Planning for Resilient Coastal Communities

WELCOME

Port Austin – September 10, 2019

Building Resiliency in Coastal Communities

Funding Provided By
Michigan Coastal Zone Management Program

The **PURPOSE** of this program:

- Study and analyze the potential coastal hazards along the Great Lakes
- Engage citizens, public officials and community stakeholders
- Help inform local land-use policy and future master planning efforts
- Create hazard-ready coastal communities

Coastal Resilience Team

Guy Meadows, PhD
Director, Great Lakes Research Center
Robbins Professor of Sustainable Marine Engineering
Michigan Technological University

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Professor, Urban and Regional Planning
Taubman College of Architecture and Urban Planning
University of Michigan

Matt Cowall, Acting Executive Director
Zach Vega, Community Planner
Land Information Access Association (LIAA)

What is Community Resilience?

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

Urban Sustainability Directors Network

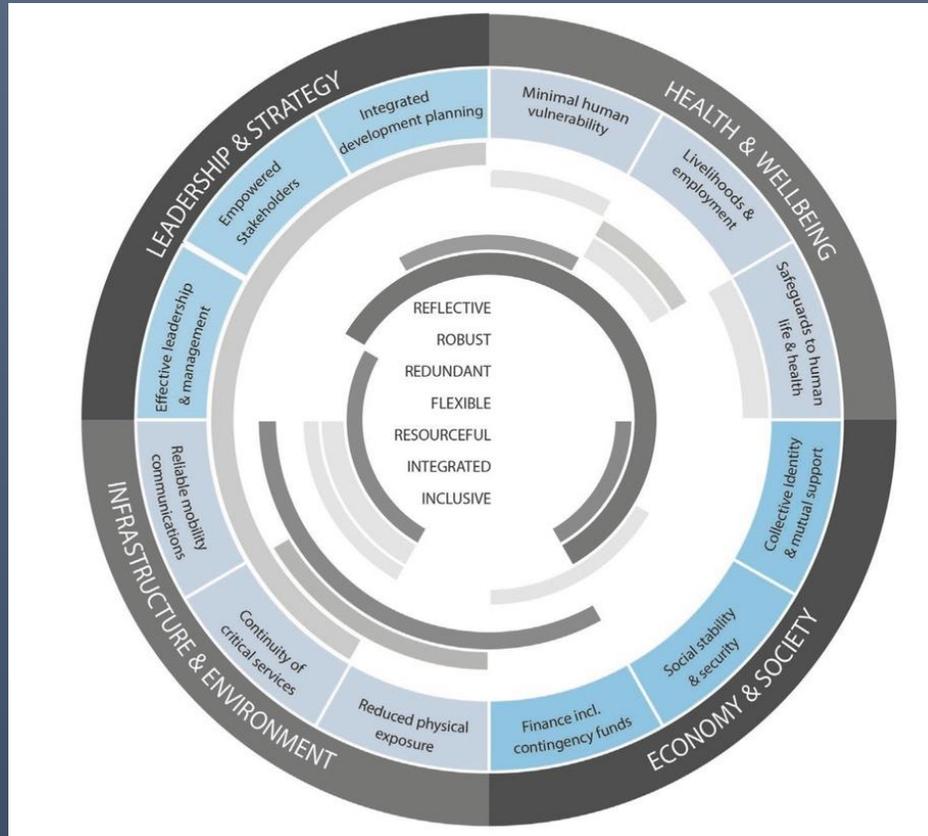# Establishing a Framework for Building Community Resilience

Image: ARUP and the Rockefeller Foundation

Resilient Systems

- **Local Governance and Leadership**
- **Infrastructure (green & gray)**
- **Transportation**
- **Local Food Systems**
- **Housing and Neighborhoods**
- **Natural Resources**
- **Public Health**
- Coastal Processes
- **Energy**
- **Economy and jobs**

A System is an interconnected set of elements that is coherently organized in a way that achieves something.

Thinking in Systems, Donella Meadows (2008)

What is **Coastal** Community Resilience?

Responding To:

1. **Shocks.** Shocks are typically considered single-event disasters, such as a severe storm and flooding (impacts associated with climate change)

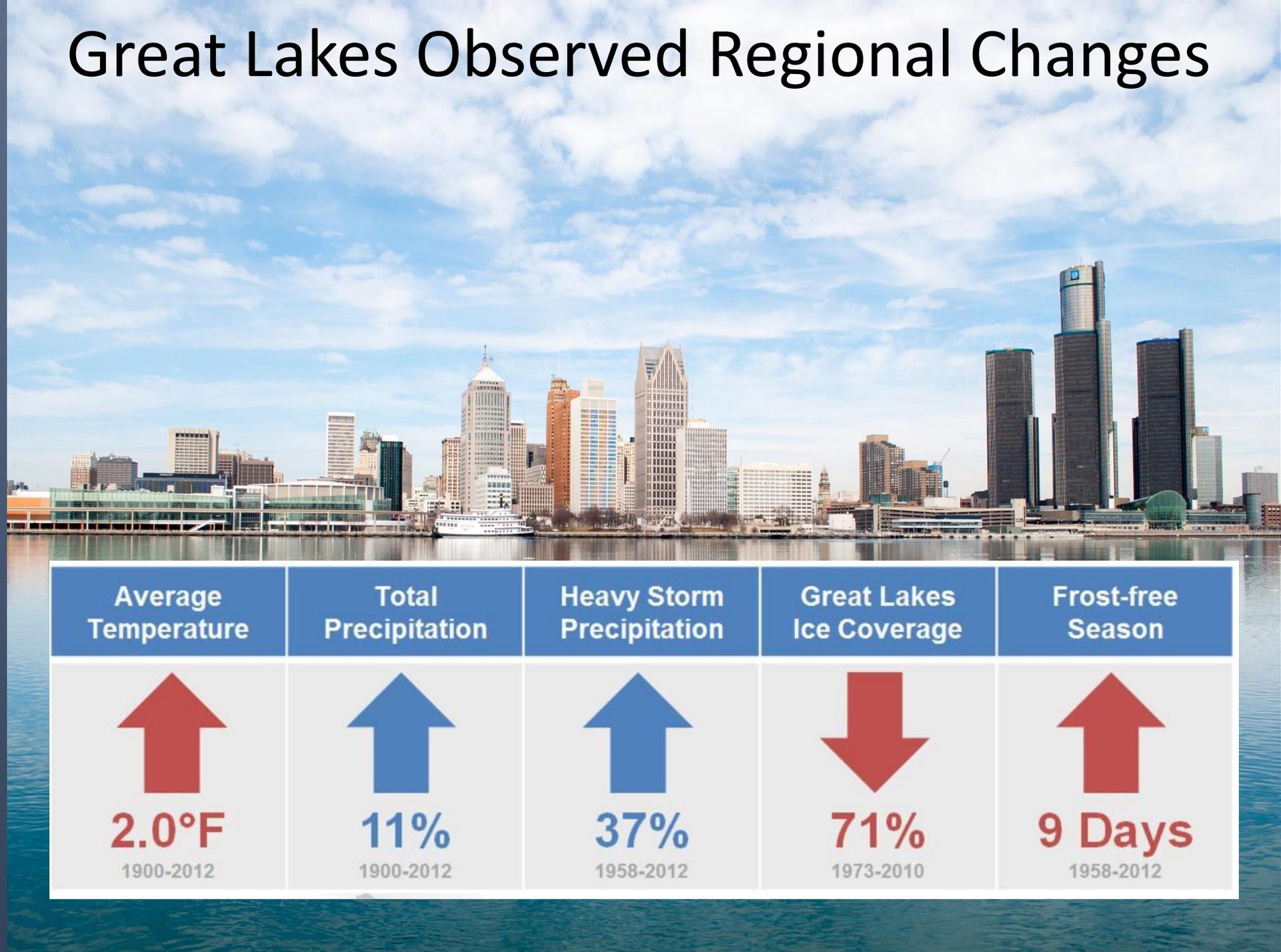Metro Detroit – August 2014

Houghton – June 2018

Photo Credit: Sonya Lampre Detroit Free Press

2. **Stresses.** Stresses are factors that pressure a community on a daily or reoccurring basis, such as fluctuating lake levels

Great Lakes Observed Regional Changes

| Average Temperature	Total Precipitation	Heavy Storm Precipitation	Great Lakes Ice Coverage	Frost-free Season
↑	↑	↑	↓	↑
2.0°F	11%	37%	71%	9 Days
1900-2012	1900-2012	1958-2012	1973-2010	1958-2012

