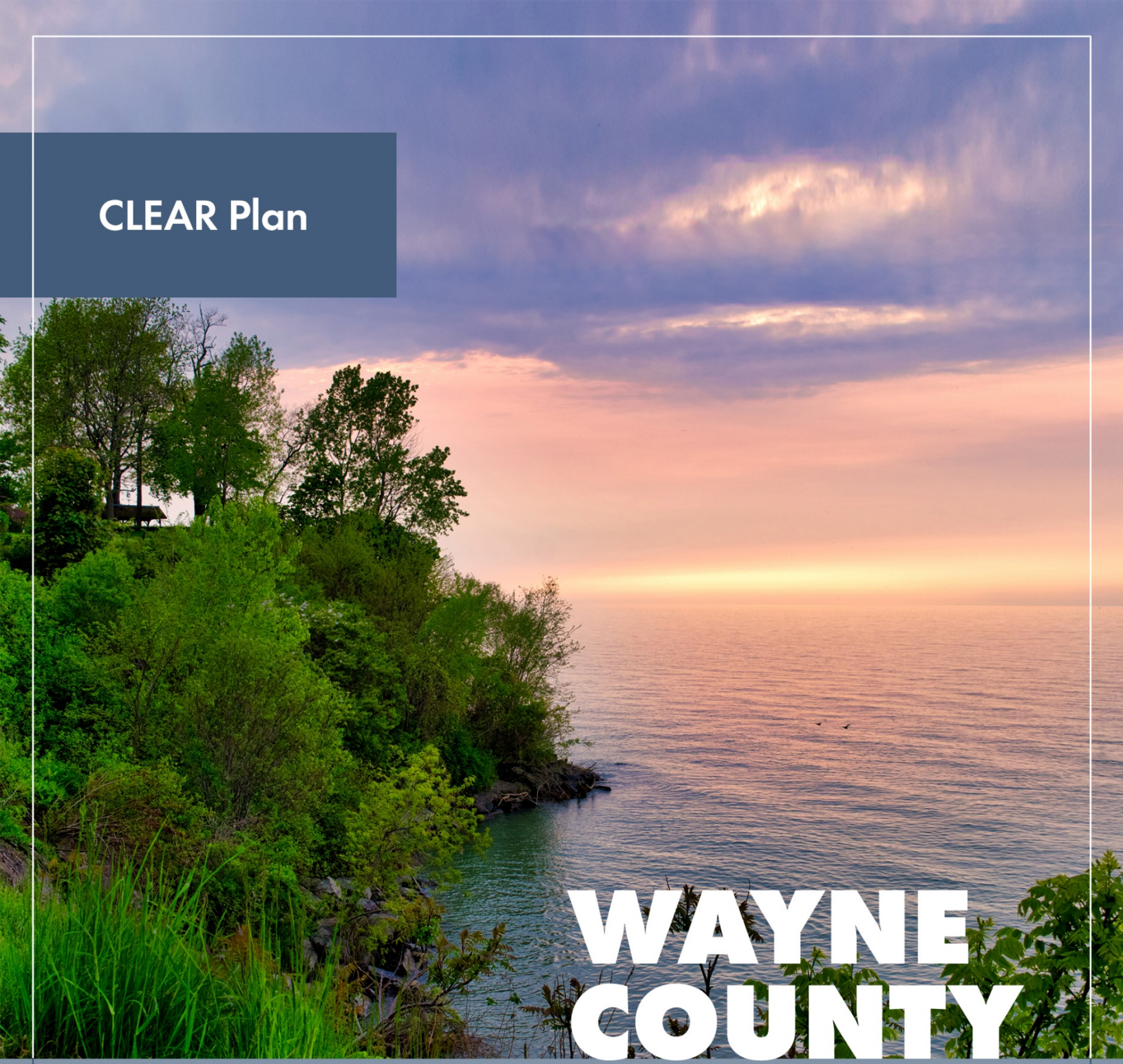


CLEAR Plan

WAYNE COUNTY

Coastal Lakeshore Economy and Resiliency (CLEAR) Initiative

December 2021

CONTENTS

CONTENTS

CLEAR Plan
Wayne County

01

Acknowledgements

1.0 ACKNOWLEDGEMENTS

New York State has led several economic recovery and resilience efforts to assist municipalities and others in addressing the immediate impacts of disaster events as well as helping with longer-term resiliency planning along the Lake Ontario shoreline. The New York State Department of State (NYSDOS) is leading this Coastal Lakeshore Economy and Resiliency (CLEAR) Initiative with the primary purpose of developing strategic plans for shoreline counties such as Wayne, to reduce future losses and enhance long-term resiliency to changing lake conditions. The CLEAR initiative was paid for using funds from the New York State Environmental Protection fund in partnership with the NYSDOS and Empire State Development (ESD).

The Wayne County CLEAR planning process was guided by a diverse group to support capacity building and foster both horizonal and vertical collaboration:

The Steering Committee was comprised of elected officials, local community leaders in the public and private sector, and regional entities who guided development of the CLEAR Plan for Wayne County. The contributions and leadership of Steering Committee members helped to create an innovative yet feasible CLEAR Plan, grounded in evidence-based scenario planning and inspired by the vision and assets of the local community. The Steering Committee was supported by partners from state agencies and regional organizations, as well as the Ramboll-Elan consultant team who facilitated the planning process.

Wayne County Steering Committee Members	
Lynn Chatfield, *Supervisor*	Town of Wolcott
Phillip Eygnor, *Supervisor*	Town of Huron
Kristy Fowler, *Manager*	Pier 53 Fowler Marinas and Restaurant
Lindsey Gerstenslager, *District Manager*	Wayne County Soil & Water Conservation District (SWCD)
Jason Haremza, *Senior Planner*	Genesee/Finger Lakes Regional Planning Council (G/FLRPC)
Tom Hart	Eastern Lake Ontario Dunes Coalition
David Klein, *Senior Field Representative*	The Nature Conservancy
Amanda Krenning-Muoio, *Senior Field Advisor*	NY Farm Bureau, Region 2
David McDowell, *Mayor*	Village of Sodus Point
Brian Pincelli, *Director*	Wayne County Planning Department
Frank Robusto, *Supervisor*	Town of Ontario
Emily Royce, *Planner*	Genesee/Finger Lakes Regional Planning Council (G/FLRPC)
Richard Sutherland, *Planner*	Genesee/Finger Lakes Regional Planning Council (G/FLRPC)
Partners	
New York State Department of State (NYSDOS)	
New York State Department of Environmental Conservation (NYSDEC)	
New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP)	
New York Sea Grant (NYSG)	

CLEAR Plan prepared by:

RAMBOLL Bright ideas. Sustainable change.

ELAN Planning & Design LLC Certified NYS WBE

02

Executive Summary

2.0 EXECUTIVE SUMMARY

2.1 Overview

Shoreline communities on Lake Ontario, the lower Niagara River, and the upper St. Lawrence River are being impacted by changing lake conditions including historic high- and low-water events, flooding, and erosion. These lake conditions have resulted in significant losses for the regional economy including damage to homes, businesses, local infrastructure systems, and natural resources in Wayne County. The NYSDOS CLEAR Initiative aims to help shoreline communities reduce future losses through the development of strategic plans to enhance long-term resiliency.

The Wayne County CLEAR Plan (the Plan) identifies potential actions local governments, organizations, and leaders can take to protect their communities and create new, more resilient pathways for growth. Included is a summary of the community-driven process that supported the development of the Plan with a description of the region, community risks and assets, and the community vision. The Plan is intended to serve as a guidebook, as shown in the adjacent graphic, with ideas and resources that local decision-makers can explore and utilize to build stronger and more resilient communities.

CLEAR Plans were also developed for Niagara and Orleans Counties, Monroe County, Cayuga and Oswego Counties, and Jefferson and St. Lawrence Counties, and may be used to coordinate actions across regions. The CLEAR initiative set forth goals, shown on the following page, that were consistent across all five regions.

Resiliency Planning – CLEAR Process Steps

01 Establish a participatory planning process
- Form local steering committee
- Enlist supporting partners
- Create public engagement plan and schedule

02 Understand the community context
- Inventory existing conditions
- Collect hazard data (risk map)
- Inventory community assets

03 Conduct a risk assessment and consider:
- Hazard magnitude and probability
- Asset exposure and vulnerability
- Social vulnerability and community priorities

04 Define resilience goals
- Identify needs and opportunities
- Create a resilience vision statement
- Develop resilience scenario statements

05 Detail resilience actions
- Develop resilience strategies
- Describe recommended actions
- Identify potential demonstration projects

06 Support implementation
- Complete an implementation matrix

CLEAR INITIATIVE GOALS

01 Provide guidance for vibrant communities to thrive in changing and variable lake levels and conditions

02 Connect the coastal communities through resilient innovative strategies and adaptive uses

03 Develop and implement resilience strategies for shoreline property owners and managers

04 Create coastal development pattern goals that provide continued opportunities for existing and new recreation and employment

05 Bring together local governments, organizations, and leaders who are empowered to protect their communities and create new, more resilient paths for community growth

2.2 Community Engagement

The Plan was developed through a participatory process guided by a Steering Committee comprised of municipal elected officials, regional organizations, and community leaders. The committee was supported by CLEAR partners from the NYDOS and other relevant state agencies, regional partners, as well as the Ramboll-Elan consultant team who facilitated the process.

Community input was collected throughout the development of the Plan including on existing conditions, community assets and risks, local needs and opportunities, the CLEAR vision, and potential resilience actions. Public outreach was guided by a public engagement plan developed in partnership with the Steering Committee to reach a broad regional audience. A variety of innovative remote forums were used to engage the community through multiple channels which allowed participation by the community at their convenience during the pandemic.

Community Engagement Activities

1 "Look and Listen" tour of community assets with the Steering Committee

7 Steering Committee meetings to develop the CLEAR Plan

1 public survey on observed impacts, vulnerabilities, and key community assets

3 interactive public webinars with live discussion and polling

1 stop shop website for information, comments, event links, and recordings

155 subscribers to the CLEAR mailing list

2.3 Summary of Regional Conditions

The Wayne County CLEAR study area encompasses areas of the Lake Ontario shoreline considered to have a moderate, high, or extreme level of risk based on their location in relation to coastal and inland flood zones. Moderate-risk areas are defined as two feet above the FEMA base flood elevation; high-risk areas are at the FEMA base flood elevation; and extreme-risk areas are two feet above the International Great Lakes Datum (IGLD) long-term average lake level for Lake Ontario. The study area includes an approximate 53-mile stretch of Lake Ontario shoreline and open-bay frontage as well as the six coastal embayments of Pultneyville Harbor, Maxwell Bay, Sodus Bay, East Bay, Port Bay, and Blind Sodus Bay, which together have over 39 miles of shoreline. In total, the study area contains 120 square miles of land area and 15 square miles of lake area, including the Village of Sodus Point and portions of the five shoreline towns of Ontario, Williamson (including the hamlet of Pultneyville), Sodus, Huron, and Wolcott.

The region is largely rural, characterized by undeveloped land, recreational areas, coastal communities, orchards, farm fields, single family homes, and limited industrialization. Land use is dominated by residential and agricultural uses which contribute to the year-round tax base. Major economic drivers in the study area include manufacturing, retail businesses, fruit crop production, and tourism. The County ranks especially high in the production of sour cherries, pears, and is the third largest apple producing county in the nation. The region's orchards benefit from a favorable micro-climate that runs along the ridge of the shoreline believed to be the former edge of Lake Ontario.

The region's natural resources also contribute to its strong tourism sector. The shoreline areas are a hub of seasonal activity and tourism in the warmer months, with many communities and economic activities centered around water-based assets and recreation. A diversity of natural, recreational, and waterfront resources attract seasonal residents and tourists including parks, campgrounds, marinas, and fishing sites. The Lake Shore Marshes Wildlife Management Area (WMA) offers undeveloped areas for fishing, hunting, trapping, hiking, birdwatching, and waterfront access. Meanwhile, the shorelines of the major bays and harbors, except for wetland areas, are largely developed with businesses, recreational amenities, houses, and second homes. Many tourist destinations, businesses, natural or cultural resources, and critical facilities are located directly on the shorelines of the Lake, bays, and tributaries in the "extreme" flooding risk zone. The extreme, high, and moderate-risk zones are shown in Figure 2.1 and are based on NYSDOS risk mapping. As a result of the abundance of businesses, homes, and tourist attractions being in the higher flood-risk zones, economic activity in the region is closely tied to Lake Ontario water levels and highly exposed to shoreline hazards.

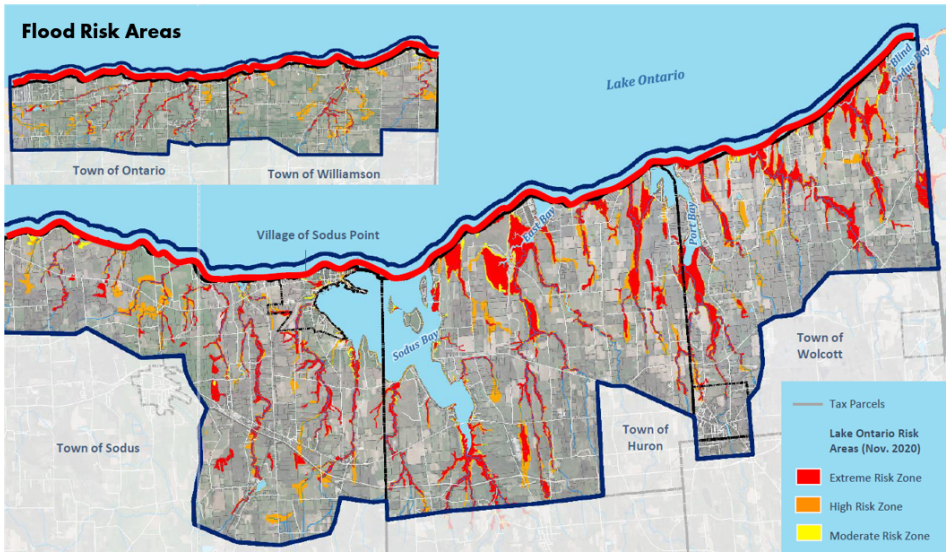


Figure 2.1, *Source: NYSDOS*

Over the years, development patterns along the Lake not only increased density but also installed infrastructure for year-round use (e.g., primary residences) in vulnerable areas. Communities are especially at risk of flooding for prolonged periods of time, stretching public resources and affecting local economies, with sustained winds exacerbating the flood risk and shoreline erosion. Socially vulnerable populations in the Towns of Sodus, Williamson, Huron, and Wolcott may be especially at risk. As climate science and regional projections for future long-term trends continue to evolve, the variability is expected to include increased seasonal precipitation and changes in ice cover that could heighten periods of high water and low water moving forward.

Long-term resiliency planning is critically needed to avoid future losses and enable the Wayne region to thrive under changing lake conditions. Flooding causes more property damage in Wayne County than any other natural disaster, as shown by repetitive National Flood Insurance Program (NFIP) flood loss data. Several sections of the shoreline area are also subject to erosion rates of 1.5 feet to up to nearly 5 feet per year.

In recent years, shoreline communities have experienced fluctuating lake levels including high-water events in 2017 and 2019 and low water in 2021. These conditions resulted in the effects shown below. Several of these concerns were also identified and are further detailed in the *Wayne County Multi-Jurisdictional All-Hazard Mitigation Plan*.

Fluctuating Lake Level Effects	
Damaged shorelines and cascading impacts	Damage from flooding and waves during high water events that is exacerbated by storms, wind, and debris, leading to increased erosion and loss of protective shoreline features
Inability to access the waterfront	Waterfront amenities, properties (e.g., on islands), boating channels, and outlets to Lake Ontario during both high and low water events
Degraded shorelines and natural resources	Leaving shorelines and nearby properties more exposed to hazards, degrading habitats and ecosystem services, and negatively impacting businesses and tourism
Property damage and lost business	Due to flooding and associated impacts

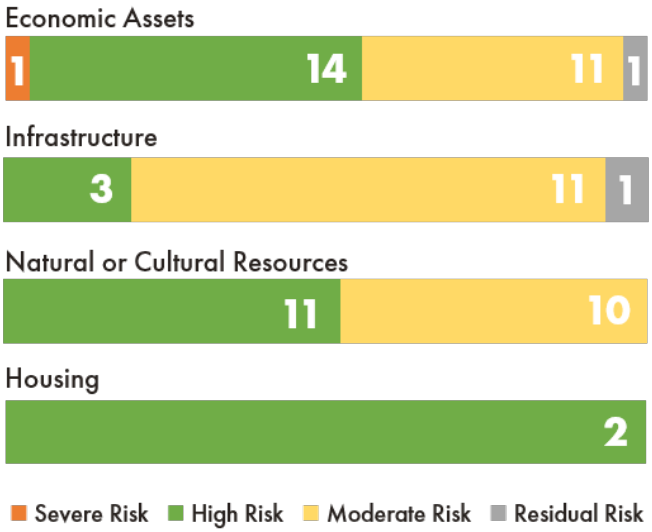
2.4 Summary of Regional Risks

The Plan includes 65 assets at risk in the Wayne County study area identified with the community. Using the NYSDOS Risk Assessment workbook (NYSDOS Risk Tool), an overall risk score was calculated for each asset based on the relative exposure of an asset to flooding, high water, and erosion as well as its capacity to recover (vulnerability) after a disaster equivalent to a 100-year storm event (hazard). Assets were then sorted into four risk categories – severe, high, moderate, and residual – according to their scores.

The risk assessment also included information on the relative community value of each asset (high, medium, low), whether it served socially vulnerable populations, and whether it was considered a critical facility by local or Federal Emergency Management Agency (FEMA) standards. Consideration of these factors can help communities prioritize the actions they take to reduce risk to various assets. Key findings from the risk assessment include:

- Overall risk to key assets is being driven by their location in **severe** or **high flood-risk** areas and compounded in many cases by erosion and shorelines with limited or degraded protective features.
- There are 30 **high-risk** assets or groupings of assets distributed throughout the study area including waterfront businesses and campgrounds (9+), natural protective features and waterbody outlets (8), fishing and waterfront access points (7+), and parks and cultural assets (5).
- The infrastructure assets at **high** or **moderate risk** include roads, bridges, water intakes, and stormwater outflows.
- 53 at-risk assets are considered critical facilities by either FEMA or local communities.

Community Risk Assessment



Risk = Hazard x Exposure x Vulnerability

- In total, 26 at-risk assets were considered to have high community value including 11 economic assets, 8 infrastructure assets, and 7 natural resources. Those at highest risk are primarily assets providing public waterfront access.
- 49 at-risk assets are in areas with an above average social vulnerability ranking[1].

2.5 Summary of Resilience Goals

The outcomes of the CLEAR risk assessment informed an analysis and development by the community of the region's top resilience needs and opportunities, as shown on the following page, and the development of the community's vision for a more resilient future, as summarized to the right.

CLEAR Vision Statement

"The Wayne County region will build long-term resilience to variable lake levels and climate change through a collaborative, multi-pronged approach supported by accessible funding mechanisms and coordinated between partners including federal, state, and local governments and supporting entities; property owners; and non-profit institutions. Resilience efforts will capitalize on opportunities to improve quality of life, the natural environment, and equity, while achieving economic sustainability."

[1] 2016 CDC SVI

TOP 3 NEEDS

- Include climate resilience in all regional/local planning initiatives
- Coordinate resilience efforts across municipal boundaries
- Educate residents and visitors about climate and resilience responsibilities

TOP 5 OPPORTUNITIES

- Revise local comprehensive plans to include climate-resilience needs and opportunities and revise/create policies
- Work with state agencies and environmental organizations to implement resilience-based restoration projects
- Create a resilience funding mechanism for repair/relocation of critical infrastructure
- Create policies for use of resilient development practices
- Create a regional climate resilience committee with decision-making authority

Mindful of the moderate-, high-, and extreme-risk scenarios, and using both the vision and needs and opportunities statements as a guide, a series of Resilience Scenario statements were then created.

These scenarios describe six pathways to enhance long-term resilience in the Wayne County region. Specific strategies were developed to correspond to each scenario.

Resilience Scenarios and Strategies

Resilience Scenario 1: Include climate resilience in all regional planning initiatives

Resilience Scenario 2: Coordinate resilience efforts across municipal boundaries

Resilience Scenario 3: Educate residents and visitors about resilience responsibilities

Resilience Scenario 4: Protect and restore ecosystem services

Resilience Scenario 5: Create a sustainable economy built upon resilience practices

Resilience Scenario 6: Establish a multi-pronged approach to reduce risk to housing

2.6 Summary of Resilience Actions

The outcome of the CLEAR planning process is a detailed list of potential resilience actions for the Wayne County region. These suggested actions detail various projects, programs, planning, and policy measures that could be taken to realize the CLEAR Vision. The list reflects best practices in local resilience building, as well as the needs and strategies identified by the community.

In line with the vision, the listing of resilience actions includes collaborative and multi-pronged approaches to improve quality of life, the natural environment, equity, and economic sustainability. In total, 28 potential resilience actions were identified and reviewed with the Steering Committee and expanded to include information that would be considered for advancing and implementing an action. A full Actions Matrix is included in the Section 11.

Resilience Actions	
Coordination and Capacity-Building	• Regional Resilience Coordinator • Regional Resilience Committee • Capacity-building programs • Educational resources for shoreline users and vulnerable groups
Support Programs and Resources	• Regional resilience funding mechanisms • Coastal Erosion Hazard Area (CEHA) Cookbook • FEMA Community Rating System program • Climate Smart Communities program • Managed retreat from dangerous areas (if necessary)
Nature-Based Adaptation	• Lake Ontario shoreline study • Blue-green infrastructure/natural and nature-based features • Lake Ontario tributary outflow study • Land protection and restoration
Planning and Policy Techniques	• Update/prepare local planning documents with a resilience lens (e.g., Comprehensive plans, LWRP, Open Space plans, Cultural Resource Resiliency plan) • Update/prepare local laws and zoning to support resiliency

To illustrate how these actions could be advanced and moved forward, three of the actions were further developed into detailed project profiles. These profiles were chosen based on their relative feasibility, economic benefit, and innovative approach as well as their ability to serve as a template for actions that could support multiple communities in the region. For Wayne County, the profiles include:

- Coastal Erosion Hazards Area (CEHA) Cookbook
- Regional Capacity Building for Resiliency – Regional Resiliency Coordinator
- Shoreline Condition Study and Bluff Conservation Plan

The potential actions and project profiles detailed in this Plan are intended to provide a curated "menu" of options for local communities and regional agencies/partners seeking to increase their long-term resilience to changing lake conditions. Shoreline communities can adapt each action to meet their needs, integrating them into existing plans and processes and/or creating new resilience-focused plans and processes at the local and regional level.

Linking local actions to the regional CLEAR Plan could also make communities more competitive when related funding opportunities arise.

As a regional guidebook with best practices for resilience planning and action, the CLEAR Plan aims to provide a useful resource for shoreline communities in Wayne County to achieve their vision for a more resilient future.

CLEAR Plan
Wayne County

03

Introduction

3.0 INTRODUCTION

3.1 Coastal Lakeshore Economy and Resiliency (CLEAR) Initiative

In response to changing lake conditions, including the extreme high- and low-water levels experienced over the past decade, NYSDOS is supporting resilience planning efforts in shoreline communities in New York State along Lake Ontario, the lower Niagara River, and upper St. Lawrence River.

The purpose of the CLEAR initiative is to develop strategies to increase long-term resiliency to changing lake conditions including flooding and storm events in shoreline communities.

The goals of the CLEAR initiative are to:

CLEAR INITIATIVE GOALS

01 Provide guidance for vibrant communities to thrive in changing and variable lake levels and conditions

02 Connect the coastal communities through resilient innovative strategies and adaptive uses

03 Develop and implement resilience strategies for shoreline property owners and managers

04 Create coastal development pattern goals that provide continued opportunities for existing and new recreation and employment

05 Bring together local governments, organizations, and leaders who are empowered to protect their communities and create new, more resilient paths for community growth

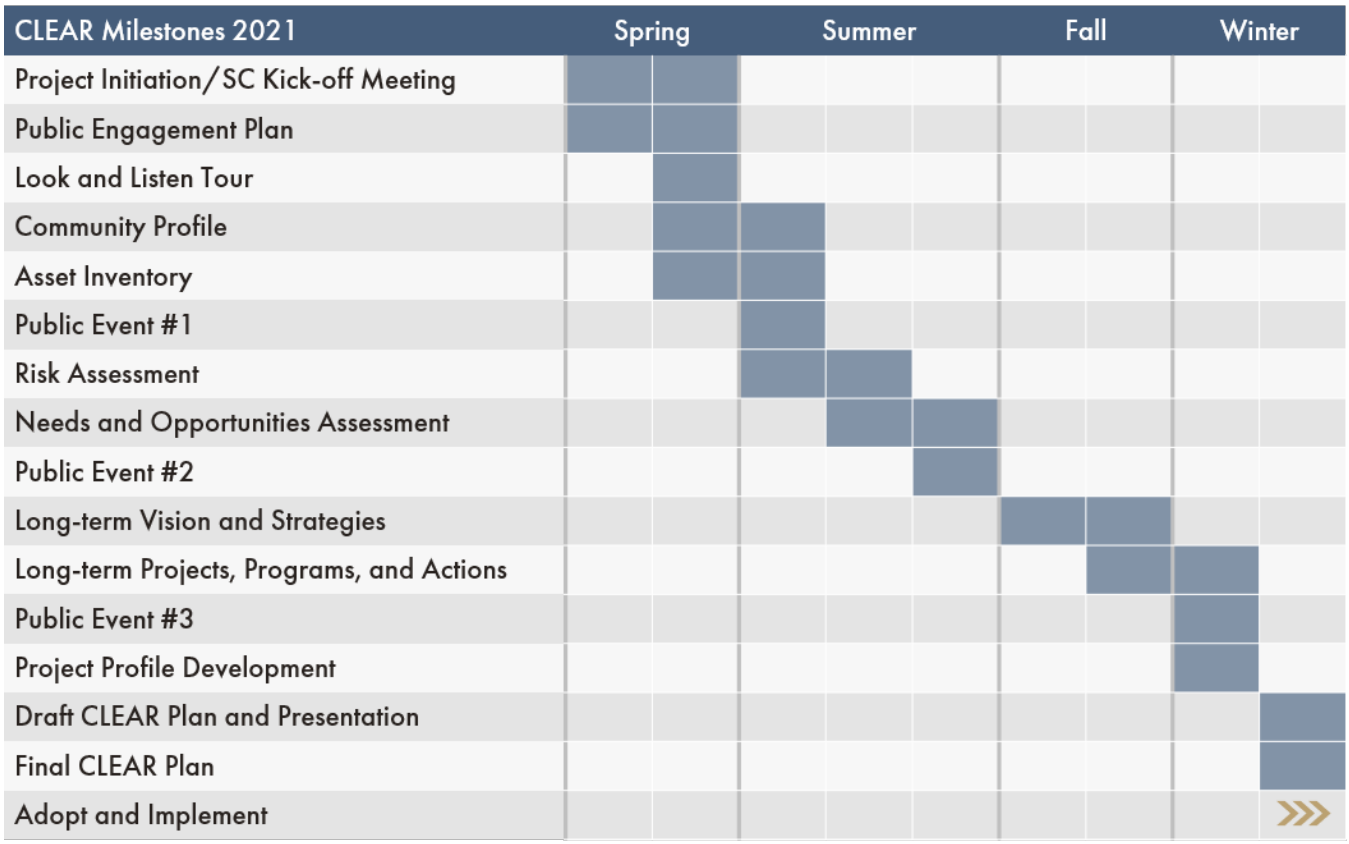
There are five regions representing the lower Niagara River, Lake Ontario, and St. Lawrence shoreline in the CLEAR Initiative, including:

- Niagara and Orleans Counties region
- Monroe County region
- Wayne County region
- Cayuga and Oswego Counties region
- Jefferson and St. Lawrence Counties region

CLEAR Plans were developed concurrently for each region using a similar methodology so that each region could respond to the specific needs of individual areas while allowing for broader coordination across the shoreline on common issues.

3.2 Wayne CLEAR Plan

The Wayne CLEAR Plan (the Plan) provides a regional framework for community leaders to pursue new, more resilient paths for community growth. The CLEAR planning process kicked off in April 2021 and concluded in December 2021, with milestones illustrated in the following schedule:



Development of the Plan was guided by a local Steering Committee with the support of the NYSDOS, relevant State agencies, regional partners, and a consultant team (see Section 1).

Community engagement throughout the process helped to ensure that the Plan reflects local needs and opportunities and will serve as a useful tool for building local capacity to adapt and thrive in the face of changing lake conditions.

The Plan examines the risks facing local shoreline communities that are disproportionately affected by changing lake levels and flooding, and suggests potential actions local and regional communities can take, regardless of the drivers, to proactively address these risks and mitigate future losses. In developing strategies to increase resiliency and promote future economic growth, the Plan considers risks to key community assets within the study area including natural and cultural resources, critical infrastructure, economic assets, and housing, taking socially vulnerable populations and local priorities into account.

The organization of the document follows the steps of the CLEAR planning process. First, it describes how the community was engaged throughout the development of the Plan. Second, there is an overview of the community context including socio-economic conditions, development patterns, community assets, and shoreline hazards.

The Plan continues with the outcomes of the risk assessment, including an overview of the assessment methodology, and the *Community Assets and Risk Level Assessment* table in the Appendices. Based on this assessment, the Plan proceeds to outline the resilience goals for the region. These are captured in a list of priority needs and opportunities for the region, the CLEAR vision statement, and six resilience scenario statements. Finally, the Plan includes a list of resilience strategies and potential resilience actions.

These potential actions are detailed in three profiles in Section 10 and an expanded Actions Matrix that is included Section 11.

The Plan is intended to serve as a high-level guidebook for resilience planning in the Wayne County region and contains ideas and resources that decision-makers can choose to customize and implement with their communities at the local and regional level. The actions suggested herein could be advanced as part of a dedicated resilience plan or they could also be mainstreamed into existing plans and processes. Integrating resilience thinking across different sectors and levels of government will help ensure that shoreline communities remain a vibrant place for residents, visitors, businesses, and all other shoreline users. Linking local actions to the regional CLEAR Plan could also make communities more competitive when related funding opportunities arise.

Resiliency Planning – CLEAR Process Steps

3.3 Relationship to the Resiliency and Economic Development Initiative (REDI)

The REDI and CLEAR programs share the goal of increasing resilience within shoreline communities. The REDI program developed recommendations for county-level projects to respond to severe flooding that occurred in 2019 that could be implemented immediately, as well as regional dredging work that reached across multiple jurisdictions.

Through the REDI program, New York State committed up to $300 million to benefit communities and improve resiliency in flood prone regions along Lake Ontario and the St. Lawrence River. The REDI program involved extensive engagement with stakeholder and planning committee workshops to establish a list of critical projects to rebuild and enhance lakeshore and riverside communities.

The CLEAR initiative, building upon the REDI program, serves to make important planning recommendations for long-term resiliency strategies and best practices with a focus on bolstering economic development in a resilient manner.

The initiative culminated in the development of regional CLEAR Plans, which serve as a guide for communities to use in understanding possible risks, solutions, and best practices for incorporating long-term resiliency strategies into future efforts with a mind towards enhancing public safety, protecting local assets, and bolstering economic development.

3.4 Relationship to "Plan 2014"

Lake Ontario is distinguished from other coastlines and water bodies experiencing the effects of climate change.

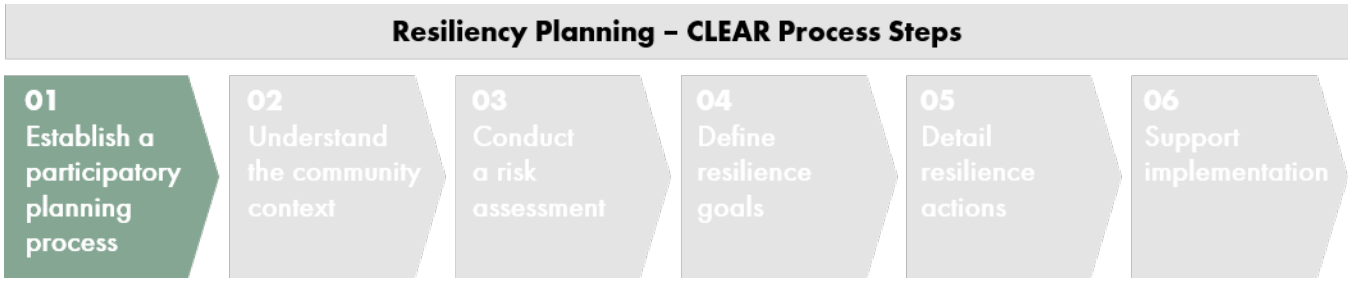
The Lake's outflow at the St. Lawrence River passes through the Moses-Saunders Dam, an international hydropower project that provides a limited ability to adjust the volume of water flowing out of Lake Ontario. "Plan 2014" is the current regulatory framework for managing water flows and is overseen by the International Joint Commission (IJC). The IJC is a binational organization that cooperatively manages the Lake and river systems of the U.S.-Canada borderlands, including the water levels within Lake Ontario and the St. Lawrence River. Controlling outflows at the dam is an attempt to balance the needs of municipal and industrial water users, commercial navigation, hydropower generation, recreational boaters, and - most recently - ecosystem health.

While regulating outflows has created more predictable lake levels overall, cyclical wet and dry periods have continued to lead to relatively extreme highs and lows. An over-reliance on the ability to maintain levels within a general range of highs and lows has resulted in development patterns along the Lake that not only increased density but also installed infrastructure for year-round use (e.g., primary residences) in areas still vulnerable to high and low lake levels. When unusual high-water events occur on Lake Ontario, communities are especially at risk of flooding for prolonged periods of time, stretching public resources and affecting local economies, with sustained winds exacerbating the flood risk and shoreline erosion. As climate science and regional projections for future long-term trends continue to evolve, the variability is expected to include increased seasonal precipitation and changes in ice cover that would heighten periods of high water and continue to be beyond the ability to fully compensate through adjusting outflows. Building more resilient communities that enhance public safety and protect assets is a goal of the CLEAR initiative.

