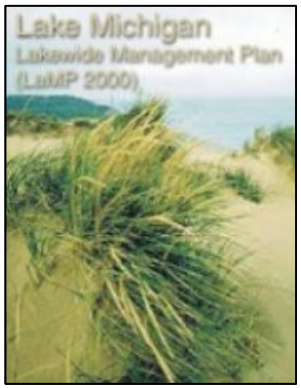
Lake Michigan LAMP Partnership Update

John Masterson - WDNR

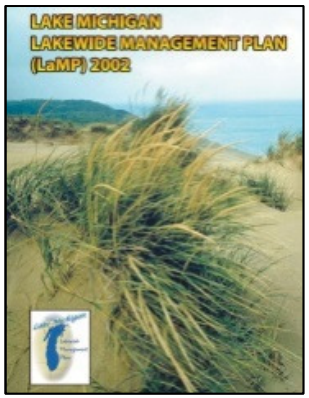
Photo Credit: WI DNR

Lakewide Management of Lake Michigan
Great Lakes Water Quality Agreement

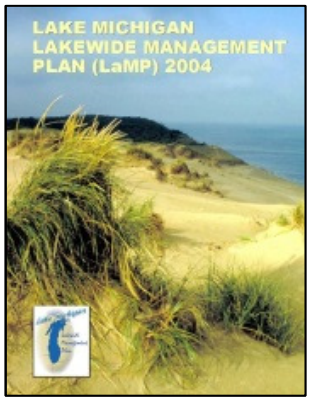
- 1987 GLWQA called for Lakewide Management Plans (LaMPs) to be developed for each Great Lake
  - ❖ To embody a systematic and comprehensive ecosystem approach to restoring or protecting beneficial uses in open lake waters
- First LaMP released in 2000
- Future L**A**MPs to be more action-oriented!



