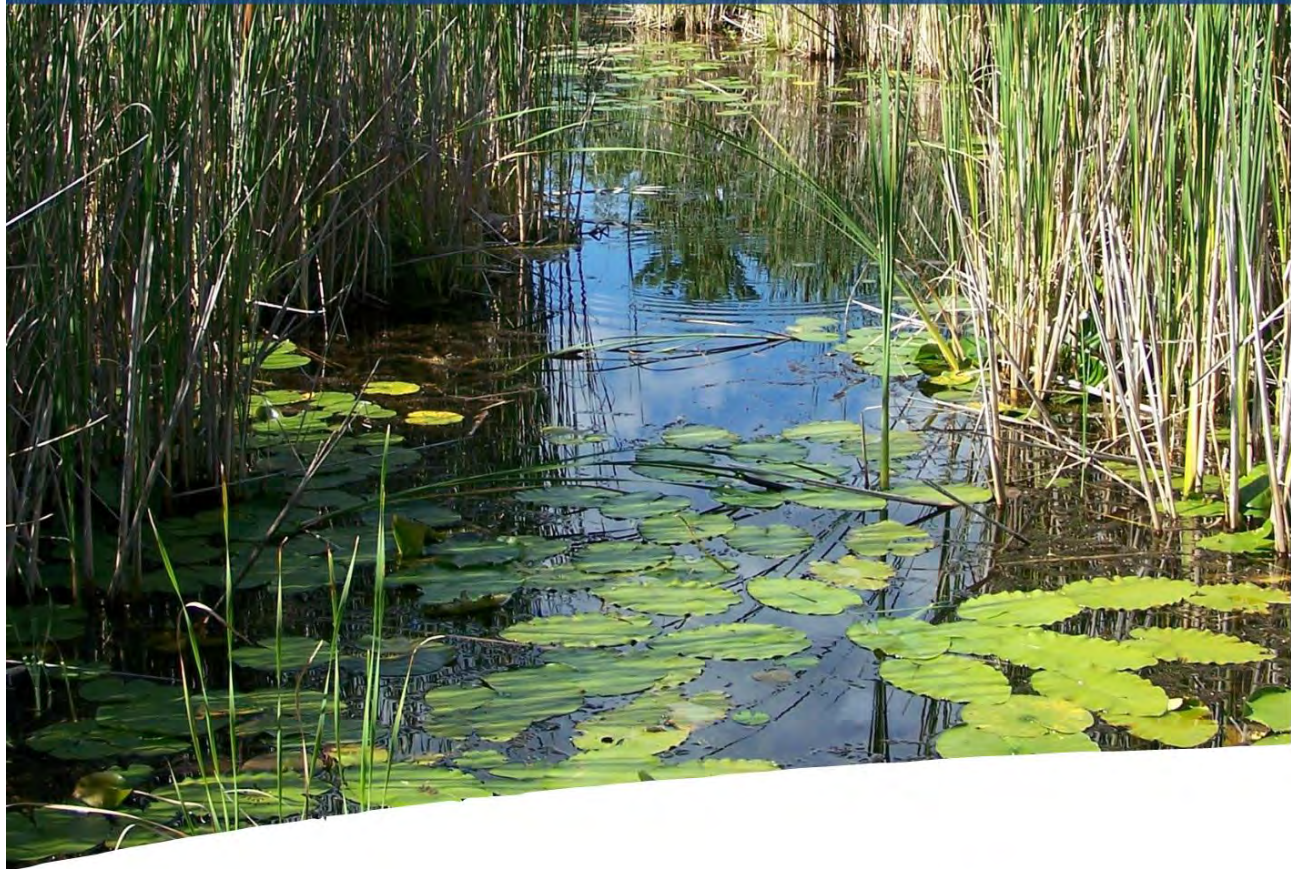




Lake Management Implementation Action Plan



**KAWARTHA
CONSERVATION**

Discover • Protect • Restore

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Executive Summary

The Kawartha Lakes are an important contributor to our economic growth. We need to continue protecting our healthy fisheries, clear water, and access to our lakes for recreational activities for now and for generations to come.

Our community is growing and so are the demands. Kawartha Conservation along with its many partners continue to work towards protecting and enhancing our lakes through our strategic goals of a healthy environment, a vibrant growing community, and supporting an exceptional quality of life. Kawartha Conservation will use this plan to prioritize Lake Management Plan recommendations to develop innovative programs, and improving existing programs that align with the goals laid out in the Healthy Environment Plan (2019) and Kawartha Lakes Strategic Plan (2022-2023) for the City of Kawartha Lakes.

Kawartha Conservation developed the Lake Management Implementation Action Plan and programs to address high priority recommendations in 2019. For the last four years, these programs have been successfully operating and generating positive impacts within our community. The health of our lakes has been improved by planting over 111,000 trees and shrubs, naturalizing 5,580ft of shoreline, and leveraging over \$322,000 in landowner contributions to private land implementation projects. We want to continue these improvements through our new plan. By updating our programs and building on our successes, we are improving water quality, building community awareness and involvement, and attracting additional investment into our municipality.

Kawartha Conservation has consulted with many stakeholders, including Lake Associations, shoreline communities, the agricultural community, City of Kawartha Lakes council and staff, as well as representatives from our real estate and business sector. This plan is the result of the collaboration within our community.

Program activities are ranked in priority, each program in its own context and on its own timeline. Costing is forecasted over five years, with the usual caveat that budgets are approved only annually. The five-year budget forecast for the recommended programs is attached to this Executive Summary as Table 1. The first-year budget request for 2024 Municipal Investment is \$527,546.

Program summaries as follows:

1. Incentive Grant Program
 - a. Kawartha Water Fund - provides private landowners and community groups with financial support through micro-grants to implement environmental projects that will have a direct impact on the health of our lakes.
2. Implementation Outreach Program
 - a. Partner and Community Engagement - continue collaboration with our partners through presentations, attendance at local events, online newsletter, website, and social media updates, etc. to ensure that the actions recommended in the Lake Management Plans are being met.
 - b. Sedimentation and Erosion Control - continue to develop partnerships with the City of Kawartha Lakes and industry professionals to pilot innovative monitoring technologies and ensure good erosion and sediment control measures.
3. Rural Program
 - a. Agricultural Stewardship - offer technical services and incentives to the farming community to increase the number of implementation Best Management Practices (BMP's), including

- exclusion fencing, barnyard eavestroughs, manure control and other projects that will achieve the Lake Management Plan recommendations.
- b. Forestry and Tree Planting Stewardship - work with private landowners to increase forest cover across the watershed through a variety of tree planting options including urban tree planting, large scale block tree planting, and over the counter seedling sales.
 - c. Investigative Upstream Monitoring – includes the monitoring of streams which will provide information on where and what nutrients are entering our watercourses and using this data to inform stewardship initiatives.
4. Shoreline Program
- a. Waterfront Stewardship - promote naturalized and stabilized streambanks and shorelines through the implementation of on-the-ground demonstration sites, technical services provided to landowners and a semi-annual native plant sale.
 - b. Community Science Monitoring – includes working with community volunteers to proactively sample the near shore environment as part of an early warning system to identify where pollution is entering the lakes.
 - c. Bobcaygeon Dam Aquatic Habitat Assessment - address concerns surrounding the aquatic ecosystem that is immediately downstream of the Bobcaygeon Dam to determine if the negative impacts on Walleye spawning success.
5. Urban Program
- a. Stormwater Monitoring Program - monitoring urban runoff areas in Lindsay and areas that drain into the Scugog River to identify where nutrients and contaminants are entering the river and using this data to inform stewardship activities.
 - b. Urban Restoration – promote urban naturalization techniques to improve infiltration and reduce urban runoff through demonstration LID projects, collaborations with the building industry, and private land consultations.

Further information on each program can be found in Appendix A.

The Lake Management Implementation Action Plan 2024-2028 recommends approval for the following reasons:

1. Actions and programs that have a direct impact on the recommendations of the Lake Management Plans
2. The program actions support healthy communities and align with the goals laid out in the Healthy Environment Plan (2019) and the City of Kawartha Lakes Strategic Plan (2022-2023)
3. Investment in the Plan will be used to focus on in-the-ground actions.
4. The programs support healthy lakes and a healthy environment in a changing climate.

Approval of the Municipal Investment for the year 2024 - 2028 as set out in Table 1 is requested.

Table 1 – Recommended Budget

Kawartha Conservation has considered each program area at three different funding levels. The recommendations below are a result of considering a balance of effectiveness, priorities, and budget constraints.

Program	2024	2025	2026	2027	2028
1. Incentive Grant Program					
Kawartha Water Fund	\$107,500	\$107,500	\$107,500	\$107,500	\$137,800
2. Implementation Outreach Program					
Partner and Community Engagement	\$98,045	\$80,040	\$80,040	\$80,040	\$80,040
Sedimentation & Erosion Control Planning	\$24,401	\$37,640	\$37,640	\$37,640	\$49,430
3. Rural Program					
Agricultural Stewardship	\$19,000	\$22,800	\$30,200	\$22,800	\$22,800
Forestry and Tree Planting Stewardship	\$48,000	\$51,300	\$51,300	\$51,300	\$51,300
Investigative Upstream Monitoring	\$42,400	-	-	-	-
4. Shoreline Program					
Waterfront Stewardship	\$22,000	\$13,800	\$22,000	\$13,800	\$22,000
Community Science Monitoring	\$25,300	\$25,300	\$26,850	\$25,300	\$29,150
Bobcaygeon Dam Aquatic Habitat Assessment	-	-	-	-	-
5. Urban Program					
Stormwater Monitoring	\$123,300	\$100,500	\$100,500	\$100,500	\$100,500
Urban Restoration	\$17,600	\$22,300	\$31,000	\$22,300	\$22,300
Total Project Cost	\$527,546	\$461,180	\$487,030	\$461,180	\$515,320
Deferred Revenue	\$140,762	\$66,660	\$84,620	\$50,722	\$56,286
Total Municipal Investment	\$386,784	\$394,520	\$402,410	\$410,458	\$459,034
Grant Funding Leveraged	\$203,900	\$283,500	\$439,400	\$283,500	\$319,400
In-Kind Support Leveraged	\$326,550	\$297,750	\$317,350	\$297,750	\$484,350
Total Program Value	\$1,057,996	\$1,042,430	\$1,243,780	\$1,042,430	\$1,319,070

The recommendations on program levels and timelines are based on the potential impacts the programs could have on the environment and the local economy. Consideration is also put on the impact of funding from the City of Kawartha Lakes and other supporting foundations. The recommendations for programs and funding levels are expected to garner 133% return on investment over the next five-year period.

The Plan

The purpose of the plan is to provide the framework for investment in the initiatives that play an important role in the implementation of the actions recommended in the lake plans. The plan will outline the multi-year programs that will be delivered to satisfy the recommendations put forward by Kawartha Conservation while also supporting the strategic goals of the City of Kawartha Lakes. The goal of the Lake Management Implementation Action Plan 2024-2028 is to continue to build on the momentum created from the previous plan and to continue to foster the effective use of limited resources across partnering agencies to improve the economic, social, and environmental wellbeing of our lakes and our lake communities.

Implementation Success

The first Lake Management Implementation Action Plan began in January of 2019, and will run until the end of 2023. The program area incorporated actions geared towards rural, urban and shoreline landowners. Each program area targeted different priorities and set out to accomplish incredible milestones (Appendix C).

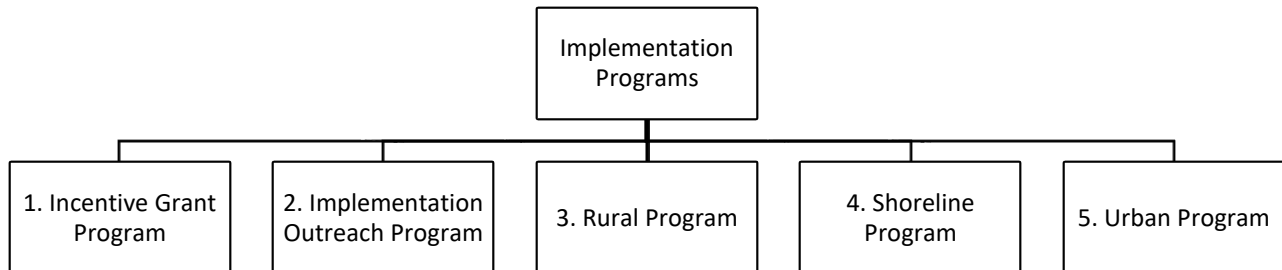
Even with unforeseen circumstances including the COVID-19 pandemic, each program area saw important implementation achievements. A key example of achievements includes the Incentive Grant program. In the first 4 years, at the time this action plan was written, this program granted a total of \$169,693 between community groups and private landowners and leveraged \$322,953. Projects completed through that program include exclusion fencing, rain garden plantings, tree plantings, shoreline naturalization, well decommissioning and more. The Landowner Incentive fund saw the completion of 26 agricultural, 25 rural, 23 waterfront and 5 urban projects on private land throughout the City of Kawartha Lakes. These “boots on-the-ground” projects are key to working towards the recommended actions from the Lake Management plans.

