

Nottawasaga Pilot Project (N-WIP)

Canadian Framework for Community Action – Lake Huron Georgian Bay Watershed

2009/2010

Final Report – April 1, 2010

The purpose of this report is to:

- describe achievements in terms of the approved deliverables identified in the Project's implementation or contribution agreement, where applicable;
- report on progress towards quantitative targets and monitoring results;
- confirm resources from all funding sources;
- update maps and photographic documentation (slides, photos, and CDs); and,
- complete and submit applicable invoices and expenditure summary sheet.

1.0 Effectiveness of Pilot Project

The Nottawasaga Pilot project was named the Nottawasaga Watershed Improvement Program or "N-WIP" by the program steering committee. This project benefited from 3 years of Environment Canada Support in the 2007/08, 2008/09 and 2009/10 fiscal years. Due to start-up challenges however, the N-WIP effectively started in January 2008. This program has effectively finished 2 complete seasons of operation, one in 2008 and the second in 2009. At the time of this final report, the program has just started its 3rd year.

The N-WIP Program has provided the NVCA and its environmental partners with a significant opportunity to increase the scope and strategic nature of the water quality improvement projects completed in the Lower Nottawasaga River Basin and the adjacent Blue Mountain Watersheds to the west. All of these drainages are in close proximity to southern Georgian and discharge into it.

1a Description of Accomplishments (see Part 2 Project Summary for more Details)

In Year 1 (2008), accomplishments included:

- Hosted public information meeting January 2008 at Wasaga Beach Council Chambers
- Recruited and supported N-WIP Steering Committee
- Implemented 5 field projects (including Yellow Fish Road Project.
- Initiated development of Environmental Action Plan

In Year 2 (2009), accomplishments included:

- Hosted 2009 project site tour on April 22 (Earth Day) for steering committee and for other partner group representatives.
- Implemented 4 volunteer riparian tree planting projects at strategic sites on Lamont Creek (2), Black Ash Creek and Bear Creek working with steering committee members, partner groups and students from 3 area highschools. COA funding administered through the Upper Great Lakes Management Unit of the Ministry of Natural Resources, supported the purchases of tree, mulch blankets and planting equipment. As well as the 4 volunteer tree planting events, 2 follow-up work days for mulch blanket installation were also completed working with the Nottawasaga Steelheaders and the Wasaga Beach Fish and Game Club.
- Implemented 3 professional tree planting projects in strategic riparian areas adjacent to McIntyre Creek, Lamont Creek and Marl Creek.
- Negotiated and set-up high priority livestock exclusion fencing project on Lamont Creek.

In Year 3 (2010) preliminary accomplishments included:

- Installed fencing adjacent to Lamont Creek at Wyant Property
- Hosted 2 steering committee meetings.
- Coordinated development of corporate outreach products/tools.
- Developed 5 and printed 2 road-side 4' X 8' signs.
- Developed draft 2010 Work Plan
- Hosted March 23, 2010 "Information and Sponsorship Meeting"

Summary Statistics (after 2 years of the project)

- Approximately 50 livestock have been excluded from 1km of stream.
- Approximately 20,000 trees have been planted in riparian areas, along 5km of stream.
- Approximately 100m of stream habitat has been restored.

1b. Challenges

The large geography for the pilot project (including 6 member municipalities) represented a challenge. Working with a wide range of municipal and local community group partners was a key to spreading-out the work load and being able to demonstrate progress over most of the area of interest. Focussing on less technically demanding projects like riparian tree planting permitted involvement of a wide range of partners. On the flip side, it was important for partners to realize that larger-scale, more staff time intensive projects could not necessarily be implemented in each municipality in each year. For example negotiating and implementing the Wyant Project in Clearview Township has made it necessary to defer negotiation and coordination of the Parrett Project in Town of the Blue Mountains, into 2010.

Sustainability for the program is also a challenges but we are optimistic about some of the preliminary outcomes from our corporate sponsorship efforts.