CLEAR Plan
Wayne County

04

Engagement

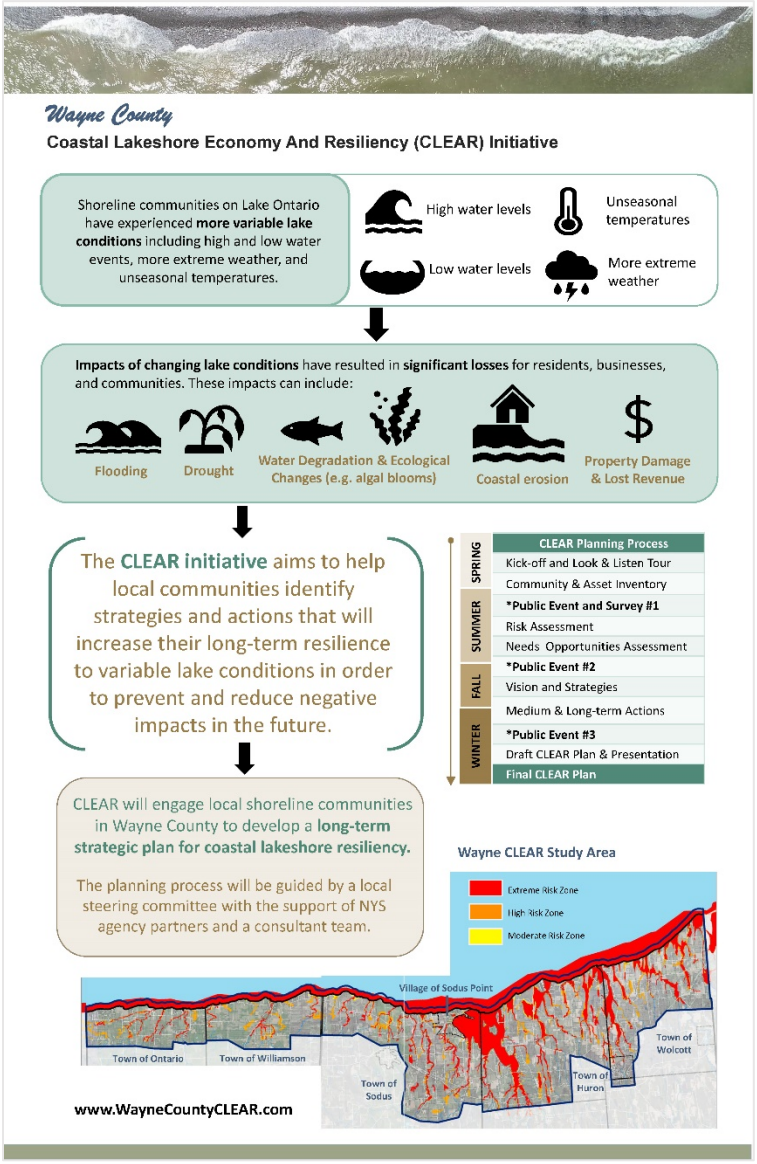


4.0 ENGAGEMENT

Community participation was a key component of the CLEAR planning process and is essential to successfully implementing this Plan. Engagement helps to build local understanding of risks and impacts, local ownership of adaptive strategies and actions, and local leadership to implement sustainable and resilient growth pathways.

A Public Engagement Plan was co-developed with the CLEAR Steering Committee at the beginning of the CLEAR initiative and adjusted as needed throughout the process. Remote formats were used to allow for broad participation during the pandemic.

A summary of community engagement activities is provided below.



CLEAR poster – an example of outreach methods used during engagement

4.1 Engagement Activities

Steering Committee Meetings

Steering Committee members supported the development of the CLEAR Plan by providing local and subject matter expertise and serving as a liaison to their communities/ organizations. They advised on the most appropriate approach toward community engagement and took an active role in public outreach. Members were engaged throughout the planning process via a series of interactive meetings:

- **Kick-Off Meeting:** An introduction to the CLEAR initiative including scope, schedule, deliverables, and roles and responsibilities. A follow-up questionnaire collected Steering Committee input on at-risk assets, relevant local plans and strategies, and the Public Engagement Plan, including outreach methods and key stakeholders.

- **"Look and Listen" Tour:** An organized virtual tour of affected areas across the region with the CLEAR Steering Committee and partners. Given COVID-19 limitations, the "tour" was held remotely using high-resolution mapping tools. Tour participants "zoomed" around the region via the shared map to provide critical feedback regarding their intimate knowledge of critical community assets and geographic areas at high risk of flooding and/or damage from low-water events.

- **Meeting #2:** A presentation of regional risks and impacts followed by discussion on the revised community assets list, updates to the Public Engagement Plan including accessibility considerations, and Public Event #1. Maps of regional assets and land use were shared in advance from the Community Profile.

- **Meeting #3:** An introduction to the Risk Assessment Tool and methodology followed by a discussion on the qualitative inputs of the risk assessment. These included questions on the relative community value of an asset, whether it is a critical facility, and if the asset serves socially vulnerable populations.

Steering Committee Meeting #4 – "fishing expedition"

- **Meeting #4 "Fishing Expedition" (virtual):** An interactive activity-based meeting to develop the resilience vision, needs, and opportunities. This visual activity illustrated example needs (goals) and opportunities (approaches) for participants to "fish" for, resulting in the selection of three targeted resilience goals and a list of approaches that will aid in accomplishing them.

- **Meeting #5:** A presentation on impact scenarios and discussion of alternative resilience scenarios and potential strategies to achieve them.

- **Meeting #6:** Discussion of potential resilience actions and detailed project profiles for the Plan.

- **Meeting #7:** Discussion on the draft Plan including the Actions Table.

CLEAR partners joined Steering Committee meetings and advised on specific topics as needed. In addition to reviewing materials and attending monthly meetings, the Steering Committee members supported the public activities and outreach as described below.

Public Outreach and Activities

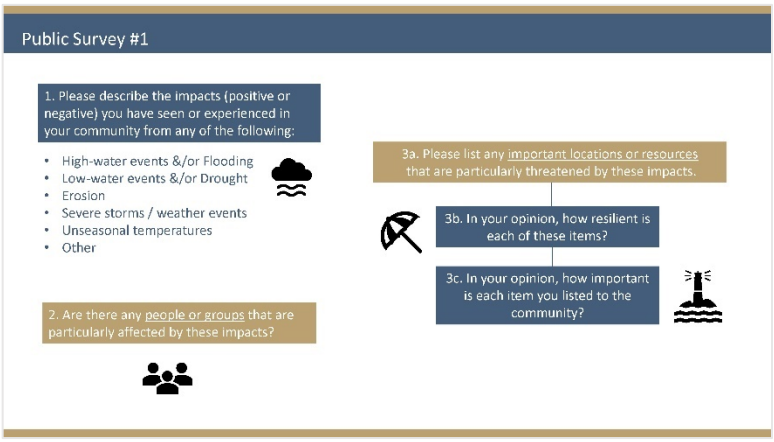
A series of public engagement activities were organized to keep community members informed about the CLEAR initiative and gather critical feedback on elements of the CLEAR Plan from the vision to potential actions.

Providing multiple opportunities for public input was particularly important while pandemic-related restrictions were in place that limited opportunities for public gatherings and in-person events.

Online tools provided an opportunity to engage people at their convenience regardless of where they were located across the region. For example, seasonal residents could participate even if they were located at their primary residence outside of the study area. In addition, the public could take advantage of event recordings and extended online surveys and comment periods to participate when their schedules allowed and to share information with their networks. Three public engagement events were held during the development of the Plan. These were organized as live, interactive webinars with an opportunity to submit comments online following the event. Webinars were recorded and posted on the Wayne County CLEAR website for individuals who could not join the live event along with information on how to submit comments.

- **Public Event #1** (6.10.2021) introduced the CLEAR initiative and the need to build resiliency to changing lake conditions. The one-hour webinar included a discussion of shoreline hazards, risks, and recurring impacts with participants and an invitation to participate in a public survey.
- The **CLEAR Public Survey** (6.10.2021 - 7.8.2021) invited the public to describe the impacts they have observed from shoreline hazards, identify groups they considered especially vulnerable to these impacts, and list important assets that may be at risk including input regarding the community value of each asset. A simplified SMS version of the survey was also available as an offline alternative for community members with limited internet access.
- **Public Event #2** (9.23.2021) presented the outcomes of the public survey, risk assessment, and Steering Committee needs and opportunities exercise for feedback. In addition, the public was invited to participate in a visioning exercise using an online interactive polling method. The result, presented as a word cloud, was used in the development of a draft vision statement that was refined with the Steering Committee. The public was also able to submit comments on the live presentation and visioning exercise following the event via the CLEAR website.
- **Public Event #3** (11.18.2021) presented the final CLEAR vision statement and guiding principles, the impact scenarios for the Wayne County region, and the resilience scenarios that were developed based on the areas at risk and the needs and opportunities identified by the community. Public feedback was also solicited on potential strategies and actions through discussion and live audience polling. Community members who were unable to attend live could submit their comments on the presentation though the website following the event.

Updates on the CLEAR initiative were distributed using a CLEAR mailing list that was initially populated with key stakeholders identified by Steering Committee members and partners, as well as community contacts involved in previous resiliency efforts in the region. As the CLEAR initiative progressed, event participants and individuals who subscribed through the website were added to the mailing list. Flyers, event links, and other materials were distributed to the mailing list and the Steering Committee to cross-post to their networks. Emails and press releases were also sent to media outlets in the region, several of whom provided coverage of the planning process.



Public Event #1 – live webinar survey launch

Finally, the Wayne County CLEAR website (www.waynecountyclear.com) served as a comprehensive repository of information for the public. The website included a description of the CLEAR initiative, key documents, meeting slides and summaries from Steering Committee meetings, video recordings and slides from public webinars, and information on open and upcoming engagement opportunities. There was also a place for people to submit comments at any time during the planning process.

4.2 Participatory Resilience-Building

Just as it was critical to engage the community throughout the regional CLEAR planning process to build local understanding of risks and impacts and to establish adaptive strategies and actions, it will be critical to establish a community-driven structure going forward to build local ownership and capacity to coordinate and lead implementation activities.

Public engagement should also continue as part of local resiliency planning and implementation efforts to ensure outcomes reflect the diverse perspectives, needs, and interests within the region, and that participation reflects socioeconomic and geographic diversity including vulnerable and under-served populations.

CLEAR Plan
Wayne County

05

Regional Overview

Resiliency Planning – CLEAR Process Steps

01 Establish a participatory planning process | **02 Understand the community context** | 03 Conduct a risk assessment | 04 Define resilience goals | 05 Detail resilience actions | 06 Support implementation

5.0 REGIONAL OVERVIEW

The following section summarizes the important physical and socioeconomic characteristics of the Wayne County CLEAR study area including land use and development patterns, socially vulnerable populations, critical infrastructure and natural resources, and recent flooding and erosion impacts.

Understanding the people, places, resources, and development trends in the study area puts the Plan in context and helps guide decision-makers when developing and prioritizing resilience plans and actions for the region. Municipal Profiles for each of the six municipalities included in the CLEAR Plan are included in Appendix A.

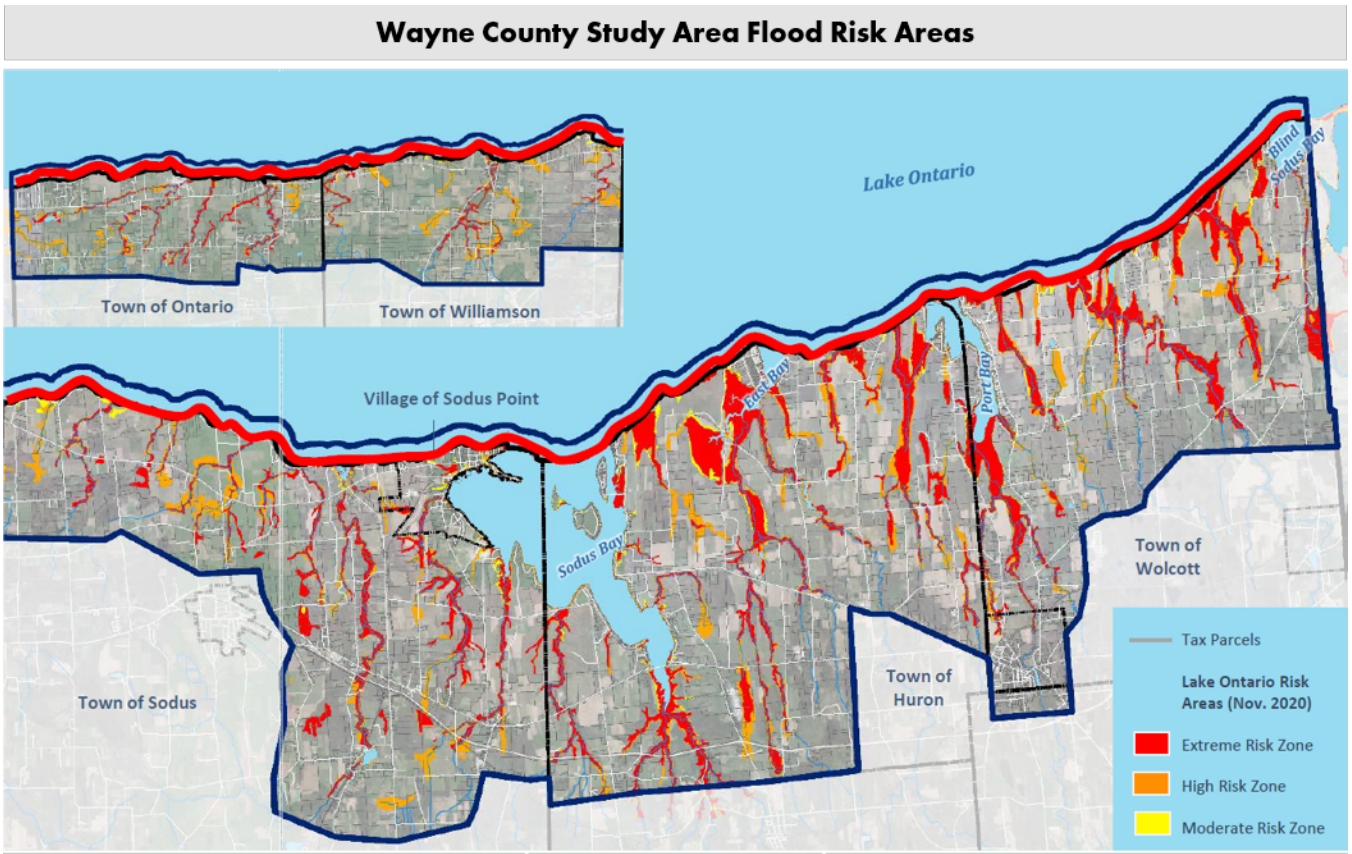
5.1 Geographic Scope of the CLEAR Plan

The Wayne County CLEAR study area encompasses areas of the Lake Ontario shoreline considered to have a moderate, high, or extreme level of risk based on their location in relation to flood zones as illustrated in Figure 5.1. This flood risk map was prepared by the NYSDOS based on November 2020 data related to climate, geology, and land use. The map defines areas at risk from coastal and riverine hazards, distinguishing significant differences in the exposure of the landscape. To the extent allowed by the mapping source data, places where flood water can extend up streams, and under culverts and bridges, were reflected.

The maps demonstrate extreme and immediate risk to lakeshore areas as well as areas bordering bays and tributaries. When overlaid with subsequent land use and features maps, the data indicate significant risk to local populations and assets from changing water levels on Lake Ontario as well as from inland flooding (e.g., related to precipitation or snowmelt).

Lake Ontario shoreline

The CLEAR Wayne study area includes an approximately 53-mile stretch of Lake Ontario shoreline and open bay frontage as well as the six coastal embayments of Pultneyville Harbor, Maxwell Bay, Sodus Bay, East Bay, Port Bay, and Blind Sodus Bay, which together have over 39 miles of shoreline. The area includes 120 square miles of land area and 15 square miles of lake area.



Scenario Example	Probability	Risk
Moderate risk/low probability	Low	Moderate (FEMA base flood elevation +2 ft.)
High risk/moderate probability	↓	High (FEMA base flood elevation)
Extreme risk/high probability	High	Extreme (IGLD average lake level +2 ft., 247.3-ft.)

Figure 5.1, *Source: NYSDOS*

It stretches inland approximately 2.5 miles on the west side and 6.5 miles on the east side around the bays. It is bounded by Monroe County to the west and Cayuga County to the east. The waterside boundary stretches 1,500 feet into Lake Ontario.

This aligns with NYS Navigation Law and NYS Executive Law, which enable shoreline municipalities that meet specific conditions to regulate certain uses and structures in Lake Ontario waters up to 1,500 feet from shore.[2]

The study area contains the Village of Sodus Point and portions of the five shoreline towns of Ontario, Williamson (including the hamlet of Pultneyville), Sodus, Huron, and Wolcott.

[2] Section 922 of Article 42 of NY Executive Law.

The region is largely rural, characterized by undeveloped land, recreational areas, coastal communities, orchards, farm fields, single family homes, and limited industrialization. The closest major cities are Rochester, approximately 15 miles west of Ontario, and Syracuse, approximately 35 miles southeast of Wolcott. The Canadian border follows the center line of Lake Ontario 23 miles north.

5.2 Demographics

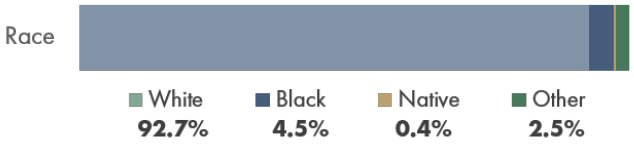
The five towns that line the Wayne County shoreline are home to 31,200 people, a number that grows in the summer when seasonal residents occupy vacation rentals and second homes near the water. Pultneyville, a lakefront hamlet in the Town of Williamson, and the shorelines of Sodus Bay and Port Bay are especially popular. In Huron, for example, local officials estimate the population increases by 70% in the summer.[3] Median household income for the five-town region is approximately $60,900, with 11.6% of the population living below the poverty line. This is close to state norms, though there is significant variation across communities. In Ontario and Huron, median household incomes are close to $70,000. In Wolcott and Sodus, they are closer to $50,000 and almost 20% of people live in poverty.

Regarding the demographic make-up of the five-town region, the proportion of retirees and residents over 65 is 3% higher than the State overall, and is expected to grow, which may increase the number of permanent residents on the shoreline.[4] The median age of the region is relatively high as a result, at 45 years old. There are 3,585 households with children under 18 years of age (28%), of which 675 are headed by single parents (5.2%). Approximately 14% of residents have a disability. Only 7% of residents belong to a racial minority and less than 0.1% of households have limited English proficiency.[5]

Wayne County Shoreline (5-Town Region) vs. New York State Demographic Data

	Wayne County	New York State
Population	31,200	19,453,561
Population Change 2010-2019	-2.8%	+1.0%
Median age	44.9	38.8
Population 65 years +	19.0%	16.1%
Population below poverty line	11.6%	14.1%
Median household income	$60.9k	$68.5k

Ontario	Williamson	Sodus	Huron	Wolcott
$71,513	$62,105	$51,479	$69,750	$46,949



U.S. Census Bureau. 2019. American Community Survey, 2015-2019 5-Year Estimate

Households in these seven categories profiled (below the poverty line, elderly, children, disabled, single parent, minority, limited English proficiency) may be less resilient to shocks or stresses than others. Groups in more socially vulnerable categories are generally less equipped to cope with the impacts of hazards such as floods and storms, placing them at a higher risk. The distribution of socially vulnerable populations in the study area is described on the following page.

[3] GRF, 2012.
[4] Cornell, 2018.

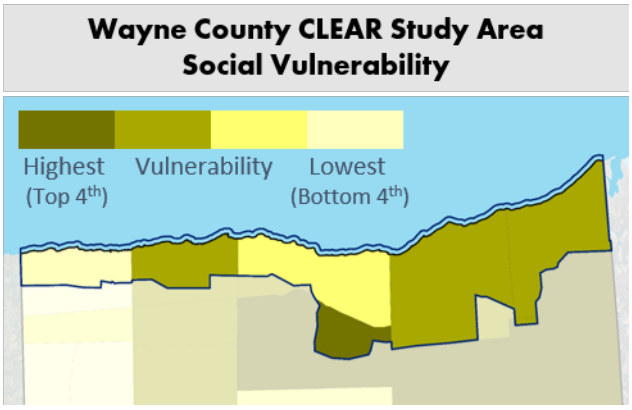
[5] All data from U.S. Census Bureau. 2019. American Community Survey, 2015-2019 5-Year Estimates, unless otherwise noted. Medians are weighted estimates for the shoreline area based on median age data available at the town level.

5.3 Socially Vulnerable Populations

Socially vulnerable populations are groups that may be more at risk during a natural disaster or emergency. This may relate to a factor that increases their exposure to a risk such as less durable housing, a factor that impedes their ability to escape the impacts of a risk such as limited mobility or English proficiency, or a factor that decreases their capability to bounce back from losses such as a low income. Social vulnerability can be thought of as a pre-existing condition that compounds a person's vulnerability when they are exposed to a given shock or stress including a storm or a flood. It is critically important that regional and municipal leaders help empower socially vulnerable populations to become equally as resilient as the general population.

A common tool used to measure social vulnerability is the Centers for Disease Control and Prevention Social Vulnerability Index (CDC SVI) developed by the Geospatial Research, Analysis, and Services Program (GRASP).

The CDC SVI helps public officials and emergency response planners identify, map, and anticipate the needs of socially vulnerable populations within their communities. The index uses 15 social variables grouped into four themes (Socioeconomic Status, Household Composition, Race/Ethnicity/Language, and Housing/Transportation) to rank census tracts using U.S. census data (see Figure 5.2).



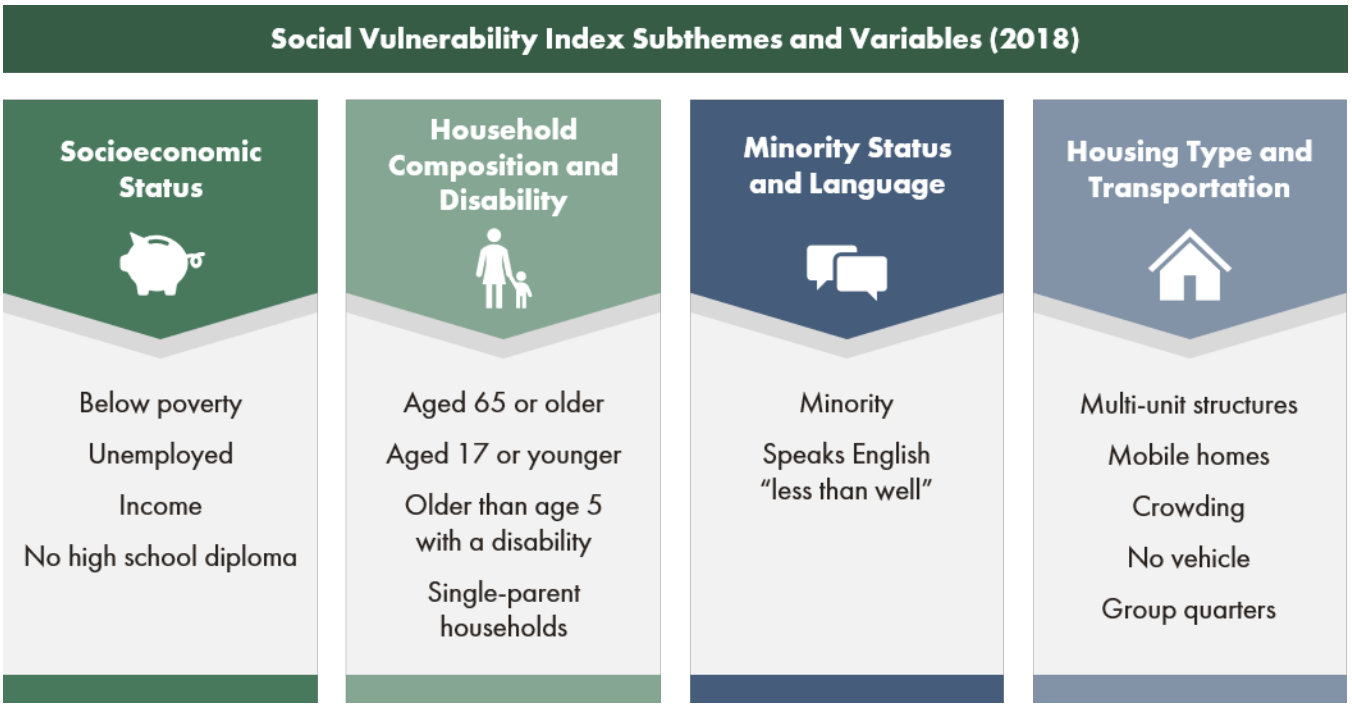


Figure 5.2

The index scores census tracts on a scale of 0 (most vulnerable) to 1 (least vulnerable) with 0.5 being the national average. Census tracts are ranked by quartile: most vulnerable (score of 0 – 0.25), more vulnerable (score of 0.26 – 0.5), less vulnerable (score of 0.51 - 0.74), and least vulnerable (score of 0.75 – 1).

In the Wayne study area, the inland portion of the Town of Sodus scores high (most vulnerable) and the shorelines of Williamson, Huron, and Wolcott score medium-high (more vulnerable).

5.4 Environmental Justice Areas

The New York State Department of Environmental Conservation (NYSDEC) identifies Potential Environmental Justice Areas (PEJAs) to focus on improving the environment in vulnerable communities, specifically minority and low-income communities, and addressing disproportionate adverse environmental impacts that may exist in those communities. PEJAs have been identified based on analysis of reported income and race/ethnicity data from the 2014-2018 five-year American Community Survey (ACS), conducted by the U.S. Census Bureau. The designated areas are then typically considered for additional outreach within the permitting process, grant eligibility, and targeted enforcement of Environmental Conservation Law violations.

There are multiple designated PEJAs in the Wayne study area located in municipalities of Sodus and Wolcott. These areas align with the "high vulnerability" socially vulnerable populations identified in the previous section. Figure 5.3 highlights PEJAs by Census Block Group in purple. Consistent with the NYSDEC Environmental Justice policy "no group of people, including a racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from state and local… programs and policies." Consequently, resilience planning should consider local Environmental Justice Areas to ensure there is fair treatment and consideration of these more vulnerable areas when implementing resilience actions.

Wayne County PEJAs by Census Block Group

Figure 5.3, *Source: NYSDEC*

5.5 Land Use and Economic Development

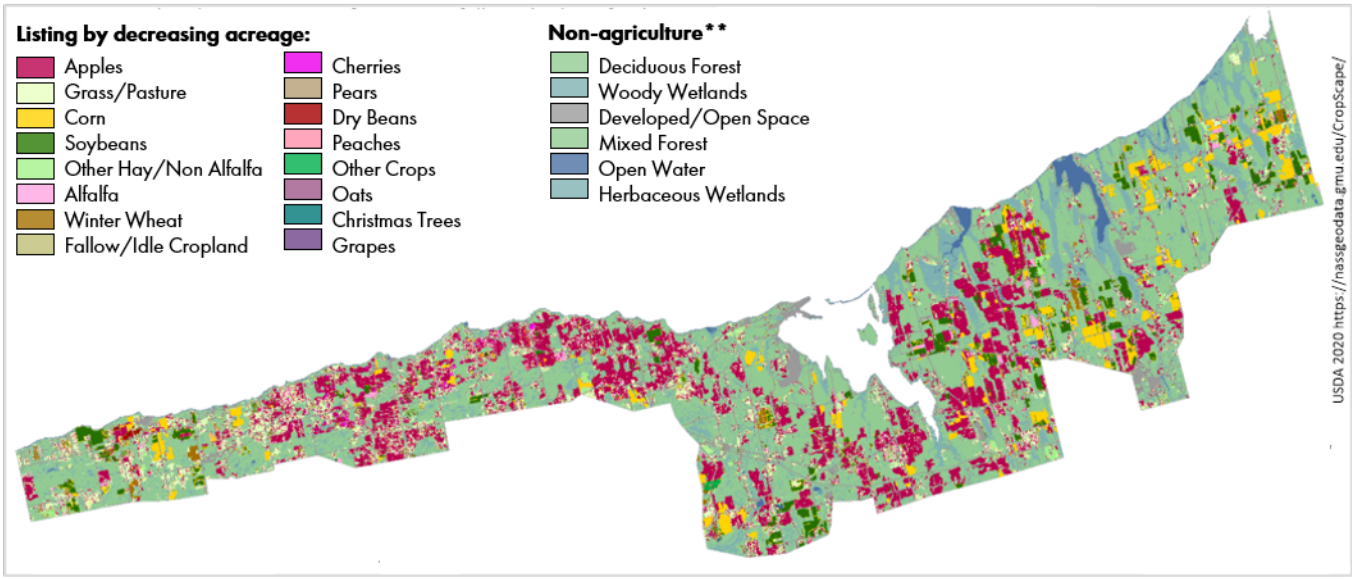
In addition to understanding the risks to various population groups, it is important to contextualize the potential impact of risks on the local economy. A summary of land uses, key sectors, and employers illustrates what types of assets are most exposed, and those that could have the most far-reaching impacts on the regional economy if damaged.

Major economic drivers in the study area include manufacturing, retail businesses, fruit crop production, and tourism. Manufacturing is particularly strong in Wayne County, bringing in $1.8 billion in revenue in 2017. Retail trade posted the next highest annual revenue at $1 billion.[6] These industries are the second and third largest employers, respectively, after education and healthcare in the five-town area.[7]

Wayne County is also notable for a high number of jobs in the agriculture and fishing industries. Agriculture is the most common land use in the study area. Orchards populate the north-facing slope of the shoreline believed to be the former edge of Lake Ontario, which has a unique micro-climate, and a variety of vegetable and grass crops concentrated further inland. The County ranks especially high in the production of sour cherries, pears, and is the third largest apple producing county in the nation. The shoreline areas are also a hub of seasonal activity and tourism in the warmer months, with many communities and economic activities centered around water-based assets and recreation. The overall GDP of the leisure and hospitality sector for Wayne County is approximately $55 million.[8] In 2019, tourism contributed $2.6 million to the local tax base and visitor spending totaled $45.1 million.[9]

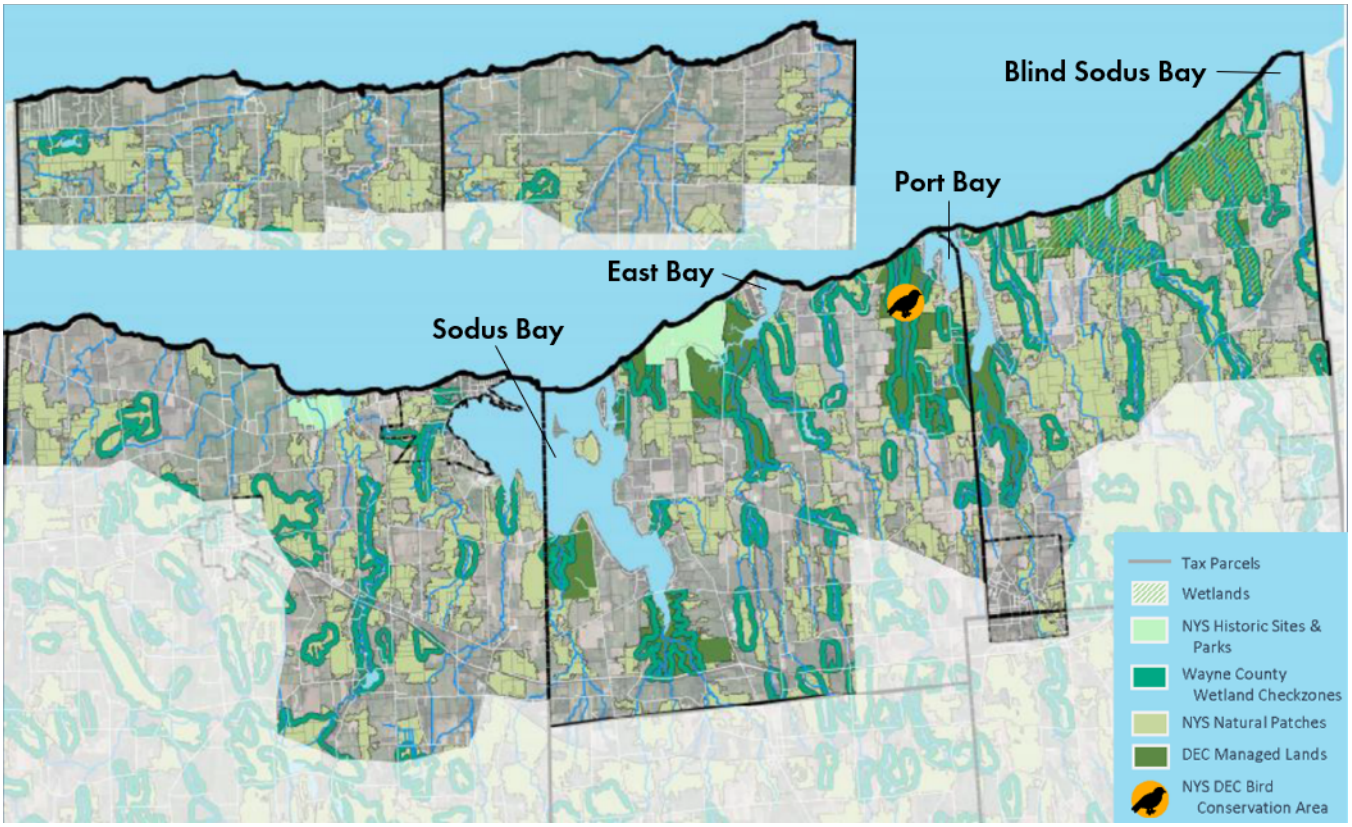
The tourism industry benefits from the variety of natural and recreational resources in the study area. These include Maxell Bay, Pultneyville Harbor, and the four major embayments of Sodus Bay, Port Bay, East Bay, and Blind Sodus Bay.

Wayne County CLEAR Study Area Crop Cover (2020)



[6] U.S. Census 2017a and 2017b.
[7] U.S. Census 2019.
[8] BEA, 2017.
[9] Tourism Economics 2019.

Wayne County CLEAR Study Area Natural Resources and Protected Lands



The shorelines of these bays are lined with businesses, recreational amenities, houses, and second homes except in wetland areas. Wayne County also hosts the Lake Shore Marshes WMA, 6,179 acres of wetlands and adjacent uplands that are open to the public for fishing, hunting, trapping, hiking, birdwatching, and waterfront access. Other popular destinations and recreational resources include Chimney Bluffs State Park, Beechwood State Park, shoreline campgrounds and marinas, and public boat launches and fishing sites along the bays and Lake Ontario tributaries.

Many tourist destinations, businesses, and natural or cultural resources are located directly on the shoreline, in the severe- or high-risk areas. As a result, economic activity in the region is closely tied to Lake Ontario water levels and highly exposed to shoreline hazards. Building future resiliency measures into these areas will be important to the community to mitigate potential impacts due to fluctuations in the water levels that can result in tourist areas becoming damaged, inaccessible, or unusable. Understanding impacts that could alter fishing and agricultural micro-climates and ecosystem services that support local commercial activities will also be relevant for resiliency planning in the region.

5.6 Critical Infrastructure

When conducting a resilience assessment, it is essential to also consider the potential risks to community support systems and services that directly and indirectly impact residents and businesses. The CLEAR planning process mapped critical facilities/critical infrastructure in the study area including utilities, educational facilities, religious institutions, hospitals, national and civil defense, and communications infrastructure that were deemed essential to the functioning of local communities. Within the flood risk area there are approximately 50 critical facilities that have previously been identified through the Wayne County Hazard Mitigation Plan process, as shown in Figure 5.4.

About half of these are further inland and somewhat removed from high-risk areas. The remaining critical facilities are closer to risk areas along tributaries, bays, and the lakeshore. These include many bridges as well as some emergency response facilities, religious institutions, communications infrastructure, wastewater treatment facilities, electric facilities, and notably, the R.E. Ginna Nuclear Power Plant.

Given the higher consequence of any damage to these resources, it is generally reasonable for decision-makers to assign a higher priority to actions that would bolster their resilience.

