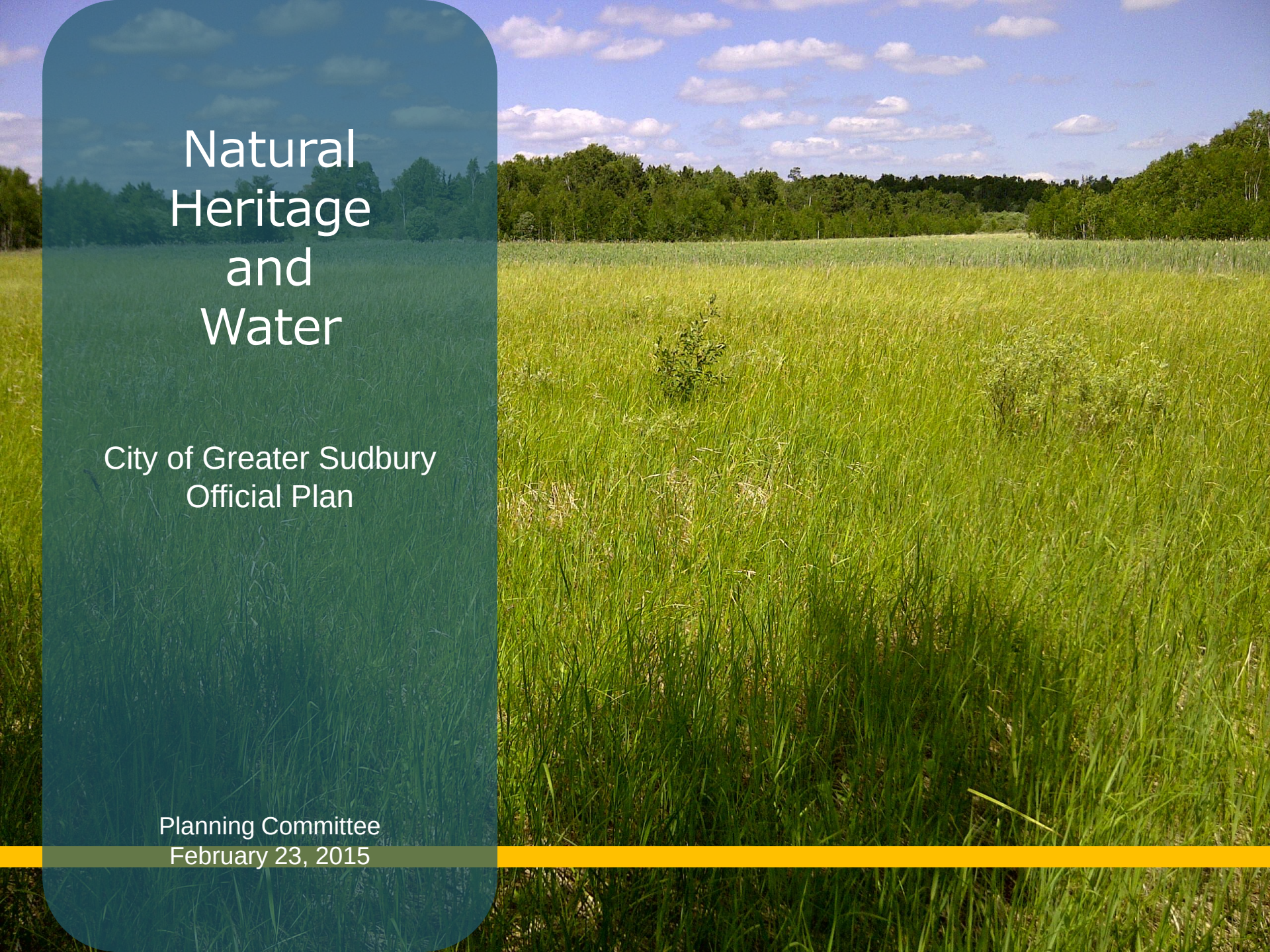
Natural Heritage and Water

City of Greater Sudbury
Official Plan

Planning Committee
February 23, 2015



Natural Heritage Background Study

- ✓ Update from 2005 Study
- ✓ Input from numerous stakeholders
- ✓ Ensure that natural heritage information is still valid
- ✓ Ensure that policies in Official Plan reflect current Provincial direction
- ✓ Official Plan is consistent with the Provincial Policy Statement