Kawartha Conservation program leaders continued to build strong relationships in our community through attendance at and hosting workshops, symposiums, and online program events. Building healthy relationships with community members, including developers, community groups and local contractors, helps to continuously raise awareness of the importance of implementation actions and the programs that were designed to protect and enhance our watershed. Furthermore, Kawartha Conservation staff successfully implemented projects that contributed to the restoration of 5,580ft of shoreline, plantings of over 111,205 trees and shrubs and plantings of over 6,150 native plant species within our watershed.

Kawartha Conservation and its partners intend to build on these successes and continue to improve the health of our watershed. Keeping the momentum going from the previous five years will be vital in ensuring that the actions recommended in the Lake Management Plans continue to be implemented and that promoting awareness of our programs remains a constant at all levels.

Recommendations

Kawartha Conservation has recommended the following implementation program areas. Funding is provided by City of Kawartha Lakes, government agencies and in-kind contributions.



Implementation Program Areas

Each of the following programs will impact the three unique communities within our watershed, this includes our rural, shoreline, and urban areas. Each of these communities have different needs and require different remedial actions which are outlined in the prioritization matrix (Appendix B). Programs were identified and designed so that they can meet the actions required for each community as well as meet the goals laid out in the Lake Management Plans, City of Kawartha Lakes Healthy Environment Plan, and the Stewardship Strategy.

1. Incentive Grant Program:

The **Kawartha Water Fund** program was created to support private landowners and community groups that are interested in undertaking projects on their properties that demonstrate actions from the Lake Management Plans. The program provides financial support in the way of small micro grants to private landowners and community groups who wish to implement environmental projects that will improve water quality. This is a cost sharing program that leverages cash and in-kind contributions from the landowners, community groups and other agencies. Kawartha Conservation administers and reports on the funding under the guidance of a grant selection committee. More information about this program can be found on page 3 of Appendix A.

2. Implementation Outreach Program:

Partner and Community Engagement will continue to build collaboration with our partners at various levels to ensure that the programs are meeting the actions recommended in the Lake Management Plans. To ensure that our community continues to be engaged and involved, the program proposes to extend outreach through presentations and attendance at local events and engage residents through an online newsletter publication that will showcase Kawartha Conservations programs and news from our partner agencies. For more information about this program see page 6 of Appendix A.

The **Sedimentation and Erosion Control Planning Program** will advance erosion and sediment control practices for projects in and around water for construction and construction related industries. The release of materials from construction and development sites to local watercourses can have significant

long-term impacts on water quality, community aesthetics, fish habitat and others. For more information regarding this program see page 8 of Appendix A.

3. Rural Program:

The **Agricultural Stewardship** program will offer a range of technical services and incentives to the farming community to increase the number of implementation Best Management Practices (BMP's) within the Kawartha Lakes. These projects include activities such as exclusion fencing, barnyard eavestroughs, manure control and other projects that will help improve water quality and the health of our community. For more information about how this program will improve water quality see page 12 of Appendix A.

The **Forestry and Tree Planting Stewardship** will help to build the tree cover of our watershed from the current level of 21% to the recommended level of 30%. This program will increase forest cover through private landowner tree plantings, community plantings, an urban tree program and an over-the-counter seedling sale. Increased forest cover will reduce erosion, increase natural habitat, support water balance, and help to sustain a community that is more resilient in the face of climate change. For more information on how this program will increase our watersheds tree cover see page 14 of Appendix A.

The **Investigative Upstream Monitoring Program** is designed to identify areas where nutrients and contaminants are entering streams and ultimately ending up in our lakes. By identifying the sources of these nutrients, priority areas for restoration can be identified and partnerships with landowners can be made. For more information on the final year of this project see page 16 of Appendix A.

4. Shoreline Program:

The **Waterfront Stewardship** program works with private landowners and the municipality to achieve naturalized and stabilized streambanks and shorelines through the implementation of on-the-ground demonstration sites. These projects will address issues such as erosion, nutrient runoff, and aquatic plant control. Restoring the delicate interface of where land meets our lakes and rivers is vital to improving water quality. For more information on how waterfront stewardship will help improve water quality see page 20 of Appendix A.

The **Community Science Monitoring Program** will work with community members to establish and maintain a community monitoring network that will focus on monitoring the nearshore zone of the lakes within the watershed. The information gathered will be presented to the community to raise awareness of water quality needs and will help identify potential sites for stewardship projects. For more information on this project see page 22 of Appendix A.

The **Bobcaygeon Dam Aquatic Habitat Assessment** program will address concerns raised by the local community surrounding the aquatic ecosystem that is immediately downstream of the Bobcaygeon Dam, as exemplified by the Save the Walleye Campaign. The area is recognized as an important fishery and this project will monitor the spawning habitat conditions to determine if the Bobcaygeon Dam is negatively impacting the Walleye spawning success. For more information on this program and its program partners see page 24 of Appendix A.

5. Urban Program:

The **Stormwater Monitoring** program will focus on monitoring the urban runoff areas in Lindsay that drain into the Scugog River. Urban runoff can negatively impact water quality in various ways, and this monitoring will help identify key areas requiring restoration and the types of restoration required to address the site-specific conditions. This program will help to inform developers on proper stormwater management techniques and provide information needed to develop Low Impact Development (LID) site plans and community stewardship plans. For more information see page 27 of Appendix A.

The **Urban Restoration** program works alongside the stormwater monitoring program to encourage the building of resilient communities through implementation of natural infrastructure-based demonstration sites within core urban areas. The program will concentrate on working with the municipality to identify key locations for public Low Impact Development (LID) sites to create alternatives to conventional stormwater management practices. Working with the development community to showcase lot level designs on new builds will help promote urban stewardship practices for new home buyers. This program will also empower private landowners to make changes on their properties through free downloadable landscape templates from Kawartha Conservation. For more information on this program see page 29 of Appendix A.

Conclusion

Continuing to implement the priority recommendations from the Lake Management Plans is a vital part of the health of our communities and our watershed. The programs proposed in this 5-year Action Plan will continue to build on our knowledge of how to improve our water quality, build increased understanding and capacity amongst our unique communities, and attract additional investment to our municipality. Our lakes are an important part of our economy, our quality of life and our environment.

The Action Plan will continue to foster effective use of resources to improve economic, social, and environmental wellbeing of our watershed to continue to build and support the communities that we live, work, and play in. Kawartha Conservation recommends proceeding with the programs and investments that are laid out in this plan. Following through with the recommendations will result in a return on investment of 133%.

The following table provides recommendations on when programs should be introduced, and the funding level associated with the recommendations. These recommendations are a result of considering a balance of effectiveness, priorities, and budget constraints.

Table 1-1: Proposed 5-Year Implementation Program and Timelines.

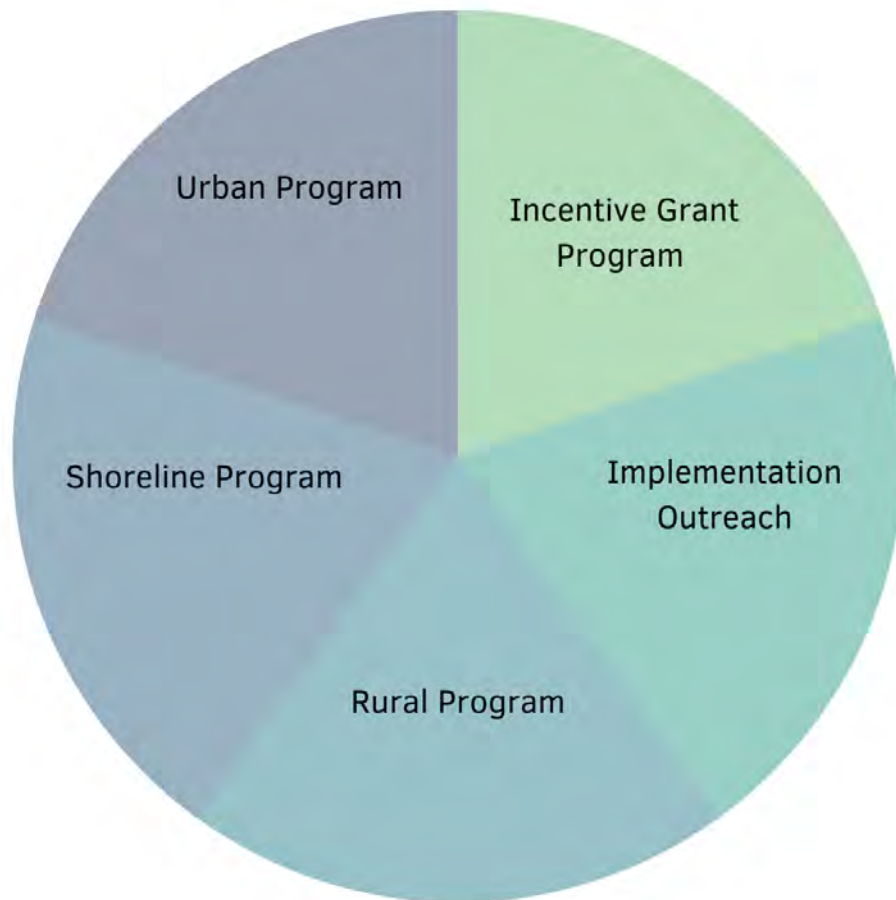
Program	2024	2025	2026	2027	2028
Incentive Grant Program					
Kawartha Water Fund	\$107,500	\$107,500	\$107,500	\$107,500	\$137,800
Implementation Outreach Program					
Partner and Community Engagement	\$98,045	\$80,040	\$80,040	\$80,040	\$80,040
Sedimentation & Erosion Control Planning	\$24,401	\$37,640	\$37,640	\$37,640	\$49,430
Rural Program					
Agricultural Stewardship	\$19,000	\$22,800	\$30,200	\$22,800	\$22,800
Forestry and Tree Planting Stewardship	\$48,000	\$51,300	\$51,300	\$51,300	\$51,300
Investigative Upstream Monitoring	\$42,400	-	-	-	-
Shoreline Program					
Waterfront Stewardship	\$22,000	\$13,800	\$22,000	\$13,800	\$22,000
Community Science Monitoring	\$25,300	\$25,300	\$26,850	\$25,300	\$29,150
Bobcaygeon Dam Aquatic Habitat Assessment	-	-	-	-	-
Urban Program					
Stormwater Monitoring	\$123,300	\$100,500	\$100,500	\$100,500	\$100,500
Urban Restoration	\$17,600	\$22,300	\$31,000	\$22,300	\$22,300
Total Project Cost	\$527,546	\$461,180	\$487,030	\$461,180	\$515,320
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Grant Funding Leveraged	\$203,900	\$283,500	\$439,400	\$283,500	\$319,400
In-Kind Support Leveraged	\$326,550	\$297,750	\$317,350	\$297,750	\$484,350
Total Program Value	\$1,057,996	\$1,042,430	\$1,243,780	\$1,042,430	\$1,319,070

Level 1	Level 2	Level 3
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Information on the various levels and associated deliverables can be found in Appendix A.

Appendix A

Program Descriptions



1. Incentive Grant Program

The Incentive Grant program contains the following detailed programs:

Kawartha Water Fund

The Kawartha Water Fund now combines the Community Grant Program and the Landowner Incentive Fund into one program area. The chart below indicates the funding for both areas combined, this allows for more flexibility and efficiency within the program.

Level 1
Level 2
Level 3

		2024	2025	2026	2027	2028
Kawartha Water Fund						
	Municipal Contribution/Deferred Revenue	\$107,500	\$107,500	\$107,500	\$107,500	\$137,800
	Grant Funding Leveraged					
	Support Leveraged	\$215,000	\$215,000	\$215,000	\$215,000	\$375,000
	Total Project Value	\$322,500	\$322,500	\$322,500	\$322,500	\$512,800

Kawartha Water Fund

Program Lead: Landowner and Community Support

Program Partners: City of Kawartha Lakes, Private Landowners, Cottage and Community Organizations, Non-profit Organizations

Recommended Funding Level: Level 2 for 2024-2027
Level 3 for 2028

Since 2019, 70 landowners have been granted \$123,000 in funding, leveraging an additional \$491,659 in community investment. 367 meters of waterfront was restored, and 11,500 native trees, shrubs, and perennials were planted. 9 community groups have been granted \$47,000, leveraging an additional \$122,500 in community investment. 95 metres of waterfront was restored, and 400 native trees, shrubs, and perennials were planted.



A community raingarden planting completed with funding through the Kawartha Water Fund.

Much of the land base in the City of Kawartha Lakes is privately owned. Kawartha Conservation seeks to support and partner with private landowners to implement environmental projects that improve water quality. Actions taken on private property can have a big impact on the overall health and wellbeing of our community's shared water resources.