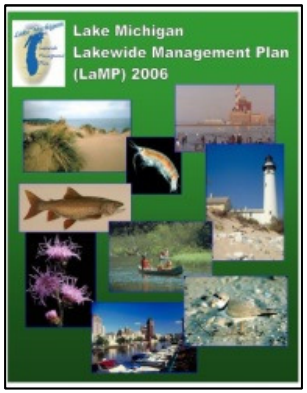
2000



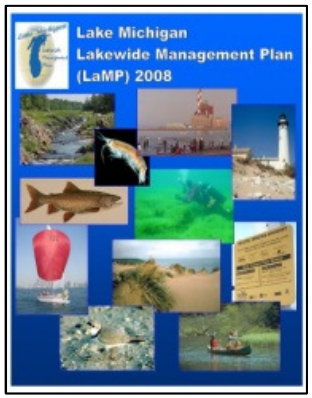
2002



2004



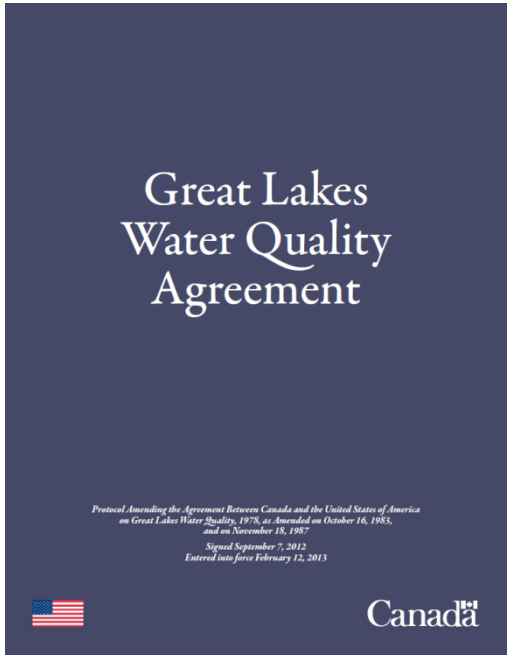
2006



2008

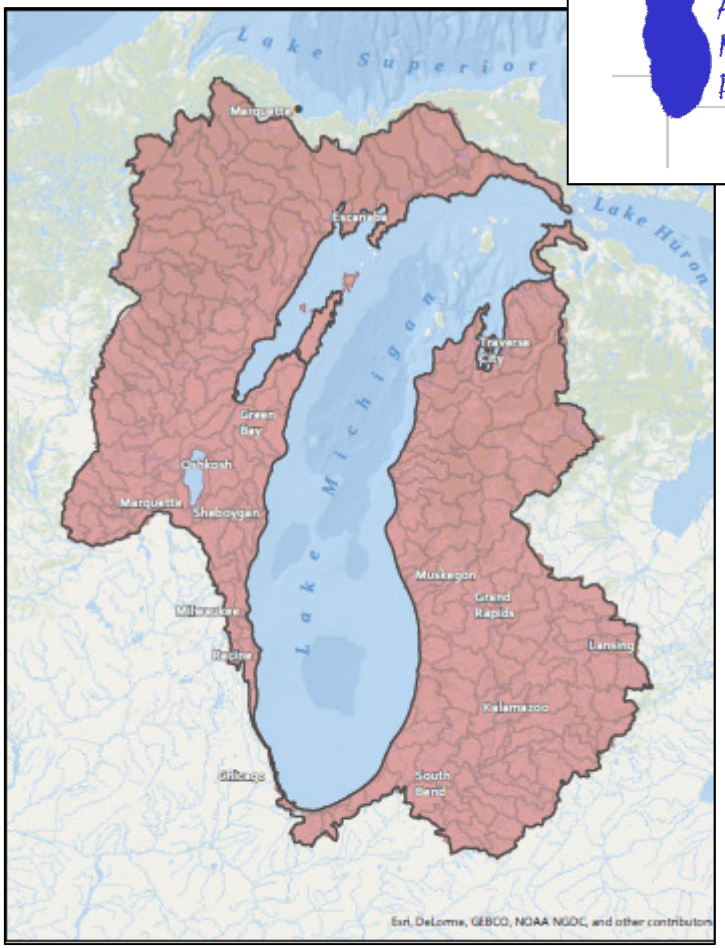
Lakewide Management of Lake Michigan
Great Lakes Water Quality Agreement

- 2012 GLWQA
  - ❖ Renewed commitment to lakewide management (Annex 2)
  - ❖ Increased emphasis on the nearshore (Annex 2) and nutrients (Annex 4)
  - ❖ LAMPS are to be blueprints for action that identify and prioritize desired restoration and protection activities



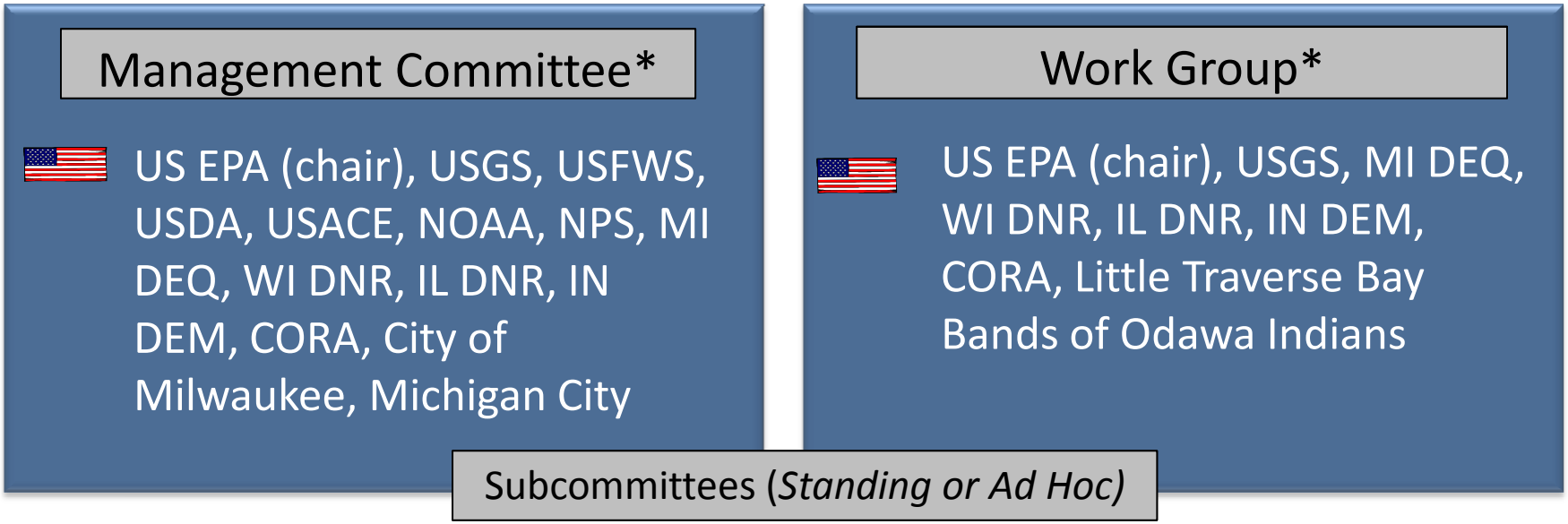
Lakewide Management of Lake Michigan
The Lakewide Action and Management Plan