Projected Great Lakes Regional Changes

Average Temperature	Total Precipitation	Heavy Storm Precipitation	Number of Hot Days (T > 90F)	Frost-Free Season
↑ 3.5 – 6.0 º F	↑ 5 - 15 %	↑ 10-60%	↑ 0-90 Days	↑ 30-70 Days
2041- 2070	2041-2070	2041-2070	2041-2070	2070-2099

February 20, 2014 (92.5% Ice Coverage)
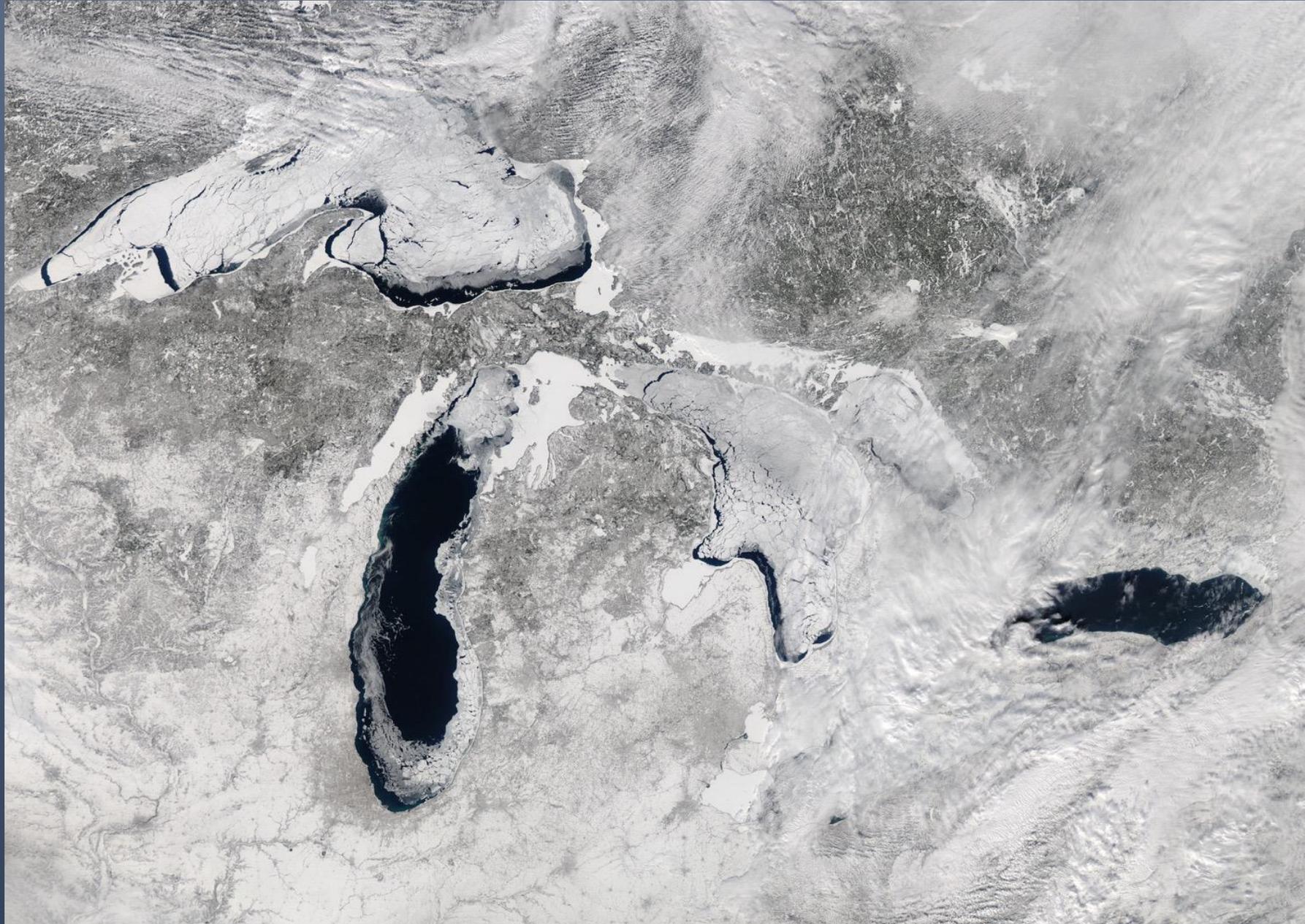
February 19, 2017   **(19.4%)**

Fall Storms of 2017
Lake Superior - Marquette

Meteotsunami – Grand Traverse Bay
18-inch increase in water level in 30 minutes.

Clinch Park, Traverse City

Water Levels Are High Again

Great Lakes water levels surge; some record highs predicted

Leonard N. Fleming, The Detroit News   Published 2:54 p.m. ET May 6, 2019 | Updated 9:01 a.m. ET May 7, 2019

A U.S. Army Corps of Engineers report released Monday says the lakes have been rising steadily for several years and are getting an extra boost as winter's melting snow mingles with recent heavy rainfall. (Photo: John L. Russell, Special to the Detroit News/John L. Russell)

Water levels will surge to record highs in some areas of the Great Lakes over the next

MORE STORIES

Detroit's LED streetlights going dark after a few years
May 7, 2019, 8:03 a.m.

Meatsplainer: How new plant-based burgers

Lake Michigan Beach in 1988 – after high water
Summit Township Park, Mason County

Lake Michigan Beach in 1988
Chikaming Township Park, Berrien County

Lake Michigan Beach in 1988

Ludington - North

Lake Michigan Beach in 1988
Buttersville Park - Ludington South

Ludington (Juanita Street): 1989

Ludington (Juanita Street): 1989

Summit Township Park: 1989 & 2008

Lake Michigan Beach in 1988
Near Michigan/Indiana State Line

Lake Michigan Beach in 2008
Near Michigan/Indiana State Line

Lake Michigan Beach in 2018
Near Michigan/Indiana State Line

Arial Photo: 2008

200 ft

Takeaway: Beaches Change Quickly...And Will Forever Continue to Do So

- Above the water
- On the water
- Below the water

St Joseph, MI

Scientific & Legal Uncertainties

Potential Consequences of No Local Control

St Joseph
03
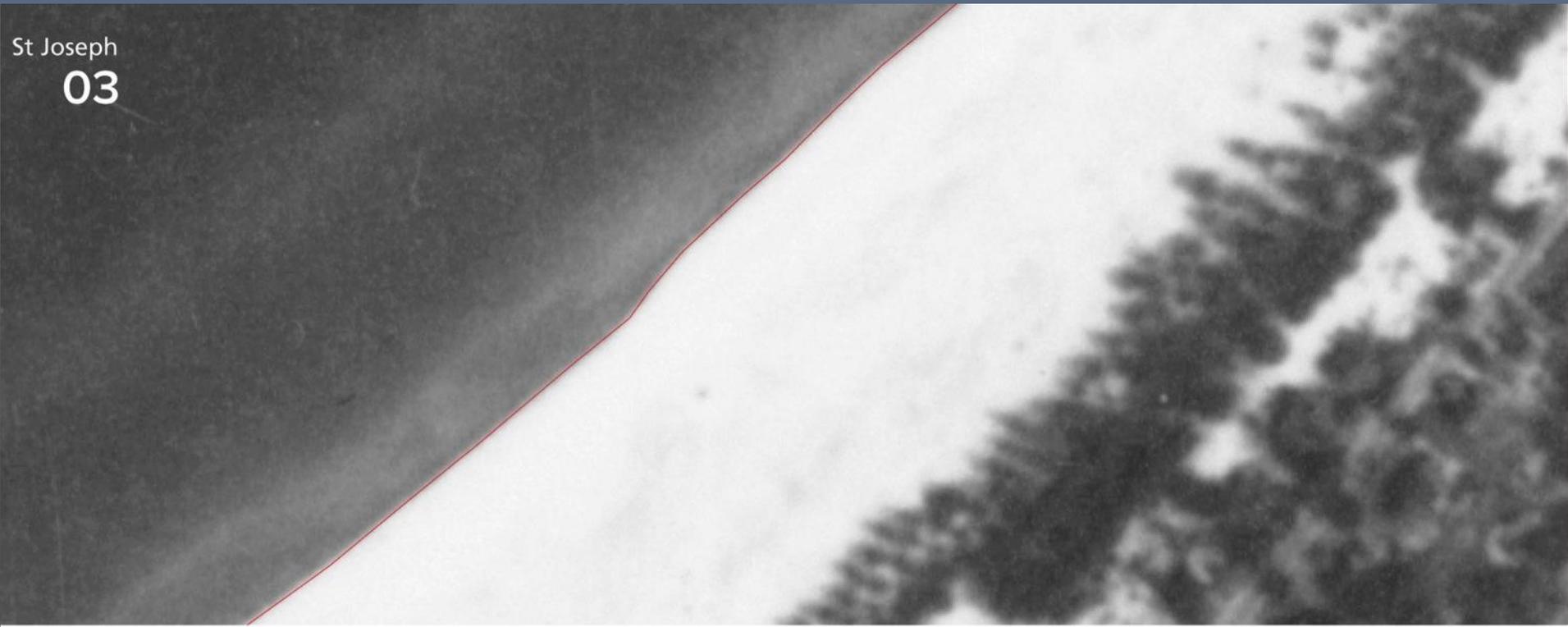
1938
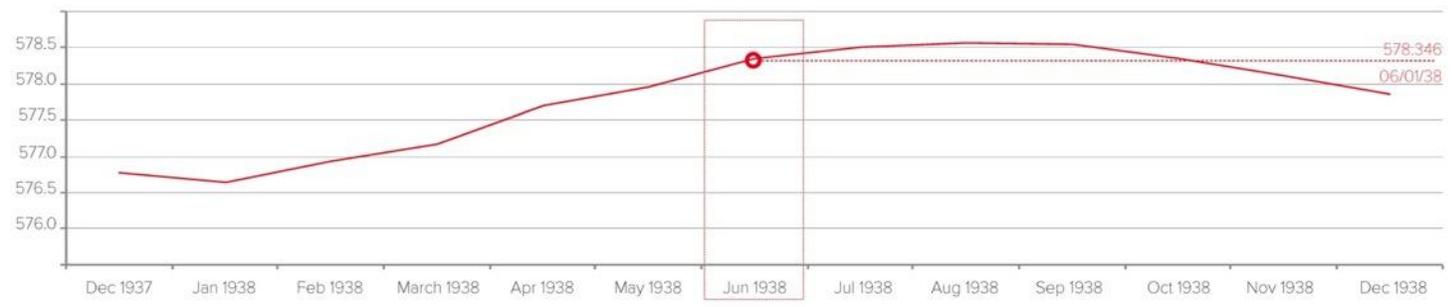
JUNE 1938
AERIAL PHOTO