The Kawartha Water Fund program provides private landowners and community groups with support to implement environmental projects that will have a direct impact on the health of our lakes. This is a cost sharing program that leverages cash and in-kind contributions from the landowners, community groups and other agencies. The Water Fund is now a well-known program for landowners in Kawartha Lakes. Eligible landowner projects include agricultural Best Management Practices (BMPs), shoreline/streambank erosion control and naturalization, and Low Impact Development (LID) projects to reduce stormwater impacts on private property. The Water Fund is also available for locally led non-profit community organizations. Community group projects include aquatic plant control measures, establishing community rain gardens, undertaking water-based research studies, implementing invasive species mitigation programs, and other projects that increase community awareness, involvement, and health. The Kawartha Water Fund is designed to inspire further investment from other agencies, while empowering change for land stewardship behaviours in our community.

Private landowner and community group contributions and commitments are required to obtain healthy watershed goals. Stewardship staff offer free phone and on-site consultations to aid in the preparation of appropriate project proposals. Additionally, where appropriate on a site-specific level, Integrated Watershed Management staff will monitor environmental KPIs before and after project implementation to determine the effectiveness of Kawartha Water Fund projects. This program is important as it builds relationships in our community, engages with community members in environmental action and creates a positive, trust-filled reputation in our watershed.

Kawartha Water Fund

Level 1	Level 2	Level 3
<ul style="list-style-type: none"> ✓ Increase landowner awareness and engagement through Landowner and Community Grants webpage updates ✓ Present at 2 cottage owner association meetings and community events ✓ Award 20 landowners and 3 community groups with funding to implement environmental projects to improve water quality ✓ Monitor environmental quality characteristics at project sites if applicable 	<ul style="list-style-type: none"> ✓ Increase landowner awareness and engagement through Landowner and Community Grants webpage updates ✓ Present at 3 cottage owner association meetings and community events ✓ Award 25 landowners and 4 community groups with funding to implement environmental projects to improve water quality ✓ Monitor environmental quality characteristics at project sites if applicable 	<ul style="list-style-type: none"> ✓ Increase landowner awareness and engagement through Landowner and Community Grants webpage updates ✓ Present at 5 cottage owner association meetings and community events ✓ Award 33 landowners and 5 community groups with funding to implement environmental projects to improve water quality ✓ Monitor environmental quality characteristics at project sites if applicable
<p>Municipal funding: \$80,800 Grant funding: \$0 Support leveraged: \$160,000 Total Value: \$240,800 ROI: 198%</p>	<p>Municipal funding: \$107,500 Grant funding: \$0 Support leveraged: \$215,000 Total Value: \$322,500 ROI: 200%</p>	<p>Municipal funding: \$137,800 Grant funding: \$0 Support leveraged: \$375,000 Total Value: \$512,800 ROI: 272%</p>

The Kawartha Water Fund program provides suggestions as to the types of projects that could receive funding while leaving room for the creativity of individual groups and private landowners. The guiding principle is that the projects should address the priority actions as recommended in the Lake Management Plans. Individual project level funding and the number of projects will vary depending on the level of funding available. While all projects will be considered, the caps per project will vary from one level of programming to the next.

The Advisory Committee recommends building this program over the five-year period to build community capacity and landowner interest. Starting at the Level 2 program will continue to build on an already solid momentum and ensure that the program demonstrates continued success. The consequences of not growing the capacity of the program includes a lack of community participation and a reduced ability to implement larger and more sophisticated projects.

Preferred program levels are highlighted in blue boxes. When multiple levels are highlighted it indicates varying levels of implementation over the 5-year period.

Text in bold represents unique activities between the levels.

2. Implementation Outreach Program

The Implementation Outreach program contains the following detailed programs:

1. Partner and Community Engagement
2. Sedimentation and Erosion Control Planning

Level 1
Level 2
Level 3

		2024	2025	2026	2027	2028
Partner and Community Engagement						
	Municipal Contribution/Deferred Revenue	\$98,045	\$80,040	\$80,040	\$80,040	\$80,040
	Grant Funding Leveraged					
	Support Leveraged					
	Total Project Value	\$98,045	\$80,040	\$80,040	\$80,040	\$80,040

		2024	2025	2026	2027	2028
Sedimentation & Erosion Control Planning						
	Municipal Contribution/Deferred Revenue	\$24,401	\$37,640	\$37,640	\$37,640	\$49,430
	Grant Funding Leveraged					
	Support Leveraged		\$6,000	\$6,000	\$6,000	\$15,000
	Total Project Value	\$24,401	\$43,630	\$43,640	\$43,640	\$64,430

Combined Implementation Outreach Budget		2024	2025	2026	2027	2028
	Municipal Contribution/Deferred Revenue	\$122,446	\$117,680	\$117,680	\$117,680	\$129,470
	Grant Funding Leveraged					
	Support Leveraged		\$6,000	\$6,000	\$6,000	\$15,000
	Total Project Value	\$122,446	\$123,680	\$123,680	\$123,680	\$144,470

Partner and Community Engagement

Program Lead: Kawartha Conservation

Program Partners: City of Kawartha Lakes, Trent Severn Waterway, First Nations Communities, Community Groups, Lake Associations, Academia, Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), Environment and Climate Change Canada, Alternative Land Use Services (ALUS), City of Kawartha Lake Environmental Advisory Committee (CKLEAC)

Recommended Funding Level: Level 2 for 2025-2029
Level 3 for 2024

Ensuring there is unity of action among Kawartha Conservation leaders, external stakeholders, community groups, agencies, and municipal partners is important to guarantee that our goals are in sync and being met. The Partner and Community Engagement program will maintain collaboration with our partners at various levels to ensure that programs and projects are meeting the actions that were recommended in the Lake Management plans. By working alongside the different program partners Kawartha Conservation will share and promote sound scientific decision making, local knowledge, and traditional values.



Community Advisory Panel members from local groups help to form the Lake Management Plans.

The lakes and rivers within the Kawartha watershed are an incredible resource and a major driver in increasing tourism and promoting economic growth. As the City of Kawartha Lakes population increases and audiences change, Kawartha Conservation recognizes that now more than ever there is a need to find new ways to reach those different audiences to inform on the different factors that can affect the health of our lakes and rivers. Kawartha Conservation will target outreach to the various groups that have the greatest impact and investment into the health of our lakes. Those groups include shoreline property owners, lake associations, agricultural and rural landowners, urban communities, tourists and other visitors, municipal staff and more. Increasing our outreach through presentations, improved reporting, public newsletters and more will ensure that we are reaching every level of those audiences and increasing awareness of the direct impacts they have on our watershed. All while promoting different ways that they can get involved to help maintain and improve the lakes that are incredibly vital to our community.

Moreover, this program will raise the profile of the different types of programs within the Action Plan to increase awareness and promote development of new partnerships that aid in maintaining a positive relationship with our community. To raise the profile of our programs, Kawartha Conservation will increase our communications and extend our reach to additional communities throughout the City of Kawartha Lakes. With improved communications, Kawartha Conservation can build heightened awareness and create more opportunities for collaboration with community groups, partner agencies, academia and more that share in our values and goals. This improved collaboration will also have a positive impact on the development of deeper more meaningful partnerships that can lead to opportunities like grant funding, program promotion, and an increased participation in recommended remedial activities.

Partner and Community Engagement

Level 1

- ✓ Attend local shows to provide updated information to local and seasonal residence (Fenelon Falls Country Living Show, East Central Farm Show)
- ✓ Attend and/or present at one Annual General Meeting for a Lake Association
- ✓ Provide an annual report on the implementation programs involving KRCA, partner groups and agencies
- ✓ Liaise with community groups and lake associations to build community leadership and positive relationships

Municipal funding: \$58,065

Grant funding: -

Support leveraged: -

Total Value: \$58,065

ROI: 0%

The Advisory Committee recommends starting 2024 at a Level 3 for this project because it allows for increased coordination, planning and attendance at the International Plowing Match and Rural Expo. From 2025-2028 it is recommended to bring the program down to the Level 2 to continue building capacity and leadership within community organizations and proactively create opportunities to collaborate with other agencies that have jurisdiction over the lakes. This will build the overall capacity to implement the plan through multiple organizations and

Level 2

- ✓ Attend local shows to provide updated information to local and seasonal residence (Fenelon Falls Country Living Show, East Central Farm Show, **Spotlight on Agriculture**)
- ✓ Attend and/or present at **Annual General Meetings for six Lake Associations**
- ✓ Provide an annual report for on the implementation programs involving KRCA, partner groups and agencies
- ✓ Liaise with community groups and lake associations to build community leadership and positive relationships
- ✓ **Publish technical information and implementation program actions through various means (e.g. website, social media)**
- ✓ **Coordinate and facilitate a multi-partner public State of Lakes Symposium every three years**
- ✓ **Create and publish a semi-annual digital newsletter on KRCA's website providing information on implementation activities from KRCA, partner agencies and groups**
- ✓ **Implement a basic digital dashboard on KRCA's website to report on implementation data and activities in real time**

Municipal funding: \$80,040

Grant funding: -

Support leveraged: -

Total Value: \$80,040

ROI: 0%

Level 3

- ✓ Attend local shows to provide updated information to local and seasonal residence (Fenelon Falls Country Living Show, East Central Farm Show, Spotlight on Agriculture)
- ✓ Attend and/or present at Annual General Meetings for six Lake Associations
- ✓ Provide an annual report for on the implementation programs involving KRCA, partner groups and agencies
- ✓ Liaise with community groups and lake associations to build community leadership and positive relationships
- ✓ Publish technical information and implementation program actions through various means (e.g. website, social media)
- ✓ Coordinate and facilitate a multi-partner public State of Lakes Symposium every three years
- ✓ Create a semi-annual digital newsletter in conjunction with partner groups and agencies to report on implementation activities
- ✓ implement a **complex digital dashboard** on KRCA's website to report on implementation data and activities in real time
- ✓ **Oversee the planning and preparation for attendance at the International Plowing Match and Rural Expo at the Lindsay Fairgrounds**

Municipal funding: \$98,045

Grant funding: -

Support leveraged: -

Total Value: \$98,045

ROI: 0%

Preferred program levels are highlighted in blue boxes. When multiple levels are highlighted, it indicates varying levels of implementation over the 5-year period.

Text in bold represents unique activities between the levels.

Sedimentation and Erosion Control Planning

Program Lead: Kawartha Conservation.

Program Partners: City of Kawartha Lakes; Construction Industry (local developers and contractors); Sustainable Technologies Evaluation Program.

Recommended Funding Level: Level 1 for 2024
Level 2 for 2025-2027
Level 3 for 2028

Better erosion and sediment control management at construction projects near water is a priority recommendation in all Lake Management Plans. Sediment-laden runoff is a significant threat to the health of local lakes and their connecting waters and can have both acute and long-term impacts including filling in shallow areas, smothering fish habitat, increasing phosphorus loads, and poor aesthetics.



Sedimentation and erosion control site inspections help to understand what control measures are problematic, and how to work with developers to resolve them.

Ongoing development is a priority in the City of Kawartha Lakes and vital to our economic growth. Responsible sediment and erosion control planning is a required part of the pre-, during, and post-construction process. Effective erosion and sediment control planning between municipalities, contractors, conservation authorities, and other construction partners reduces construction delays, ensures work permit compliance, and protects the local environment.

The purpose of the 5-year program is to partner with the development industry to pilot innovative technologies and research to track erosion and sedimentation at construction sites. Educating developers, contractors, construction workers, and others in the development industry on best management practices related to selection, installation, and inspection of erosion and sediment control measures will help ensure the effectiveness of these technologies. The program will also work towards an updated consolidation of Erosion and Sedimentation control plan requirements and guidelines to streamline approval processes and increase efficiencies. Lastly, a key part of this program is to undertake site inspections on active construction projects to work with proponents on evaluating effectiveness and to make adjustments when needed to ensure the health and safety of our surface water.

Innovative technologies include the use of drones to identify high-risk areas, and turbidity meters (logging devices or real-time devices) installed in a receiving watercourse upstream and downstream of a construction site. Innovative research includes establishing a relationship between land-based and water-based sediment for total suspended solids (CSA standard) and turbidity (not CSA standard). This will allow site inspectors to detect non-compliant sediment-release events more efficiently.

Sedimentation and Erosion Control Planning

Level 1

- ✓ Establish a partnership with 1 developer to test sediment and erosion tracking technologies during the construction phase of a project.
- ✓ Establish a relationship between water clarity and sedimentation at 1 site during the construction phase of a project.
- ✓ Increased distribution of fact sheets, videos, and other education materials to proponents by 25% annually.
- ✓ Update erosion and sediment control guidelines at Kawartha Conservation.
- ✓ Undertake 10 construction site inspections annually to assess efficiency of control measures.
- ✓ Secure proponent-led solutions for improving control measures for 5 construction projects annually.
- ✓ Certification of 1 staff as a Certified Inspector of Sediment and Erosion Control, annually.

Municipal funding: \$24,401

Grant funding: -
 Support leveraged: -
Total Value: \$24,401
ROI: 0%

Level 2

- ✓ Establish a partnership with 2 developers to test sediment and erosion tracking technologies during the construction phase of a project.
- ✓ Establish a relationship between water clarity and sedimentation at 2 sites during the construction phase of a project.
- ✓ Increased distribution of fact sheets, videos, and other education materials by proponents by **50% annually**.
- ✓ Update erosion and sediment control guidelines at Kawartha Conservation **and consolidate guidelines with City of Kawartha Lakes**.
- ✓ Undertake **20** construction site inspections annually to assess efficiency of control measures.
- ✓ Secure proponent-led solutions for improving control measures for **10** construction projects annually.
- ✓ Certification of **2 staff** as a Certified Inspector of Sediment and Erosion Control, annually.

