For Sale Only	25 (6.5%)	36 (3.5%)	368 (5.4%)	77,080 (11.7%)
Sold—Not Occupied	0 (0.0%)	0 (0.0%)	82 (1.2%)	17,978 (2.7%)
Seasonal/Recreational/ Occasional Use	299 (77.5%)	895 (87.2%)	5,155 (75.2%)	263,071 (39.9%)
For Migrant Workers	0 (0.0%)	0 (0.0%)	7 (0.1%)	1,773 (0.3%)
Other Vacant	38 (9.8%)	63 (6.1%)	830 (12.1%)	151,452 (23.0%)

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024.

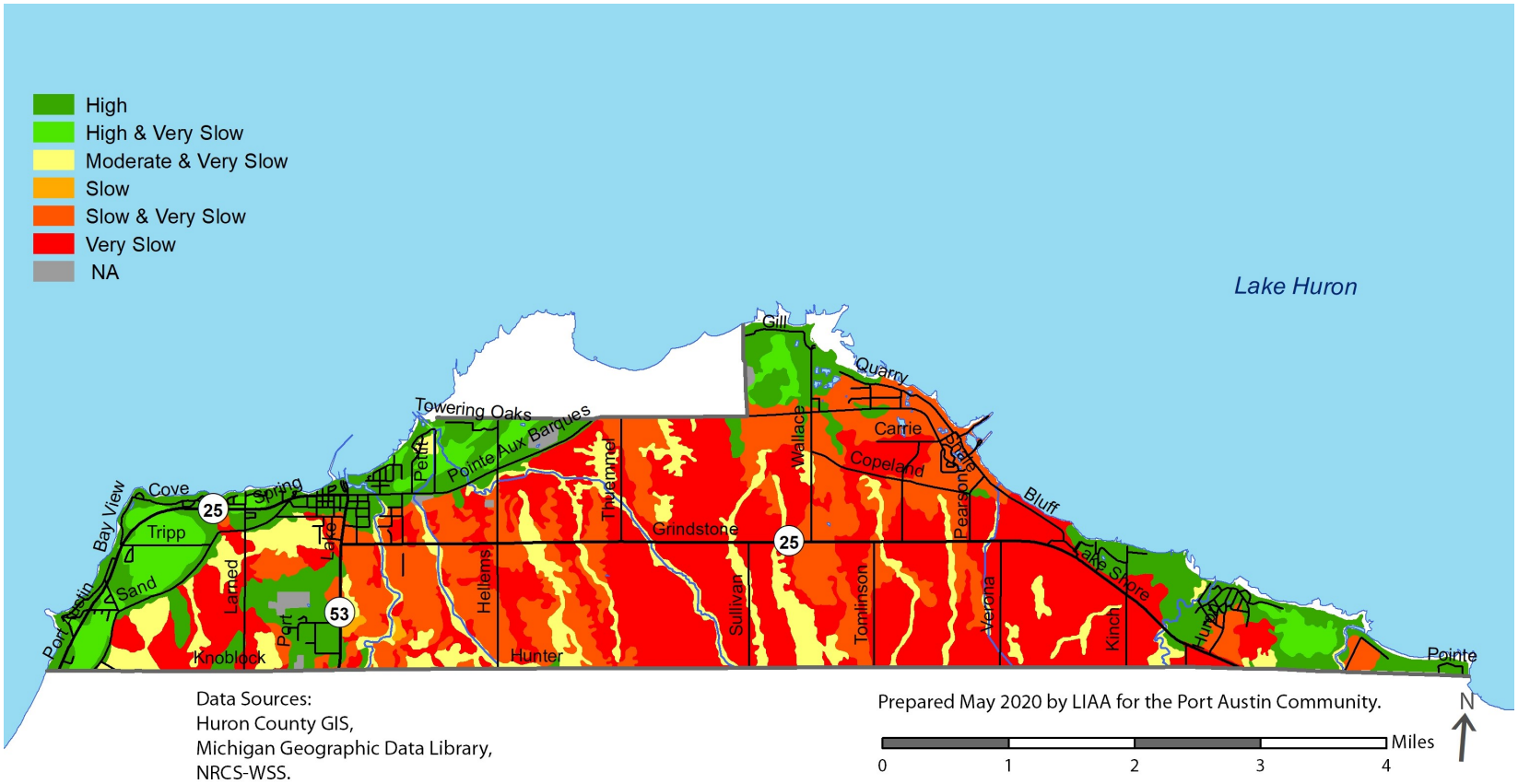
Appendix G: Vulnerability Mapping

Map G.1. Ecological Sites (based on soils) in the Port Austin Community



