Lake System Health

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Lake Links
Perth Ontario
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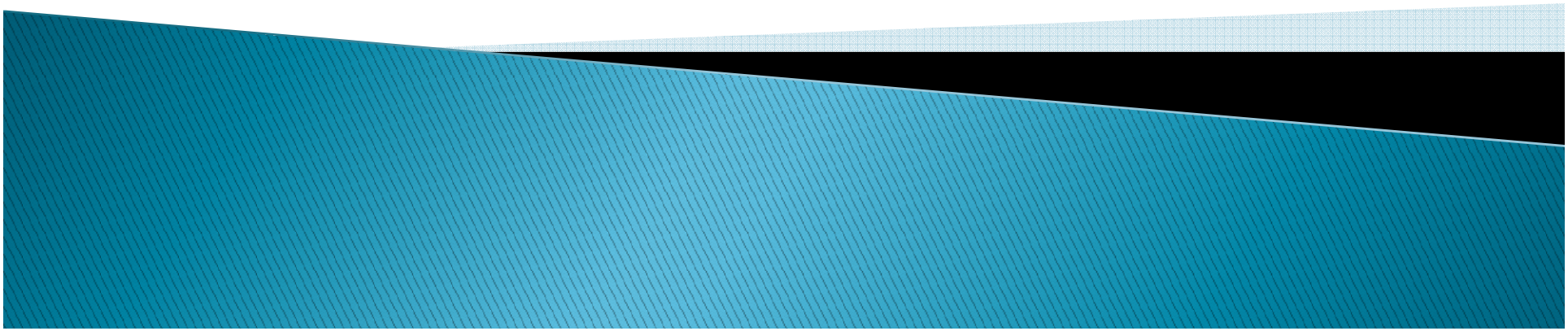


Agenda

- Purpose of the Model
- Lake Classification
- Land Use Policy
- Over Threshold Lakes
- Model limitations
- Questions

Use of the Model

MNR/MOE

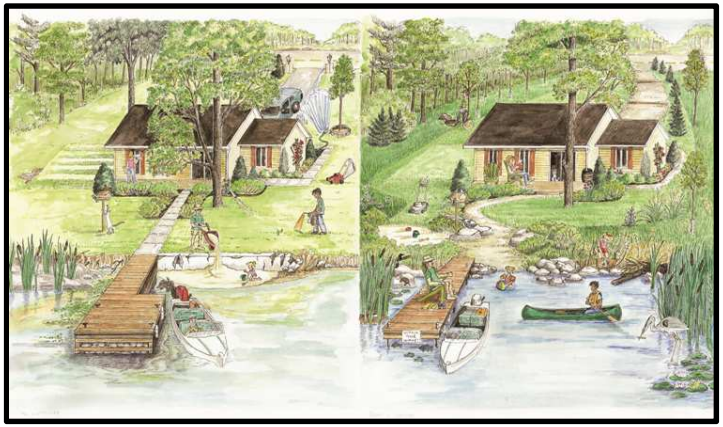
Municipalities

Function of the Model

- One tool to plan for growth on our lakes
- Classify lakes based on 'Sensitivity' to phosphorus
  - Responsiveness
  - Mobility
- Basis for land use policies

What the Model Doesn't Do

- Stop development
  - OMB decisions
- Stop removal of shoreline vegetation
- Protect Wetlands
- Require new development to be set back from the shoreline



What the Model does Do

- Indicates the level of sensitivity of a lake to development
- Indicates state of phosphorus concentration
- Guide development policy
- Indicate when a lake has more phosphorus than is healthy
- Be the basis for a stewardship program

Lake Classification

How Sensitive is a Lake to Development?

