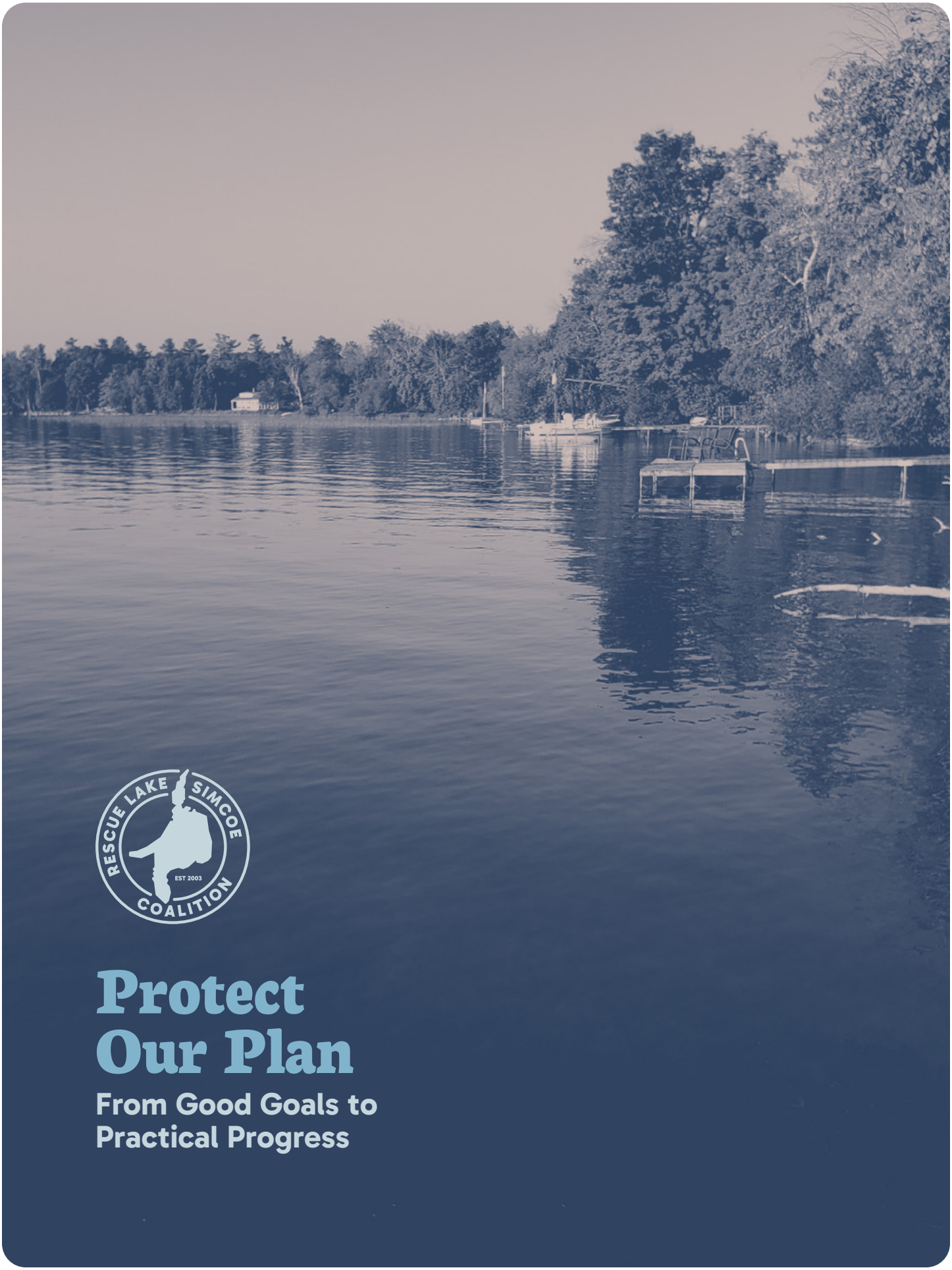

Protect Our Plan

From Good Goals to Practical Progress

Protect Our Plan:
From Good Goals to Practical Progress

Prepared by Rescue Lake Simcoe Coalition.

Published November 2025.

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Introduction

Lake Simcoe is one of Ontario's most important freshwater ecosystems. It is vital to the ecological health, cultural identity and economic wellbeing of the region. Spanning more than 3,400 square kilometres, the watershed supports over half a million residents, dozens of communities and a diversity of natural systems, from coldwater fish habitat to wetlands and woodlands. With hundreds of working farms, including The Holland Marsh specialty crop area, and significant economic activity from tourism—including swimming, boating, fishing, ice fishing, snowmobiling, hiking and summer cottages—the health of the Lake is intrinsically linked to the economic success of the region.

Since 2009, the Lake Simcoe Protection Plan (LSPP) has provided a science-based framework to protect and restore the watershed. It sets out ambitious goals: to reduce phosphorus pollution to 44 tonnes per year, protect 40% high-quality natural cover from forests and wetlands, restore dissolved oxygen for fish habitat and embed watershed science into land-use planning. These goals remain sound—but they are increasingly at risk.

From 2009 to 2015, the LSPP was supported by robust federal and provincial investment, coordinated governance and a strong mandate for local implementation. In recent years, however, this foundation has eroded. Federal funding declined sharply after 2015 with the expiration of the Lake Simcoe Clean-Up Fund. At the same time, provincial legislation has weakened key protections, and the phosphorus reduction strategy has not been updated in over a decade, even as pollution levels remain well above target.