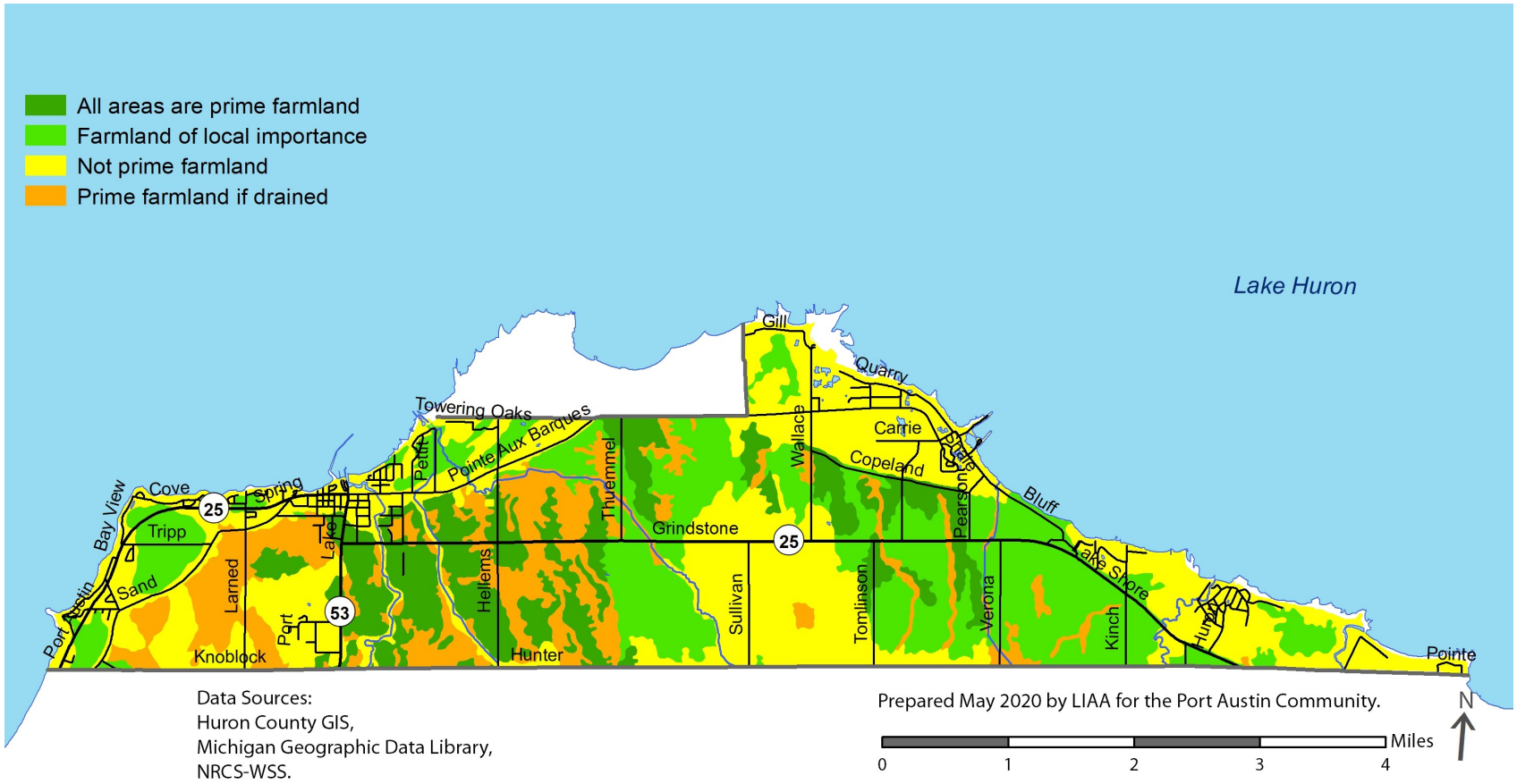
Appendix G: Vulnerability Mapping

Map G.2. Infiltration Rates (based on soils) in the Port Austin Community



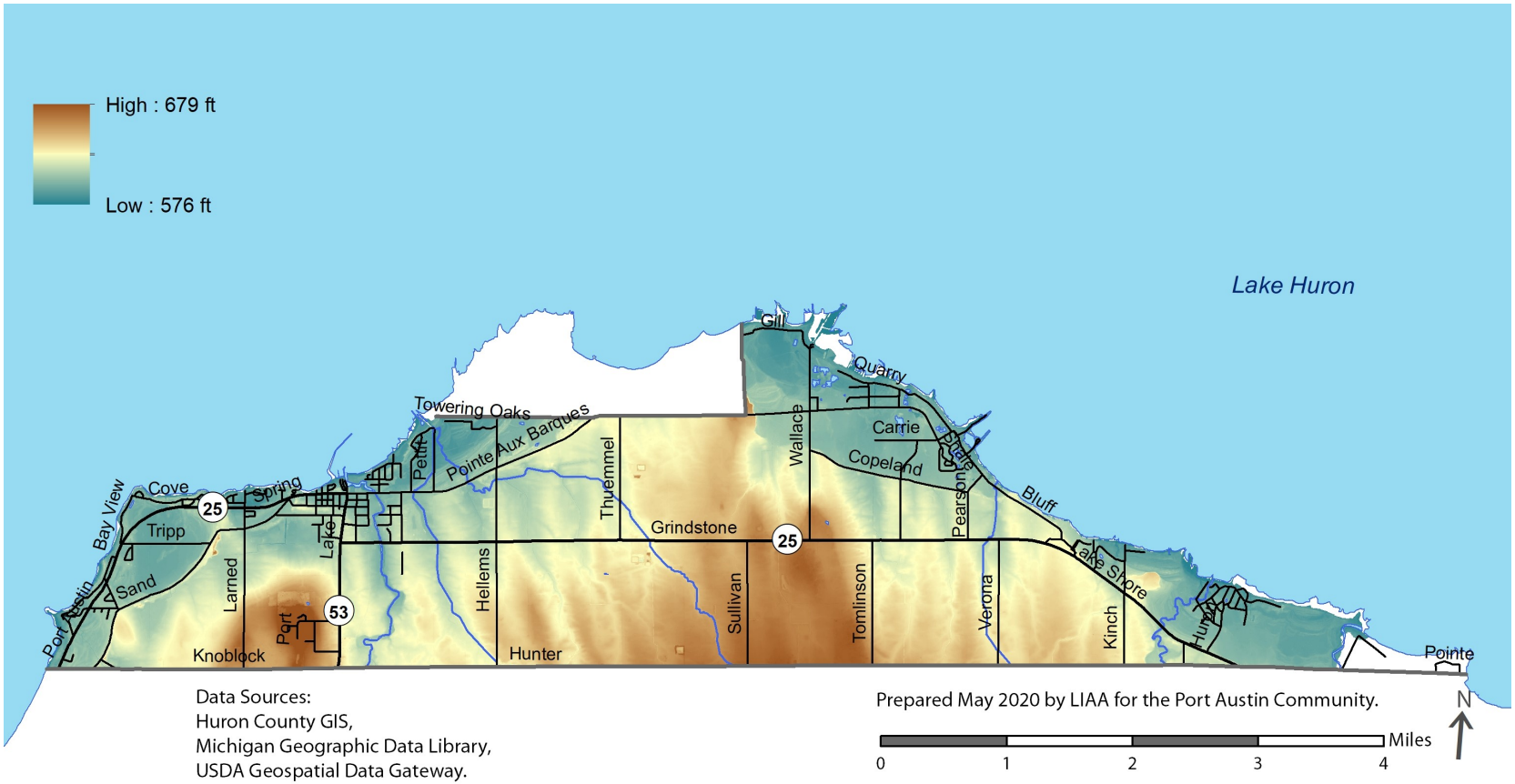
Appendix G: Vulnerability Mapping

Map G.3. Farmland Classification (based on soils) in the Port Austin Community



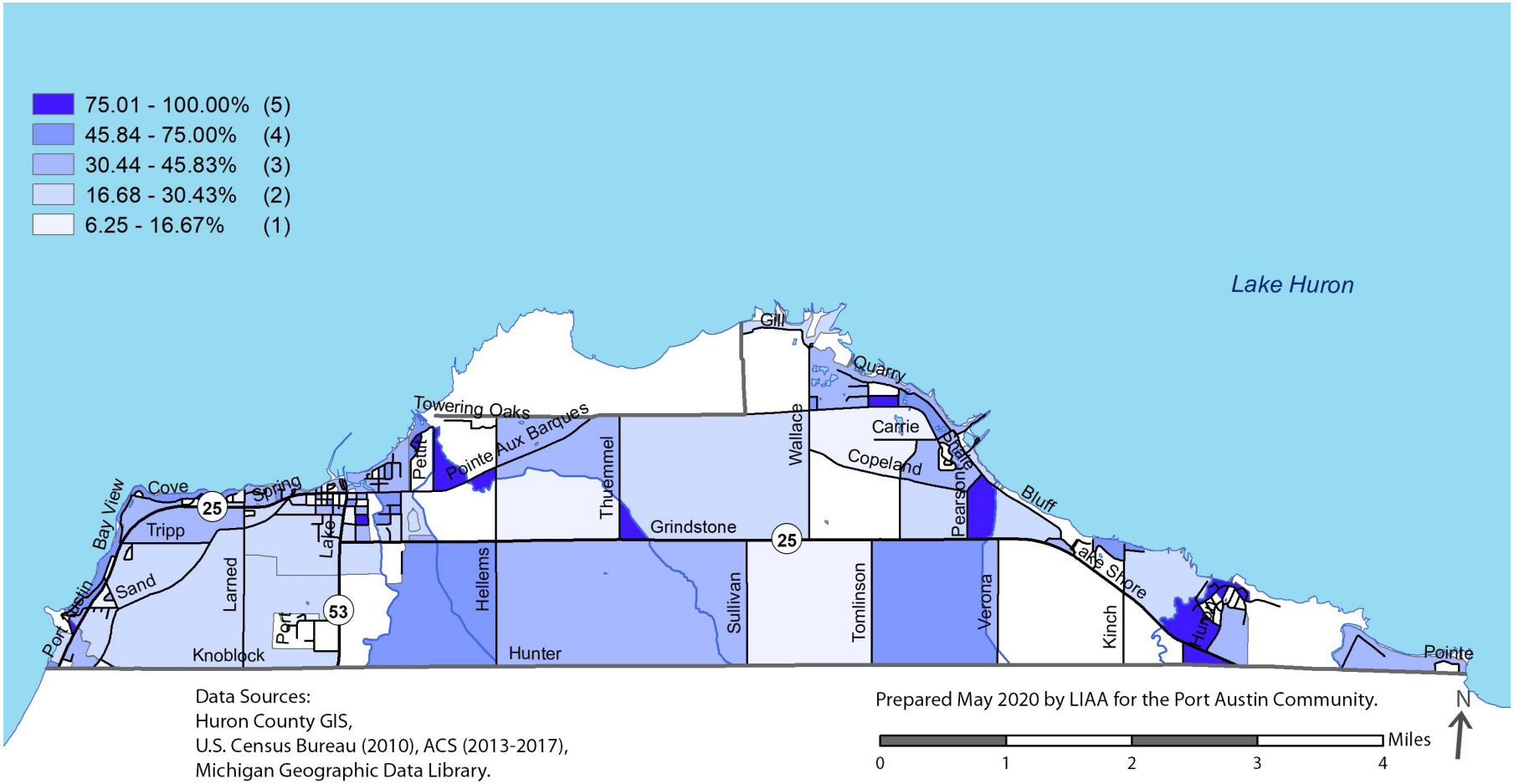
Appendix G: Vulnerability Mapping

Map G.4. Digital Elevation Model



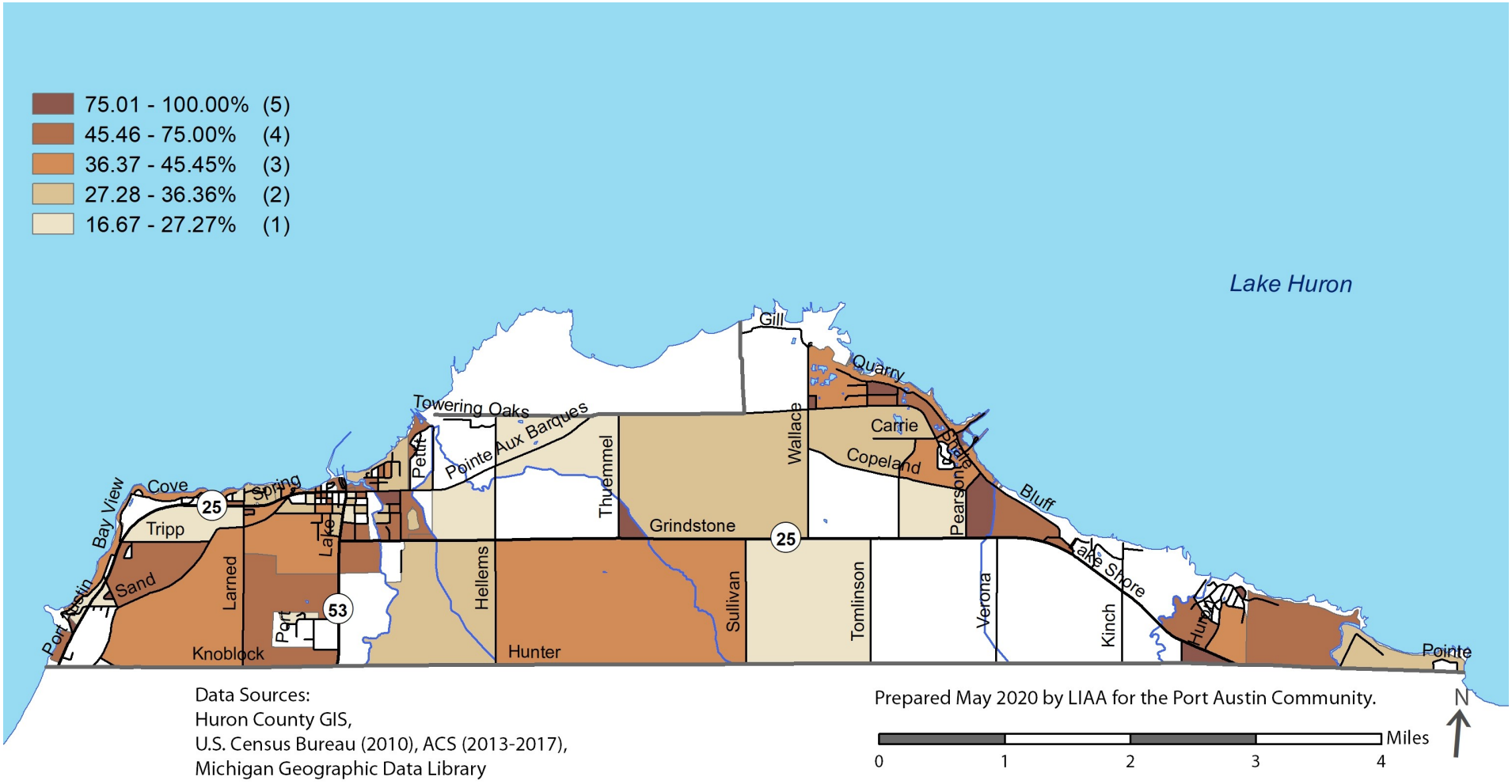
Appendix G: Vulnerability Mapping

Map G.5. Percent of Population 65 Years and Older (Male and Female)



