

Nottawasaga Valley Conservation Authority

Watershed Plan Strategic Review and Update 1996-2015

November 24, 2006

Approved by the NVCA Board of Directors _____



Table of Contents

Executive Summary	3
1.0 Introduction	7
1.1 Why Manage Water on a Watershed Basis?	7
1.2 The 1996 Watershed Plan: Goal and Objectives	11
1.3 Why Do We Need a Review of the 1996 Watershed Plan?	12
2.0 The Watershed Plan Strategic Review Process	12
2.1 The Integrated Planning Cycle	12
2.2 The Review Process	13
3.0 Watershed Issues Both Old and New	14
4.0 2006 Vision	15
4.1 Measurable Watershed Targets	16
4.2 Current status of Watershed Targets	17
5.0 Legislative and Policy Update	19
6.0 Assessment of the 1996 Watershed Plan Implementation	21
6.1 Evaluation of the 1996 Watershed Plan Recommended Actions	21
6.2 Updated Watershed Management Plan Recommendations	21
7.0 Consultations	23
8.0 Conclusions	24
Figure 1: The Hydrological Cycle	10
Figure 2: Integrated Planning Cycle	13
Figure 3: Summary of the Watershed Plan Strategic Review Phases	13
Figure 4: Watershed Objectives and Targets	17
Figure 5: Current Target Status by Subwatershed	19
Figure 6: Legislation	20
Watershed Map	
Appendix A	Evaluation of the 1996 Watershed Plan Recommended Actions and Summary of Revised Recommendations, Priorities, Funding and Timing
Appendix B	Planning Policy Formulation Process

Executive Summary

Why Do We Need a Watershed Plan Review?

The purpose of this exercise is to conduct a review of the Nottawasaga Valley Conservation Authority's (NVCA) 1996 Watershed Plan to address the issues that have arisen since the plan was completed.

This review examined the Watershed Plan's strategic directions, issues, recommendations, and assessed the effectiveness of its implementation.

This review highlights the importance of integrating the long-term Watershed Plan with the annual Business Plan processes. The NVCA has developed an annual business planning process that ensures the implementation of the Watershed Plan's strategic directions as well as providing the capability to implement new local and provincial initiatives.

Once this strategic review has been approved by the Full Authority, it will be considered an amendment to the 1996 Watershed Plan and, as a result, it will represent NVCA policy.

What's NVCA's Vision and Guiding Direction?

The following is a summary of NVCA's strategic directions which has been approved through the Business Plan process. It provides clear and concise guidance and is consistent with the 1996 Watershed Plan.

- **Vision:** *"Conserving our Healthy Waters"*
- **Goal (Mission):** *"Working together to value, protect, enhance, and restore our watershed resources, for a healthy sustainable future"*
- **Core Statement:** *"The Nottawasaga Valley Conservation Authority is your public agency dedicated to the preservation of a healthy environment. As your partner, the NVCA provides the expertise to help protect our water, our land, our future".*

- **Principles:**

This plan reflects the following management principles:

- Wise use: balancing socio-economic needs and ecological health within the watershed
- Innovation and use of the best available technologies
- Maintaining proactive, adaptive programs
- Maintaining a fair, open decision making process that balances individual and societal rights, privileges and responsibilities
- Maintaining strong stakeholder communication, education and consultation
- A streamlined, cooperative approach, emphasizing partnerships
- Considering economic implications of all management actions
- Science based, policy guided decision making

- **Objectives and Targets:**

To help achieve the watershed goal, the objectives have been updated and measurable watershed wide targets added. Additional targets may be developed in the future as appropriate. NVCA's business planning process will annually monitor progress in achieving watershed wide targets and provide additional targets if appropriate. In addition, specific subwatershed targets will be developed and tracked through the Watershed Report Cards.

Watershed Objectives	Recommended Watershed Targets
Protecting, enhancing and restoring water	<ul style="list-style-type: none"> - 100% Healthy Streams - 75% of the watershed's natural stream length should be naturally vegetated (30m) on both sides of the stream - Meet provincial water quality objective(PWQO) <ul style="list-style-type: none"> • total suspended sediments below 25mg/l • The Assimilative Capacity Study suggested a target of 36,964 kg/year total maximum yearly load of phosphorus (Nottawasaga River)
Protecting, enhancing and restoring land	<ul style="list-style-type: none"> - 10% of a watershed should be wetlands. - 30% of the area of any subwatershed should be forested - At least 10% of the subwatershed should be forest cover 100 metres or further from the forest edge (5% should be 200 metres or greater from the forest edge)
Protecting life and property from flooding and erosion	<ul style="list-style-type: none"> - Zero lives lost and minimal property damage - Zero unauthorized development in Hazard Lands - The percentage of impervious surfaces within any subwatershed should not exceed 10%.
Providing educational and recreational opportunities for the public	<ul style="list-style-type: none"> - Provide 8000 student environmental education opportunities per year and effective communication

Recommendations/Actions to Implement NVCA's Goal, Objectives and Targets

Following from the 1996 Watershed Plan and the results of this review the updated recommendations are:

1. Provide municipalities with technical and planning assistance to incorporate environmental and natural hazards policies into planning documents.

2. All NVCA programs and services shall continue to build-in an education and communication component within their programs to effectively inform key audiences on the importance of all aspects of wise watershed management and conservation.
3. All programs shall continue to search for new and innovative funding sources and partnerships.
4. A watershed wide natural heritage strategy shall be developed in support of the provincial and local growth management plans.
5. The NVCA shall promote policies protecting the natural heritage system.
6. The NVCA shall continue its land acquisition and securement programs to help ensure the protection of important natural features and water resources.
7. Terrestrial and aquatic restoration opportunities shall be identified, evaluated and promoted through stewardship programs, subwatershed studies and the planning process.
8. The NVCA in conjunction with MOE shall develop a Groundwater Management Plan in order to manage the quantity and quality of groundwater. This could include strategic planning, development standards, policies, and stewardship initiatives for the effective management of groundwater resources
9. The NVCA shall provide both ground and surface water technical support to its municipalities to enable them to implement Provincially/Federally and locally mandated initiatives including implementing Source Water Protection Plans
10. The NVCA shall continue to play an active role in Source Water Protection Plan development and implementations, meeting its provincially and locally mandated responsibilities.
11. The NVCA shall play a major role in the implementation of the Assimilative Capacity Study recommendations partnering with the province and local municipalities to develop local implementation strategies and actions.
12. The NVCA shall carry out Assimilative Capacity Studies for the Blue Mountain Watershed streams and where appropriate for the Severn Sound watersheds within NVCA's area of jurisdiction.
13. The NVCA shall provide technical input to MOE concerning the permits to take water to assist the decision makers in making the most informed decision possible following the Conservation Ontario and local Memorandum of Understanding
14. The NVCA should expand its Watershed Monitoring Program to provide inputs to municipalities, landowners and MOE to help ensure the most effective watershed nutrient management possible and to monitor the effectiveness of actions taken. Additional

financial support is required from the province or other sources to fully implement this program