1c. Unanticipated Outcomes

Having the Township of Tiny not only sit on the N-WIP Steering Committee but play and active role in the program has been very positive, albeit unanticipated. In the L. Huron South-eastern Shoreline, impacted users (e.g. Cottage Owners) have been able to make the link between local landuse practices, tributary discharges and impacts to water quality. Feedback from impacted users has highlighted the need for work in this area. The need in the Nottawasaga Area is as great, but due to a larger more complex contributing watershed and the fact that impacted users (Township of Tiny) are located north-east of the Nottawasaga Watershed, defining the issues and needs from a water quality perspective has been more challenging. Having positive feedback from Township of Tiny highlighting the need to work on water quality in the Nottawasaga Basin may help provide on-going political support for the N-WIP program.

1d. see Cash Flow Statement

1e. Lessons Learned from Pilot Project

As a large conservation authority, engaging all 18 member municipalities in strategic water quality improvement programs each year is a big challenge. In the N-WIP, we attempted to implement significant projects with local partners within the boundaries of 5 member municipalities in the northern part of the watershed, closest to Georgian Bay. Even with the strong support from the Lake Huron Committee, we were only able to implement projects within 4 out of 5 N-WIP municipalities each year. This was achieved by “emphasizing the basics” including buffer strip retirement and riparian tree planting, both working with volunteers and also taking advantage of the current capacity of the NVCA forestry program. Combining approaches worked well in that the volunteer plants engaged the community partners and generated program exposure and momentum while the professional plants were helpful for getting more trees in the ground and increasing the scope of work completed, beyond what could be achieved working with volunteers alone.

Having a big area of focus is great for engaging partners (e.g. multiple highschoools) and keeping options open for a wide range of projects on multiple sites, but does not take advantage

of the momentum that can be developed with local landowners working in a smaller area more intensively. Working on Site A can provide staff with perspectives on adjacent properties including environmental needs and potential projects, as well as providing “word of mouth” positive communications to adjacent landowners which can facilitate negotiation of projects on abutting properties. Focussing on a smaller area could also make it more feasible to demonstrate positive water quality and ecosystem responses to projects, particularly over a short time-line. There are both pros and cons to working in a large geography (e.g. Nottawasaga Pilot) versus a more focussed geographical area (e.g. North Bayfield Pilot).

2. Project Summary

Reporting Period: All 4 quarters of 2009/10 Project

Project Activity	Anticipated Activity Result (Performance Measures)	Activity Status (In Progress; Complete; Cancelled; Delayed; Not Started)	Description of Progress to Date (with explanation of any changes from Work Plan)	Projected % Total Budget	Actual % Total Budget
1. Provide administrative and coordination services for the pilot projects.	Facilitation of the pilot project.	<u>Completed.</u>	NVCA has provided program and project management services as well as administering payroll and purchasing, providing office space, phone, fax, furniture, cleaning, IT support, GIS support etc.	5	5
2. Host two strategic workshops intended to engage local municipalities, communities, interest groups, landowners and corporate sponsors, promote progress achieved through the program and develop momentum for implementation of the sustainability plan) One of these workshops could be a field tour.	Improve community awareness of local water quality and habitat issues and develop momentum for implementing 2009 projects and for supporting the sustainability plan.	<u>Completed, N-WIP</u>	The NVCA has hosted the two strategic workshop events identified in the deliverables. The April 22, 2009 event was a field tour which provided steering committee members, municipal councilors/staff and other community group partners with an opportunity to learn about proposed and high priority candidate restoration sites in the N-WIP area of interest. Information/ Sponsorship Session was held on March 23, 2010 in Wasaga Beach to inform the public and engage potential corporate sponsors.	10	10
3. Erect road-side signage promoting the pilot project and L. Huron Community		In progress but late for deadline.	Two signs have been completed and NVCA staff are waiting for the ground to thaw out to install them, one at the Baycliffe Site in Wasaga Beach	10	10