In the face of these challenges, municipalities and the Lake Simcoe Region Conservation Authority (LSRCA) have stepped up. From capital investments like the Phosphorus Reduction Facility to green infrastructure pilots, stormwater retrofits and data partnerships, local leadership has been strong, yet fragmented. Without clear performance tracking, sustained senior government funding and modernized governance, these efforts risk becoming isolated wins in a fragmented system. Local efforts are commendable, but the lake requires an integrated, watershed-wide plan and renewed federal and provincial engagement.

Executive Summary

Sixteen years after the Lake Simcoe Protection Plan (LSPP) was launched, the watershed remains under significant ecological stress. This report reviews the Plan's implementation, current scientific conditions and policy trends across federal, provincial and municipal levels.

The costs of inaction are mounting. Declining water quality drives higher municipal expenses for stormwater systems, with significant deferred maintenance for stormwater ponds and linear drainage assets requiring funding, alongside road maintenance. We are also seeing an increase in public-health advisories related to beach closures, while lost fisheries and recreational opportunities mean forgone revenue for local communities.

Yet progress is possible. The LSRCA and the larger shoreline municipalities, in particular, have pioneered effective local projects, from the Phosphorus Reduction Facility to stormwater retrofits, low-impact development techniques and wetland restoration. These successes now need coordination and scaling up.

This report outlines thirteen recommendations to restore policy momentum.

The message is clear: we must protect the plan that protects the lake with strong policy, smart investment, and tangible incentives that reward conservation and good governance.

Lake Simcoe Protection Plan Background

Enabled by the *Lake Simcoe Protection Act*, 2008, the Lake Simcoe Protection Plan is Ontario's most comprehensive watershed-based strategy. It was created to address declining water quality, rising phosphorus pollution, habitat loss and the impacts of growing urban development.

The core goals of the plan are to:

- Reduce phosphorus pollution to 44 tonnes per year (from ~78 tonnes per year pre-2009)
- Reduce pathogen loading to eliminate beach closures
- Maintain dissolved oxygen at ≥7 mg/L to support coldwater fish habitat
- Achieve a minimum 40% high-quality natural cover across the watershed
- Improve stormwater management and wastewater performance
- Support subwatershed monitoring, scientific research and intergovernmental coordination

Implementation partners include:

Ontario

Ontario Ministry of the Environment, Conservation and Parks (MECP)

Ontario Ministry of Natural Resources and Forestry (MNRF)

Lake Simcoe Region Conservation Authority (LSRCA)

20

Municipalities and First Nations

+

Environmental non-profits, agricultural and development sectors, and the public.

State of the Lake

Sixteen years after the launch of the LSPP, the watershed remains under significant ecological pressure. Key scientific indicators highlight some areas of progress and several areas of continuing decline.

Phosphorus Pollution

Annual phosphorus loads remain at ~70-110 tonnes—double the Plan's 44-tonne target. While sewage-treatment plant upgrades have increased the efficacy of treatment plants, growth has meant these system improvements have merely held the line on phosphorus loading. The proposed Phosphorus Reduction Facility in Bradford is expected to remove 2–10% of phosphorus pollution, but more reductions across stormwater and septic systems are needed.

Fish Health

Cisco populations fluctuate, burbot are improving, but lake trout and whitefish continue to struggle with natural reproduction. Stocking sustains these species, while warm-water fish such as perch and bass remain generally healthy and resilient. However, invasive species and climate-driven changes continue to pose increasing threats to the lake's native fish community.

Dissolved Oxygen

Dissolved oxygen levels in the lake's coldwater zone, critical for lake trout and whitefish survival, remain volatile. Monitoring from 2019–23 shows concentrations ranging from 4.0 to 6.9 mg/L, which is better than the 1990s but still often below the 7 mg/L target.

High-Quality Natural Cover

In 2009, forests and wetlands comprised approximately 35% of the watershed's land-area, and about 61% of the land was subject to some form of provincial protection. The LSPP includes a goal often expressed as striving for 40% "high-quality natural cover". Ongoing fragmentation and land-use change are diminishing the watershed's capacity to filter nutrients, provide flood-water storage, and maintain shade and habitat for temperature-sensitive species. Strengthening protection and restoration of well-connected natural areas remains fundamental to meeting the broader outcomes of the Plan.

Chloride (Road Salt)

Concentrations rose from ~40 mg/L in 2010 to ~61 mg/L in 2024, with tributary spikes up to >26,000 mg/L in urban areas—far above aquatic health thresholds. Lake Simcoe is on a trajectory to reach the federal chronic Chloride level of 120mg/L by 2058. No provincial chloride reduction targets or strategies exist. Elevated road-salt use has also increased sodium levels in some municipal drinking-water sources, posing public-health concerns for residents on sodium-restricted diets and adding costs to local water treatment.

Impervious Cover

Urbanization continues to reshape the watershed. Impervious surfaces have increased from roughly 3% in 2003 to about 5% today. Given the rapid pace of growth, the increase being relatively low reflects the benefits of densification. According to the LSRCA, subwatersheds such as East Holland River (13%), Lovers Creek (14%) and Hewitt's Creek (8%) remain below the critical 25–30% threshold where stream health typically declines sharply, but ongoing growth is pushing them closer. Once those thresholds are crossed, water-quality decline becomes difficult to reverse.

Harmful Algal Blooms (Cyanobacteria)

Blue-green algae blooms have appeared the last two summers, driven by warm temperatures, calm water and nutrient enrichment. Several water quality advisories in 2023 and 2024 closed beaches for weeks, affecting recreation and local tourism. These blooms can produce toxins harmful to people, pets and wildlife. While variability remains high, the trend is worsening, underscoring the need to reduce nutrient loading and manage climate-related drivers.

