



# **Stakeholder Partnerships and Coordination in Lake and Watershed Management**

Randall Perry, Executive Director, Chautauqua Lake & Watershed Management Alliance

2023 Chautauqua Lake Conference

Athenaeum Hotel, Chautauqua Institution, June 17, 2023



# History & Structure of Our Alliance



## Founding Members

- Chautauqua - Cattaraugus Board of Realtors
- Chautauqua County Chamber of Commerce
- Chautauqua County Government
- Chautauqua County Soil & Water Conservation District
- Chautauqua County Visitors Bureau
- Chautauqua Institution
- Chautauqua Lake Association
- Chautauqua Lake Fishing Association
- Chautauqua Lake Partnership
- Chautauqua Property Owners Association
- Chautauqua Utility District
- Chautauqua Watershed Conservancy
- Holmberg Foundation
- Jamestown Audubon Society
- The Lenna Foundation
- Mayville - Chautauqua Community Chamber of Commerce
- NYS Office of Parks, Recreation and Historic Preservation - Allegany Region
- North Chautauqua Lake Sewer District
- Roger Tory Peterson Institute
- South & Center Chautauqua Lake Sewer District
- Town of Busti
- Town of Chautauqua
- Town of Ellery
- Town of Ellicott
- Town of North Harmony
- Village of Bemus Point
- Village of Celoron
- Village of Lakewood
- Village of Mayville



# History & Structure of Our Alliance

## ❑ 501c3 Non-Profit Member Organization

❖ 31 Founding Members

## ❑ Evolved from the Chautauqua Lake Management Commission (CLMC) in late 2014

## ❑ Established for the benefit of all lake and watershed stakeholders

## ❑ Our Mission:

The CLWMA, working in **collaboration** with lake and watershed-related organizations, municipalities and other stakeholders, will **promote and facilitate implementation** of recommendations from the Chautauqua Lake Watershed Management Plan and the Chautauqua Lake Macrophyte Management Strategy by **prioritizing projects, securing funding and allocating resources.**

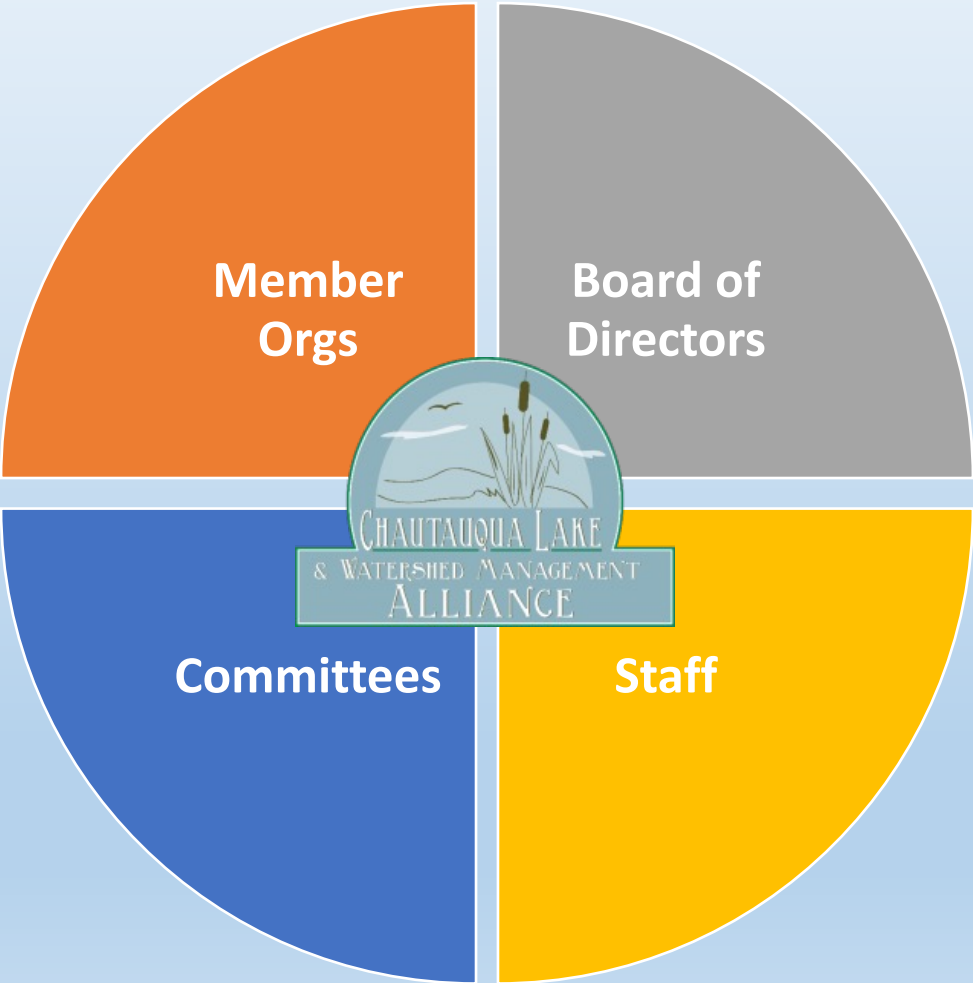


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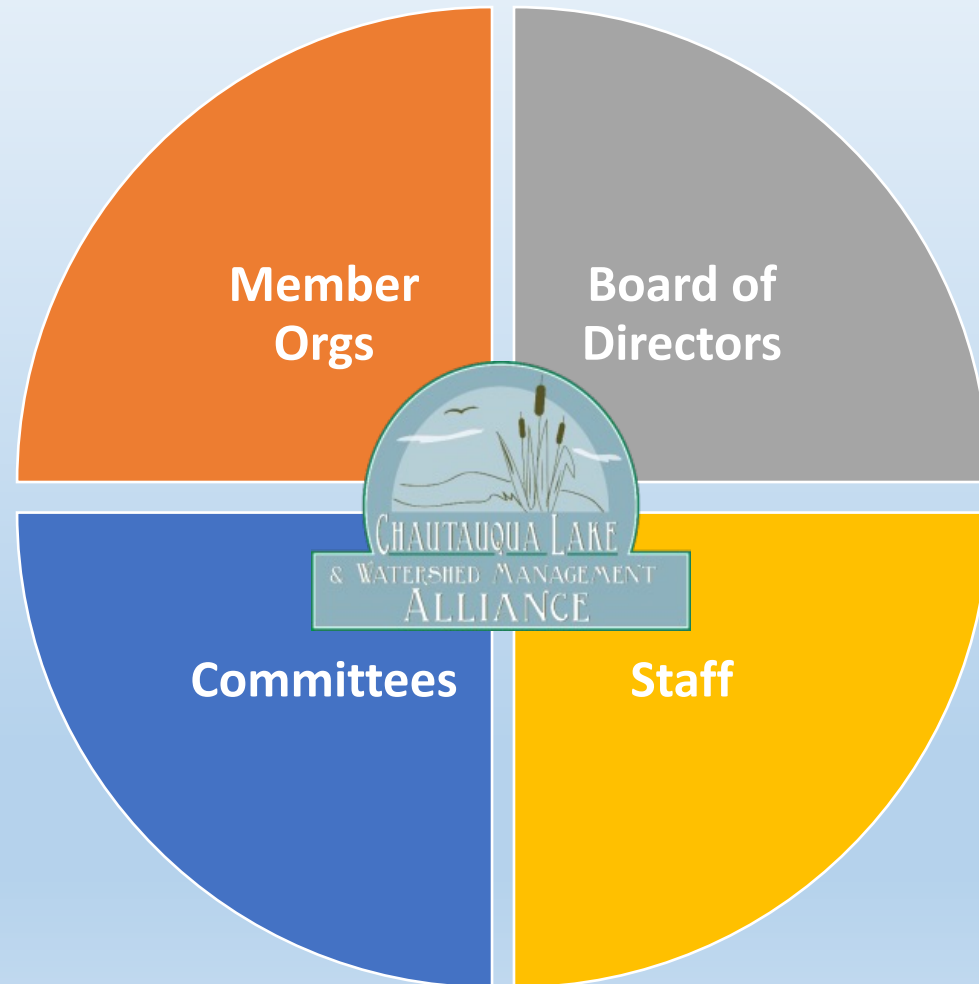
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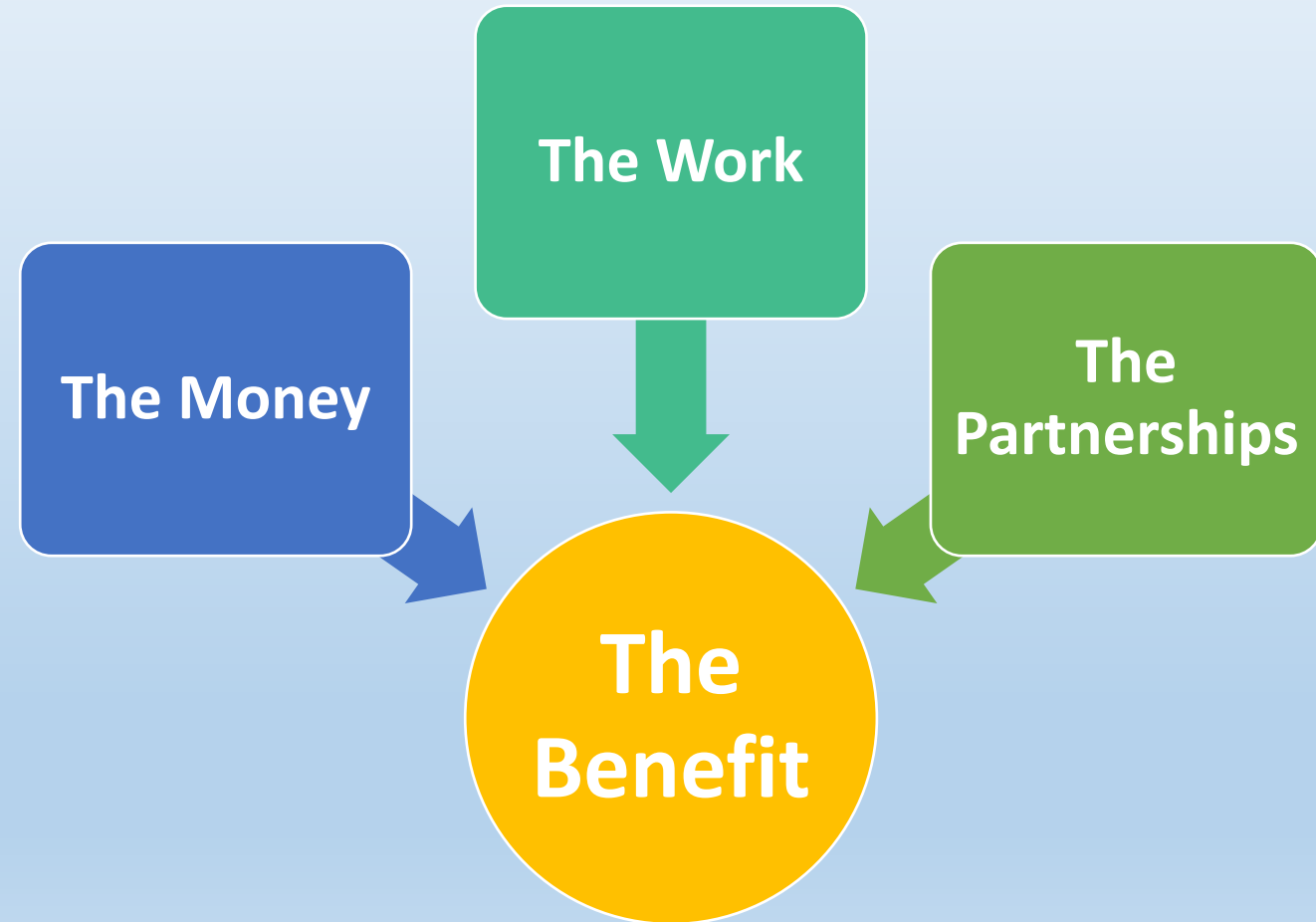
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- ❑ **Board of Directors, n = 9**
  - ❖ Elected by Members, from the Membership
  - ❖ Cross section of government/NGO leaders from around Chautauqua Lake
  - ❖ County (2), Towns/Villages (3), At-Large (4)
- ❑ **Staff, n = 3**
  - ❖ Fisheries, communications, water/environmental
  - ❖ Cross-trained, capacity flexes based on need
- ❑ **Committees**
  - ❖ Lake Management Committee
  - ❖ Watershed Management Committee
  - ❖ Data Analysis & Research Committee
- ❑ **Member Organizations**
  - ❖ 31 Founding Members