<p>Action Framework at two sites (November 30, 2009).</p>			<p>and the second at the Blue Mountain Mall Site in Collingwood.</p> <p>Municipal staff have committed to assist with installation.</p> <p>Three additional signs are being developed (with funding support from MNR-COA and are scheduled to be installed Spring 2010.</p>		
<p>4. Support the implementation committee consisting of current agency and interest group partners involved in the N-WIP Program.</p>	<p>Maintain momentum for implementation of water quality improvement projects.</p>	<p>In-progress</p>	<p>Two steering committee meetings were coordinated/hosted in 4th quarter on Feb. 3 and March 3.</p> <p>A steering committee meeting was hosted on October 7, 2009. Steering committee members were actively engaged as project partners for implementation of tree planting/buffer strip creation projects completed to in the first two quarters.</p>	<p>25</p>	<p>25</p>
<p>5. Develop a strategic sustainability plan for the pilot project (N-WIP program) that would include: a plan for accessing the funding needed to extend the program into 2010/11, a communication/ media engagement program</p>	<p>Maintain capacity to implement program and thereby continue implementation of water quality and stream health improvement projects beyond 2009/10.</p>	<p>Completed, Sustainability Plan was submitted via e-mail, March 2010.</p>	<p>Steering Committee and NVCA staff hosted Information/Sponsorship Meeting on March 23 and prepared:</p> <ul style="list-style-type: none"> • Letter of invitation (w new letterhead) • Factsheet • Power Point Presentation • 9 posters • Draft work plan requiring \$40,000.00 of operational support. • New Area Map 	<p>20</p>	<p>20</p>

<p>(including a signage component), new partnership development, corporate sponsorship strategy, plan for applying for funding from government sources (e.g. Ecoaction 2000). This plan would identify opportunities to expand the scope of the pilot to address integrated shoreline habitat management and opportunities to help in addressing water quality problems at the Tiny Beaches. (March 31, 2010);</p>			<ul style="list-style-type: none"> • Revised Partner List. • Implemented direct contact via steering committee and e-mail to approximately 18 potential local corporate sponsors. • Promoted meeting with Collingwood “The Peak” FM and Wasaga Beach “The Beach” Radio Stations. <p>NVCA staff have submitted application to MNR-COA (Upper Great Lakes Man. Unit) for \$8,000.00/year to support staffing costs and \$12,000.00 for materials costs for 2010/11 and 2011/12 fiscal years. Wasaga Beach has identified potential corporate sponsor and will be coordinating approach with NVCA staff.</p> <p>NVCA staff completed deputation to Tiny Township and received confirmation from Township that they would like to participate on the N-WIP steering Committee. NVCA have assisted in facilitating Coastal Management Plan meetings and development of information needs document.</p>		
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<p>6. Implement seven (7) stewardship projects developed in Phase 2 (2008-2009) (November 30, 2009).</p>	<p>Establish 1100m of forested buffer strips on local watercourses to reduce future nutrient and sediment inputs, reduce future summer warming/increase dissolved oxygen concentrations etc.</p>	<p><u>Completed</u></p>	<p>High priority livestock exclusion fencing project at Wyant Property – Lamont Creek was completed January 2010 (this represented the eighth project completed).</p> <p>Upper Great Lakes Management Unit Contributed \$12,000.00 COA funding towards N-WIP Projects (including \$1,800.00 for signage).</p> <p>Completed 7 tree planting riparian/buffer strip establishment projects.</p> <p>A total of 4 were implemented working with community volunteers, including projects on Lamont Creek (2), Black Ash Creek and Bear Creek.</p> <p>A total of 3 were completed by a professional tree planting contract crew including projects on Lamont Creek, MacIntyre Creek and Marl Creek.</p>	<p>25</p>	<p>25</p>
<p>7. Coordinate (e.g., site visits, conceptualization, design, costing and acquisition of permits/permission) the development of two (2) stewardship</p>		<p><u>Completed.</u></p>	<p>Draft 2010 Work Plan includes 8 riparian tree planting projects (May 1, Black Ash Creek, May 5, Black Ash Creek, May 8, Willow Creek, May 12, Lamont Creek, May 15 Lamont Creek, May 15, Nottawasaga River, unknown date</p>	<p>10</p>	<p>10</p>

<p>projects to be implemented in 2010 (November 30, 2009).</p>			<p>Minesing Wetlands demonstration plant, Porter professional plant, a bufferstrip implementation project (Silver Creek – Town of the Blue Mountains) and a conceptual project for Lamont Creek/Wasaga Beach that would include stream-bed restoration and floodplain creation.</p> <p>Initiated landowner negotiation but have not confirmed livestock exclusion fencing plan for Parrett Property on Silver Creek, Town of the Blue Mountains.</p>		
<p>8. Collect background and new biological monitoring data using Ontario Benthic Biomonitoring Network Protocol and Fish Community Sampling (presence/absence data) for Silver Creek (two sites) and Black Ash Creek (two sites). Monitoring data collected in 2008 on Lamont Creek and McIntyre Creeks will be supplemented by new collections of stream temperature data at four stations.</p>	<p>Collect background data to support future performance monitoring of stream habitat restoration initiatives.</p>	<p><u>Complete.</u></p>	<p>Fish Community monitoring data collected for two stations on Silver Creek and two stations on Black Ash Creek. A report was developed for the fish sampling work.</p> <p>Benthic Biomonitoring data has been collected for two stations on Silver Creek and two stations on Black Ash Creek. <i>Status of interpretation/reporting for this data has not been confirmed.</i></p> <p>Stream temperature monitoring data has been collected at 4 stations on McIntyre Creek as well as stations on Silver Creek and Black Ash Creek. <i>Status of</i></p>		