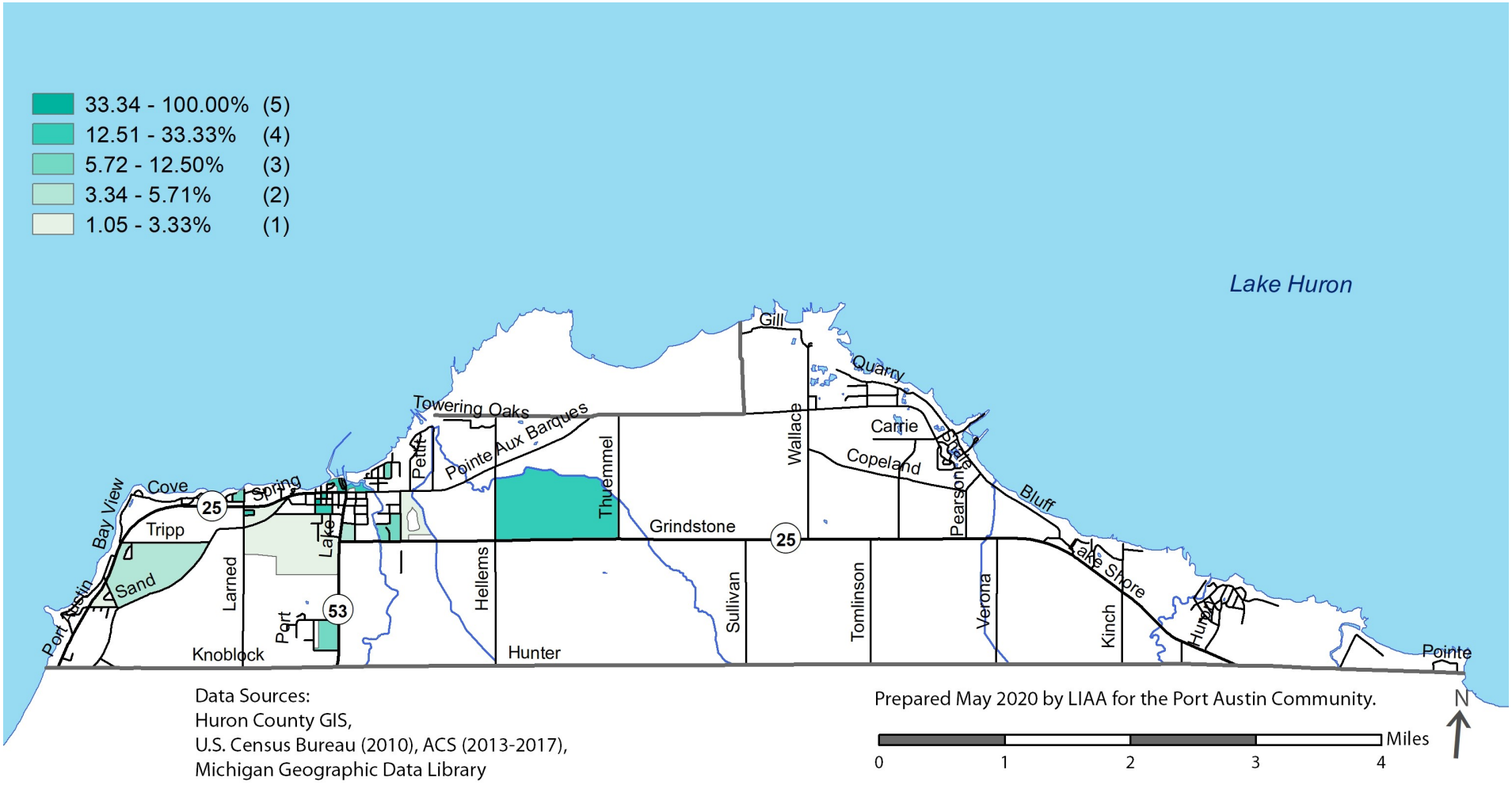
Appendix G: Vulnerability Mapping

Map G.6. Percent of households with people living alone



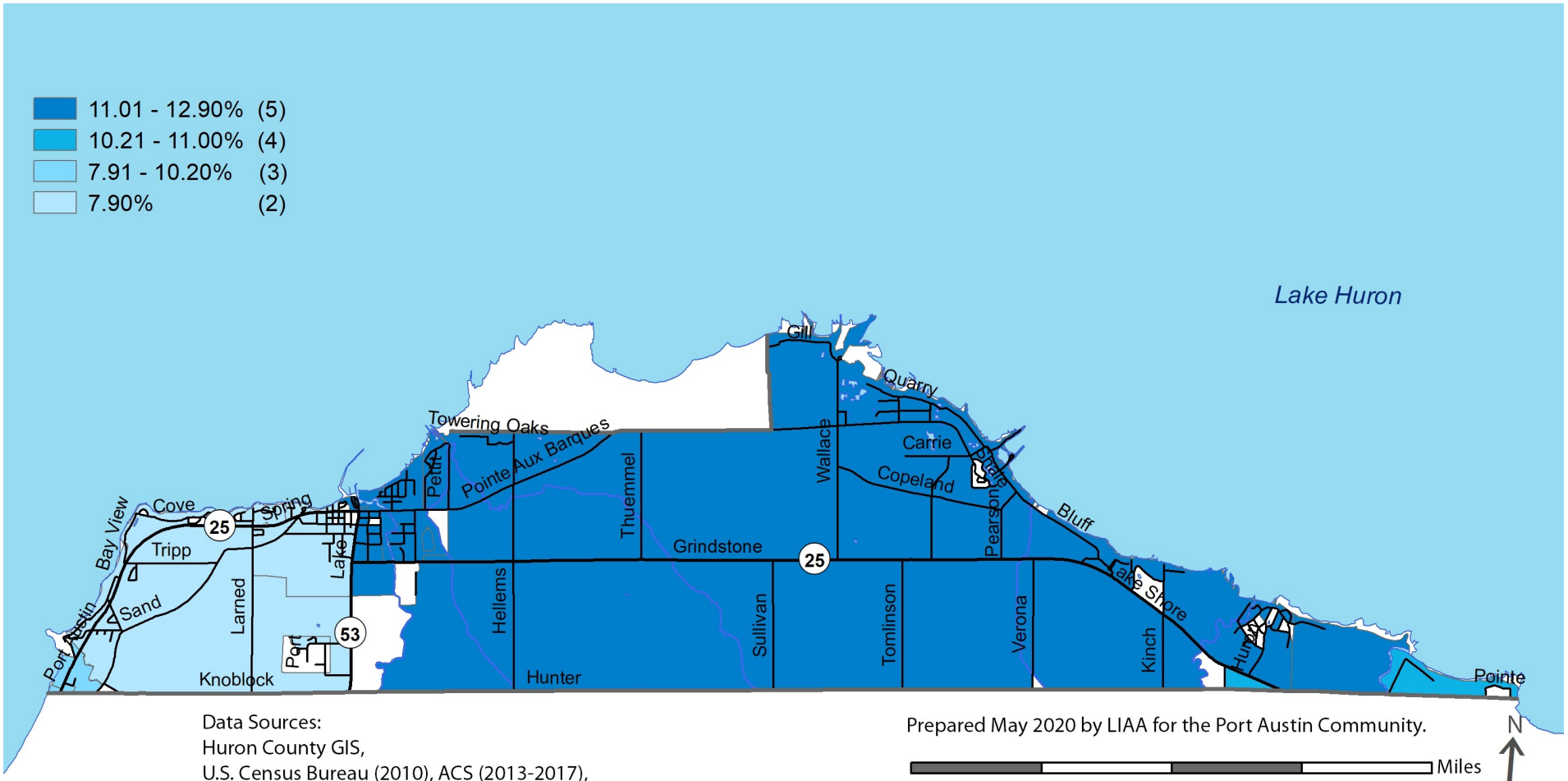
Appendix G: Vulnerability Mapping

Map G.7. Percent of Non-white Population



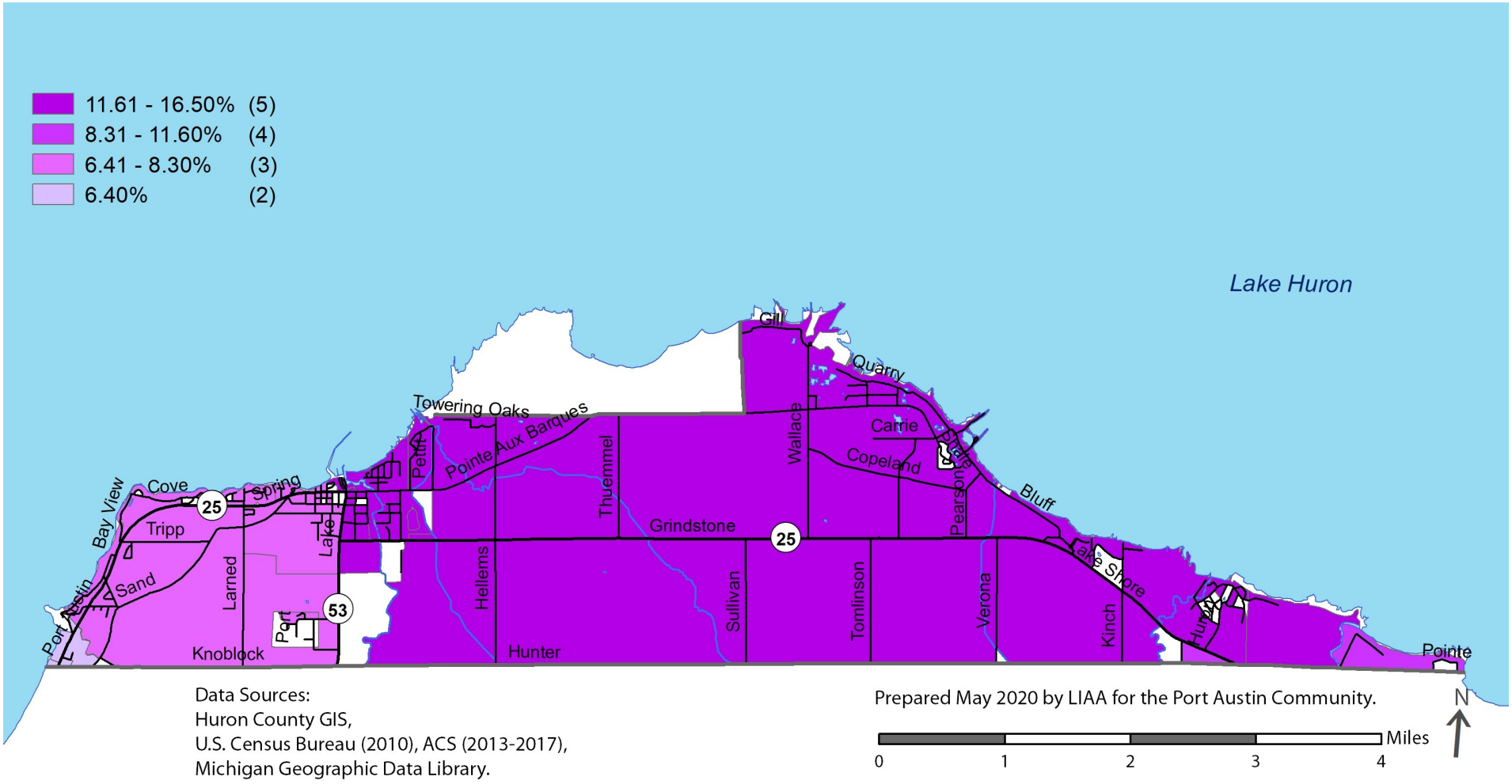