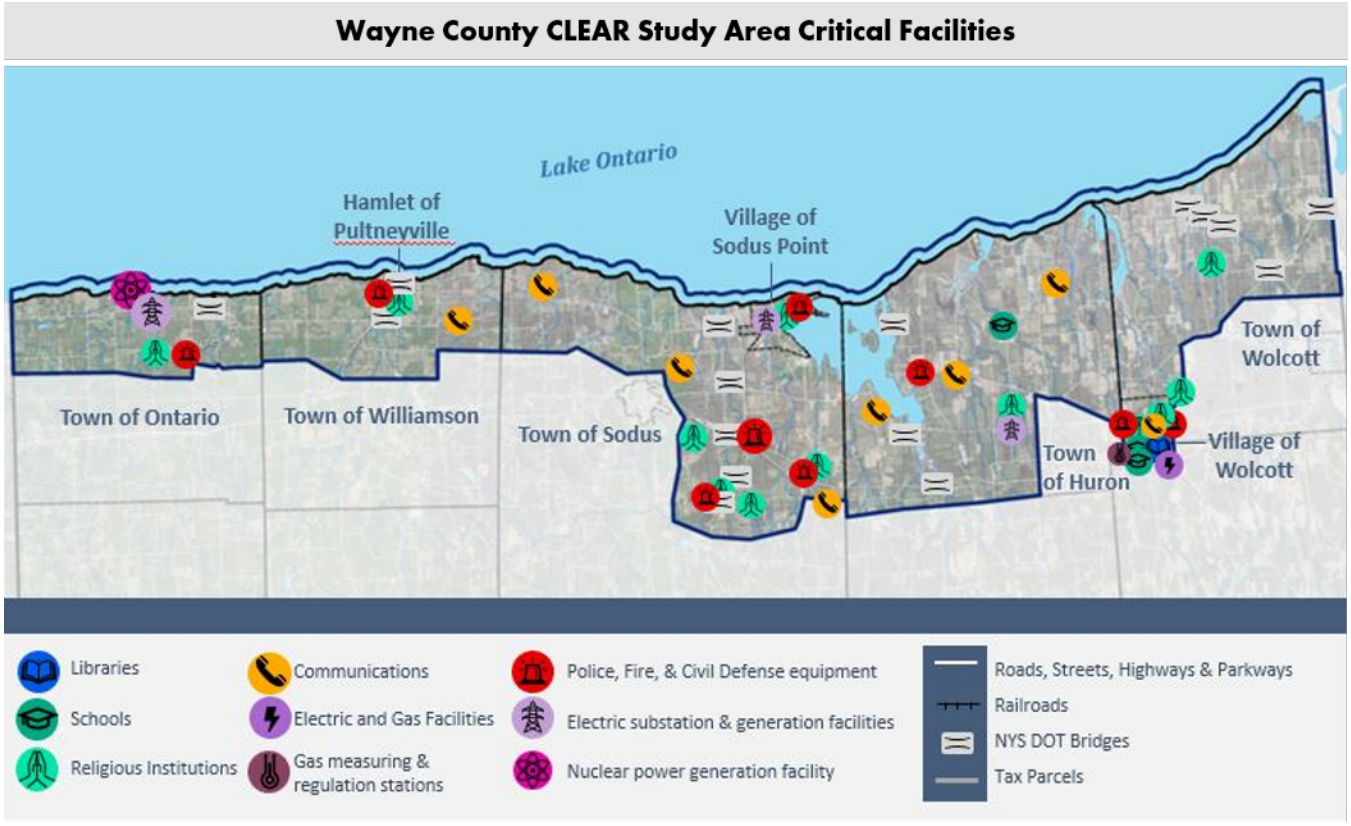


Figure 5.4

5.7 Shoreline Characterization and Erosion

The Wayne County Lake Ontario shoreline includes sections of undeveloped bluffs, wetlands, wildlife areas, and agricultural land in between clusters of single-family homes, campgrounds, and small coastal communities including Pultneyville and Sodus Point. The shorelines of the major embayments have developed as seasonal destinations with many second homes, vacation rentals, and a small year-round population. They are densely developed - except for portions of wetlands - and dominated by residential uses. Homes can be found all along the water's edge including on barrier bars, islands, peninsulas, and other waterfront locations vulnerable to flooding and erosion, some of which are only accessible by boat.

The study area includes large expanses of wetlands and protected areas including the NYSDEC Lakeshore Marshes WMAs lands described previously. These areas include sensitive habitats as well as naturally resilient ecological systems.

Wayne County CLEAR Study Area Shoreline Erosion Rates

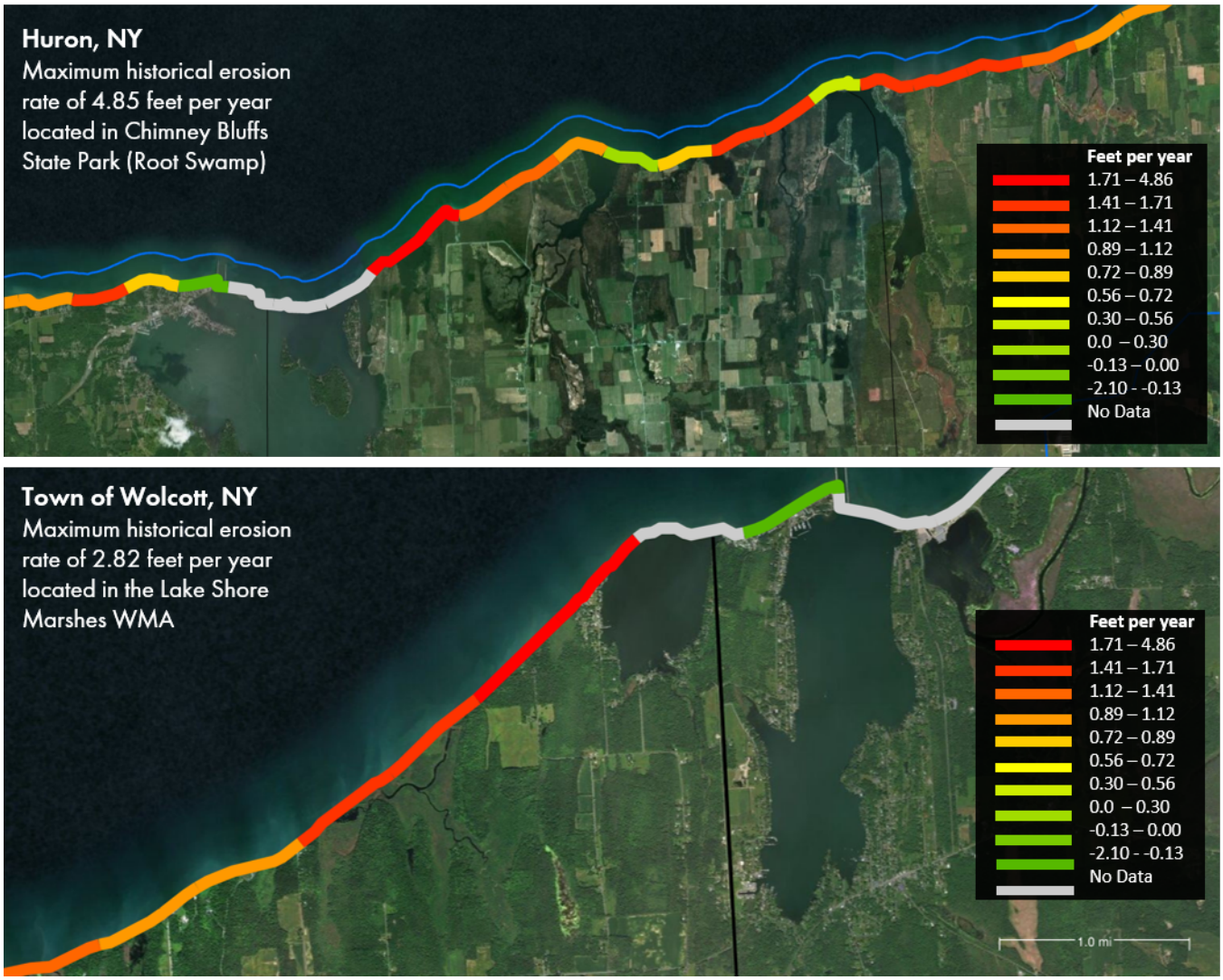


Figure 5.5

They are vulnerable to impacts that degrade environmental quality during high- and low-water events. These include flooding, erosion, and excess silting (high water), as well as eutrophication and lost connections to the Lake. The bays are relatively shallow with extensive vegetation that is kept in check by the Wayne County Soil and Water Conservation District (SWCD).

The shoreline areas that are most susceptible to erosion are within the Chimney Bluffs State Park in Huron, the Salmon Creek and Amherst Island Watersheds within the Town of Sodus and Village of Sodus Point (Figure 5.5, top), and the Lake Shore Marshes WMA in the Town of Wolcott (Figure 5.5, bottom). The shoreline areas in red (Sodus) are subject to erosion rates of 1.5 feet to up to nearly five feet per year. Those in orange have had historic erosion rates of approximately one foot per year.

Some erosion is natural and necessary to supply sediment to key assets such as barrier bars and beaches. In other cases, erosion can be harmful to both natural features and shoreline property and infrastructure. These processes are not well documented at a local scale, and managing this balance is an ongoing challenge for shoreline communities and users. Historical erosion rate data for the Lake shoreline were obtained from the Flood Erosion Prediction System (FEPS) database and are based only on the erodible portion (i.e., unhardened shoreline) of the Lake Ontario shoreline. More detail on shoreline erosion rates can be found in the municipal profiles in Appendix A.

5.8 Summary of Historic Flood Damage

Flooding causes more property damage in Wayne County than any other natural disaster, as shown by repetitive NFIP flood loss data. The entire Wayne County shoreline is within the current FEMA-designated “100 year” flood zone. Several major tributaries such as Sodus and Salmon Creeks frequently flood interior developed areas. Repetitive changes in the natural environment from development have increased the potential for flooding along the Lake Ontario shoreline over the past several decades.

Most recently, in 2017 and 2019, Lake Ontario experienced high water levels that resulted in severe flooding and erosion throughout the region. The 2017 high-water event included exceptionally wet weather from January through May, and higher than average inflows from Lake Erie throughout the year. The 2019 high-water event included high inflows of water from Lake Erie, entering Lake Ontario and the St. Lawrence River, resulting in flooding along the shorelines. These conditions had damaging impacts on property, infrastructure, business, natural resources, and public safety. For example:

- The Sodus Bay and Port Bay barrier bars were breached during both high-water events.
- The Blind Sodus Bay barrier bar was washed away except for a thin strip on the eastern side.
- Deteriorated sections of the Sodus Bay east breakwater were further damaged.
- Important community assets flooded, including shoreline businesses, docks, marinas, Crescent Beach, Sodus Point Beach, the Grieg Street peninsula, and Wickham Street.

Similar flooding events have occurred in the past and will continue to occur in the future. The inherently complex nature of flood conditions in the region calls for an array of solutions depending on the nature and drivers of flooding in specific areas.

More information on various engineering solutions to address flooding within the project area can be found in the Wayne County REDI Project Profiles and further detailed in corresponding REDI Engineering Reports available from applicable municipalities.[10]

Natural resources serve as one of the most critically important mitigation and adaptation features along a shoreline in Wayne County. Wetland systems provide floodwater absorption, retention, and filtration, moderating the risk of high- and low-water events. Other natural resources that provide mitigative ecosystem functions include protected and restored beaches, coastal bluffs and bank systems, forested areas, open space/greenspace areas, and even natural landscaping. Conserving natural protective features can be a cost-effective way to increase resilience in certain areas.

In addition to the impacts related to high-water events, the CLEAR study area is also vulnerable to lower-than-average water levels, such as those which occurred in 2021.

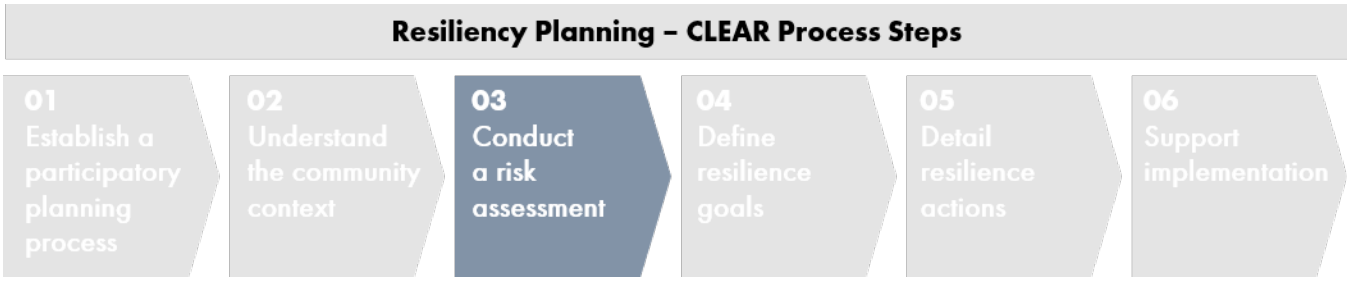
Low water levels can leave residents and businesses literally high and dry – unable to access waterfront amenities, including docks, boathouses, marinas, boat launches, harbors, etc. Low water can also exacerbate conditions that lead to potential reductions in water quality caused by tributary blockages and reduced flushing of non-point source nutrients. These conditions could compromise fish and wildlife habitats and pollute recreational areas including beaches. By impacting the accessibility of waterfront recreational resources from docks to fish populations, low water levels can result in significant economic and ecological losses in the region.

[10] Wayne County REDI Project Profiles, https://www.ny.gov/sites/default/files/atoms/files/REDI_Project_Profiles_WA_20191010.pdf

CLEAR Plan
Wayne County

06

Risk Assessment



6.0 RISK ASSESSMENT

Risk assessments are a critical step in the process of resiliency planning. Understanding risk exposure for key community assets such as public health and safety infrastructure, or assets that function as major economic engines for the region, is a fundamental component of defining regional resilience goals in subsequent stages in the CLEAR Process.

The NYSDOS Risk Assessment workbook (NYSDOS Risk Tool) can be utilized to inform the development of long-term resilience strategies by analyzing physical risk to assets and considering factors such as the community value of the asset and whether it impacts socially vulnerable populations.

The tool also helps communities prioritize actions by indicating which assets are most vulnerable and/or critical. As the community moves forward with resiliency planning, this tool can be supplemented with additional assets or modified based on changing conditions.

The NYSDOS Risk Tool was utilized in the CLEAR planning process to assess the level of risk, qualitatively and quantitatively, for 65 assets that the community identified. A summary of the key findings and methodology is provided below.

6.1 Risk Assessment Key Findings

The risk assessment analyzed 65 at-risk assets in the CLEAR study area that were identified with the community. The overall risk of each asset – severe, high, moderate, or residual - was calculated based on its relative exposure to flooding, high water, and erosion as well as its capacity to recover after a disaster equivalent to a 100-year storm event (hazard). In total, one asset was found to be at severe risk, 30 are high risk, 32 at moderate risk, and two have only a residual risk from shoreline conditions. Figure 6.1 provides an overview by asset class and risk level.

Primary observations from the risk assessment process include:

- Overall risk to key assets in Wayne County is being driven by their location in extreme or high flood-risk areas and compounded in many cases by erosion and shorelines with limited or degraded protective features.
- There are 30 high-risk assets or groupings of assets distributed throughout the study area including waterfront businesses and campgrounds (9+), natural protective features and waterbody outlets (8), fishing and

waterfront access points (7+), and parks and cultural assets (5).

- The infrastructure assets at high or moderate risk include roads, bridges, water intakes, and stormwater outflows.
- In total, 26 at-risk assets were considered to have high community value including 11 economic assets, 8 infrastructure assets, and 7 natural resources. Those at highest risk are primarily assets providing public waterfront access.
- 53 at-risk assets are considered critical facilities by either FEMA or local communities.
- 49 at-risk assets are in areas with an above average social vulnerability ranking (2016 CDC SVI).

These findings support general discussions with the Steering Committee and the public on critical concerns relating to shoreline conditions including (but not limited to):

- **Damaged shorelines and cascading impacts** – damage from flooding and waves during high-water events that is exacerbated by storms, wind, and debris, leading to increased erosion and loss of protective shoreline features including barrier bars. Understanding how the shoreline is shaped under typical and atypical conditions by both natural systems and human activities is important to understand how to better manage such impacts.
- **Inability to access the waterfront** – during both high and low water, residents and visitors are cut off from waterfront access points, amenities, properties (e.g., on islands), boating channels, and outlets to Lake Ontario.
- **Degraded shorelines and natural resources** – from impacts including excessive erosion or siltation, algal blooms, mud, and debris. These leave shorelines and nearby properties more exposed to hazards, degrade habitats and ecosystem services, and negatively impact businesses and tourism.
- **Property damage and lost business** – damage to waterfront homes and businesses due to flooding and associated impacts.

A detailed list of community assets and risk levels is included in Appendix B.

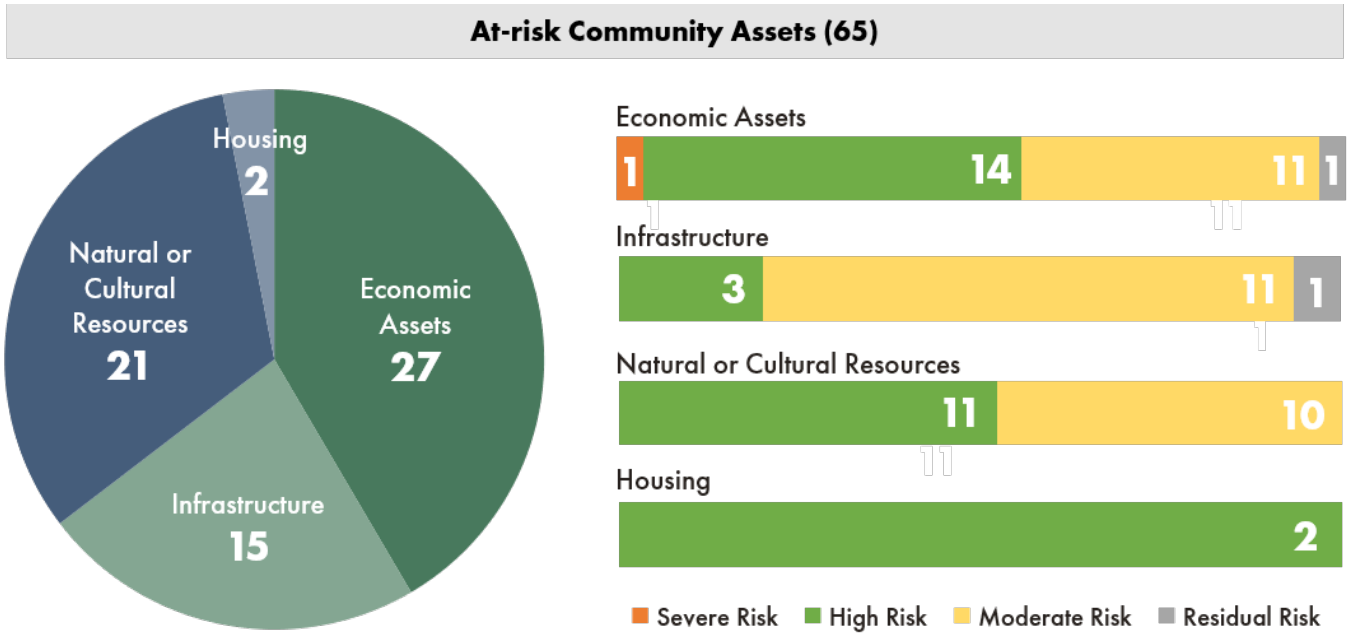


Figure 6.1

6.2 Risk Assessment Methodology

Overview

The NYSDOS Risk Tool was used to assess risk to a list of assets co-developed with community members. The risk assessment helps identify assets with elevated potential for damage.

A key principle of the risk assessment process is that **RISK = Hazard x Exposure x Vulnerability,** as illustrated in Figure 6.2.

In addition to the risk value, other factors also contribute to determining which assets should be addressed, how soon they should be addressed, and their priority for the community:

- If the asset is a critical facility for public health, safety, and well-being
- Value of asset to the community
- If the asset supports socially vulnerable populations

The NYSDOS Risk Tool is populated through a series of steps to produce an overall risk score for each asset, as described below.

Asset Inventory

Assets at risk from impacts due to changing lake conditions were identified with the Steering Committee and the public. Previously identified infrastructure projects not selected to progress under REDI were also included on the list. Once the assets are identified, they are then categorized by Asset Class, which includes Housing, Economic, Natural or Cultural Resources, and Infrastructure, as well a more distinct Asset Subcategory.

An asset location map and ArcGIS geodatabase are then created with distinct points for discrete locations, such as a marina or boat ramp, polygons for assets that cover larger areas, such as a barrier bar or group of homes, and lines for assets such as a sewer/water line or a road. Care should be taken to only represent the portion on the linear asset at risk and not necessarily the entire asset.

Figure 6.2

For CLEAR, following completion of the asset characterization and mapping, the map was then made available to the Steering Committee to visually inspect the asset map locations for consistency.

Risk Score

Once the required information is populated into the NYSDOS Risk Tool Worksheet, an overall risk score is calculated for each asset by multiplying its hazard score, exposure score, and vulnerability score.

Hazard Score

The hazard score is based on the likelihood an event will occur and the magnitude/intensity of the event. Likelihood is derived from the storm recurrence interval, with the magnitude of storm events increasing as the likelihood decreases. For the purposes of this risk assessment, a high intensity, 100-year storm event (1% annual chance) was used for all assets. This equates to a hazard score of 3 out of 5.

Exposure Score

The relative exposure of each asset is determined based on the risk zone and landscape attributes of the asset's location. To determine the risk zone, the asset map is overlaid with risk area map data to determine if the asset is in an "extreme", "high", or "moderate" risk area. The following datasets are overlaid, and combined vulnerabilities are used to discriminate geographic areas into three classes:

- **Extreme Risk Area:** Areas at greatest risk of frequent inundation or vulnerable to erosion:
  - Area at or below the ordinary high-water elevation (247.3ft IGLD)
  - Coastal areas with greater than 1% chance of flooding that are also susceptible to hazards associated with storm waves
  - Soils in which the likelihood of flooding is likely to occur often under usual weather conditions or is expected infrequently under usual weather conditions (approximately 5 to 50 times in 100 years)
  - Dynamic natural shoreline feature areas susceptible to flooding and erosion
- **High Risk Areas:** Areas outside the extreme-risk area that are at a less frequent, but high risk of inundation:
  - Area bounded by the 1% annual flood risk zone (FEMA A zones)
  - Riparian buffer area
- **Moderate Risk Areas:** Areas outside the extreme- and high-risk areas but currently at moderate risk of inundation from infrequent events.
  - Area bounded by the 0.2% annual risk (500-year) flood zone, where available
  - Area bounded by the base flood elevation plus 2 feet of vertical elevation
  - Soils dominated by running water or formed by water-deposited sediments

How exposed an asset is to a hazard can be moderated or exacerbated by the **landscape attributes** of its surroundings. The NYSDOS Risk Tool considers six landscape attributes: Erosion Rate, Beach Width, Presence of Shore Defenses, Presence of Protective Vegetation, Protective Natural Features, and Soils. Erosion rates are determined using National Resource Conservation Service (NRCS) County level GIS soils data, with erosion rates (K-factors) greater than 0.41 considered to be highly erodible. For the CLEAR risk assessment, the remaining attributes were assessed via field visits and conversations with partners and Steering Committee members.

Exposure scores range from 1 to 5. For example, assets in moderate-risk areas with protective landscape attributes score lower, while those in higher-risk areas with fewer protective landscape attributes are more exposed and scored higher.

Vulnerability Score

Vulnerability is an expression of the capacity of an asset to return to service after a storm, considering its material strength relative to the coastal hazard as well as its regenerative capacity. If an asset quickly recovers without external assistance, it has low vulnerability.

A vulnerability score between 1 and 5 is assigned to each asset based on a general assessment of the impact of a 100-year storm on the service or function of the asset. A score of 1 indicates low vulnerability (insignificant damage anticipated) while a score of 5 indicates high vulnerability (major damage anticipated).

The NYSDOS assessment criteria for vulnerability varies according to the asset class (economic, housing, health and social services, infrastructure systems, natural and cultural resources).

> Vulnerability is defined by NYSDOS as the
> **capacity of an asset to return to service after a storm, taking into account its material strength relative to the coastal hazard, as well as its regenerative capacity.**

Risk Score

By multiplying the hazard, exposure, and vulnerability scores for each asset, an overall risk score is calculated. This score is a measure of the relative risk of storm damage for this asset: severe, high, moderate, or residual. The Risk Level (Severe, High, Moderate, Residual) that was computed using the NYSDOS Risk Tool for CLEAR was reviewed with the Steering Committee and by the public as part of Public Event #2 to ensure it accurately represented conditions experienced by the community.

100-Year Event (Hazard Score = 3)					
Exposure					
5	15	30	45	60	75
4.5	13	27	40.5	54	67.5
4	12	24	36	48	60
3.5	10.5	21	31.5	42	52.5
3	9	18	27	36	45
2.5	7.5	15	22.5	30	37.5
2	6	12	18	24	30
1.5	4.5	9	13.5	18	22.5
1	3	6	9	12	15
0.5	1.5	3	4.5	6	7.5
	1	2	3	4	5
	Vulnerability				

Severe	Risk scores in this category occur only if one of the two factors, exposure or vulnerability, is rated 5, and the other is 4 or higher; asset is in a dangerous situation.
High	Conditions that could lead to significant negative outcomes from a storm. A vulnerability of 4 indicates the likely loss of service of an asset for an extended period of time. For many assets this may be unacceptable.
Moderate	Moderate to serious consequences, but adaptation may be of lower priority due to one factor, exposure or vulnerability, remaining relatively low.
Residual	Exposure and vulnerability are relatively low. Floods would pose minor or infrequent consequences. Note that risk is never completely eliminated.

Qualitative Variables

The NYSDOS Risk Tool also includes more qualitative information for each asset:

- Does the asset serve **Socially Vulnerable Populations**? (Yes / No)
- Is the asset a **Critical Facility**? (Yes, FEMA critical facility / Yes, locally significant / No)
- What is the relative **Community Value** of the asset? (High / Medium / Low)

Taken together with the risk score, this information can help communities prioritize their resilience actions.

During the CLEAR process, the values for these qualitative variables were prepopulated based on relevant datasets and initial community input provided through the Steering Committee kick-off questionnaire and the public survey. The compiled input was then reviewed by the Steering Committee and CLEAR partners for accuracy and presented to the public for feedback during Public Event #2.

The presence of socially vulnerable populations in each location is prepopulated by overlaying the asset map on the CDC SVI (2016) map.[11] Assets that fall within a census tract with an above average social vulnerability rating (greater than or equal to 0.50) are considered to serve socially vulnerable populations unless local knowledge of the asset indicated otherwise.

Critical Facility designations are also prepopulated using the Asset Class and Subcategory classifications compared against the list of FEMA Critical Facilities (July 13, 2015 Fact Sheet). For assets considered not FEMA critical, the community is able to assign the designation of "locally significant" to any asset deemed so.

Lastly, a community value is assigned to each asset based on input from the community. Community values for assets identified in the CLEAR process were solicited from the Steering Committee and public using surveys and in-person discussions according to a rating system of high, medium, or low community value, alongside descriptions if a value could not be accurately classified. A full list of community assets and their corresponding risk levels (severe, high, moderate, residual) can be found in Appendix B.

Community Value Descriptions

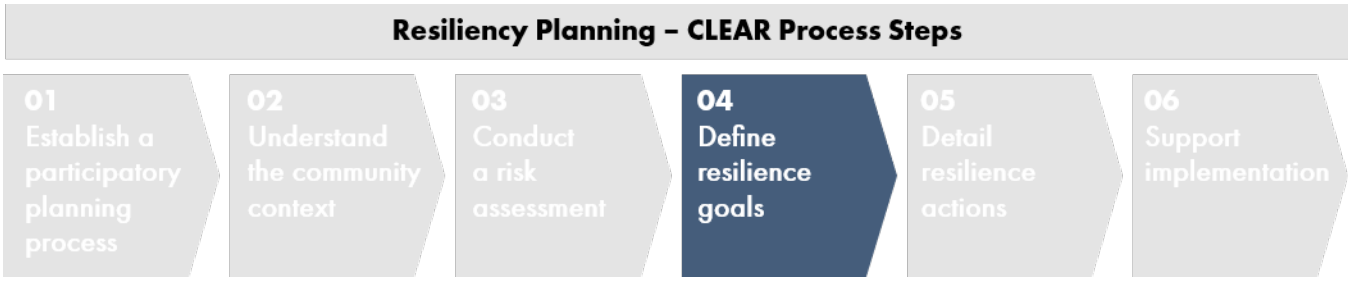
HIGH	MEDIUM	LOW
This community asset is **highly important** to the community. If it was lost or unable to function for a period of time, there would be **strong direct and indirect impacts** for a significant percentage of people in the community and/or region (i.e., entire sectors, several neighborhoods, etc.). Compared to other community assets, the significance of this asset to the community's economy, culture, natural environment, or health is **high.**	This community asset is **important** to the community. If it was lost or unable to function for a period of time, there would be **moderate to strong direct impacts** for a large group of people in the community (i.e., a group of businesses, several blocks of residential, a large demographic (e.g., seasonal workers, families), etc.). Compared to other community assets, this has a **medium significance** for the community's economy, culture, natural environment, or health.	This community asset **holds some value** to the community. If this asset was lost or unable to function for a period of time, **impacts would be fairly localized** (i.e., several households or businesses). Compared to other community assets, the significance of this asset for the broader community's economy, culture, natural environment, or health is **relatively minor.**

[11] Note: The CDC SVI is updated every few years. The more recent 2018 version of the SVI map is depicted in the Regional Overview and in the Appendices. For the Risk Assessment, which was completed earlier, the 2018 release was not yet available, and 2016 data were used. Communities can update the data in the NYSDOS Risk Tool as part of future resilience planning efforts.

CLEAR Plan
Wayne County

07

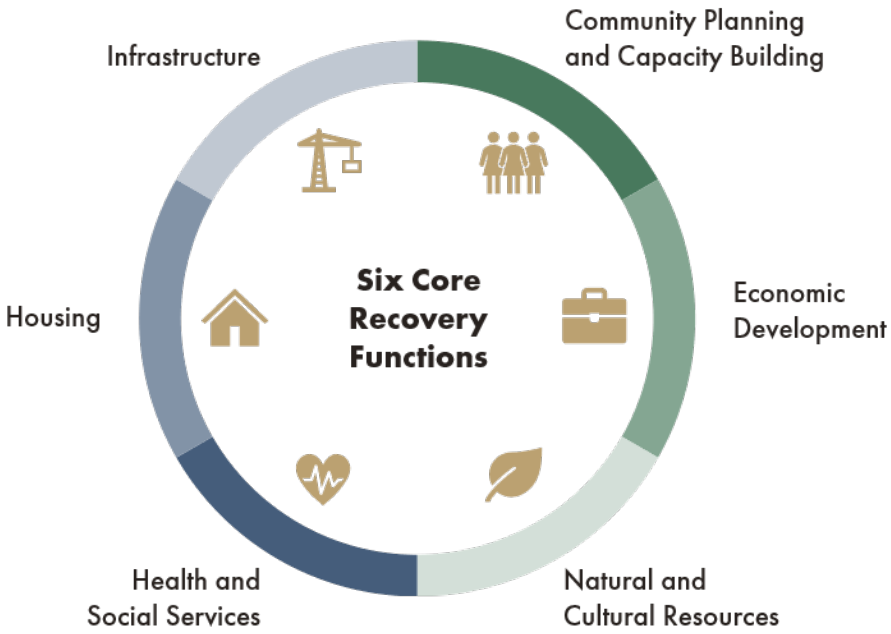
Needs & Opportunities



7.0 NEEDS AND OPPORTUNITIES

A needs and opportunities assessment helps communities define their goals (needs) and understand which approaches (opportunities) will aid in accomplishing their defined goals. This step is necessary in the long-term planning process as it ensures that subsequent implementation actions are indeed tied to and support community needs. It is essentially a building block to guide a community towards actionable measures, and can be used to address multiple needs simultaneously, adding greater value.

An interactive exercise was conducted with the Steering Committee and reviewed with the public to identify priority resilience needs and feasible opportunities that reflected community desires. This exercise was completed after the risk assessment so that participants were aware of the relative risk facing community assets in the study area. The exercise considered multiple needs and opportunities related to each of the six core recovery functions. The resilience of these component areas contributes to the overall resilience of a community.



The activity produced the community's top three needs and top five resilience opportunities shown in Figure 7.1. These needs and opportunities together with the community vision served as a basis to develop targeted resilience strategies and actions, as described in subsequent sections.

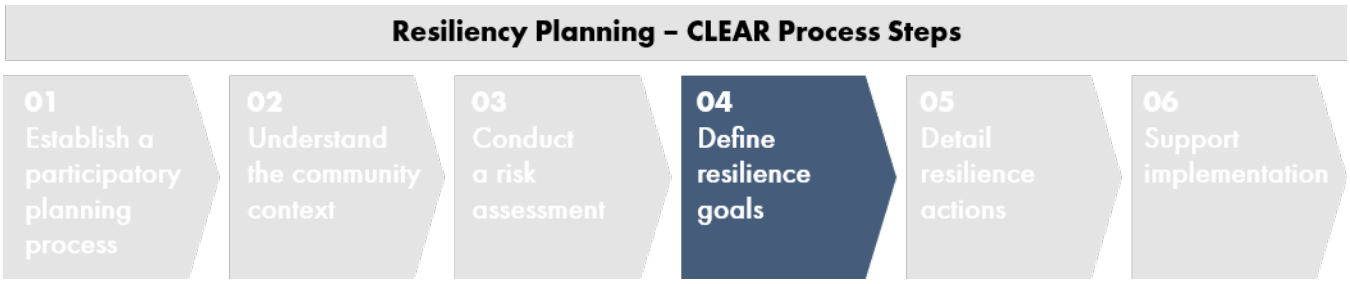
TOP 3 NEEDS	Include climate resilience in all regional/local planning initiatives
	Coordinate resilience efforts across municipal boundaries
	Educate residents and visitors about climate and resilience responsibilities
TOP 5 OPPORTUNITIES	Revise local comprehensive plans to include climate-resilience needs and opportunities and revise/create policies
	Work with state agencies and environmental organizations to implement resilience-based restoration projects
	Create a resilience funding mechanism for repair/relocation of critical infrastructure
	Create policies for use of resilient development practices
	Create a regional climate resilience committee with decision-making authority

Figure 7.1

CLEAR Plan
Wayne County

08

Vision



8.0 VISION

Once the community had defined their current state – "where are we now?" – through the risk assessment and needs and opportunities exercise, they were asked to envision their desired future – "where do we want to be?" – in terms of community resilience. The preparation of a shared vision statement is an important aspect of resiliency planning as it provides a desired future for the community to work toward.

When developing resilience strategies and prioritizing resilience actions, the community can consider how they will help to achieve the overall vision.

This vision was drafted following discussions with the Steering Committee and public engagement participants, and finalized after Steering Committee review:

The Vision is accompanied by a set of **Guiding Principles for Resilience-Building**, which were prepared with guidance from the community.

These principles capture best practices the community would like to see applied to achieve the vision.

Guiding Principles for Resilience-Building

Integrate resilience principles into all relevant planning and policy processes for the region.

Ensure resilience measures are **implemented in a consistent manner** that avoids maladaptation.

Build ownership among local actors and stakeholders, ensuring they are informed about lakeshore risks and engaged in mitigation strategies.

Base resilience-building practices and regulations on an **understanding of the complex interactions** between the local community, economy and environment.