Municipal funding: \$37,640

Grant funding: -
 Support leveraged: \$6,000
Total Value: \$55,740
ROI: 48%

Level 3

- ✓ Establish a partnership with 3 developers to test sediment and erosion tracking technologies during the construction phase of a project.
- ✓ Establish a relationship between water clarity and sedimentation at 3 sites during the construction phase of a project.
- ✓ Increased distribution of fact sheets, videos, and other education materials by proponents by **100% annually**.
- ✓ Update erosion and sediment control guidelines at Kawartha Conservation and consolidate guidelines with City of Kawartha Lakes, **and Parks Canada**.
- ✓ Undertake **30 construction site inspections** annually to assess efficiency of control measures.
- ✓ Secure proponent-led solutions for improving control measures for **15 construction projects** annually.
- ✓ Certification of **3 staff** as a Certified Inspector of Sediment and Erosion Control, annually.

Municipal funding: \$49,430

Grant funding: -
 Support leveraged: \$15,000
Total Value: \$64,430
ROI: 30%

The Advisory Committee recommends starting at a Level 1 programing, increasing to Level 2 for 2025-2027 and finishing 2028 at a level 3. Staring programming at the lowest level allows time to build a healthy relationship with a local developer to pilot new monitoring techniques. Increasing levels will help to establish more relationships and provide greater insight into the sedimentation and erosion control techniques that are being used on-the-ground. Increasing levels will also include multiple information transfer opportunities which will support improved techniques.

Preferred program levels are highlighted in blue boxes. When multiple levels are highlighted it indicates varying levels of implementation over the 5-year period.

Text in bold represents unique activities between the levels.

3. Rural Program

The Community and Landowner Stewardship Services program contains the following detailed programs:

- Agricultural Stewardship
- Forestry and Tree Planting Stewardship
- Investigative Upstream Monitoring

Level 1
Level 2
Level 3

		2024	2025	2026	2027	2028
Agricultural Stewardship						
	Municipal Contribution/Deferred Revenue	\$19,000	\$22,800	\$30,200	\$22,800	\$22,800
	Grant Funding Leveraged		\$55,000	\$105,000	\$55,000	\$55,000
	Support Leveraged		\$1,500	\$2,500	\$1,500	\$1,500
	Total Project Value	\$19,000	\$79,300	\$137,700	\$79,300	\$79,300

		2024	2025	2026	2027	2028
Forestry and Tree Planting Stewardship						
	Municipal Contribution/Deferred Revenue	\$48,000	\$51,300	\$51,300	\$51,300	\$51,300
	Grant Funding Leveraged	\$81,400	\$101,900	\$101,900	\$101,900	\$101,900
	Support Leveraged	\$56,600	\$62,300	\$62,300	\$62,300	\$62,300
	Other	\$66,000	\$69,300	\$69,300	\$69,300	\$69,300
	Total Project Value	\$252,000	\$284,800	\$284,800	\$284,800	\$284,800

		2024	2025	2026	2027	2028
Investigative Upstream Monitoring						
	Municipal Contribution/Deferred Revenue	\$42,400	-	-	-	-
	Grant Funding Leveraged					
	Support Leveraged	\$25,900				
	Total Project Value	\$68,300	-	-	-	-

Combined Rural Program Budget		2024	2025	2026	2027	2028
	Municipal Contribution/Deferred Revenue	\$109,400	\$74,100	\$81,500	\$74,100	\$74,100
	Grant Funding Leveraged	\$81,400	\$156,900	\$206,900	\$156,900	\$156,900
	Support Leveraged	\$82,500	\$63,800	\$64,800	\$63,800	\$63,800
	Other	\$66,000	\$69,300	\$69,300	\$69,300	\$69,300
	Total Project Value	\$339,300	\$364,100	\$422,500	\$364,100	\$364,100

Agricultural Stewardship

Program Lead: Landowner and Community Support

Program Partners: City of Kawartha Lakes, Ontario Ministry of Agriculture, Food and Rural Affairs, East Central Farm Stewardship Collaborative, ALUS Peterborough, East Central Farm Show, Ontario Soil and Crop Improvement Association, Victoria Soil and Crop Improvement Association, Ducks Unlimited Canada, Ontario Federation of Agriculture, Kawartha Lakes Haliburton Federation of Agriculture, other commodity groups.

Recommended Funding Level: Level 1 for 2024
Level 2 for 2025, 2027-2028
Level 3 for 2026

Since 2019, 9 agricultural demonstration projects have been implemented in Kawartha Lakes. \$208,000 in granting funding and \$8,000 in community funding was leveraged. 2095 native trees and shrubs were planted, and 36 on-site consultations were conducted.

Farmland makes up nearly 50% of the Kawartha watershed, and is particularly important in sustaining our rural communities, with agriculture and healthy lakes being the two pillars of our vibrant local economy. Farms can have significant impact and benefits on watershed health. When such a large portion of the watershed is used for agriculture, a significant opportunity exists to implement innovative Best Management Practices (BMPs) to make a big difference. Farmer contributions and commitment are essential for obtaining our healthy watershed goals.

The Agricultural Stewardship program provides a range of technical services and incentives for our farming community to increase the implementation of agricultural Best Management Practices (BMPs) in our watershed. Projects include BMP activities that improve surface water quality and soil erosion control, which ultimately help to achieve Lake Management Plan targets. In 2020, Kawartha Conservation surveyed local farmers to decipher how our programs could best encourage and support the agricultural community to implement BMPs on their land. Respondents answered unanimously that the primary barrier to BMP implementation is financial support. Kawartha Conservation recognizes that reducing the financial burden from producers by partnering with external funding agencies will ensure we achieve the greatest participation in our Agricultural Stewardship Program, thereby achieving the greatest uptake in BMP implementation.

This program will also build on community outreach and engagement by facilitating the continued participation of Kawartha Conservation in initiatives like the East Central Farm Stewardship Collaborative (a group of 12 organizations that leverage local expertise and resources to support farm stewardship projects across the region) and the ALUS Peterborough Participant Action Committee (an initiative that provides technical and financial support to farmers undertaking stewardship projects on marginal agricultural land). Kawartha Conservation's involvement in these initiatives leads to opportunities to combine resources with our partners to increase the participation, success, and impact of agricultural stewardship projects. Outreach also includes attending local events including the East Central Farm Show, International Plowing Match, Kawartha Lakes Country Living Show, Spotlight on Agriculture, and AGMs for local commodity groups to share programs and opportunities for networking and collaboration across the watershed.



Barnyard eavestrough project completed in partnership with agricultural landowner and Ontario Ministry of Agriculture, Food and Rural Affairs.

Agricultural Stewardship

Level 1

- ✓ Present at **3** agricultural commodity group meetings and events
- ✓ Participate in the East Central Farm Stewardship Collaborative
- ✓ Participate in the ALUS Peterborough PAC
- ✓ Increase landowner awareness and engagement through Farm Management webpage updates

Municipal funding: \$19,000
 Grant funding: \$0
 Support leveraged: \$0
Total Value: \$19,000
ROI: 0%

Level 2

- ✓ Present at **5** agricultural commodity group meetings and events
- ✓ Participate in the East Central Farm Stewardship Collaborative
- ✓ Participate in the ALUS Peterborough PAC
- ✓ Increase landowner awareness and engagement through Farm Management webpage updates **and a mailout campaign to 250 farmers**
- ✓ **Provide on-farm consultations with 10+ landowners**
- ✓ **Implement 2-3 agricultural Best Management Practice (BMP) projects**
- ✓ **Creation 1 new educational resource**
- ✓ **Monitor nutrient loading and sedimentation in agricultural waterways**

Municipal funding: \$22,800
 Grant funding: \$55,000
 Support leveraged: \$1,500
Total Value: \$79,300
ROI: 248%

Level 3

- ✓ Present at **7** agricultural commodity group meetings and events
- ✓ Participate in the East Central Farm Stewardship Collaborative
- ✓ Participate in the ALUS Peterborough PAC
- ✓ Increase landowner awareness and engagement through Farm Management webpage updates **and a mailout campaign to 500 farmers**
- ✓ **Provide on-farm consultations with 20+ landowners**
- ✓ **Implement 5 agricultural Best Management Practice (BMP) projects**
- ✓ **Create 1 new educational resource**
- ✓ **Monitor nutrient loading and sedimentation in agricultural waterways**
- ✓ **Host 1 farm tour**

Municipal funding: \$30,200
 Grant funding: \$105,000
 Support leveraged: \$2,500
Total Value: \$137,700
ROI: 357%

The Advisory Committee recommends starting at a Level 1 program for the first year, increasing to the Level 2 program for 3-years and then increasing service to a Level 3 for the final year. This level of programming will support our agricultural sector to implement BMPs and protect our water while also showcasing new technologies. The City of Kawartha Lakes has a significant and well-respected agricultural community. By developing these relationships and working together towards a healthier lake system, we are better able to affect change on the landscape. Reducing the level of activity will make this relationship building more difficult and will impact the number of in-the-ground projects we can accomplish.

Preferred program levels are highlighted in blue boxes. When multiple levels are highlighted it indicates varying levels of implementation over the 5-year period.

Text in bold represents unique activities between the levels.

Forestry and Tree Planting Stewardship

Program Lead: Kawartha Conservation

Program Partners: Forests Ontario, Durham Region, City of Kawartha Lakes, TD Friends of the Environment, Ontario Woodlot Association

Timeline: Level 2 for 2024
Level 3 for 2025-2028

Since 2018, Kawartha Conservation has implemented 8 private land large scale plantings, 2 community plantings, and hosted 5 annual seedling sales. With the help of funding from external partners, we were able to offset large scale tree planting costs by 60-95% and implement community driven urban plantings on public land.

Rural landowners have a unique opportunity to impact their watershed's health simply because they often own and manage large areas (e.g. 10-100 acres), which are home to valuable ecosystem features that protect our water resources and overall health. Private rural properties often possess significant forested lands, wetlands, streams, and pollinator habitat. It is imperative that these features are maintained in proper functioning order. Rural land management can be complex and complicated, and as our climate changes the level of complexity increases. Extreme weather conditions, increasing populations of forest pests and invasive species all pose new challenges for rural land managers.

The Forestry and Tree Planting program works to provide large scale tree planting services at a reduced cost to the landowner. The goal of this is to increase forest cover to 30% as laid out in the Stewardship Strategy and all the Lake Management Plans. This program includes projects such as afforestation, reforestation, windrows, and riparian plantings. With additional forest cover, these projects will also help to target the goal sequestration of carbon as laid out in the City of Kawartha Lakes Healthy Environment Plan. Plantings will also assist in decreasing soil erosion, all while aiding in soil remediation. With these planting projects we create resilient planting plans to grow and thrive through the ever-changing climate of our future.

Other benefits of the tree planting program are that City of Kawartha Lakes private landowners receive additional resources during consultation on topics such as invasive species management, climate change, forest health, riparian habitat, and buffer zones, as well as the opportunity to implement windrows that not only benefit them but the community that use the surrounding rural roads.

The forestry and tree planting program also aims to increase urban forest cover through engaging the community in volunteer planting events, and an urban tree program. These programs allow us to engage with the community on a personal level to help enhance their land and community spaces. These tree plantings will help enhance our watershed and community greenspace by reducing the heat island effects, increasing shade and wildlife habitat as well as reduce runoff into local water systems.



Community tree planting events encourage residence to be involved in environmental improvements.

Forestry and Tree Planting Stewardship

Level 1

- ✓ Increase forest cover up to 10ha each year in CKL through increasing the number of hectares of afforested land to help reach the Kawartha Conservation goal of 30% forest cover jurisdiction wide.
- ✓ Sell 8,000 trees during the annual seedling sale to citizen of the City of Kawartha Lakes help increase forest cover up on private lands
- ✓ Plant 11,000 trees through the forestry and tree planting program in the City of Kawartha Lakes to help sequester a goal of 71 tons of carbon each year to help the region reach their emission reduction rates for 2030
- ✓ Host 1 community tree planting event in an urban area and engage the community.

Municipal funding: \$45,000

Other: \$63,000

Grant funding: \$58,900

Fee of service: \$50,900

Total Value: \$217,800

ROI: 384%

Level 2

- ✓ Increase forest cover up to **15ha** each year in CKL through increasing the number of hectares of afforested land to help reach the Kawartha Conservation goal of 30% forest cover jurisdiction wide.
- ✓ Sell **15,000** trees during the annual seedling sale to citizen of the City of Kawartha Lakes help increase forest cover up on private lands.
- ✓ Plant **15,000** trees through the forestry and tree planting program in the City of Kawartha Lakes to help **sequester 97 tons of carbon** each year to help CKL reach their emission reduction rates for 2030
- ✓ **Implement an urban trees project to increase forest cover in urban centres by planting 5 Urban Public or Private Properties**
- ✓ Host **2** community tree planting event on public urban lands and engage the community.