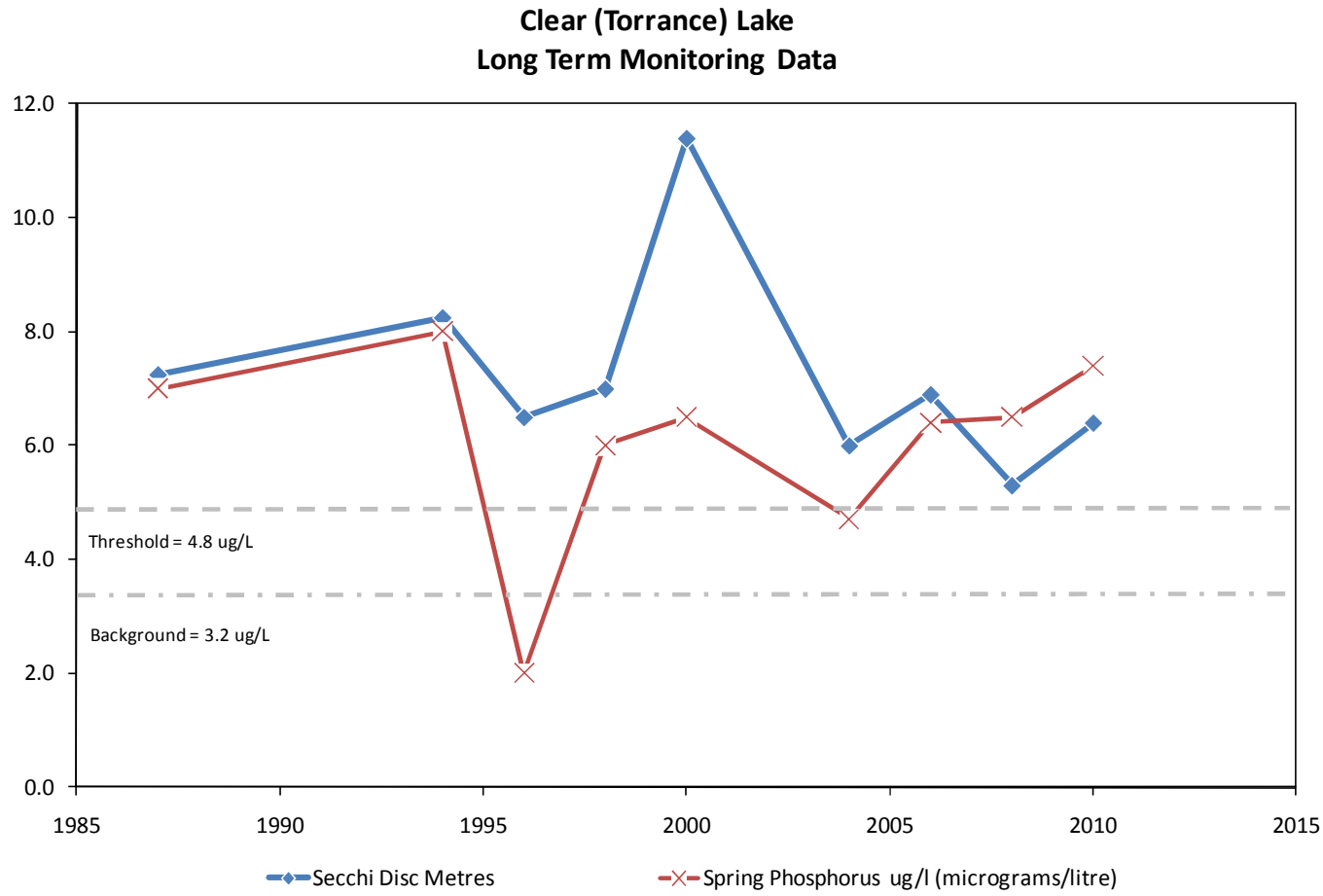
		Mobility	
		High	Low
Responsiveness	High	High Sensitivity	Moderate Sensitivity
	Low	Moderate Sensitivity	Low Sensitivity

Lake Classification

- Three Classes of Lakes
  - High Sensitivity
  - Moderate Sensitivity
  - Low Sensitivity
- Over Threshold

		Mobility	
		High	Low
Responsiveness	High	High Sensitivity	Moderate Sensitivity
	Low	Moderate Sensitivity	Low Sensitivity