# History & Structure of Our Alliance

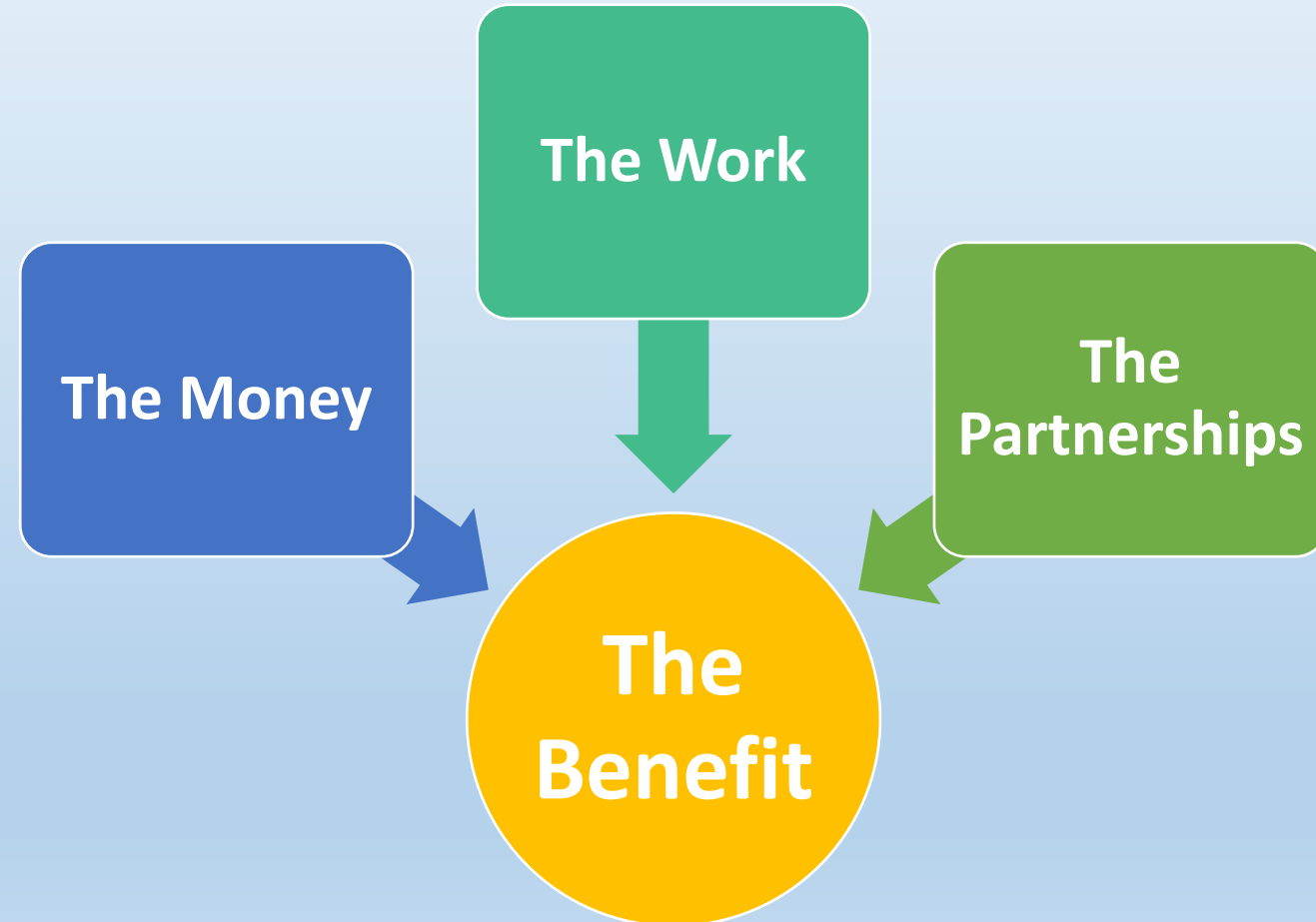




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- The Lenna Foundation
- Arnold Holmberg Foundation
- Hultquist Foundation
- Gebbie Foundation
- Committee Volunteers
- Individual Contributors
- Past & Present Board of Directors
- The Scientific Research Community
- Our Lake Community's Stakeholders
- NYS & US agencies: DEC, DOS, EFC, OPRHP, USACE & more

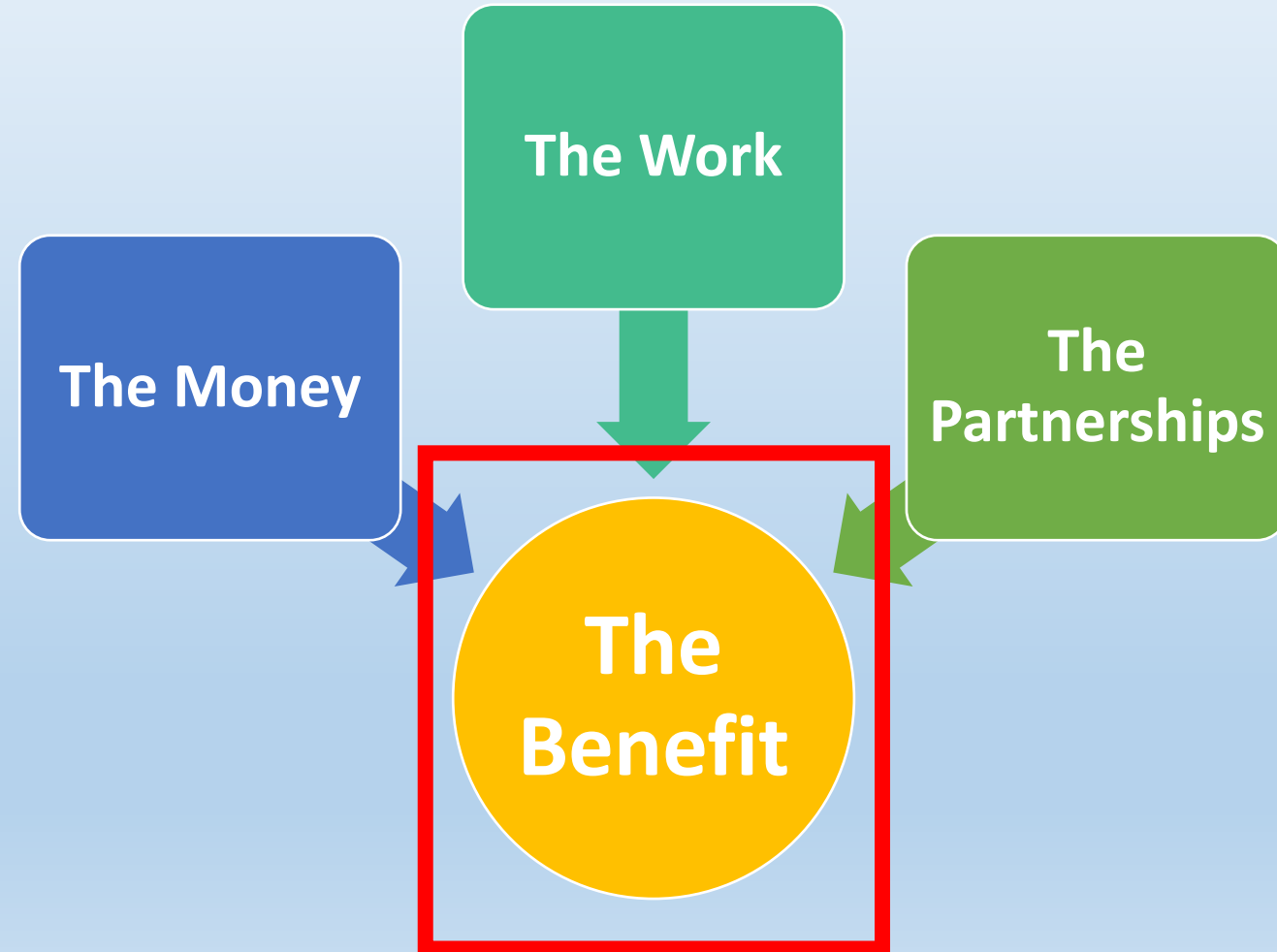




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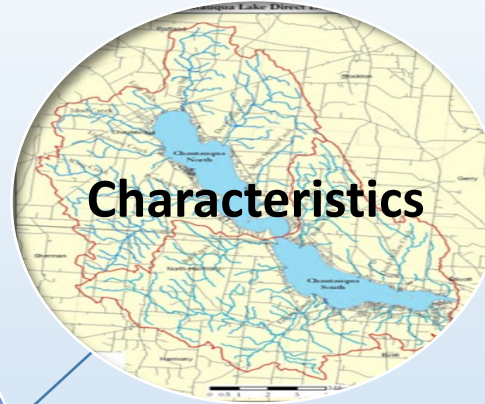
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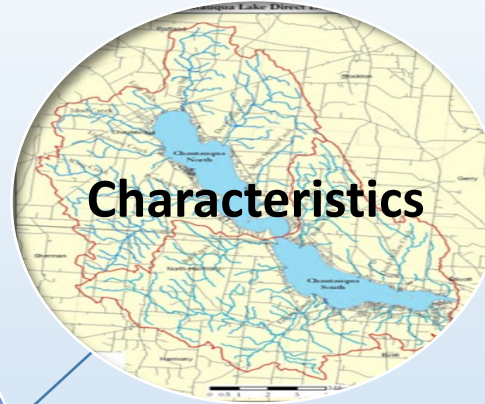


# Our Shared Resource that is *CHAUTAUQUA LAKE*





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- ❑ 13K Acre Lake & 102K Acre Watershed
- ❑ Unique North & South Basin Geography & Ecology
- ❑ Class A Waterbody & Drinking Water Source
- ❑ Relatively shallow and productive





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- ❑ Supports Rare, Threatened, and Endangered Species
- ❑ 2<sup>nd</sup> Best Musky Fishery in NY (Wide Open Spaces)
- ❑ 83<sup>rd</sup> ranked in US for bass (Bassmaster Magazine)
- ❑ Improving walleye fishery (NYSDEC)





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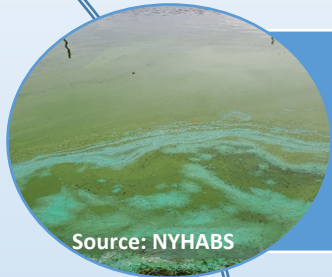
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- ❑ Cultural, recreational, employment hub
- ❑ Provides Array of Boating & Other Recreation Uses to Visitors & Residents
- ❑ Major component of County Property and Sales Tax bases
- ❑ Supports Year-Round Lakeside Businesses and Events



# Our Collective Challenges, Our Collective Opportunities



- Internal Loading (Nitrogen and Phosphorus)
- Harmful Algal Blooms (HABs)
- Drinking Water Protection, Climate Change



- Nuisance Aquatic Plant Growth and Human Conflicts (Native & Invasive)
- New Invasive Species Threats
- Shoreline Conditions



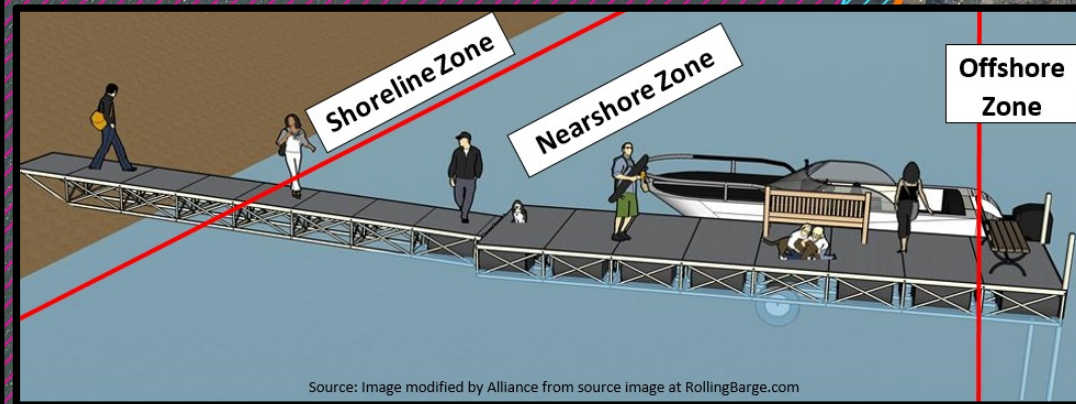
- Flooding and Property Loss due to Erosion
- Excess Sediment and Nutrient Loading From Watershed, and Other Pollutants (e.g., salt)
- Loss of Habitat/Biodiversity



Locations are approximate.  
For illustrative purposes only.  
Not for permit compliance.

Chautauqua Lake

# Complex System, Comprehensive Focus – *Stakeholders at Work*



Source: Image modified by Alliance from source image at RollingBarge.com

## Legend

- Shoreline Zone
- Nearshore Zone
- Offshore Zone

0 250 500 ft





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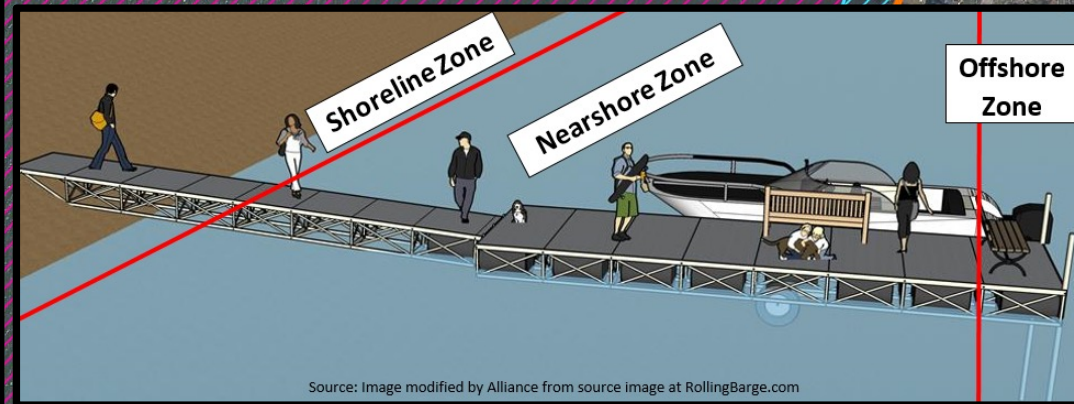
Chautauqua Lake

Offshore  
Harvesters  
Transports  
Skimmers  
Herbicides  
AIS Programs

Nearshore  
Mobitracs  
Skimmers  
Herbicides  
AIS Programs

Shoreline  
Shoreline Barges  
Shoreline Workers

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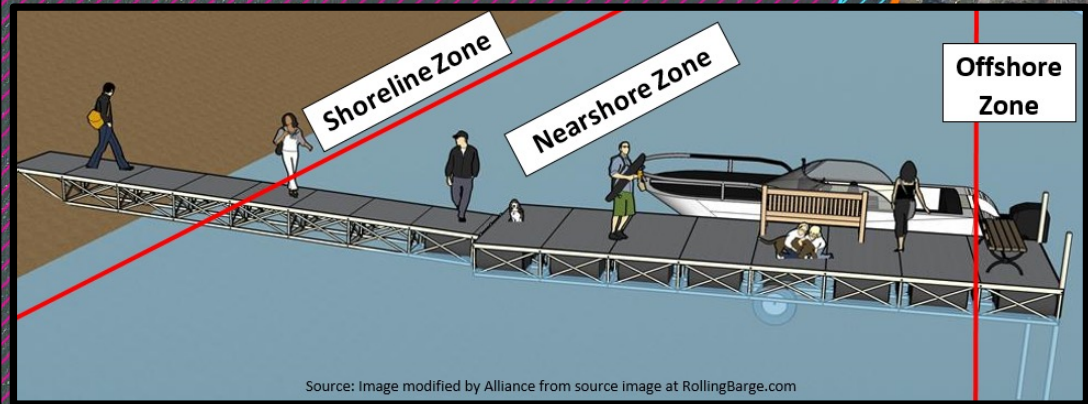
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Offload Location

- Harvesters
- Skimmers
- Transports
- Shoreline Barges
- Shoreline Conveyors
- Dump Trucks