Appendix G: Vulnerability Mapping

Map G.8. Percent of Households Living Below the Poverty Threshold



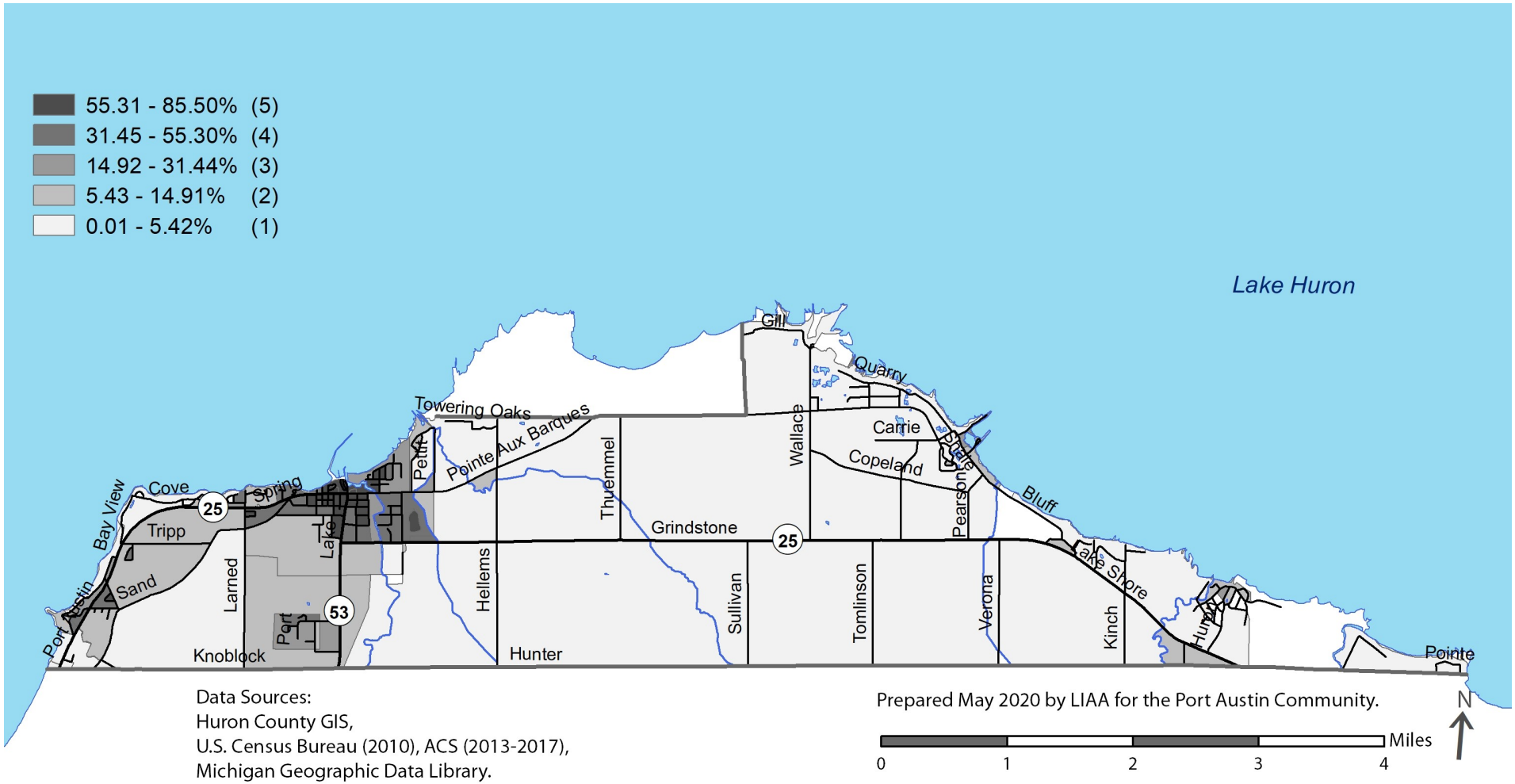
Appendix G: Vulnerability Mapping

Map G.9. Percent of Population 25 Years and Older with Less than a High School Education