Invasive Species

Quagga mussels have overtaken zebra mussels; round goby are widespread; starry stonewort is entrenched, though it has gone through "boom and bust" cycles; and in 2024, water soldier was confirmed near Keswick and Innisfil as a significant emerging threat, especially to Cook's Bay. These invasions alter food webs and complicate recovery.

Climate Change

Warming temperatures, earlier stratification and more intense rainfall events are exacerbating phosphorus release, lowering deep-water oxygen and favouring invasive species.

STATE OF THE LAKE

Overall Assessment

Scientific monitoring shows a mixed picture for Lake Simcoe. Phosphorus concentrations have slightly declined or held flat, albeit well above the 44-tonne target, and deep-water oxygen levels have improved, indicating some success in nutrient management. Forest and wetland cover have remained broadly stable, though still below targets for ecosystem resilience. At the same time, chloride levels continue to rise, climate pressures are intensifying and impervious surface area is increasing, even as “per capita” imperviousness declines through more compact development.

Overall, these trends show that **while localized improvements have occurred, many key indicators are static or worsening.** The goals of the LSPP remain sound, but progress has stalled. Without renewed coordination, stable funding and science-based regulation, the lake risks drifting further from recovery.

Methodology and detailed data tables supporting this section are provided in the Appendices.

Analysis of Federal, Provincial and Municipal Policies and Programmes

Federal Government

Strategic projects, but a retreat from sustained funding

From 2015–2025, the federal government invested $24.7 million in twenty projects across ten municipalities under the Clean Water and Wastewater Fund (CWWF) and the Canada Community-Building Fund (CCBF). These projects largely targeted upgrades to stormwater and wastewater systems. Most notably, $16 million was delivered toward the Lake Simcoe Phosphorus Reduction Facility in Bradford—a long-delayed project expected to remove 2-12 tonnes of phosphorus annually from the Holland Marsh basin before it reaches the lake.

However, this period also marks a significant decline in federal funding compared to the 2008-2015 Lake Simcoe Clean-Up Fund (LSCUF), which delivered $59.9 million across more than 200 projects, averaging $8.5 million per year. The post-2015 era has seen fewer projects and, simply put, less funding reduces the ability to achieve the Plan's goals. The recently released 2026 Federal Budget did not fulfill prior promises to restore funding to at least $40 million, although rumoured cuts also did not occur.

While the federal government deserves credit for funding its share of the Phosphorus Reduction Facility, sustained and transparent investments are urgently needed, particularly to support smaller municipalities, subwatershed data reporting, stormwater retrofits, wastewater upgrades and other capital improvements.

Comparing Federal Investment Eras

	2008-2015 (LSCUF)	2015-2025 (Post-LSCUF)
Federal Investment	$59.9M	$24.7M + $4.1M
Delivery Model	Dedicated fund	General infrastructure funds
Projects Funded	~200	~30
Project Types	Community, retrofits, outreach, research	Capital-heavy
Major Achievements	2-4 tonnes/year phosphorus reduction	Projected 2-10 tonnes/year from one facility
Monitoring/Reporting	Locally reported	Harder to trace
Alignment with LSPP	Strong	More ad hoc

Key Takeaway

While 2015–2025 includes funding for the single largest phosphorus project to date, the LSCUF era offered more diverse, locally grounded and performance-linked funding. Ensuring a dedicated Lake Simcoe federal funding program through the Freshwater Action Fund would restore momentum. Despite recent investments, annual phosphorus loads remain ~88 tonnes—unchanged from pre-2010 levels—underscoring the need for sustained and diversified federal programming beyond single capital projects.

Provincial Government

Important investments, but regulatory weakening and strategic drift

Ontario is the steward of the LSPP. In 2022, the province committed $24 million to the Phosphorus Reduction Facility, its largest single capital investment for Lake Simcoe water quality to date. Since 2018, an additional $13 million has supported scientific research, runoff tracking, chloride studies and urban restoration.

Recent provincial initiatives include:

- → $3 million to fund filtration of wash water from agriculture;
- → $165,250 to the Holland Marsh Growers Association for phosphorus-smart fertilizer practices;
- → $63,599 for phosphorus monitoring in drainage canals;
- → $115,000 to Toronto Metropolitan University to study chloride discharge from stormwater ponds;
- → $69,114 for chemical contaminant tracking in lake and tributary sediments; and
- → Preservation of the North Gwillimbury Forest from development as a future conservation area.

Despite this funding, regulatory and implementation weaknesses have emerged:

- The Phosphorus Reduction Strategy, 2010 has not been revised despite phosphorus pollution remaining well above target.
- Advisory bodies like the Lake Simcoe Coordinating Committee and Science Committee appear inactive or under-resourced, seemingly without scientific leadership.
- Conservation Authorities' planning roles were curtailed by Bill 23, reducing oversight of development impacts. The recent proposal to dramatically consolidate Conservation Authorities also potentially risks reducing focus on the Lake Simcoe watershed should the LSRCA be subsumed into a mega-regional conservation authority that includes all of the conservation regions in Lake Huron and Lake Superior up to Thunder Bay.
- Reporting from the MECP has become less transparent, although LSRCA reporting has increased.

Wetland and forest protections, once embedded in provincial policy, have been rolled back, leaving thousands of hectares of natural cover vulnerable. Other changes by the province to environmental protections have caused further risks to our natural heritage. These natural features are critical to filtering runoff and achieving the LSPP's 40% high-quality natural cover goal.

Chloride levels in the Lake itself have risen from ~40 mg/L in 2010 to 61 mg/L in 2024, with several tributaries exceeding the LSRCA's 50 mg/L threshold for aquatic health. Yet, the province has not set reduction targets, leaving a major gap in the LSPP framework.