Municipal funding: \$48,000

Other: \$66,000

Grant funding: \$81,400

Fee of Service: \$56,600

Total Value: \$252,000

ROI: 425%

Level 3

- ✓ Increase forest cover up to **16ha** each year in CKL through increasing the number of hectares of afforested land to help reach the Kawartha Conservation goal of 30% forest cover jurisdiction wide.
- ✓ Sell 15,000 trees during the annual seedling sale to citizen of the City of Kawartha Lakes help increase forest cover up on private lands.
- ✓ Plant **18,000** trees through the forestry and tree planting program in the City of Kawartha Lakes to help sequester **117 tons of carbon** each year to help CKL reach their emission reduction rates for 2030
- ✓ Implement an urban trees project to increase forest cover in urban centres by planting **10** Urban Public or Private Properties
- ✓ Host 2 community tree planting event on public urban lands and engage the community.

Municipal funding: 51,300

Other: \$69,300

Grant funding: \$101,900

Fee of Service: \$62,300

Total Value: \$284,800

ROI: 455%

The Advisory Committee recommends beginning implementation at Level 2 for the first year and increasing service to a Level 3 for 2025-2028. The recommended delivery levels will provide support to private landowners, leading to improved and maintained

ecosystem function on large rural lots.

Preferred program levels are highlighted in blue boxes. When multiple levels are highlighted it indicates varying levels of implementation over the 5-year period.

Text in bold represents unique activities between the levels.

Investigative Upstream Monitoring

Program Lead: Kawartha Conservation

Program Partners: Trent University

Recommended Funding Level: Level 2 for 2024

Investigative Upstream monitoring focuses on surface water draining into tributaries entering our lakes that have been identified by the Lake Management plan process as having high concentration of nutrients and contaminants. Knowing the point source of these nutrients will help us to design and implement stewardship restoration projects to address the nutrient loading at these sites. The intention of the Investigative Upstream Monitoring Program is to reduce the data gaps by performing more comprehensive water quality & quantity data collection (more sites on one stream) over a three-year period, to identify areas of water quality degradation and plan for remediation or restoration efforts through our stewardship department.

Currently, three streams are monitored through a collaboration with Trent University, which has strengthened strategic, beneficial, and impactful opportunities for learning, a key strategic goal of Kawartha Conservation. By collaborating, our partners benefited from our technical expertise and vast knowledge of the landscape. In addition, partners with students can gain critical hands-on experience from Kawartha Conservation staff.

Unfortunately, the program initiated a year later than anticipated due to pandemic response (2021), on three tributaries **Sucker Creek, Stoney Creek, and Janetville Creek**, and will continue in 2023 (as year 2 of three). To round up the third year of monitoring on these tributaries Kawartha Conservation will require an extension of one year into 2024 (year 3 of 3). At the end of 2024 we will have addressed all the high priority tributary of concerns identified through the Lake Management Plans.



Monitoring streams across the watershed will identify key areas where nutrients enter our waterways.

Investigative Upstream Monitoring

*Due to the hiatus in 2020 for pandemic response, Year 3 of this project will use deferred funds in 2024. The Investigative Upstream Monitoring program will continue through deferred revenue and will operate at a level 2 programming as it is being carried forward for a single year. Level 2 programming meets the objectives of identifying upstream hot spots with scientific rigor which will provide stewardship prioritizations for remedial actions. The consequence of reducing the program has implications that due to fewer samples and the identification of stewardship actions will become less targeted.

Level 2

- ✓ One year monitoring period
- ✓ 3 streams (21 sites based on road crossings)
- ✓ Flow data collected simultaneously -Ontario Stream Assessment Protocol
- ✓ Water chemistry sampling 8 time a year
- ✓ Parameters include nutrients (phosphorus & nitrogen), total suspended solids, chloride-proxy for road salt.
- ✓ Produce summary report including recommendations for stewardship prioritization projects.

Municipal funding: \$0
Deferred Revenue: \$42,400
Grant funding: \$0
Support leveraged: \$25,900
Total Value: \$68,300
ROI: 61%

4. Shoreline Program

The Rural and Shoreline Monitoring program contains the following detailed programs:

Waterfront Stewardship

Community Science Monitoring

Bobcaygeon Dam Aquatic Habitat Assessment

Level 1
Level 2
Level 3

		2024	2025	2026	2027	2028
Waterfront Stewardship						
	Municipal Contribution/Deferred Revenue	\$22,000	\$13,800	\$22,000	\$13,800	\$22,000
	Grant Funding Leveraged	\$35,900		\$35,900		\$35,900
	Support Leveraged	\$17,600		\$17,600		\$17,600
	Total Project Value	\$75,500	\$13,800	\$75,500	\$13,800	\$75,500

		2024	2025	2026	2027	2028
Community Science Monitoring						
	Municipal Contribution/Deferred Revenue	\$25,300	\$25,300	\$26,850	\$25,300	\$29,150
	Grant Funding Leveraged	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
	Support Leveraged					
	Total Project Value	\$65,300	\$65,300	\$66,850	\$65,300	\$69,150

		2024	2025	2026	2027	2028
Bobcaygeon Dam Aquatic Habitat Assessment						
	Municipal Contribution/Deferred Revenue	-	-	-	-	-
	Grant Funding Leveraged	\$46,600	\$46,600	\$46,600	\$46,600	\$46,600
	Support Leveraged	\$11,450	\$11,450	\$11,450	\$11,450	\$11,450
	Total Project Value	\$58,050	\$58,050	\$58,050	\$58,050	\$58,050

Combined Shoreline Program Budget		2024	2025	2026	2027	2028
	Municipal Contribution/Deferred Revenue	\$47,300	\$39,100	\$48,850	\$39,100	\$51,150
	Grant Funding Leveraged	\$122,500	\$86,600	\$122,500	\$86,600	\$122,500
	Support Leveraged	\$29,050	\$11,450	\$29,050	\$11,450	\$29,050
	Total Project Value	\$198,850	\$137,150	\$200,400	\$137,150	\$202,700

Waterfront Stewardship

Program Lead: Landowner and Community Support

Program Partners: City of Kawartha Lakes, Real Estate Board, CKLEAC, Cottage and Communication Associations.

Recommended Funding Level: Level 1 for 2025, 2027
Level 2 for 2024, 2026, 2028

Since 2019, the Native Plant Sale drew 104 landowners to plant 3,265 native plants in Kawartha Lakes.

The majority of waterfront properties in the City of Kawartha Lakes are privately owned. One of the primary reasons tourists and new residents come to the Kawartha Lakes is the abundant recreational opportunities our lakes and waterways provide. Recreation and other activities can have significant impacts on the health of our waterways, which could limit access and enjoyability for the entire community. With increased tourism and development in our region, it is imperative that Kawartha Conservation works with the municipality and external agencies on the public spaces on our lakes and waterways to protect and improve water quality and prevent erosion.



Naturalized shorelines and streambanks help to reduce erosion and runoff.

The Waterfront Stewardship program aims to achieve 75% naturalized and stabilized streambanks and shorelines on all shoreline projects as outlined in the Stewardship Strategy. By implementing on-the-ground demonstration projects in high traffic, publicly accessible areas Kawartha Conservation can help to educate and inspire private landowners to adopt similar projects on their properties. The team will monitor water at all demonstration sites prior to and after the completion of project activities to determine project success. Over the past 5 years, a previous rendition of this program attracted interest and investment from the municipality, community, and external funding agencies who all aim to improve the quality of experience our waterways have to offer. We will continue to build relationships with project partners and funders to implement the most meaningful, innovative, and attractive projects possible.

This program supports private landowners to undertake land stewardship initiatives on their shorelines by offering technical advice for addressing shoreline issues and offering a semi-annual Native Plant Sale. The Native Plant Sale supplies residents with waterfront stabilizing native plants and shrubs at a reduced cost. Kawartha Conservation staff select species and provide supplementary resources with the goal of helping landowners to enhance their shorelines while simultaneously preventing erosion and nutrient runoff to improve water quality across our watershed.

Additionally, a Watershed Welcome package will be created annually and distributed to partnering realtors to reach the largest number of new landowners in our community. This package will contain pertinent information about waterfront stewardship, including project examples, funding opportunities, plant sale promotions, and permit guidelines to ensure landowner projects are implemented safely and effectively.

Waterfront Stewardship

Level 1

- ✓ Increase landowner awareness and engagement through Erosion and Shoreline Protection webpage updates
- ✓ Increase new landowner awareness and engagement through Watershed Welcome packages
- ✓ Provide **800** native plants to waterfront landowners through annual shoreline plant kit sale

Municipal funding: \$13,800
 Grant funding: \$0
 Support leveraged: \$0
Total Value: \$13,800
ROI: 0%

Level 2

- ✓ Increase landowner awareness and engagement through Erosion and Shoreline Protection webpage updates
- ✓ Increase new landowner awareness and engagement through Watershed Welcome packages
- ✓ Provide **1,200** native plants to waterfront landowners through annual shoreline plant kit sale
- ✓ Implement **1-2** public waterfront naturalization projects
- ✓ Monitor sedimentation and nutrient loading at project waterfronts
- ✓ Present at **3** cottage owner association meetings

Municipal funding: \$22,000
 Grant funding: \$35,900
 Support leveraged: \$17,600
Total Value: \$75,500
ROI: 243%

Level 3

- ✓ Increase landowner awareness and engagement through Erosion and Shoreline Protection webpage updates
- ✓ Increase new landowner awareness and engagement through Watershed Welcome packages
- ✓ Provide **2,000** native plants to waterfront landowners through annual shoreline plant kit sale
- ✓ Implement **3-5** public waterfront naturalization projects
- ✓ Monitor sedimentation and nutrient loading at project waterfronts
- ✓ Present at **5** cottage owner association meetings
- ✓ Engage **100** community volunteers in public waterfront naturalization projects

Municipal funding: \$26,500
 Grant funding: \$110,000
 Support leveraged: \$2,500
Total Value: \$139,000
ROI: 427%

Most of our shoreline is privately owned and managed. As the ribbon of land surrounding our lakes, this area is particularly sensitive to management techniques and often has a direct impact on lake water quality. The Advisory Committee recommends alternating between a Level 2 and Level 1 for this program because it combines the provision of information to private landowners with the collaboration between Real Estate Professionals and the City of Kawartha Lakes. Building these partnerships and collaborating with community partners will help to improve the state of our shorelines. Reducing the level of programming offered to the shoreline community will significantly impact on the quality of projects and our ability to maintain or improve water quality within our lakes.

Preferred program levels are highlighted in blue boxes. When multiple levels are highlighted it indicates varying levels of implementation over the 5-year period.

Text in bold represents unique activities between the levels.

Community Science Monitoring

Program Lead: Kawartha Conservation

Program Partners: City of Kawartha Lakes; Kawartha Lake Stewards Association; Scugog Lake Stewards Association; other community associations/groups, lakeshore residents

Recommended Funding Level: Level 3 for 2024-2028

The nearshore area is under the direct influence of activities performed on the shoreline (urban development, agriculture, specific shoreline alteration) in addition to acting as a transition zone that is highly influenced from waters offshore and land and tributary drainage. The data collected in near shore areas can act as an early warning indicator for the lakes and thus identify “problem areas” or “hot spots” of degraded water quality and threats to human and animal health in addition to a decrease in biodiversity and habitat.

Routine water quality monitoring was identified as a priority recommendation in every Lake Management Plan. In addition, members of the public, councillors, environmental groups, and other governmental agencies have all questioned the health of the surrounding waterbodies due to the greater movement of people from the Greater Toronto Area to the Kawarthas, the reliance of the lake for tourism and recreational dollars, and the growing awareness of environmental issues such as climate change, harmful algae blooms, contaminants, and invasive species. This awareness of the health of our waterbodies has major implications to the health and well-being of the citizens of Kawartha Lakes, [whom many have spent their lives connecting to their favourite lake or stream](#).



Community Science engages community members to actively participate in the monitoring of their local lakes.

This citizen science program will continue the successful Nearshore Monitoring Program (2019-2021) and aim to continue to empower our community to take action and provide valuable information on the concentrations of various nutrients in our waterbodies.

The objectives of the 5-year Community Science Monitoring Program are to monitor the nearshore environments health annually, provide up-to-date results to the public and key lake stakeholders, track changes over a 3- and 5-year period to inform Lake Plan actions, and provide stewardship with information on areas with degraded nearshore water quality. These findings will guide stewardship efforts through the Water Fund and Waterfront Stewardship programs. The monitoring and hands-on components will work together to seek funding.