Support resilience efforts with new or existing policies, accessible funding mechanisms, and educational or capacity-building programs.

Prioritize solutions with co-benefits that contribute to healthy environments and increased quality of life.

Pursue a multi-pronged approach that includes **mitigation, adaptation, and managed retreat:**

- Adopt more resilient and adaptive uses and development practices.
- Enhance and expand protective features that mitigate risk in the long term.
- Reduce exposure of vulnerable people and community assets to hazards.
- Improve disaster response and recovery systems so communities can bounce back quickly from unavoidable losses.

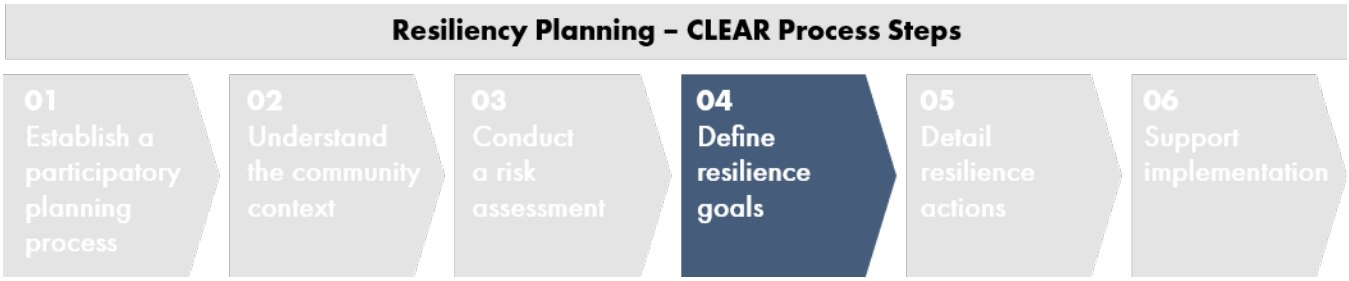
Develop and demonstrate defined **best management practices** for resiliency measures using assessed and balanced nature-based solutions where appropriate to accelerate uptake and approval of climate resilient actions.

Follow an iterative process responsive to evolving needs.

CLEAR Plan
Wayne County

09

Scenario Planning



9.0 SCENARIO PLANNING

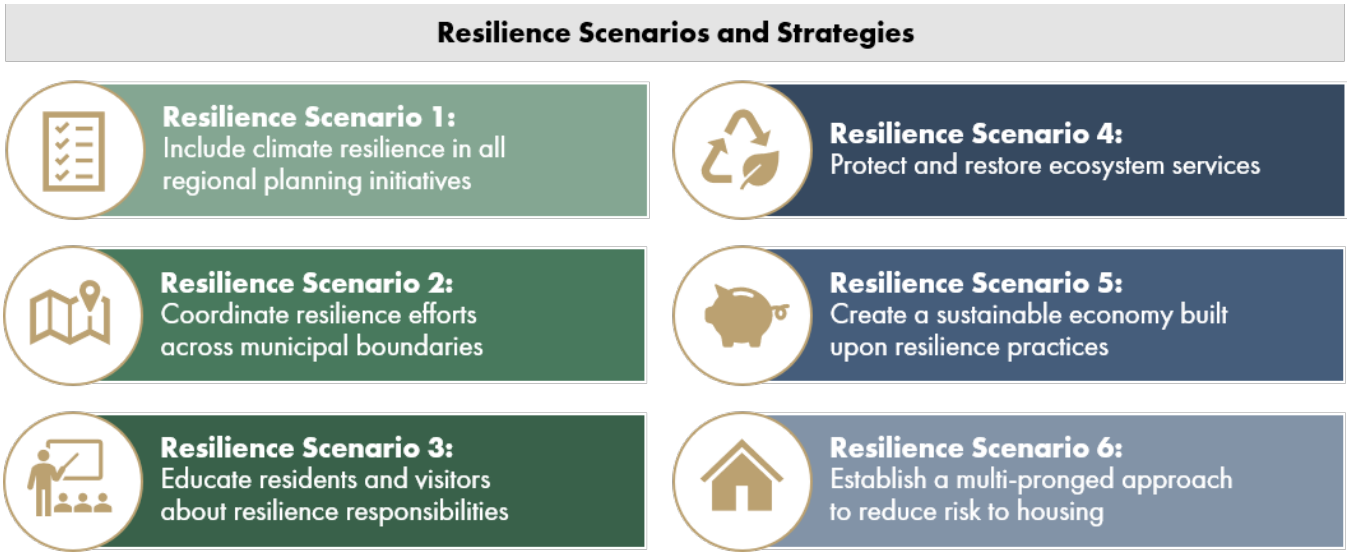
A variety of resilience scenarios were developed to help conceptualize the types of strategies that can help a community achieve their resilience vision. Scenario planning is a helpful tool to use when future conditions are uncertain.

By considering various possible futures and responses, it helps communities identify strategies that have the greatest potential to advance the resilience vision across a variety of possible conditions.

9.1 Resilience Scenarios Results

The following Resilience Scenarios were selected for the Wayne region based on the planning exercise with the Steering Committee and the community.

The order reflects the relative priority of the scenarios, though it is expected that all these scenarios would be pursued simultaneously.



9.2 Scenario Planning Methodology

Scenario planning is a tool to help communities identify strategies that have the greatest potential to advance the resilience vision and goals across a variety of possible future conditions. In the context of the CLEAR initiative, scenario planning considered both impact scenarios and resilience scenarios:

- **Impact scenarios** are possible versions of what communities can expect to occur over time in terms of flood extent and lake conditions. These were defined based on the same NYSDOS Coastal Management Program Risk Zones (extreme, high, moderate) that are used in the risk assessment (see page 25 and 39).
- **Resilience scenarios** are understood as the level of, and options for, achieving resilience under each impact scenario (extreme, high, moderate). These serve as the basis through which the resilience vision can be achieved, despite these impacts.

There are five distinct methods of developing resilience scenarios, shown in Figure 9.1.

For CLEAR, the **topical resilience scenario development method** was selected as strong resilience topics of concern came to light during Steering Committee and public discussions. These concerns were translated into planning scenarios for identified "keystone actions" (needs and opportunities) that were considered critical to resilience success. The scenarios were then refined via feedback from the Steering Committee and the public.

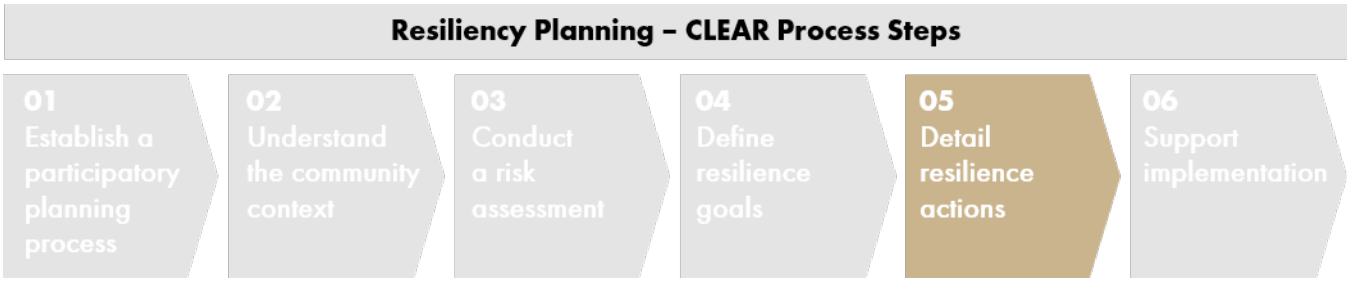
Resilience Scenario Development Methods	
Timeframe-focused	Providing resilience scenarios based upon potential fluctuation in lake levels and the timeframe in which appropriate resilience measures can be achieved
Capacity-focused	Scenarios based upon a regional or local government (or entity) plan for such as master or comprehensive plan development (10, 30, and 50+ year horizons) or capital improvement project planning
Level of resilience	Scenarios often based upon the intensity of resilience such as "status quo," moderate resilience and innovation/transformation
Topical	Scenarios based upon the key resilience goals/objectives selected by the community such as environmental protection and restoration, protection of community assets or economic development concerns
Hybrid	Combination of the above

Figure 9.1

CLEAR Plan
Wayne County

10

Strategies & Actions



10.0 STRATEGIES AND ACTIONS

Once the resilience scenarios are defined, a set of specific strategies and actions can be developed for each. These strategies and actions aim to embed resilience and climate risk considerations into community activities, local government decision-making processes, and private sector actions to enable communities to prepare for and respond to changing lake conditions.

10.1 Strategies

For each scenario identified in the CLEAR process, a series of strategies were identified and refined with the Steering Committee and the public, as listed within the following table:

Scenario	Strategy	
01 Include climate resilience in all regional planning initiatives	1.1	Develop building guidelines and land development regulations (e.g., zoning) that protect against known impacts of lake shore erosion and extreme flooding events.
	1.2	Coordinate across communities to acquire land to mitigate future flooding
	1.3	Prepare targeted land use studies to determine highest, best, and smartest use for vacant parcels
02 Coordinate resilience efforts across multiple boundaries	2.1	Create a regional Climate Resilience Committee
	2.2	Create regional resilience funding mechanisms
03 Educate residents and visitors about resilience responsibilities	3.1	Focus educational programming within socially vulnerable populations
	3.2	Conduct educational programs with County residents and visitors
	3.3	Preserve historic and cultural assets for future generations

Scenario	Strategy	
04 Protect and restore ecosystem services	4.1	Work with state agencies and environmental organizations to develop and fund resilience-based restoration projects
	4.2	Incorporate nature-based solutions to protect the shoreline and improve ecosystems
	4.3	Improve stormwater management systems to improve water quality (e.g., bioswales, permeable pavement, etc.)
05 Create a sustainable economy built upon resilience practices	5.1	Ensure that new development occurs in low-risk areas
	5.2	Minimize damage and losses of commercial businesses, including marinas, due to high and low water events
	5.3	Diversify the economy to increase resiliency
06 Establish a multi-pronged approach to reduce risk to housing	6.1	Incentivize retrofits to be more resilient in the future
	6.2	Ensure new housing development occurs in low-risk areas
	6.3	Protect and/or relocate community facilities and services in high-risk areas

10.2 Actions

A series of 28 specific actions were developed with input from the Steering Committee and public to advance the strategies. This list is intended to provide a menu of potential actions for communities in the Wayne region to choose from, based on the findings of the Plan. Not all actions will be appropriate for all communities, and some communities may already be implementing certain actions in some form.

A general list of actions is provided for shoreline communities to consider, adapt, implement, and add to according to their specific needs. The table below lists each of the actions and references how each action aligns with the 17 strategies previously discussed. The actions are further detailed in the Actions Matrix in Section 11.

	Strategy Alignment																
Action	1.1	1.2	1.3	2.1	2.2	3.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
Coastal Erosion Hazard Area (CEHA) Cookbook																	
Update/prepare open space plan																	
Regional capacity building: Regional Resilience Coordinator																	
Establish a resilience fund																	
Increase local capacity to implement resilience actions																	

Action	Strategy Alignment																
	1.1	1.2	1.3	2.1	2.2	3.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
Educational programming for socially vulnerable populations																	
Educational programming for residents and property owners																	
Educational programming for visitors																	
Lake Ontario shoreline study																	
Living shorelines																	
Regional Resilience Committee/ Advisory Board																	
Conduct a feasibility study for tributary outflows into Lake Ontario																	
Create/update zoning with a resilience lens																	
Floodplain, wetland, and/or resource conservation overlay district																	
Adopt FEMA increased cost of compliance definition																	
Define and integrate no adverse impact principle into local policies																	
Additional land use restrictions in floodplain																	
Establish a design flood elevation																	
Enroll in the FEMA community rating system																	
Join the Climate Smart Communities program																	
Prepare/update LWRP																	
Cultural resources resiliency plan																	
Managed retreat (if necessary)																	
Voluntary buy-outs of repeatedly flooded properties																	
Blue-green infrastructure																	
• Vegetated buffers/terraces																	
• Roadway reduction/permeable pavement																	
• Rain gardens/bioretention																	

10.3 Detailed Project Profiles

Detailed Project Profiles can serve as a template for the communities, with guidelines on many of the factors that need to be considered as an idea is advanced from conception to future phases, such as funding applications, initial regulatory discussions, community input, etc.

For the Wayne CLEAR Region, actions were selected to profile in more detail based on input from the Steering Committee and the public as well as the selection criteria listed below.

The three profiles, included on the following pages, for Wayne County are:

- Coastal Erosion Hazards Area (CEHA) Cookbook
- Regional Capacity Building for Resiliency - Regional Resiliency Coordinator
- Shoreline Condition Study and Bluff Conservation Plan

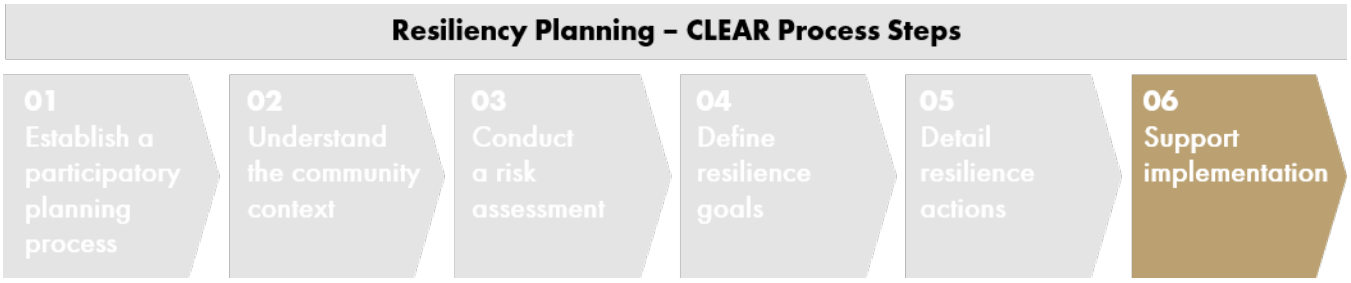
Resilience Actions Criteria	
☑	**Demonstration Project** Can the project serve as a template for other areas or communities?
☑	**Implementation Feasibility** Can the project receive support from landowners and is it is feasible from a permitting and cost standpoint?
☑	**Multiple Benefit Project** Does the project include elements that benefit multiple communities?
☑	**Innovative** Does the project incorporate innovative technologies/techniques/policies?
☑	**Economic Benefit** Does the project include a demonstrated ability to protect economic assets?

Project Profiles under review - coming soon!

CLEAR Plan
Wayne County

11

Implementation



11.0 IMPLEMENTATION

The Action Matrix is an implementation tool to guide communities through the various resilience actions identified. The matrix contains a description of each action including its anticipated benefits, how it advances the CLEAR goals and vision, the strategies it aligns with, and a related case study or resource. In addition, the matrix includes information on the suggested timeframe, priority, potential partners, estimated cost, potential funding, and key performance indicators for the action.

Community leaders, non-profits, interest groups, or private citizens/businesses can easily browse the wide variety of potential actions that could be taken with their support to achieve long-term resilience for shoreline communities in the Wayne region. By aligning their programs with the CLEAR Plan, they may also be at a competitive advantage for future funding opportunities. This matrix should be a living tool that is routinely revisited and updated to reflect the evolving needs of the community.

Wayne County Priority Action Matrix

KEY

Action (How)	Description	Case Study or Resource	Anticipated Benefits	Alignment with CLEAR Goals and Vision	Alignment with CLEAR Strategies	Timeframe	Priority	Ongoing	Potential Partners	Estimated Cost	Potential Funding	KPIs
Coastal Erosion Hazard Area (CEHA) Cookbook	All six municipalities in the Wayne County CLEAR region are coastal communities in New York CEHA jurisdiction. As a result, public and private development along much of the shoreline requires a CEHA permit. Given the complexity of the CEHA program a 'CEHA Cookbook' that explains the basic principles and processes of the program in simple language can be developed and shared with the public and private sectors. (See detailed project profile.)	The idea of the CEHA Cookbook came from the SEQRA Cookbook that was created by NYSDEC. (https://www.dec.ny.gov/docs/permits_ej_operations_pdf/cookbook1.pdf)	A CEHA Cookbook would provide a valuable resource for municipal staff in coastal communities to better understand, interpret, and, where relevant, enforce coastal protection measures. It could also serve as a useful reference for shoreline property owners and stakeholders. Potential benefits include increased local awareness and ownership of CEHA regulations, improved compliance with and consistent application of coastal protection measures, and shorter permit processing times.	Advances CLEAR goals 1, 3, 4, and 5 Advances the CLEAR vision by helping to "build long-term resilience to variable lake levels and climate change" that is "coordinated between regional partners including federal, state, and local governments and supporting entities; property owners; and non-profit institutions" and improves "the natural environment . . . while achieving economic sustainability."	Potential to align with all Strategies				NYSDEC, NYS ITS, NYS GIS Program Office, Geospatial Advisory Council, NYSDOS, US ACE, SWCD, County planning, NFIP, NYSBOC, NY Sea Grant	N/A	NYS	CEHA Cookbook completed in 2-3 years.
Update/Prepare Open Space Plan	Open space plans typically focus on open spaces for land protection for flora, fauna, and open space preservation. While Wayne County has a large amount of open space, an open space plan can be prepared/updated with a focus on resiliency along the coastline areas to understand sources of sediment, and areas that should be protected.	Open Space Plan for the City of Portsmouth, NH (https://www.cityofportsmouth.com/planportsmouth/open-space-plan). This plan examines a wide variety of open spaces within the City and also considers integration of climate resiliency objectives as they relate to open space.	Potential identification of lands that can help protect from future flood events as well as lands that could potentially be used for new/increased access to the lake and streams for recreational purposes. Open Space Preservation is also a great opportunity to earn points through the NFIP CRS program. The Town of Greece in Monroe County participates in CRS and earns most of its points through open space preservation.	Advances CLEAR goals 1, 2, 3, 4, 5 Advances the CLEAR Vision by incorporating resilience principles and actions into plans that will "improve the long-term resilience of communities, infrastructure, and natural ecosystems while enhancing the economy and quality of life for all shoreline users."	Advances Strategy 2.1 and supports all Strategies				Municipal elected officials, municipal staff, NYSDOS, NYSDEC, NY Sea Grant, SWCD, County planning, regional planning, academia	$25,000 - $75,000	NYSDOS, NY Ag and Markets, USDA	1-2 Open Space Plans completed in next 4-5 years.
Regional Capacity Building: Regional Resilience Coordinator	Regional Resilience Coordinator(s) to facilitate funding, capacity building, technical assistance & skills-building, awareness, coordination in the region. (See detailed description in project profile.)	Owasco Lake Watershed Management Council (OLWMC). The OLWMC was created in 2011 as an inter-municipal 501(c)3 nonprofit development corporation with an Executive Director and support staff to coordinate actions for protecting and restoring the health of Owasco Lake and its watershed.	The position would improve coordination between various public and private entities to help remove barriers to action; delineate responsibilities; reduce waste, duplication, and maladaptation; and promote approaches with broad co-benefits.	Advances CLEAR Goals 1, 2, 3, 4 and 5. Advances the CLEAR vision by facilitating "a collaborative, multi-pronged approach supported by accessible funding mechanisms, and coordinated between regional partners including federal, state, and local governments and supporting entities; property owners; and non-profit institutions."	Aligns with Strategies 2.2 and supports implementation of all strategies			X	County planning agencies, GFLRPC, County emergency managers, shoreline municipalities, regional NGOs, regional institutes and networks, State agencies, SWCD, NY Sea Grant	$150,000-$250,000	NYS agencies, Cost-share, Resiliency Fund, EPA, Federal programs, County	Coordinator hired and seated in a supporting entity; Improved understanding of resilience actions among key regional actors and officials within 3 years; Increased financial and technical resources available for regional resilience actions within 4 years; Increase in average annual number or projects implemented that have a resilience component within 5 years.

Wayne County Priority Action Matrix

KEY

Short (1-2 yrs.)
Medium (3-5 yrs.)
Long (6+ yrs.)

Medium
High
Top

Action (How)	Description	Case Study or Resource	Anticipated Benefits	Alignment with CLEAR Goals and Vision	Alignment with CLEAR Strategies	Timeframe	Priority	Ongoing	Potential Partners	Estimated Cost	Potential Funding	KPIs
Establish a Resilience Fund	Identify funding mechanisms that could be used in resiliency efforts. This could include re-programing existing funds for certain resiliency projects (i.e., different ways in which to maintain ditches along rural roads), seeking funding to establish a loan and/or grant fund, partnering with NGOs or research organizations on grants, establishing new financing mechanisms (e.g. special improvement district) to create a funding reserve for resilience actions, or taking advantage of new federal programs (e.g. PROTECT grant, STORM Act).	The National Association of Counties has a description of how funding could be obtained and used: https://www.naco.org/resources/local-government-guide-coastal-resilience/funding#link-0 Funding case studies are also available on the Georgetown Climate Center Adaptation Clearinghouse https://www.adaptationclearinghouse.org/	By establishing consistent, locally-driven funding streams for resilience actions, the Wayne region will be able to proactively invest in risk reduction measures that will prevent future damages to the local economy, environment, and community, saving millions of dollars in the long-term.	Advances CLEAR Goals 3, 4, 5. Advances the CLEAR vision by facilitating "a collaborative, multi-pronged approach supported by accessible funding mechanisms, and coordinated between regional partners including federal, state, and local governments and supporting entities; property owners; and non-profit institutions."	Aligns with Strategies 3.1 and 3.2			X	County planning, regional planning, SWCD, NY Sea Grant	$100,000 - $500,000	NYSDOS, NYSDEC, USEPA, FEMA, US HUD, Krege Foundation, NFWF, Shared-Costs, Locally-generated revenue	Fund guidelines established and funding obtained in 2-3 years.
Increase Local Capacity to Implement Resilience Actions	In addition to a regional coordinator, municipalities need additional staff capacity to implement resilience actions. This includes grant writing, policy and code adoption/enforcement, administration of programs (CSC, NFIP, etc.), and managing partnerships.	Many cities, such as Pittsburgh, have appointed "Resilience Officers" to lead cross-cutting resilience initiatives related to the environment, economy, equity, and other urban systems.	Staff time and resources to implement resilience actions.	Advances CLEAR Goals 1, 2, 3, 4 and 5. Advances the CLEAR vision by facilitating "a collaborative, multi-pronged approach supported by accessible funding mechanisms, and coordinated between regional partners including federal, state, and local governments and supporting entities; property owners; and non-profit institutions."	Aligns with Strategies 2.2 and supports implementation of all strategies				County planning agencies, GFLRPC, municipalities, regional partners	$75,000-$150,000 per municipality	NYS agencies, Cost-share, Resiliency Fund, EPA, Federal programs, County	Municipalities have the equivalent of one full-time staff person working on resilience initiatives (can be integrated into responsibilities of multiple positions) in three years.
Educational Programming for Socially Vulnerable Populations	Continue outreach to socially vulnerable population to help them increase their personal resilience. E.g. educational materials, risk and vulnerability assessment workshops, multi-lingual outreach etc.	Resources for Vulnerable Population Mapping: CDC Social Vulnerability Index https://www.atsdr.cdc.gov/placeandhealth/svi/index.html Case Study: The Town of Caroline, NY completed a participatory Vulnerability Assessment that engaged diverse stakeholders to identify local risks and physical as well as social vulnerabilities. Conducted from 2019-2020, the process included in-person and remote methods. http://www.townofcaroline.org/uploads/6/2/7/8/62781479/caroline_cva.pdf	Engaging communities who are most at-risk will increase understanding and ownership of how to reduce these risks for vulnerable populations and municipal officials alike. As a result, socially vulnerable populations are better protected from future hazard events.	Advances CLEAR goals 1, 4 and 5 Advances the CLEAR Vision "through a collaborative, multi-pronged approach supported by accessible funding mechanisms and coordinated between regional partners including ... to improve quality of life ... and equity, while achieving economic sustainability."	Aligns with Strategies 1.1, 3.2, 4.2, and 5.2			X	NYS HCR, NYSDOS, NYSERDA, USHUD, USDA, NY Sea Grant	$15,000-$20,000	NYSHCR, NYSDOS, USDA, USHUD	1 outreach campaign to a socially vulnerable population in the next 2 years.

Wayne County Priority Action Matrix

KEY

Action (How)	Description	Case Study or Resource	Anticipated Benefits	Alignment with CLEAR Goals and Vision	Alignment with CLEAR Strategies	Timeframe	Priority	Ongoing	Potential Partners	Estimated Cost	Potential Funding	KPIs
Educational Programming for Residents and Property Owners	Identify and assemble existing resources that can be provided to property owners to support resilience building actions.	NYS REDI Building Resilience in Recovery: Homeowner Program Guidance for Shoreline Management on the Great Lakes and St. Lawrence River. NYSDEC compiled this handbook with general guidelines for coastal design and development projects as part of REDI to share technical and regulatory requirements, best practices, and available resources for rebuilding and maintaining erosion protection. http://on.ny.gov/rediguidance See also NY Sea Grant resources including the Home Owner's Guide to healthy shorelines https://waynecountynysoilandwater.org/wp-content/uploads/Web-Version-Wayne-County-Home-Owners-Guide-Book-rev2.pdf	Increased awareness for property owners and options available to reduce stormwater, flooding and erosion impacts.	Advances with CLEAR Goals 1, 3, 5 Advances the CLEAR Vision "through a collaborative, multi-pronged approach supported by accessible funding mechanisms, and coordinated between regional partners including federal, state, and local governments and supporting entities; property owners; and non-profit institutions. Resilience efforts will capitalize on opportunities to improve quality of life, the natural environment, and equity, while achieving economic sustainability.	Aligns with Strategies 3.2 and 3.3			X	County planning, regional planning, GFLRPC, SWCD, NOAA, USACE, NYSDEC, NYSDOS, non-profit institutions, academia, NY Sea Grant, TNC, NYSDOT, USEPA	$1,000 - $20,000	Cost-share or in-kind support, NYSDEC, NYSDOS, Resiliency Fund, Local Foundation	1 new resource or training shared with community members each year.
Educational Programming for Visitors	Outreach programs to educate visitors and tourists about sustainable, resilient development practices and stewardship. Could include informational materials at major tourist sites including State parks, campsites, and historic landmarks. Resilience principles could also be shared as part of popular tourist activities including fishing and boating excursions.	The Sterling Nature Center Trail in Cayuga County includes interpretative signage on environmental stewardship. The NY Hunter Education course is required to purchase a hunting license in New York. The course includes information on conservation principles and environmental stewardship. This approach could be adopted for other purposes (e.g. fishing or boating license quiz, informational video for park visitors) to introduce resilience principles to tourists.	Educate visitors on special resources of Wayne County to improve ownership, stewardship, and appreciation of natural heritage. Maintains public access to environmental resources while protecting them for future generations.	Advances CLEAR Goal 1 Advance the CLEAR Vision as a "collaborative, multi-pronged approach ... coordinated between regional partners including federal, state, and local governments and supporting entities; property owners; and non-profit institutions ... to improve quality of life, the natural environment, and equity, while achieving economic sustainability."	Supports Strategies 1.1, 1.3, 3.3, 4.1, 4.2, 4.3, and 5.2			X	County, municipalities, NYS Parks, TNC, academia, NY Sea Grant, non-profit organizations, local foundations	$5,000 - $100,000	NYSDOS, NYSDEC, Foundation funding, NOAA, NFWF, Tourism revenue/donations	1 new educational resource provided for visitors within the first 2 years. Positive feedback and engagement captured related to the educational resource to further the CLEAR vision.
Lake Ontario Shoreline Study	Shoreline assessment study including analysis of sediment flow related to natural and manmade (e.g. dredging) processes and historic losses and damages to inform potential interventions. Assessment should consider conditions over a period of time to establish a baseline model of the shoreline under different conditions including low water, high water, and winter/ice conditions. The assessment should build on previous studies and available shoreline data including USACE data to produce a downscaled model of shoreline characteristics and trends. (See detailed project profile.)	The City of Albany's Hudson River Shoreline Stabilization Study (2021) assessed the condition of the City's tidal Hudson River shoreline and developed a strategy for restoring and enhancing the riverfront. It also included recommendations for potential long-range projects to improve public access and park facilities, which informed a recent update of the City's LWRP. See also NY Sea Grant research and resources on coastal processes and erosion.	The study will serve as a basis for decision-making for shoreline management practices. A better understanding of erosion patterns and 'feeder' sites that serve as a source of sediment for other shoreline sites will increase understanding of which shoreline stabilization techniques to use in which locations, and the potential impacts of different uses and interventions on the broader shoreline.	Advances CLEAR Goals 1, 2, 3, 4, and 5 Advances the CLEAR vision by informing best practices to "build long-term resilience to variable lake levels and climate change through a collaborative, multi-pronged approach ... coordinated between regional partners including federal, state, and local governments and supporting entities; property owners; and non-profit institutions ... to improve quality of life, the natural environment, and equity, while achieving economic sustainability."	Aligns with Strategies 4.1, 4.2, and 4.3				NYSDOS, NYSDEC, NYSOPRHP, USACE, academia, NY Sea Grant, TNC, regional planning agencies	$400,000 - $600,000	Cost-share, NYSDEC, USACE, Resiliency Fund, EPA, FEMA	Study completed and distributed to key actors and stakeholders. Study informs multiple public and private shoreline actions within the first 3 years.

Wayne County Priority Action Matrix

KEY

Short (1-2 yrs.)
Medium (3-5 yrs.)
Long (6+ yrs.)

Medium
High
Top

Action (How)	Description	Case Study or Resource	Anticipated Benefits	Alignment with CLEAR Goals and Vision	Alignment with CLEAR Strategies	Timeframe	Priority	Ongoing	Potential Partners	Estimated Cost	Potential Funding	KPIs
Living Shorelines	Living shorelines connect the land and water to stabilize shorelines, reduce erosion, and provide valuable habitat that enhances coastal resilience.	The City of Marysville, MI replaced 1,885 feet of steel seawall along the St. Clair River (Lake Huron outlet) with a naturalized shoreline in 2012, providing improved public spaces and wildlife habitat. The project was supported by the Great Lake Restoration Initiative. For an overview of living shorelines and links to helpful resources, see https://storymaps.arcgis.com/stories/def578589be547b88870578612897cab	Living shorelines offer direct and indirect co-benefits including shoreline protection and stabilization, ecosystem restoration, scenic beauty, improved water and air quality, habitat restoration, temperature moderation, and improved public space and waterfront access.	Advances CLEAR Goals 1, 2, and 3. Advances the CLEAR Vision by capitalizing "on opportunities to improve quality of life, the natural environment, and equity, while achieving economic sustainability."	Supports all strategies				NYSDOS, NYSDEC, NYSOPRHP, USACE, SWCD, academia, NY Sea Grant, TNC, community and environmental groups	$75,000 - $1.5M depending on size and scope	Great Lakes Restoration Initiative, USEPA, USACE, NYSDOS, Foundations, Cost-share	Living/naturalized shoreline project initiated within five years in the region to serve as a demonstration project for others.
Regional Resilience Committee/Advisory Board	Regional committee with a representative such as a staff member or elected official from each participating municipality. This committee would serve as a resource to advise municipal officials on resilience-building and enable coordinated regional action. Part of their role could be to formulate potential policies for the region that could be adopted locally by individual municipalities. They could also serve as the 'implementation committee' for the CLEAR plan.	Wayne County government and conservation entities routinely partner to educate and inform a wide variety of audiences about the potential threat from future storm events. Partners include the Wayne County SWCD, Wayne County Planning, NY Sea Grant, and others. The Regional Resilience Committee could be a formalized group of members of these organizations that could then continue to educate and implement the CLEAR plan.	Such a committee would continue the already established regional cooperation and coordination so that all communities can learn from each other and adopt similar policies for resiliency that protect the broader region. By pooling resources and expertise, the committee would contribute to increased understanding of and capacity for resilience planning across the region.	Advances Goals 1 and 5 of the CLEAR initiative by bringing together local governments, organizations, and leaders to protect their communities. Advances the vision by building partnerships that increase long-term resilience for all shoreline users and ecosystems.	Aligns with Strategies 3.3, 4.1, 4.2, 5.2, 5.3 and 6.3			X	Regional Resilience Coordinator, municipal elected officials, County planning and economic development, GFLRPC, Wayne County Soil and Water Conservation, NY Sea Grant, NYSDEC	N/A	N/A	Committee officially formed by a Memorandum of Understanding from each municipality in the study area. Process for advising on regional resilience plans and policies initiated.
Conduct a Feasibility Study to Evaluate Tributary Outflows into Lake Ontario	Conduct a resiliency study for the outflows of tributaries into Lake Ontario to preserve outflows or evaluate the possibility of restoring the outflow. The study should examine low- and high-water events to assess flow, erosion, and aquatic activity/management. It should also investigate water quality, wetland filtration, and upland sediment contributions.	Wayne County SWCD has a proposal to undertake this activity which could be used as a starting point.	Preservation of fish and other habitat for recreational and fishing for sustenance. Improved water quality by maintaining water exchange. Erosion and floodplain management.	Advances CLEAR Goals 1, 2, 3, 4 and 5 Advances the vision as by seeking ways to "build long-term resilience to variable lake levels and climate change through a collaborative, multi-pronged approach ... coordinated between regional partners ... to improve quality of life, the natural environment, and equity, while achieving economic sustainability."	Aligns with Strategies 1.1, 1.3, 3.3, 4.2, 4.3, 5.1, 5.2, 6.1, 6.2, and 6.3				Wayne County SWCD, NYSDEC, municipalities, NY Sea Grant	$50,000 - $75,000	NYSDOS, NYSDEC	Feasibility Study completed in 4 years.
Create/Update Zoning with a Resilience Lens	Examine local zoning ordinances to determine what type of resiliency measures can be incorporated such as use restrictions in high-risk areas, allowing retrofits to buildings even if the building is non-conforming if retrofit helps protect the structure from future hazards, adjusting area and bulk requirements to limit development in risk areas, and creating overlay districts where certain rules apply designed to protect from flooding and erosion.	The NYSDOS's "Model Local Laws to Increase Resilience" (https://dos.ny.gov/system/files/documents/2020/09/model_local_laws_to_increase_resilience.pdf) has a wide variety of tools that can potentially be incorporated into local zoning ordinances.	New development and redevelopment occurs in low-risk areas or is adapted in-place to withstand future impacts from hazards.	Advances CLEAR Goals 1, 2 and 5 Advances the vision as by increasing local agency to "build long-term resilience to variable lake levels and climate change."	Aligns with Strategies 1.1, 1.2, 3.3, 4.2, 5.1, 6.2, and 6.3				Municipal elected officials, municipal staff, municipal zoning boards, NYSDOS, NY Sea Grant, Wayne County SWCD, County planning, GFLRPC	$10,000 - $75,000	NYSDOS, NYSERDA	3-4 Zoning Ordinances updated with resiliency measures in next 4 years. Vulnerability of structures in risk areas significantly reduced in next 10 years.