Source: Image modified by Alliance from source image at RollingBarge.com

Chautauqua Lake

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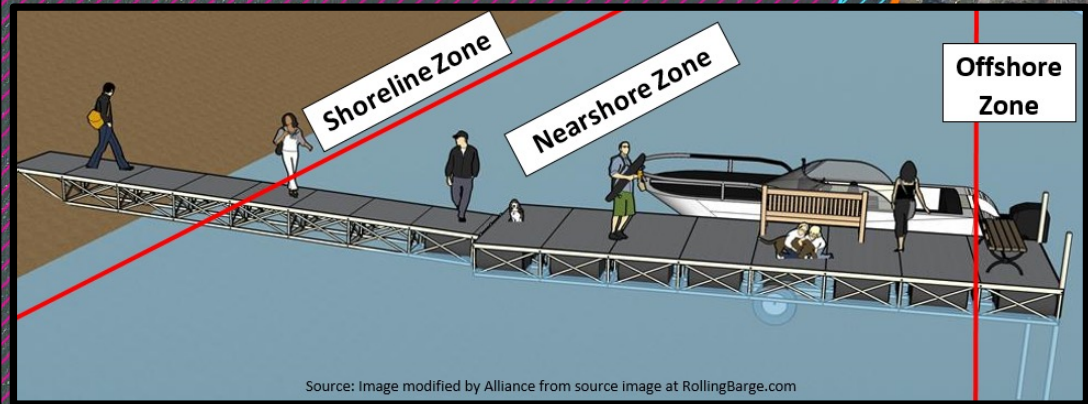
- Harvesters
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Launches & Watershed

- AIS Prevention
- Stormwater Management
- Lake Access & Amenities
- Stream Stabilization
- Vegetated Buffers
- Wastewater Management
- Agricultural Environmental Management

**Legend**

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- ▨ Nearshore Zone
- ▨ Offshore Zone





# Progress through *Partnership*

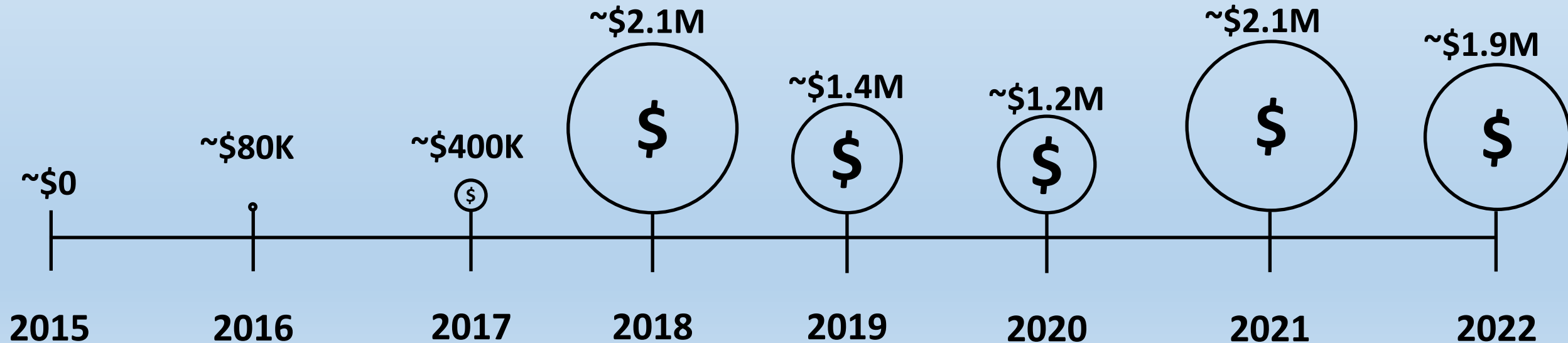
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*YTD*
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- ❑ Blend of *Lake, Watershed, and  
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# Progress through *Partnership*

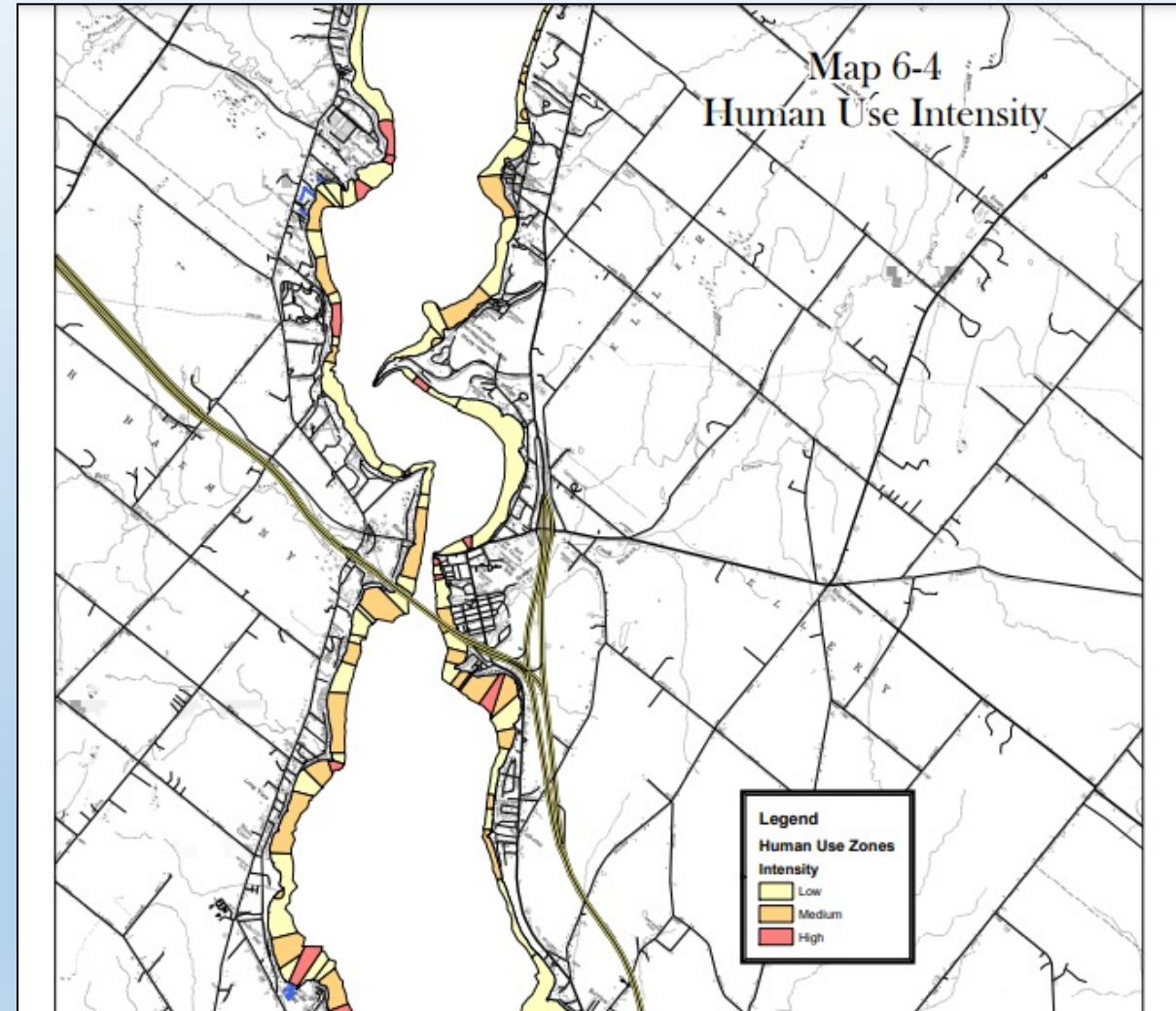
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# Progress through *Planning, Prioritization & Assessment*

- ☐ Needs vary over space & time
- ☐ Multiple lake users & uses
- ☐ Active management areas
- ☐ No action areas
- ☐ Areas of Emphasis – Economic & Ecological
- ☐ Adaptive management approach
- ☐ Regulatory framework
- ☐ Technical feasibility
- ☐ Technological advancements



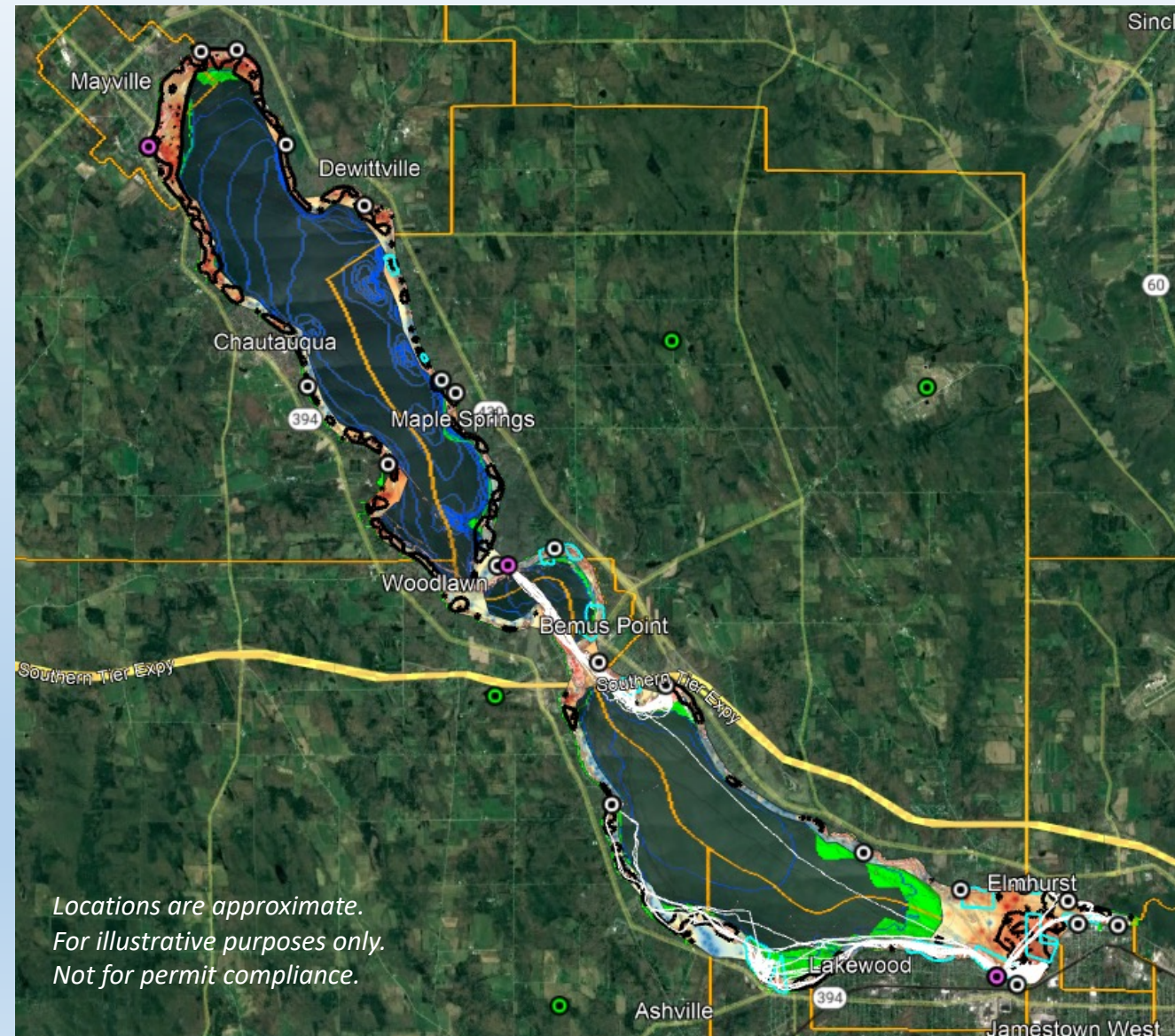
Map Source: *Macrophyte Management Strategy*, County of Chautauqua, 2017



# Progress through *Planning, Prioritization & Assessment*

## Interactive Management Review & Planning Tool using Google Earth

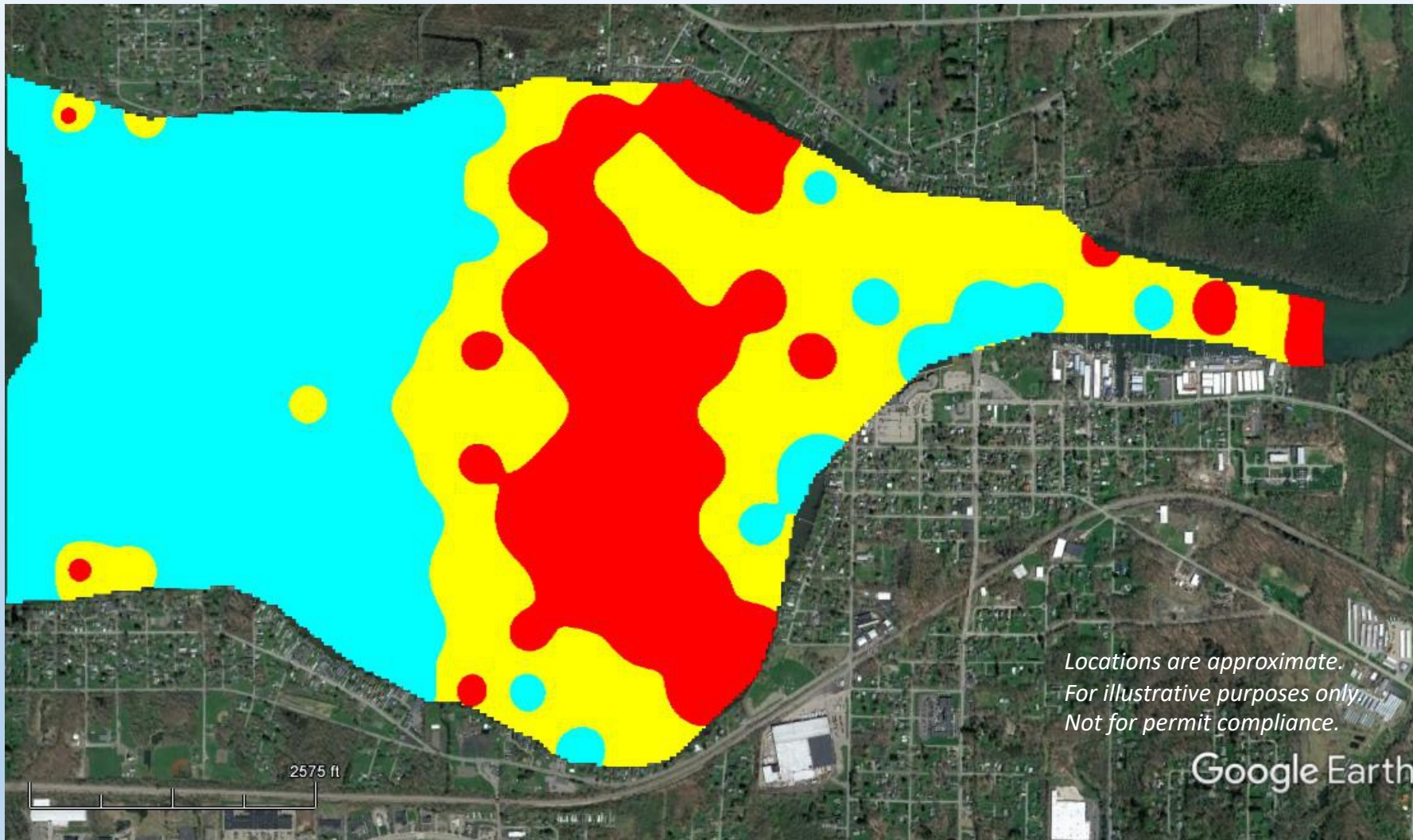
- ☐ GIS unification of multiple datasets
- ☐ Provides whole-lake perspective
- ☐ Supports a zone-based approach
- ☐ Historical or near-term
- ☐ Blends conditions, management, logistics, and other lake characteristics
- ☐ Interactive & can be updated