15. The NVCA shall continue to promote the use of best management practices to ensure the protection and restoration of water quality and quantity and the implementation of the current and future Assimilative Capacity Studies recommendations
16. The NVCA shall continue to update the flood forecasting and warning methodology and assist municipalities in their emergency response planning.
17. The NVCA shall develop a watershed wide erosion control model.
18. The NVCA shall use the information from the provincial and local Growth Management Plans to assist in setting priorities for Subwatershed Plans.
19. A Watershed Health Report should be produced annually to communicate monitoring results to watershed stakeholders. Staff should prepare report cards every five years for each subwatershed. This should be a phased approach with 2-3 subwatershed report cards produced each year.
20. Watershed management targets shall be established specific to all four watershed objectives.

1.0 Introduction

1.1 Why Manage Water On A Watershed Basis?

The residents of the watershed are well aware of the importance of their water resources. (See attached map showing NVCA's administrative area). Public concerns have been raised through numerous local planning exercises regarding the impacts of land use and development on the quality and quantity of surface and ground water.

Impacts on water resources are often not limited to the municipality in which they occur, but also affect downstream municipalities. For example the removal of a stream's headwater wetland has the potential for significant impacts on downstream municipalities through reduced base flow, increased flooding, erosion and water quality impairment.

Wise watershed management also results in significant economic benefits to many municipalities. For example, the fifty six million dollar tourist industry of Wasaga Beach and a very valuable sport fishery will both be at risk if upstream water quality is not protected.

The provincial government, often in partnership with conservation authorities, has recently initiated several important programs to address the public's concerns regarding wise water management. The following is a brief summary of these programs.

Provincial Policy

Provincial land use planning direction for water management is provided in the recent Provincial Policy Statement (PPS) 2005 under the Planning Act. This policy places a much greater emphasis on managing water on a watershed basis. The Provincial Policy Statement now has a whole section devoted to water management as follows:

"2.2. Water

2.2.1 Planning authorities shall protect, improve or restore the quality and quantity of water by:

- a) using the watershed as the ecologically meaningful scale for planning;*
- b) minimizing potential negative impacts, including cross-jurisdictional and cross-watershed impacts;*
- c) identifying surface water features, ground water features, hydrologic functions and natural heritage features and areas which are necessary for the ecological and hydrological integrity of the watershed;*
- d) implementing necessary restrictions on development and site alteration to:
 - 1. protect all municipal drinking water supplies and designated vulnerable areas;* *and*
 - 2. protect, improve or restore vulnerable surface and ground water, sensitive surface water features and sensitive ground water features, and their hydrologic functions;**

- e) *maintaining linkages and related functions among surface water features, ground water features, hydrologic functions and natural heritage features and areas;*
- f) *promoting efficient and sustainable use of water resources, including practices for water conservation and sustaining water quality; and*
- g) *ensuring stormwater management practices minimize stormwater volumes and contaminant loads, and maintain or increase the extent of vegetative and pervious surfaces.*

2.2.2 *Development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored.*

Mitigative measures and/or alternative development approaches may be required in order to protect, improve or restore sensitive surface water features, sensitive ground water features, and their hydrologic functions.”¹

Source Water Protection

Further encouragement for managing water on a watershed basis came from the Honourable Justice Dennis R. O’Connor’s recommendation, in part two of the Report on the Walkerton Inquiry. The report recommends that the province adopt a watershed-based planning process led by the Ministry of the Environment and Conservation Authorities. His first recommendation is that *“Drinking water sources should be protected by developing watershed based source protection plans. Source protection plans should be required for all watersheds in Ontario.”²*

The province has committed to implement these recommendations through the source water protection planning legislation introduced on December 5th 2005. This legislation, called the Clean Water Act, received Royal Assent on October 19th, 2006. It establishes a framework for the development of source water protection plans. The plans will protect human health by ensuring that current and future sources of drinking water in Ontario’s inland lakes, rivers, groundwater and the Great Lakes are protected from potential contamination and depletion.

Source water protection is the first barrier in a multi-barrier approach to ensuring safe drinking water that safeguards the water in our lakes, river and aquifers.

The Clean Water Act and the resulting source water protection plans will assist the NVCA in protecting sensitive water resources. It will provide more detailed technical models including hydrology and water budgets. These models will support the identification and monitoring of both our ground and surface waters that may be at risk. Once this process has been completed (3 to 5 years), the NVCA will be in a much better position to ensure implementation of one of its four primary objectives, *“To protect, enhance and restore water”*.

¹ Provincial Policy Statement 2005, page 16

² Recommendation #1 of Part Two report of the Walkerton Inquiry: the Honourable Dennis R. O’Connor 2002

Growth Management Planning

Over the next thirty years the watershed will be impacted by a great deal of growth in Simcoe County, Barrie and Orillia (additional 275,000 residents)

To assist in managing this growth the province passed the Places to Grow Act in June 2005. This Act requires that the province prepare a Growth Plan for the Greater Golden Horseshoe (GGH). This growth plan was approved in June 2006 to implement the province's vision for managing growth in the Greater Golden Horseshoe. The focus of the plan is to create complete communities. It intends to curb urban sprawl, and better integrate transportation and infrastructure planning with land use planning. Development is to be directed to existing settlement areas and to Urban Growth Centres (Barrie) in particular. A substantial amount of new development must also be achieved within existing built-up areas through intensification. The requirements of the growth plan will be implemented through municipal official plans. This will greatly assist in the protection of the watershed's natural heritage system. Consolidated development may also lead to more effective quality and quantity water management.

The Ontario Government, Simcoe County, and the Cities of Barrie and Orillia also completed the "*Intergovernmental Action Plan*" (IGAP) in August 2006. The IGAP study examined the following:

- the assimilative (nutrient carrying) capacity of the Nottawasaga River and Lake Simcoe watersheds;
- the existing infrastructure and its ability to support current development commitments;
- the appropriate level of development for the future; and
- an effective governance structures.

This IGAP study will be a significant component of an integrated growth management plan for Simcoe County, Barrie and Orillia.