Wayne County Priority Action Matrix

KEY

Action (How)	Description	Case Study or Resource	Anticipated Benefits	Alignment with CLEAR Goals and Vision	Alignment with CLEAR Strategies	Timeframe	Priority	Ongoing	Potential Partners	Estimated Cost	Potential Funding	KPIs
Floodplain, Wetland, and/or Resource Conservation Overlay District	A zoning overlay district to apply performance standards to new development in stream corridors, including floodplains, buffer areas, and regulated wetlands. The buffer zone would be either adjacent to the floodplain or, where no Special Flood Hazard Area has been mapped, measured from the center line of an adjacent perennial stream.	The zoning code for the Town of Hamlin, NY includes a Conservation Overlay along major streams and Lake Ontario that is 100 feet from each bank (streams) or mean high water line (lake) to the landward boundary of the 100-year flood plain, whichever is greater. There is also a 200-foot buffer around all other wetlands, waterbodies, and streams. The Conservation Overlay District provides special controls and protections so development in these areas is limited and subject to special standards and permits. Town of Hamlin Zoning Code Article V, Section 520-24. https://ecode360.com/14919867#14920073	As described in the NYS Model Local Laws for increasing resilience, about one-third of flood insurance claims are for properties outside of mapped "special flood hazard areas;" Flood Insurance Rate Maps (FIRMs) in New York State do not demonstrate the extent of flooding from ice jams or wave run up and wave action along the coasts of the Great Lakes (as of 2018); and they also may not account for the increasing frequency, intensity, and duration of precipitation events and storms in the Northeast.	Advances CLEAR Goals 1, 2 and 5 Advances the vision by "building long-term resilience to variable lake levels and climate change" and capitalizing on "opportunities to improve quality of life, the natural environment ... while achieving economic sustainability."	Aligns with Strategies 1.1, 2.2, 5.2, 6.1, and 6.3				Municipal elected officials, municipal staff, NYSDOS, NY Sea Grant, Wayne County SWCD, TNC, County planning, GFLRPC	$10,000 - $75,000	NYSDOS, NYSERDA	3-4 Zoning Ordinances updated with resiliency measures in next 4 years. Vulnerability of structures in risk areas significantly reduced in next 10 years.
Adopt FEMA Increased Cost of Compliance Definition	FEMA's Increased Cost of Compliance (ICC) flood insurance coverage provides up to $30,000 toward elevating, floodproofing (non-residential buildings), demolishing or relocating a structure that has been substantially damaged or repetitively damaged within a municipality that has adopted an ICC definition in its local law and uniformly enforces it. A municipality must update its "Substantial Damage" definition in its flood damage prevention law, receive NYS Code Council approval for the change, and keep track of all flood-related damages.	Town of Huron (NY) Flood Damage Prevention Law, Section 2	Support for adaptation measures to protect vulnerable structures. Eligible, NFIP insured non-residential structures that are damaged twice within a ten-year period with an average damage of at least 25% of its market value would qualify for up to $30,000 toward elevating, floodproofing, demolishing, or relocating the structure. In some circumstances, ICC coverages is also available after a single flood event.	Advances CLEAR Goals 1, 2 and 5 Advances the vision as a by building "long-term resilience to variable lake levels and climate change through a collaborative, multi-pronged approach supported by accessible funding mechanisms, and coordinated between regional partners including federal, state, and local governments and supporting entities; [and] property owners"	Aligns with Strategies 1.1, 5.2, and 6.3				Municipal elected officials and municipal staff, Resilience Coordinator, County planning, GFLRPC, NYSDEC	$20,000 - $40,000	NYSDOS, NYSDEC	2-3 Floodplain Damage Prevention Ordinances substantial structure definition updated in next 3 years. Included in Wayne County All Hazards mitigation plan 5 year goal, NFIP administrator needed
Define and Integrate No Adverse Impact Principle into Local Policies	The No Adverse Impact principle developed by the Association of State Floodplain Managers (ASFPM) aims to ensure actions of a municipality or property owner taken in the floodplain will not adversely impact the property and rights of others. A municipality can define what an "adverse impact" is in the municipality (based on physical, environmental, social and economic conditions) and incorporate this requirement into local plans and policies.	To assess the possibilities of this in a community the Association of Floodplain Managers No Adverse Impact Toolkit can be referred to as a guide (https://www.floods.org/resource-center/association-of-state-floodplain-managers-nai-no-adverse-impact-floodplain-management/)	This approach ensures that actions of a municipality or property owner will not adversely impact the property and rights of others	Advances CLEAR Goals 1, 2 and 5 Advances the CLEAR Vision by encouraging cooperation "between regional partners including ... local governments and ... property owners ... to improve quality of life, the natural environment, and equity, while achieving economic sustainability." for shoreline users.	Aligns with Strategies 1.1, 5.2, 6.1, 6.3				Municipal elected officials, municipal staff, County planning, GFLRPC, NYSDEC	$20,000 - $40,000	NYSDOS, NYSDEC	2-3 No Adverse Impact laws incorporated into local laws and/or plans in next 5 years.

Wayne County Priority Action Matrix

KEY

Short (1-2 yrs.)
Medium (3-5 yrs.)
Long (6+ yrs.)

Medium
High
Top

Action (How)	Description	Case Study or Resource	Anticipated Benefits	Alignment with CLEAR Goals and Vision	Alignment with CLEAR Strategies	Timeframe	Priority	Ongoing	Potential Partners	Estimated Cost	Potential Funding	KPIs
Additional Land Use Restrictions in Floodplain	Limit future development of land in high-risk areas beyond minimum requirements. Example regulations include policies that restrict or prohibit (a) subdivisions for residential use or other forms of development (b) substantial improvements to non-conforming uses or structures in a flood protection district (c) development within buffer zones next to waterbodies (setbacks) and (d) disturbance of natural features in a floodplain.	The Town of Huron defines "substantial improvement" cumulatively in its municipal Flood Damage Prevention Law. The State model flood damage prevention law allows improvements valued at less than 50 percent of a building's pre-improvement value to be permitted without meeting the flood protection requirements, with no limit on the number of times a building can be improved. By making substantial improvement cumulative, structures become subject to flood protection requirements when a certain threshold is reached. See Town of Huron (NY) Flood Damage Prevention Law, Section 2 Definitions.	Protection of structures in high-risk areas	Advances CLEAR Goals 1, 2 and 5 Advances the vision by building "long-term resilience to variable lake levels and climate change ... coordinated between regional partners including ... local governments and ... property owners ... to improve quality of life ... while achieving economic sustainability."	Aligns with Strategies 1.1, 5.2, 6.1, 6.3					Municipal elected officials, municipal staff, County planning, GFLRPC, NYSDEC	$20,000 - $40,000	NYSDOS, NYSDEC	2-3 additional land use restrictions in place in high-risk areas adopted in next 5 years.
Establish a Design Flood Elevation	The NYS Uniform Code requires two feet of freeboard between the lowest floor of a building (Design Flood Elevation (DFE)) and the base flood elevation (BFE) in SFHAs. Municipalities may adopt a BFE that is higher than the BFE as a protective measure against flood damage.	The NYSDOS's "Model Local Laws to Increase Resilience" (https://dos.ny.gov/system/files/documents/2020/09/model_local_laws_to_increase_resilience.pdf) has a wide variety of tools that can potentially be incorporated into local zoning ordinances.	Some FIRMS may no longer depict the true base flood elevation and Special Flood Hazard Area boundaries including increased risk from erosion, severe storms, topographic changes, climatic changes, and degraded ecological protections. By adopting BFEs above the FIRM 100-year floodplain that are based on existing and anticipated conditions, municipalities can help ensure their community is better protected.	Advances CLEAR Goals 1, 2 and 5 Advances the vision by building "long-term resilience to variable lake levels and climate change ... coordinated between regional partners including ... local governments and ... property owners ... to improve quality of life ... while achieving economic sustainability."	Aligns with Strategies 1.1, 2.2, 3.2, 4.2, 4.3, 5.2, 6.3					Municipal elected officials, municipal staff, county planning, GFLRPC, NY Sea Grant, NYSDEC	$20,000 - $30,000	NYSDOS, NYSDEC	1 amended floodplain ordinance amended to increase BFE in next 2 years.
Enroll in the FEMA Community Rating System	The FEMA Community Rating System (CRS) is a voluntary incentive program that provides participating communities with the opportunity to receive discounted flood insurance premiums in exchange for reducing their flood risk. Communities gradually improve their risk rating by implementing 15-20 specified actions across four categories: public information, mapping and regulation, flood damage reduction, and flood preparedness.	The Town of Greece, NY joined the CRS program in 1992. As of 2021, they have a rating of 5 on a scale of 1-10, with 1 being the best possible score. The Town currently receives a 25% discount on flood insurance premiums for those that have flood insurance in Special Flood Hazard Areas and a 10% discount for those outside of SFHAs . As the City improves its rating, this discount will increase up to a maximum 45%. See also Monroe County pilot program to increase CRS participation https://www.monroecountycrs.com/	Communities are rewarded with lower FEMA National Flood Insurance Program (NFIP) premiums for flood resilience actions, thereby offsetting the cost of these actions. By enrolling in the CRS program, municipalities can simultaneously earn points toward the Climate Smart Communities certification program.	Advances CLEAR Goals 1, 2 and 5 Advances the vision by building "long-term resilience to variable lake levels and climate change through a collaborative, multi-pronged approach supported by accessible funding mechanisms, and coordinated between regional partners including federal, state, and local governments and supporting entities;[and] property owners."	Aligns with Strategies 2.1 and 2.2 and has the potential to support all strategies					Municipal elected officials, municipal staff, Resiliency Coordinator/officers, County planning, GFLRPC, NYSDEC	$50,000 - $100,000	NYSDOS, NYSDEC, NYSERDA	1 municipality joins the CRS program in the next 3 years and qualifies for a discount within the first 5 years.

Wayne County Priority Action Matrix

KEY

Action (How)	Description	Case Study or Resource	Anticipated Benefits	Alignment with CLEAR Goals and Vision	Alignment with CLEAR Strategies	Timeframe	Priority	Ongoing	Potential Partners	Estimated Cost	Potential Funding	KPIs
Join the Climate Smart Communities program	Climate Smart Communities (CSC) is a New York State program that helps local governments take action to reduce greenhouse gas emissions and adapt to a changing climate. The program offers free technical assistance, grants, and rebates for electric vehicles. https://climatesmart.ny.gov	A map of participating communities can be found here: https://climatesmart.ny.gov/actions-certification/participating-communities/. There are three communities registered in Wayne County but none at a higher level.	The benefits of participating include leadership recognition, free technical assistance, and access to grants. Local governments participate by signing a voluntary pledge and using the CSC framework to guide progress toward creating attractive, healthy, and equitable places to live, work, and play.	Advances CLEAR Goals 1, 2 and 5 Advances the vision as a "collaborative, multi-pronged approach supported by accessible funding mechanisms, and coordinated between regional partners including federal, state, and local governments and supporting entities; property owners; and non-profit institutions ... to improve quality of life, the natural environment, and equity, while achieving economic sustainability."	Aligns with Strategy 2.2 and has the potential to support all strategies				Municipal elected officials, municipal staff, Resilience Coordinator/officers, NYSDOS, NYSDEC, NYSERDA, NYSDOT, NYPA, County planning, GFLRPC	TBD - depending on CSC level desired	NYSDEC, NYSERDA	1 new registered communities in next 2 years. Current CSC communities advance to next level of certification (bronze/silver/gold) in next 3 years.
Prepare/Update LWRP	NYSDOS program which includes funding for planning and implementation. Allows local communities to have increased authority over their waterfront, consistent with NYS Coastal Management policies.	Many communities in Wayne County have LWRPs. Additional case studies can be found at: https://dos.ny.gov/local-waterfront-revitalization-program	A locally developed plan that guides waterfront revitalization and resiliency for all waterfront users including local, state, and federal actions. Increased access to funding for waterfront revitalization projects as well as waterfront and resiliency planning. Emphasizing public access to the waterfront.	Advances CLEAR Goals 1, 2, 3, 4, 5 Advances the CLEAR Vision by building "long-term resilience to variable lake levels and climate change through a collaborative, multi-pronged approach supported by accessible funding mechanisms, and coordinated between regional partners including federal, state, and local governments and supporting entities; property owners; and non-profit institutions ... to improve quality of life, the natural environment, and equity, while achieving economic sustainability."	Potential to align with all Strategies				Municipal elected officials, municipal staff, NYSDOS, NYSDEC, NY Sea Grant, SWCD, County planning, GFLRPC, academia	$75,000 - $125,000	NYSDOS	Each community has an up-to-date LWRP in next 5 years.
Cultural Resources Resiliency Plan	There are cultural and historic sites within Wayne County that could be potentially impacted by hazards including storm events or high/low water levels. In an effort to protect these important assets a Cultural Resources Resiliency Plan can be developed that inventories these assets to determine future risks and methods to protect them.	Historic Preservation and Resiliency Planning in CT (https://portal.ct.gov/-/media/DECD/Hurricane_Sandy_Relief/Website-Stuff/ResiliencyPlanningStatewideGuide_Reduced.pdf) is a thorough resource for adapting local plans to protect cultural and historical assets.	Protected cultural and historical assets for current and future generations.	Advances CLEAR Goals 1, 2, 3 and 5 Advances the CLEAR vision by seeking options to "build long-term resilience to variable lake levels and climate change" through "collaborative, multi-pronged approach(s) supported by accessible funding mechanisms, and coordinated between regional partners including federal, state, and local governments and supporting entities; property owners; and non-profit institutions."	Aligns with Strategies 1.1, 1.2, 5.2, 6.2, 6.3				Municipal staff, NYSHPO, NYSDOS, NYSOPRHP, National Historic Preservation, local foundations and volunteer organizations	$50,000 - $100,000	NYSHPO, NYSDOS, National Historic Preservation	1-2 Cultural Resource Plans in next 5 years.

Wayne County Priority Action Matrix

KEY

Action (How)	Description	Case Study or Resource	Anticipated Benefits	Alignment with CLEAR Goals and Vision	Alignment with CLEAR Strategies	Timeframe	Priority	Ongoing	Potential Partners	Estimated Cost	Potential Funding	KPIs
Managed Retreat (if necessary)	Provide support programs for private property owners to relocate if/when necessary from high-risk areas that have become uninhabitable or that are unsuitable for alternative adaptation strategies. Such programs may provide additional support for socially vulnerable populations who are disproportionately impacted. This is typically treated as a last resort, but can offer many opportunities for asset protection.	Sidney, NY Green Plain (https://www.resilient-sidney.com/greenplain). In response to repeated flooding the Village of Sidney, NY created the Sidney GreenPlain which is a climate adaptation initiative that uses nature and natural flood reduction measures in a managed retreat project to relocate 100 families, buy out over 100 properties on 140+/- acres and remove infrastructure.	Potentially relocating people out of high-risk areas that are repeatedly impacted by major hazards (e.g. floods) and where adaptation measures are no longer adequate to protect that population/neighborhood.	Advances CLEAR Goals 1 and 5 Advances the CLEAR vision as part of "a collaborative, multi-pronged approach" to "build long-term resilience to variable lake levels and climate change" and "improve quality of life ... while achieving economic sustainability."	Aligns with strategies 5.2, 6.3				Municipal elected officials, municipal staff, County emergency managers, NYSDOS, FEMA, NYSHCR	TBD	NYSDOS, FEMA	If desired/needed, one study of an impacted area completed in next 5 years.
Voluntary Buy-outs of Repeatedly Flooded Properties	The U.S. has a long history of voluntary buy-outs of flood-prone properties. These are typically utilized as a last resort for properties subject to repeat, costly damages. Buy-outs have been funded by local, state, and federal agencies such as the Small Business Administration and the Department of Housing and Urban Development (HUD). Between 1989 and 2017, the US Federal Emergency Management Agency (FEMA) funded over 43,000 voluntary buy-outs across 1148 counties in 49 states and 3 territories. This count includes shoreline communities on Lake Ontario in New York State. Local governments (county or city) administered the buy-outs in 94% of cases. Ensuring populations relocate to an area of LOWER risk that does not increase their overall risk is key. Reference: K.J. Mach, C.M. Kraan, M. Hino, A.R. Siders, E.M. Johnston, C.B. Field Managed retreat through voluntary buyouts of flood-prone properties Sci. Adv., 5 (2019), p. eaax8995, 10.1126/sciadv.aax8995	Case Study: The relocation of the Soldiers Grove, WI business district helped reduce risk while reimagining the district in a way that stimulated growth Anne Siders (2013), Managed Coastal Retreat: A Legal Handbook on Shifting Development Away from Vulnerable Areas, Columbia University Center for Climate Change Law https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2349461 Other resources: Overview of Managed Retreat in the US https://www.sciencedirect.com/science/article/pii/S2590332219300806#abs0015	Safely relocating people out of the floodplain and protected lands to reduce risk to life and property, reduce repeat loss and damages, and repurpose high-risk areas for more productive/safe use when adaptation measures are no longer adequate.	Advances CLEAR Goals 1 and 5 Advances the CLEAR vision as part of "a collaborative, multi-pronged approach" to "build long-term resilience to variable lake levels and climate change" and "improve quality of life ... while achieving economic sustainability."	Aligns with strategies 5.2, 6.3				Municipal elected officials, municipal staff, County planning, NYSDOS, FEMA, NYSHCR	TBD	FEMA, CDBG	If desired/needed, buy-out of selected properties completed in next 5 years. High risk areas converted from a liability/expense to productive property that brings value to the community. Number and/or vulnerability of structures/residents in community reduced. Insurance premiums and disaster losses significantly reduced.
Blue-Green Infrastructure	A network of multi-functional green spaces, both new and existing, rural and urban, which support the natural and ecological processes and is integral to the health and quality of life of sustainable communities. "Blue" (water spaces) and "green" (vegetated spaces) infrastructure can be used in place of conventional "gray" infrastructure (e.g. culverts, pipes) in many cases to achieve similar results for stormwater management, shoreline protection etc. with added co-benefits for the environment and community. Some Blue-Green Infrastructure is designed to become a self-sustaining part of the local eco-system, reducing costs and maintenance needs in the long-term.	Ramboll Strengthening Blue-Green Infrastructure report https://ramboll.com/-/media/38fc23d12a5d47dcb7b3821716d69270.pdf NYS Stormwater Management Design Manual https://www.dec.ny.gov/chemical/29072.html NY Sea Grant Green Infrastructure Retrofit manual and trainings Great Lakes Commission Green Infrastructure Champions Program https://www.glc.org/work/champions	Blue-Green Infrastructure offers a feasible, economical and valuable option for regions facing natural hazards and climate change. It complements and in some cases mitigates the need for gray infrastructure. Blue-Green Infrastructure (BGI) represents a paradigm shift that recognizes the importance of and value in including the role of hydrology within water management. The "Blue" recognizes the importance of the physicality of water itself, while the "Green" connects hydrological functions with vegetation systems in landscape design. The resulting BGI has overall socioeconomic benefits that are greater than the sum of the individual components.	Advances CLEAR Goals 1, 2, and 3. Advances the vision by "building long-term resilience to variable lake levels and climate change" and capitalizing on "opportunities to improve quality of life, the natural environment ... while achieving economic sustainability."	Aligns with strategies 4.1, 4.2, 4.3			X	NYSDOS, NYSDEC, NYSDOT, NYSOPRHP, NY Sea Grant, USACE, academia, TNC, SWCD, GFLRPC, community and environmental groups, USEPA, USDOT	Cost varies based on components and features	Highway Trust Fund, NYSDOS, NYSDEC, Great Lakes Restoration Initiative, USEPA, USFWS, FEMA, USHUD,	Local practitioners trained in Blue-Green Infrastructure practices. Blue-Green Infrastructure techniques integrated into mainstream, local infrastructure plans and projects. 1 BGI action implemented in each municipality in next 5 years.

Wayne County Priority Action Matrix

KEY

Action (How)	Description	Case Study or Resource	Anticipated Benefits	Alignment with CLEAR Goals and Vision	Alignment with CLEAR Strategies	Timeframe	Priority	Ongoing	Potential Partners	Estimated Cost	Potential Funding	KPIs
Vegetated Buffers/Terraces	It is best to maintain naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands. In areas where they have been degraded or channelized, designed vegetated buffers should include thickly vegetated strips of land that protect waterways and wetlands from polluted runoff and erosion, and flood absorption. As the width of a vegetated buffer increases, environmental benefits also grow. Buffers less than 50 feet wide offer minimal protection, while those 200 to 300 feet wide improve water quality and protect aquatic habitats. Additionally, riverine and inter-tidal terraces can be implemented within previously channelized rivers to naturalize riverbanks and re-introduce areas for nature to flourish. They can vary significantly in size, from small wood fenders attached to existing river walls, to large stepped terraces replacing hard walls. They are of great benefit to a variety of species, providing space for aquatic planting to develop which in turn provides cover for fish to spawn, niches for aquatic invertebrates and habitat for breeding birds and terrestrial invertebrates.	NYS DEC Riparian Buffer Resources https://www.dec.ny.gov/chemical/106345.html NYSDAM Source Water Buffer Program https://agriculture.ny.gov/soil-and-water/source-water-buffer-program	Blue-Green Infrastructure offers a feasible, economical and valuable option for regions facing natural hazards and climate change with a range of social, economic, and ecological co-benefits. Vegetated Buffers in particular offer shoreline stabilization, property protection, and opportunity for increased biodiversity in place of hardened gray infrastructure.	Advances CLEAR Goals 1, 2, and 3. Advances the vision by "building long-term resilience to variable lake levels and climate change" and capitalizing on "opportunities to improve quality of life, the natural environment"	Aligns with strategies 4.1, 4.2, 4.3			X	NYSDEC, NYSOPRHP, NYSDAM, NY Sea Grant, academia, TNC, SWCD, community and environmental groups, USEPA, USDOT	$600/acre - $3400/acre	NYSDEC, WQIP, Trees4Tribs, USEPA, NFWF, USFWS, FEMA	New buffer projects implemented for 3 streams or other wetland areas in the region in next 4 years.
Roadway Reduction/ Permeable Pavement	The use of alternative road layouts that reduce the total length of roadways can significantly reduce overall imperviousness of a development site. Permeable paving provides the structural support of conventional pavement, while reducing stormwater runoff by draining directly into the underlying base and soils. It can be used to treat low traffic roads, single-family residential driveways, overflow parking areas, sidewalks, plazas, tennis or basketball courts, and courtyard areas.	Lake George, NY recently installed a porous pavement along its Beach Road to improve stormwater management, water quality, and traffic operations. The innovative project has won several awards and serves as a model for other projects. Cornell Local Roads Program: https://cals.cornell.edu/nysltap-local-roads	Reducing paved surfaces and increasing permeable areas reduces stormwater runoff. This is beneficial for water quality and stormwater service infrastructure, especially in areas with combined sewers. It has also been shown to reduce heat indexes during peak heat in summer months.	Advances CLEAR Goals 1, 2, and 3. Advances the vision by "building long-term resilience to variable lake levels and climate change" and capitalizing on "opportunities to improve quality of life, the natural environment"	Aligns with strategies 4.1, 4.2, 4.3			X	NYSDOS, NYSDEC, NYSDOT, NYSOPRHP, academia, TNC, SWCD, community and environmental groups, USEPA, USDOT	$12.00/sf - $20.00/sf	Highway Trust Fund, NYSDOS, NYSDEC, NYSEFC, USEPA, USDOT	Local practitioners trained in permeable pavement techniques. 1 demonstration project implemented and 1 larger-scale project initiated in the next 4 years.
Rain Gardens/ Bioretention	These green infrastructure features reduce flooding incidences, promote runoff infiltration, provide water quality treatment, and improve the livability of urban areas. They contribute to flood management and provide wetland habitat. Rain gardens can have a variety of plantings, with species which are both flood and drought tolerant included. They do not have to be large to serve a useful function. Swales contribute to flood management of larger areas. To be of benefit to biodiversity, they should be planted or have vegetation allowed to develop naturally, and not be managed too intensively. Cutting of vegetation after flowering will encourage wildflowers to develop.	The Genesee/Finger Lakes Regional Planning Council provides a list of resources and examples of green infrastructure practices including rain gardens. https://www.gflrpc.org/green_infrastructure_practices/index.php	Blue-Green Infrastructure offers a feasible, economical and valuable option for regions facing natural hazards and climate change with a range of social, economic, and ecological co-benefits.	Advances CLEAR Goals 1, 2, and 3. Advances the vision by "building long-term resilience to variable lake levels and climate change" and capitalizing on "opportunities to improve quality of life, the natural environment"	Aligns with strategies 4.1, 4.2, 4.3			X	NYSDOS, NYSDEC, NYSDOT, NYSOPRHP, GFLRPC, academia, NY Sea Grant, TNC, SWCD, community and environmental groups, USEPA	$29.00/sf - $45.00/sf	NYSDEC, NYSEFC, NYSDOS, USEPA, USFWS, FEMA, Foundations,	Local practitioners trained in bioretention techniques. 3 raingarden/bioretention projects implemented in the next 4 years.

CLEAR Plan
Wayne County

12

Appendices

12.0 APPENDICES

Appendix A

Wayne County Municipal Profiles

- Town of Ontario
- Town of Williamson
- Town of Sodus
- Village of Sodus Point
- Town of Huron
- Town of Wolcott

Appendix B

Community Assets and Risk Level Assessment

CLEAR Plan
Wayne County

APPENDIX A

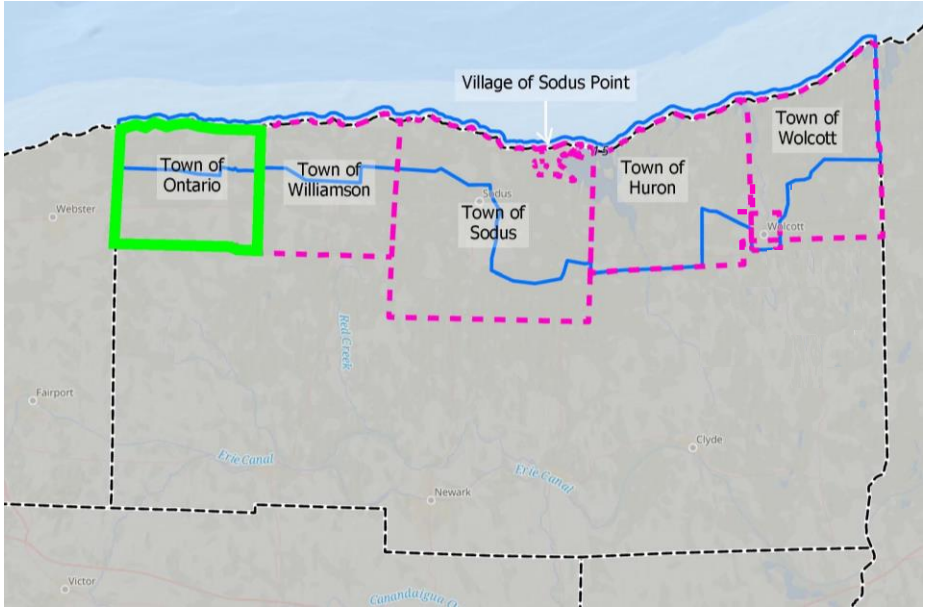
Municipal Profiles

TOWN OF ONTARIO, NY

Municipal Profile

COMMUNITY OVERVIEW – TOWN OF ONTARIO

The Town of Ontario is located between the Towns of Webster and Williamson in Wayne County. The Town of Ontario is approximately 32 square miles and includes approximately 7 miles of Lake Ontario shoreline with additional waterfront on Bear Creek and Dennison Creek. The town is bounded by the Town of Webster to the west, the Town of Williamson to the east, and the Town of Walworth to the south. The closest cities are Rochester, approximately 15 miles southwest, and Syracuse, approximately 55 miles southeast.



Town of Ontario: Location Map

Legend

- CLEAR Study Boundary Area
- County Boundaries
- Wayne County Municipalities in CLEAR Boundary
- Town of Ontario

Socio-economic data from U.S. Census Bureau. 2019. American Community Survey, 2015-2019 5-Year Estimates.

Town of Ontario

Population
10,092

Median Age
46

# of Housing Units
4,685

Social Vulnerability
Lowest
(SVI score of 0.082 for shoreline census tract)

Shoreline Miles
7.0

% Occupied Homes
94%

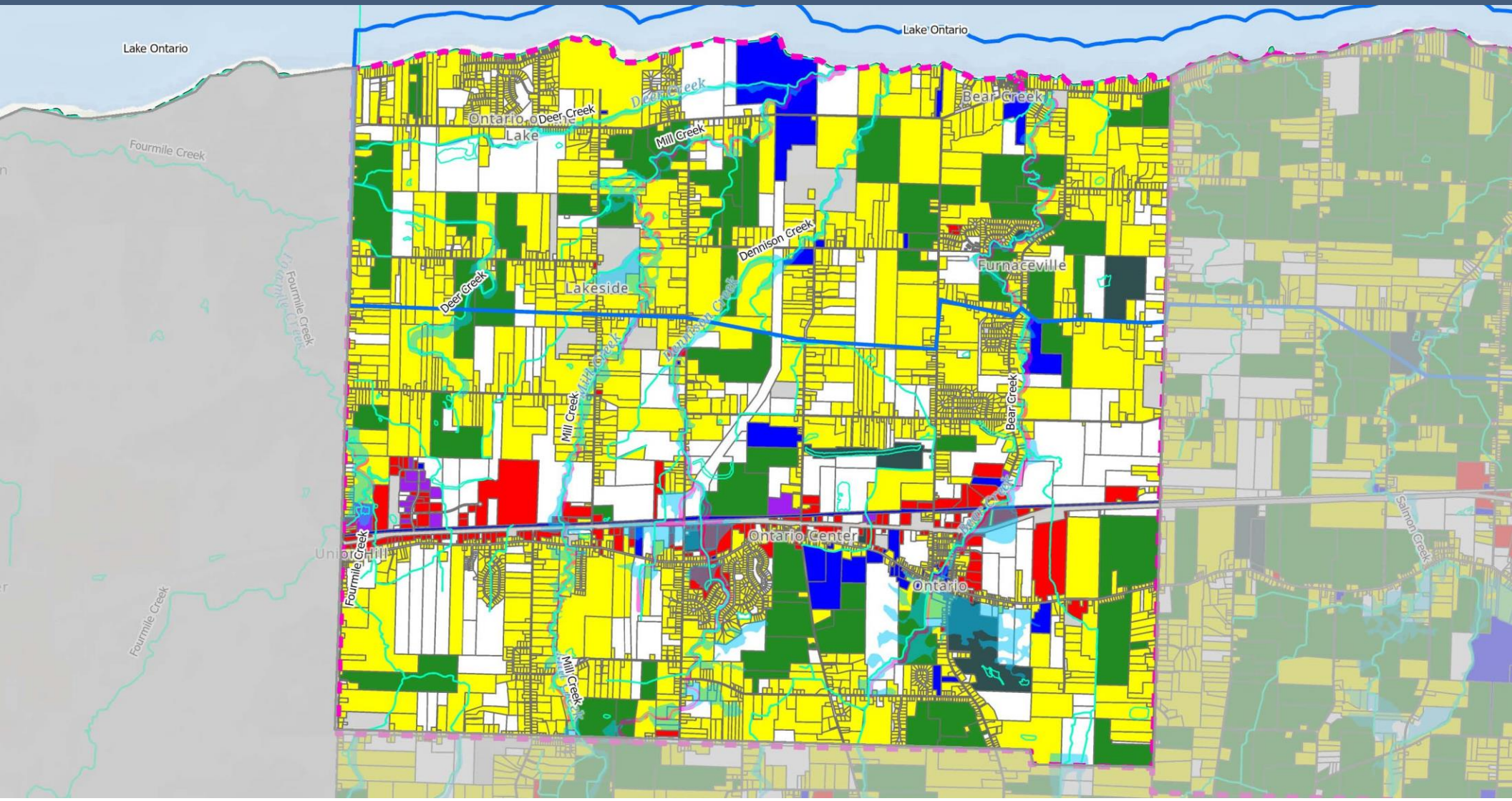
Median Home Value
$167k

Median Household Income
$71,513

As illustrated by the map on the following page, land use in the Town of Ontario is predominantly a mixture of residential; agricultural, conservation lands and parks; and vacant land. The majority of residences are single houses located along the shoreline or creek waterfronts and near Ontario Center. Conservation areas and public parks include Casey Park and Maguire Family Wildlife Sanctuary. Commercial and industrial assets are concentrated along Route 104 outside of the CLEAR study area.

Key assets inside the CLEAR study area include the Heritage Square Museum located in the Brick Church Corners historic district, and the R.E. Ginna Nuclear Power Plant, which produces enough electricity to power approximately 500,000 homes and businesses.