# Progress through *Planning, Prioritization & Assessment*

## Aquatic Plants

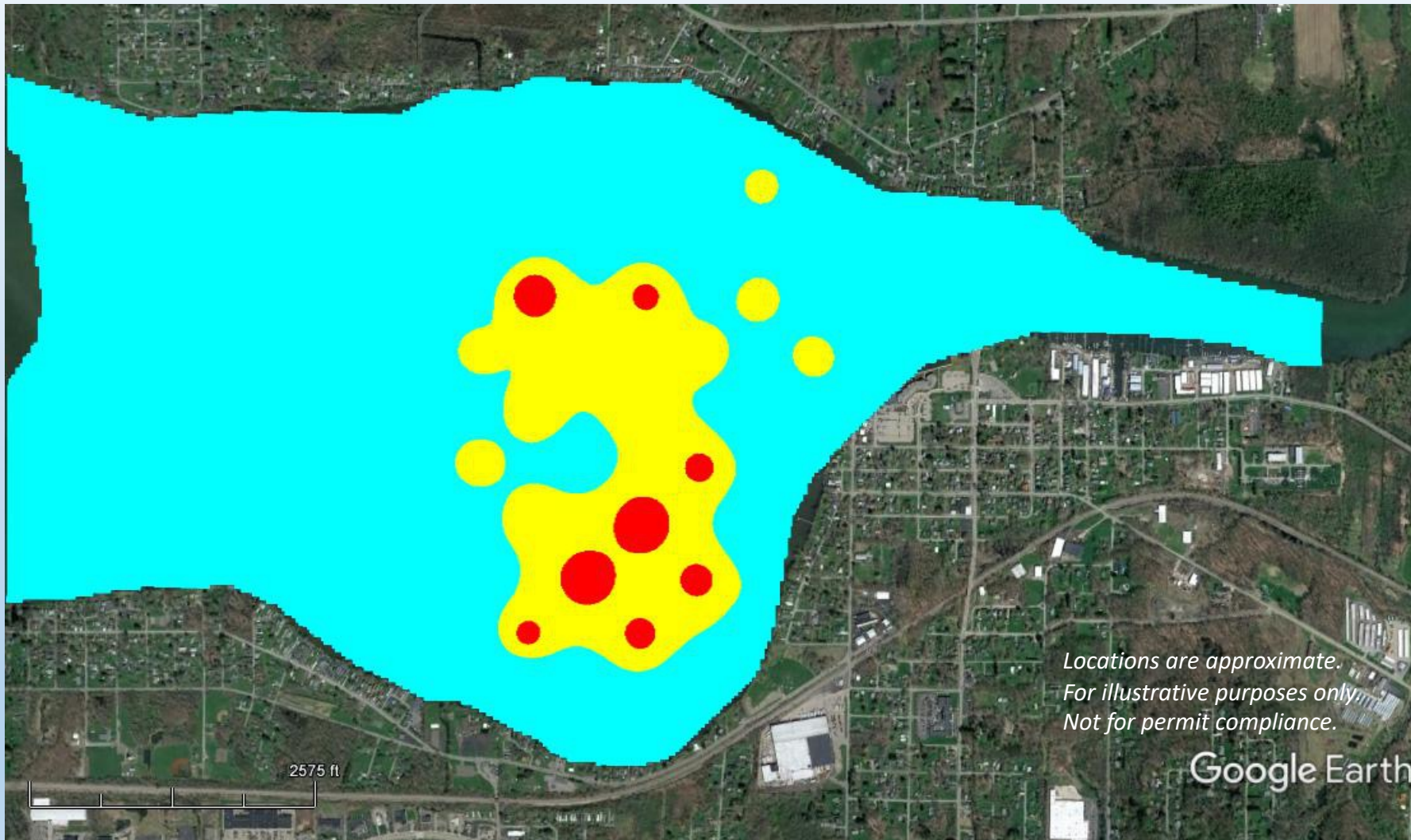


Data Source for Map: North Carolina State University/ Chautauqua Lake Partnership



# Progress through *Planning, Prioritization & Assessment*

## Invasive Species

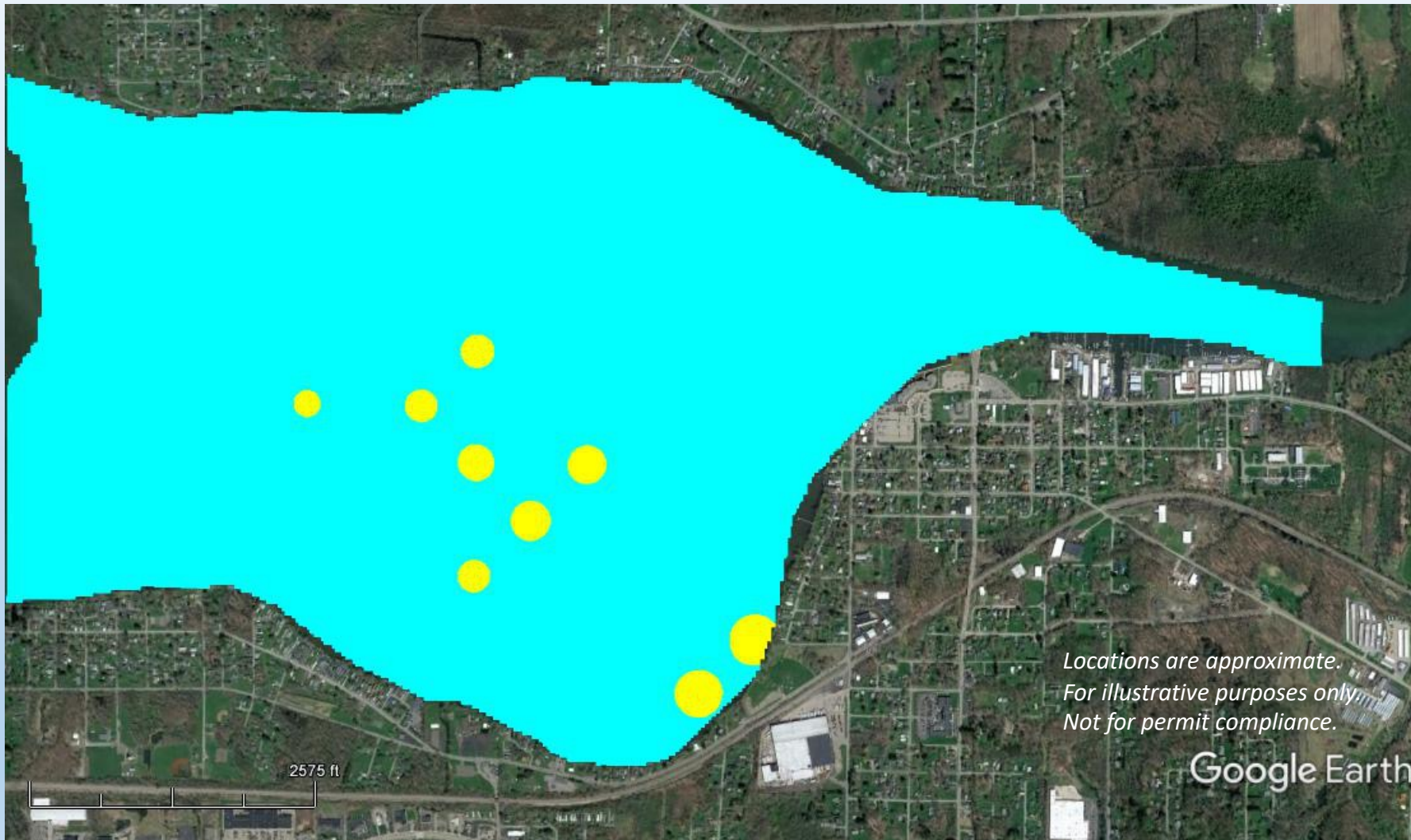


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# Progress through *Planning, Prioritization & Assessment*

## Native Species

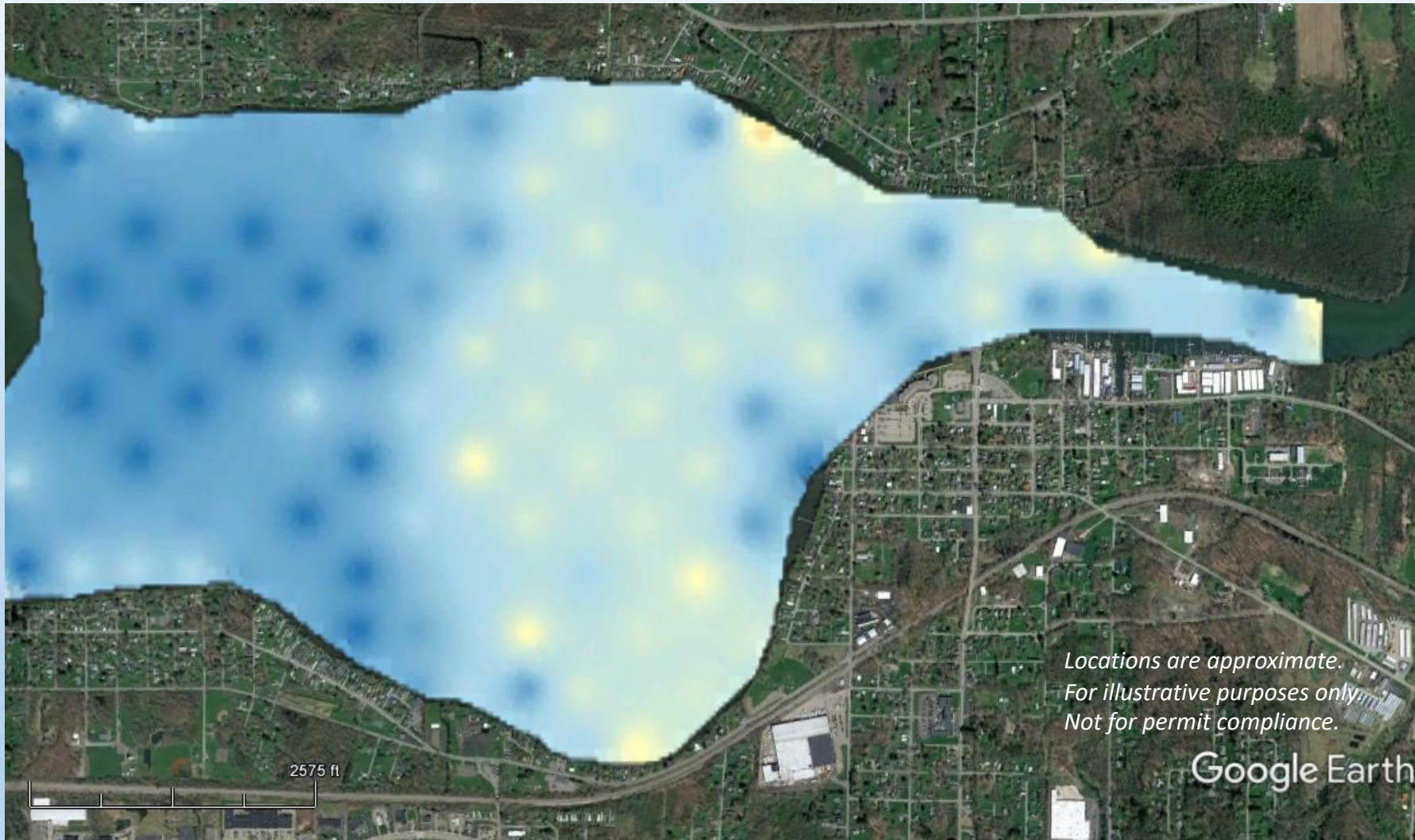


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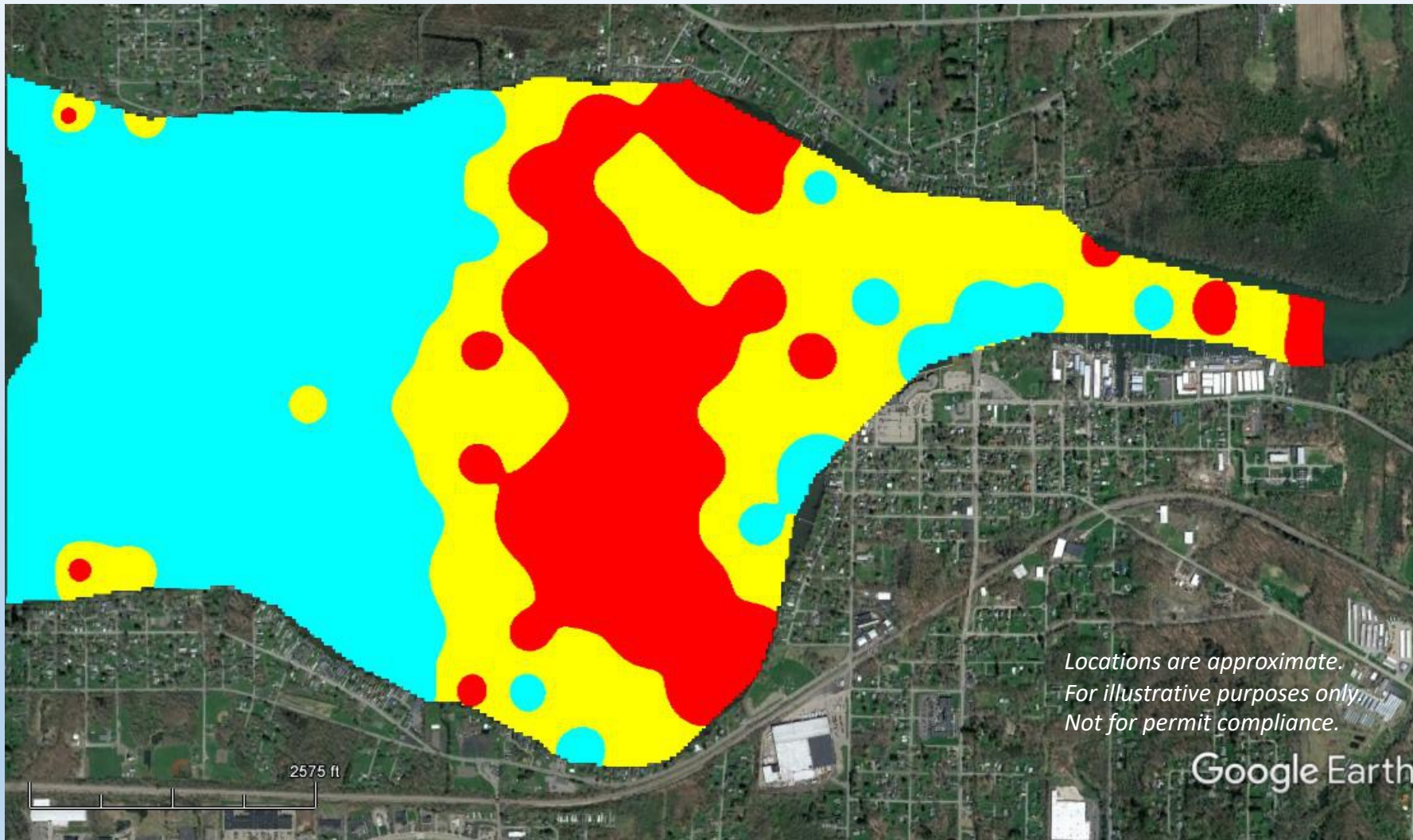
## Species Diversity