Key Takeaway

Ontario's capital investments will play a vital role in Lake Simcoe's restoration, but long-term success will depend on rebuilding governance capacity, re-establishing science-based regulatory oversight, and improving data transparency and public reporting to align implementation with the LSPP objectives.

Municipal Governments

Leading on implementation, but needing partners

All municipalities in the Lake Simcoe watershed—shoreline and inland alike—play vital roles in implementation of the LSPP. Municipalities manage most of the infrastructure and land-use decisions affecting water quality. Collectively, they also contribute roughly $9.5 million annually to the LSRCA's operating levy, oversee billions in infrastructure assets and invest heavily in stormwater, wastewater and green-infrastructure improvements.

While shoreline municipalities tend to manage the largest water-facing assets, inland communities are making important progress integrating low-impact development, stormwater retrofits and natural-cover restoration into their growth plans. Aurora's leading work on low-impact development standards and Newmarket's green infrastructure retrofits show how inland municipalities are helping reduce nutrient and salt loading before water reaches the lake.

Inland and headwater municipalities—including New Tecumseth, Oro-Medonte, Ramara, Brock and others—contribute through stormwater retrofits, agricultural best-management practices and source-water protection planning. Many partner with LSRCA through cost-share programmes that support rural stewardship, urban stormwater retrofits and habitat restoration.

Sustaining and scaling these municipal efforts—both shoreline and inland—will require stable provincial and federal support, modernized policy tools and consistent watershed-wide reporting to demonstrate collective progress toward the LSPP's goals.

Recent Municipal Investments

The following examples highlight major recent shoreline-area investments that demonstrate the scale and innovation needed for full delivery of the Plan.

Bradford West Gwillimbury

- Phosphorus Reduction Facility: Coordinating multi-government funding and engineering oversight for the $40-million plant near the Holland Marsh basin, capable of removing up to 10% of the phosphorus reduction target per annum;
- LittaTrap Pilot: Capturing debris, sediment and microplastics from stormwater grates before entering the Holland River;
- Snow Storage and Filtration Facility: $2.9M site filtering pollutant-laden meltwater;
- Vegetated Buffer Strip Pilot: Intercepting phosphorus runoff in agricultural drainage areas; and
- Ducks Unlimited Partnership: Supporting 434-acre Holland River Wetland Restoration.

Barrie

- $261M upgrade to its Water Pollution Control Centre, with $125 M+ awarded to Maple-Bird JV for advanced treatment works—including new aeration, membrane bioreactor systems and solids handling—to meet phosphorus limits and renew capacity as the project expands treatment volume while maintaining some of the most stringent effluent standards in Canada, demonstrating how growth can be accommodated without increasing nutrient loads to the lake;
- Ongoing retrofits to stormwater outfalls and water quality monitoring programmes; and
- Stable water/wastewater rate structures funding long-term capital planning.

Innisfil

- Planning a $290M wastewater treatment plant upgrade, with phosphorus offsets required for new development, allowing growth within existing environmental obligations by improving performance, not relaxing standards;
- Releasing Master Servicing Plans and annual sewage system performance reports; and
- Launching stormwater restoration projects with LSRCA partnership.

Recent Municipal Investments (cont'd)

Georgina

- Phosphorus reduction through stormwater management: Award-winning catch basin filter pilot, integration of Low Impact Development features in road and parking lot retrofits, and rehabilitation of aging stormwater systems.
- Shoreline stabilization projects: Using geotechnical and green-infrastructure solutions to prevent erosion and reduce phosphorus loading.
- Salt mitigation: Implementing an enhanced Salt Management Plan that includes rock-salt alternatives, electronic spreader controllers, and other best practices.
- Invasive species management: Removing phragmites from stormwater infrastructure, ponds and tributaries, and conducting aquatic weed collection.
- Climate Action Plan: Council-approved plan identifying Lake Simcoe's health as a top environmental and climate-risk priority.

Key Takeaway

These local interventions are vital. Together, municipalities have demonstrated that even under tight constraints, local leadership can advance watershed priorities.

Continued progress, however, depends on sustained provincial and federal investment, science-informed frameworks and public access to data.

Recommendations: From Promises to Performance

To transition from fragmented programmes to meaningful implementation of the LSPP, all levels of government must **move from symbolic commitments to systemic action.**

Accordingly, we recommend the following thirteen actions →

1.

Anchor Lake Simcoe Within the Federal Freshwater Action Plan

Blue-green algae blooms have appeared the last two summers, driven by warm temperatures, calm water and nutrient enrichment. Several water quality advisories in 2023 and 2024 closed beaches for weeks, affecting recreation and local tourism. These blooms can produce toxins harmful to people, pets and wildlife. While variability remains high, the trend is worsening, underscoring the need to reduce nutrient loading and manage climate-related drivers.

2.

Modernize and Enforce the Provincial Phosphorus-Reduction Strategy

Update the 2011 Phosphorus Reduction Strategy with subwatershed-specific targets, timelines and public dashboards. Integrate low-impact development (LID), stormwater retrofits, natural-cover restoration and agricultural buffer strips as phosphorus-control measures. Mandate phosphorus-reduction reporting for all provincially funded infrastructure projects. Provide stable funding for septic inspections and upgrades, and require large developments to demonstrate net phosphorus neutrality. Public engagement is essential. Expanding homeowner and cottager awareness—through incentives and education on native planting, erosion control and reduced-use practices—would strengthen phosphorus reduction and improve water quality.

3.