To provide the science to help identify how much development should occur and where, the IGAP study included an Assimilative Capacity Study (ACS) for the Nottawasaga River and Lake Simcoe watersheds. Assimilative capacity is defined as: "*the relationship between water quality/quantity and land use and the capability of the watercourse or lake, to resist the effects of landscape disturbance without impairment of water quality.*"

The ACS study developed specific scientific modeling, which will assist the province, local municipalities and the NVCA in predicting the impacts from various land use changes and development scenarios on the water quality of the Nottawasaga River watersheds.

The information from the ACS study (including the water quality targets) has been incorporated into this review. This information combined with NVCA's land stewardship, best management practices, natural heritage programs and monitoring will assist municipalities with local water management and growth issues. ACS studies should also be completed for the Blue Mountain watershed streams and other appropriate

watersheds within the NVCA's area of jurisdiction such as the Coldwater and Sturgeon Rivers.

The ACS information and computer models will be an important tool to assist the NVCA in achieving its goal, objectives and targets by helping to ensure that watershed health is maintained and improved. The final IGAP and ACS studies are posted on the Simcoe County website at www.county.simcoe.on.ca/

"It's All Connected"

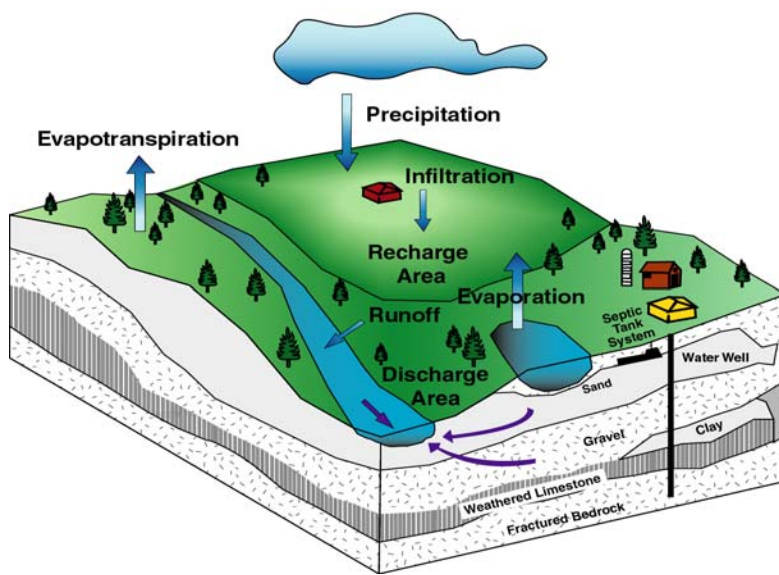
It is understood that there are strong connections between the terrestrial and aquatic ecosystems. In nature, *"everything is connected to everything else"*. This is the essence of "an ecosystems approach"; it represents a holistic view of the natural environment which is a complex, interconnected, and dynamic system.

An ecosystem approach to land use planning and management requires that the context for examining the relationships between the natural environment and human activities must be based on natural, biological, or physiological boundaries and not man-made municipal boundaries.

The logical natural boundary for considering water management features and functions is the watershed. Watersheds are defined as the area that is drained by a river and its tributaries. Within a watershed, the hydrological cycle demonstrates how the natural physical, chemical, and biological processes are all integrated (**Figure 1**).

The hydrological cycle demonstrates how the streams, wetlands, lakes, and groundwater are all connected to each other and are potentially impacted by human activities. It shows the ecosystem's pathways for the transport of natural nutrients, as well as the movement of contaminants.

Figure 1: The Hydrological Cycle³



³ Source: CH2MHILL 2001. Eastern Ontario Water Resources Management Strategy. Final Report. March 2001

1.2 The 1996 Watershed Plan: Goal and Objectives

To provide an overview of the Nottawasaga Watersheds and address broad water related issues, the Nottawasaga Valley Conservation Authority (NVCA) developed the "Nottawasaga Valley Watershed Management Plan (1996-2015)". It dealt with water management issues across the entire Nottawasaga, Batteaux, Pretty Rivers, Black Ash and Silver watersheds, a total drainage area of 3,361km².

The following are the goal and objectives from the original 1996 Watershed Plan.

Goal:

"The goal of the Watershed Plan (1996) is the conservation of natural resources within our watershed in a cooperative, integrated manner in which human needs are met in balance with the need to sustain the natural environment".

Objectives

"The following broad objectives were established as the basis for the Watershed Plan:

1. *To identify existing and potential problems and concerns with regard to:*
 - *natural resources - particularly water related resources*
 - *land use practices and management*
 - *administration, organization, and communication.*
2. *To identify factors that contribute significantly to the above noted potential problems and concerns and determine short term and long term strategies/recommendations to rectify them.*
3. *To identify means by which to effectively inform the public and all relevant parties about resource management policy, legislation, programs, and services.*
4. *To set priorities for resource management in order to ensure community needs are being addressed without compromising the present and future health of the environment.*
5. *To build on past and present successes by documenting existing measures which are consistent with the Watershed Plan.*
6. *To identify and prioritize subwatersheds for further study and remediation.*
7. *To provide background support and direction for municipal planning documents and Ontario Municipal Board hearings".⁴*

The preparation of the 1996 Watershed Plan was a major undertaking with extensive public consultation. The plan was based on an ecosystems approach to water management and planning. It succeeded in identifying and coordinating the existing resource information, legislation and policies into a useful document. The plan achieved the following:

⁴ ibid page 6

- supported and addressed a wide variety of water management issues:
- identified the key responsibilities of stakeholders; and
- made recommendations for the implementation of resource management actions.

1.3 Why Do We Need a Review of the 1996 Watershed Plan?

The purpose of this exercise was to conduct a strategic review of the 1996 Watershed Plan focusing on “big picture” or watershed wide issues.

The following were reviewed:

- the strategic directions
- water related issues
- the effectiveness in implementing the 1996 plan and its recommendations and updated them as appropriate
- the process that the authority developed to integrate the watershed plan with the business planning process
- changes to NVCA’s roles, responsibilities and jurisdictional boundary

This review was very timely as it helped prepare the NVCA for the new provincial initiatives such as source water protection and growth management planning. The Authority is now well positioned with an updated Watershed Plan that clearly articulates its vision. This review also helped us evaluate NVCA’s efforts in water management and assessed the most effective methods and tools in implementation.

This update also provided the authority with an opportunity to obtain additional input from the 26 board members representing our 18 watershed municipalities on their local issues and challenges. It assisted in educating new board member on NVCA’s expanding roles and responsibilities.

Once this review has been approved by the Full Authority it will be considered an amendment to the original Watershed Plan and, as such, will represent NVCA policy.