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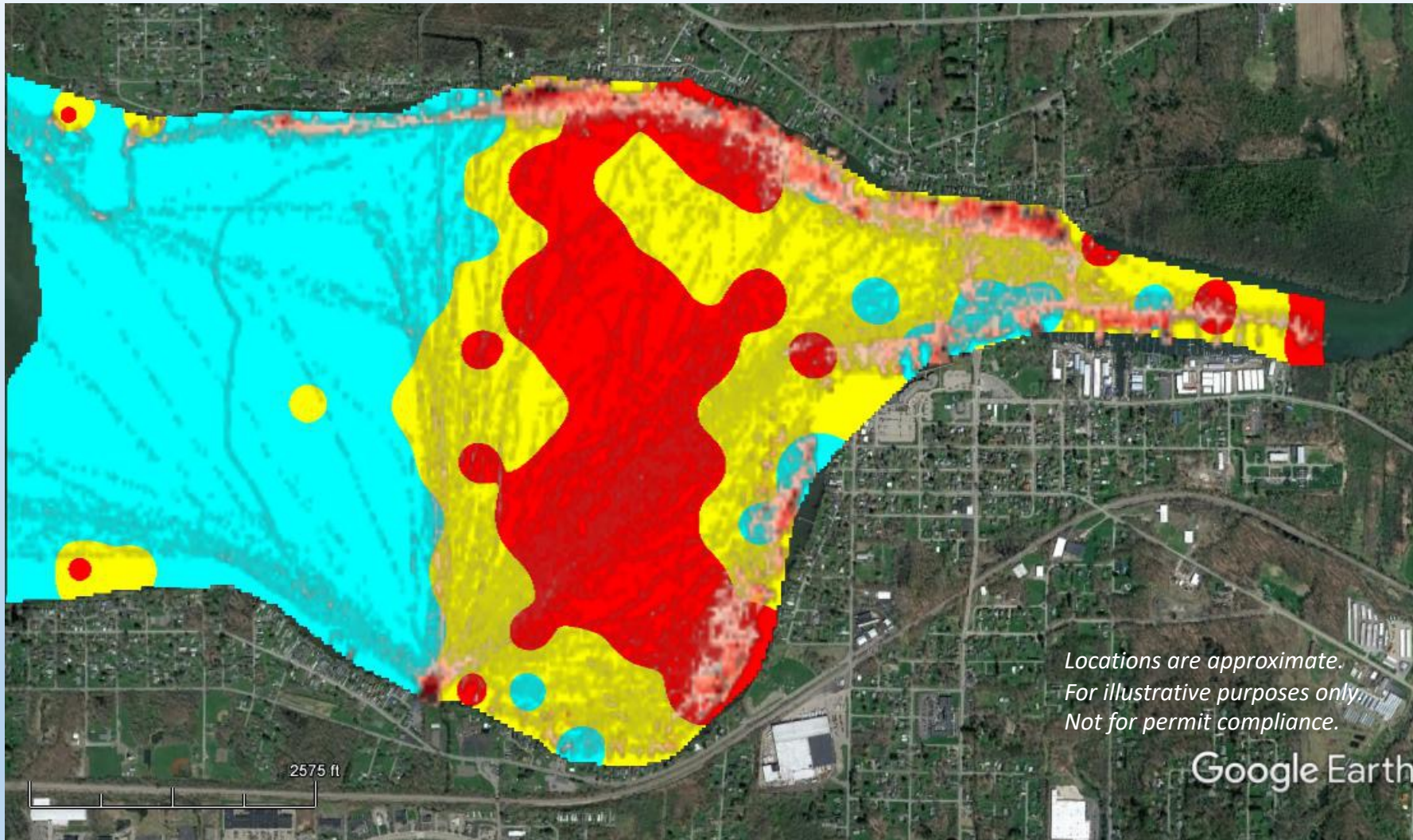


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Conditions-based monitoring, coupled with Management-based monitoring



# Progress through *Planning, Prioritization & Assessment*



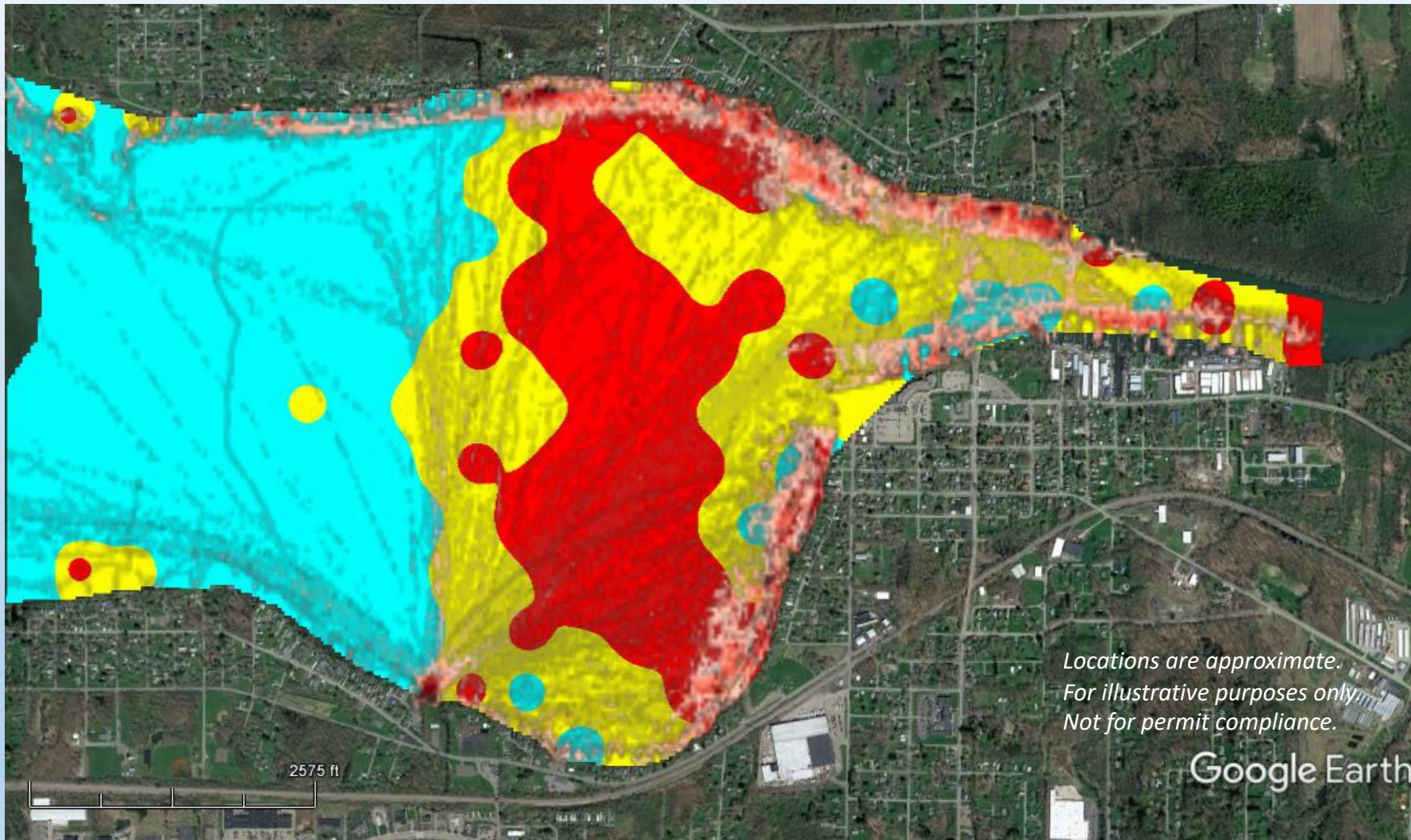
Data Source for Map: North Carolina State University/ Chautauqua Lake Partnership; CLWMA