Tackle Road-Salt Pollution Through Liability Reform, Regulation and Enforcement

Adopt a limited-liability framework for certified salt contractors, coupled with mandatory training, enforceable application limits and annual reporting. Develop a single set of provincially endorsed Best Management Practices for snow and ice management to curb over-application of salt while maintaining public safety. Establish and fund an expert stakeholder advisory committee to guide the province and municipalities on implementing salt-use standards, monitoring chloride levels, and protecting freshwater ecosystems and drinking-water sources. Addressing chloride pollution is now as urgent as phosphorus control; chloride levels continue to rise across the watershed, threatening aquatic life, infrastructure and drinking water. At the same time, a limited-liability reform will allow small businesses to reduce their costs by using an adequate amount of salt.

4.

Invest in Stormwater Management and Asset Maintenance

Increase provincial and federal funding for municipal stormwater infrastructure renewal and maintenance—not only new construction. Aging systems contribute to phosphorus and chloride loading, urban flooding and erosion hazards. Recognize stormwater ponds, conveyances and green-infrastructure systems as core municipal assets under Ontario's Asset-Management Planning Regulation, and create a dedicated maintenance and inspection funding stream. Improved maintenance also supports flood-plain hazard reduction, protecting existing communities and enabling more compact housing within serviced areas.

5.

Restore and Expand High-Quality Natural Cover

Establish enforceable watershed-wide natural-heritage targets with subwatershed allocations and timelines. Fund land securement, riparian buffers and wetland restoration through joint federal–provincial programmes. As an example, work with adjacent private landowners near the Black River, Maskinonge River and Lake Simcoe shoreline, and/or to expand the Scanlon Creek Conservation Area. Require net-gain natural cover in major developments and integrate targets with the LSRCA's Natural Heritage System and Restoration Strategy.

6.

Cut Property Taxes to Clean the Lake

Expand Ontario's Conservation Land Tax Incentive Program (CLTIP) and create a Lake Simcoe Riparian Tax Exemption to exempt naturalized areas within thirty metres of streams and rivers from municipal taxation. This incentive would reward landowners who maintain or restore vegetated buffers that reduce runoff, mitigate flooding and enhance habitat. Municipal revenues could be backfilled through a modest provincial transfer and/or the Freshwater Action Plan.

7.

Scale and Export Municipal Best Practices

Create a trilateral Lake Simcoe Best Practices Fund to replicate and scale-up successful municipal pilots—such as Bradford's snow-filtration site, Aurora's LID retrofits and Georgina's stormwater filter and salt-management programmes—across the watershed. Funded municipalities would submit phosphorus and chloride reduction projections, share technical designs and contribute performance data to a public dashboard.

8.

Build a Public Lake Simcoe Dashboard

Develop a map-based, public-facing platform showing timely water-quality data, septic-inspection results, sewage-treatment performance and beach conditions. Host jointly through MECP and the LSRCA, with federal funding support, ensuring open data, transparency and accountability.

9.

Enable Compact, Climate-Ready Housing in Serviced Areas

Integrate flood-plain hazard mitigation, culvert upgrades and stormwater retrofits into municipal growth strategies to unlock housing within existing settlement boundaries—allowing communities to grow up, not out. Provincial and federal infrastructure programmes should prioritize densification projects that reduce runoff, protect natural cover and make more efficient use of existing services, helping deliver affordable, transit-oriented housing compatible with the LSPP.

10.

Ensure MZOs and Special Economic Zones Uphold the Lake Simcoe Protection Plan

Require that any Minister's Zoning Order (MZO), provincial land-use order or Special Economic Zone designation within the watershed conform to the LSPP and its objectives. Create a public disclosure and review process for proposed MZOs in the watershed, including environmental impact statements and LSRCA consultation, to maintain transparency and uphold watershed integrity.

11.

Establish an Annual Lake Simcoe Science and Policy Forum

Bring back a public science forum—co-chaired by the Science and Coordinating Committees—as an annual, day-long conference to share research findings, policy updates and municipal progress. This forum would strengthen knowledge translation, data coordination and accountability, ensuring decisions remain grounded in the best available science and engaging citizens and partners in adaptive management.

12.

Deliver All-Day, Two-Way Regional Express Rail (RER) on the Barrie GO Line and Strengthen Regional Connectivity

Prioritize fifteen-minute, all-day, two-way service on the Barrie GO Line—serving Barrie, Innisfil, Bradford, East Gwillimbury, Newmarket and Aurora—and study a Bloomington-to-Keswick extension. Include a Pefferlaw stop on the Ontario Northlander to connect eastern Lake Simcoe communities. Upgrading rail corridors would also replace undersized culverts, thereby reducing flood risk, restoring hydrologic connectivity and enabling higher-density housing within existing settlement boundaries near transit stations.

13.

Protect and Strengthen Conservation Authority Governance

Amend legislation to restore the LSRCA's planning and review powers over development applications, ensuring consistency with watershed standards and the LSPP. Ensure any consolidation of Ontario's conservation authorities into larger regional bodies does not dilute local scientific focus or shift resources away from Lake Simcoe's needs. Reinvest in the LSRCA's scientific, policy and monitoring capacity so it can continue leading integrated watershed management.

Conclusion: Time to Restore the Spirit—and the Tools—of the Plan

The Lake Simcoe Protection Plan remains Ontario's strongest watershed-based environmental strategy.

It is not broken, but it is under pressure. Its success depends not only on clear goals but on full commitment from governments, municipalities, conservation authorities and the public. Isolated capital investments alone are no substitute for a sustained strategy.

This past decade has shown what can work: snow filtration, phosphorus reduction, buffer strips, green infrastructure and stormwater retrofits. The Phosphorus Reduction Facility is a good project, and every effort must be made to bring it online quickly as it is long overdue.

But local efforts are not enough. Without alignment and sustained investment from provincial and federal governments, these innovations will remain scattered and insufficient.

Protecting Lake Simcoe requires transparent governance, modernized scientific oversight and coordinated funding. We must restore the plan to the strength, clarity and shared purpose it had in 2009.