Community Science Monitoring

Level 1	Level 2	Level 3
<ul style="list-style-type: none"> ✓ Monthly (May to October) contaminant concentration monitoring at 40 sites across the high priority lakes (Sturgeon, Balsam, Cameron, Pigeon), yearly. ✓ Engage at least 40 volunteers in monitoring activities annually. ✓ Reporting of key findings to lake stakeholders through online dashboards. ✓ Annual reporting of key findings. ✓ Summary report of degraded areas of water quality for the planning of future stewardship project. ✓ Monthly social media posts with science summary. ✓ 3 and 5-year trending summary report. ✓ Annual volunteer appreciation event. ** 	<ul style="list-style-type: none"> ✓ Monthly (May to October) contaminant concentration monitoring at 55 sites across the high priority lakes (Sturgeon, Balsam, Cameron, Pigeon), and medium priority lakes (Canal, Mitchell, Dalrymple), yearly. ✓ Engage at least 55 volunteers in monitoring activities annually. ✓ Reporting of key findings to watershed residents through online dashboards. ✓ Annual reporting of key findings. ✓ Summary report of degraded areas of water quality for the planning of future stewardship project. ✓ Monthly social media posts with science summary. ✓ 3 and 5-year trending summary report. ✓ Annual volunteer appreciation event. ** 	<ul style="list-style-type: none"> ✓ Monthly (May to October) contaminant concentration monitoring at 70 sites across the high priority lakes (Sturgeon, Balsam, Cameron, Pigeon), medium priority lakes (Canal, Mitchell, Dalrymple), and low priority lakes (Head, Shadow, Four Mile), yearly. ✓ Engage at least 70 volunteers in monitoring activities annually. ✓ Reporting of key findings to watershed residents through online dashboards. ✓ Annual reporting of key findings. ✓ Summary report of degraded areas of water quality for the planning of future stewardship project. ✓ Monthly social media posts with science summary. ✓ 3 and 5-year trending summary report. ✓ Annual volunteer appreciation event. **
<p>Municipal funding: \$*17,680 Grant funding: \$20,000 Support leveraged: \$0 Total Value: \$37,680 ROI: 113%</p> <p>*Year 3: \$19,200 *Year 5: \$21,150</p>	<p>Municipal funding: \$*20,000 Grant funding: \$30,000 Support leveraged: \$0 Total Value: \$50,000 ROI: 150%</p> <p>*Year 3: \$21,500 *Year 5: \$23,440</p>	<p>Municipal funding: \$*25,300 Grant funding: \$40,000 Support leveraged: \$0 Total Value: \$65,300 ROI: 178%</p> <p>*Year 3: \$26,850 *Year 5: \$29,150</p>

* Funding will differ for year 3 & 5 to accommodate addition reporting.

The Advisory Committee recommends the Level 3 program as it will provide for monitoring on all ten of major lakes within our watershed at the same time. This monitoring will provide the greatest amount of insight into the health of our nearshore lake environment.

Preferred program levels are highlighted in blue boxes. When multiple levels are highlighted it indicates varying levels of implementation over the 5-year period.

Text in bold represents unique activities between the levels.

Bobcaygeon Dam Aquatic Habitat Assessment

Program Lead: Kawartha Conservation.

Program Partners: Save the Walleye Campaign; Jamie Schmale’s Office; Parks Canada; Ontario Ministry of Natural Resources and Forestry; Fleming College Fish and Wildlife Program.

Timeline: Level 3 for 2024-2028

The aquatic system immediately downstream of the Bobcaygeon Dam (Big Bob Channel, Bobcaygeon River) has long been recognized as an important reproductive area for fishes, especially Walleye but also other aquatic organisms that exist in connected waters which includes Pigeon Lake, Buckhorn Lake, and Chemong Lake (collectively called the ‘Tri-Lakes’).

The local community has expressed significant concerns that the aquatic ecosystem in this section is not functioning as optimally as it could be, as exemplified by the [Save the Walleye](#) campaign. Of particular concern is the management of water flows through the Bobcaygeon Dam, specifically the perception that this leads to sub-optimal and/or degrading habitat conditions for spawning Walleye and other aquatic life. Specifically, there is a perception that the current flow regime causes the following negative impacts:

- Reduced surface area of habitat due to low water levels, with sections of prime spawning grounds being ‘high and dry’ during all or part of the spawning period.
- Increased flow velocities at the substrate that dislodge deposited and developing eggs.
- Reductions in dissolved oxygen and water temperature.

The purpose of the 5-year program is to:

- 1) Monitor spring Walleye spawning habitat conditions downstream of Bobcaygeon Dam over a multi-year period to confirm if any water quality, quantity, or habitat limitations exist that negatively impact Walleye spawning success.
- 2) Share information with partners and develop site-specific recommendations that strive to improve Walleye spawning habitat conditions in Big Bob Channel below the dam.



Bobcaygeon Dam – working with program partners to determine if the aquatic system downstream is being affected by water flows.

Local organizations including provincial and federal governments, academia, First Nations, angling and hunting clubs, and conservation authorities met in December 2020 on the topic and expressed a general interest in pursuing a science-based study of the local aquatic ecosystem.

Comparison of existing conditions against known Walleye spawning habitat preferences for each parameter of interest, for example optimal spawning depth, optimal dissolved oxygen concentrations, etc. Annual monitoring of key water quality, quantity, and aquatic habitat conditions in the spring, including: water levels, water flows, dissolved oxygen, water temperature, substrate and riparian land use.

Bobcaygeon Dam Aquatic Habitat Assessment

Level 1

- ✓ Aquatic habitat monitoring of fish spawning and nursery habitat along 2.2 ha (from dam to Main St.) of Bobcaygeon River annually during spring.
- ✓ Secure 2 students to undertake Walleye Watch spawning population monitoring during spring.
- ✓ Coordinate 1 multi-stakeholder meeting per year for project info sharing.
- ✓ Partner with 3 external organization on monitoring efforts.
- ✓ Technical report on fish spawning habitat conditions and constraints in the Bobcaygeon River.

Level 2

- ✓ Aquatic habitat monitoring of fish spawning and nursery habitat along **7.1 ha (from dam to East St.)** of Bobcaygeon River annually during spring.
- ✓ Secure **4** students to undertake Walleye Watch spawning population monitoring during spring.
- ✓ Coordinate **2** multi-stakeholder meetings per year for project info sharing.
- ✓ Partner with 3 external organizations on monitoring efforts.
- ✓ Technical report on fish spawning habitat conditions and constraints in the Bobcaygeon River.

Level 3

- ✓ Aquatic habitat monitoring of fish spawning and nursery habitat along **11.5 ha (from dam to Pigeon Lake)** of Bobcaygeon River annually during spring.
- ✓ Secure **6** students to undertake Walleye Watch spawning population monitoring during spring.
- ✓ Coordinate **3** multi-stakeholder meetings per year for project info sharing.
- ✓ Partner with 3 external organizations on monitoring efforts.
- ✓ Technical report on fish spawning habitat conditions and constraints in the Bobcaygeon River.

Municipal funding: \$0

Grant funding: \$36,140

Support leveraged: \$5,150

Total Value: \$41,290

ROI: 0%

Municipal funding: \$0

Grant funding: \$41,370

Support leveraged: \$9,300

Total Value: \$50,670

ROI: 0%

Municipal funding: \$0

Grant funding: \$46,600

Support leveraged: \$11,450

Total Value: \$58,050

ROI: 0%

The Advisory Committee recommends Level 3 programming. This service level will monitor the largest habitat area which will help to discern if dam water flows need to be adjusted to protect valuable habitat. This program level will also increase the outreach efforts to the local community which will impact awareness surrounding this important issue.

Preferred program levels are highlighted in blue boxes. When multiple levels are highlighted it indicates varying levels of implementation over the 5-year period.

5. Urban Program

The Urban Program contains the following detailed programs:

Stormwater Monitoring

Urban Restoration

Level 1
Level 2
Level 3

		2024	2025	2026	2027	2028
Stormwater Monitoring						
	Municipal Contribution/Deferred Revenue	\$123,300	\$100,500	\$100,500	\$100,500	\$100,500
	Grant Funding Leveraged					
	Support Leveraged					
	Total Project Value	\$123,300	\$100,500	\$100,500	\$100,500	\$100,500

		2024	2025	2026	2027	2028
Urban Restoration						
	Municipal Contribution/Deferred Revenue	\$17,600	\$22,300	\$31,000	\$22,300	\$22,300
	Grant Funding Leveraged		\$40,000	\$110,000	\$40,000	\$40,000
	Support Leveraged		\$1,500	\$2,500	\$1,500	\$1,500
	Total Project Value	\$17,600	\$63,800	\$143,500	\$63,800	\$63,800

Combined Stormwater Monitoring and Restoration Budget		2024	2025	2026	2027	2028
	Municipal Contribution/Deferred Revenue	\$140,900	\$122,800	\$131,500	\$122,800	\$122,800
	Grant Funding Leveraged		\$40,000	\$110,000	\$40,000	\$40,000
	Support Leveraged		\$1,500	\$2,500	\$1,500	\$1,500
	Total Project Value	\$140,900	\$164,300	\$244,00	\$164,300	\$164,300

Stormwater Monitoring Program

Program Lead: Kawartha Conservation

Program Partners: City of Kawartha Lakes, Fleming College and Developers

Recommended Funding Level: Level 2 for 2024-2028

The City of Kawartha Lakes has a number of urban centres that are poised for growth in the coming years. It is critical that we develop a program designed to support this growing community to protect our watershed. Urban centers, such as Lindsay, has been recorded to increase phosphorus concentrations up to 0.114 mg/L (note that the Provincial Water Quality Objective is 0.03 mg/L) in the Scugog River. Furthermore, urban centers are source points for other contaminant types such as chloride, hydrocarbons, and heavy metals.

During the next 5 years, our focus will be in the largest urban centre of CKL, Lindsay, and the urban runoff draining into the Scugog River. The Stormwater Monitoring program will gather baseline water quality and quantity information from both stormwater outlets and streams. Our collection efforts will take place at outlets during storm events occurring spring, summer and fall months as well as at 5 major streams that drain directly into the Scugog River (Distillery, Jennings, Sinister, Albert, and Sucker creeks).



Urban stormwater runoff has been identified throughout all Lake Management Plans to be a concern due to higher rates of imperviousness and the concentration of contaminant sources. Building upon the successes of the Investigative Upstream Monitoring program for agricultural tributaries, we are able to transfer the same approach of monitoring multiple sites along a watercourse, to identify hotspots along the Scugog River.

In the older development areas, we will determine whether implementation measures need to be put in place to improve stormwater runoff, while in the newer development areas we will track storm water runoff to ensure that water quality and quantity is satisfactory and if not, ensure that the proper measures are put in place by developers to improve the stormwater runoff entering the Scugog River.

In addition, the information gathered will help direct the upcoming monitoring plans that will need to be developed by municipalities as part of the new provincial guidance being released in 2023, that are specific to the Consolidated Linear Infrastructure Permissions Approach (CLI-EAC). The preliminary data being collected will directly correlate with the two main objectives that these plans will have to include.

- i) Identifying existing or emerging water quality and quantity issues in the key receivers as well as track future changes to water quality and quantity including long term trends of receiver health due to urbanization and
- ii) Determining cumulative impacts on the receiver due to water quality and quantity changes over time due to urbanization.

Stormwater Monitoring

Level 1	Level 2	Level 3
<ul style="list-style-type: none"> ✓ Calculating contaminant inputs from 63% of the Lindsay Urban Area, into the Scugog River, annually. ✓ Calculating contaminant inputs from 25% of storm sewer catchments in the Lindsay Urban Area, into the Scugog River, annually. ✓ Calculating contaminant inputs from 53% of watercourse catchments in the Lindsay Urban Area, into the Scugog River, annually. ✓ Determining source bacteria at 1 storm sewer outlet and 1 stream location. ✓ Continuous conductivity logger at 1 storm sewer outlet 	<ul style="list-style-type: none"> ✓ Calculating contaminant inputs from 63% of the Lindsay Urban Area, into the Scugog River, annually. ✓ Calculating contaminant inputs from 25% of storm sewer catchments in the Lindsay Urban Area, into the Scugog River, annually. ✓ Calculating contaminant inputs from 53% of watercourse catchments in the Lindsay Urban Area, into the Scugog River, annually. ✓ Determining source of bacteria at 2 storm sewer outlets and 2 stream locations. ✓ Continuous conductivity loggers at 2 storm sewer outlets. 	<ul style="list-style-type: none"> ✓ Calculating contaminant inputs from 63% of the Lindsay Urban Area, into the Scugog River, annually. ✓ Calculating contaminant inputs from 25% of storm sewer catchments in the Lindsay Urban Area, into the Scugog River, annually. ✓ Calculating contaminant inputs from 53% of watercourse catchments in the Lindsay Urban Area, into the Scugog River, annually. ✓ Determining source of bacteria at 3 storm sewer outlets and 3 stream locations. ✓ Continuous conductivity loggers
<p>Municipal funding: \$81,000 Grant funding: \$0 Support leveraged: \$0 Total Value: \$81,000 ROI: 0%</p>	<p>Municipal funding: *\$100,500 Grant funding: \$0 Support leveraged: \$0 Total Value: \$100,500 ROI: 0%</p> <p>*Year 1: \$123,300</p>	<p>Municipal funding: *\$136,250 Grant funding: \$0 Support leveraged: \$0 Total Value: \$136,250 ROI: 0%</p> <p>*Year 1: \$165,150</p>

*Year 1 will have slightly higher budget than all other years, due to equipment purchases taking place.