- A long term ecosystem-based framework for the management of Lake Michigan
- Spatial scope: Lake Michigan proper including nearshore areas, embayments and river mouths
- Environmental influence may occur anywhere within the watershed or from outside
- Lake Michigan LAMP is due in 2019



Lakewide Management of Lake Michigan
The Lake Michigan Partnership

- The LAMP is developed and overseen by the Lake Michigan Partnership
- Led by the U.S. EPA, U.S. government agencies, and tribes working collaboratively to understand lake conditions, stressors and identify actions

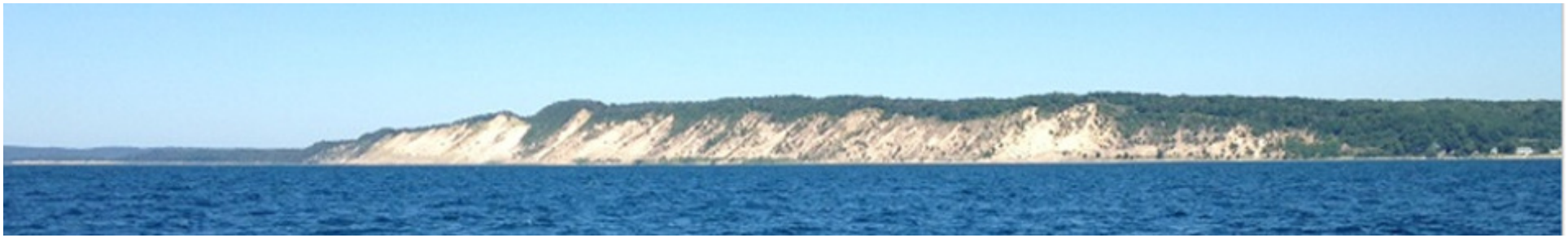


*Observers: IJC, BIA

Lakewide Management of Lake Michigan

The Lake Michigan Partnership

- Roles of the partnership:
  - Developing and overseeing the LAMP
  - Report on existing scientific information
  - Assessing state of the lake
  - Setting lakewide priorities and lake ecosystem objectives (LEOs)
  - Coordinating action for protection and restoration



Lakewide Management of Lake Michigan
What's Coming?

- Lake Michigan LAMP due in 2019
  - State of the Lake
  - Identification of priority threats
  - Priority actions and projects

- **LEOs being developed (2017)**

- Science reporting workshop at State of Lake Michigan conference (Green Bay, November 6-10, 2017)

- Science priorities workshop (Fall 2018)

- 2016 Annual Report (Sept), 2017 Annual Report (Sept)