Natural Heritage Features

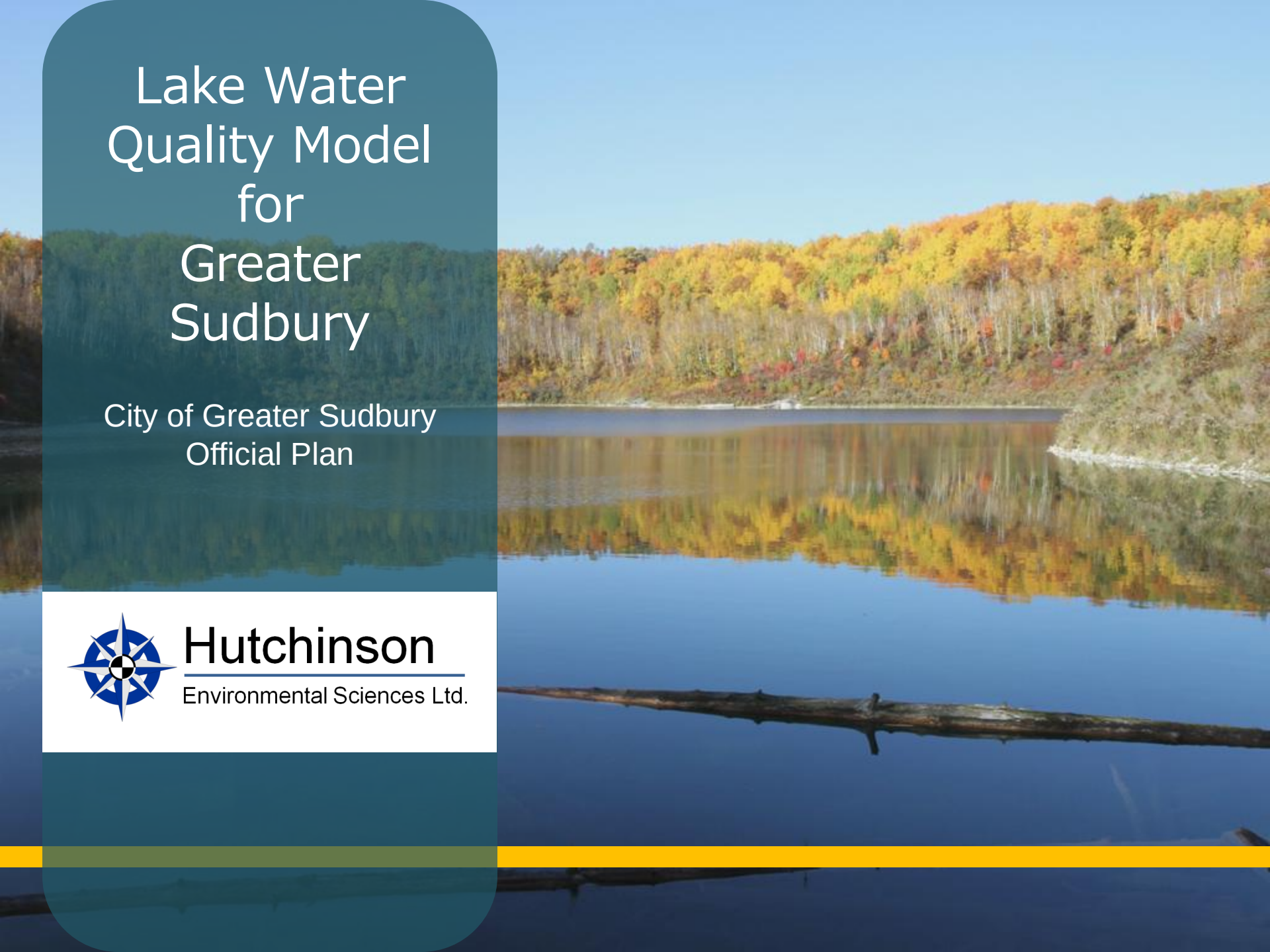
- Species at Risk
- Wetlands
- Significant wildlife habitat