With political will and intergovernmental cooperation, Lake Simcoe can once again become a provincial and national success story in watershed recovery.

Let us protect the plan that protects the lake.

APPENDIX

Methodology

This assessment draws upon federal and provincial reports, legislation, academic literature and local monitoring data to compare two periods of implementation: 2008–2013, representing the early benchmark years following adoption of the LSPP, and 2020–2025, reflecting current trends under recent policy changes.

Indicators were assessed using a “Better / Same / Worse” framework to summarize direction of change, supported by quantitative data wherever available. Qualitative policy shifts were considered where measurable data was unavailable. Limitations include data gaps caused by cancelled programmes, lagging ecological indicators such as fish recruitment, and incomplete public reporting at the subwatershed level.

APPENDIX

Indicator Assessment Summary

Indicator	2008-2013	2020-2025	Trend
Wetland protection	Strong buffers, LSRCA oversight	Buffers reduced, LSRCA role curtailed	⬇ Worse
Forest cover protection	40% HQNC target, NHS mapping required	NHS mapping revoked, no binding targets	⬇ Worse
Phosphorus load	Effluent upgrades, still >80 t/yr	~88 t/yr, above 44 t/yr target	⬇ Worse
Dissolved oxygen	Improved vs 1990s, still <7 mg/L	4.0–6.9 mg/L, variable	⬆ Slight Improvement
Fish health	Cisco & burbot improving	Trout/whitefish declining	⊖ Mixed
Chloride (road salt)	Rising, spikes >6,000 mg/L	Avg. ~61 mg/L, peaks >26,000 mg/L	⬇ Worse
Impervious cover	Watershed 3.4→4.3%	Watershed ~5%	⬇ Worse [1]
Invasive species	Zebra mussels dominant, goby emerging	Quagga/stonewort/water soldier present	⬇ Worse
Capital investment	$59.9M Clean-Up Fund, 200+ projects	One $40M facility, ad hoc funding	⊖ Same
Natural cover (forests, wetlands, meadows)	40% target set but actual sat at 28-34%	28–34%	⊖ Same
Harmful algal blooms (cyanobacteria)	Sporadic advisories	Recurring advisories 2023–24	⬇ Worse
Chloride / Sodium	~40 mg/L Cl	~61 mg/L Cl + rising sodium in DW sources	⬇ Worse

1. While overall impervious surface area in the Lake Simcoe watershed has increased with population growth, the rate of increase has been slower than population growth itself. On a per-capita basis, imperviousness is actually declining, reflecting the success of municipal intensification policies and compact development in limiting sprawl. This demonstrates that growth management and urban intensification can reduce the per-person impact on water quality and quantity, even as total land coverage rises.

A. Wetland protection

Time Period	Policy/Action	Observed Impact
2008-2013	100 m buffers; LSRCA oversight intact	Strong, consistent protection
202-2025	Bill 23 reduced buffers to 30 m; complexes delisted	Legislative change has created a risk of fragmentation

B. Forest cover

Time Period	Policy/Action	Observed Impact
2008-2013	40% HQNC target; NHS mapping required	~34–35% forest cover
202-2025	NHS mapping revoked; no binding woodland target	Fragmentation, discretionary only, slight increase from 33% to 34% per LSRCA

C. Phosphorus loads

Time Period	Policy/Action	Observed Impact
2008-2013	LSCUF $59.9M, 200+ projects	Sewage effluent improved; >80 t/yr
202-2025	Major facility funded	~88 t/yr; facility expected 2–10 t/yr reduction

D. Dissolved oxygen

Time Period	Observed vs Target (7 mg/L)
2008-2013	Improved vs 1980s, but <7 mg/L
202-2025	4.0–6.9 mg/L; highly variable

E. Fish health

Species	2008-2013	2020-2025	Trend
Lake trout	Minimal wild reproduction	Still reliant on stocking	Worse
Whitefish	Weak recruitment	Declining further	Worse
Cisco	Strong cohorts (2004/08/12)	Recruitment variable	Same
Burbot	Increasing CPUE	Continued increase	Better
Brook trout	Declining in tributaries	Stable	Same

F. Chloride (road salt)

Period	Avg. Lake Conc.	Tributary Spikes	Trend
2000s	~36–40 mg/L	>6,000 mg/L	Worse
2020-2025	~61 mg/L (2024)	>26,000 mg/L in Newmarket, 2025)	Worse

G. Impervious Cover

Area	2008-2013	2020-2025	Trend
Watershed average	3.4% → 4.3%	~5%	Worse [1]

1. With population growth, the 'per capita' rate of worsening has slowed

H. Invasive Species

Species	2008-2013	2020-2025	Trend
Round goby	Rapid spread	Widespread, dominant	Worse
Zebra mussel	Dominant benthos	Declined, replaced by quagga	Better
Quagga mussel	Low abundance	Now dominant	Worse
Starry stonewort	Spread after 2009	Still widespread albeit declining in a 'boom to bust' cycle	Mixed
Water soldier	Absent	Confirmed 2024	Worse

I. Major Capital Investments

Project	Cost	Impact	Trend
Federal Clean-Up Fund (2007–17)	$59.9M	200+ projects; 2–4 t/yr reduction	Better
Phosphorus Reduction Facility	$40M	Expected 2–10 t/yr reduction	Better
Barrie WWTF upgrade	$261M	Major nutrient removal gains	Better
Innisfil WWTP expansion	$290M	Growth offset, phosphorus neutral	Same
Pond retrofit backlog	$117M	Potential 7 t/yr reduction (unfunded)	Worse