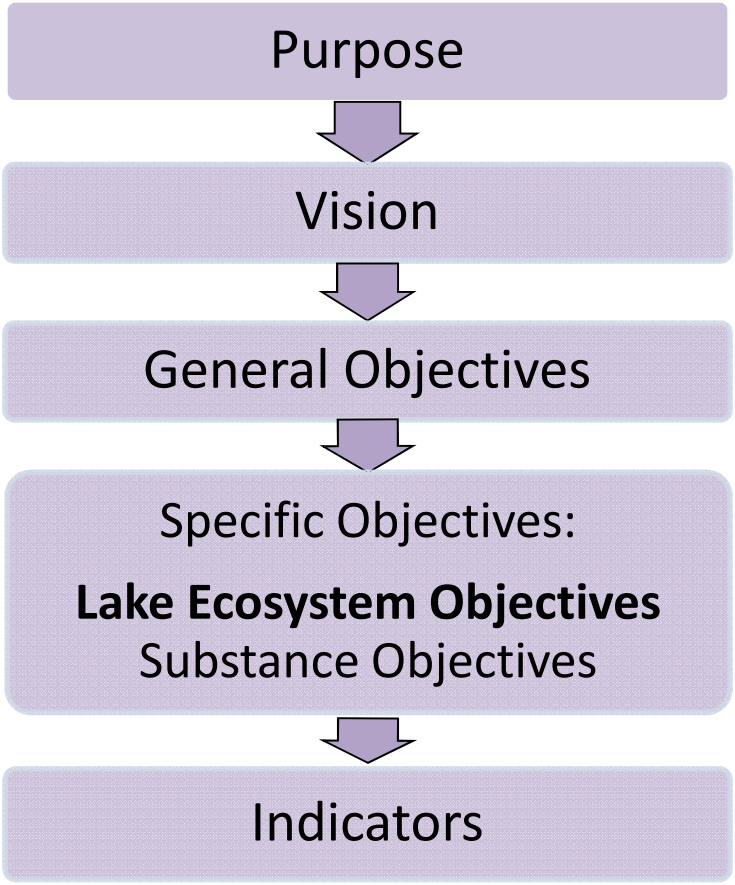
Lakewide Management of Lake Michigan
GLWQA General Objectives

1. **Safe, high-quality drinking water**
2. **Allow for unrestricted swimming and other recreation**
3. **Allow for unrestricted consumption of fish and wildlife**
4. **Free from pollutants that could be harmful to human health, wildlife, or aquatic organisms**
5. **Healthy and productive wetlands and other habitats**
6. **Free from nutrients in amounts that interfere with aquatic ecosystem health or human use**
7. **Free from invasives that adversely impact water quality**
8. **Free from harmful impact of contaminated groundwater**
9. **Free from substances, materials or conditions that may negatively impact chemical, physical or biological integrity**

Lakewide Management of Lake Michigan
Lake Ecosystem Objectives

- Benchmarks to assess status and trends in water quality and ecosystem health
- Support achievement of the General Objectives
- Established for each Great Lake and its connecting river system
- Binational*
- Specify desired ecological condition
- Narrative or numeric