578.346
06/01/38

GRAPH: LAKE LEVELS
in the 6 months before and
after the survey
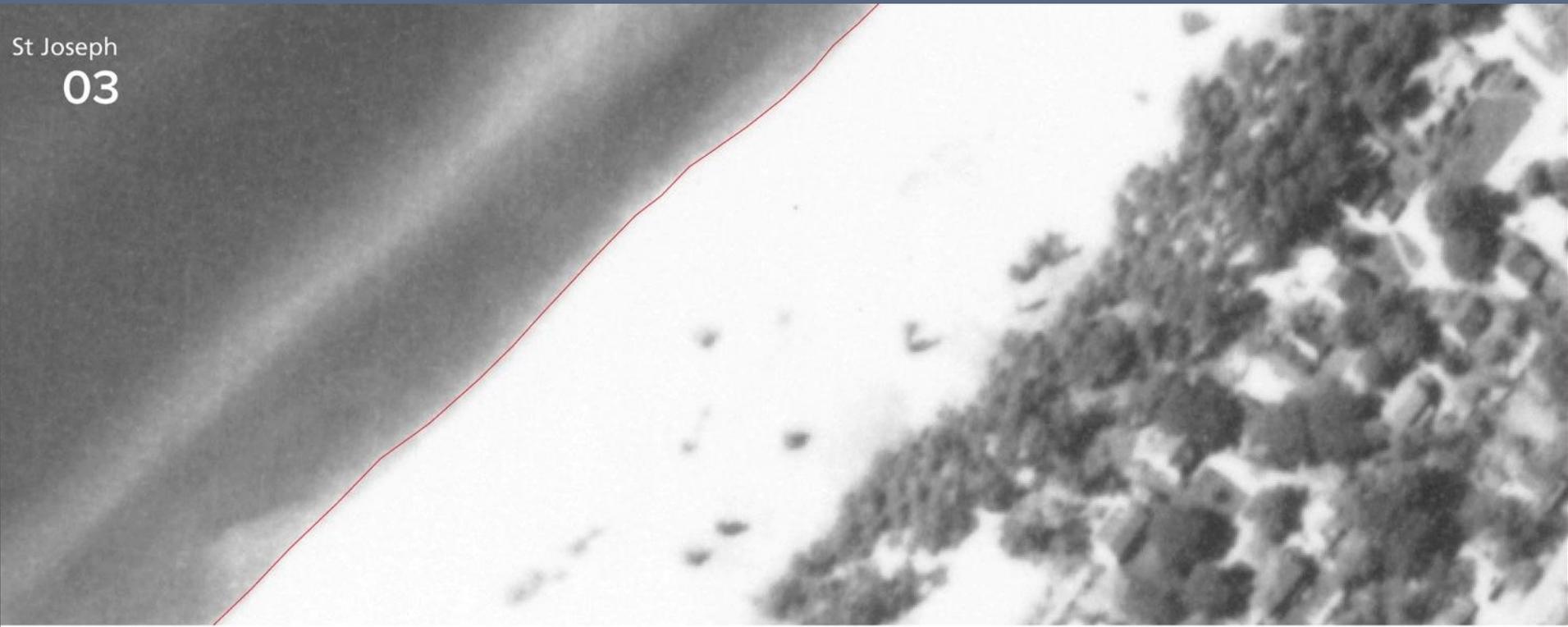
St Joseph
03

1960
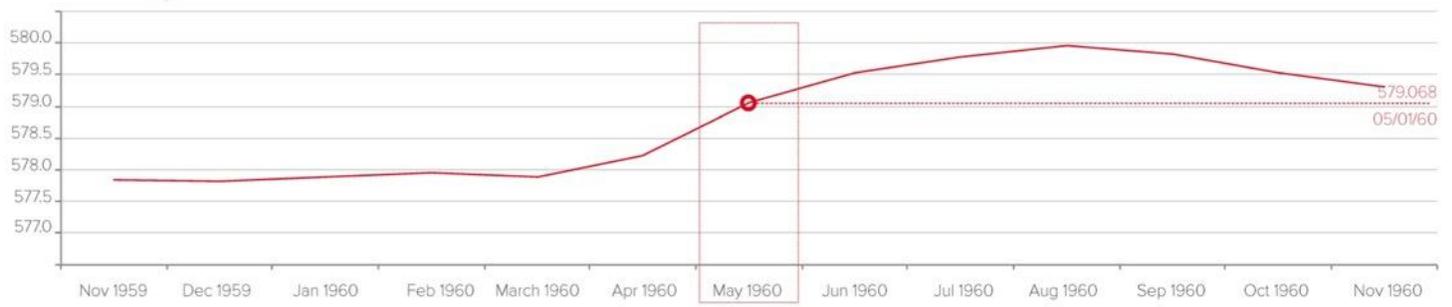
MAY 1960
AERIAL PHOTO

GRAPH: LAKE LEVELS
in the 6 months before and
after the survey

579.068
05/01/60

580.0
579.5
579.0
578.5
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577.0

Nov 1959   Dec 1959   Jan 1960   Feb 1960   March 1960   Apr 1960   May 1960   Jun 1960   Jul 1960   Aug 1960   Sep 1960   Oct 1960   Nov 1960
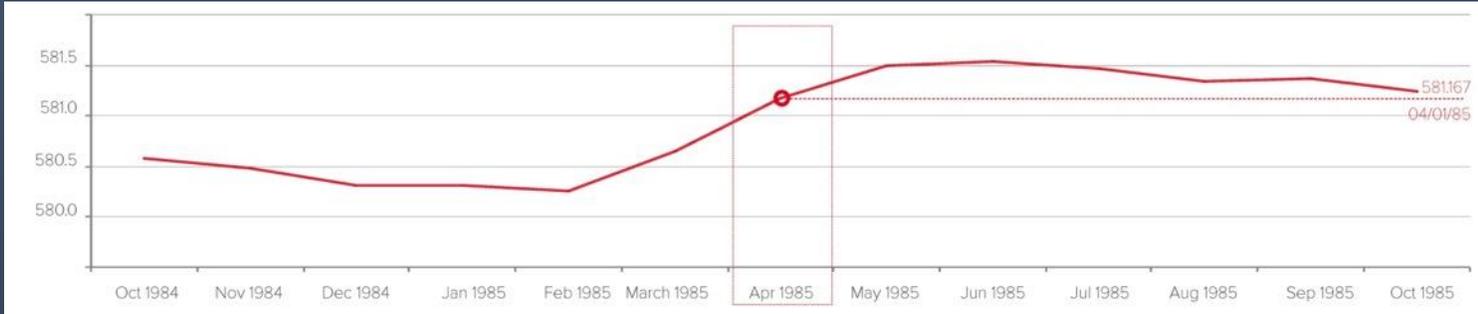
St Joseph
03