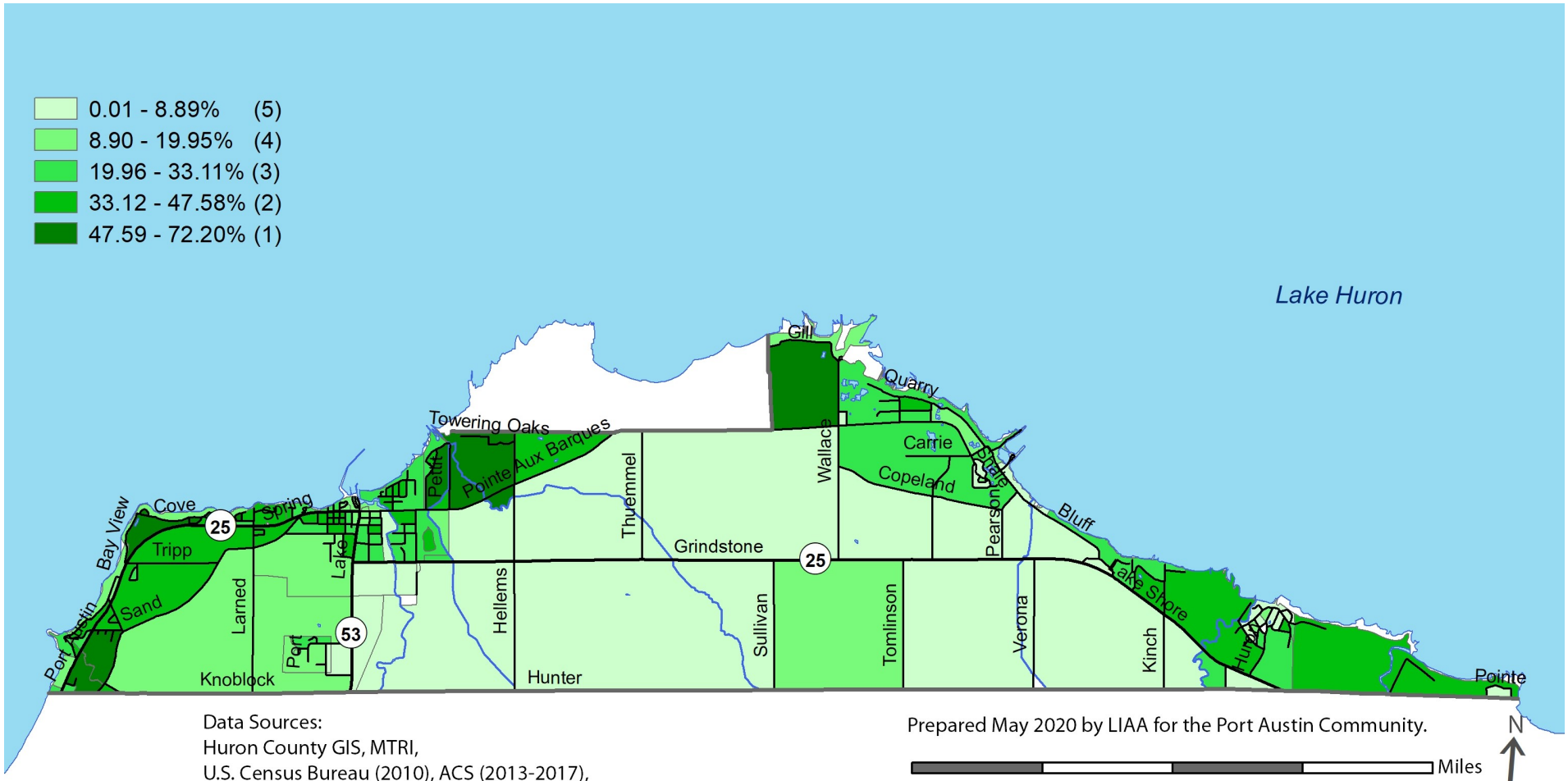
Appendix G: Vulnerability Mapping

Map G.10. Percent Impervious Surface Exposure



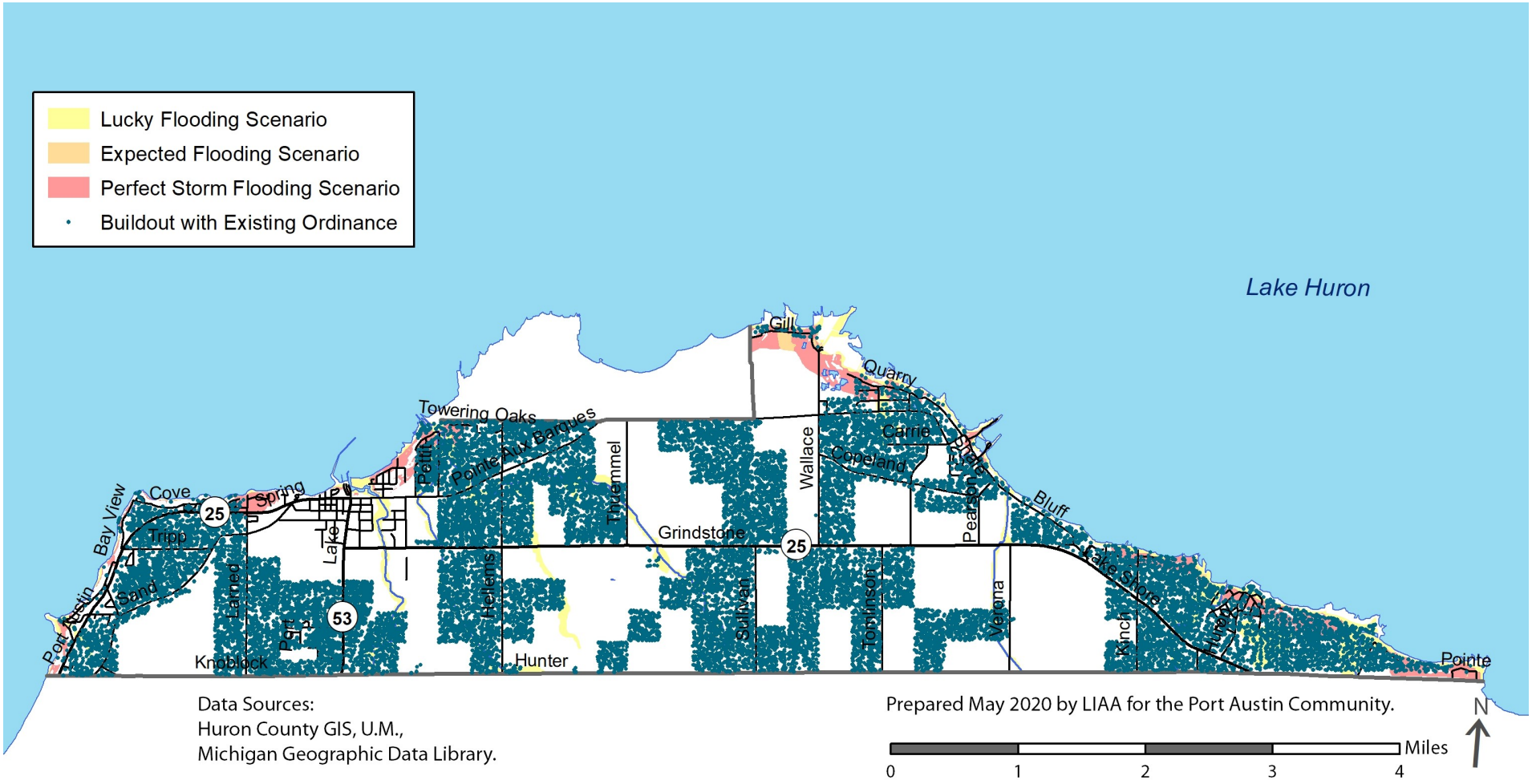
Appendix G: Vulnerability Mapping

Map G.11. Percent Tree Canopy



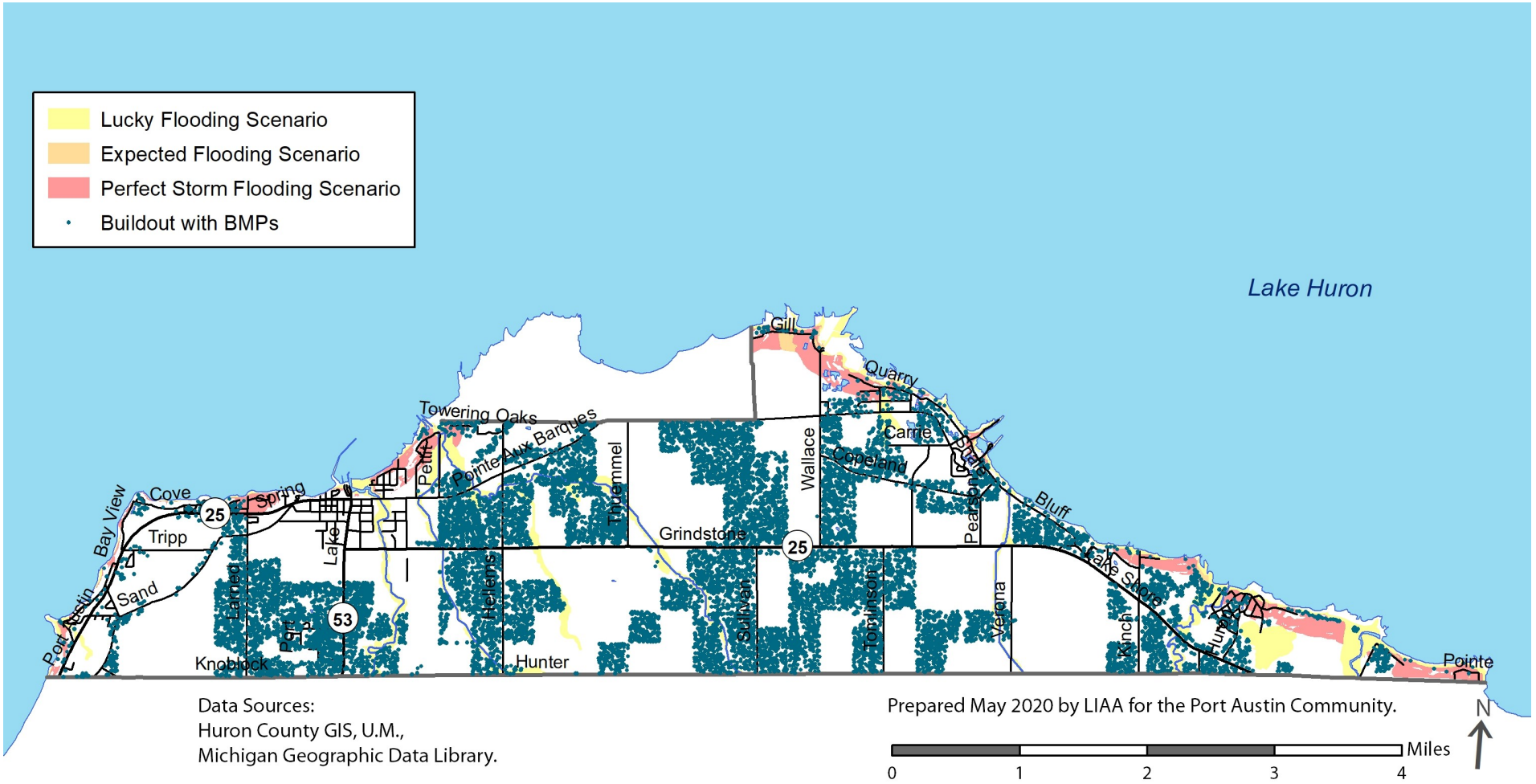
Appendix G: Vulnerability Mapping

Map G.12. Buildout According to Current Zoning



Appendix G: Vulnerability Mapping

Map G.13. Buildout According to Best Management Practices



Appendix H: Input from the Drafting Goals & Objectives Meeting

Transportation

* Connect Bird Creek Park/Beach to town over creek
* Improve non-motorized connections to assets on east side of Twp (Grindstone), History Center, ice cream)
* Seasonal trolley route
* Shared service industry (uber, scooters)
* Regional transportation options into Port Austin
* Bus/plane/train – more regional connections
* Car charging stations – think about strategically placing
* County-wide arranged transport to events (possibility of working with hotels to accomplish)
* Bike trail designations
* Off-road trail opportunities (Huron & Sanilac)
* Analyze how smaller motor vehicles are used on roads (safe?)
* Get attention to water trail

Local Economy

* Install fiber optic to homes, community-wide wifi, better broadband connectivity
* Provide opportunities to attract remote employees
* Programming, spaces for artists
* Deal with vacant commercial spaces – acquire, sell, improve
* Agricultural tourism
* Local food network
* Commercial kitchen, production facility
* Buy local, made local programming
* Shared kitchen
* Encouraging "creative light industrial" downtown – craftsmen, furniture, etc.
* Winter infrastructure and events
* Attract satellite educational facilities
* Streetscape amenities (fire pits, chairs)

Cultural Heritage

* Embrace orchards, farms – available to visit (tourism) – tours, marketing
* Community gardens – space for learning, raised beds to accommodate all abilities
* Internship opportunities for farms, orchards, gardening
* Community calendar for cultural events (water-related and heritage-type events)
* Coordinate local events/times to prevent crossover
* Tour of 3 art barns
* Implement branding strategy
* Recognize/promote local heroes
* Provide links (non-motorized) to promote History Center