GLWQA Framework



Guidance Document for Developing LEOs

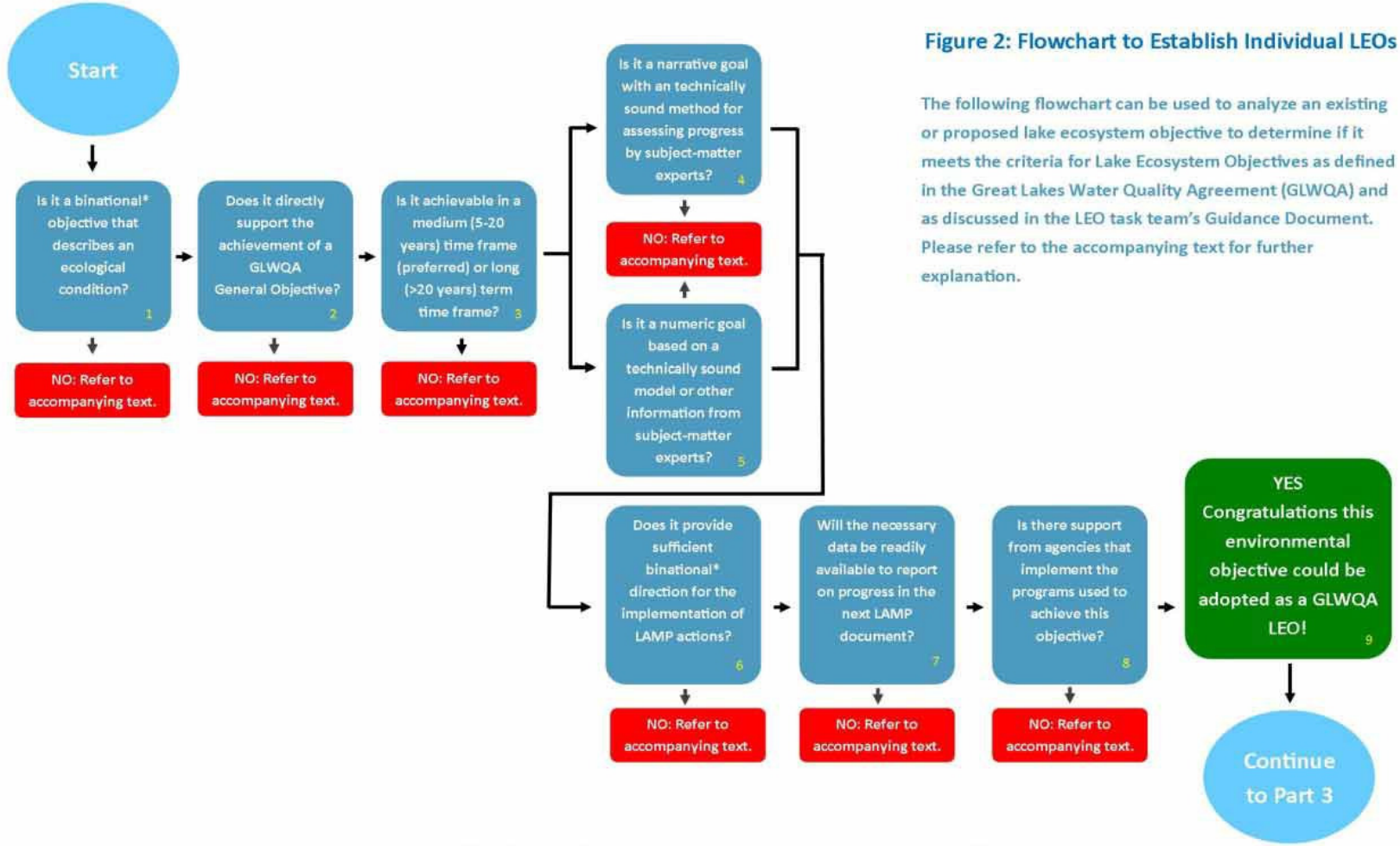


Figure 2: Flowchart to Establish Individual LEOs

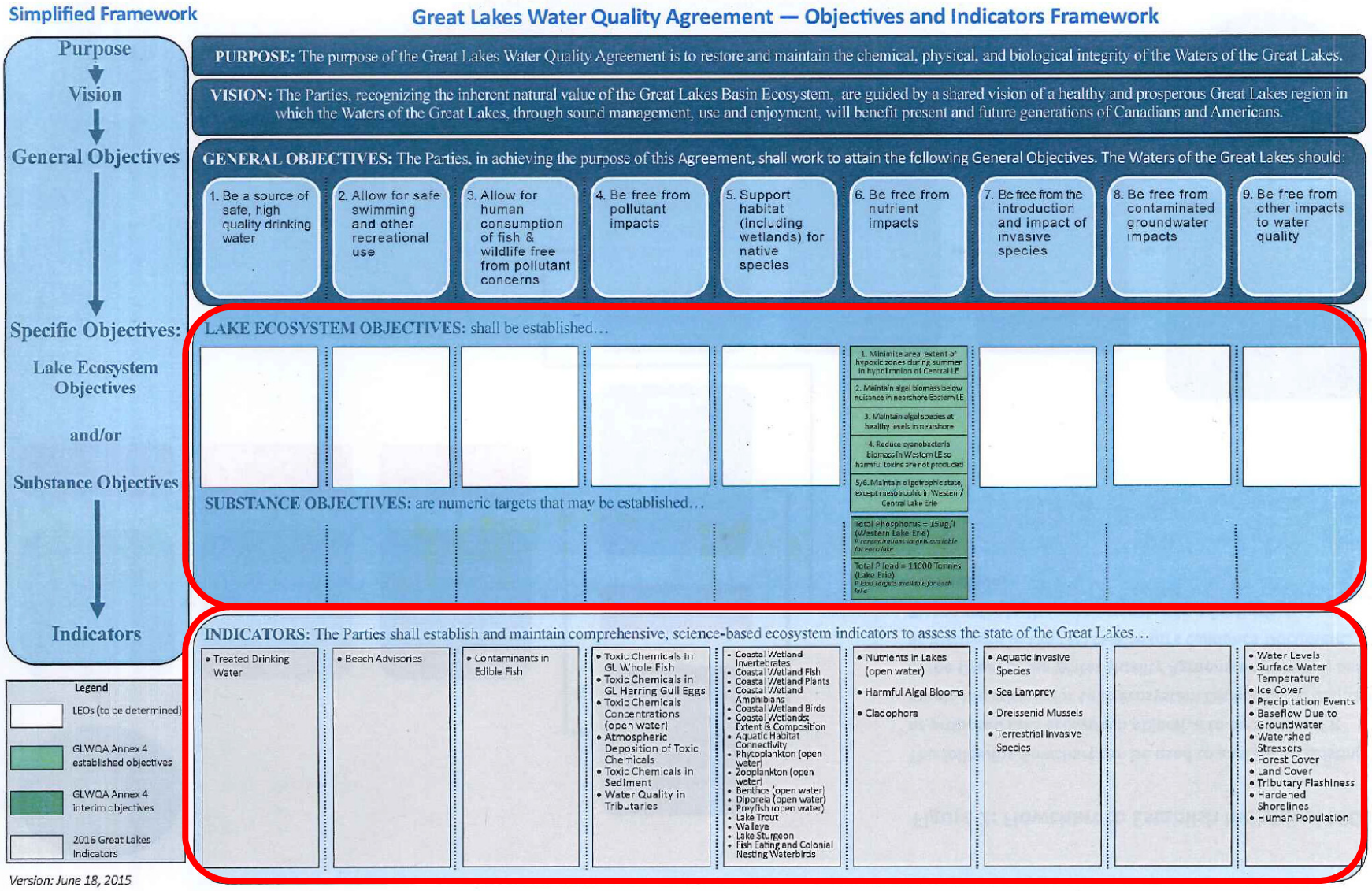
The following flowchart can be used to analyze an existing or proposed lake ecosystem objective to determine if it meets the criteria for Lake Ecosystem Objectives as defined in the Great Lakes Water Quality Agreement (GLWQA) and as discussed in the LEO task team's Guidance Document. Please refer to the accompanying text for further explanation.

*Lake Michigan excepted

** DRAFT — for discussion at Lake Erie Partnership meeting, July 14, 2015 **

Version: July 7, 2015

Where do Lake Ecosystem Objectives Fit?



LEOs: Nutrients-Annex 4

- The following nutrient-related LEOs are included in GLWQA:

1. Minimize extent of hypoxic zones due to excessive P loading
2. Maintain levels of algal biomass below nuisance conditions
3. Maintain algal species consistent with healthy aquatic ecosystems in nearshore
4. Maintain cyanobacteria biomass at levels that do not produce harmful toxins
5. Maintain oligotrophic state, relative algal biomass and species consistent with healthy aquatic ecosystems, in the open waters of Lake Michigan

- Substance objectives (Numeric targets) and indicators (HABs)

LEO Task Team Work to Date

- Initial meeting to form tasks teams, May 2016
- Task teams to develop draft LEOs for General Objectives, 2017
  - Engage key partners in process
- Brief Management Committee on LEO progress, 2017
- Finalize LEOs


Thank you!
Questions?