LAND USE MAP – TOWN OF ONTARIO



CLEAR Study Boundary
Towns, Villages, and Cities
Streams and Creeks
Lakes and Ponds

FEMA Flood Zones (Wayne)

Floodway
100-Year / 1% ACE

Wayne County Land Use

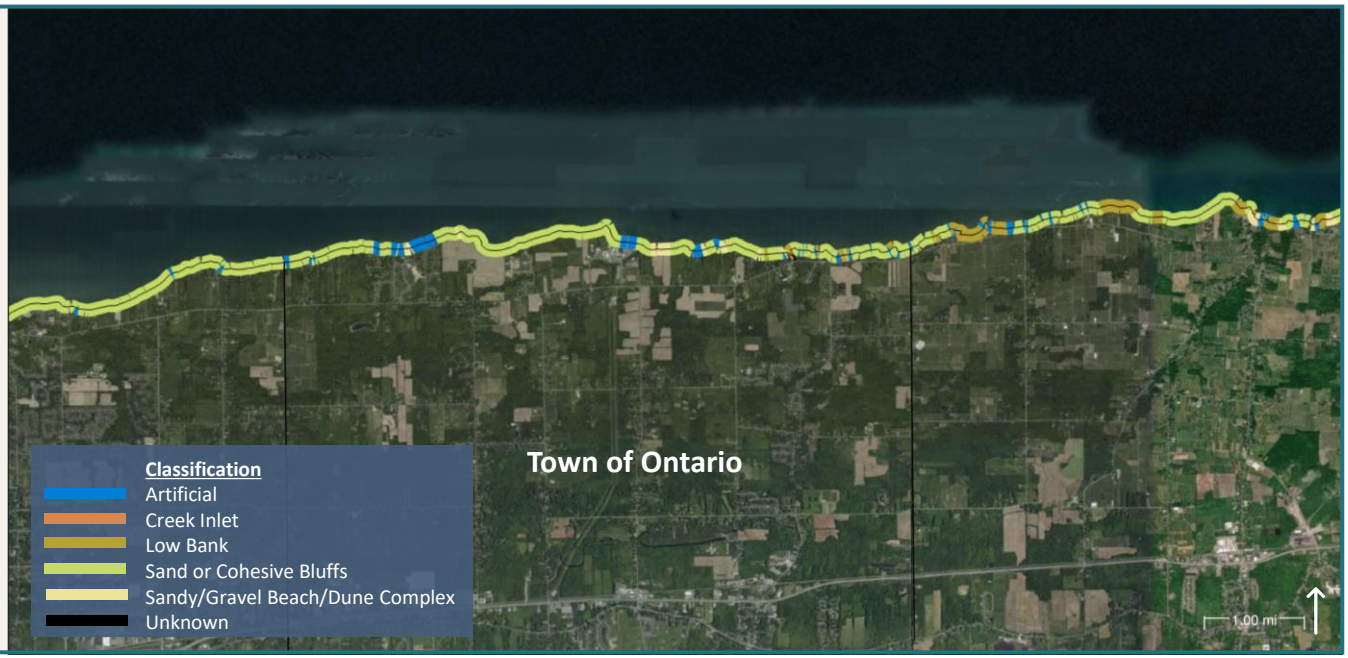
Agricultural, Conservation Lands and Parks
Residential
Vacant Land
Commercial
Recreation and Entertainment
Community and Public Services
Industrial
No Data

Wayne County land use information is available at https://web.co.wayne.ny.us/333/Real-Property-Tax-Service

SHORELINE CHARACTERISTICS – TOWN OF ONTARIO

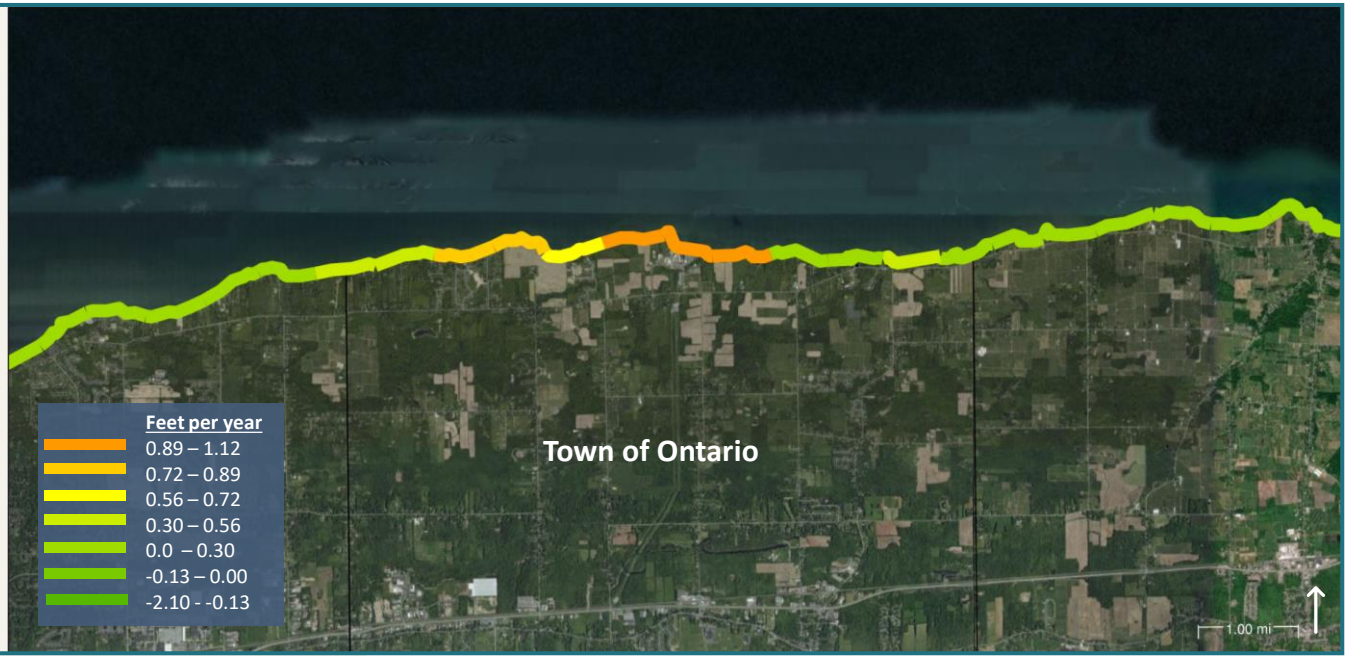
Shoreline Classification

The shoreline of Lake Ontario in the Town of Ontario (center of map) is primarily sand or cohesive bluffs with areas of sand/gravel beach/dune complex, artificial hardening with riprap or seawalls and low banks around the creek inlets.

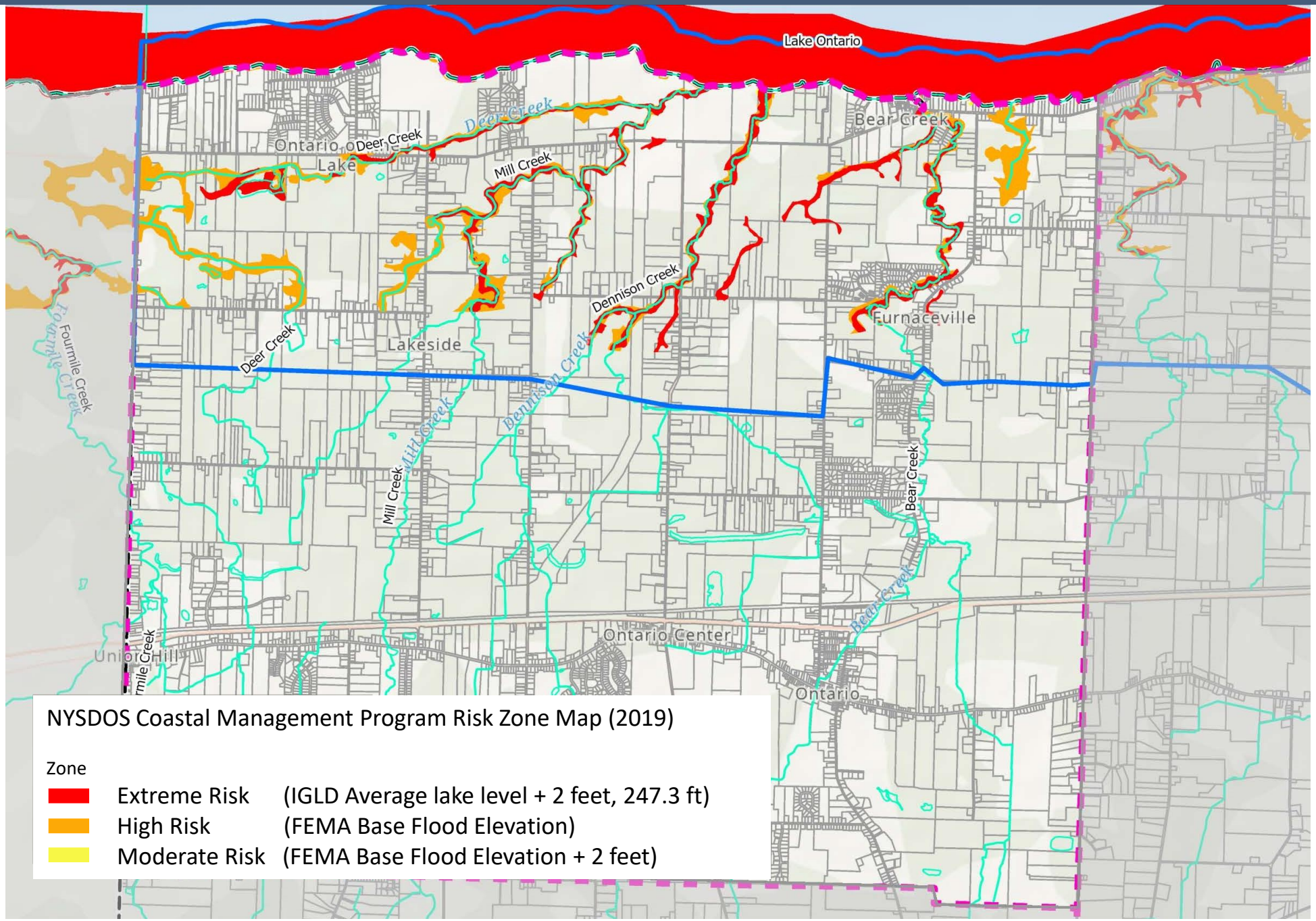


Erosion Rate

The shoreline erosion rate along Lake Ontario in the Town of Ontario (center of map) ranges from 0.08 to 1.11 ft/yr, with a general mixture of rates closer to the lower and upper ends of this range as demonstrated by the green and orange reaches respectively. These historical erosion rate estimates were based only on the erodible portion (i.e., unhardened shoreline) of the Lake Ontario shoreline.



RISK AREAS – TOWN OF ONTARIO



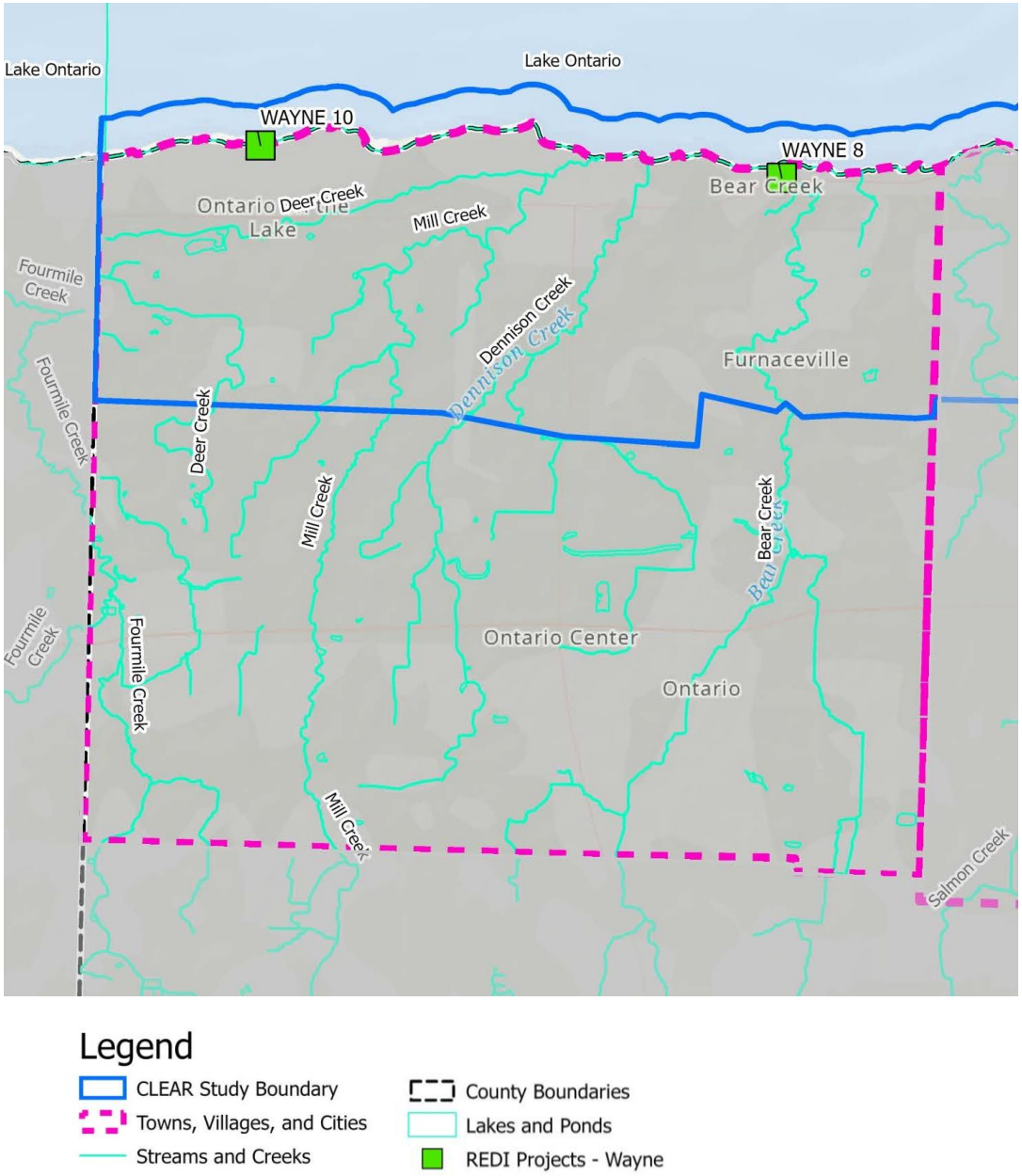
REDI PROJECTS – TOWN OF ONTARIO

In 2017 and 2019, major flooding affected the Lake Ontario and St. Lawrence River system. These flooding events, each of which reached levels of a 1% chance occurrence, caused extensive damage to shoreline systems and communities. In response to the extended pattern of flooding along the shores of Lake Ontario and the St. Lawrence River and underlying economic challenges, the Lake Ontario Resiliency and Economic Development Initiative (REDI) was created to address the immediate resiliency and economic development needs of these areas.

The following projects were selected by the REDI Commission in the Fall of 2019 to receive program funding. The conceptual project profiles were published online and are available at https://www.ny.gov/sites/default/files/atoms/files/REDI_Project_Profiles_WA_20191010.pdf.

For current project status or additional information related to a REDI project, please contact the local municipality.

Project	Amount
WA.10 Ontario Dr Stormwater Outlets	$1,860,000
WA.8 Ontario Main Wastewater Pump Station	$400,000

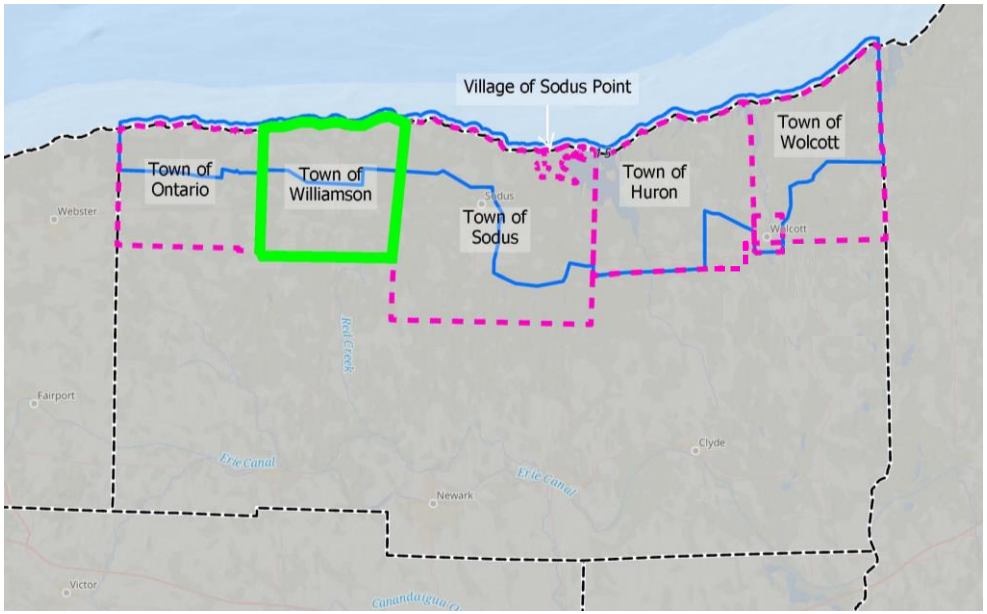


TOWN OF WILLIAMSON, NY

Municipal Profile

COMMUNITY OVERVIEW – TOWN OF WILLIAMSON

The Town of Williamson is located between the Towns of Ontario and Sodus in Wayne County. The Town of Williamson is approximately 34 square miles and includes approximately 7 miles of Lake Ontario shoreline with additional waterfront on Salmon Creek. The town is bounded by the Town of Ontario to the west, the Town of Sodus to the east, and the Town of Marion to the south. The closest cities are Rochester, approximately 16 miles southwest, and Syracuse, approximately 54 miles southeast.



Town of Williamson: Location Map

Legend

- CLEAR Study Boundary Area
- County Boundaries
- Wayne County Municipalities in CLEAR Boundary
- Town of Ontario

Socio-economic data from the U.S. Census Bureau. 2019. American Community Survey, 2015-2019 5-Year Estimates.

Town of Williamson

Population
6,757

Median Age
43

# of Housing Units
3,101

Social Vulnerability
Medium-High
(CDC SVI score of 0.595)

Shoreline Miles
7.0

% Occupied Homes
87%

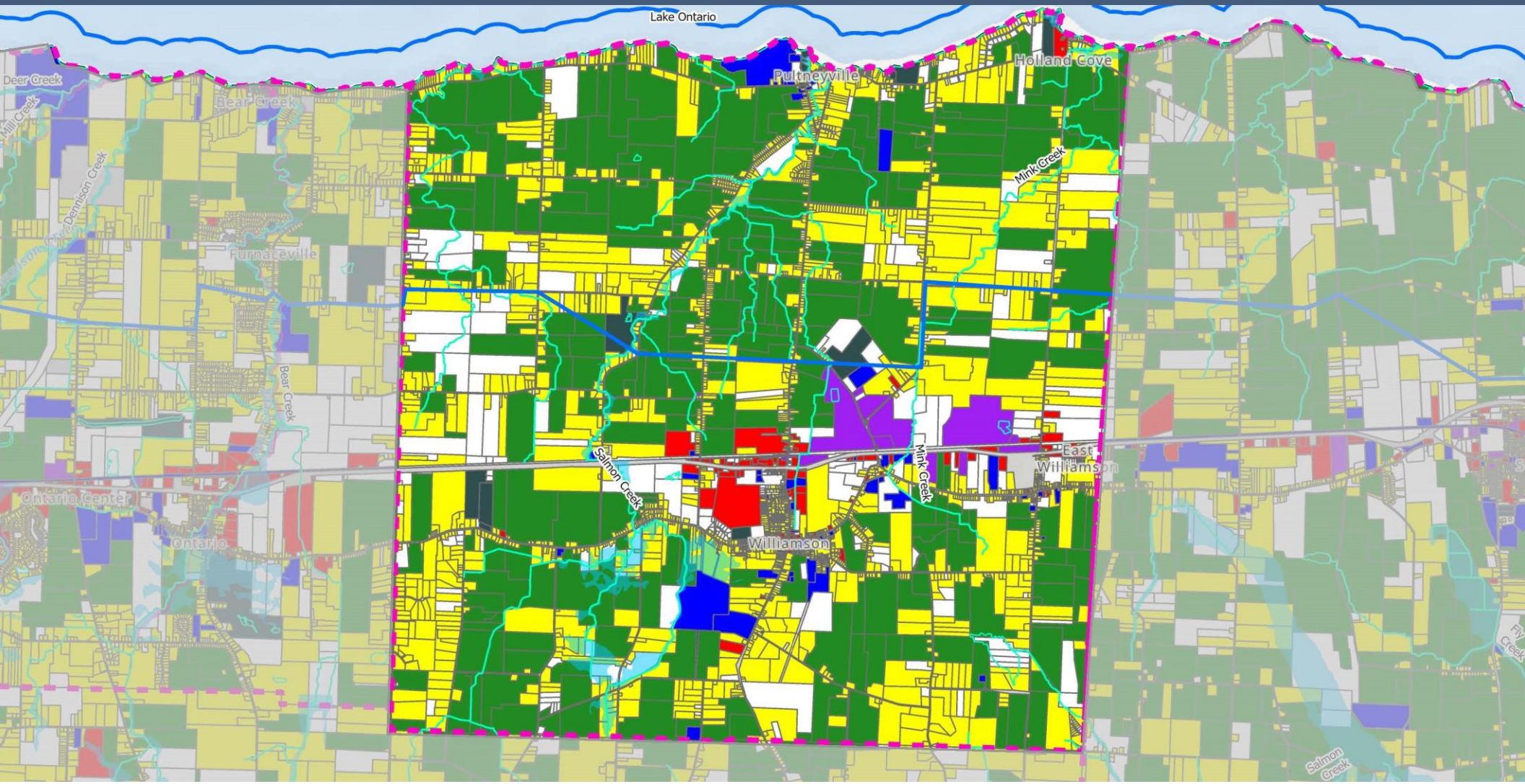
Median Home Value
$137k

Median Household Income
$62,105

As illustrated on the following page, land use in the Town of Williamson is predominantly agricultural, conservation lands and parks; followed by residential; and vacant land. The majority of residences are single houses. Residences are clustered in town centers (Ontario and Pultneyville) and front main roads, Salmon Creek Road, and Lake Ontario. Commercial and industrial uses are concentrated along Route 104 outside the CLEAR study area.

Key community assets in the study area are clustered along the Lake Ontario shoreline and the hamlet of Pultneyville including seasonal businesses and recreational resources. They include Williamson Town Park, B. Forman Park, Pultneyville Harbor, Pulneyville Yacht Club, and Hughes Marina and Campground.

LAND USE MAP – TOWN OF WILLIAMSON



CLEAR Study Boundary
Towns, Villages, and Cities
Streams and Creeks
Lakes and Ponds

FEMA Flood Zones (Wayne)

Floodway
100-Year / 1% ACE

Wayne County Land Use

Agricultural, Conservation Lands and Parks
Residential
Vacant Land
Commercial
Recreation and Entertainment
Community and Public Services
Industrial
No Data

Wayne County land use information is available at https://web.co.wayne.ny.us/333/Real-Property-Tax-Service

SHORELINE CHARACTERISTICS – TOWN OF WILLIAMSON

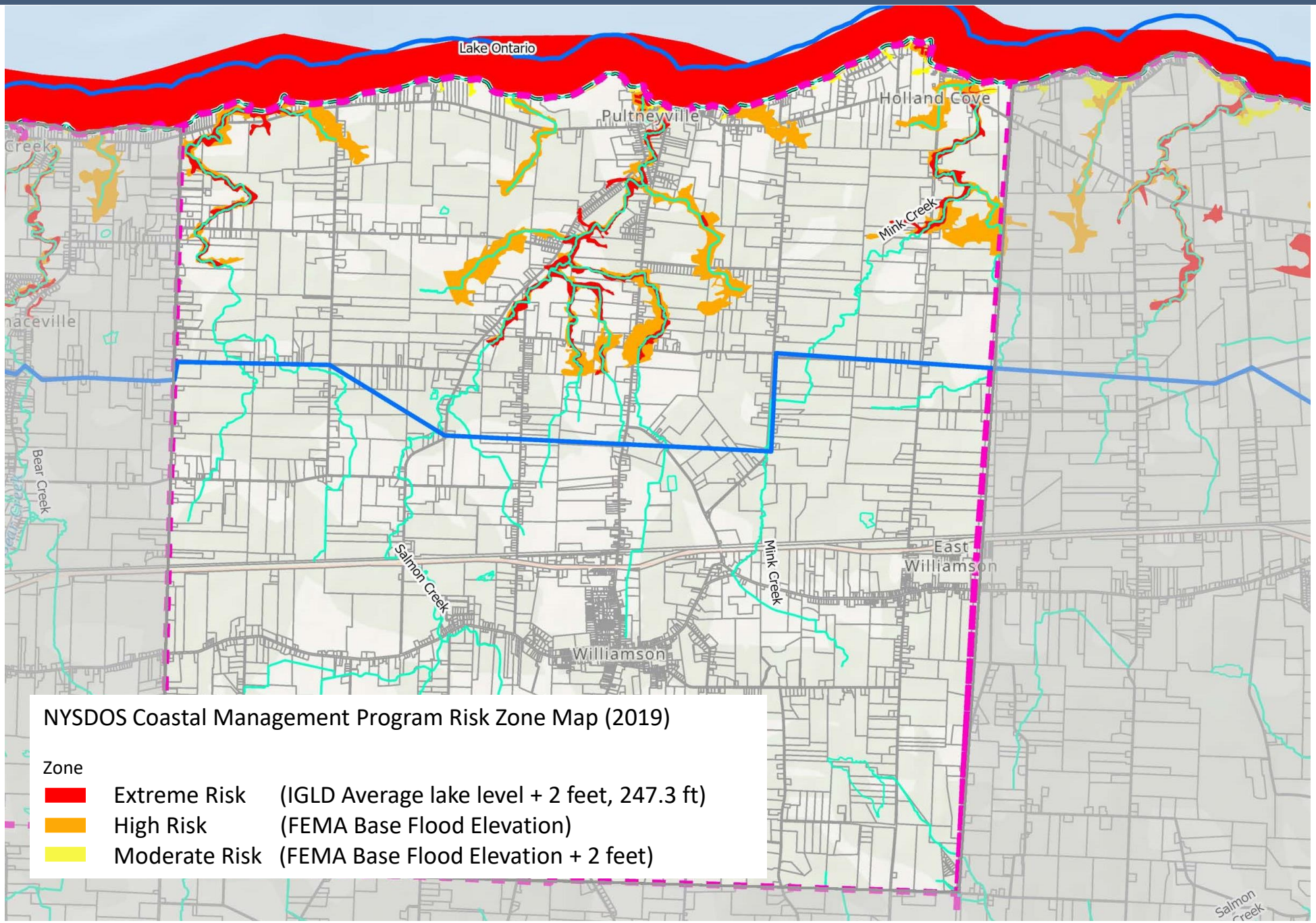
Shoreline Classification

The Lake Ontario shoreline in the Town of Williamson (center of map) is primarily sand or cohesive bluffs, with areas of low bank around baymouth barrier complex and creek inlets, and artificial hardening with riprap or seawalls.

Erosion Rate

The shoreline erosion rate in the Town of Williamson (shown in the center of this map) along Lake Ontario ranges from 0.06 to 0.6 ft/yr with a general mixture of rates closer to the lower and upper ends of this range as demonstrated by the green and yellow reaches respectively. These historical erosion rate estimates were based only on the erodible portion (i.e., unhardened shoreline) of the Lake Ontario shoreline.

RISK AREAS – TOWN OF WILLIAMSON



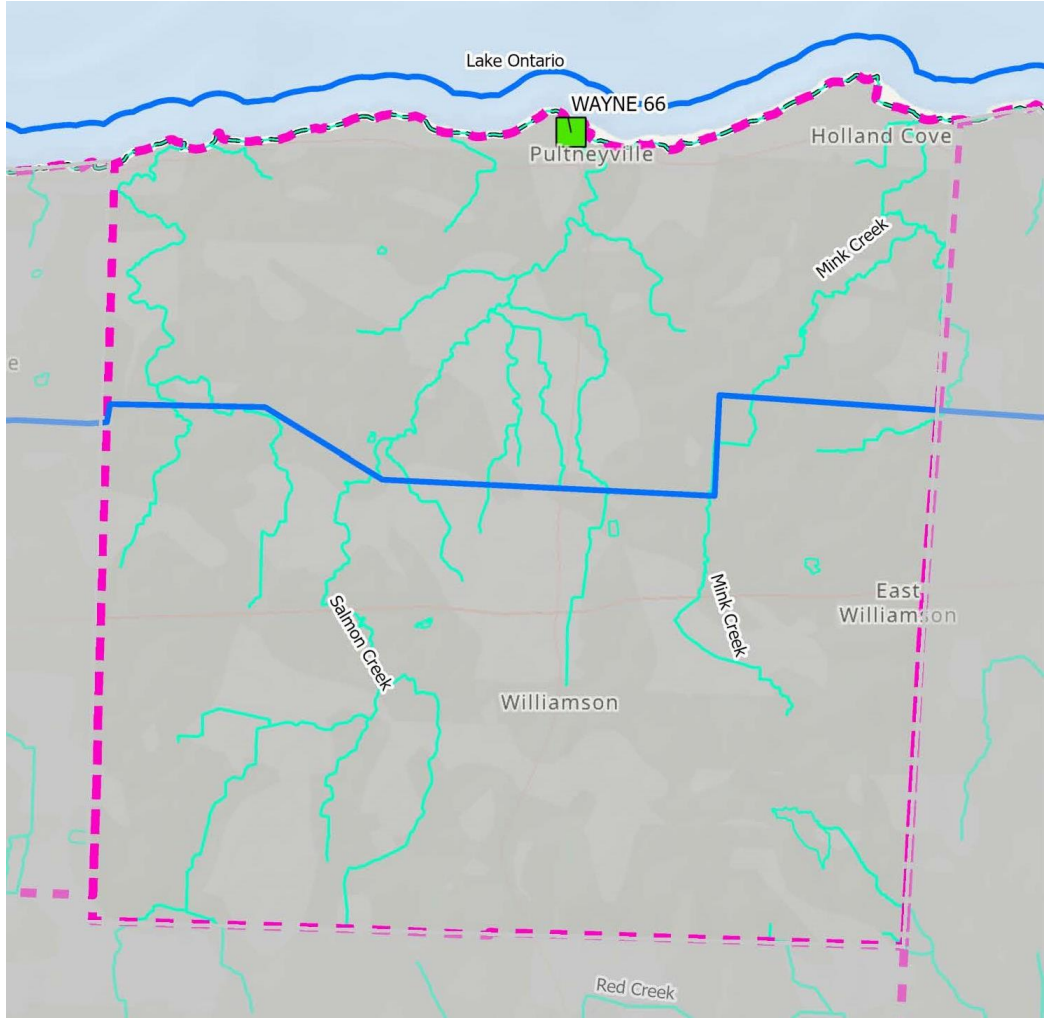
REDI PROJECTS – TOWN OF WILLIAMSON

In 2017 and 2019, major flooding affected the Lake Ontario and St. Lawrence River system. These flooding events, each of which reached levels of a 1% chance occurrence, caused extensive damage to shoreline systems and communities. In response to the extended pattern of flooding along the shores of Lake Ontario and the St. Lawrence River and underlying economic challenges, the Lake Ontario Resiliency and Economic Development Initiative (REDI) was created to address the immediate resiliency and economic development needs of these areas.

The following projects were selected by the REDI Commission in the Fall of 2019 to receive program funding. The conceptual project profiles were published online and are available at https://www.ny.gov/sites/default/files/atoms/files/REDI_Project_Profiles_WA_20191010.pdf.

For current project status or additional information related to a REDI project, please contact the local municipality.

Project	Amount
WA.66 Williamson Water Intake	$260,000



Legend

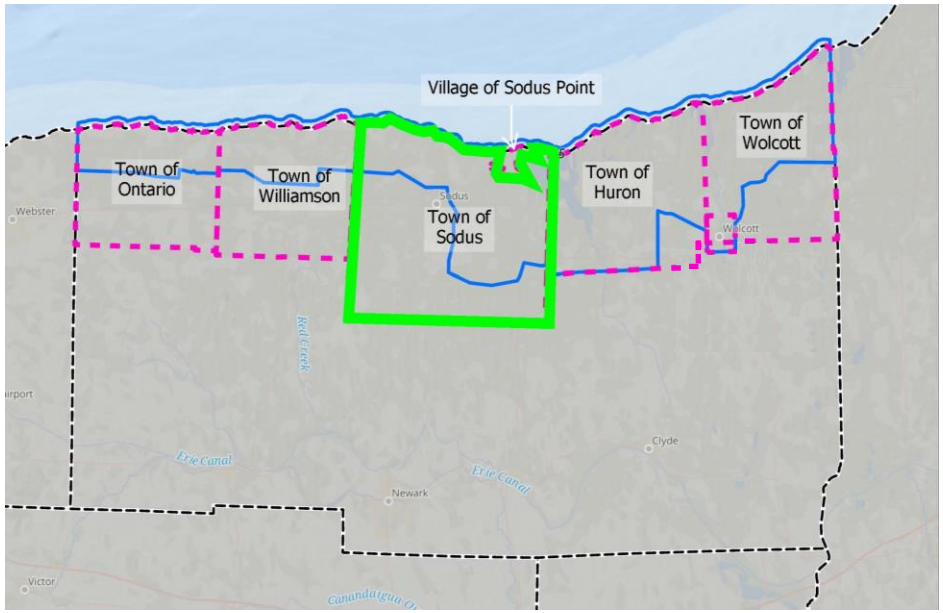
- CLEAR Study Boundary
- Towns, Villages, and Cities
- Streams and Creeks
- County Boundaries
- Lakes and Ponds
- REDI Projects - Wayne

TOWN OF SODUS, NY

Municipal Profile

COMMUNITY OVERVIEW – TOWN OF SODUS

The Town of Sodus is located between the Towns of Williamson and Huron in Wayne County. The Town of Sodus is approximately 69 square miles and includes approximately 10 miles of Lake Ontario shoreline (including 2 miles along the Village of Sodus) with additional waterfront on Sodus Bay, Maxwell Bay, and Sill Creek. The town is bounded by the Town of Williamson to the west, the Town of Huron to the east, and the Towns of Arcadia and Lyons to the south. The closest cities are Rochester, approximately 29 miles west, and Syracuse, approximately 40 miles southeast.



Town of Sodus: Location Map

Legend

- CLEAR Study Boundary Area
- County Boundaries
- Wayne County Municipalities in CLEAR Boundary
- Town of Ontario

Socio-economic data is from the U.S. Census Bureau. 2019. American Community Survey, 2015-2019 5-Year Estimates

Town of Sodus

Population
8,094

Median Age
46

# of Housing Units
4,092

Social Vulnerability
Shoreline:
Medium - Low
(CDC SVI score of 0.472)
Inland: High
(CDC SVI score of 0.820)

Shoreline Miles
9.6

% Occupied Homes
79%

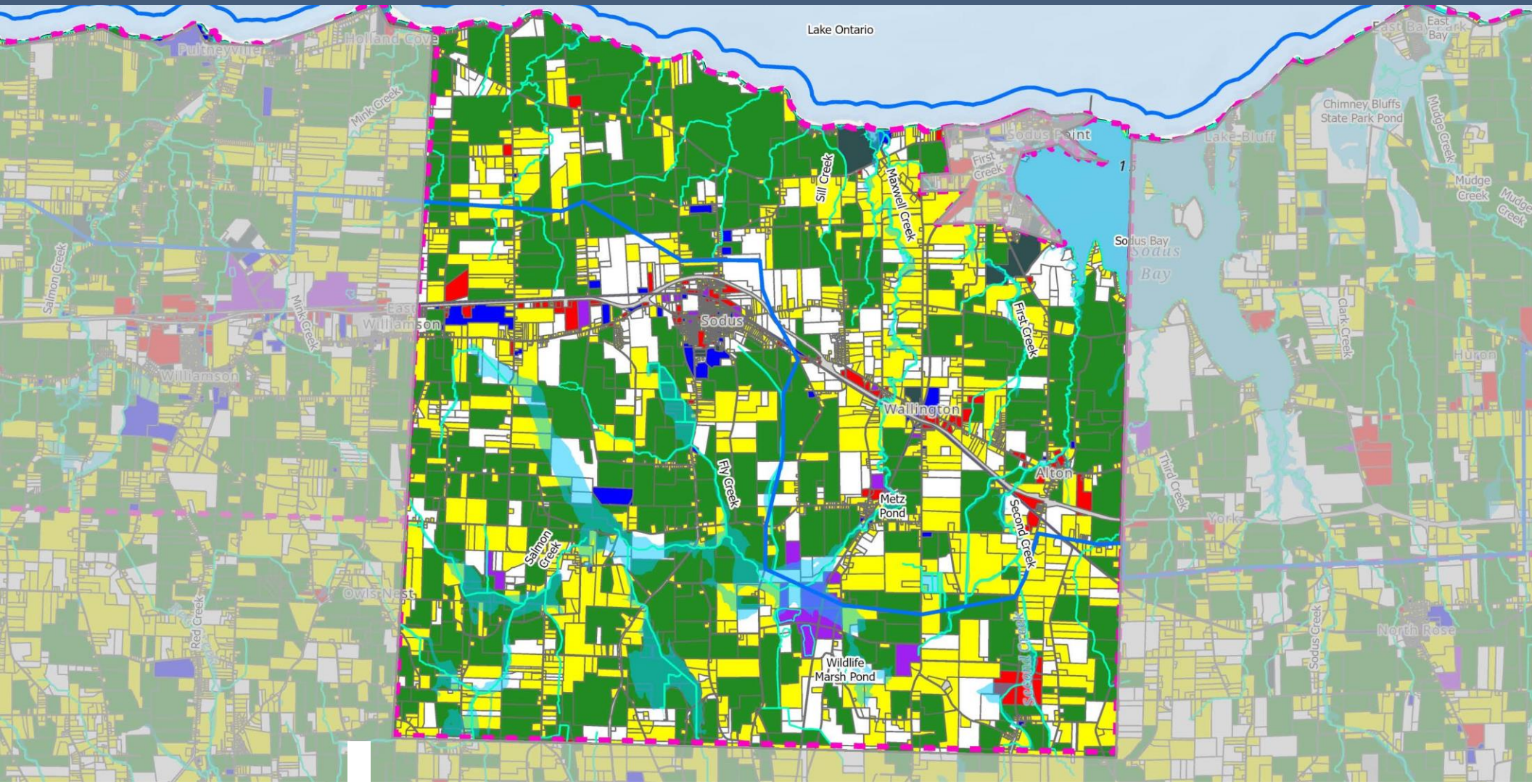
Median Home Value
$106k

Median Household Income
$51,479

As illustrated on the following page, land use in the Town of Sodus is predominantly agricultural, conservation lands and parks; followed by residential; and vacant land. The majority of residences are single houses. Residences line the waterfronts, Salmon Creek area, and North Centenary Road in particular. Commercial and industrial uses are mostly found along Ridge Road and in the population centers (Sodus, Alton, Wallington).