Over Threshold Lake



Land Use Policy

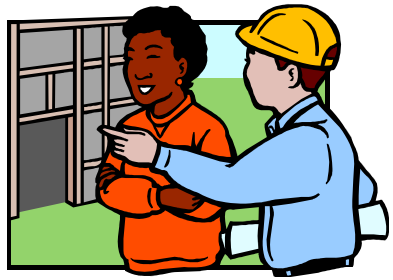
- Purpose – To provide clear policy direction for environmentally sound development around our lakes and rivers
- Objectives –
  - Reduce the impact of existing development, and
  - Minimize the impact of new development on lake health

Land Use Policy

- Policy should address all development situations, including:
  - lot creation,
  - development of existing vacant lots,
  - redevelopment of lots, and
  - all land use designations (waterfront, community, urban centres and major highway inputs)

Principles

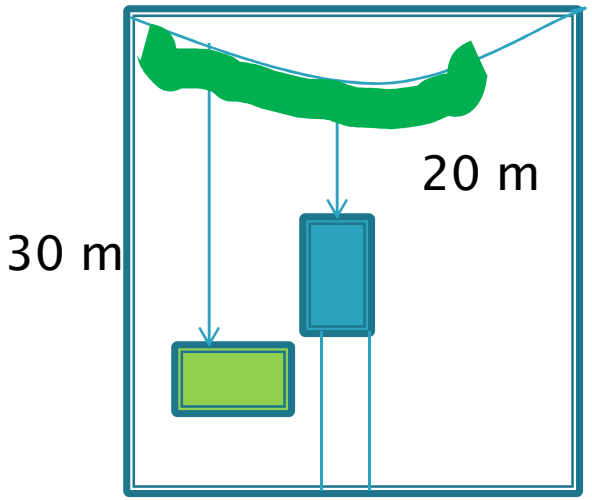
- Reduce impact of new development



- Achieve a net reduction in phosphorus as redevelopment proceeds

General Policy

- Target of 75% of linear shoreline frontage in natural state
- 30 m setback for leaching beds
- 20 m setback for all structures



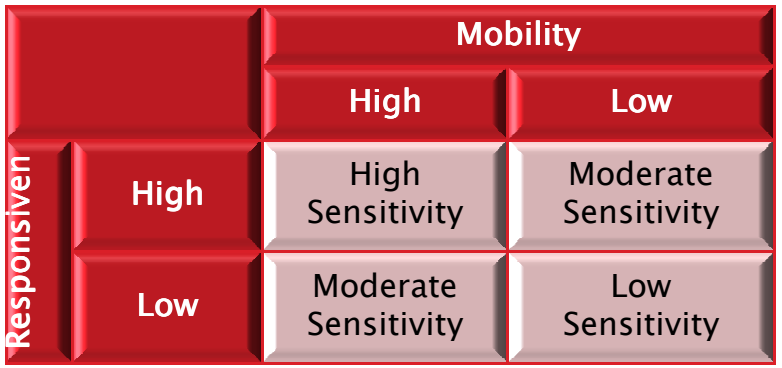
Low Sensitivity Lakes

- Other policies more restrictive
- Encouraged to used site plan or development permit for substantial building and commercial, industrial and institutional development.

		Mobility	
		High	Low
Responsivenes	High	High Sensitivity	Moderate Sensitivity
	Low	Moderate Sensitivity	Low Sensitivity

Moderate Sensitivity

Activity	Lot Creation	Vacant Land	Redevelopment
Municipal Services			
WQIA #1			
WQIA #2			
Site Plan	✓	✓	✓
Septic (binds Tp)			
Tp Mitigation Pl.			
Monitoring			
Net Reduct. Tp			



Site Plan Agreement

- Location of structures
- Retention of shoreline vegetation
- Maintain native cover
- Location of driveways, pathways, roads
- Stormwater management and construction mitigation

High Sensitivity

Activity	Lot Creation	Vacant Land	Redevelopment
Municipal Services			
WQIA #1	✓	✓	
WQIA #2	✓		
Site Plan	✓	✓	✓
Septic (binds Tp)	✓	✓	✓
Tp Mitigation Pl.	✓	✓	✓
Monitoring	✓		
Net Reduct. Tp			✓