Natural Heritage Features

- Fish habitat
- Areas of Natural and Scientific Interest
- Geological sites of interest
- Ecological recovery sites

Lake Water Quality Model for Greater Sudbury

City of Greater Sudbury
Official Plan



Hutchinson
Environmental Sciences Ltd.

Purpose

Technical guidance to Official Plan for unserviced shoreline lots that is:

- ✓ *protective of water quality*
- ✓*technically sound*
- ✓*defensible, and*
- ✓*meets the intent of the Provincial Policy Statement*

Guidance from MOE Lakeshore Capacity Assessment approach

Phosphorus

- Natural earth element (‘P’ on the periodic table)
- Limiting nutrient in lakes on boreal shield
- Excess levels can stimulate algal growth
- Loadings from various sources, including septic systems

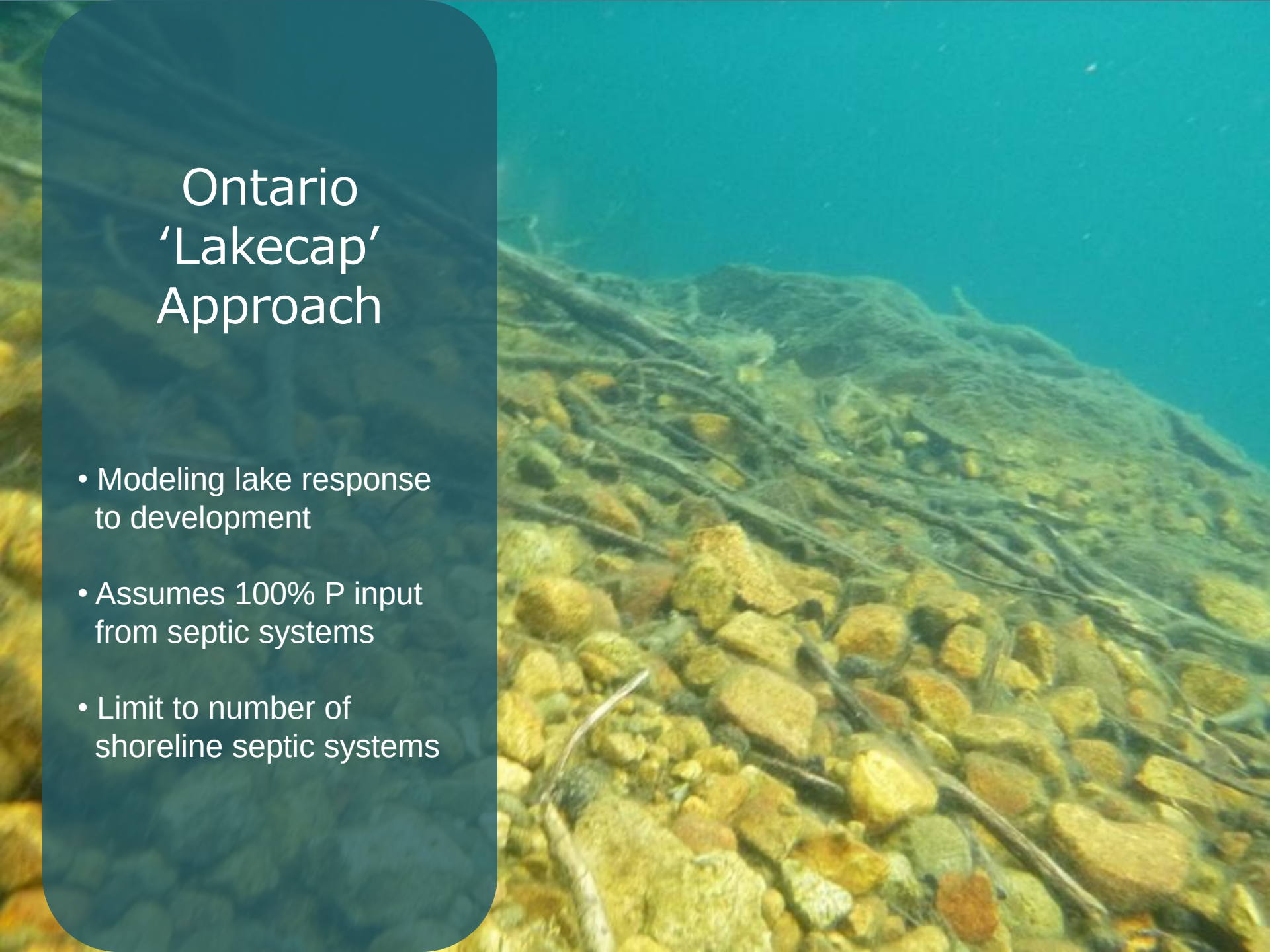
Phosphorus Trends

- No significant increasing trends.
- Significant decreasing trend in 12 lakes.

Lake	n_{years}	Mean TP_{so} (µg/L)
Bethel	7	36.9
Brodill	7	5.5
Clearwater	6	3.3
Crooked	7	11.2
Gordon	7	9.4
Hanmer	8	4.7
Linton	5	4.8
Little Raft	7	9.6
McFarlane	11	10.7
Ramsey	10	10.8
T (Dill)	8	17.6
Vermilion	8	10.8

Ontario ‘Lakecap’ Approach

- Modeling lake response to development
- Assumes 100% P input from septic systems
- Limit to number of shoreline septic systems



‘Lakecap’

- Translate target concentration of TP = BG+50% to ‘development capacity’

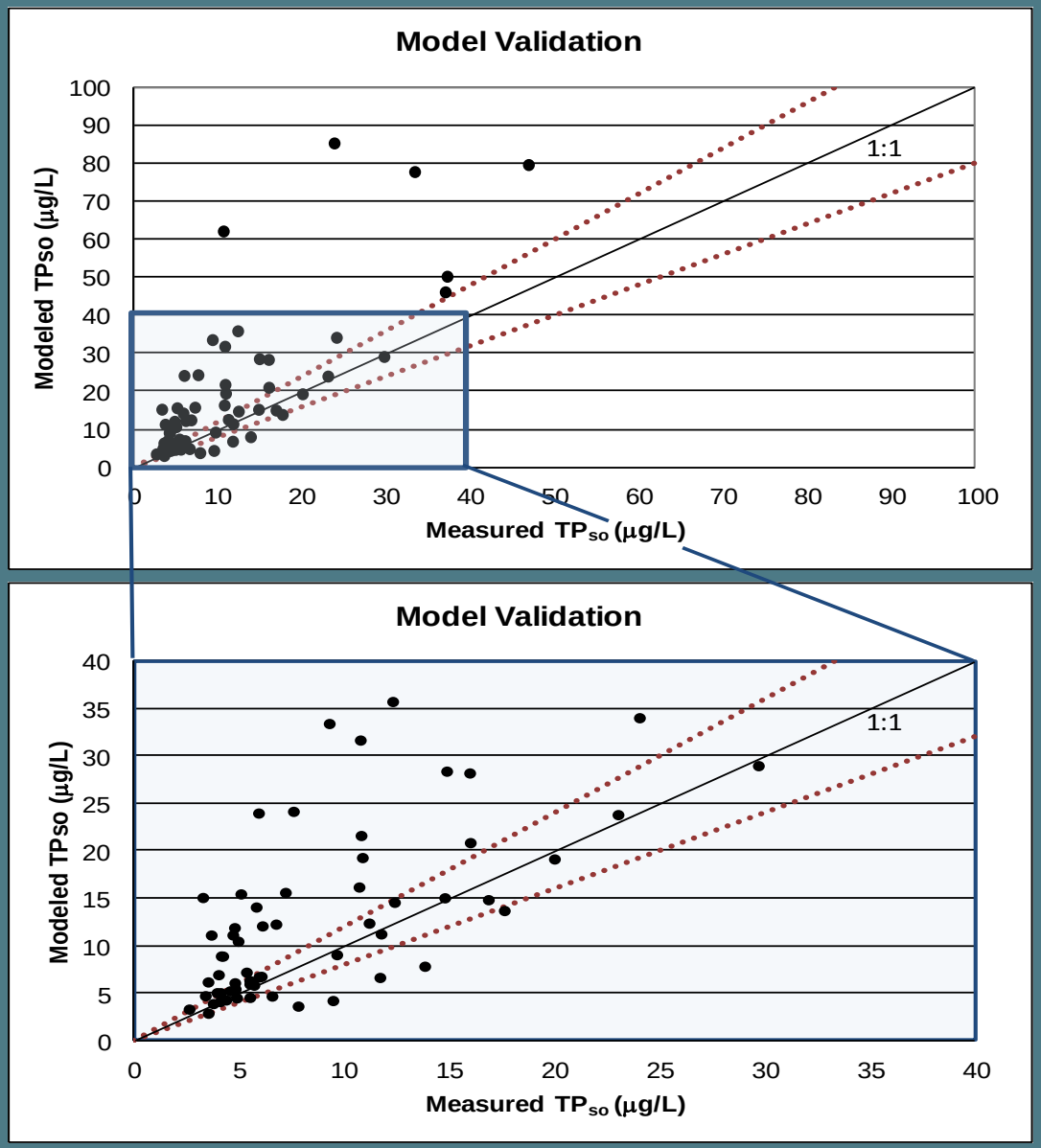
Implications:

- 124 homes acceptable
- 125 homes over capacity

- Does model/approach offer this level of precision?

Model Results

- Lakecap model for CGS lakes did not accurately predict Total Phosphorus (TP) concentrations due to multiple sources of error.
- Development recommendations based on specific lake capacities using the model could not be defended due to model accuracy.

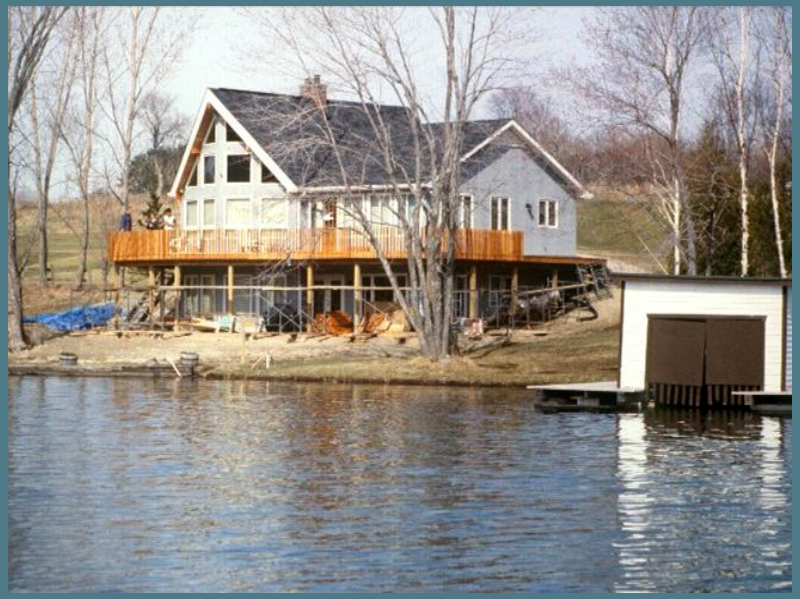


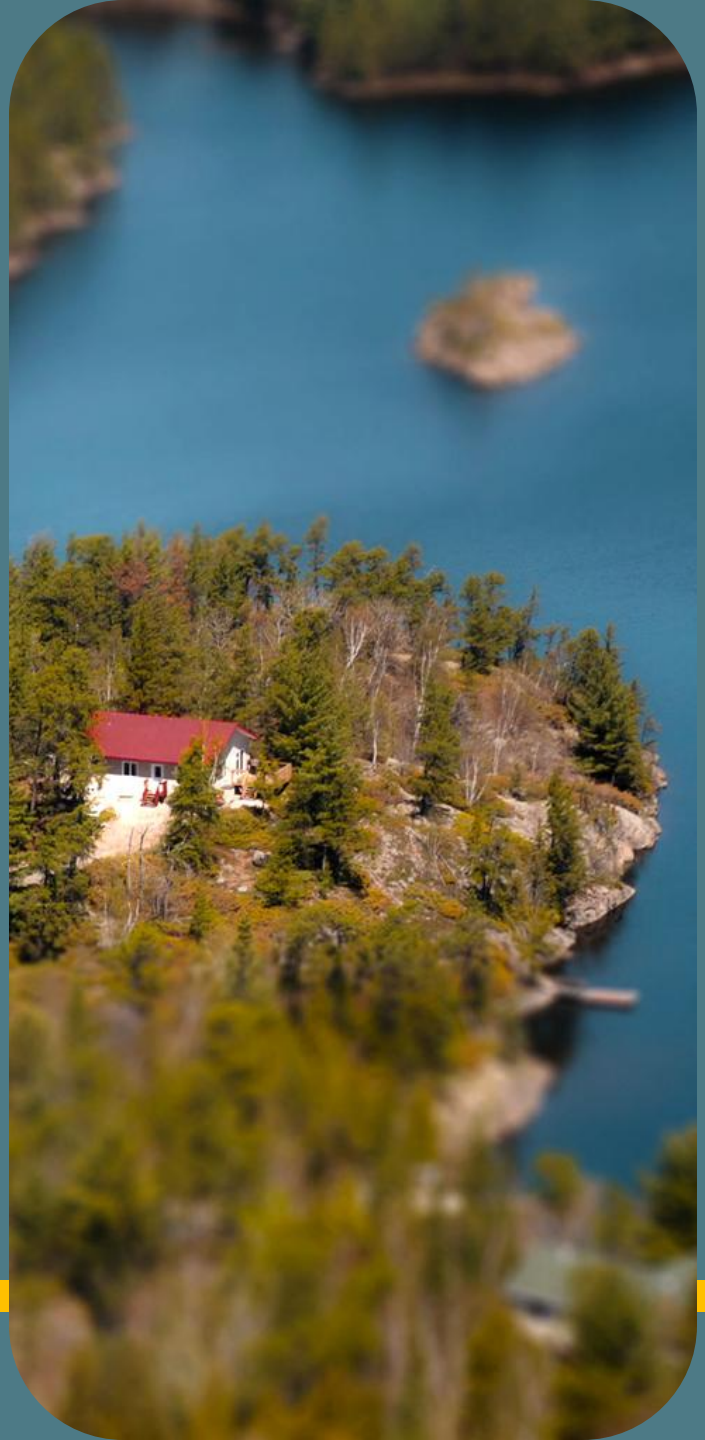
Lake Capacity

- These lakes have much capacity

BUT

- Is this desirable ?





Recommended Approach

- ✓ Manage the nature of development versus the ‘capacity’
- ✓ Developed a sensitivity-based lake classification system to inform planning decisions for unserviced shoreline areas
- ✓ Report recommendations for policy direction only. Final policies developed by City staff allowing for public consultation.

Watersheds

- Ecologically meaningful scale for planning
- Protect, improve, restore:
  - sensitive surface water features
  - sensitive ground water features
  - hydrologic functions
- Maintain linkages among watershed features

Conclusion

- Official Plan is consistent with the Provincial Policy Statement on natural heritage matters
- Policies on shorelines of lakes and rivers
- Policies on watershed planning