<p>These data collection projects will provide a defensible basis for documenting anticipated improvements in stream ecosystem health due to on-going stream/buffer strip improvement projects implemented through the pilot project. Monitoring results will be incorporated into the final progress report (see next bullet, for March 31, 2010);</p>			<p><i>interpretation/reporting for this data has not been confirmed.</i></p>		
<p>9. Submit applications for pilot project funding for the 2010/11 period.</p>		<p><u>Complete.</u></p>	<p>NVCA staff have submitted application to MNR-COA (Upper Great Lakes Man. Unit) for \$8,000.00/year to support staffing costs and \$12,000.00 for materials costs for 2010/11 and 2011/12 fiscal years. NVCA staff working with representatives from Burnside and Associates, Beacon Environmental and Canadian Mist to pursue corporate sponsorship opportunities. Application to Ecoaction Fund was not completed for Nov. 1, 2009 deadline.</p>		

<p>10. Prepare a final progress report summarizing activities towards Framework implementation and project finances, including lessons learned and recommendations for future pilot projects initiatives (see (C) 1. and 2.) (March 31, 2010).</p>		<p><u>Completed</u> (through submission of this report).</p>			

• **Cash Flow Update** – For Period Ending March 31, 2009

Income:	Period Ending March 26, 2010				To Date (cumulative)			
	Projected		Actual		Projected		Actual	
	Cash (\$)	In-Kind (\$)	Cash (\$)	In-Kind (\$)	Cash (\$)	In-Kind (\$)	Cash (\$)	In-Kind (\$)
NVCA			\$3,364.49		\$15,490.00	\$250	\$18,856.81	\$208.00
Environment Canada					\$31,500.00		\$23,477.31	
Volunteers					\$0.00	\$3,000.00		\$3,410.00
N-WIP Steer. Com.					\$0.00	\$3,000.00		\$12,200.00
Total Income			\$3,364.49		\$46,990.0	\$6,250	\$42,334.12	\$15,818.00

Expenses:	Period Ending March 26, 2010				To Date (cumulative)			
	Projected		Actual		Projected		Actual	
	Cash (\$)	In-Kind (\$)	Cash (\$)	In-Kind (\$)	Cash (\$)	In-Kind (\$)	Cash (\$)	In-Kind (\$)
Human Resources	\$1,000.00	\$1,000.00		\$5,675.00	\$9,000.00	\$7,000.00	\$3,631.18	\$14,743.00
Contracts and Professional Services	\$3,250.00		\$9,626.57		\$37,240.00		\$42,920.69	
Registration Fees					\$100.00		\$110.00	
Travel and Field Expenses	\$250.00				\$1,250.00		\$1,485.98	
Purchase of Supplies					\$2,000.00		\$448.35	
Communication and Dissemination			\$1,200.00		\$1,900.00		\$1,200.00	
Rental of Space or other facilities		\$250.00	\$250.00			\$500.00	\$250.00	
Total Expenses	\$4,500.00	\$1,250.00	\$11,076.57	\$5,675.00	\$51,490.00	\$7,500.00	\$50,046.20	\$14,743.00
Income minus Expenses	-\$4,500.00	-\$1,250.00	-\$7,712.08		-\$4,500.00	-\$1,250.00	-\$7,712.08	\$1,075.00

Discrepancies (recipient must explain any significant discrepancies between the Projected and actual amounts in the cash flow statement).

- **Changes/Revisions/Future Activities**

If you foresee any concerns with Project implementation, Project completion, or Project cash flow at this time, please state them and explain.

N.A.