1985

APRIL 1985
AERIAL PHOTO

581.167
04/01/85

GRAPH: LAKE LEVELS
in the 6 months before and
after the survey

St Joseph
03

1996
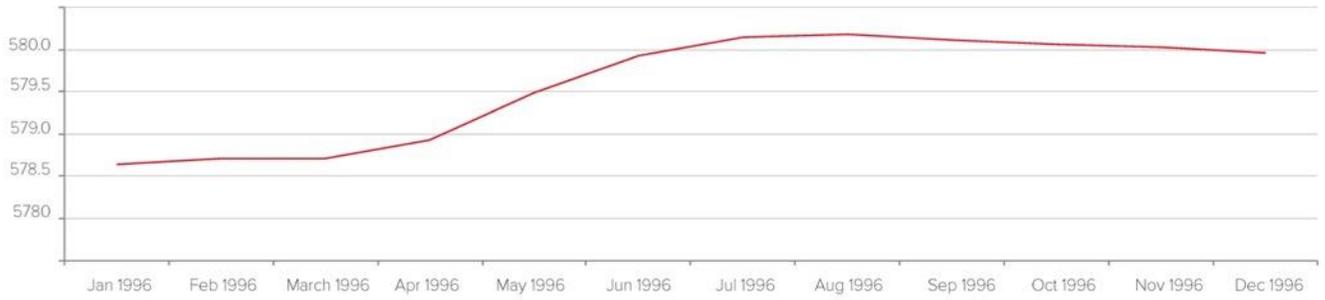
1996 (12530195)
AERIAL PHOTO

GRAPH: LAKE LEVELS
during the year

St Joseph
03
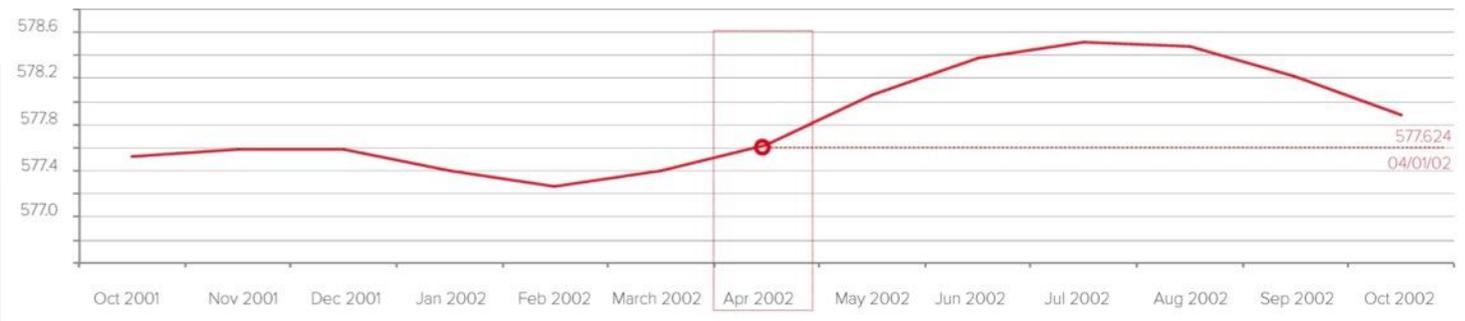
April 2002

APRIL 2002
AERIAL PHOTO

GRAPH: LAKE LEVELS
in the 6 months before and
after the survey

577.624
04/01/02

St Joseph
03

May 2011
water line
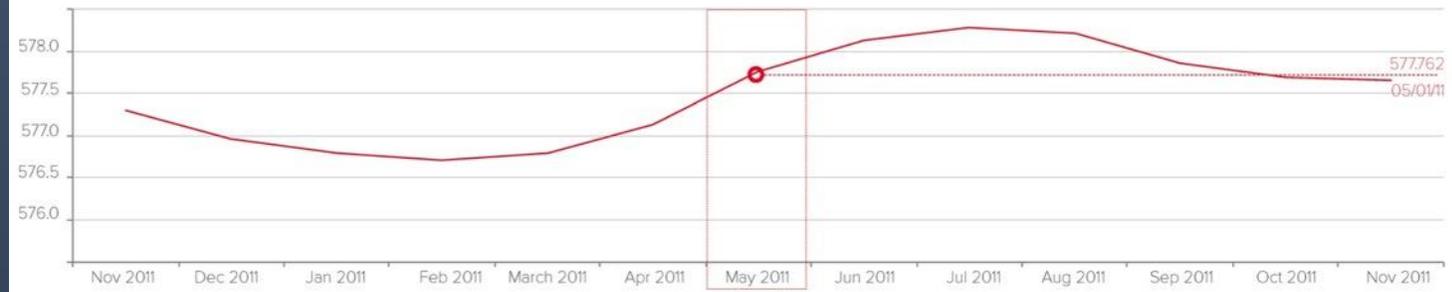
MAY 2011
AERIAL PHOTO

GRAPH: LAKE LEVELS
in the 6 months before and
after the survey

577.762
05/01/11

St Joseph
03

June 1938

future scenario:
projected conditions 1938

St Joseph
03

May 1960

future scenario:
projected conditions 1960

St Joseph
03

April 1985

future scenario:
projected conditions 1985

St Joseph
03

1996

future scenario:
projected conditions 1996

St Joseph
03

April 2002

future scenario:
projected conditions2002

Potential Consequences of No Local Control

Looming Legal / Policy Problem
Shoreline Armoring

Looming Legal / Policy Problem
Shoreline Armoring

The Bluff Will Look the Same from the Beach, but… It's Moving!

Looming Legal / Policy Problem
Shoreline Armoring

Looming Legal / Policy Problem
Shoreline Armoring

Introduction to Scenario-Based Planning
Scenario-Based Planning Framework

Management Options	Climate Futures		
	Lucky	Expected	Perfect Storm
Current Development	Scenario 1A	Scenario 1B	Scenario 1C
Current Zoning Build-Out	Scenario 2A	Scenario 2B	Scenario 2C
BMP Build-Out	Scenario 3A	Scenario 3B	Scenario 3C

1970

1974

1986

1998

2014

Proposed
Setback
Line
1970
1974
1986
1998
Property
Boundaries
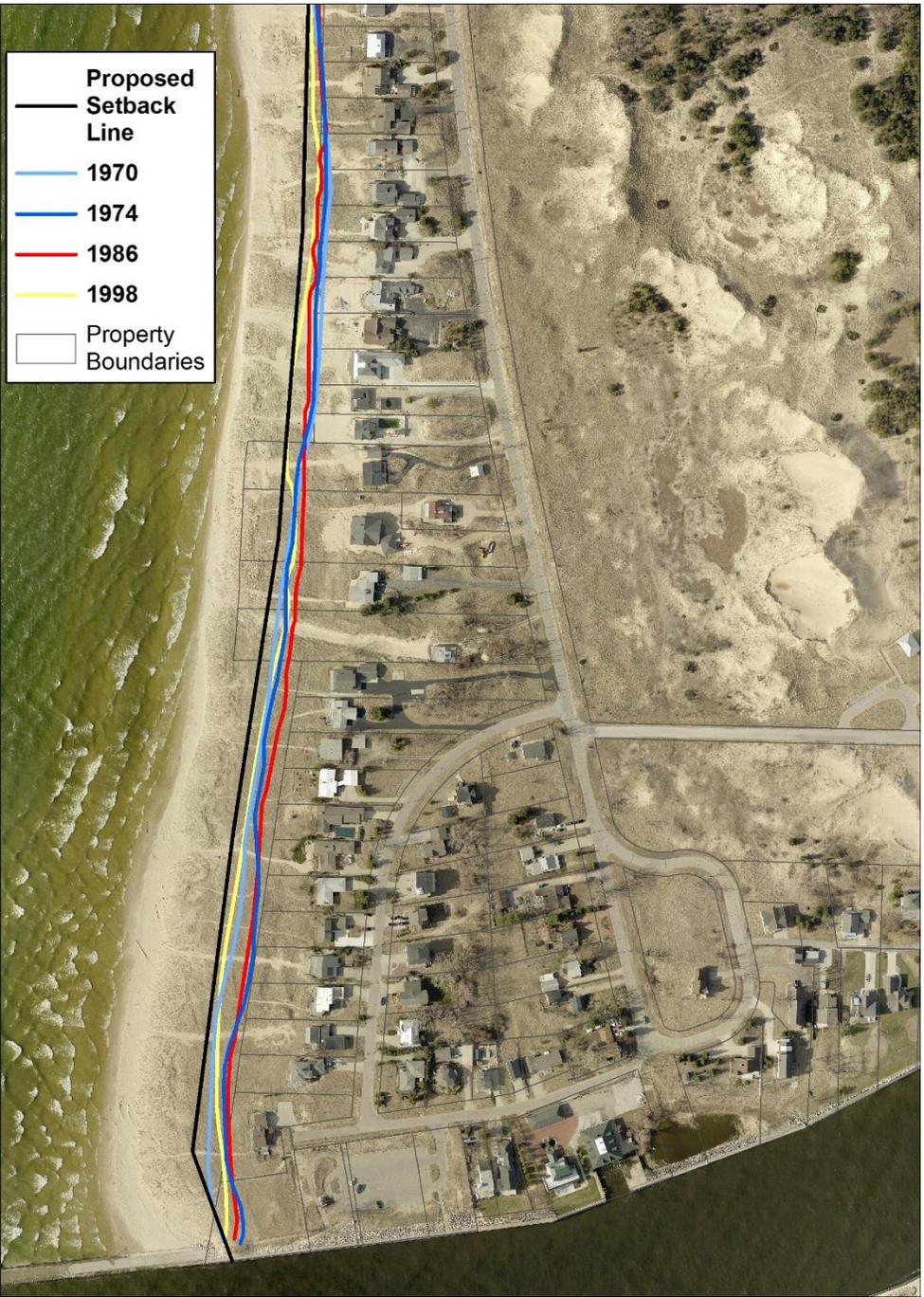
High Risk Erosion Area Represents the 60-year projected recession distance (in feet)
State of Michigan