2.0 The Watershed Plan Strategic Review Process

2.1 The Integrated Planning Cycle

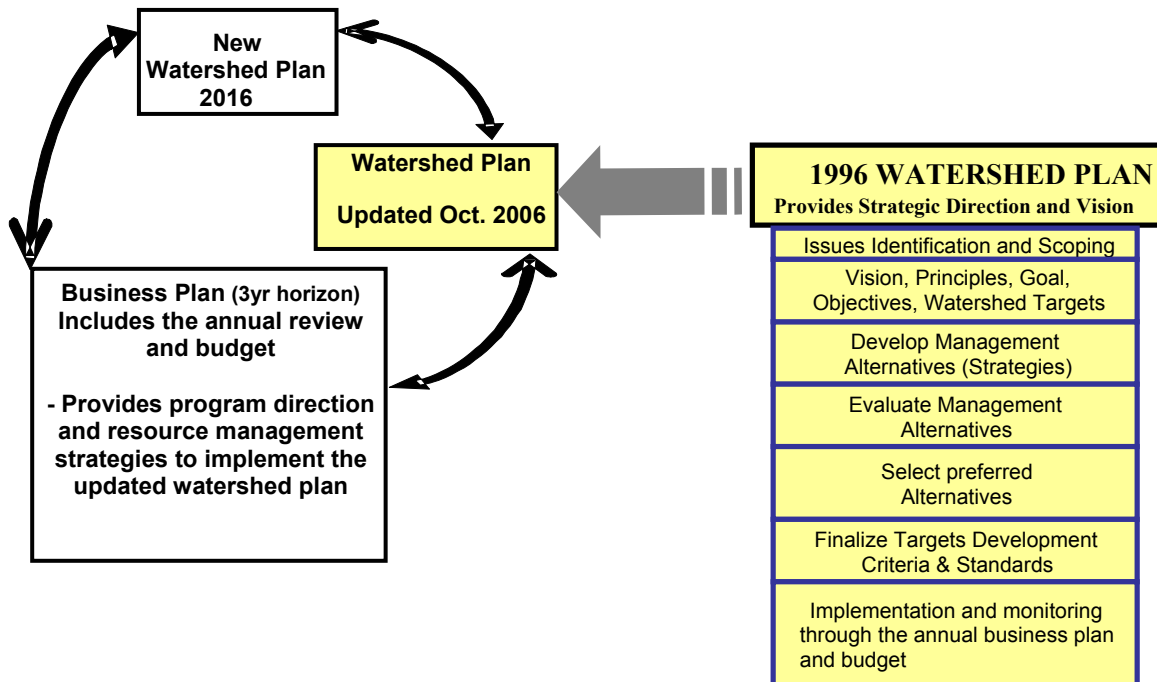
This watershed plan review follows an “adaptive watershed management process”. This process is summarized in **Figure 2 the Integrated Planning Cycle**. This adaptive process emphasizes that the watershed plan is a “living document” that is implemented through the annual Business Plan.

It is very important to note that the Watershed Plan will remain current through its integration with the annual Business Planning Process. It is through this integration with the Business Plan that the Watershed Plan will adapt to changing local and provincial priorities while still focusing on achieving the watershed plan goal, objectives and targets. As new local and provincial priorities develop, the business planning process

responds in an appropriate manner. Program adjustments are approved through the annual work plan and budget, guided by the Watershed Plan’s goal, objectives and targets.

This integrated planning cycle will ensure that the implementation of the Watershed Plan will stay current with changing provincial and local priorities leading into the major Watershed Plan Review which takes place in 2016.

Figure 2 _ Integrated Planning Cycle



2.2 The Review Process

This Watershed Plan Strategic Review was developed in three phases, which are described in the following **Figure 3**.

Figure 3: Summary of the Watershed Plan Strategic Review Phases

Phases	Description	Time Frame	Report Dates
Phase 1	Develop the Terms of Reference	July- Dec 2004	Finalized Terms of Reference- Jan. 2005
Phase 2	Analysis and Evaluation of 1996 Watershed Plan	Spring 2005	Interim Report May 2005
Phase 3	Draft Watershed Plan Strategic Review	Nov. 05-Apr 06	Final Report Approved by the Full Authority in fall 2006

3.0 Watershed Issues Both Old and New

The 1996 Watershed Plan identified a number of significant issues related to watershed management including terrestrial and aquatic habitats. The Plan proposed to address those issues through 30 recommended management actions.

Staff reviewed these recommended management actions and assessed their success in resolving the issues.

In an effort to keep the body of this report as concise as possible, the results of the issues and management actions analysis is placed in **Appendix A: Evaluation of the 1996 Watershed Plan Recommended Actions**.

This evaluation also included a review of new and emerging watershed issues. For example, the protection of groundwater is now a concern of all municipalities. The NVCA believes that integrated watershed management should include the development of a Groundwater Management Program to manage and protect the groundwater resources within the watershed or ground watershed. Groundwater is vital to the livelihoods and health of the majority of watershed residents. It provides much of the water resource for domestic, agricultural, industrial use and ecological uses.

Water resources, both surface water and groundwater, must be managed in an integrated manner to ensure the sustainability of the ecosystem

To ensure that all water management issues of concern to NVCA's municipalities were identified, an information exchange was held with the full authority membership on April 15th 2005.

In order to facilitate discussions, NVCA's three Advisory Committees were employed to identify and discuss the current issues of concern to member municipalities.

The following were identified by the committees as the three most significant "big picture" water related, environmental issues facing their municipalities today:

- impacts from growth (on the natural heritage and aquatic ecosystems)
- water quality and quantity concerns (including impacts from septic systems, seepage, land use practices, water takings and increased flooding)
- environmental impacts on water resources from natural resource extractions (aggregates, peat and water bottling)

Not surprisingly, it was noted that many of the components of these issues were also highlighted in the 1996 Watershed Plan.

Where appropriate, the original recommendations have been revised and updated. Recommendations have added to address new and emerging issues. Priorities and timing have been assessed, in **Appendix A** as well as a very preliminary cost assessment.

4.0 2006 Vision

NVCA's vision has evolved since 1996 in response to changing responsibilities, demands and expectations. The revised vision, as approved by the Full Authority Board in the Business Plan, is outlined below.

The vision (including, goal, core statement, principles and objectives) represents the authority's strategic direction. It "modernizes" the original goal objectives and principles, by making them clearer and more concise without changing the intent.

The steering committee that guided this review added one new component to the vision: measurable targets. These targets provide strategic direction for program action and accountability. They are tracked through monitoring success in meeting the goal and objectives.