The Advisory Committee recommends Level 2 programming so that base line information can be collected to be provide Stewardship with the information needed to pinpoint locations for restoration projects. Reducing the program level will not provide enough information to be able to help locate important areas for restoration projects.

Preferred program levels are highlighted in blue boxes. When multiple levels are highlighted it indicates varying levels of implementation over the 5-year period.

Text in bold represents unique activities between the levels.

Urban Restoration

Program Lead: Landowner and Community Support

Program Partners: City of Kawartha Lakes, CKLEAC, contractors, community organizations

Recommended Funding Level: Level 1 for 2024
Level 2 for 2025, 2027-2028
Level 3 for 2026

Since 2019, Kawartha Conservation has successfully implemented 14 urban demonstration projects, with \$75,000 in grant funding and \$38,200 in community investment leveraged. Through these projects, 456 metres of waterfront was restored and 2,190 native trees, shrubs and perennials were planted.

The City of Kawartha Lakes has several urban centres that are poised for growth in the coming years. It is critical that we develop a program designed to support this growing community to protect our watershed. The Stormwater Monitoring and Restoration program is a new initiative that will consist of two separate sub-programs: 1) the Stormwater Monitoring program, and 2) the Urban Restoration program.



Kent Street silva cell installation to help with urban runoff and reduce the heat island effect.

The Urban Restoration program will focus on natural infrastructure-based demonstration projects in our urban centres to build resilient communities in the face of climate change. At the core of natural infrastructure is the principle of Low Impact Development (LID) – an alternative to conventional stormwater management that supplements municipal water infrastructure with practices that treat stormwater at the source, preventing flooding and erosion. Examples of natural infrastructure include permeable pavement, green roofs, raingardens, bioswales, tree cells, and rainwater harvesting and storage. This program aims to create demonstration projects in high traffic, publicly accessible areas to educate and inspire private landowners to adopt similar projects on their properties

Decentralized LIDs absorb stormwater, reducing pressure on municipal stormwater facilities, and consequently the reducing the probability of stormwater facility failure events that are only likely to increase in the face of climate change and extreme weather. This program will empower private landowners to undertake land stewardship initiatives on their properties by offering free, downloadable landscape templates for Low Impact Development (LID) lawn alternatives. This approach will provide professionally curated resources, instructions, and landscape templates for independent implementation by landowners.

Kawartha Conservation will seek to collaborate with businesses and developers to expand the implementation to corporate grounds and new subdivisions. The primary goal of inspiring private land LIDs is to grow the amount of natural infrastructure and direct stormwater treatment areas across our watershed. Additionally, this program provides secondary benefits including increased biodiversity, habitat quantity and connectivity, community awareness and of natural processes.

Urban Restoration

Level 1

- ✓ Increase landowner awareness and engagement through Healthy Gardens webpage updates
- ✓ Increase urban naturalization through **50** digital landowner garden template downloads

Municipal funding: \$17,600
 Grant funding: \$0
 Support leveraged: \$0
Total Value: \$17,600
ROI: 0%

Level 2

- ✓ Increase landowner awareness and engagement through Healthy Gardens webpage updates
- ✓ Increase urban naturalization through **100** digital landowner garden template downloads
- ✓ Implement **1-2** public land LID projects
- ✓ Collaborate with **2** businesses/developments to implement LID projects
- ✓ Monitor stormwater runoff diversion and water quality at project sites

Municipal funding: \$22,300
 Grant funding: \$40,000
 Support leveraged: \$1,500
Total Value: \$63,800
ROI: 187%

Level 3

- ✓ Increase landowner awareness and engagement through Healthy Gardens webpage updates
- ✓ Increase urban naturalization through **200** digital landowner garden template downloads
- ✓ Implement **3-5** public land LID projects
- ✓ Collaborate with **3** businesses/developments to implement LID projects
- ✓ Monitor stormwater runoff diversion and water quality at project sites
- ✓ Present at **2** public meetings
- ✓ Engage **50** community volunteers in public land projects

Municipal funding: \$31,000
 Grant funding: \$110,000
 Support leveraged: \$2,500
Total Value: \$143,500
ROI: 363%

The Advisory Committee recommends starting at a service Level 1, increasing to a Level 2 for 2025-2027 and increasing service to a Level 3 in 2028. Building the program will encourage practical partnership development with the landscape and development industries to reduce urban runoff by facilitating voluntary lot level stormwater management by private landowners in new and existing homes.

Preferred program levels are highlighted in blue boxes. When multiple levels are highlighted it indicates varying levels of implementation over the 5-year period.

Text in bold represents unique activities between the levels.

Appendix B

Prioritization Matrix

A summary of the recommendations and priorities for all Lake Plans, each recommendation has a weighted value. The final column has been added to indicate which recommendation will be addressed in the new Action Plan programs.

Recommendation	Strategy	Urban/Rural					Rural			# of Highs(3)	# of Mediums(2)	# of Lows(1)	# of Any	Weighted Value	Implementation Action Plan 2024 Programs
		Balsam/Cameron	Canal/Mitchell	Scugog	Pigeon	Sturgeon	Four Mile	Head/Rush	Shadow/Silver						
Responsible Development and Construction	Urban and Rural Infrastructure	H	H	H	H	M	H	H	H	7	1	0	8	23	✓
Shoreline Naturalization	Stewardship	H	H	H	H	H	M	H	H	7	1	0	8	23	✓
Urban Stormwater BMP Projects	Stewardship	H	H	H	H	H	M	H	H	7	1	0	8	23	✓
Invasive Species Management	Stewardship	H	H		H	H	H	H	H	7	0	0	7	21	
Coordinated Monitoring of Lake Health	Research and Monitoring	M	H	H	H	M	M	H	H	5	3	0	8	21	
Septic System Management	Stewardship	M		H	M	H	H	H	H	5	2	0	7	19	✓
Keeping stakeholders informed	Communications and Outreach	H			H	H	H	H	H	6	0	0	6	18	✓
Implementing other community plans	Strategic Planning	H	H		M	H	M	M	H	4	3	0	7	18	
Management of Public Waterfronts	Urban and Rural Infrastructure	M	H		M	H	M	H	H	4	3	0	7	18	
Public/Technical Advisory Committees	Communications and Outreach	H	H	H	H	H	M			5	1	0	6	17	✓
Stormwater Management Planning	Urban and Rural Infrastructure	H	H	H	H	H				5	0	0	5	15	✓
Aquatic Plant Management Options	Communications and Outreach	H	H		H	H	H			5	0	0	5	15	

Recommendation	Strategy	Urban/Rural					Rural			# of Highs(3)	# of Mediums(2)	# of Lows(1)	# of Any	Weighted Value	Implementation Action Plan 2024 Programs
		Balsam/Cameron	Canal/Mitchell	Scugog	Pigeon	Sturgeon	Four Mile	Head/Rush	Shadow/Silver						
Agricultural BMP Projects	Stewardship	M	H	H	M	H		L	L	3	2	2	7	15	✓
Enhanced Shoreline Protection	Strategic Planning	H	H		H	H	M			4	1	0	5	14	
Pilot Projects	Research and Monitoring	H	H	M	H	M				3	2	0	5	13	✓
Profiling Lake Values	Communications and Outreach	H			H	H	M	M		3	2	0	5	13	
Research on Emerging Pressures	Research and Monitoring	L	H		L	M	M	M	M	1	4	2	7	13	
Official Plan Updating and Consistency	Strategic Planning	H	H		H	H				4	0	0	4	12	
Responsible Boating	Stewardship	M			M	M	M	M	M	0	6	0	6	12	
Obtaining Community Input	Communications and Outreach	H			H	H	M			3	1	0	4	11	✓
Sewage Treatment and Landfill	Urban and Rural Infrastructure	M		H	M	M				1	3	0	4	9	
Reforestation Program	Stewardship	M		M	M	M				0	4	0	4	8	✓
Collaboration With Partners	Communications and Outreach	M			H	M				1	2	0	3	7	✓
Lake Level Management Planning	Strategic Planning							H	H	2	0	0	2	6	
Shoreline Permitting Coordination	Strategic Planning	M			M	M				0	3	0	3	6	
Youth Programming	Communications and Outreach	M			M	M				0	3	0	3	6	
Protect large tracts of natural lands	Strategic Planning				M		M			0	2	0	2	4	
CANWET and PREDICT models	Research and Monitoring			H						1	0	0	1	3	
Colonial Waterbird Research	Research and Monitoring							H		1	0	0	1	3	
Maintain Special Policy Area	Strategic Planning						H			1	0	0	1	3	
Protecting Significant Groundwater Recharge Areas	Strategic Planning		H							1	0	0	1	3	

Recommendation	Strategy	Urban/Rural					Rural			# of Highs(3)	# of Mediums(2)	# of Lows(1)	# of Any	Weighted Value	Implementation Action Plan 2024 Programs
		Balsam/Cameron	Canal/Mitchell	Scugog	Pigeon	Sturgeon	Four Mile	Head/Rush	Shadow/Silver						
Routine Water Levels Communications	Communications and Outreach								H	1	0	0	1	3	
Scugog WATER Fund	Stewardship			H						1	0	0	1	3	
Watershed Planning	Strategic Planning			H						1	0	0	1	3	
Wild Rice Management	Strategic Planning				H					1	0	0	1	3	
Stewardship Strategy	Stewardship		H							1	0	0	1	3	
Socioeconomic Valuation	Research and Monitoring	L			L	L				0	0	3	3	3	
Lake Dredging	Urban and Rural Infrastructure			M						0	1	0	1	2	
Regulation	Strategic Planning			M						0	1	0	1	2	
Rural Landowner Stewardship Guide	Stewardship			M						0	1	0	1	2	

Appendix C

Status Update Report



2019-2023

Lake Management Implementation Action Plan Accomplishments



**KAWARTHA
CONSERVATION**

www.kawarthaconservation.com

277 Kenrei Road, Lindsay

705.328.2271



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Protecting our lakes and water resources in Kawartha Lakes.

Kawartha Conservation

Kawartha Conservation is a science and information based organization that manages natural resource features that are essential for sustaining water quality and quantity. Through scientific monitoring and best stewardship practices, our programs and services promote an integrated watershed approach that balances human, environmental, and economic need.



Lake Management Implementation Action Plan

The Lake Management Implementation Action Plan builds on the momentum of involvement and investment generated through the lake planning process with the goal to preserve and improve the appeal of our lakes as an engine for economic growth.

Spotlight on Success



HIGHLIGHTS



153,311

Trees & shrubs
planted



7,785

Shoreline (ft)
restored



10,846

Native species
planted

The team has hit significant milestones during the last four years. Each year Kawartha Conservation has increased the number of trees, shrubs and native species planted. A significant amount of shoreline, that plays a crucial role in the health of our lakes, has also been repaired.

Program Highlights



INCENTIVE GRANT PROGRAM

Community Grant Program



- Twelve community projects were completed:
 - Educational awareness campaign, lake health optimization, climate change initiative through tree planting, rain garden planting, aquatic plant removal and shoreline erosion control and naturalization
- Granted a total of \$62,337 and leveraged an additional \$150,208 in completed projects

Landowner Incentive Fund



- Successfully completed a total of 88 private landowner projects
 - 30 Agricultural projects
 - 27 Rural projects
 - 25 Waterfront projects
 - 6 Urban projects
- Granted a total of \$162,856 and leveraged an additional \$604,970 in completed projects

Program Highlights

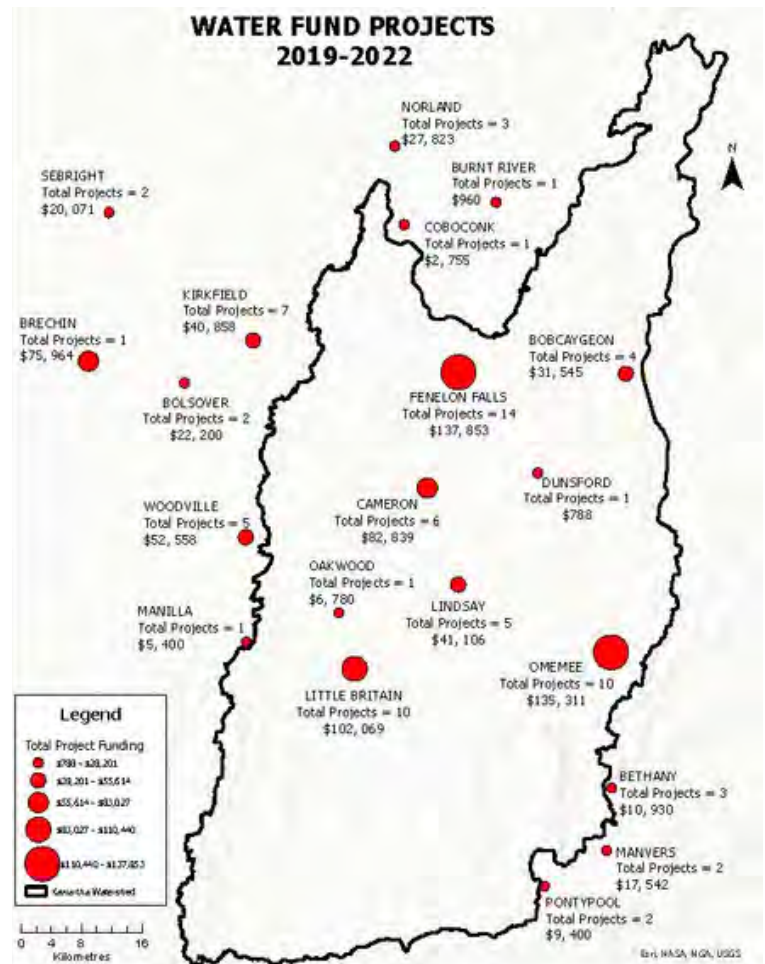


GENERAL PROGRAM

Implementation Oversight and Coordination



- Worked with the Community Advisory Panel, and the Science and Technical Advisory Committee to design an interactive map on Kawartha Conservations website
 - Provides a place for community groups and private landowners to go to promote their projects
- Connected with outside agencies to create lasting relationships including
 - Trent Severn Waterway
 - Carleton University
 - OMAFRA (Ontario Ministry of Agriculture Food and Rural Affairs)
 - ALUS (Alternate Land Use Services)