Port Austin Today

An overview of existing conditions information

Population Trends

Key Observations
1. Port Austin's population has followed a pattern **of steady decline since 2000**.
2. This trend is **similar to population changes for Huron County**, which has lost around 5,000 residents over the past two decades.
3. Port Austin's residents are about **10 years older** than Huron County as a whole and 20 years older than Michigan residents.
4. The population of **residents age 65+** is expected to reach 41.5% in the Township and 41.8% in the Village by **2024**.

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, VILLAGE OF PORT AUSTIN

2024   2019   2010

Age Group	2024	2019	2010
85+	3.8	3.7	2.9
75-84	13.9	11	10.5
65-74	24.1	21.5	16.9
55-64	18.3	22.3	20.6
45-54	9.9	10.7	14.2
35-44	9.3	8.2	8.0
25-34	6.3	7.7	8.1
15-24	5.8	6	7.4
10-14	3.3	3.6	3.6
5-9	2.8	2.9	3.5
0-4	2.4	2.5	4.4

POPULATION BY AGE, PORT AUSTIN TOWNSHIP

2024   2019   2010

Age Group	2024	2019	2010
85+	3.7	3.5	2.7
75-84	13.8	11.1	10.0
65-74	24	21.5	18.0
55-64	18.6	22.3	20.6
45-54	9.9	10.8	16.6
35-44	9.4	8.3	7.8
25-34	6.2	7.6	7.0
15-24	5.7	5.9	7.0
10-14	3.3	3.5	3.7
5-9	2.9	2.9	3.5
0-4	2.4	2.6	3.1

Demographic Profile

Key Observations

- Port Austin is more **racially homogenous** than the State of Michigan as a whole with 96.8% of residents identifying as white, 2.6% as Hispanic and 1.1% as two or more races.

Table 3: 2019 Population by Race/Ethnicity

	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

Education

Key Observations
1. Port Austin has a **lower percentage of residents with a higher education degree** than the State of Michigan (28.3% to 39.4%).
2. Enrollment in North Huron School District has remained at around **450 students** each academic year since 2008, but dropped to **367 for the 2018-19 school year**.
3. A higher percentage of Port Austin residents have a graduate/professional degree compared to Huron County as a whole (8.7% to 5.5%)

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

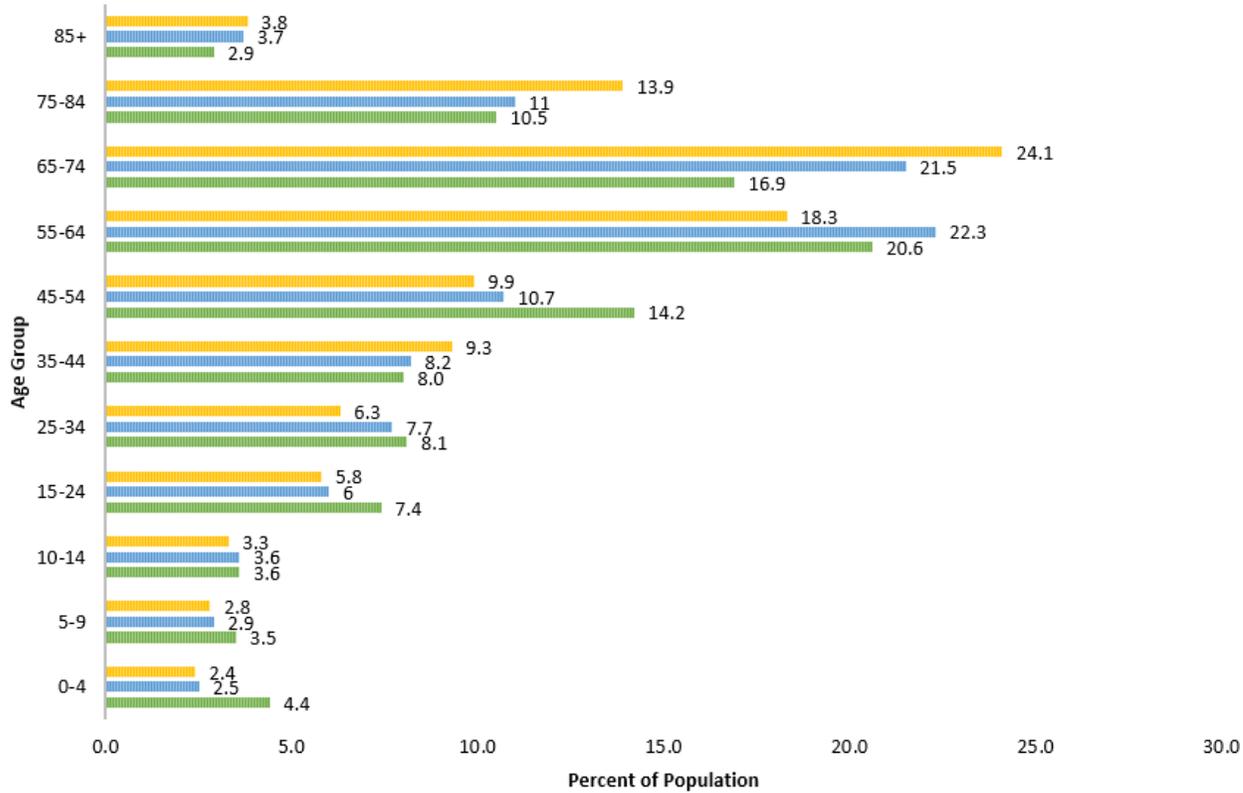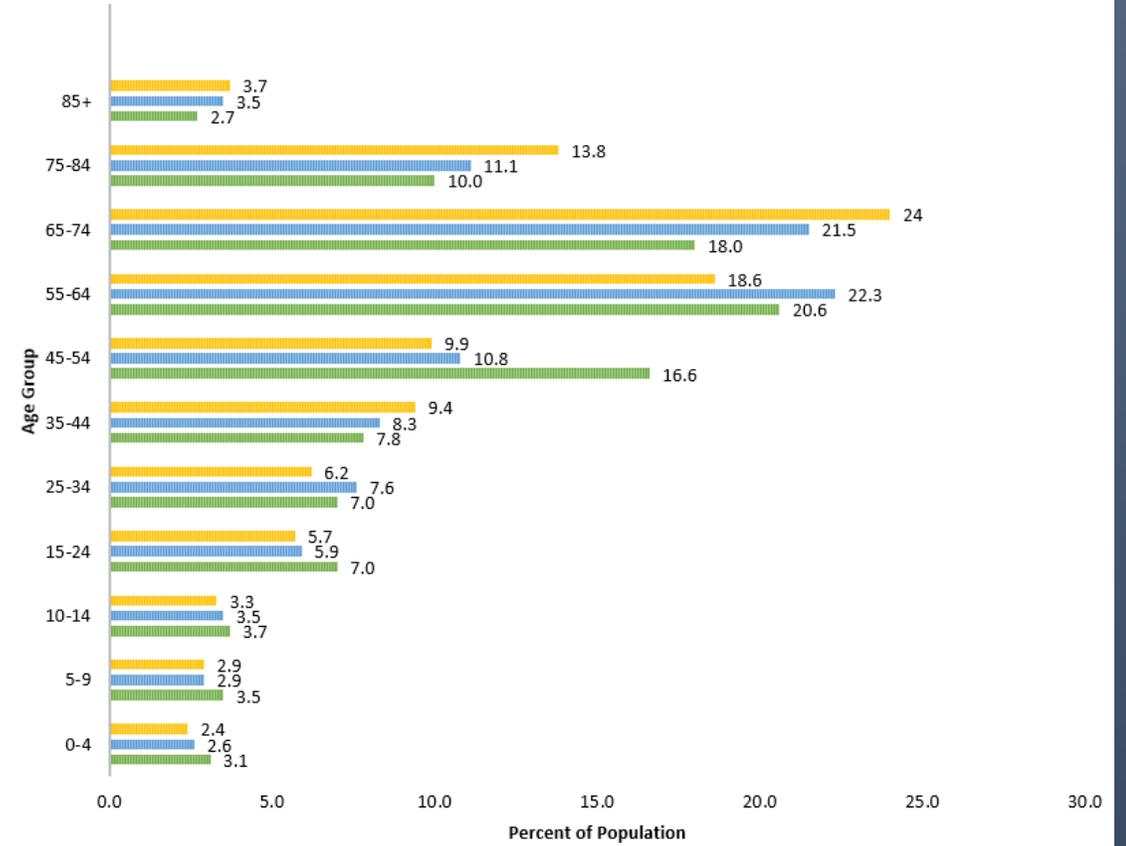Table 5: North Huron School District Enrollment