APPENDIX

References

BarrieToday.com. (2022, March 30). Oldest asset in the city: Wastewater treatment facility in line for $261M retrofit. https://www.barrietoday.com/local-news/oldest-asset-in-the-city-wastewater-treatment-facility-in-line-for-261m-retrofit-5199424

BarrieToday.com. (2023, April 18). Innisfil's water pollution control plant expansion pegged at $290M. https://www.barrietoday.com/local-news/innisfils-water-pollution-control-plant-expansion-pegged-at-290m-9250389

Canadian Council of Ministers of the Environment. (2011). Canadian water quality guidelines for the protection of aquatic life: Chloride. https://ccme.ca/en/res/chloride-canadian-water-quality-guidelines-for-the-protection-of-aquatic-life

City of Barrie. (2017). Wastewater treatment facility expansion – Environmental reports. https://www.barrie.ca/Wastewater-Treatment-Facility-Annual-Environmental-Reporting.pdf

City of Barrie. (2018). Salt management plan update. https://www.barrie.ca/sites/default/files/2022-07/Salt-Management-Plan.pdf

City of Orillia. (2016). Comprehensive stormwater master plan. https://www.orillia.ca/en/living-here/StormwaterMasterPlan.aspx

Convention on Biological Diversity. (2010). Strategic plan for biodiversity 2011–2020 and the Aichi biodiversity targets. https://www.cbd.int/sp/targets

Credit Valley Conservation, & Toronto and Region Conservation Authority. (2010). Low impact development stormwater management planning and design guide. https://cvc.ca/planning-permits/low-impact-development

Dupuis, L. (2021). Effects of zebra and quagga mussels on the benthic ecosystem of Lake Simcoe (Master's thesis). Lakehead University. https://knowledgecommons.lakeheadu.ca/handle/2453/4793

Eimers, M. C., Winter, J. G., Scheider, W. A., Watmough, S. A., & Nicholls, K. H. (2005). Recent changes and patterns in the water chemistry of Lake Simcoe, Ontario (1970–2001). Journal of Great Lakes Research, 31(3), 322–332. https://doi.org/10.1016/S0380-1330(05)70264-3

Environment and Climate Change Canada. (2012). Lake Simcoe Clean-Up Fund (2007–2012) results. Government of Canada. https://open.canada.ca/data/en/dataset/34af74b4-727e-4784-b21f-db822a5a2cdc

Environment and Climate Change Canada. (2017). Lake Simcoe/South-eastern Georgian Bay Clean-Up Fund (2012–2017). Government of Canada. https://www.canada.ca/en/environment-climate-change/services/evaluations/lake-simcoe-south-eastern-georgian-bay-fund.html

Environment and Climate Change Canada. (2024). Canada Water Agency – Mandate. Government of Canada. https://www.canada.ca/en/canada-water-agency/corporate/mandate.html

Environment Canada. (1991). The federal policy on wetland conservation. Government of Canada. https://publications.gc.ca/site/eng/100725/publication.html

Evans, D. O., & Willox, C. C. (1991). Loss of exploited, indigenous lake trout, Salvelinus namaycush, populations in Canadian lakes: Causes, consequences, and management. Canadian Journal of Fisheries and Aquatic Sciences, 48(S1), 134–147. https://doi.org/10.1139/f91-313

Evans, D. O., Nicholls, K. H., Allen, Y. C., & McMurtry, M. J. (1996). Historical land use, phosphorus loading, and loss of fish habitat in Lake Simcoe, Canada. Canadian Journal of Fisheries and Aquatic Sciences, 53(S1), 194–218. https://doi.org/10.1139/cjfas-53-S1-194

Fisheries and Oceans Canada. (2013). Fisheries Act, R.S.C., 1985, c. F-14. https://laws-lois.justice.gc.ca/eng/acts/f-14

Fisheries and Oceans Canada. (2015). Aquatic invasive species regulations (SOR/2015-121), Fisheries Act. https://laws-lois.justice.gc.ca/eng/regulations/SOR-2015-121

Ginn, B. K. (2021). Impacts of an invasion of starry stonewort (Nitellopsis obtusa) in Lake Simcoe, Canada. Lake and Reservoir Management, 37(1), 1–12. https://doi.org/10.1080/10402381.2020.1859025

Government of Canada. (2018). Canada's 6th national report to the Convention on Biological Diversity. Environment and Climate Change Canada. https://www.cbd.int/doc/nr/nr-06/ca-nr-06-en.pdf

Government of Canada. (2021). Ballast water regulations, 2021, Canada Shipping Act, 2001. https://laws-lois.justice.gc.ca/eng/regulations/SOR-2021-120

Government of Canada. (2022). Canada's 2030 biodiversity strategy: Protecting 30 percent of land and waters by 2030. Environment and Climate Change Canada. https://www.canada.ca/en/environment-climate-change/services/biodiversity/2030-nature-strategy.html

Government of Ontario. (2010). Lake Simcoe phosphorus reduction strategy. Ministry of the Environment. https://www.ontario.ca/page/lake-simcoe-phosphorus-reduction-strategy

Government of Ontario. (2022). Bill 23 – More Homes Built Faster Act, 2022. https://www.ontario.ca/laws/statute/s22021

Government of Ontario. (2022, December 22). Amendments to the Ontario Wetland Evaluation System (ERO #019-6160). https://ero.ontario.ca/notice/019-6160

Government of Ontario. (2024). Ontario Regulation 41/24: Prohibited activities, exemptions and permits. Conservation Authorities Act. https://www.ontario.ca/laws/regulation/240041

Hintz, W. D., & Relyea, R. A. (2019). A review of road salt impacts on freshwater ecosystems. Environmental Science & Technology, 53(19), 11419–11429. https://doi.org/10.1021/acs.est.9b03411