4. Evaluation of Project Effectiveness

The NVCA is committed to ongoing benthic invertebrate, fish community and water temperature monitoring as a means of evaluating long-term water quality and fish/wildlife habitat improvements associated with this project. NVCA aquatic biologist will be working with core monitoring staff to implement assessment projects in 2010 designed to evaluate the performance of stewardship projects and to document the need to implement work on new sites (e.g. need to implement stream habitat/floodplain restoration on Lamont Creek at Baycliffe site in the Town of Wasaga Beach).

NVCA is also committed to monitoring past tree planting sites and implementing tending projects (grass removal, brush blanket installation etc.) working with community partner groups, as required.

5. Further Comments

In order to effectively restore the health of the Nottawasaga River (and reduce impacts to southern Georgian Bay) it will be critical to develop the science needed to better understand the relationship between phosphorus loading, suspended algae and diatom growth, associated turbidity and subsequent impacts to aquatic habitat. Currently we do not know whether or not summer growing season low-flow turbidity (often 35cm of visibility or less in the main river and particularly Innisfil Creek) is related to suspended single-cell organism growth, suspended in-organic matter (e.g. clays) or some combination of the two.

If suspended algae growth is important we need to partition sources of phosphorus to see if summer low-flow contributions (from in-stream livestock access or sewage treatment plant discharges) play a disproportionate role in impacting water quality rather than upland sources (e.g. from row-crops) which only contribute during high flow periods, not necessarily at the same time that summer water quality impacts are being demonstrated.

We also need to know whether or not the inflow from Innisfil Creek by itself can account for the bulk of the water quality impacts extending to Wasaga Beach and potentially to the Beaches of Tiny. Without this understanding it is possible that we could work hard on stewardship in the current N-WIP area (lower Nottawasaga River basin and Blue Mountain Watersheds without truly being able to address the water quality in the main River. In the future linking work in the Innisfil Creek basin with the work in the N-WIP area may be critical for being able to demonstrate a significant water quality improvement in the river and its outflow to Georgian Bay. Taking advantage of current initiatives and partners in the Innisfil Creek basin (South Simcoe Streams Network, New Tecumseth Streams Committee, new Agricultural social marketing pilot) may be an important opportunity.

The MOE standard criterion for dissolved phosphorus 0.03mg/l may have been developed looking at rock-bottomed medium gradient (>0.3% slope) rivers and associated Cladophora growth. This approach may provide good protection for rivers like the middle Thames, Maitland, Saugeen, middle grand etc. but be inappropriate for providing protection for a flat sand substrate river where the available phosphorus (summer low flows) is expressed as a suspended algae bloom and where the lack of rock bottom habitat does not support filter-feeding species such as caddis flies which are capable of removing suspended algae from the water column, thereby reducing turbidity and integrating phosphorus into the next level of the food chain where it is less available to support future algae growth. Bottom line, the 0.03mg/L phosphorus criterion may be too high to protect the health of aquatic habitat in a flat relatively lake-like habitat with a shifting sand bed, where the bulk of the physical habitat is limited to overhanging riparian vegetation and woody material inputs. The 0.02

mg/L lake criterion may be a better fit with protecting the Nottawasaga. Stewardship efforts may not be successful if an inappropriate dissolved phosphorus criterion is being applied to managing urban growth and STP discharges.

For future tributary pilots, it would be very valuable to have access to new science or a synthesis of existing science looking at the role that aquatic habitat restoration and foodweb management can play in creating a buffer for making phosphorus unavailable. In an era where benthic mussels have been demonstrated to play a huge role in regulating clarity in lakes, it is much easier to sell habitat/foodweb manipulation as a strong phosphorus management tool.

Such information may show that for a river system, improving habitat and capacity to integrate phosphorus into a complex food web may be even more cost effective (and provide a better range of renewable natural resources like fisheries) than the same value of work completed further inland. This work could support a philosophy of looking at phosphorus as a nutrient resource rather than just as a pollutant, and would provide a basis for using habitat improvement/management as a means of expressing the nutrient into the target resource/food web. This approach is consistent with the idea that a large predatory fish could be viewed as a phosphorus storage module making the nutrient unavailable over a relatively long cycle for supporting algae growth, i.e. even if you are not interested in fish populations, fish habitat management can be a vital component of a holistic water quality improvement initiative. For future urban development habitat restoration could be a viable alternative to phosphorus trading.