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

Local Economy

Key Observations
1. Local **employment rates are similar** to those of Huron County and the State of Michigan (94.1%).
2. The top **employment industries** for residents 16+ are as follows: Services (48.6%), manufacturing (13.5%), retail trade (10.4%) and construction (8.9%)
3. Port Austin and Huron County residents are **meeting their retail, food and drink demand outside of the area** in most industry categories
4. Huron County has a **very high concentration** of the following employment categories: Animal production and aquaculture, Crop production, Food manufacturing, Machinery manufacturing and Truck transportation
5. The **manufacturing industry** makes up a significantly smaller share of local employment now than in 2010

Table 6: 2019 Civilian Population 16+ in Labor Force

	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

Table 7: 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

Left Panel

Retail MarketPlace Profile

Port Austin township, MI 2
Port Austin township, MI (2606365700)
Geography: County Subdivision

Summary Demographics

2019 Population	1,385
2019 Households	707
2019 Median Disposable Income	$33,963
2019 Per Capita Income	$28,864

2017 Industry Summary

2017 Industry Summary	NAICS	Demand (Retail Potential)	Supply (Retail Sales)	Retail Gap	Leakage/Surplus Factor	Number of Businesses
Total Retail Trade and Food & Drink	44-45,722	$21,179,535	$11,117,107	$10,062,428	31.2	23
Total Retail Trade	44-45	$19,529,936	$8,792,708	$10,737,228	37.9	16
Total Food & Drink	722	$1,649,599	$2,324,399	-$674,800	-17.0	7

2017 Industry Group

2017 Industry Group	NAICS	Demand (Retail Potential)	Supply (Retail Sales)	Retail Gap	Leakage/Surplus Factor	Number of Businesses
Motor Vehicle & Parts Dealers	441	$4,582,027	$2,487,883	$2,094,144	29.6	2
Automobile Dealers	4411	$3,711,082	$295,931	$3,415,151	85.2	1
Other Motor Vehicle Dealers	4412	$447,389	$2,191,952	-$1,744,563	-66.1	1
Auto Parts, Accessories & Tire Stores	4413	$423,556	$0	$423,556	100.0	0
Furniture & Home Furnishings Stores	442	$525,288	$0	$525,288	100.0	0
Furniture Stores	4421	$311,978	$0	$311,978	100.0	0
Home Furnishings Stores	4422	$213,310	$0	$213,310	100.0	0
Electronics & Appliance Stores	443	$525,441	$0	$525,441	100.0	0
Bldg Materials, Garden Equip. & Supply Stores	444	$1,575,001	$674,863	$900,138	40.0	2
Bldg Material & Supplies Dealers	4441	$1,410,242	$674,863	$735,379	35.3	2
Lawn & Garden Equip & Supply Stores	4442	$164,759	$0	$164,759	100.0	0
Food & Beverage Stores	445	$3,362,662	$2,134,865	$1,227,797	22.3	4
Grocery Stores	4451	$2,966,434	$1,925,673	$1,040,761	21.3	3
Specialty Food Stores	4452	$164,118	$209,192	-$45,074	-12.1	1
Beer, Wine & Liquor Stores	4453	$232,110	$0	$232,110	100.0	0
Health & Personal Care Stores	446,4461	$1,503,890	$232,600	$1,271,290	73.2	1
Gasoline Stations	447,4471	$2,366,937	$1,543,030	$823,907	21.1	1
Clothing & Clothing Accessories Stores	448	$770,985	$540,684	$230,301	17.6	2
Clothing Stores	4481	$523,125	$540,684	-$17,559	-1.7	2
Shoe Stores	4482	$111,516	$0	$111,516	100.0	0
Jewelry, Luggage & Leather Goods Stores	4483	$136,344	$0	$136,344	100.0	0
Sporting Goods, Hobby, Book & Music Stores	451	$446,187	$0	$446,187	100.0	0
Sporting Goods/Hobby/Musical Instr Stores	4511	$381,941	$0	$381,941	100.0	0
Book, Periodical & Music Stores	4512	$64,246	$0	$64,246	100.0	0
General Merchandise Stores	452	$2,714,388	$468,510	$2,245,878	70.6	1
Department Stores Excluding Leased Depts.	4521	$1,782,683	$0	$1,782,683	100.0	0
Other General Merchandise Stores	4529	$931,705	$468,510	$463,195	33.1	1
Miscellaneous Store Retailers	453	$784,616	$710,273	$74,343	5.0	3
Florists	4531	$33,239	$0	$33,239	100.0	0
Office Supplies, Stationery & Gift Stores	4532	$124,855	$122,886	$1,969	0.8	1
Used Merchandise Stores	4533	$94,115	$0	$94,115	100.0	0
Other Miscellaneous Store Retailers	4539	$532,407	$587,387	-$54,980	-4.9	2
Nonstore Retailers	454	$372,514	$0	$372,514	100.0	0
Electronic Shopping & Mail-Order Houses	4541	$260,981	$0	$260,981	100.0	0
Vending Machine Operators	4542	$18,908	$0	$18,908	100.0	0
Direct Selling Establishments	4543	$92,625	$0	$92,625	100.0	0
Food Services & Drinking Places	722	$1,649,599	$2,324,399	-$674,800	-17.0	7
Special Food Services	7223	$49,759	$0	$49,759	100.0	0
Drinking Places - Alcoholic Beverages	7224	$79,336	$846,900	-$767,564	-82.9	3
Restaurants/Other Eating Places	7225	$1,520,504	$1,477,499	$43,005	1.4	4

Data Note: Supply (retail sales) estimates sales to consumers by establishments. Sales to businesses are excluded. Demand (retail potential) estimates the expected amount spent by consumers at retail establishments. Supply and demand estimates are in current dollars. The Leakage/Surplus Factor presents a snapshot of retail opportunity. This is a measure of the relationship between supply and demand that ranges from +100 (total leakage) to -100 (total surplus). A positive value represents 'leakage' of retail opportunity outside the trade area. A negative value represents a surplus of retail sales, a market where customers are drawn in from outside the trade area. The Retail Gap represents the difference between Retail Potential and Retail Sales. Esri uses the North American Industry Classification System (NAICS) to classify businesses by their primary type of economic activity. Retail establishments are classified into 27 industry groups in the Retail Trade sector, as well as four industry groups within the Food Services & Drinking Establishments subsector. For more information on the Retail MarketPlace data, please click the link below to view the Methodology Statement. http://www.esri.com/library/whitepapers/pdfs/esri-data-retail-marketplace.pdf