Key community assets in the CLEAR Study area are Beechwood State Park and Beechwood Campground on Lake Ontario, Maxwell Bay including fishing access areas in the bay and in local creeks, and the Ridge Road Commercial Corridor. There are no REDI Projects for the Town of Sodus.

LAND USE MAP – TOWN OF SODUS



CLEAR Study Boundary
Towns, Villages, and Cities
Streams and Creeks
Lakes and Ponds

FEMA Flood Zones (Wayne)

Floodway
100-Year / 1% ACE

Wayne County Land Use

Agricultural, Conservation Lands and Parks
Residential
Vacant Land
Commercial
Recreation and Entertainment
Community and Public Services
Industrial
No Data

Wayne County land use information is available at https://web.co.wayne.ny.us/333/Real-Property-Tax-Service

SHORELINE CHARACTERISTICS – TOWN OF SODUS

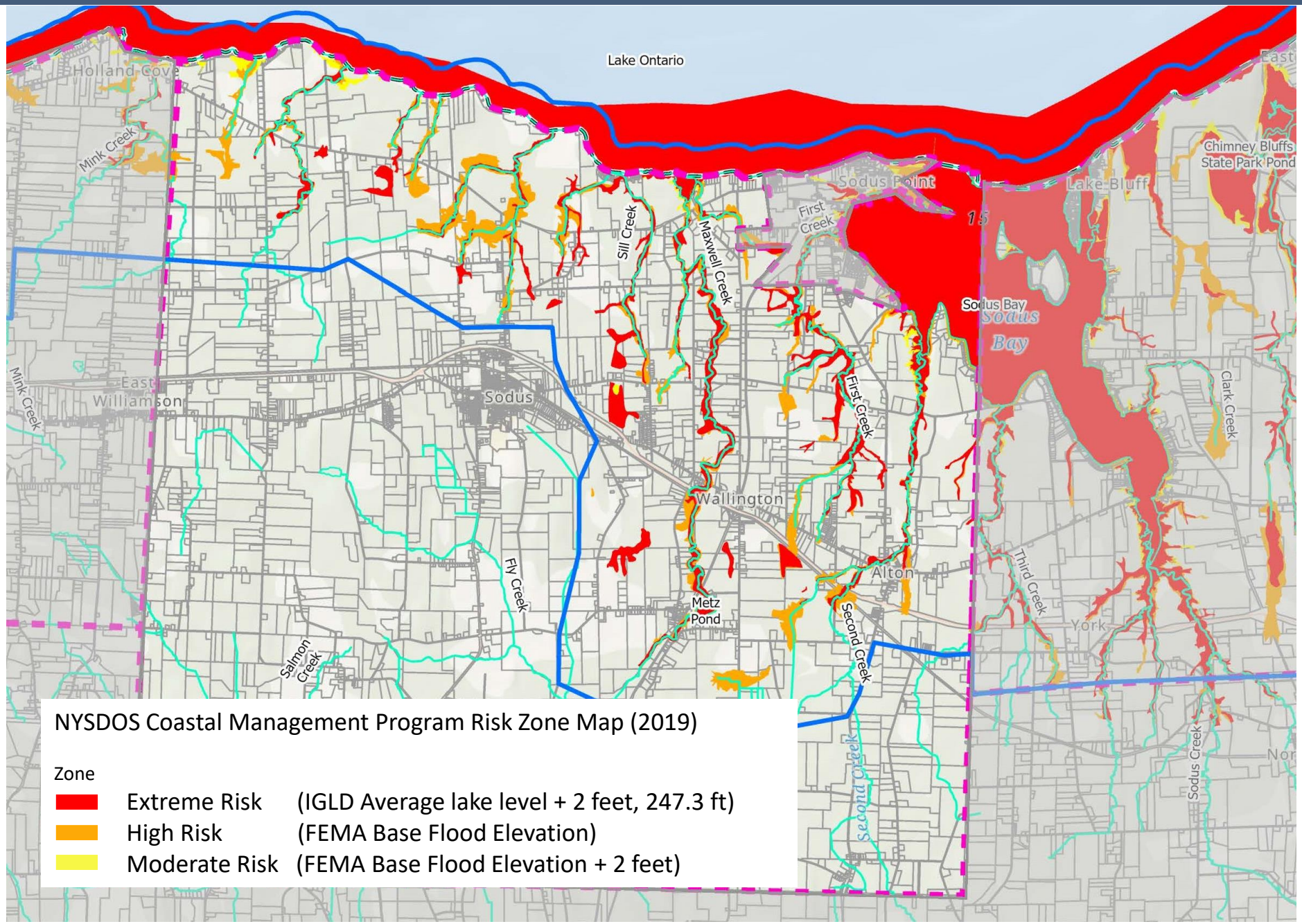
Shoreline Classification

The Lake Ontario shoreline in the Town of Sodus (center of map) is primarily sand or cohesive bluffs with areas of sandy/gravel beach/dune complex, baymouth barrier complex, low bank around creek inlets and artificial hardening with riprap or seawalls.

Erosion Rate

The shoreline erosion rate along Lake Ontario in the Town of Sodus (center of map) ranges from 0.26 to 1.1 ft/yr with a general mixture of rates closer to the lower and upper ends of this range as demonstrated by the green and red reaches respectively. The erosion rate for the Village of Sodus is included in a separate municipal profile. These historical erosion rate estimates were based only on the erodible portion (i.e., unhardened shoreline) of the Lake Ontario shoreline.

RISK AREAS – TOWN OF SODUS

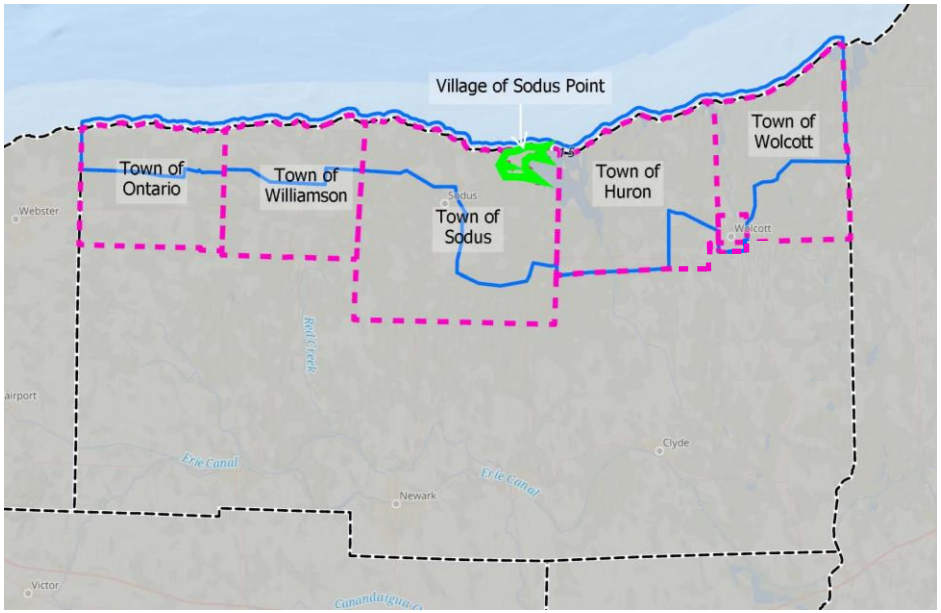


VILLAGE OF SODUS POINT, NY

Municipal Profile

COMMUNITY OVERVIEW – VILLAGE OF SODUS POINT

The Village of Sodus Point is located within the Town of Sodus in Wayne County. The Village of Sodus Point is approximately 1.5 square miles and includes approximately 2 miles of Lake Ontario shoreline plus extensive additional waterfront on Sodus Bay. The Village is bounded by the Town of Sodus to the west and south and by Sodus Bay to the east. The closest cities are Rochester, approximately 29 miles southwest, and Syracuse, approximately 42 miles southeast.



Village of Sodus Point: Location Map

Legend

- CLEAR Study Boundary Area
- County Boundaries
- Wayne County Municipalities in CLEAR Boundary
- Town of Ontario

Village of Sodus Point

Population
822

Median Age
61

# of Housing Units
706

Social Vulnerability
Medium-Low
(CDC SVI score of 0.4717)

Shoreline Miles
1.9

% Occupied Homes
63%

Median Home Value
$158k

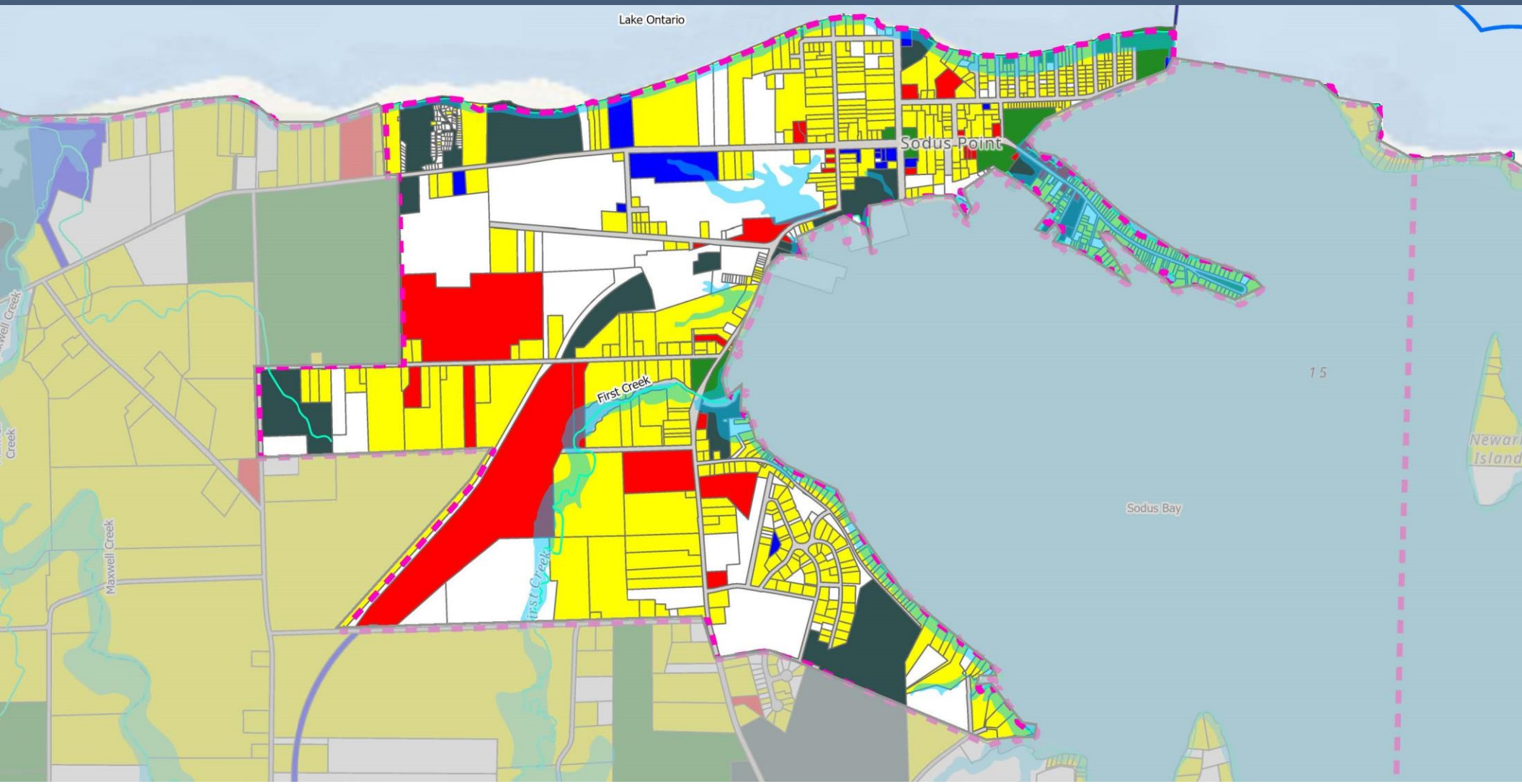
Median Household Income
$49,333

As illustrated on the following page, land use in the Village of Sodus Point is predominantly residential. These is also a mix of commercial; recreation and entertainment; parks; and vacant land. The majority of residences are single houses located along the waterfront.

Sodus Point hosts many businesses including retail shops, marinas, charter boats, and lodging. Key community assets include Sodus Point Beach Park and Lighthouse, Willow Park, Sodus Bay Yacht Club, public boat launches, White Birch Campground, Sodus Marina, Sodus Bay Heights Golf Club, and Macyville Woods Natural Preserve, to name a few.

Socio-economic data is from the U.S. Census Bureau. 2019. American Community Survey, 2015-2019 5-Year Estimates

LAND USE MAP – VILLAGE OF SODUS POINT



CLEAR Study Boundary
Towns, Villages, and Cities
Streams and Creeks
Lakes and Ponds

FEMA Flood Zones (Wayne)

Floodway
100-Year / 1% ACE

Wayne County Land Use

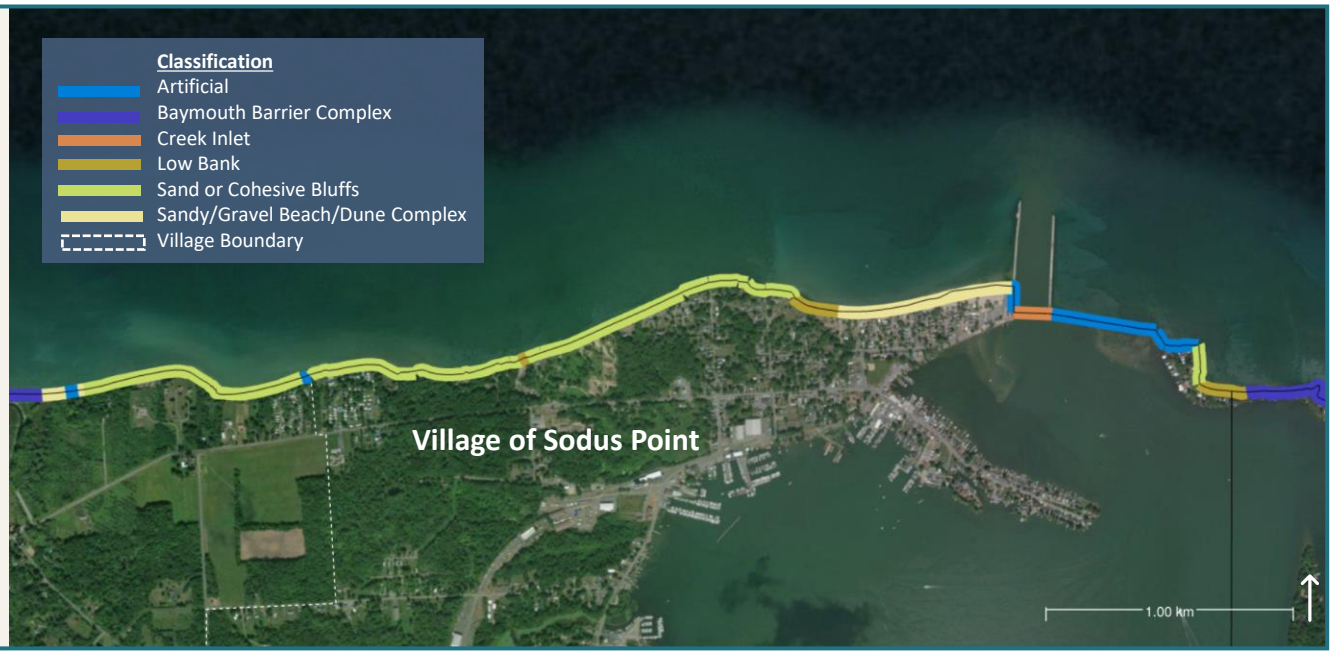
Agricultural, Conservation Lands and Parks
Residential
Vacant Land
Commercial
Recreation and Entertainment
Community and Public Services
Industrial
No Data

Wayne County land use information is available at https://web.co.wayne.ny.us/333/Real-Property-Tax-Service

SHORELINE CHARACTERISTICS – VILLAGE OF SODUS POINT

Shoreline Classification

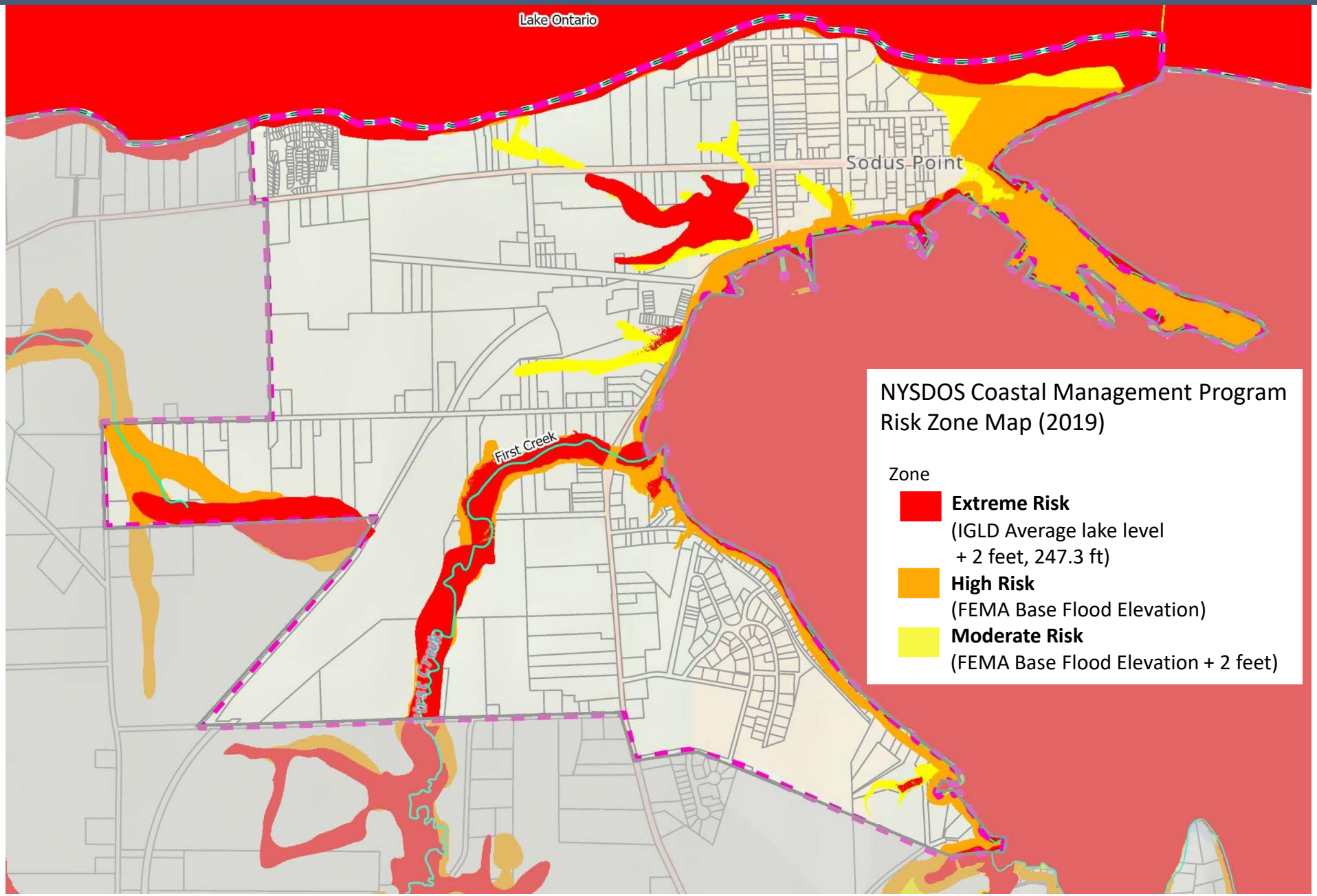
The Lake Ontario shoreline in the Village of Sodus Point is primarily sand or cohesive bluffs with areas of artificial hardening with riprap or seawalls, low banks around creek inlets, and sandy/gravel beach/dune complex along Sodus Point.



Erosion Rate

The shoreline erosion rate along Lake Ontario in the Village of Sodus Point ranges from -1.93 (accretion) to 1.61 ft/yr with a general mixture of rates closer to the lower and upper ends of this range as demonstrated by the green and red reaches respectively. These historical erosion rate estimates were based only on the erodible portion (i.e., unhardened shoreline) of the Lake Ontario shoreline.

RISK AREAS – VILLAGE OF SODUS POINT



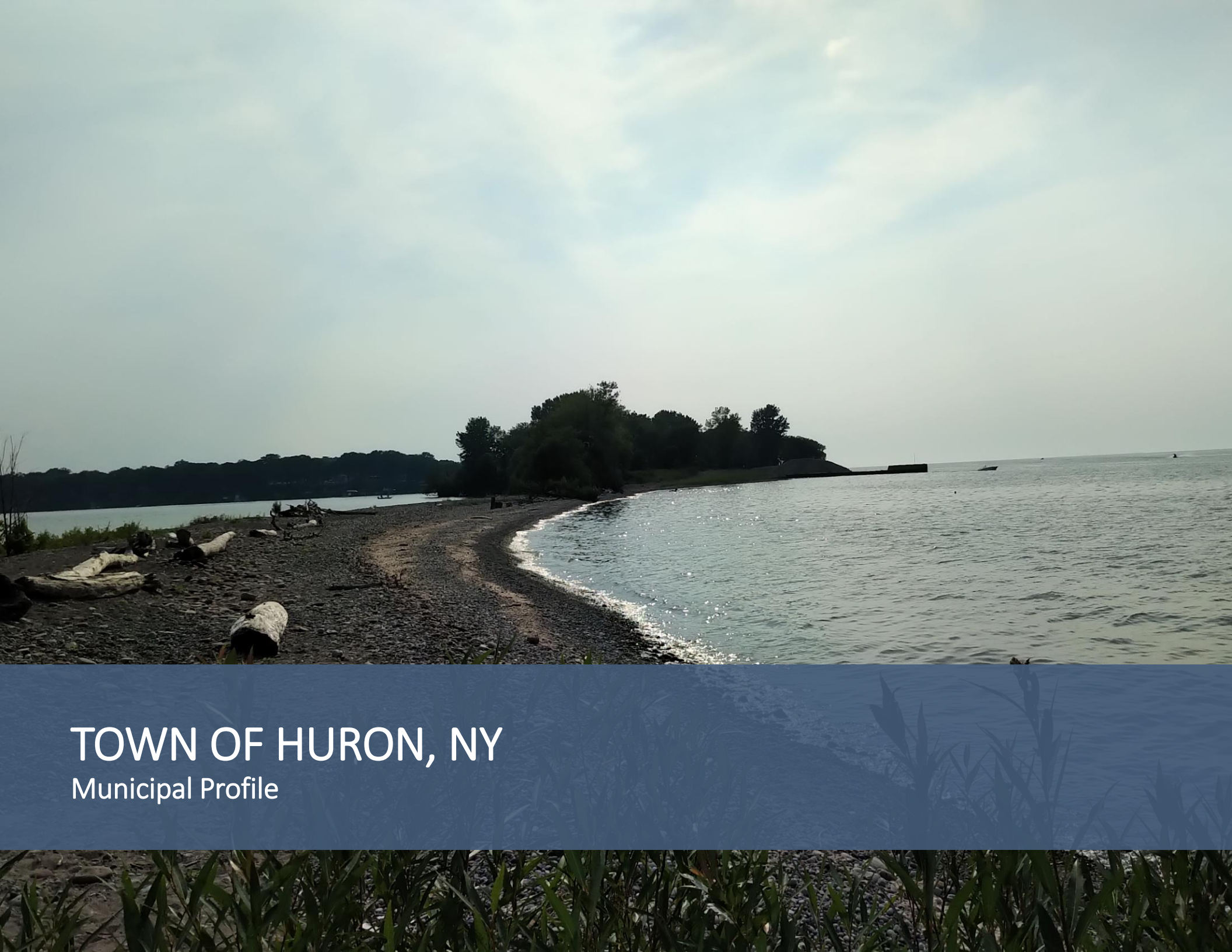
REDI PROJECTS – VILLAGE OF SODUS POINT

In 2017 and 2019, major flooding affected the Lake Ontario and St. Lawrence River system. These flooding events, each of which reached levels of a 1% chance occurrence, caused extensive damage to shoreline systems and communities. In response to the extended pattern of flooding along the shores of Lake Ontario and the St. Lawrence River and underlying economic challenges, the Lake Ontario Resiliency and Economic Development Initiative (REDI) was created to address the immediate resiliency and economic development needs of these areas.

The following projects were selected by the REDI Commission in the Fall of 2019 to receive program funding. The conceptual project profiles were published online and are available at https://www.ny.gov/sites/default/files/atoms/files/REDI_Project_Profiles_WA_20191010.pdf.

For current project status or additional information related to a REDI project, please contact the local municipality.

Project	Amount
WA.24 Sodus Point Beach	$490,000
WA.30 Wickham Blvd and Greig St.	$7,400,000
WA.34 Lakestones Drive	$342,000
WA.35 White Birch Campground Wastewater Infrastructure	$590,000

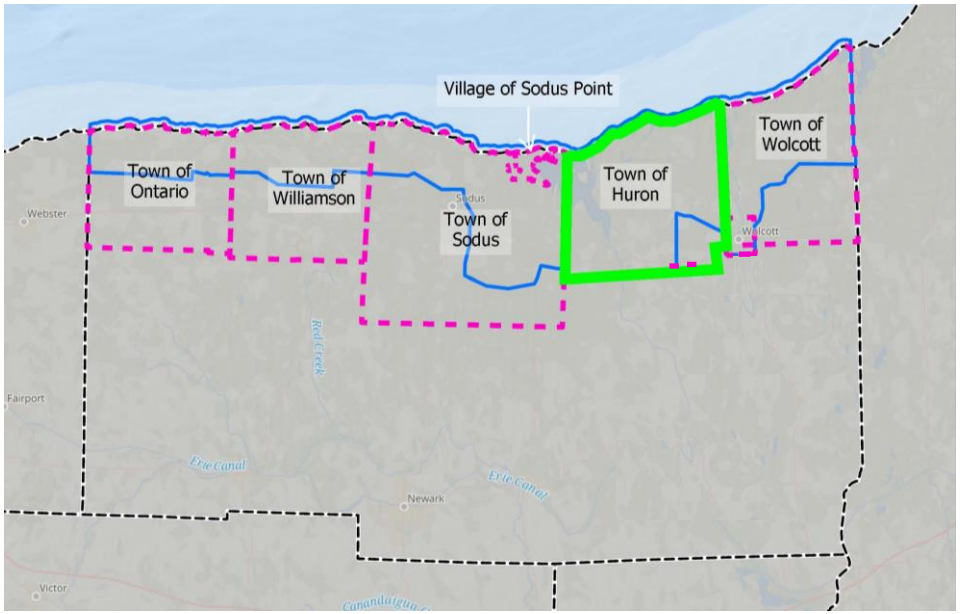


TOWN OF HURON, NY

Municipal Profile

COMMUNITY OVERVIEW – TOWN OF HURON

The Town of Huron is located between the Towns of Sodus and Wolcott in Wayne County. The Town of Huron is approximately 43 square miles and includes approximately 7 miles of Lake Ontario shoreline with additional extensive waterfront on Sodus Bay, East Bay, Brush Marsh, Port Bay, Clark Creek, Mudge Creek, Beaver Creek, Wolcott Creek, and Sodus Creek. The town is bounded by the Town of Sodus to the west, the Town of Wolcott to the east, and the Town of Rose to the south. The closest cities are Rochester, approximately 30 miles west, and Syracuse, approximately 34 miles southeast.



Town of Huron: Location Map

Legend

- CLEAR Study Boundary Area
- County Boundaries
- Wayne County Municipalities in CLEAR Boundary
- Town of Ontario

Socio-economic data is from the U.S. Census Bureau. 2019. American Community Survey, 2015-2019 5-Year Estimates

Town of Huron

Population
2,096

Median Age
46

# of Housing Units
1,568

Social Vulnerability
Medium-High
(CDC SVI score of 0.569)

Shoreline Miles
7.3

% Occupied Homes
52%

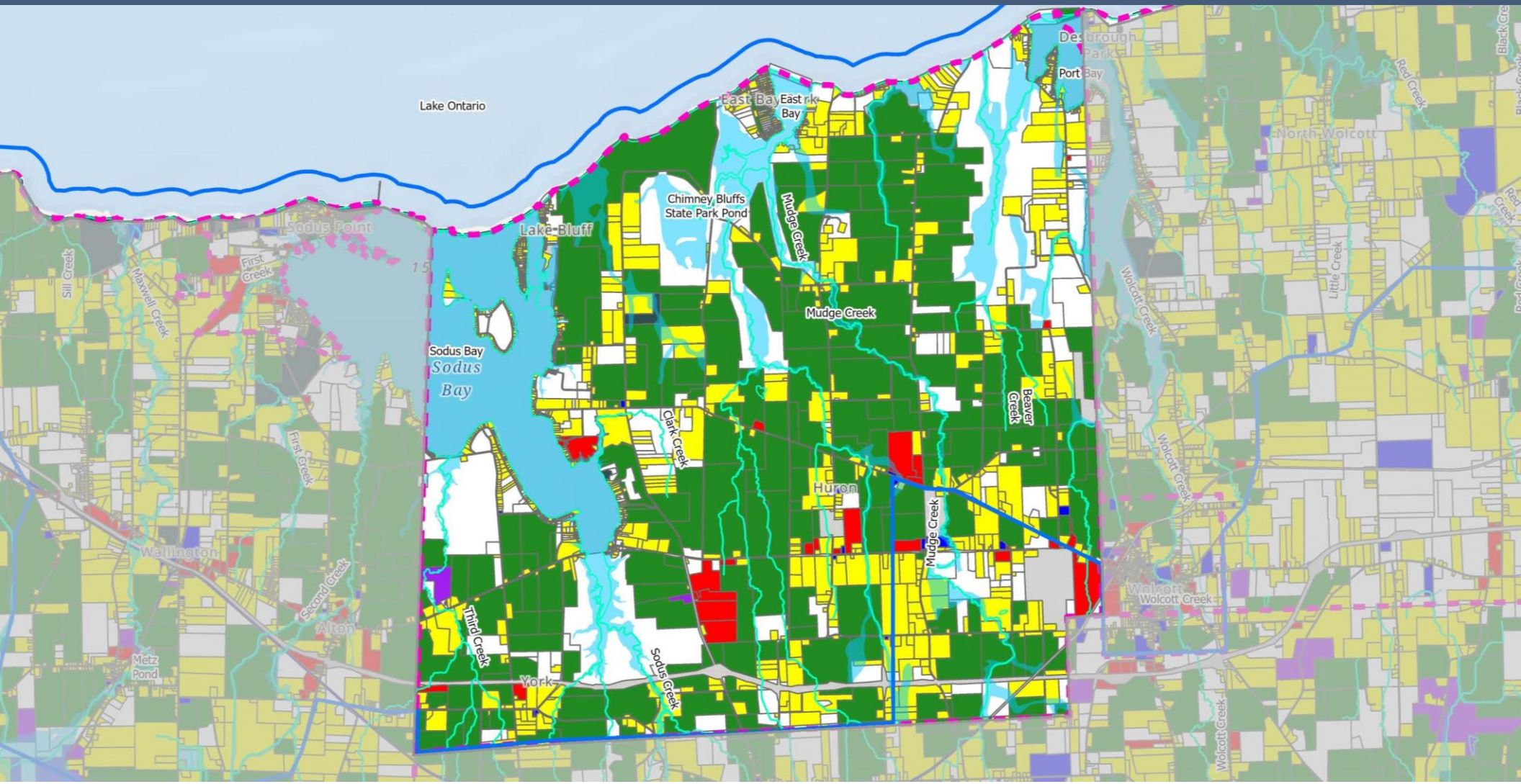
Median Home Value
$186k

Median Household Income
$69,750

As illustrated on the following page, land use in the Town of Huron is predominantly agricultural, conservation lands, and parks. This is due to the presence of large wetland areas and DEC managed lands including the northwest and center sections of the Lake Shore Marshes Wildlife Management Areas and a NYS DEC bird conservation area. These natural resources are also recreational assets open for public use.

The majority of residences are single houses, including many seasonal houses. These line the shoreline of Sodus Bay, East Bay, Port Bay, and are clustered near the Huron town center. There are some commercial areas inland, along Ridge Road, as well as some marinas and restaurants on Sodus Bay. Other community assets include Chimney Bluffs State Park, East Bay Park, Lake Bluff Campground, and public boat launches on East Bay and Port Bay.