Vision: "Conserving our Healthy Waters"

Goal (Mission): "Working together to value, protect, enhance, and restore our watershed resources, for a healthy sustainable future"

Core Statement: *The Nottawasaga Valley Conservation Authority is your public agency dedicated to the preservation of a healthy environment. As your partner, the NVCA provides the expertise to help protect our water, our land, our future.*

Principles:

This plan reflects the following management principles:

- *Wise use: balancing socio-economic needs and ecological health within the watershed*
- *Innovation and use of the best available technologies*
- *Maintaining proactive, adaptive programs*
- *Maintaining a fair, open decision making process that balances individual and societal rights, privileges and responsibilities*
- *Maintaining strong stakeholder communication, education and consultation*
- *A streamlined, cooperative approach, emphasizing partnerships*
- *Considering economic implications of all management actions*
- *Science based, policy guided decision making*

Objectives:

To achieve our vision, goal and following our principles, our objectives are:

- *Protecting, enhancing and restoring water*
- *Protecting, enhancing and restoring land*
- *Protecting life and property from flooding and erosion*
- *Providing educational and recreational opportunities for the public*

4.1 Measurable Watershed Targets

In order to accurately assess the achievement of the goal and objectives, the Watershed Plan Strategic Review has established watershed wide targets. These targets must be measurable in order to assess achievements in a meaningful manner.

Where appropriate, targets will be developed for all objectives. The NVCA will investigate the use of targets that Conservation Ontario is developing. There also are several program areas such as, ground water, water takings and effective communications where the authority may wish to develop targets over time.

NVCA's business planning process will annually monitor progress in target development and the achievement of watershed wide targets. In addition, appropriate targets will be tracked at a subwatershed level through the Watershed Report Cards.

The recommended targets reflect established provincial plans (Oak Ridges Moraine Plan) and recommended federal standards (Environment Canada's How Much Habitat is Enough). Local targets have been developed where required (see Figure 4).

The Provincial Water Quality Objectives (PWQO) have also included been included as a target, including the long-term target for phosphorus. Specific PWQO priority targets will be developed as appropriate.

The phosphorus target from the Assimilative Capacity Study (ACS) is considered a short to medium term (achievable) target considering the best management practices and technology available today. It should be noted that the ACS phosphorus targets only apply to the Nottawasaga River and subwatersheds and does not include the Blue Mountain or Severn Sound Watersheds. Specific targets for these watersheds need to be developed.

An annual Watershed Report Card, based on the Conservation Ontario template, is being developed to monitor and communicate the health of the terrestrial, wetland and aquatic systems. The environmental targets and their current status will be reported at the more detailed subwatershed level.

The following table provides a summary of the watershed objectives and the corresponding watershed wide targets.

Figure 4: Watershed Objectives and Targets

Watershed Objectives	Recommended Watershed Targets
Protecting, enhancing and restoring water	<ul style="list-style-type: none"> - 100% Healthy Streams* - 75% of the watershed's natural stream length should be naturally vegetated (30m) on both sides of the stream** - Meet Provincial Water Quality Objectives(PWQO) (a long-term target of 25,500 kg/year phosphorus for the Nottawasaga River) <ul style="list-style-type: none"> • E.g. total suspended sediments below 25mg/l • The Assimilative Capacity study suggested a target of 36,964 kg/year total maximum yearly load of phosphorus (a short to medium term target for the Nottawasaga River)
Protecting, enhancing and restoring land	<ul style="list-style-type: none"> - 10% of a subwatershed should be wetlands** - 30% of the area of any subwatershed should be self-sustaining*** - At least 10% of the subwatershed should be forest cover 100 metres or further from the forest edge (5% should be 200 metres or greater from the forest edge)**
Protecting life and property from flooding and erosion	<ul style="list-style-type: none"> - Zero lives lost and minimal property damage* - Zero unauthorized development in Hazard Lands* - The percentage of impervious surfaces within any subwatershed should not exceed 10%***
Providing educational and recreational opportunities for the public	<ul style="list-style-type: none"> - Provide 8000 student environmental education opportunities per year and effective communication*

* Local NVCA Targets

** Environment Canada – How Much Habitat is Enough

*** Oak Ridges Moraine Conservation Plan

4.2 Current status of Watershed Targets

This section provides a brief summary of the current status of the watershed resources in relation to achieving the above watershed wide targets.

Targets for the Water Objective

- 100% healthy streams - current status: 25% Healthy; 50% Fair; 25% poor streams
- 75% stream (length) in natural cover - current status: Approximately 38% of the stream length currently has appropriate forest cover. It ranges from 24% to 54% by subwatershed. It should be noted that NVCA does not expect that municipal drains will be able to maintain as much riparian vegetation as natural streams. NVCA will be encouraging landowners to maintain as much riparian vegetation as possible along municipal drains.

- Meet Provincial Water quality objectives: (Total Suspended Sediments below 25 mg/l). It is known that suspended sediments affect aquatic habitat adversely by filling in the bottoms of lakes and streams thereby limiting habitats for aquatic invertebrates. Under extreme conditions fish eggs may be smothered. All of our subwatersheds, except Innisfil Creek, are under the 25mgs per litre levels during base flow conditions.
- The Nottawasaga River Provincial Water Quality Objective for phosphorus is 25.5 tonnes/y (derived from to provincial objectives of below 0.03 mg/l in streams and rivers. The ACS indicates that a short to medium term phosphorus target is 37 tonnes/year total maximum yearly load is achievable based on today's technology . The current Nottawasaga watershed phosphorus load is 47 tonnes/yr.

Targets for the Land Objective

- 10 % of the watershed should be Wetlands - the percentage of wetlands within the watershed is approximately 12%. However 40% of our subwatersheds are below the target with the range from 6.1 to 20.4%
- 30% of the watershed should be forested - the percentage of forest cover of the watershed is approximately 28%. However, 60% of our subwatersheds are below this target with the range from 14.9 to 42%.
- 10% of the watershed should be in large forest blocks supporting Interior Forest Habitats. Currently the watershed has approximately 9.7% forest cover with at least 100 metres or further from the forest edge, thus providing these interior habitats. However, 50% of our subwatersheds do not meet this target with the range from 2.6 to 18 %.

Targets for the Protection of Life and Property Objective

- Zero lives lost and minimal property damage – Fortunately no lives have been lost since Hurricane Hazel. The amount of property damage is currently not available; it will be reported annually through the business planning process.
- Zero unauthorized development within hazard lands. In 2005, 20 known unauthorized developments within hazard lands were investigated
- Not more than 10% of the watershed should be impervious surfaces -These are areas that do not allow for infiltration of rain and snow melt, such as roads, roof tops, parking lots etc. If not properly managed, they may result in flooding, erosion and water quality issues. Approximately 3.5% of the watershed is within settlement or urban areas. However, only approximately 3% of these areas are considered to be impervious. The Blue Mountains Watershed is the closest to the maximum with 8.6% impervious surfaces.