Infrastructure Canada. (2021). Disaster Mitigation and Adaptation Fund (DMAF). https://www.infrastructure.gc.ca/dmaf-faac/index-eng.html

Kelly, N. E., Young, J. D., Winter, J. G., & Yan, N. D. (2013). Dynamics of the spiny water flea (Bythotrephes longimanus) invasion in Lake Simcoe, Ontario. Biological Invasions, 15(8), 1859–1871. https://doi.org/10.1007/s10530-013-0413-3

Lake Simcoe Region Conservation Authority. (2018). Natural heritage system and restoration strategy. https://lsrca.on.ca/wp-content/uploads/2023/07/Natural-Heritage-Systems-Restoration-Strategy-opt.pdf

Lake Simcoe Region Conservation Authority. (2021). Phosphorus in the watershed. https://lsrca.on.ca/index.php/watershed-health/phosphorus

Lake Simcoe Region Conservation Authority. (2007). Lake Simcoe Basin Stormwater Management & Retrofit Opportunities. https://lsrca.on.ca/wp-content/uploads/2023/08/Lake-Simcoe-Basin-SWM-Retrofit-Opportunities-opt.pdf

Lake Simcoe Region Conservation Authority. (2023a). Chloride monitoring and salt vulnerable areas. https://lsrca.on.ca/index.php/watershed-health/salt

Lake Simcoe Region Conservation Authority. (2023b). Climate change adaptation strategy for the Lake Simcoe watershed. https://lsrca.on.ca/wp-content/uploads/2023/10/Climate-Change-Adaptation-Strategy-opt.pdf

Lake Simcoe Region Conservation Authority. (2023c). Phosphorus offsetting policy. https://lsrca.on.ca/wp-content/uploads/2023/06/Phosphorus-Offsetting-Policy.pdf

Li, J., Young, J. D., Winter, J. G., & Molot, L. A. (2018). Long-term changes in hypolimnetic dissolved oxygen in a large lake: Effects of invasive mussels, eutrophication and climate change on Lake Simcoe, 1980–2012. Journal of Great Lakes Research, 44(5), 743–752. https://doi.org/10.1016/j.jglr.2018.05.016

North, R. L., Livermore, J., Dittrich, M., et al. (2013). Evidence for internal phosphorus loading and climate change as drivers of hypoxia in Lake Simcoe. Inland Waters, 3(2), 207–223. https://doi.org/10.5268/IW-3.2.614

Ontario Ministry of the Environment. (2009). Lake Simcoe Protection Plan. Queen's Printer for Ontario. https://www.ontario.ca/page/lake-simcoe-protection-plan

Ontario Ministry of the Environment, Conservation and Parks. (2020). Minister's annual report on Lake Simcoe. https://www.ontario.ca/page/ministers-annual-report-lake-simcoe

Ontario Ministry of the Environment, Conservation and Parks. (2023). Minister's annual report on Lake Simcoe 2023. https://www.ontario.ca/page/2023-ministers-annual-report-lake-simcoe

Ontario Ministry of Natural Resources and Forestry. (2011). Fish community objectives for Lake Simcoe. https://www.ontario.ca/page/fish-community-objectives-lake-simcoe

Ontario Ministry of Natural Resources and Forestry. (2014). COSEWIC assessment and status report on Lake Whitefish in Canada. Committee on the Status of Endangered Wildlife in Canada. https://www.cosewic.ca

Ontario Ministry of Natural Resources and Forestry. (2017). Ontario's wetland conservation strategy 2017–2030. https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf

Ontario Ministry of Natural Resources and Forestry. (2024). 2024 Ontario fishing regulations summary. https://www.ontario.ca/files/2024-04/mnrf-fishing-regulations-summary-en-2024-04-10_0.pdf

Ontario Nature. (2024). Wetlands under threat after OWES changes. https://ontarionature.org/bad-news-for-wetlands-owes-blog

O'Connor, E. M., Winter, J. G., & Dillon, P. J. (2015). Long-term chloride trends in Lake Simcoe and its tributaries: Mass balance and ecological risk. Water Quality Research Journal of Canada, 50(2), 131–146. https://doi.org/10.2166/wqrjc.2011.124

Rescue Lake Simcoe Coalition. (2021, November 9). Take action to protect our forests and natural spaces! https://rescuelakesimcoe.org/2021/11/09/take-action-to-protect-our-forests-and-natural-spaces

Rescue Lake Simcoe Coalition. (2024, February 15). Lake Simcoe health update 2024. https://rescuelakesimcoe.org/2024/02/15/lake-simcoe-health-update-2024

Rescue Lake Simcoe Coalition. (2025, July 17). Salt: A substance that eats through our infrastructure and budgets. https://rescuelakesimcoe.org/2025/07/17/salt-a-substance-that-eats-through-our-infrastructure-and-budgets

Schueler, T. R., Fraley-McNeal, L., & Cappiella, K. (2009). Is impervious cover still important? Review of recent research. Journal of Hydrologic Engineering, 14(4), 309–315. https://doi.org/10.1061/(ASCE)1084-0699(2009)14:4(309)

Winter, J. G., Eimers, M. C., & Dillon, P. J. (2011). Increasing chloride concentrations in Lake Simcoe and its tributaries. Water Quality Research Journal of Canada, 46(2), 131–146. https://doi.org/10.2166/wqrjc.2011.124

Young, J. D., Young, J. O., & Molot, L. A. (2011). Changes in the thermal stability of Lake Simcoe from 1980 to 2008. Journal of Great Lakes Research, 37(3), 507–513. https://doi.org/10.1016/j.jglr.2011.02.001

APPENDIX

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