Appendix H: Input from the Drafting Goals & Objectives Meeting

Coastal Resilience

* Improve sewer system to meet future challenges
* Consider implementation of septic ordinance/inspections
* Public water supply along shore
* Build up the points at Grindstone
* Implement Grindstone Plan
* Identify and manage risk areas most affected by erosion
* Protect shoreline views
* Work to develop public open spaces at public easements
* Address the effects of residential/ agricultural runoff – measure at the local level, strategically mitigate, investigate riprap under blue causeway and its effect on water flow and water quality
* Increase setbacks from all lakeshore areas
* Encourage larger lot sizes on shore

Built Environment

* Control blight – enforce blight ordinance
* Identify, preserve historic structures
* Install wayfinding signage
* Consistent themes for architecture
* Protecting water views
* Promote user-friendly shore fishing – safety features, handicap ramps
* Improve parking, especially for weekends during summer – conduct a traffic, parking study, speed, access
* Streetscape amenities
* Streetscape improvements – landscaping and sidewalk size
* Infill redevelopment (underutilized spaces)
* Active community center (create one)

Natural Environment

* Address geese issue, especially at Bird Creek
* Address failing septic systems, especially at the lakeshore
* Invasive species identification, prevention, education
* Farm runoff – testing for source, how to fix
* Test beaches – funding from state to Huron County – identify internal funding source
* Blight, dangerous buildings, noxious weeds
* Manage deer population
* Site design based on flood risks
* Retention of graywater
* Seawalls (prohibit? Allow in certain areas?)
* Local monitoring, tool, photography with drones

Appendix I: Michigan Economic Development Corporation's Redevelopment Ready Communities Checklist

EVALUATION CRITERIA 1.1.1

The governing body has adopted a master plan in the past five years.

EXPECTATIONS

- ☐ The master plan reflects the community's desired direction for the future.
- ☐ The master plan identifies strategies for priority redevelopment areas.
- ☐ The master plan addresses land use and infrastructure, including complete streets.
- ☐ The master plan includes a zoning plan.
- ☐ The master plan incorporates recommendations for implementation, including goals, actions, timelines and responsible parties.
- ☐ Progress on the master plan is annually reported to the governing body.
- ☐ The master plan is accessible online.

EVALUATION CRITERIA 1.1.2

The governing body has adopted a downtown plan.

EXPECTATIONS

- ☐ The downtown plan identifies development area boundaries.
- ☐ The downtown plan identifies projects, and includes estimated project costs and a timeline for completion.
- ☐ The downtown plan includes mixed-use and pedestrian oriented development elements.
- ☐ The downtown plan addresses transit oriented development, if applicable.
- ☐ The downtown plan is accessible online.

EVALUATION CRITERIA 1.1.3

The governing body has adopted a corridor plan.

EXPECTATIONS

- ☐ The corridor plan identifies development area boundaries.
- ☐ The corridor plan identifies projects, and includes estimated project costs and a timeline for completion.
- ☐ The corridor plan includes mixed-use and pedestrian oriented development elements.
- ☐ The corridor plan addresses transit oriented development, if applicable.
- ☐ The corridor plan is accessible online.

EVALUATION CRITERIA 1.1.4

The governing body has adopted a capital improvements plan.

EXPECTATIONS

- ☐ The capital improvements plan details a minimum of six years of public structures and improvements and is updated annually.
- ☐ The capital improvements plan coordinates projects to minimize construction costs.
- ☐ The capital improvements plan coordinates with adopted community plans and the budget.
- ☐ The capital improvements plan is accessible online.

EVALUATION CRITERIA 1.2.1

The community has a documented public participation strategy for engaging a diverse set of community stakeholders.

EXPECTATIONS

- ☐ The strategy identifies key stakeholders, including those not normally at the visioning table.
- ☐ The strategy describes public participation methods and the appropriate venue to use each method.
- ☐ If a third party is consulted, they adhere to the public participation strategy.
- ☐ The community assists the developer in soliciting input on a proposal early in the site plan approval process.
- ☐ The community reviews and updates the strategy on a regular basis.

EVALUATION CRITERIA 1.2.2

The community demonstrates that public participation efforts go beyond the basic methods.

EXPECTATIONS

☐ **Basic practices:**

* Open Meetings Act
* Website posting
* Postcard mailings
* Local cable notification
* Newspaper posting
* Flier posting on community hall door
* Attachments to water bills
* Announcements at governing body meetings

☐ **Proactive practices:**

* Individual mailings
* Community workshops
* Social media platforms
* One-on-one interviews
* Charrettes
* Canvassing
* Focus groups
* Crowd-sourcing

EVALUATION CRITERIA 1.2.3

The community shares outcomes of public participation processes.

EXPECTATIONS

☐ The community tracks success of various outreach methods.

☐ The community participation results are communicated in a consistent and transparent manner.

EVALUATION CRITERIA 2.1.1

The governing body has adopted a zoning ordinance that aligns with the goals of the master plan.

EXPECTATIONS

☐ The community has evaluated the master plan's recommendations to determine if changes to the zoning map or ordinance are needed.

EVALUATION CRITERIA 2.1.2

The zoning ordinance provides for areas of concentrated development in appropriate locations and encourages the type and form of development desired.

EXPECTATIONS

☐ The ordinance allows mixed-use buildings by right in designated areas of concentrated development.

☐ The ordinance requires one or more of the following elements in areas of concentrated development:

* Build-to lines
* Open store fronts
* Outdoor dining
* Minimum ground floor transparency
* Streetscape elements (trees, seating, pedestrian-scale lighting and signage)
* Front facing doorways
* Parking located in the rear of building

☐ The ordinance addresses historic preservation.

EVALUATION CRITERIA 2.1.3

The zoning ordinance includes flexible tools to encourage development and redevelopment.

EXPECTATIONS

☐ The zoning ordinance includes at least two of the following flexible tools:

* Density bonuses
* Non-conforming regulations
* Conditional rezoning
* Overlay zones
* Form-based code
* Compatible new-economy businesses in commercial and industrial districts

EVALUATION CRITERIA 2.1.4

The zoning ordinance allows for a variety of housing options.

EXPECTATIONS

☐ The ordinance allows for three or more of the following housing types by right:

* Accessory dwelling units
* Townhouses/rowhouses
* Stacked flats
* Residential units above non-residential uses
* Live/work
* Co-housing
* Cluster housing
* Micro units

EVALUATION CRITERIA 2.1.5

The zoning ordinance includes standards to improve non-motorized transportation.

EXPECTATIONS

☐ The ordinance includes standards for the following elements where appropriate:

* Bicycle parking
* Traffic calming
* Sidewalk connectivity
* Pedestrian-scale lighting
* Public realm standards
* Block size

EVALUATION CRITERIA 2.1.6

The zoning ordinance includes flexible parking standards.

EXPECTATIONS

☐ The ordinance includes regulations for two or more of the following

* Reduction or elimination of required parking when on- street and public parking is available
* Connections between parking lots
* Shared parking agreements
* Parking maximums
* Elimination of parking minimums
* Parking waivers
* Electric vehicle charging stations
* Bicycle parking
* Payment in lieu of parking
* Reduction of required parking for complementary mixed-uses

EVALUATION CRITERIA 2.1.7

The zoning ordinance includes standards for environmental preservation and green infrastructure.

EXPECTATIONS

☐ The ordinance includes regulations for three or more of the following:

* Low impact development techniques (rain gardens, bioswales, etc.)
* Rain water collection (blue roofs, cisterns, water harvesting, stormwater vaults, etc.)
* Green roofs
* Pervious pavement
* Steep slope protections
* Street tree planting standards
* Tree preservation or replacement standards
* Parking lot landscaping standards
* Required native or low-maintenance plantings
* Renewable energy
* Buffering standards around water bodies or other natural resources
* Off-site stormwater regulations allowing site developers to participate in district-scale stormwater management plan

EVALUATION CRITERIA 2.1.8

The zoning ordinance is user-friendly.

EXPECTATIONS

☐ The ordinance portrays clear definitions and requirements using graphics, tables or charts as appropriate.

☐ The ordinance is available in an electronic format at no cost and hard copies are available for review at convenient locations.

☐ The ordinance is accessible online.

EVALUATION CRITERIA 3.1.1

The zoning ordinance articulates a thorough site plan review process.

EXPECTATIONS

☐ The responsibilities of the governing body, planning commission, zoning board of appeals, other reviewing bodies, and staff are clearly documented.

EVALUATION CRITERIA 3.1.2

The community has a qualified intake professional.