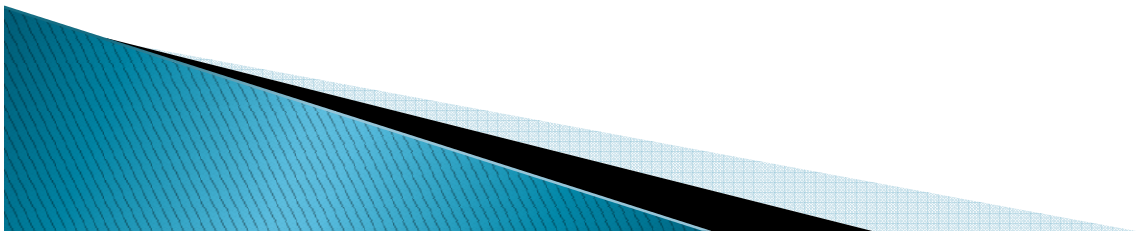
		Mobility	
		High	Low
Responsive	High	High Sensitivity	Moderate Sensitivity
	Low	Moderate Sensitivity	Low Sensitivity

Phase 1 WQ Impact Assessment

- To determine IF development can proceed
  - Site analysis
  - Surrounding area analysis
  - Soil characteristics
  - Vegetation cover
  - Water flow

Phase 2 WQ Assessment

- To determine HOW development should ocur
  - Recommend building and septic sites
  - Stormwater and Construction Mitigation Plan
  - Shoreline buffer, protection of native vegetation
  - Monitoring plan



Over Threshold

Activity	Lot Creation	Vacant Land	Redevelopment
Municipal Services	✓		
WQIA #1	✓	✓	
WQIA #2	✓	✓	
Site Plan	✓	✓	✓
Septic (binds Tp)	✓	✓	✓
Tp Mitigation Pl.	✓	✓	✓
Monitoring	✓	✓	
Net Reduct. Tp	✓		✓

		Mobility	
		High	Low
Responsive	High	High Sensitivity	Moderate Sensitivity
	Low	Moderate Sensitivity	Low Sensitivity

Over Threshold

Activity	Lot Creation	Vacant Land	Redevelopment
OPA	✓		
ZBL	✓	✓	
Tree Cutting By-law	✓		
Site Alteration By-law	✓		

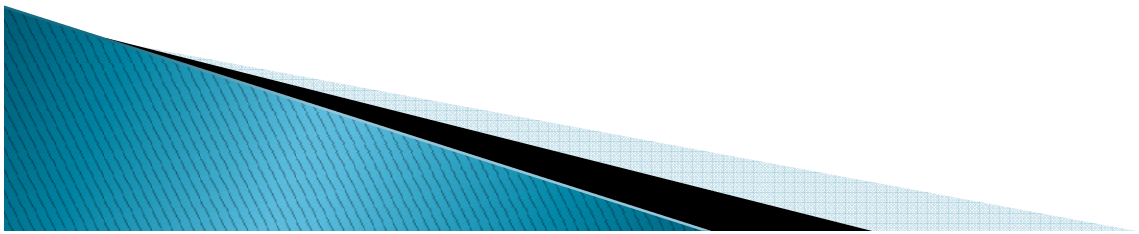
		Mobility	
		High	Low
Responsive	High	High Sensitivity	Moderate Sensitivity
	Low	Moderate Sensitivity	Low Sensitivity

Over Threshold

- Remedial Action Program, in conjunction with Lake Association, may provide specific policy
  - Removing municipal sewage outflow
  - Stewardship
  - Septic reinspection process
- Limits to Growth Assessment
  - Based on existing policy

Operational Issues

- Dystrophic/High DOC lakes (coloured)
- Measured but not modeled values over threshold
- Shallow/Unstratified lakes
- Shallow lakes that go anoxic
- Lakes with very low TP
- Regular updates are required



Questions