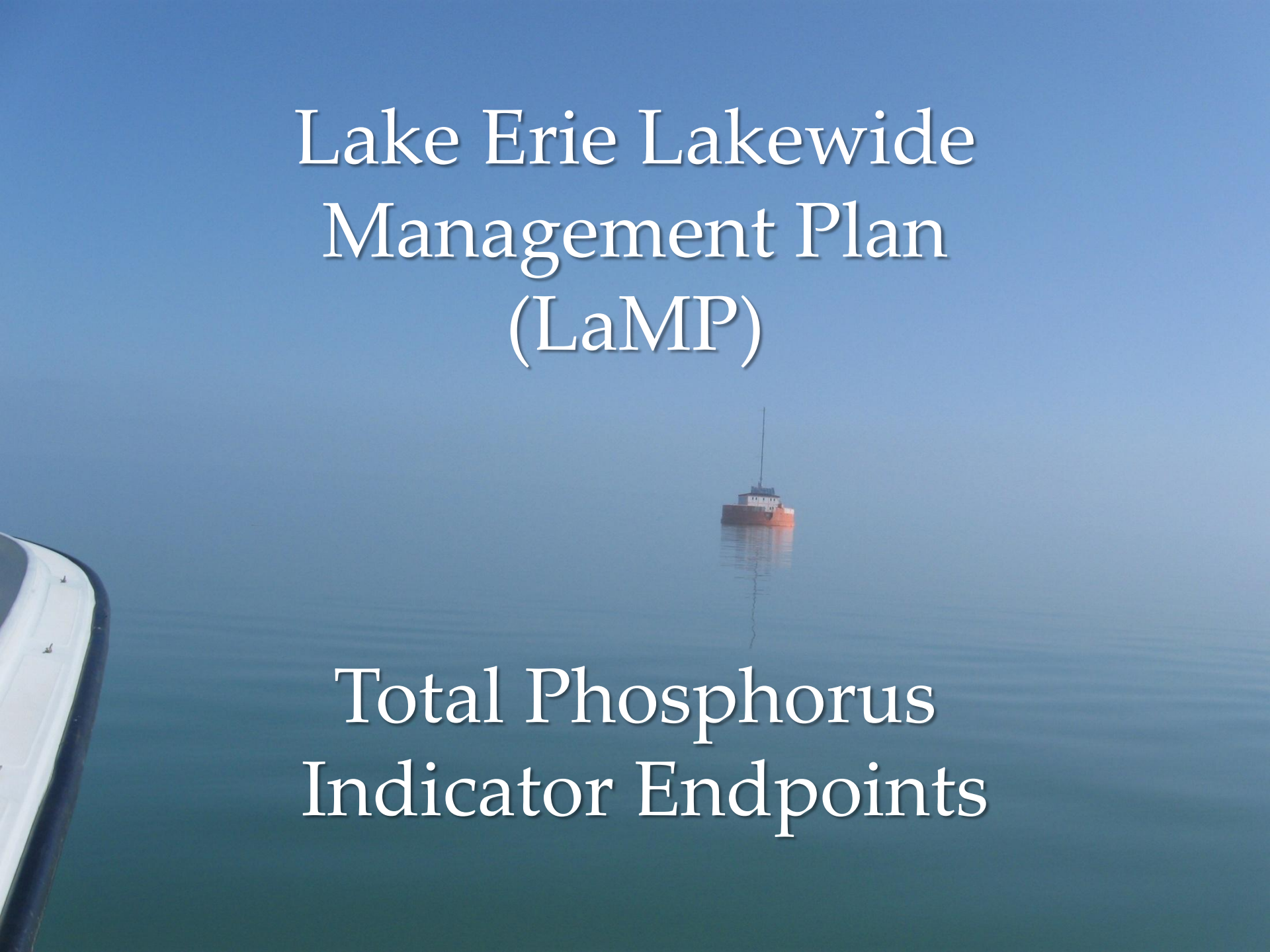


# Lake Erie Lakewide Management Plan (LaMP)



Total Phosphorus  
Indicator Endpoints

# Lake Erie LaMP Recent Activity

- 2007 – Lake Erie LaMP charged with developing a Binational Nutrient Management Strategy
- Review of existing management programs and actions developed to inform the Strategy
  - Nutrients in the Lake Erie Basin (Hiriart-Baer et al., 2008)
  - Literature Review on Best Management Scenarios in Nutrient Management for the Lake Erie Basin (Great Lakes Commission, 2008)
  - 2010 Status of Nutrients in the Lake Erie Basin (Lake Erie Nutrient Science Task Group)
- Strategy will “represent the consensus of key Lake Erie resource managers on the goals, objectives, targets, indicators, priority watersheds, monitoring and research needed to improve conditions and prevent further eutrophication”.

# 2010 Status of Nutrients in the Lake Erie Basin

- Background report to inform the Strategy
- Includes nutrient information (thru Nov. 2008)
- Identified indicator endpoints for Total Phosphorus
  - Based on best available science regarding the Total P concentrations required to restore and protect the ecological conditions identified in the LaMP's vision, goals and objectives.
  - Comparison of concentrations to the target informs about trends, provides a means to assess the results of management actions and adaptively manage a changing ecosystem.
  - Additional research and monitoring are needed and will aid in refinement of the targets and ensure that they are credible and appropriate.

[http://www.epa.gov/lakeerie/erie\\_nutrient\\_2010.pdf](http://www.epa.gov/lakeerie/erie_nutrient_2010.pdf)

# LaMP Ecological Endpoints for Total Phosphorus

Habitat Type	Desired Ecological Endpoint* (ug/L)
Offshore - Western Basin	15
Offshore - Central Basin	10
Offshore - Eastern Basin	10
Nearshore	20
Coastal Wetland	One recording of < 30 ug/L / year
Tributaries	32

\*Mean annual concentration

# Basis for the Numbers

- Offshore Nutrient Targets
  - Based on GLWQA total phosphorus loading target for Lake Erie of 11,000 metric ton/yr and complements the Great Lakes Fisheries Commission's Lake Erie Environmental Objectives (mesotrophic, 10-20 ug/L) in the west and central basins.
- Nearshore Nutrient Target
  - Applies to both the coastal margin and the nearshore open-water.
  - Based on the Ontario Provincial Water Quality Objective (1999) of 20 ug/L for the lake water during ice free period and complements the Great Lakes Fisheries Commission's Lake Erie Environmental Objectives (mesotrophic, 10-20 ug/L) in the eastern basin.

# Basis for the Numbers

- Coastal Wetlands
  - Based on the SOLEC indicator “Nitrate and Total Phosphorus for Coastal Wetlands” with a recommended target of at least one instance per yr of less than 30 ug/L.
- Tributary Nutrient Target
  - Applies to tributary waters immediately above the lake effect zone on the tributary.
  - Based on research by Environment Canada that established a total phosphorus concentration target of 32 ug/L for smaller, agriculturally-dominated watersheds (Chambers et al., 2008).