Targets for the Educational and Recreational Opportunities Objective

- Provide 8000 student environmental education opportunities per year for all watershed residents - Currently the NVCA provides approximately 6000 environmental education opportunities primarily to Simcoe county students.

Including students from Grey and Dufferin Counties represents a challenge due to commuting distances and Board of Education budgets.

While the Watershed Report Card will report on the status of all appropriate targets at a subwatershed level, the following chart (**Figure 5**) gives a snapshot of the current status of the terrestrial and aquatic objective targets by subwatershed. Not all targets currently have accurate information at this level.

Figure 5: Current Target Status by Subwatershed

Targets		75%+ of Streams vegetated with 30m of cover both sides	No more than 10% Impervious Surfaces	10% in Wetlands	30% in Forest Cover	10% of forest cover as Interior forest (100m to forest edge)	Mean total suspended solids during baseflow-below 25mg/L
Subwatersheds	Area km ²	%	%	%	%	%	mg/L
Willow Creek	307.7	50.8	2.0*	20.4*	40.5*	17.6*	8.0*
Mad River	457.7	41.3	1.1*	17.1*	30.5*	10.9*	8.3*
Pine River	350.8	49.4	3.7*	8.1	35.6*	12.3*	10.4*
Boyne River	244.3	33.2	4.0*	8.5	17.0	2.9	3.6*
Upper Nottawasaga	364.8	45.2	0.8*	10.4*	26.7	6.1	2.0*
Innisfil Creek	491.0	23.6	1.7*	8.4	14.9	2.6	30.6 Beeton- 13.4*
Middle Nottawasaga	298.1	33.2	4.1*	12.9*	25.9	8.2	8.3*
Lower Nottawasaga	462.9	24.5	4.7.*	14.4*	26.9	11.3*	13.9*
Blue Mountain Watersheds	247.9	33.2	8.6*	6.1	22.3	4.1	Silver-2.5* Pretty-5.3*
Severn Sound Headwaters	420.8	53.7	2.7*	11.9*	42.6*	18.0*	
Watershed total	3646	37.9	3.1*	12.1*	28.5	9.7	

* Subwatersheds meeting the Targets

5.0 Legislative and Policy Update

This section outlines the legislation and policies that involve the authority. It also provides as general summary the process used to implement any changes to our programs.

The figure below identifies the legislation and indicates NVCA's role in implementation.

Figure 6: Legislation

Legislation:	NVCA Role:
<u>Conservation Authorities Act</u>	approval
<u>Planning Act</u>	Commenting and representing the province for natural hazards
<u>Municipal Act</u>	commenting
<u>Fisheries Act</u>	approval
<u>Environmental Assessment Act</u>	commenting
<u>Aggregate Resources Act</u>	commenting
<u>Niagara Escarpment Planning and Development Act</u>	commenting
<u>Conservation Land Act</u>	approval
<u>Oak Ridges Moraine Conservation Act</u>	commenting
<u>Greenbelt Act</u>	commenting
<u>Places to Grow Act</u>	commenting
<u>Clean Water Act</u>	coordinating (to be confirmed)

New Provincial Policy Initiatives Affecting the Authority

- Oak Ridges Moraine Conservation Plan (2002)
- 2005 Provincial Policy Statement (PPS)
- Greenbelt Protection Plan (2005)
- Greater Golden Horseshoe Growth Management Plan (June, 2006)
- Source Water Protection Plans

Other Related Initiatives

- County and municipal groundwater studies (2001 to 2003)
- Intergovernmental Action Plan for Simcoe County, Barrie and Orillia, including the Assimilative Capacity Study
- Integrated Simcoe County, Barrie and Orillia Growth Management Plan (2007)
- The NVCA may soon have an advisory role in MOE's permit to take water process
- The NVCA has a level 2 agreement with the Federal Department of Fisheries and Oceans for the review of applications that may impact fish habitat

These initiatives, including legislative and policy changes, are the latest in an evolving land use planning and resource management field. As a result, to deal with this constant change, the NVCA has developed an annual business planning process to implement appropriate program and policy adjustments in the most efficient and effective manner possible.

Adjustments are often initiated through the authority's advisory committees. They assess and make program recommendations as appropriate, to support new legislation, policies, provincial plans, and local initiatives. Any changes in program direction must be reflected in the business plan and annual budget and approved by the full authority. The NVCA has also set up a process for approving specific NVCA policies where either no provincial policy exists, or there is a need for a local policy (e.g. Conservation Land Protection and Acquisition and the Pond Policies). This process is outlined in **Appendix B - Planning Policy Formulation Process**. The process includes the identification of the appropriate level of public and stakeholder involvement in the policy development. It will be used for the formulation of specific NVCA policy (and significant amendments) related to planning, development, and resource management.

As new provincial legislation, plans and policies are developed in the future; the authority is well positioned to quickly react with appropriate implementation, through the business planning process.

6.0 Assessment of the 1996 Watershed Plan Implementation

This section provides a general review of the implementation of the 1996 Watershed plan. Please see **Appendix A** for the detailed effectiveness evaluation in achieving the 30 recommended actions as well as the updated recommendations.

6.1 Evaluation of the 1996 Watershed Plan Recommended Actions

It is important to note that the NVCA has taken action towards implementing all of the recommendations. The evaluation identified where full implementation has occurred and where action is still on-going.

A few recommendations (five) have been identified that do not contribute to our goal and objectives and are not part of our core business, or are now implemented by another agency. These recommendations have been eliminated.

Where applicable, new recommendations have been established that combine and adjust the original recommendations to reflect the current watershed management needs.