Conditions-based monitoring, coupled with Management-based monitoring

*e.g.*, Aquatic plant harvesting, near-shore cleanup, herbicide treatment



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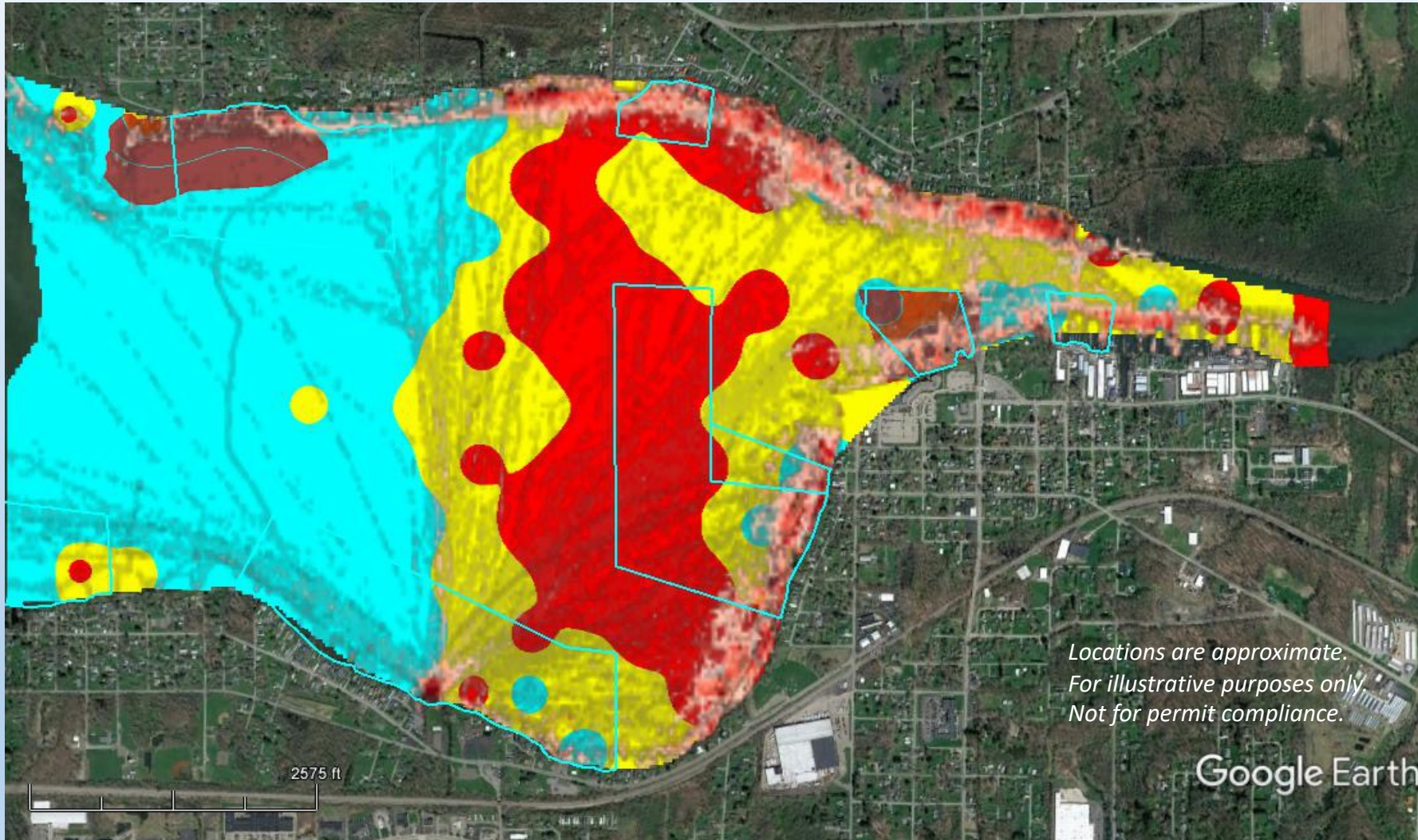
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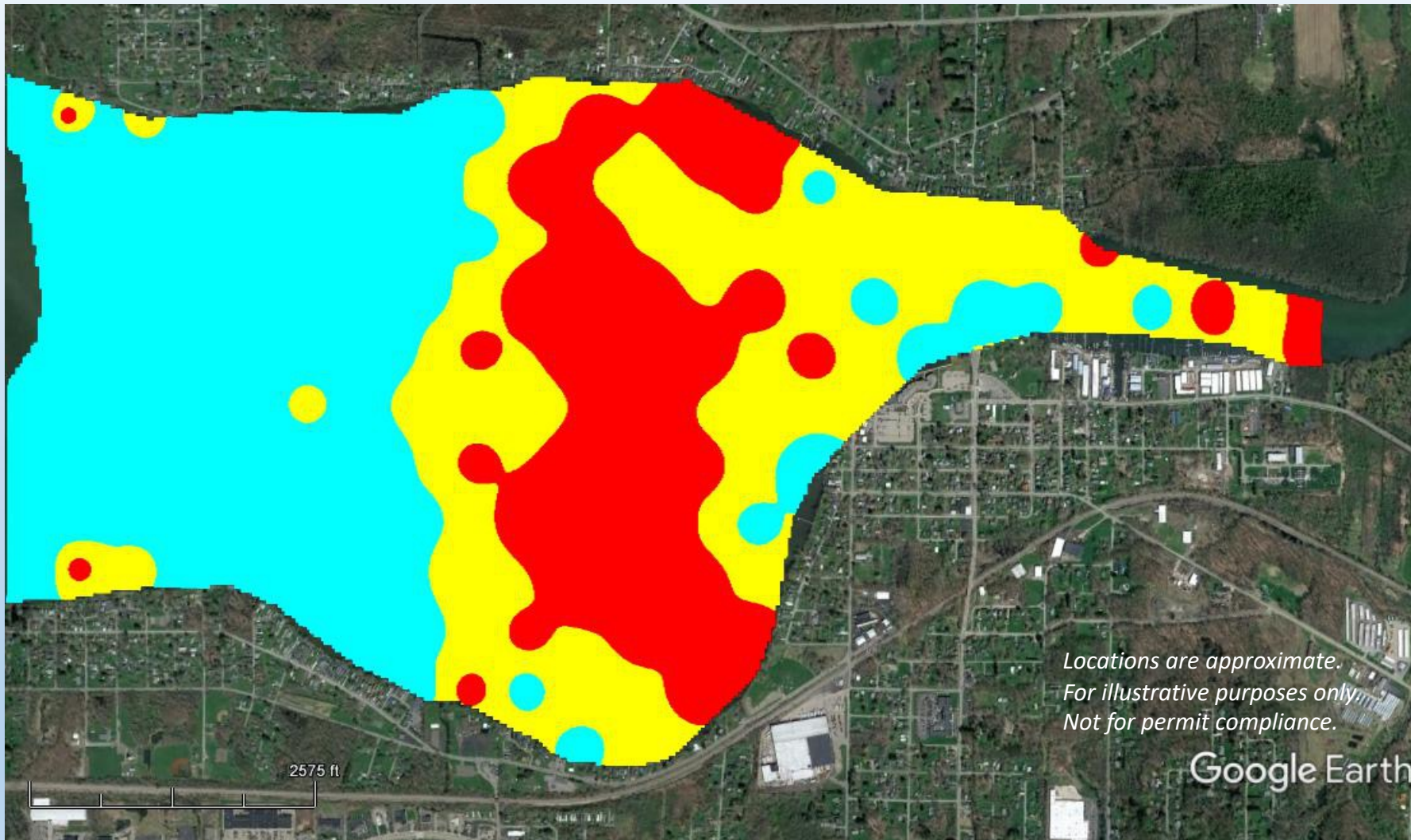
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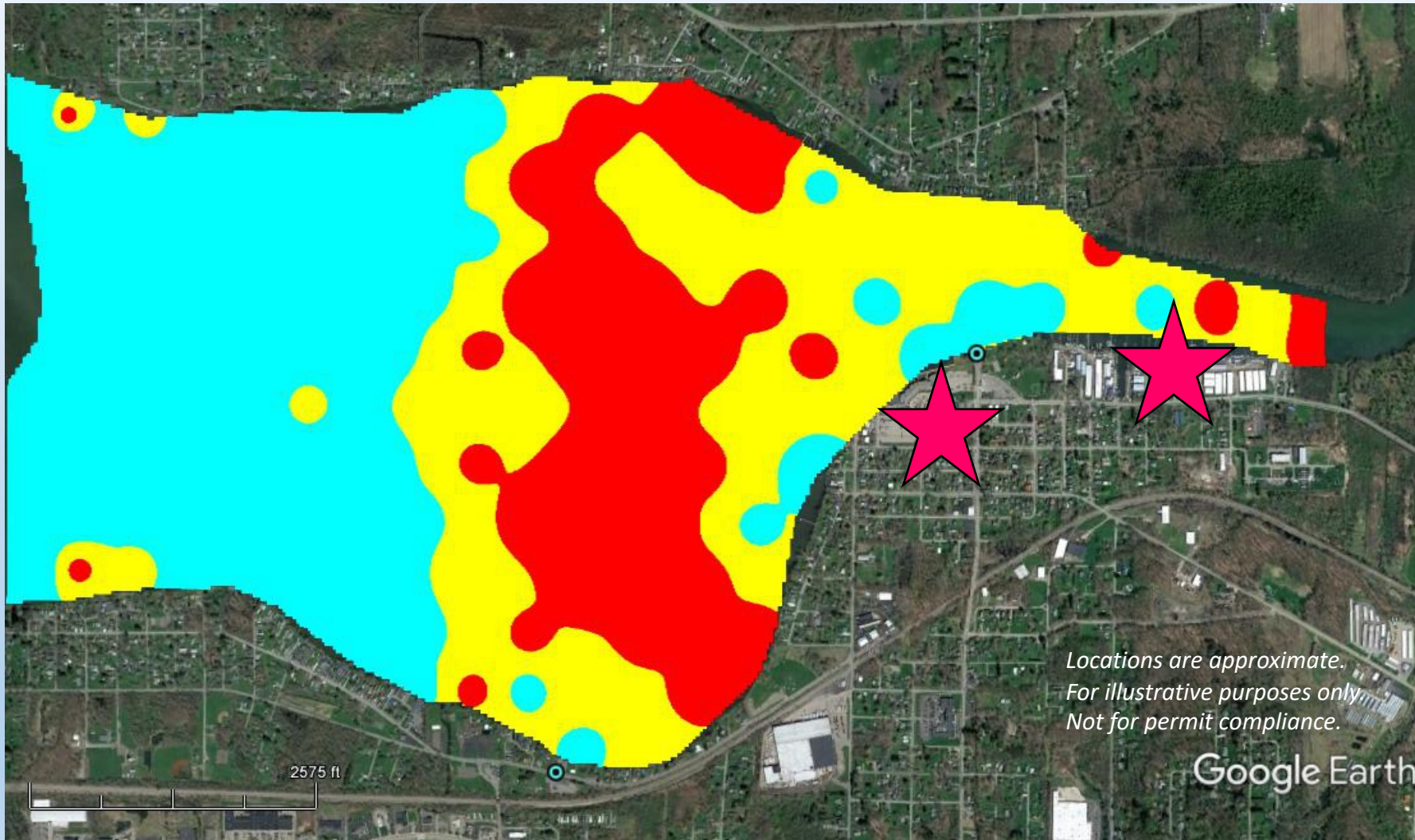


Balancing lake  
uses &  
ecological  
function

Data Source for Map: *North Carolina State University/ Chautauqua Lake Partnership*



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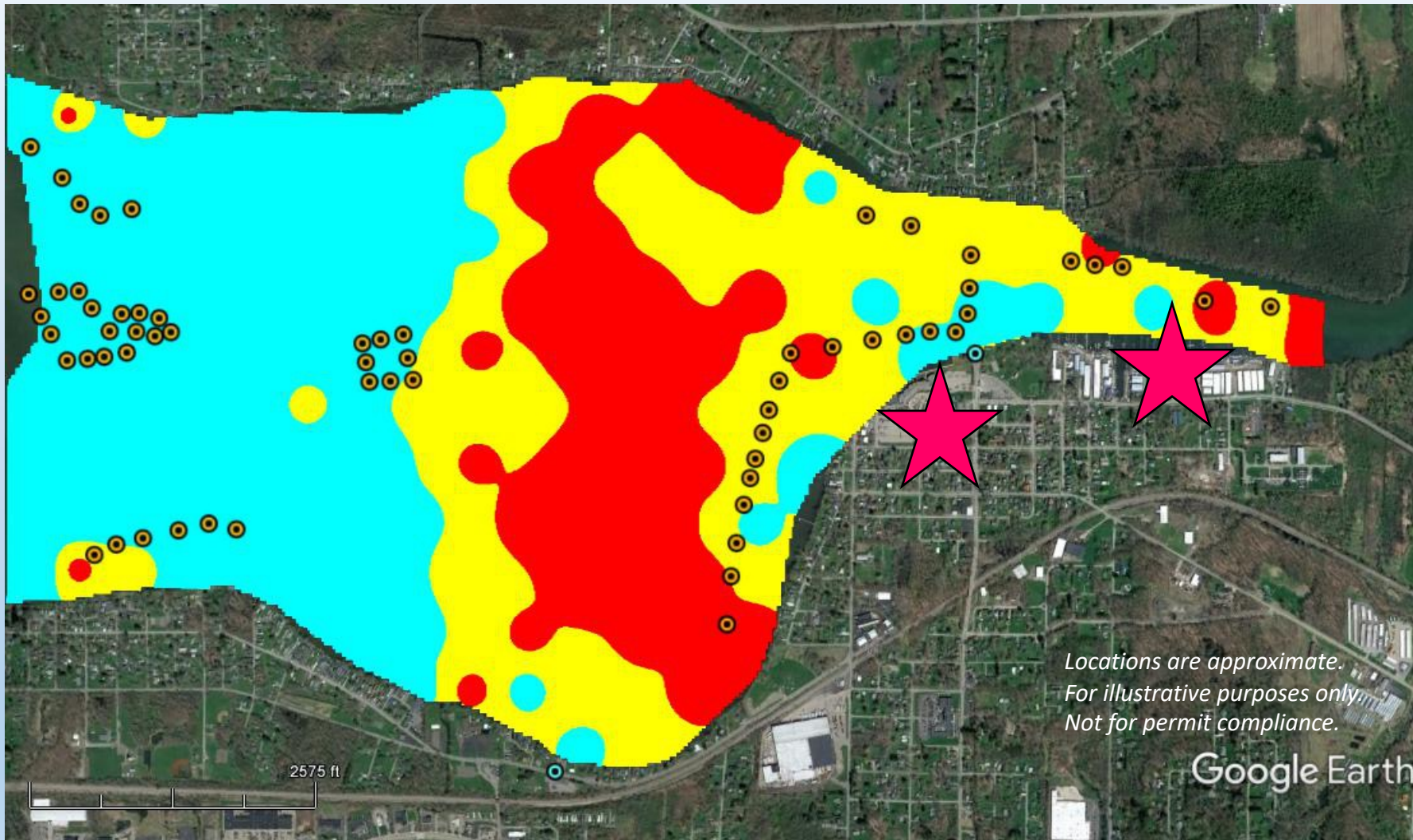
Balancing lake  
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*e.g.*, Economic  
drivers – hotels,  
marinas, boat  
launches, etc.

Data Source for Map: North Carolina State University/ Chautauqua Lake Partnership; County MMS



