Great Lakes Resources for
Healthy Watersheds and Resilient Communities

Resources

1. [Community Resilience Building](#) is a unique, "anywhere at any scale", community-driven process, rich with information, experience, and dialogue, where participants identify top hazards, current strengths, challenges, and priority actions to improve community resilience for all hazards today, and in the future.
2. Engineering with Nature: https://ewn.el.erdc.dren.mil/
3. Erosion Management for New York's Great Lakes Shorelines: https://seagrant.sunysb.edu/glcoastal/pdfs/ErosionManagement.pdf
4. [FEMA Flood Map Service Center](#) (MSC) is the official public source for flood hazard information produced in support of the National Flood Insurance Program (NFIP). Use the MSC to find your official flood map, access a range of other flood hazard products, and take advantage of tools for better understanding flood risk.
5. Great Lakes Ice Cover: https://www.glerl.noaa.gov/data/ice/#currentConditions
6. Great Lakes Portal: https://www.weather.gov/greatlakes/
7. Guidance for Consideration of Flood Risk in Smart Growth Public Infrastructure Assessment: https://www.dec.ny.gov/docs/administration_pdf/crrasmartgrowth.pdf
8. Hazard Mitigation – New York State Division of Homeland Security and Emergency Services (NYS DHSES): https://www.dhses.ny.gov/hazard-mitigation
9. Hazard Mitigation Planning – Federal Emergency Management Agency (FEMA): https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning
10. [Lake Ontario Flood Forecast Mapper](#) is an online flood risk mapping tool based on monthly static water level forecasts. Inundation predictions are calculated using the NOAA (z-score) approach. This method propagates uncertainties inherent in the underlying data sources (e.g., elevation data, water level forecast, storm surge impacts, datum conversions) into the final inundation predictions.
11. [Model Local Laws to Increase Resilience | Department of State (ny.gov)](#): Model local laws can help local governments be more resilient to sea-level rise, storm surge, and flooding. Cities, towns, and villages are invited to adapt model local laws to meet the resilience needs of the community with the assistance of their municipal attorneys.
12. Local Waterfront Revitalization Programs in the Coastal Area: Guidance Manual for Preparing Local Programs: https://dos.ny.gov/system/files/documents/2021/09/lwrp-preparation-guidance_final_9_1_21.pdf
13. National Oceanic and Atmospheric Administration's (NOAA) Climate Normals: https://www.climate.gov/news-features/understanding-climate/climate-change-and-1991-2020-us-climate-normals
14. NOAA Coastal & Waterfront Smart Growth: https://coastalsmartgrowth.noaa.gov/welcome.html

15. [NOAA Digital Coast](): Online repository of data, tools and training available for community leaders to address issues commonly associated with a changing climate and a growing population.
16. [NOAA Lake Level Viewer]() displays variations in lake levels ranging from six feet above and below the long-term average, and helps users visualize the impacts of lake-level fluctuations on shorelines and coastal areas.
17. [New York Climate Change Science Clearinghouse (NYCCSC)]() is a gateway for policymakers, local planners, and the public to identify and access documents, data, websites, tools, and maps relevant to climate change adaptation and mitigation across New York State. The goal of the NYCCSC is to support scientifically sound and cost-effective decision-making. The vision is a dynamic site where users can find information in multiple ways, including through interactive tools that use data from different sources.
18. [New York's Great Lakes Coastal Resilience Index (CRI)]() is a self-assessment tool developed by New York Sea Grant. To complete the index, community leaders get together and use the tool to guide discussion about their community's resilience to coastal hazards. The Index provides a simple, inexpensive method for community leaders to perform a self-assessment of their community's resilience to coastal flooding and weather disasters, identifying weaknesses a community may want to address prior to the next hazard event and guiding community discussion. The Index is not intended for comparison between communities.
The Index uses information that is readily available and asks mainly "yes" or "no" questions. It consists of a 9-page exercise to investigate the vulnerabilities across six community sectors (critical facilities and infrastructure, transportation issues, community plans and agreements, mitigation measures, business plans, and social systems). The booklet also includes 24 pages of coastal flood mapping tutorials, and weather disaster narratives and charts to help frame the exercise. The Index can be completed in approximately three hours.
19. New York Sea Grant Virtual Site Visits: https://www.seagrant.sunysb.edu/glcoastalvirtualsitevisit
20. New York State Climate Smart Communities: Climate Smart Resiliency Planning (i.e., PE7 Action: Evaluate Policies for Climate Resilience): https://climatesmart.ny.gov/actions-certification/actions/#open/action/87
21. New York State Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act: https://www.dec.ny.gov/docs/administration_pdf/crrafloodriskmgmtgdnc.pdf
22. [New York State REDI](): Building Resilience in Recover is a Homeowner Guide for Shoreline Management on The Great Lakes and St. Lawrence River. This document is applicable beyond REDI and Lake Ontario.
23. Using Natural Measures to Reduce the Risk of Flooding and Erosion: https://www.dec.ny.gov/docs/administration_pdf/crranaturalmeasuresgndc.pdf
24. US Army Corps of Engineers - Ice Jam Database: https://icejam.sec.usace.army.mil/ords/f?p=1001:7

25. USACE - Lake Ontario & Lake Erie Sediment Viewer: https://www.arcgis.com/apps/MapSeries/index.html?appid=34476ea8c07a4111841d28a5d960cb02
26. US Climate Resilience Toolkit: An online repository of data, tools, resources, case studies, and tips for improving your community's resilience to climate change.
27. Working with Nature: A Guide to Native Plants for New York's Great Lakes Shorelines (applicable to areas outside of the Great Lakes): https://seagrant.sunysb.edu/Images/Uploads/PDFs/GreatLakes-ShorelinePlantsGuide.pdf
28. Association of State Floodplain Managers: No Adverse Impact Floodplain Management https://www.floods.org/resource-center/association-of-state-floodplain-managers-nai-no-adverse-impact-floodplain-management/

Policies

1. Climate Leadership and Community Protection Act (Climate Act): https://climate.ny.gov/
2. Community Risk and Resiliency Act (CRRA): https://www.dec.ny.gov/energy/102559.html
3. Stormwater MS4 Permit and Forms: https://www.dec.ny.gov/chemical/43150.html

Programs

1. Coastal Erosion Hazard Area (CEHA) Permit Program: https://www.dec.ny.gov/permits/6064.html
2. NYS Climate Smart Communities: https://climatesmart.ny.gov/
3. NYSERDA Clean Energy Communities: https://www.nyserda.ny.gov/all-programs/programs/clean-energy-communities
4. NYS Floodplain and Manager Stormwater Association: www.nyfloods.org
5. Community Rating System (CRS): www.crsresources.org

Plans

1. Responding to Climate Change in New York State (ClimAID): https://www.nyserda.ny.gov/About/Publications/Energy-Analysis-Reports-and-Studies/Environmental-Research-and-Development-Technical-Reports/Response-to-Climate-Change-in-New-York
2. NYS Climate Assessments: https://nysclimateimpacts.org/
3. NYS Great Lakes Action Agenda: https://www.dec.ny.gov/docs/water_pdf/greatlakesactionagenda2023.pdf
4. NYS Coastal Lakeshore Economy and Resiliency (CLEAR) Initiative: https://dos.ny.gov/coastal-lakeshore-economy-and-resiliency-clear-initiative