6.2 Updated Watershed Management Plan Recommendations

As a result of the analysis in **Appendix A**, the water management recommendations have been updated and listed below. Some of the original recommendations have been consolidated and those that have been fully implemented have not been included. Recommendations have been adjusted or added to reflect new policies, as appropriate. It should be noted that as new technical information or models (for example climate change) are developed, they will be incorporated into all appropriate programs

The following is a summary of the amended and updated Watershed Management Plan recommendations:

1. Provide municipalities with technical and planning assistance to incorporate environmental and natural hazards policies into planning documents.
2. All NVCA programs and services shall continue to build-in an education and communication component within their programs to effectively inform key audiences on the importance of all aspects of wise watershed management and conservation.
3. All programs shall continue to search for new and innovative funding sources and partnerships.
4. A watershed wide natural heritage strategy shall be developed in support of the provincial and local growth management plans.
5. The NVCA shall promote policies protecting the natural heritage system.
6. The NVCA shall continue its land acquisition and securement programs to help ensure the protection of important natural features and water resources.
7. Terrestrial and aquatic restoration opportunities shall be identified, evaluated and promoted through stewardship programs, subwatershed studies and the planning process.
8. The NVCA in conjunction with MOE shall develop a Groundwater Management Plan in order to manage the quantity and quality of groundwater. This could include strategic planning, development standards, policies, and stewardship initiatives for the effective management of groundwater resources
9. The NVCA shall provide both ground and surface water technical support to its municipalities to enable them to implement Provincially/Federally and locally mandated initiatives including implementing Source Water Protection Plans
10. The NVCA shall continue to play an active role in Source Water Protection Plan development and implementations, meeting its provincially and locally mandated responsibilities.
11. The NVCA shall play a major role in the implementation of the Assimilative Capacity Study recommendations partnering with the province and local municipalities to develop local implementation strategies and actions.
12. The NVCA shall carry out Assimilative Capacity Studies for the Blue Mountain Watershed streams and where appropriate for the Severn Sound watersheds within NVCA's area of jurisdiction.
13. The NVCA shall provide technical input to MOE concerning the permits to take water to assist the decision makers in making the most informed decision

possible following the Conservation Ontario and local Memorandum of Understanding

14. The NVCA should expand its Watershed Monitoring Program to provide inputs to municipalities, landowners and MOE to help ensure the most effective watershed nutrient management possible and to monitor the effectiveness of actions taken. Additional financial support is required from the province or other sources to fully implement this program
15. The NVCA shall continue to promote the use of best management practices to ensure the protection and restoration of water quality and quantity and the implementation of the current and future Assimilative Capacity Studies recommendations
16. The NVCA shall continue to update the flood forecasting and warning methodology and assist municipalities in their emergency response planning.
17. The NVCA shall develop a watershed wide erosion control model.
18. The NVCA shall use the information from the provincial and local Growth Management Plans to assist in setting priorities for Subwatershed Plans.
19. A Watershed Health Report should be produced annually to communicate monitoring results to watershed stakeholders. Staff should prepare report cards every five years for each subwatershed. This should be a phased approach with 2-3 subwatershed report cards produced each year.
20. Watershed management targets shall be established specific to all four watershed objectives.

7.0 Consultation

Public consultation was a large and important component of the 1996 Watershed Plan.

Several related public consultation processes have been initiated by the province and Conservation Authorities. This includes the IGAP/ACS studies for Simcoe County and Barrie and Orillia, and Source Water Protection Planning.

The public consultation on the Watershed Plan Strategic Review has, where possible, been coordinated with these other planning efforts.

Fact Sheets were distributed at the following events in 2005 outlining the purpose of this strategic review, the significant components, the schedule and how to become involved. In addition staff were available to answer questions.

The Assimilative Capacity Study/IGAP information sessions:

- September 20th Elmvale

- September 21 Bradford.
- NVCA's Generic Regulation information sessions:
- September 8th Tiffin Centre for Conservation
 - September 15th Town of Shelburne
 - September 27th Town of Collingwood
 - October 4th Oro-Medonte Community Centre

The January 2006, the Draft Watershed Strategic Review was circulated to our full authority members for comment. It was also sent to over 50 of our current stakeholders. Their comments have been incorporated into this document.

The NVCA established a Steering Committee to guide the development of this review with the following representation

- Lynn Dollin, NVCA Planning Advisory Committee Representative (Councillor Town of Innisfil).
- Staff, Wayne Wilson CAO; Charles Burgess Planning Director; Beverley Booth Planning Manager; Glenn Switzer Engineering and Technical Services Director; Byron Wesson Land & Water Stewardship Director; Dave Featherstone Watershed Monitoring Program Manager; Fred Dobbs Stewardship Services Manager; and Bob Law Watershed Planner.

Advisory Committees

All NVCA Advisory Committees have provided input to this review.

Final Approval

Approval of this Watershed Plan Strategic Review will be through the NVCA's Board of Directors in the fall of 2006.

8.0 Conclusion

This review has confirmed that the 1996 Watershed Plan is a very valuable strategic document to guide our watershed management efforts.

This review has resulted in slight wording changes to the Watershed Plan goal, objectives, and principles. The review has added a vision, core statement and watershed targets to further refine our strategic direction. These additions do not substantially change the strategic direction of the 1996 Watershed Plan. The fact that most of the original recommendations have either been implemented or are still relevant is testament to the significance of the 1996 document.