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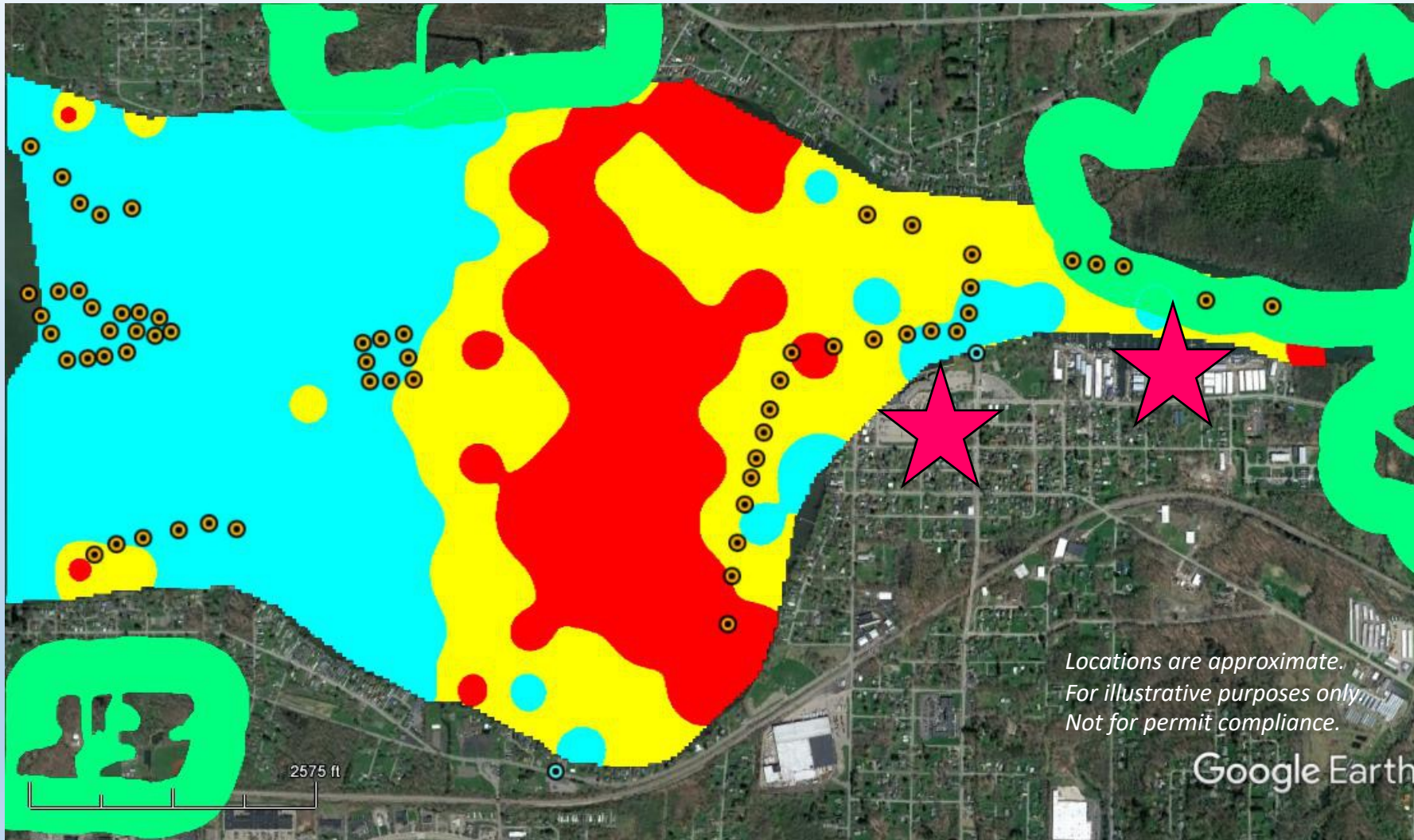
*e.g.*, Navigational  
channels, hazards,  
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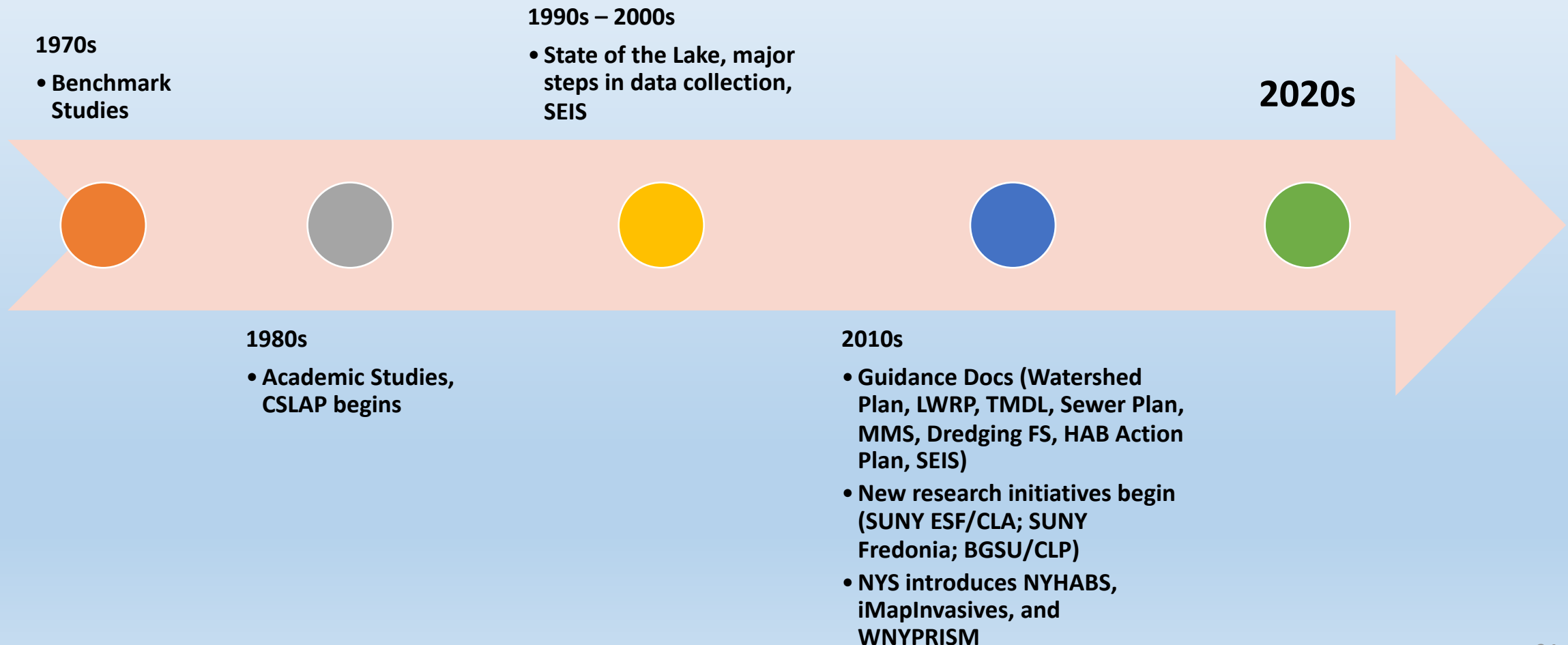
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*e.g.*, Wetlands,  
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other sensitive areas,  
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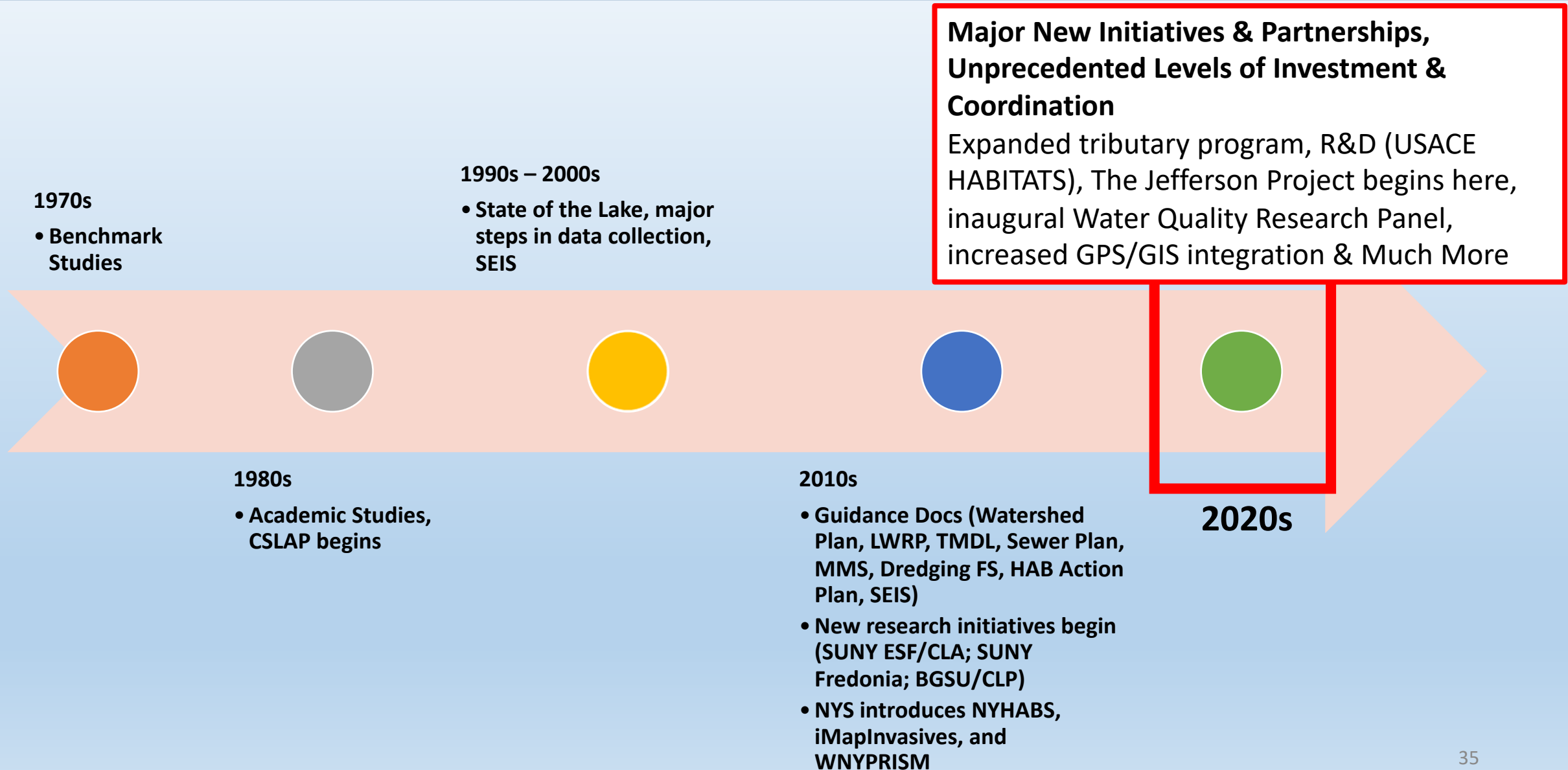


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GPS maps for chemical lake management						
GIS-based whole-lake plant survey data						
Sonar-based plant biovolume						
Bathymetry surveys						
Third-Party Monitoring						
Underwater Imagery						
Tributary Monitoring (WQ)						
Hydrology/ Hydraulics						
CSLAP						
Vertical Profilers						
Lake Models						
NYHABS, toxins						
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Lake Sediment						
Invertebrates	Under review					



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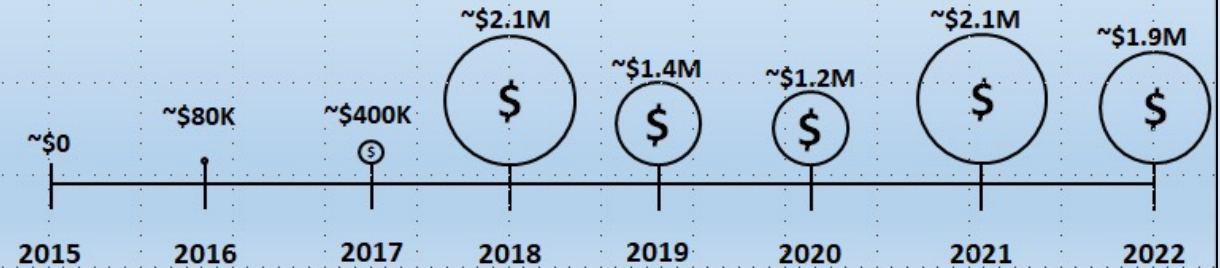
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☐ Blend of *Lake, Watershed, and Research/Monitoring*





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- Lake sediment chemistry (e.g., nutrient pools, Al/Fe, etc.)
- Nutrient budgets – external vs. internal loads of P & N
- Water budget – hydrology & hydraulics
- Ground water
- & More



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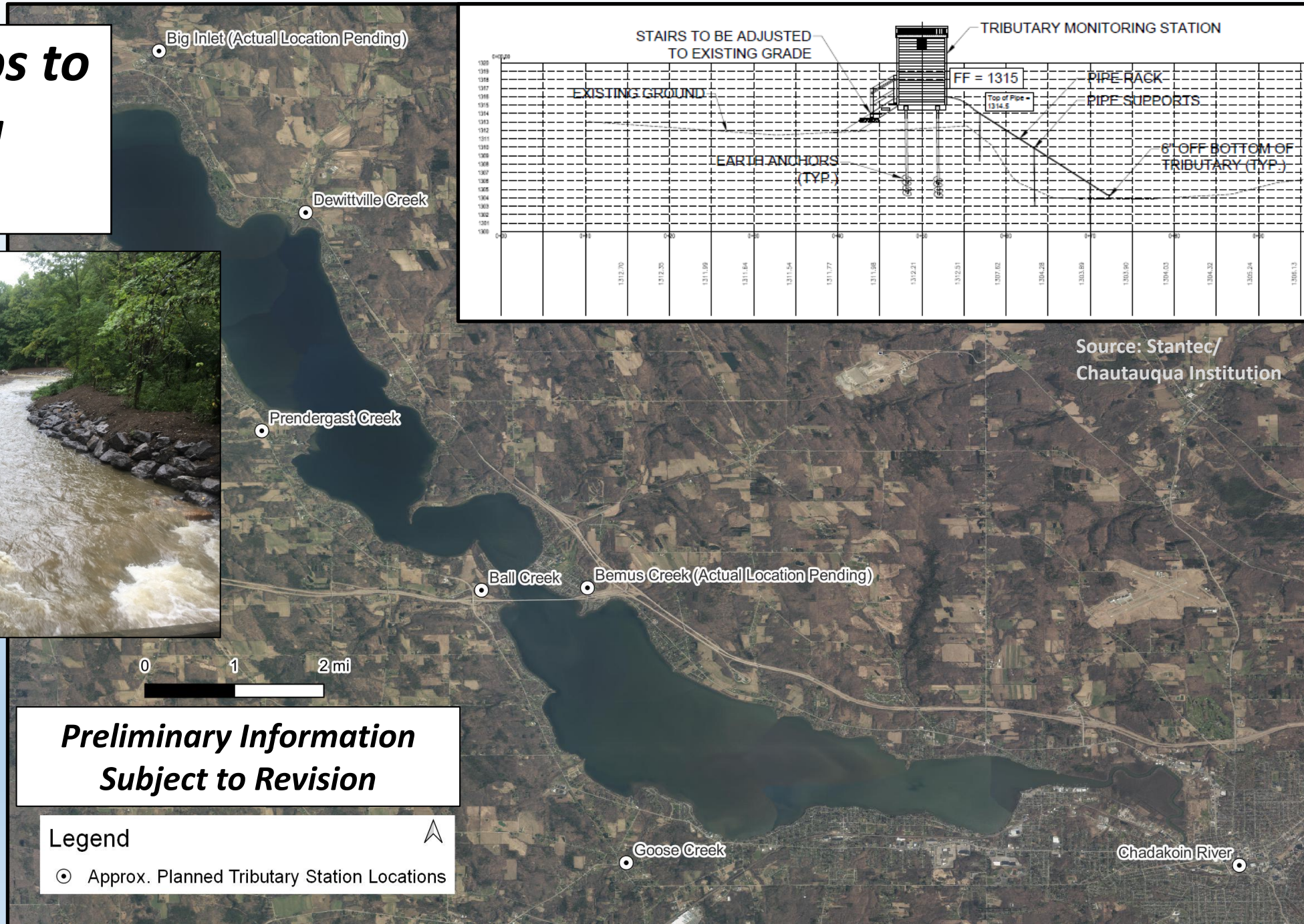
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*Where to from here?*



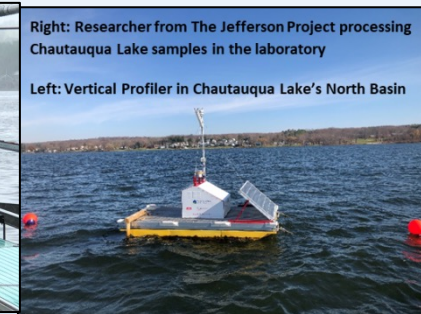
# Taking big steps to fill critical data gaps