EXPECTATIONS

☐ The community identifies a project point person and trains staff to perform intake responsibilities including:

* Receiving and processing applications and site plans
* Documenting contact with the applicant
* Explaining procedures and submittal requirements
* Facilitating meetings
* Processing applications after approval
* Excellent customer service

EVALUATION CRITERIA 3.1.3

The community defines and offers conceptual site plan review meetings for applicants.

EXPECTATIONS

☐ The community has clearly defined expectations posted online and a checklist to be reviewed at conceptual meetings.

☐ The community advertises online that conceptual site plan review meetings are available.

EVALUATION CRITERIA 3.1.4

The appropriate departments engage in joint site plan reviews.

EXPECTATIONS

☐ The joint site plan review team consists of the following representatives, as appropriate:

* Planning department
* Public works department
* Building department
* Transportation department
* Fire
* Police
* Assessor
* Community manager or supervisor
* Economic development
* Historic District Commission
* Consultant
* Attorney
* County soil erosion and sedimentation
* County drain commissioner
* County health department
* County road commission
* Outside agencies

EVALUATION CRITERIA 3.1.5

The community has a clearly documented internal staff review process.

EXPECTATIONS

☐ The internal review process articulates clear roles, responsibilities and timelines.

☐ Development review standards are clearly defined.

EVALUATION CRITERIA 3.1.6

The community promptly acts on development requests.

EXPECTATIONS

- ☐ Site plans for permitted uses are approved administratively or by the planning commission.
- ☐ The community follows its documented procedures and timelines.
- ☐ The community has easy to follow flowcharts of development processes that include timelines.
- ☐ Community development staff coordinates with permitting and inspections staff to ensure a smooth and timely approval process.

EVALUATION CRITERIA 3.1.7

The community has a method to track development projects.

EXPECTATIONS

- ☐ The community uses a tracking mechanism for projects during the development process.
- ☐ The community uses a tracking mechanism for projects during the permitting and inspections process.

EVALUATION CRITERIA 3.1.8

The community annually reviews successes and challenges with the development review process.

EXPECTATIONS

- ☐ The community obtains customer feedback on the site plan approval and permitting and inspections process and integrates changes where applicable.
- ☐ The joint site plan review team, including permitting and inspections staff, meets to capture lessons learned and amends the process accordingly.

EVALUATION CRITERIA 3.2.1

The community maintains a guide to development that explains policies, procedures and steps to obtain approvals.

EXPECTATIONS

☐ The guide includes:

* Relevant contact information
* Relevant meeting schedules
* Easy-to-follow step-by-step flowcharts of development processes, including timelines
* Conceptual meeting procedures
* Relevant ordinances to review prior to site plan submission
* Site plan review requirements and application
* Clear explanation for site plans that can be approved administratively
* Rezoning request process and application
* Variance request process and application
* Special land use request process and application
* Fee schedule
* Special meeting procedures
* Financial assistance tools
* Design guidelines and related processes
* Building permit requirements and applications

EVALUATION CRITERIA 3.2.2

The community annually reviews the fee schedule.

EXPECTATIONS

☐ The fee schedule is reviewed annually and updated as needed.

☐ The community accepts credit card payment for fees.

EVALUATION CRITERIA 4.1.1

The community sets expectations for board and commission positions.

EXPECTATIONS

- ☐ The community outlines expectations and desired skill sets for open seats.
- ☐ The community has clearly documented the process for board and commission appointments.
- ☐ Board and commission applications are available online.

EVALUATION CRITERIA 4.1.2

The community provides orientation packets to all appointed and elected members of development related boards and commissions.

EXPECTATIONS

- ☐ The orientation packet includes all relevant planning, zoning and development information.

EVALUATION CRITERIA 4.2.1

The community has a dedicated source of funding for training.

EXPECTATIONS

- ☐ The community has a training budget allocated for elected and appointed officials and staff.

EVALUATION CRITERIA 4.2.2

The community identifies training needs and tracks attendance for elected and appointed officials and staff.

EXPECTATIONS

- ☐ The community manages a simple tracking mechanism for logging individual training needs and attendance.
- ☐ The community identifies trainings that assist in accomplishing their stated goals and objectives.

EVALUATION CRITERIA 4.2.3

The community encourages elected and appointed officials and staff to attend trainings.

EXPECTATIONS

☐ The community has an established process to notify its elected and appointed officials and staff about training opportunities.

EVALUATION CRITERIA 4.2.4

The community shares information between elected and appointed officials and staff.

EXPECTATIONS

☐ The community holds collaborative work sessions, including joint trainings on development topics.

☐ Training participants share information with those not in attendance.

☐ The planning commission prepares an annual report for the governing body.

EVALUATION CRITERIA 5.1.1

The community has an approved economic development strategy.

EXPECTATIONS

☐ The economic development strategy is part of the master plan, annual budget or a separate document.

☐ The economic development strategy connects to the master plan and capital improvements plan.

☐ The economic development strategy identifies the economic opportunities and challenges of the community.

☐ The economic development strategy incorporates recommendations for implementation, including goals, actions, timelines and responsible parties.

☐ The economic development strategy coordinates with a regional economic development strategy.

☐ The economic development strategy is accessible online.

EVALUATION CRITERIA 5.1.2

The community annually reviews the economic development strategy.

EXPECTATIONS

☐ Progress on the economic development strategy is reported annually to the governing body.

EVALUATION CRITERIA 5.2.1

The community has developed a marketing strategy.

EXPECTATIONS

☐ The marketing strategy identifies opportunities and outlines specific steps to attract businesses, consumers and real estate development to the community.

☐ The marketing strategy strives to create or strengthen an image for the community.

☐ The marketing strategy identifies approaches to market priority development sites.

☐ The community coordinates marketing efforts with local, regional and state partners.

EVALUATION CRITERIA 5.2.2

The community has an updated, user-friendly municipal website.

EXPECTATIONS

☐ The community's website is easy to navigate.

☐ The community's planning, zoning and development information is grouped together with links to the following:

* Master plan and amendments
* Downtown plan
* Corridor plan
* Capital improvements plan
* Zoning ordinance
* Guide to development
* Online payment option
* Partner organizations
* Board and commission applications
* Property information packages
* Economic development strategy

EVALUATION CRITERIA 6.1.1

The community identifies and prioritizes redevelopment sites.

EXPECTATIONS

☐ The community maintains an updated list of at least three priority sites.

EVALUATION CRITERIA 6.1.2

The community gathers basic information for three priority sites.

EXPECTATIONS

☐ Required information to include:

* Photo of the site and/or rendering
* Desired development outcomes for the site
* Owner contact information
* Community contact information
* Zoning
* Lot size
* Building size
* State equalized value
* Utility contact information
* Utilities on site: Water, sewer, electricity, natural gas
* Wired broadband infrastructure: DSL, cable, fiber

EVALUATION CRITERIA 6.1.3

The community establishes a vision for three priority sites.

EXPECTATIONS

☐ The vision includes desired development outcomes.

☐ Community champions for redevelopment of the site are identified.

☐ High controversy redevelopment sites may require additional public engagement as identified in the public engagement strategy.

☐ The master plan and zoning ordinance have been reviewed for any updates needed to support the site vision.

EVALUATION CRITERIA 6.1.4

The community identifies potential resources and incentives for three priority sites.

EXPECTATIONS

☐ The community identifies negotiable development tools, financial incentives and/or in-kind support, based on the project meeting the community's vision and desired development outcomes. Examples include:

* Density bonuses
* Local grants and loans
* Abatements
* Expedited approval process
* Waived fees
* State incentives

EVALUATION CRITERIA 6.1.5

The community assembles a property information package for at least one priority site.

EXPECTATIONS

☐ The property information package includes all basic information, site vision, financial incentives and the following as applicable:

* Deed restrictions
* Property tax assessment information
* Property survey
* Previous uses
* Existing conditions report
* Known environmental and/or contamination conditions
* Soil conditions
* Demographic data
* Surrounding amenities
* Planned infrastructure improvements as identified in CIP
* GIS information including site location and street maps
* Natural features map
* Traffic studies
* Target market analysis
* Market feasibility studies
* Special zone/district status

EVALUATION CRITERIA 6.1.6

Priority redevelopment sites are actively marketed in accordance with the marketing strategy.

EXPECTATIONS

☐ The property information package(s) are accessible online.