September 17, 2019

Right Panel

Retail MarketPlace Profile

Huron County, MI
Huron County, MI (26063)
Geography: County

Summary Demographics

2019 Population	31,907
2019 Households	14,042
2019 Median Disposable Income	$36,210
2019 Per Capita Income	$25,778

2017 Industry Summary

2017 Industry Summary	NAICS	Demand (Retail Potential)	Supply (Retail Sales)	Retail Gap	Leakage/Surplus Factor	Number of Businesses
Total Retail Trade and Food & Drink	44-45,722	$431,907,617	$385,868,832	$46,038,785	5.6	312
Total Retail Trade	44-45	$396,786,371	$354,365,087	$42,421,284	5.6	238
Total Food & Drink	722	$35,121,246	$31,503,745	$3,617,501	5.4	74

2017 Industry Group

2017 Industry Group	NAICS	Demand (Retail Potential)	Supply (Retail Sales)	Retail Gap	Leakage/Surplus Factor	Number of Businesses
Motor Vehicle & Parts Dealers	441	$91,670,735	$70,940,460	$20,730,275	12.7	47
Automobile Dealers	4411	$74,392,690	$56,849,679	$17,543,011	13.4	18
Other Motor Vehicle Dealers	4412	$8,763,626	$7,851,634	$911,992	5.5	11
Auto Parts, Accessories & Tire Stores	4413	$8,514,419	$6,239,147	$2,275,272	15.4	18
Furniture & Home Furnishings Stores	442	$11,127,799	$22,282,365	-$11,154,566	-33.4	8
Furniture Stores	4421	$6,698,489	$17,149,163	-$10,450,674	-43.8	5
Home Furnishings Stores	4422	$4,429,310	$5,133,202	-$703,892	-7.4	3
Electronics & Appliance Stores	443	$10,944,926	$4,143,491	$6,801,435	45.1	7
Bldg Materials, Garden Equip. & Supply Stores	444	$30,684,567	$27,762,155	$2,922,412	5.0	35
Bldg Material & Supplies Dealers	4441	$27,565,956	$22,649,297	$4,916,659	9.8	31
Lawn & Garden Equip & Supply Stores	4442	$3,118,611	$5,112,858	-$1,994,247	-24.2	4
Food & Beverage Stores	445	$68,906,908	$48,196,987	$20,709,921	17.7	29
Grocery Stores	4451	$60,759,160	$44,800,091	$15,959,069	15.1	20
Specialty Food Stores	4452	$3,377,080	$3,005,564	$371,516	5.8	8
Beer, Wine & Liquor Stores	4453	$4,770,668	$391,332	$4,379,336	84.8	1
Health & Personal Care Stores	446,4461	$29,766,646	$16,819,529	$12,947,117	27.8	12
Gasoline Stations	447,4471	$47,977,678	$101,096,005	-$53,118,327	-35.6	30
Clothing & Clothing Accessories Stores	448	$16,555,758	$3,601,226	$12,954,532	64.3	11
Clothing Stores	4481	$11,308,846	$2,583,886	$8,724,960	62.8	8
Shoe Stores	4482	$2,446,185	$235,982	$2,210,203	82.4	1
Jewelry, Luggage & Leather Goods Stores	4483	$2,800,727	$781,358	$2,019,369	56.4	2
Sporting Goods, Hobby, Book & Music Stores	451	$9,420,576	$5,564,072	$3,856,504	25.7	11
Sporting Goods/Hobby/Musical Instr Stores	4511	$8,021,692	$5,564,072	$2,457,620	18.1	11
Book, Periodical & Music Stores	4512	$1,398,884	$0	$1,398,884	100.0	0
General Merchandise Stores	452	$56,738,809	$42,108,996	$14,629,813	14.8	14
Department Stores Excluding Leased Depts.	4521	$37,636,111	$34,481,455	$3,154,656	4.4	3
Other General Merchandise Stores	4529	$19,102,698	$7,627,541	$11,475,157	42.9	11
Miscellaneous Store Retailers	453	$15,544,773	$10,616,371	$4,928,402	18.8	33
Florists	4531	$664,066	$614,091	$49,975	3.9	8
Office Supplies, Stationery & Gift Stores	4532	$2,596,557	$3,644,675	-$1,048,118	-16.8	10
Used Merchandise Stores	4533	$2,029,844	$1,480,720	$549,124	15.6	4
Other Miscellaneous Store Retailers	4539	$10,254,306	$4,876,885	$5,377,421	35.5	11
Nonstore Retailers	454	$7,447,196	$1,233,430	$6,213,766	71.6	1
Electronic Shopping & Mail-Order Houses	4541	$5,384,509	$0	$5,384,509	100.0	0
Vending Machine Operators	4542	$392,235	$0	$392,235	100.0	0
Direct Selling Establishments	4543	$1,670,452	$1,233,430	$437,022	15.0	1
Food Services & Drinking Places	722	$35,121,246	$31,503,745	$3,617,501	5.4	74
Special Food Services	7223	$1,097,043	$196,981	$900,062	69.6	2
Drinking Places - Alcoholic Beverages	7224	$1,727,651	$2,541,473	-$813,822	-19.1	10
Restaurants/Other Eating Places	7225	$32,296,552	$28,765,291	$3,531,261	5.8	62

Data Note: Supply (retail sales) estimates sales to consumers by establishments. Sales to businesses are excluded. Demand (retail potential) estimates the expected amount spent by consumers at retail establishments. Supply and demand estimates are in current dollars. The Leakage/Surplus Factor presents a snapshot of retail opportunity. This is a measure of the relationship between supply and demand that ranges from +100 (total leakage) to -100 (total surplus). A positive value represents 'leakage' of retail opportunity outside the trade area. A negative value represents a surplus of retail sales, a market where customers are drawn in from outside the trade area. The Retail Gap represents the difference between Retail Potential and Retail Sales. Esri uses the North American Industry Classification System (NAICS) to classify businesses by their primary type of economic activity. Retail establishments are classified into 27 industry groups in the Retail Trade sector, as well as four industry groups within the Food Services & Drinking Establishments subsector. For more information on the Retail MarketPlace data, please click the link below to view the Methodology Statement. http://www.esri.com/library/whitepapers/pdfs/esri-data-retail-marketplace.pdf

September 18, 2019

NAICS Sectors

NAICS Sector	Annual Establishments	Annual Average Employment	Total Annual Wages	Annual Average Weekly Wage	Annual Wages per Employee	Annual Average Employment Location Quotient	Total Annual Wages Location Quotient
NAICS 31-33 Manufacturing	57	1,866	$86,756,748	$894	$46,502	1.93	1.9
NAICS 99 Unclassified	11	18	513,826	559	29,084	1.84	1.33
NAICS 22 Utilities	3	58	6,556,594	2,187	113,698	1.38	2.05
NAICS 52 Finance and insurance	57	470	22,715,148	930	48,364	1.04	0.66
NAICS 44-45 Retail trade	120	1,206	32,932,434	525	27,298	1	1.22
NAICS 23 Construction	121	489	20,067,638	790	41,066	0.89	0.84
NAICS 81 Other services, except public administration	87	303	9,423,551	598	31,101	0.88	1.03
NAICS 48-49 Transportation and warehousing	35	345	18,362,343	1,023	53,173	0.87	1.26
NAICS 51 Information	11	175	12,098,264	1,326	68,969	0.81	0.72
NAICS 42 Wholesale trade	32	326	15,425,700	909	47,294	0.73	0.64
NAICS 72 Accommodation and food services	86	716	8,740,368	235	12,200	0.68	0.56
NAICS 71 Arts, entertainment, and recreation	21	104	1,689,945	313	16,289	0.58	0.35
NAICS 56 Administrative and waste services	30	372	13,190,128	682	35,449	0.53	0.66
NAICS 53 Real estate and rental and leasing	7	28	535,165	364	18,944	0.16	0.08