LAND USE MAP – TOWN OF HURON



CLEAR Study Boundary
Towns, Villages, and Cities
Streams and Creeks
Lakes and Ponds

FEMA Flood Zones (Wayne)

Floodway
100-Year / 1% ACE

Wayne County Land Use

Agricultural, Conservation Lands and Parks
Residential
Vacant Land
Commercial
Recreation and Entertainment
Community and Public Services
Industrial
No Data

Wayne County land use information is available at https://web.co.wayne.ny.us/333/Real-Property-Tax-Service

SHORELINE CHARACTERISTICS – TOWN OF HURON

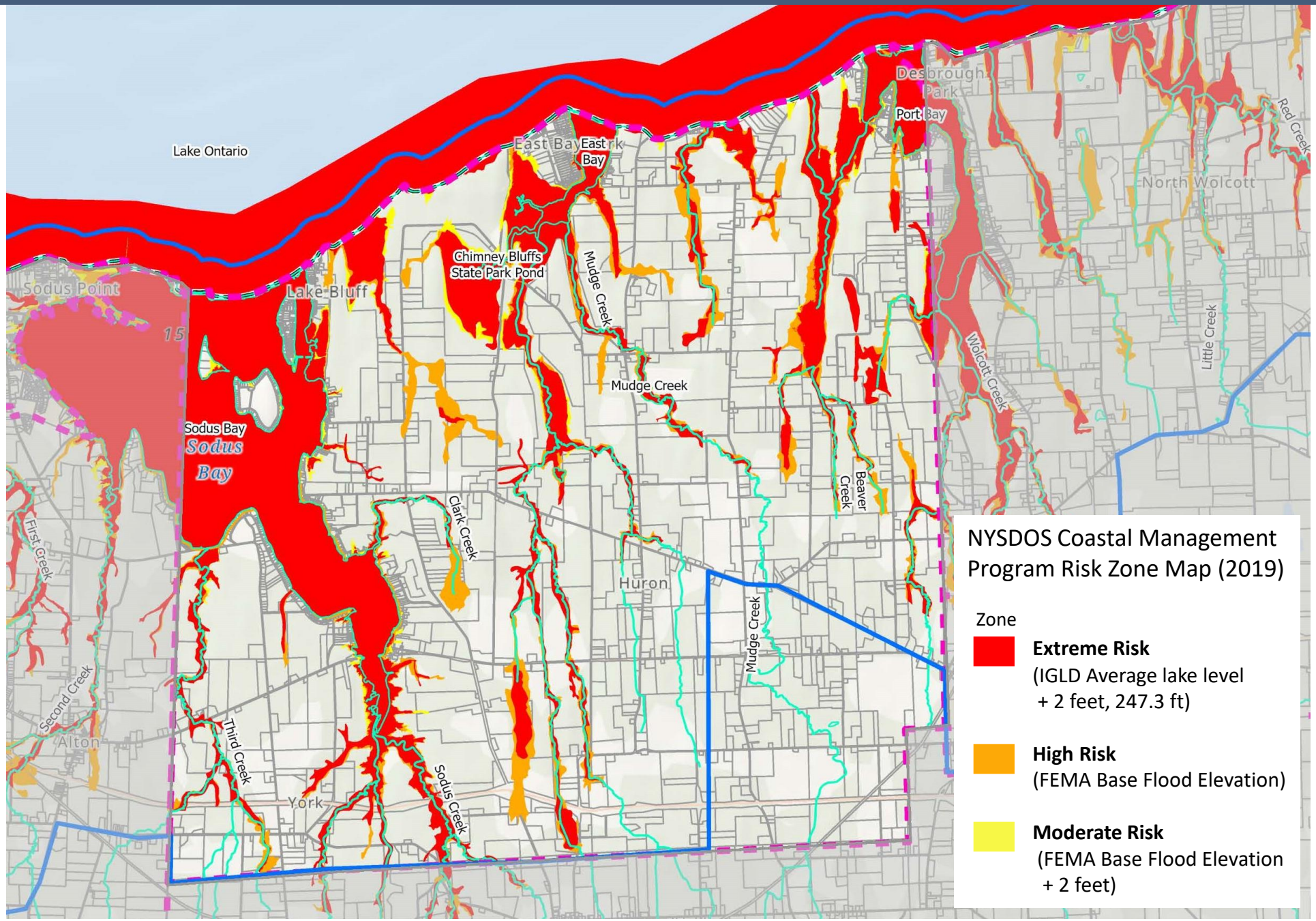
Shoreline Classification

The Lake Ontario shoreline in the Town of Huron (center of map) is primarily sand or cohesive bluffs with areas of creek inlets, baymouth barrier complex, artificial hardening with riprap or seawall and sandy/gravel beach/dune complex.

Erosion Rate

The shoreline erosion rate along Lake Ontario in the Town of Huron (center of map) ranges from 0.13 to 4.85 ft/yr, with a general mixture of rates closer to the lower and upper ends of this range as demonstrated by the green and red reaches respectively. These historical erosion rate estimates were based only on the erodible portion (i.e., unhardened shoreline) of the Lake Ontario shoreline.

RISK AREAS – TOWN OF HURON



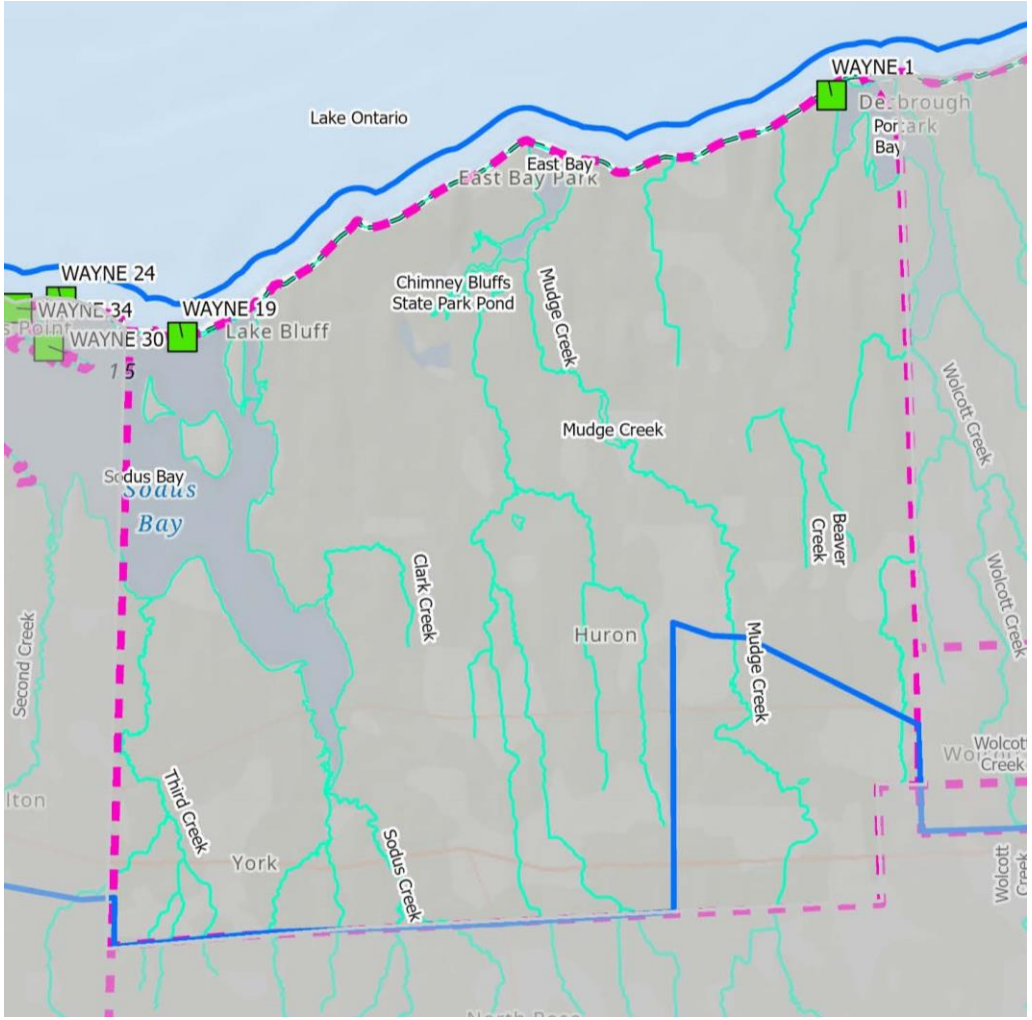
REDI PROJECTS – TOWN OF HURON

In 2017 and 2019, major flooding affected the Lake Ontario and St. Lawrence River system. These flooding events, each of which reached levels of a 1% chance occurrence, caused extensive damage to shoreline systems and communities. In response to the extended pattern of flooding along the shores of Lake Ontario and the St. Lawrence River and underlying economic challenges, the Lake Ontario Resiliency and Economic Development Initiative (REDI) was created to address the immediate resiliency and economic development needs of these areas.

The following projects were selected by the REDI Commission in the Fall of 2019 to receive program funding. The conceptual project profiles were published online and are available at https://www.ny.gov/sites/default/files/atoms/files/REDI_Project_Profiles_WA_20191010.pdf.

For current project status or additional information related to a REDI project, please contact the local municipality.

Project	Amount
WA.1 Port Bay	$3,340,000
WA.19 Crescent Beach	$14,630,000



Legend

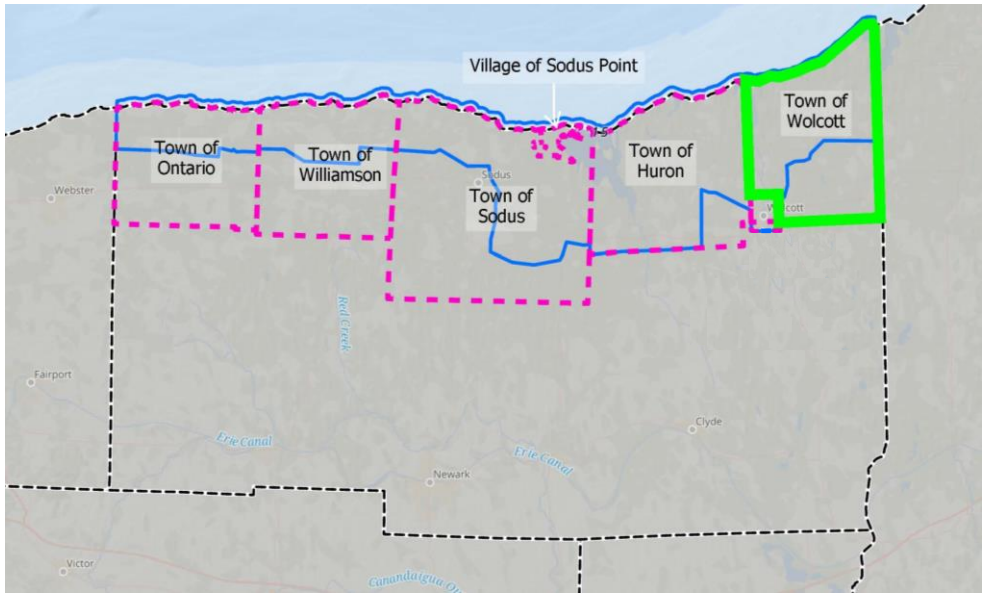
- CLEAR Study Boundary
- Towns, Villages, and Cities
- Streams and Creeks
- County Boundaries
- Lakes and Ponds
- REDI Projects - Wayne

Town of Wolcott, NY

Municipal Profile

COMMUNITY OVERVIEW – TOWN OF WOLCOTT

The Town of Wolcott is located between the Towns of Huron and Sterling in Wayne County. The Town of Wolcott is approximately 40 square miles and includes approximately 6.8 miles of Lake Ontario shoreline with additional waterfront on Port Bay, Red Creek, Black Creek, Little Creek, Blind Sodus Creek, Wolcott Creek, and Blind Sodus Bay. The town is bounded by the Town of Huron to the west, the Town of Sterling to the east, and the Town of Butler to the south. The closest cities are Syracuse, approximately 34 miles southeast, and Rochester, approximately 44 miles southwest.



Town of Wolcott: Location Map

Legend

- CLEAR Study Boundary Area
- County Boundaries
- Wayne County Municipalities in CLEAR Boundary
- Town of Ontario

Socio-economic data is from the U.S. Census Bureau. 2019. American Community Survey, 2015-2019 5-Year Estimates

Town of Wolcott

Population
4,144

Median Age
42

# of Housing Units
2,435

Social Vulnerability
Medium-High
(CDC SVI score of 0.7319)

Shoreline Miles
6.8

% Occupied Homes
74%

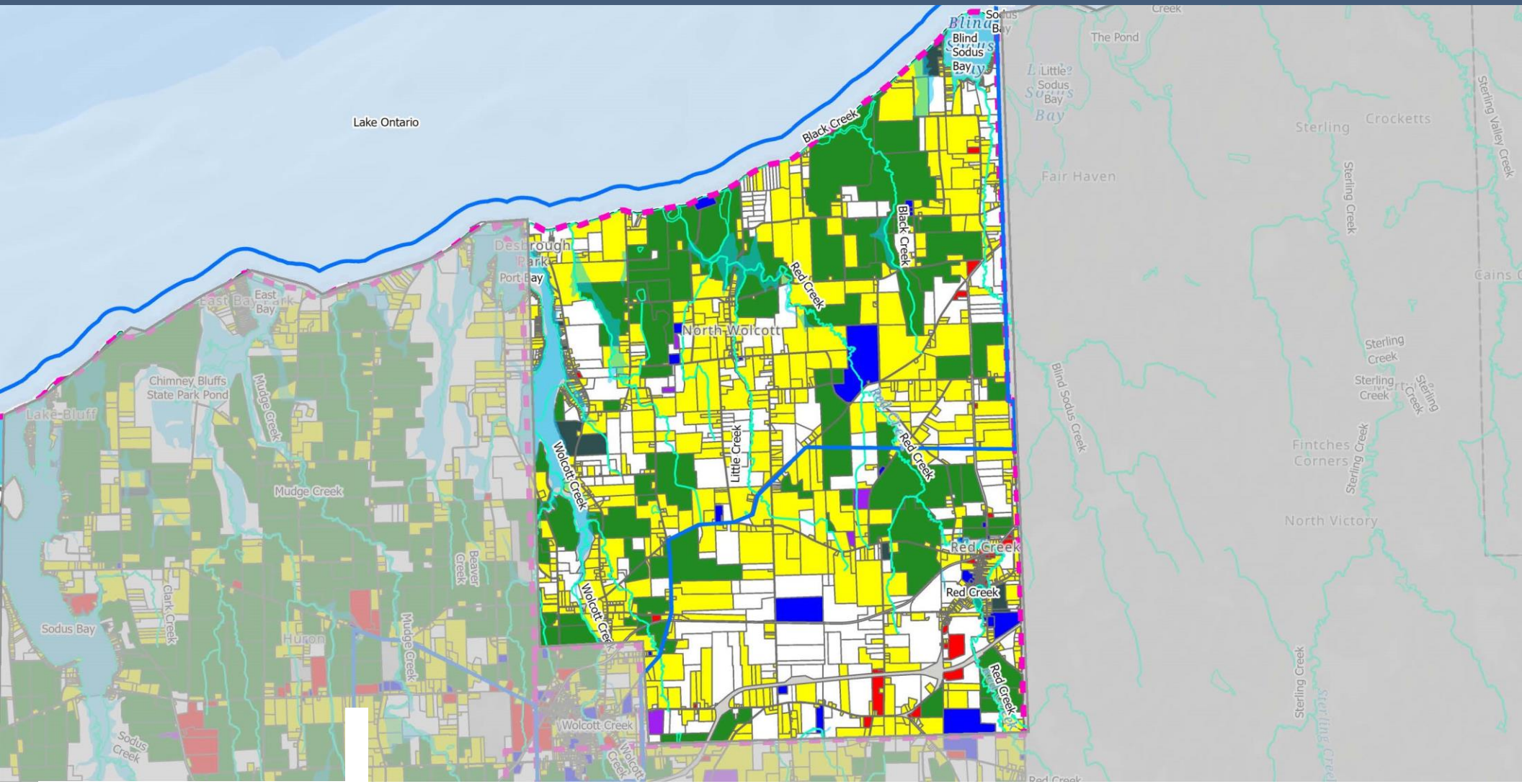
Median Home Value
$83k

Median Household Income
$46,949

As illustrated on the following page, land use in the Town of Wolcott is predominantly a mixture of residential; vacant land; and agricultural, conservation lands and parks, The majority of residences are single houses, including seasonal houses on Port Bay and Blind Sodus Bay. Other uses are mostly concentrated in the Village of Wolcott.

Key community assets include large wetland areas and DEC managed lands including the east section and a portion of the center section of the Lake Shore Marshes Wildlife Management Areas. These areas are open to the public for recreational use. Other recreational assets include Port Bay Golf Club, Holiday Harbor RV Park on Blind Sodus Bay, and a public boat launch on Port Bay.

LAND USE MAP – TOWN OF WOLCOTT



CLEAR Study Boundary
Towns, Villages, and Cities
Streams and Creeks
Lakes and Ponds

FEMA Flood Zones (Wayne)

Floodway
100-Year / 1% ACE

Wayne County Land Use

Agricultural, Conservation Lands and Parks
Residential
Vacant Land
Commercial
Recreation and Entertainment
Community and Public Services
Industrial
No Data

Wayne County land use information is available at https://web.co.wayne.ny.us/333/Real-Property-Tax-Service

SHORELINE CHARACTERISTICS – TOWN OF WOLCOTT

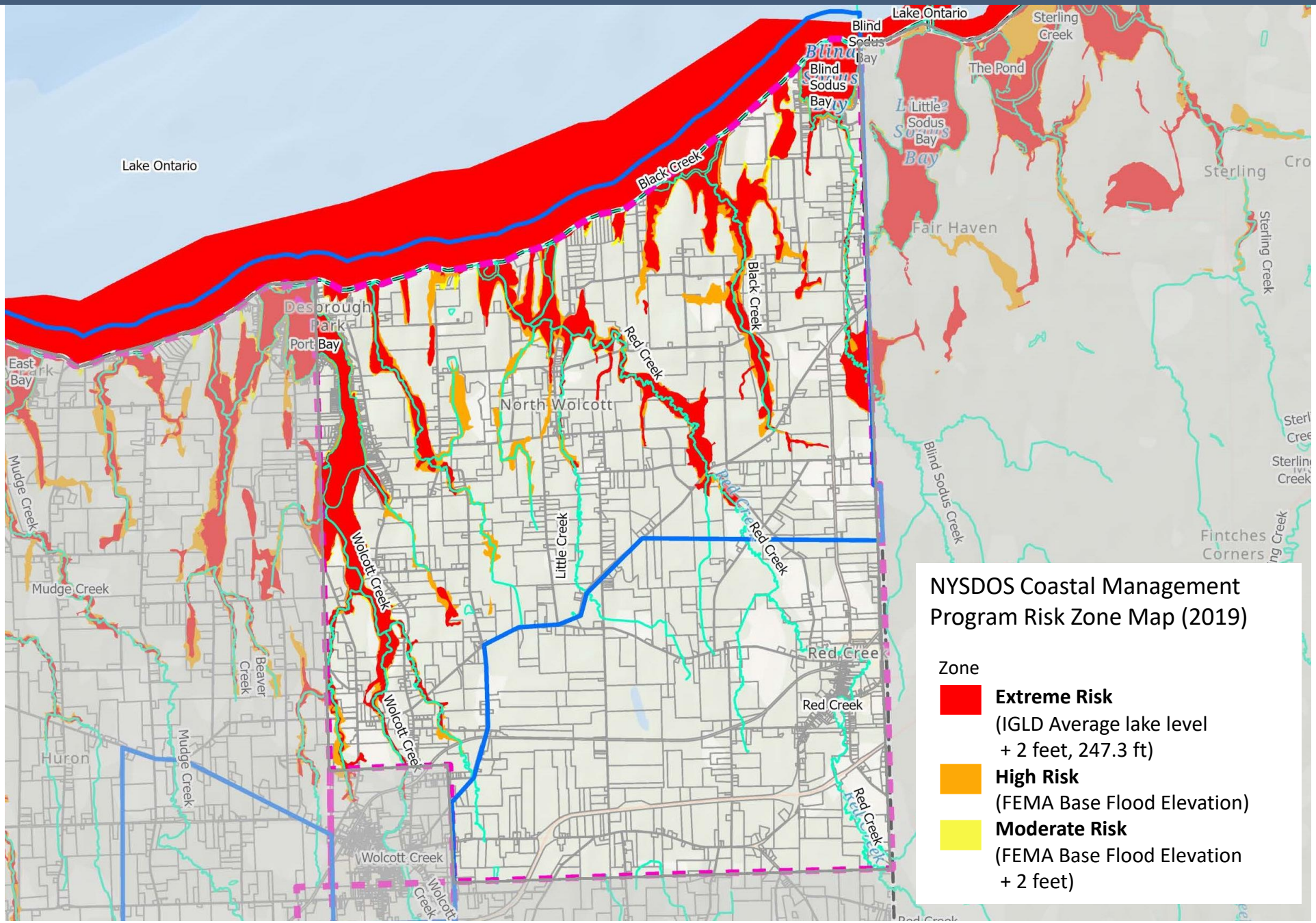
Shoreline Classification

The Lake Ontario shoreline in the Town of Wolcott (center of map) is a mixture of baymouth barrier complex, sand or cohesive bluffs, sandy/gravel beach/dune complex and artificial hardening with riprap or seawalls.

Erosion Rate

The shoreline erosion rate along Lake Ontario in the Town of Wolcott (center of map) ranges from 0.42 to 2.82 ft/yr with a general mixture of rates closer to the lower and upper ends of this range as demonstrated by the yellow and red reaches respectively. These historical erosion rate estimates were based only on the erodible portion (i.e., unhardened shoreline) of the Lake Ontario shoreline.

RISK AREAS – TOWN OF WOLCOTT



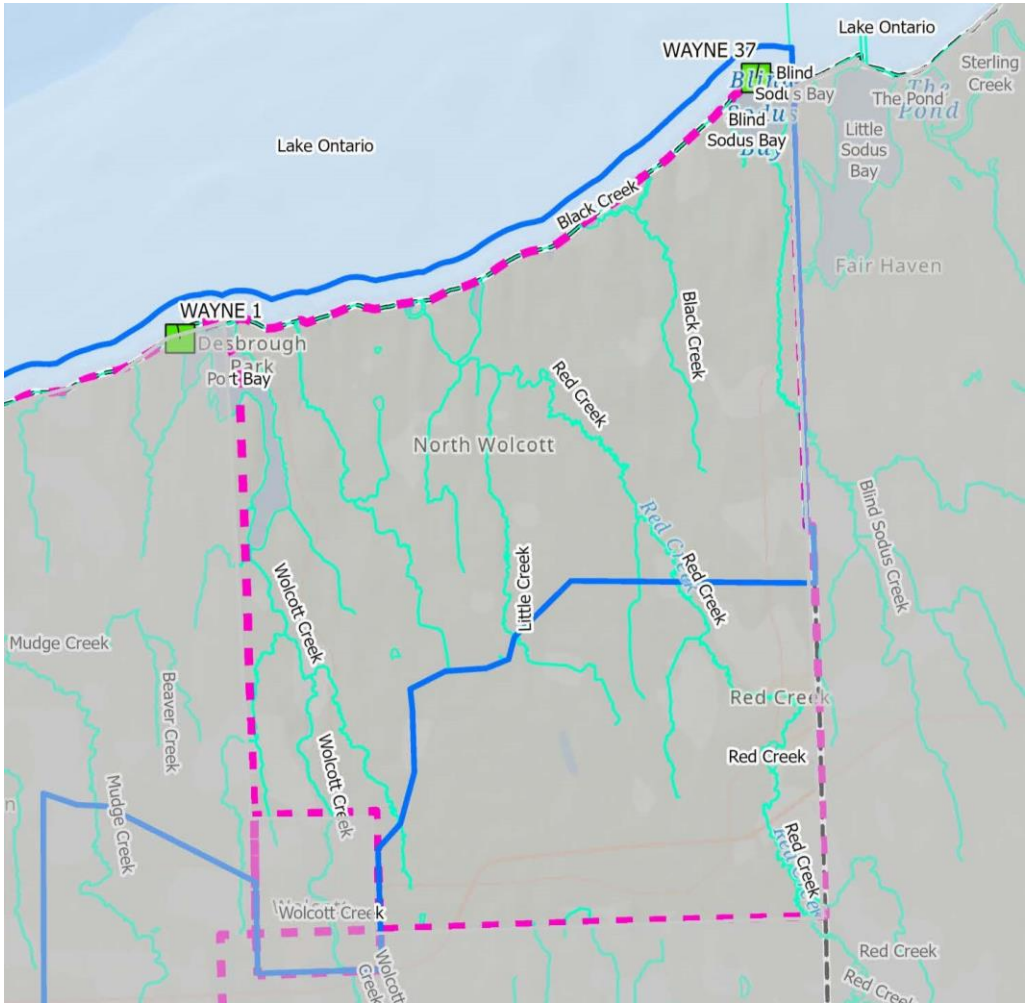
REDI PROJECTS – TOWN OF WOLCOTT

In 2017 and 2019, major flooding affected the Lake Ontario and St. Lawrence River system. These flooding events, each of which reached levels of a 1% chance occurrence, caused extensive damage to shoreline systems and communities. In response to the extended pattern of flooding along the shores of Lake Ontario and the St. Lawrence River and underlying economic challenges, the Lake Ontario Resiliency and Economic Development Initiative (REDI) was created to address the immediate resiliency and economic development needs of these areas.

The following projects were selected by the REDI Commission in the Fall of 2019 to receive program funding. The conceptual project profiles were published online and are available at https://www.ny.gov/sites/default/files/atoms/files/REDI_Project_Profiles_WA_20191010.pdf.

For current project status or additional information related to a REDI project, please contact the local municipality.

Project	Amount
WA.37 Blind Sodus Bay	$12,170,000



Legend

- CLEAR Study Boundary
- Towns, Villages, and Cities
- Streams and Creeks
- County Boundaries
- Lakes and Ponds
- REDI Projects - Wayne

CLEAR Plan
Wayne County

APPENDIX B

Community Assets & Risk Level Assessment

Wayne County Community Assets and Risk Level Assessment

Severe risk	
High risk	
Moderate risk	
Residual risk	

Municipality			Assets Information							Risk Assessment
County	Town / Village	Village	Asset Name	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	
Wayne County	Sodus Point	Sodus Point	**Village Municipal Parking Lot - Docks/Boat Launch**	Extreme	Economic	Marina/Water Based Business	Yes	No, Locally Significant	Low	
Wayne County	Williamson		**Pultneyville - Fishing Access**	Extreme	Economic	Marina/Water Based Business	No	No, Locally Significant	Low	
Wayne County	Sodus Point	Sodus Point	**White Birch Campground Wastewater Infrastructure**	Extreme	Natural & Cultural Resources	Natural Protective Features	Yes	No, Locally Significant	Low	
Wayne County	Wolcott		**Holiday Harbor RV Resort**	Extreme	Economic	Tourism Destinations	Yes	No, Locally Significant	Medium	
Wayne County	Huron		**Sodus Bay Breakwater**	Extreme	Natural & Cultural Resources	Natural Protective Features	Yes	Yes, FEMA	Medium	
Wayne County	Sodus		**Beechwood State Park**	Extreme	Natural & Cultural Resources	Parks and Recreation	Yes	No	Low	
Wayne County	Williamson		**Pultneyville Harbor**	High	Economic	Marina/Water Based Business	No	No, Locally Significant	Low	
Wayne County	Huron		**Eagle Island dock on Eagle Island**	Extreme	Economic	Marina/Water Based Business	Yes	No, Locally Significant	Medium	
Wayne County	Williamson		**Hughes Marina**	Extreme	Economic	Marina/Water Based Business	No	No, Locally Significant	Medium	
Wayne County	Ontario		**Ontario Dr. Stormwater Outlets**	Extreme	Housing	Single-Family Residence	No	No	Medium	
Wayne County	Huron		**Drumlins Along Shoreline**	Extreme	Natural & Cultural Resources	Natural Habitats	Yes	No	Medium	
Wayne County	Wolcott		**Shoreline Erosion**	Extreme	Natural & Cultural Resources	Natural Protective Features	Yes	No	Medium	
Wayne County	Sodus Point	Sodus Point	**Willow Park Public Access for Ice Fishing**	Extreme	Natural & Cultural Resources	Parks and Recreation	Yes	No	Medium	
Wayne County	Williamson		**Businesses in Pultneyville Marina**	High	Economic	Marina/Water Based Business	No	No, Locally Significant	Medium	

Wayne County Community Assets and Risk Level Assessment

Severe risk	
High risk	
Moderate risk	
Residual risk	

	Municipality		Assets Information							Risk Assessment
County	Town / Village	Village	Asset Name	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	
Wayne County	Huron		**Eagle Island Marina**	Extreme	Economic	Marina/Water Based Business	Yes	No, Locally Significant	Medium	
Wayne County	Williamson		**Hollands Cove Properties**	Extreme	Housing	Single-Family Residence	No	No	Medium	
Wayne County	Wolcott		**Port Bay Marina & Campground**	Extreme	Economic	Marina/Water Based Business	Yes	No, Locally Significant	Medium	
Wayne County	Huron		**Chimney Bluff State Park**	Extreme	Natural & Cultural Resources	Natural Protective Features	Yes	No	High	
Wayne County	Huron		**Crescent Beach**	Extreme	Natural & Cultural Resources	Natural Protective Features	Yes	Yes, FEMA	High	
Wayne County	Wolcott		**Blind Sodus Bay**	Extreme	Natural & Cultural Resources	Natural Protective Features	Yes	Yes, FEMA	Medium	
Wayne County	Sodus		**Camp Beechwood**	Extreme	Economic	Tourism Destinations	Yes	No	High	
Wayne County	Sodus Point	Sodus Point	**Lakestones Drive**	Extreme	Infrastructure Systems	Transportation	Yes	No, Locally Significant	Medium	
Wayne County	Huron		**Mudge creek outlet**	Extreme	Natural & Cultural Resources	Water Bodies	Yes	No	Medium	
Wayne County	Wolcott		**Port Bay - Businesses and Campgrounds**	High	Economic	Marina/Water Based Business	Yes	No, Locally Significant	Medium	
Wayne County	Sodus Point	Sodus Point	**South Shore Drive**	Extreme	Infrastructure Systems	Transportation	Yes	No, Locally Significant	Medium	
Wayne County	Sodus		**Connelly's Cove - Businesses and Public Docks**	Extreme	Economic	Marina/Water Based Business	Yes	No, Locally Significant	High	
Wayne County	Hurom		**East Bay Fishing Access Site**	Extreme	Economic	Marina/Water Based Business	Yes	No, Locally Significant	High	
Wayne County	Ontario		**Lakeside Cemetery**	High	Natural & Cultural Resources	Religious/Cultural	No	No, Locally Significant	Low	

Wayne County Community Assets and Risk Level Assessment

Severe risk	
High risk	
Moderate risk	
Residual risk	

Municipality			Assets Information							Risk Assessment
County	Town / Village	Village	Asset Name	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	
Wayne County	Sodus		**Maxwell Bay - Fishing Access**	Extreme	Economic	Marina/Water Based Business	Yes	No, Locally Significant	High	
Wayne County	Huron & Wolcott		**Port Bay - Access During Low Water Levels**	Extreme	Economic	Marina/Water Based Business	Yes	No, Locally Significant	High	
Wayne County	Williamson		**Williamson Water Intake**	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	
Wayne County	Huron		**Davenports & Son Boat Liverly Marina**	High	Economic	Marina/Water Based Business	Yes	No, Locally Significant	Medium	
Wayne County	Huron		**DEC Access North of Beaver Creek Unit**	Moderate	Natural & Cultural Resources	Natural Protective Features	Yes	No	Medium	
Wayne County	Sodus Point	Sodus Point	**Sand Point**	High	Natural & Cultural Resources	Natural Habitats	Yes	No, Locally Significant	Medium	
Wayne County	Sodus	Sodus Point	**Sill Road**	High	Infrastructure Systems	Transportation	Yes	Yes, FEMA	Medium	
Wayne County	Port Bay	Port Bay	**The Bayfront Restaurant**	High	Economic	Restaurants	Yes	No, Locally Significant	Medium	
Wayne County	Huron		**Leroy Island Bridge**	Extreme	Infrastructure Systems	Transportation	Yes	Yes, FEMA	High	
Wayne County	Huron		**Pier 53**	Extreme	Economic	Restaurants	Yes	No, Locally Significant	High	
Wayne County	Williamson		**B. Forman Park**	High	Natural & Cultural Resources	Parks and Recreation	No	No	Medium	
Wayne County	Huron		**Bay Bridge Bait and Tackle Marina**	High	Economic	Marina/Water Based Business	Yes	No, Locally Significant	Medium	
Wayne County	Sodus	Sodus Point	**Featherly Drive**	Moderate	Infrastructure Systems	Transportation	Yes	No, Locally Significant	Low	
Wayne County	Ontario		**Ginna Nuclear Power Station**	Extreme	Infrastructure Systems	Energy - Power Generation	No	Yes, FEMA	low	

Wayne County Community Assets and Risk Level Assessment

Severe risk	
High risk	
Moderate risk	
Residual risk	

	Municipality		Assets Information							Risk Assessment
County	Town / Village	Village	Asset Name	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	
Wayne County	Wolcott		**Lake Shore Marshes Wildlife Management Area**	High	Natural & Cultural Resources	Parks and Recreation	Yes	No, Locally Significant	Medium	
Wayne County	Huron		**Oak Park Marina**	High	Economic	Marina/Water Based Business	Yes	No, Locally Significant	Medium	
Wayne County	Sodus	Sodus Point	**Oscar Fuerst Park - Ball field and Municipal Parking Lots**	High	Natural & Cultural Resources	Parks and Recreation	Yes	No, Locally Significant	Medium	
Wayne County	Williamson		**Pultneyville Yacht Club**	High	Economic	Marina/Water Based Business	No	No, Locally Significant	Low	
Wayne County	Wolcott		**Wolcott Water Intake**	Extreme	Infrastructure Systems	Water Supply	Yes	Yes, FEMA	Medium	
Wayne County	Sodus	Sodus Point	**First Creek Bridge, and Outlet, Fishing Access**	High	Natural & Cultural Resources	Water Bodies	Yes	Yes, FEMA	High	
Wayne County	Ontario		**Ontario Water Intake**	Extreme	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	
Wayne County	Ontario, Williamson, Sodus, Wolcott,		**Outlets of Tributaries**	Extreme	Natural & Cultural Resources	Water Bodies	Yes	No	High	
Wayne County	Sodus Point	Sodus Point	**Sodus Bay (West Side) - Charter Boats, Boat Launches, Marinas**	Extreme	Economic	Marina/Water Based Business	Yes	No, Locally Significant	High	
Wayne County	Huron		**Port Bay Barrier Bar**	Extreme	Natural & Cultural Resources	Natural Protective Features	Yes	Yes, FEMA	High	
Wayne County	Huron		**East Bay Barrier Bar**	Extreme	Natural & Cultural Resources	Natural Protective Features	Yes	Yes, FEMA	High	
Wayne County	Huron		**Fowlers Marina**	High	Economic	Marina/Water Based Business	Yes	No, Locally Significant	High	
Wayne County	Ontario		**Public Boat Launch and Seawall**	High	Economic	Marina/Water Based Business	No	No, Locally Significant	High	
Wayne County	Huron		**Skippers**	Moderate	Economic	Restaurants	Yes	No, Locally Significant	High	

Wayne County Community Assets and Risk Level Assessment

Severe risk	
High risk	
Moderate risk	
Residual risk	

Municipality			Assets Information							Risk Assessment
County	Town / Village	Village	Asset Name	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	
Wayne County	Sodus	Sodus Point	**Sodus Lighthouse (Mainland)**	Extreme	Economic	Tourism Destinations	Yes	No, Locally Significant	High	
Wayne County	Sodus		**Sodus Water Intake**	High	Infrastructure Systems	Water Supply	Yes	Yes, FEMA	High	
Wayne County	Sodus Point	Sodus Point	**Wickham Blvd and Greig St.**	High	Infrastructure Systems	Stormwater	Yes	Yes, FEMA	High	
Wayne County	Huron		**Shaker Tract Rd at Third Creek/Sawmill Cove**	Extreme	Infrastructure Systems	Transportation	Yes	Yes, FEMA	High	
Wayne County	Sodus Point	Sodus Point	**Sodus Point Beach**	Extreme	Natural & Cultural Resources	Natural Protective Features	Yes	Yes, FEMA	High	
Wayne County	Huron		**Bay Bridge (Ridge Road)**	Extreme	Infrastructure Systems	Transportation	Yes	Yes, FEMA	High	
Wayne County	Ontario		**Ontario Main Wastewater Pump Station**	Extreme	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	
Wayne County	Sodus Point		**Salmon Creek - Fishing Access**	High	Economic	Marina/Water Based Business	Yes	No, Locally Significant	Medium	
Wayne County	Sodus Point	Sodus Point	**Village of Sodus Point Wastewater/Stormwater/Sewer System**	Moderate	Infrastructure Systems	Stormwater	Yes	Yes, FEMA	High	