# Collaborative Research Initiatives

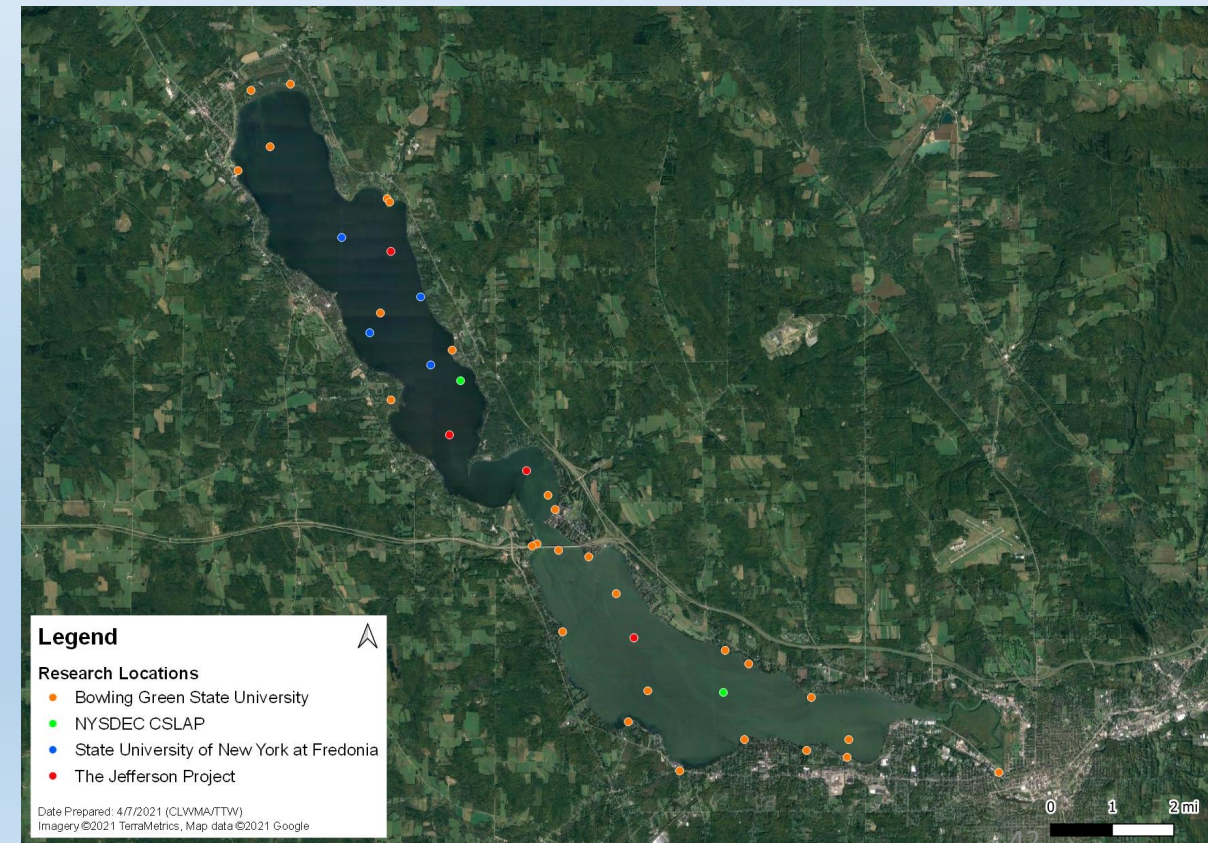
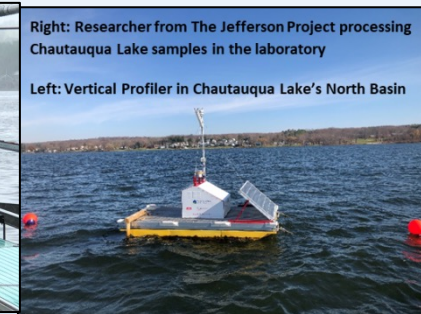
- ☐ Collaborative research efforts by leading experts in lake dynamics, HABs, environmental monitoring & modeling
- ☐ Sharing & coordination of data/planning
- ☐ “Science towards Solutions” approach
- ☐ Actionable data & information for decision-makers
- ☐ Public updates
  - Please visit: <http://www.chautauquaalliance.org/data-and-research/>





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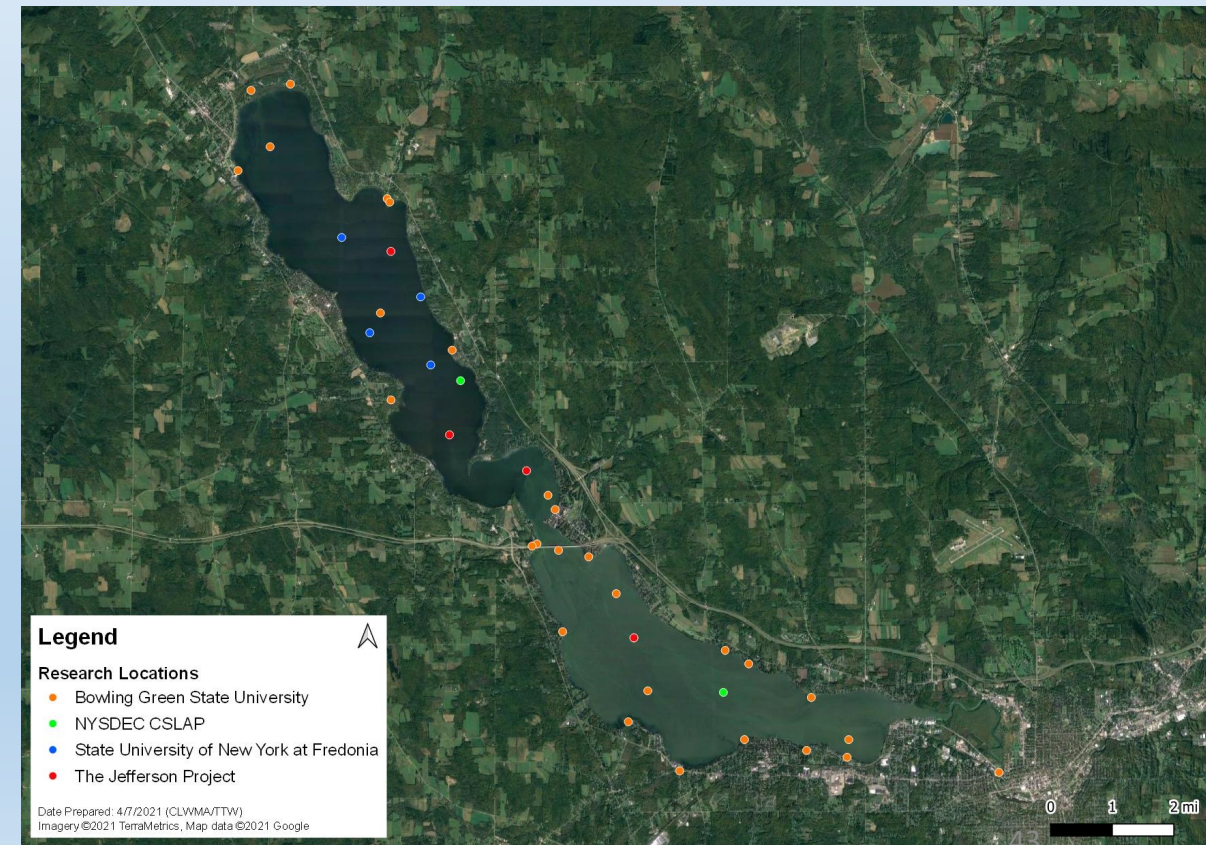
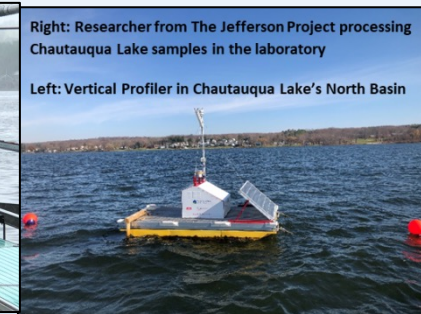
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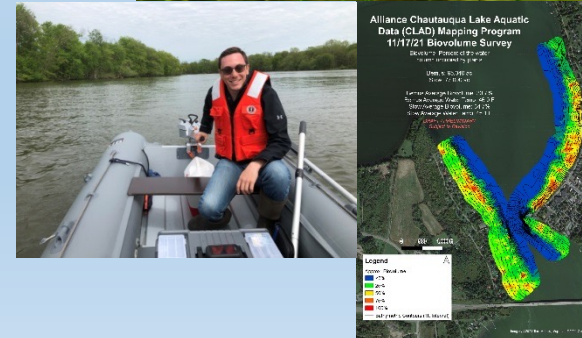


THANK YOU! The Jefferson Project at Lake George, Bowling Green State University, SUNY Fredonia, SUNY Oneonta, SUNY ESF, CSLAP (NYSDEC & Volunteers), NYHABS, North Carolina State University, Racine-Johnson Aquatic Ecologists, SOLitude Lake Management, Princeton Hydro, and More



# Putting Data & Information to Work

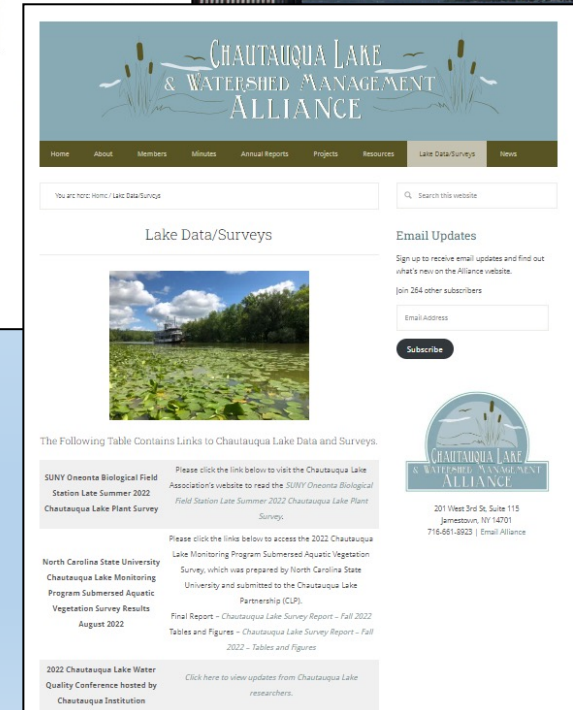
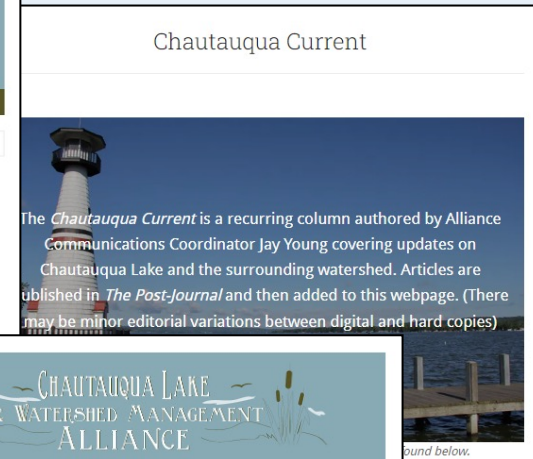
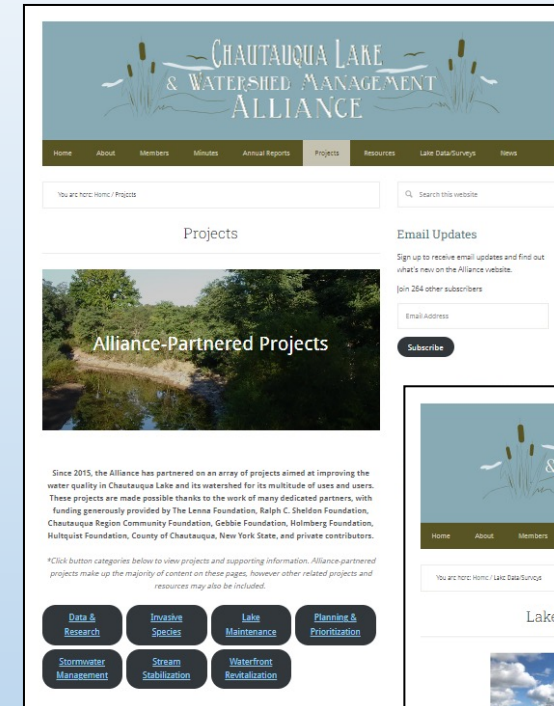
- ❑ Data → Information → Decisions
- ❑ Alignment of needs, resources, and timing for maximum benefit
- ❑ Assessment of effort (management) and results (conditions)
- ❑ Accessibility, Visualization & Communication
- ❑ Technology (GPS, GIS, sonar, mapping)
- ❑ Multiple lines of evidence
- ❑ Rapid assessment, adaptive workplans
- ❑ Historical perspective of long-term datasets
- ❑ Public updates
- ❑ Coordination → Collaboration → Integration





# Getting the Word Out

- ❑ Recent website updates – including comprehensive ‘Projects’ page.
- ❑ Rapid dissemination of data/info.
- ❑ Hub for lake-related data and surveys and other resources.
- ❑ ***Chautauqua Current*** - Recurring column in partnership with The Post-Journal, covering lake and watershed topics
- ❑ Meetings, press releases, emails, etc.
- ❑ Build trust, build interest & awareness... and keep it.
- ❑ Linkage of information & awareness to action & results – e.g., 2022 starry stonewort.
- ❑ ***Next Public Board Meeting Thu 7/13/23 @ Lawson Center, Bemus Point (2<sup>nd</sup> Thu of Jan, Mar, May, Jul, Sep, and Nov)***
- ❑ Please visit us at: <http://www.chautauquaalliance.org/>
- ❑ And, visit our Members’ websites to learn more.





# Thank you for your time & attention! Questions?

- ❑ **Randall Perry, Executive Director**  
[rperry@chautauquaalliance.org](mailto:rperry@chautauquaalliance.org) | (716) 661-8923
- ❑ **Taylor West, Project Manager**
- ❑ **Jay Young, Communications Coordinator**
- ❑ **Website:** <http://www.chautauquaalliance.org/>



## Founding Members

- Chautauqua - Cattaraugus Board of Realtors
- Chautauqua County Chamber of Commerce
- Chautauqua County Government
- Chautauqua County Soil & Water Conservation District
- Chautauqua County Visitors Bureau
- Chautauqua Institution
- Chautauqua Lake Association
- Chautauqua Lake Fishing Association
- Chautauqua Lake Partnership
- Chautauqua Property Owners Association
- Chautauqua Utility District
- Chautauqua Watershed Conservancy
- Holmberg Foundation
- Jamestown Audubon Society
- The Lenna Foundation
- Mayville - Chautauqua Community Chamber of Commerce
- NYS Office of Parks, Recreation and Historic Preservation - Allegany Region
- North Chautauqua Lake Sewer District
- Roger Tory Peterson Institute
- South & Center Chautauqua Lake Sewer District
- Town of Busti
- Town of Chautauqua
- Town of Ellery
- Town of Ellicott
- Town of North Harmony
- Village of Bemus Point
- Village of Celoron
- Village of Lakewood
- Village of Mayville