Program Highlights



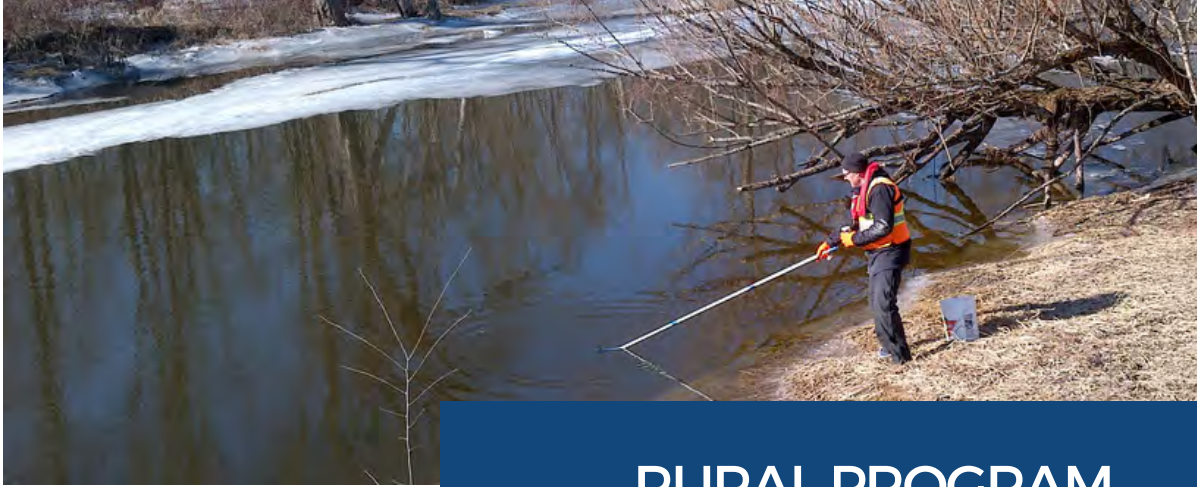
GENERAL PROGRAM

Sedimentation and Erosion Control Planning



- Staff certification and renewal of Certified Inspector of Sediment and Erosion Control.
- Attended site visits on active construction sites to better understand the deficiencies and identify local contractor approaches to fixing erosion sediment control practices.
- Creation of five fact sheets, distributed during permitting process, and made available on new webpage
 - Silt Fencing
 - Fibre Rolls
 - Straw Bale Check Dams
 - Erosion Control Blankets
 - Calculating Erosion Risk and Slope
- Created of four training videos, available on new webpage, includes training on silt fencing, fibre rolls, straw bale check dams and erosion control blankets.
- Hosted a symposium in Fenelon Falls for industry professionals, which included several presentations, exhibitors and networking opportunities. Over 120 people in attendance.

Program Highlights



RURAL PROGRAM

Agricultural Stewardship



- 50 consultations with farmers regarding Best Management Practice (BMP) implementation
- Attended and presented at annual agricultural commodity group meetings
 - City of Kawartha Lakes VIP Farm Tour, Kawartha Country Living Show, East Central Farm Show, Environmental Farm Plan Workshops, Victoria Soil and Crop Improvement Association
- Participated in the East Central Farm Stewardship Collaborative and the ALUS Peterborough Participant Advisory Committee
- Hosted agricultural outreach and education events:
 - BMP webinar with partners Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), Lake Simcoe Region Conservation Authority, Toronto Region Conservation Authority
 - Agricultural Symposium with presentation from Thames River Phosphorus Reduction Collaborative
- Implemented 9 agricultural BMP demonstration projects across the Upper Talbot River sub watershed, contributing to the Talbot River Healthy Environment Initiative funded in part by OMAFRA

Program Highlights



RURAL PROGRAM

Investigative Upstream Monitoring



- Monitored six streams over a five year period
 - McLaren Creek, Jennings Creek, Reforestation Creek, and working with Trent University on Sucker, Stoney, and Janetville Creek
- Analyzed results were provided to the Stewardship department for consideration during project implementation.
- A technical and summary report on McLaren Creek, Jennings Creek and Reforestation Creek was developed and published on Kawartha Conservation's [website](#).
- News article produced by the [Peterborough Examiner](#)

Investigative Upstream Monitoring - Rural Extension



- Extension of the Investigative Upstream Monitoring program to monitor four rural rurally sourced streams in Lindsay.
 - Sinister, Jennings, Distillery and Albert Creek
- Characterizing water quality, flow regime and aquatic life at each outlet through unique sampling techniques including:
 - Automatic samplers and microbial source tracking (used to identify sources of E.coli)
 - Water level loggers and staff gauges installed to monitor flow regimes.
 - Rain gauges to continuously capture rainfall amounts.
 - Benthic-invertebrate species and community structures are monitored to assess aquatic life.

Program Highlights

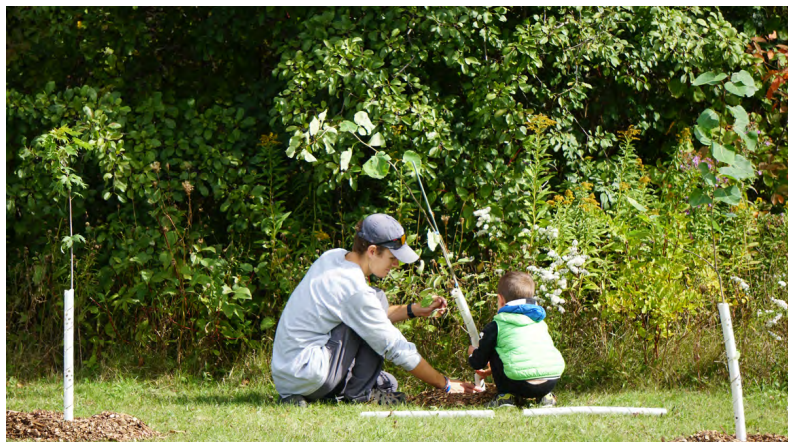


RURAL PROGRAM

Rural Residential Stewardship



- Funding received from the Forest Recovery Program
 - Four sites, 5,500 trees in the ground
- For three seasons now, funding has been received from the 50 Million Tree Program
 - Six sites in 2021, 6,700 trees planted
 - Four sites in 2022, 11,475 trees planted
 - Twenty two sites in 2023, 39,090 trees planted
- Over the Counter Seedling Sale saw 75,150 seedlings sold



Program Highlights



Aquatic Plant Control



Before



During



After

- Tested one brand of aerator, the Kasco 3/4 Horsepower Dock Mount Aquatic Thruster
- Three study locations including Lake Scugog, Balsam Lake, and Sturgeon Lake
- Drafted technical report; data indicates significant reductions in plants growing in the immediate "zone of influence", plant coverage has declined to about one-third.
- Partner in a research collaborative starting in 2023 with Carleton University as the lead, the project will be completed on Trent Severn Waterway and Rideau Canal. The study will look at:
 - impacts of aquatic plant control techniques
 - nearshore aquatic ecosystems
 - impact of boat wakes on shoreline erosion
 - strategies for naturalizing shorelines in urbanized settings

Program Highlights



SHORELINE PROGRAM

Shoreline Planning and Policy Background



- Informed the City of Kawartha Lakes Planning Department on rural zoning by law review
- Published planning policy articles:
 - “Shoreline Planning and Policy in the City of Kawartha Lakes - Comparison of municipal land use policies 2020” on where CKL compares to other municipalities with respect to shoreline land use policies
 - “Shoreline Planning and Policy in the City of Kawartha Lakes- Trends in shoreline development and water quality 2020” on shoreline land use change in relation to water quality changes over time
- Conducted research on socioeconomic and environmental changes with help from an enviro-analytic company
 - Created a data snapshot of the income and dwelling permanency around the lakes

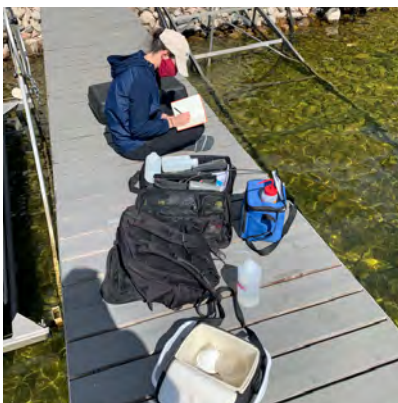


Program Highlights



SHORELINE PROGRAM

Near Shore Monitoring



- 170 Citizen Scientists engaged in monthly monitoring of nutrients (phosphorus and nitrogen), water clarity (turbidity), salts (chloride), E. coli, and algae (chlorophyll) for the following lakes:
 - Lake Scugog (northshore)
 - Balsam Lake
 - Cameron Lake
 - Sturgeon Lake
 - Pigeon Lake
- Data collected used to issue reports and provide recommendations for stewardship activities
- Peer reviewed article:
 - "Community science- based monitoring reveals the role of land use scale in driving nearshore water quality in a large, shallow, Canadian lake" accepted to Lake and Reservoir Management
 - "Nearshore plankton and macroinvertebrate community structure is strongly associated with macrophyte abundance in a large lake with high shoreline development"
- Ph.D. thesis performed on "Assessing nearshore water quality and biological condition in the Kawartha Lakes using a community science approach"
- A technical and summary report on the Nearshore Monitoring Program was developed and published on Kawartha Conservation's [website](#).

Program Highlights

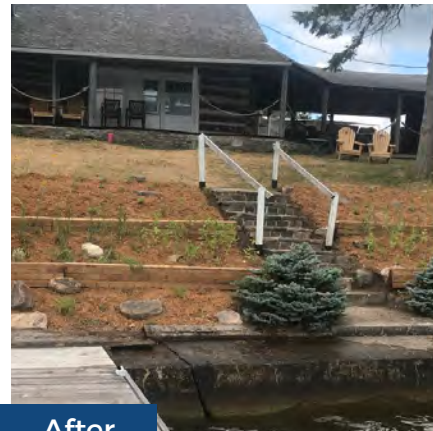


SHORELINE PROGRAM

Shoreline Stewardship



Before



After

- More than 50 consultations completed with private landowners and community groups
- Watershed Welcome created for local realtor's to provide to new home buyers
- Shoreline restoration project completed at Sturgeon Point Golf Club (see above photos) to address erosion issues adjacent to the shoreline.
- We worked with Haliburton, Kawartha, Pineridge District Health Unit to monitor local beaches, inform on beach posting decisions, and provide recommendations to CKL on stewardship projects.
- Semi-annual Native Plant Sale that encourages the community to purchase native species at a reduced cost. Plant kits include shoreline stabilizers, understory oasis, pollinator gardens and rain gardens. Since 2019, a total of 7153 native species have been sold with 212 private landowners participating.

Program Highlights



URBAN PROGRAM

Bluescaping



- Received an RBC grant to complete impactful demonstration sites;
 - Kent Street silva cell installation for Lindsay's downtown revitalization project
 - Rain garden and tree planting at Alexandra Public School
 - Rain garden at Ken Reid Conservation Area
 - Rain garden at Omeme Beach



Program Highlights



URBAN PROGRAM

Bluescaping



- Creation of three different Garden Guides to help landowners implement healthy, natural gardens on their properties. Each guide includes design templates, species list, maintenance tips and more.
 - Pollinator Garden
 - Understory Garden
 - Low Maintenance Rain Garden
- Received \$75,000 in funding from Environmental Damages Fund (EDF) over the course of 2021 and 2022 to complete restoration of fish habitat within the urban areas of the City of Kawartha Lakes.
 - A total of 10 project sites were completed, with each site focusing on water quality improvement and streambank erosion and sediment control.
 - Once implementation was completed, there was a total of 1,496 ft of restored streambank, 747 trees and shrubs planted and 910 native species planted.