NAICS Sub-Sector	Annual Establishments	Annual Average Employment	Total Annual Wages	Annual Average Weekly Wage	Annual Wages per Employee	Annual Average Employment Location Quotient	Total Annual Wages Location Quotient
NAICS 112 Animal production and aquaculture	32	674	$22,480,038	$641	$33,353	33.42	41.13
NAICS 111 Crop production	33	185	6,521,191	678	35,28_	4.41	6.6
NAICS 311 Food manufacturing	6	412	21,867,595	1,020	53,0_4	3.36	5.3
NAICS 333 Machinery manufacturing	13	215	8,925,525	800	41,_95	2.54	_.12
NAICS 484 Truck transportation	31	279	14,688,974	1,014	52,712	2.45	3.51
NAICS 115 Agriculture and forestry support activities	10	70	2,632,985	722	3_,525	2.37	3._
NAICS 622 Hospitals	11	916	45,840,261	962	5_,039	2.37	2.6_
NAICS 332 Fabricated metal product manufacturing	14	243	9,812,838	776	_0,354	2.18	2._
NAICS 517 Telecommunications	4	110	7,319,350	1,277	66,389	1.92	2.0_
NAICS 999 Unclassified	11	18	513,826	559	29,084	1.84	1.33
NAICS 522 Credit intermediation and related activities	22	349	17,534,000	966	50,217	1.74	1.48
NAICS 811 Repair and maintenance	39	151	7,053,520	898	46,712	1.5	2.22
NAICS 452 General merchandise stores	12	334	8,831,132	509	26,447	1.41	2.16
NAICS 221 Utilities	3	58	6,556,594	2,187	113,698	1.38	2.05
NAICS 441 Motor vehicle and parts dealers	22	200	7,580,574	728	37,871	1.3	1.41
NAICS 446 Health and personal care stores	8	105	4,490,777	821	42,668	1.3	2.0_
NAICS 447 Gasoline stations	12	85	1,234,628	281	1_,611	1.2	1.1_
NAICS 445 Food and beverage stores	21	265	4,371,717	317	1_,507	1.13	1.0_
NAICS 444 Building material and garden supply stores	16	112	3,759,271	644	3_,490	1.12	1._
NAICS 236 Construction of buildings	42	132	5,545,794	807	4_,987	1.07	0.95
NAICS 623 Nursing and residential care facilities	9	238	7,026,858	569	29,_87	0.93	_.23
NAICS 238 Specialty trade contractors	70	319	12,928,425	779	40,5_7	0.91	0.92
NAICS 814 Private households	11	20	223,772	214	11,14_	0.9	0.55

Shift-Share analysis
Not much has changed since 2010 except in manufacturing

Huron County Employment Growth, 2010-2017

Major Industry	Employment 2010 Level	Employment 2010 Share[1]	Employment 2017 Level	Employment 2017 Share[1]	Actual Growth Percent	Actual Growth Net	Standardized Growth[2] Percent	Standardized Growth[2] Net	Standardized Employment[3] 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**

1 Share: The percentage share of total employment by industry.

2 Standardized Growth: at the same rate as its counterpart at the national level had each industry grown.

3 Standardized Employment, 2017: The 2017 level of employment in each industry had it grown at the same rate as its counterparts at the national level since 2010.

* The "Other/Suppressed Industries" category portrayed in this table represents a combined total of those industries for which data were unavailable due to confidentiality restrictions. Those industries that are combined include: Forestry, Fishing, and Related Activities; Mining; Utilities; Transportation and Warehousing; Professional, Scientific, and Technical Services; Management of Companies and Enterprises; Educational Services; Health Care and Social Assistance

Note: Percent growth figures may not add due to rounding by a factor of ± 0.01%

Source: Calculations by the Michigan Regional Economic Analysis Project (MI-REAP)

with data provided by the U.S. Department of Commerce, Bureau of Economic Analysis

November 2018

SHIFTSHAREA

Households

Key Observations

1. Median household **income is expected to rise** by around $4,000/yr by 2024
2. The rate of individuals living below the **poverty line** in the Village is 25.8% compared to 15.2% in the Township
3. The average household size has consistently decreased since 2000
4. **Compared to the State of Michigan**, Port Austin Township has more nonfamily households, more householders living alone and a higher percentage of householders age 65+
5. **Median home values are expected to increase** over the next 5 years

Table 8: 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

Population Below Poverty Level, 2017 Estimates

	Village of Port Austin	Port Austin Township	Huron County	State of Michigan
Below poverty level	140	179	4,266	1,510,841
Above poverty level	542	1,177	27,000	8,187,280

Above poverty level   Below poverty level

Table 9: 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.

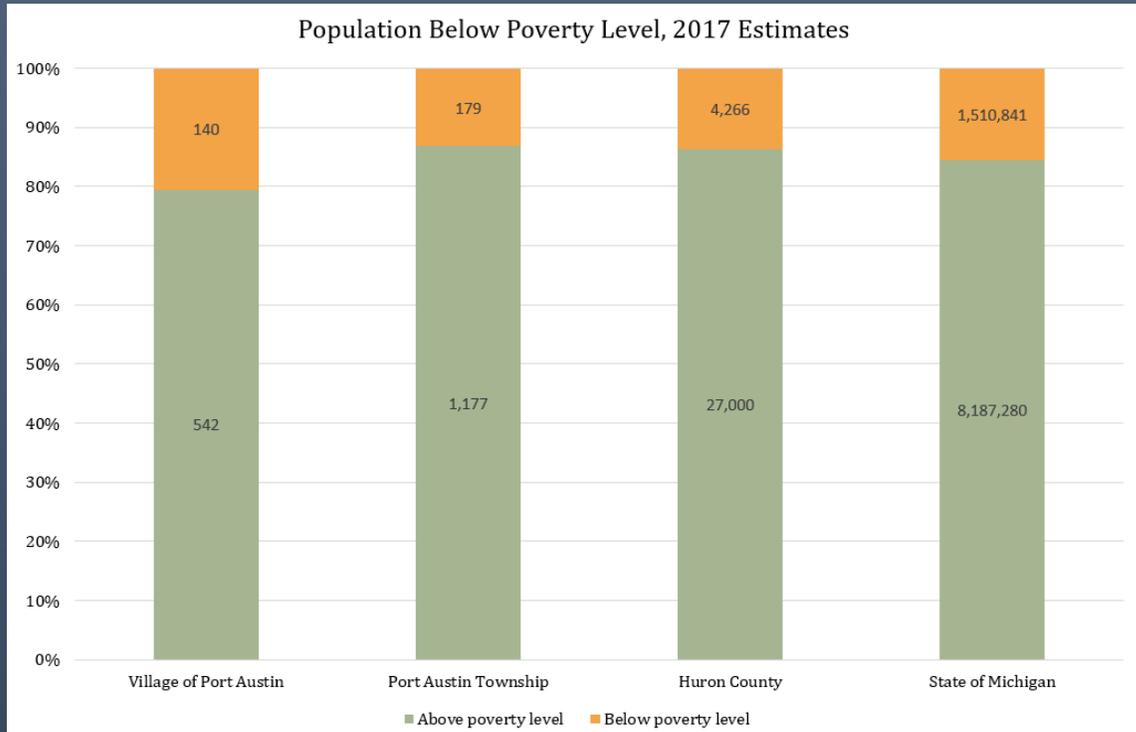Table 10: Household Characteristics of Occupied Housing Units, 2017

|	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 11: 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.

Village of Port Austin
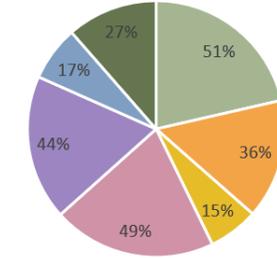
51%, 36%, 15%, 49%, 44%, 17%, 27%

- Family Households
- Married-couple Family
- Other Family
- Nonfamily Households
- Householder Living Alone
- Household under 65 years
- Householder 65 years and over

Port Austin Township
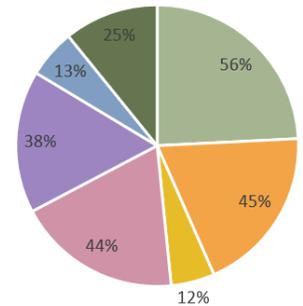
56%, 45%, 12%, 44%, 38%, 13%, 25%

- Family Households
- Married-couple Family
- Other Family
- Nonfamily Households
- Householder Living Alone
- Household under 65 years
- Householder 65 years and over

Households (cont.)

Key Observations
1. The majority of Port Austin's housing options are **single-family detached** units (64.9% in Village, 75.6% in Township)
2. Port Austin has a **higher percent of mobile homes** as housing units (9.1%) than Huron County and the State of Michigan

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

Households (cont.)

Key Observations
1. Port Austin has a slightly **younger housing stock** compared to the County and State
2. 30% of the housing stock was built prior to 1960
3. Around **half of the housing units** in Port Austin are considered **vacant** (54.1% in the Village and 59.7%in the Township). This number is expected to rise. Roughly ¾ of these are **seasonal housing units**.

Table 13: 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

Table 14: Occupied Housing Units by Year Householder Moved Into Unit

	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

Table 15: 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 data into 2010 geography.

Table 16: 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.

Table 17: 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 18: 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

Travel

Key Observations
1. More people **walk to work** in Port Austin than in Huron County or the State of Michigan
2. Port Austin has a higher percentage of people who need **less than 10 minutes to get to work** than in Huron County and the State of Michigan

Port Austin's Future

Strengths
Weaknesses
Opportunities
Threats

Categories – 20 minutes each
- Coastal Resilience
- Economic Development
- Housing
- Community Amenities & Services
- Land Use
- Transportation