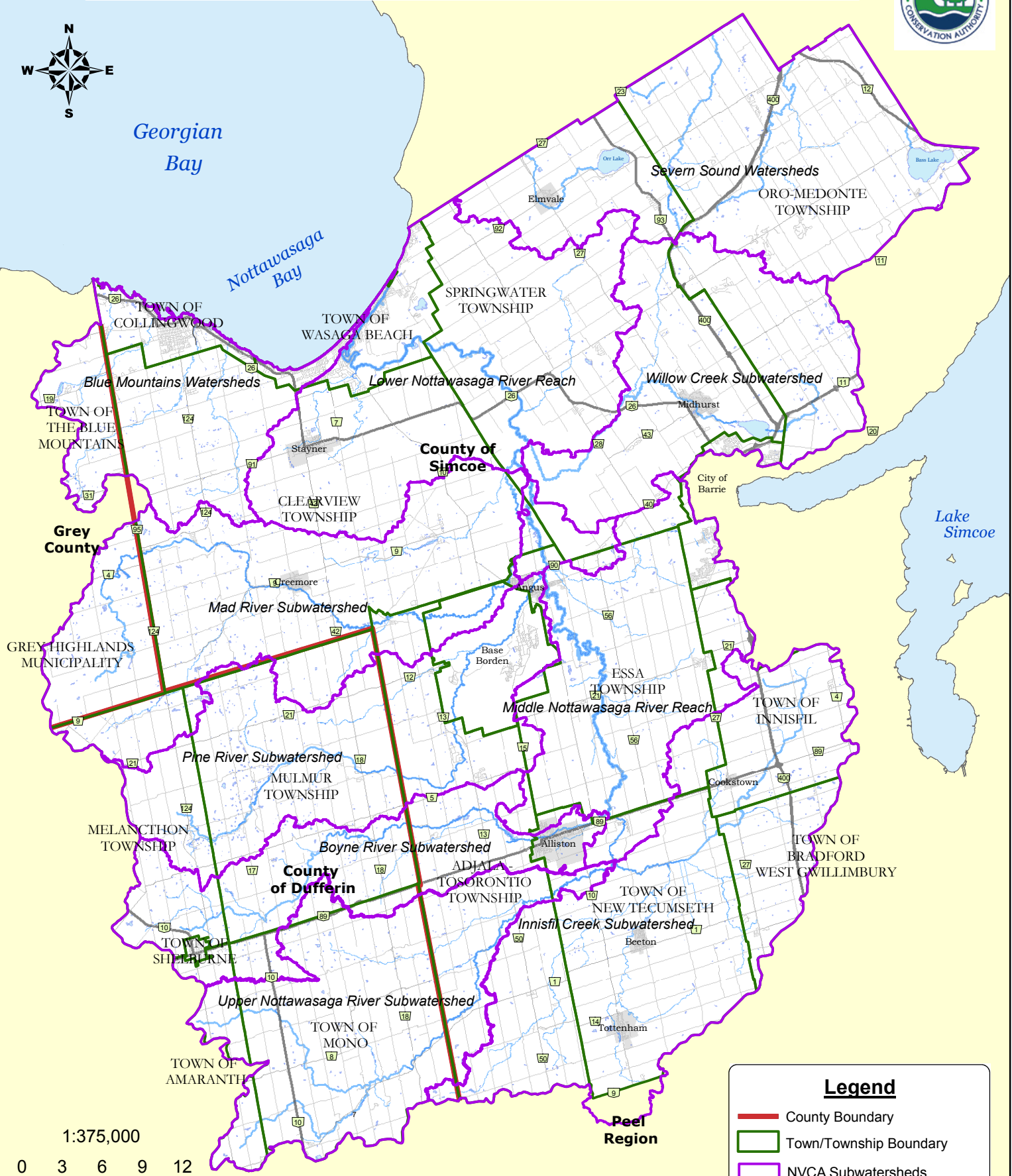
Through this strategic review a few significant features to build on the success of the original watershed plan have been added as follows:

- measurable targets specific to the four watershed management objectives have been established to facilitate programs, accountability, effectiveness, and communications;
- the watershed plan and the business plan process has been integrated giving the authority the ability to quickly react to the ever changing legislative and policy environment as well as to local priorities;
- the watershed plan recommendations have been updated, modernized and new ones added to address recent challenges; and
- recommendations have been made on the priorities to help the NVCA deliver effective watershed manage.

This review combined with the 1996 Watershed Plan, provides the Nottawasaga Valley Conservation Authority with clear direction to help support the watershed residents and municipalities in addressing the many new challenges to come!

Once approved by the Board of Directors, the Strategic Review will be posted on the NVCA website at www.nvca.on.ca.

Nottawasaga Valley Conservation Authority



1:375,000

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Kilometers

Legend

- County Boundary
- Town/Township Boundary
- NVCA Subwatersheds

Appendix A

Table 1

Evaluation of the 1996 Watershed Plan Recommended Actions

Table 2

Summary of Revised Recommendations, Priorities, Funding and Timing

November 24, 2006

Table 1 Appendix A: Evaluation of the 1996 Watershed Plan Recommended Actions				
Original 1996 Recommended Actions	NVCA's Role as Identified in the 1996 Plan	Action Status as of 2006	Evaluation and Assessment of Recommended Actions	Status and/or Revised Recommendations (1 -20)
1. Establish a land stewardship program.	NVCA plays a lead role	Implemented	Land Management and Stewardship Service have implemented this recommendation through the Forestry Program; Community River Restoration Program; Health Waters; and Conservation Lands Programs.	Implemented and program will be on-going (However, Provincial/Federal financial support is required to be fully implemented)
2. Provide municipalities with assistance in incorporation Environmental Policy Statements and Guidelines into planning documents.	NVCA plays a lead role	Fully Implemented	NVCA's planning program provides a comprehensive plan input and review service to all its municipalities. This includes input into municipal planning documents meeting the requirements of the Planning Act, Provincial Policy Statement, Oak Ridges Moraine Conservation Plan, Greenbelt Plan, Growth Management Plans, Environmental Assessment Act and NVCA's own Policies.	Fully implemented and will be on-going as new provincial and CA policies and plans are developed. Technical standards will also be updated due to new data such as on climate change. 1. Provide municipalities with technical and planning assistance to incorporate environmental and natural hazards policies into planning documents.
3. Streamline and co-ordinate development review through pre-development consultation meetings.	The approval authorities plays the lead role and NVCA a direct role	Fully Implemented	This recommendation has been fully implemented by the province and is prescribed by the Planning Act.	Fully Implemented and on-going
4. Inform and educate residents about watershed management issues including wetlands, groundwater, flooding and erosion.	NVCA plays a lead role	Partially Implemented and will be on-going	All of NVCA's programs and services help to implement this recommendation through their land owner contacts and education and communication components. New tools such as our website have helped to implement this recommendation. Environmental education partnerships have also been developed for example with Beyond the Horizon Outdoor Adventures delivered at the Tiffin Conservation Area.	Partially Implemented and will be on-going 2. All NVCA programs and services shall continue to build-in an education and communication component within their programs to effectively inform key audiences on the importance of all aspects of wise watershed management and conservation.
5. Find new creative sources of funding, i.e. endorsements, foundations, user fees, grants, and forming new partnerships.	NVCA plays a direct role	Partially Implemented and will be on-going	Many authorities programs depend on establishing partnerships to provide ongoing funding, manpower, and creative ideas. The search for creative funding sources and review of user fees is continuous. The nurturing and developing of partnerships with for example, municipalities, landowners, the province, Chamber of Commerce, community river restoration groups, angler and hunter organizations, Ducks and Trout Unlimited, is a major staff responsibility.	Partially Implemented and will be on-going 3. All programs shall continue to search for new and innovative funding sources and partnerships.

6. Identify and delineate the boundaries of significant ravine valley, river and streams corridors.	The approval authorities plays the lead role and NVCA a direct role with a lead for CA regulations	Partial Implementation through the Subwatershed Plans and slope analysis through the Generic Regulation exercise.	Significant valleylands and corridors are part of the Natural Heritage System in our Subwatershed Plans. Rivers, stream and their tributaries as well as municipal drains have been identified through fisheries assessment and the hazardous lands identified through NVCA's Generic Regulations mapping programs.	4. A watershed wide natural heritage strategy shall be developed in support of the provincial and local growth management plans. 5. The NVCA shall promote policies protecting the natural heritage system
7. Identify, delineate, and evaluate natural corridors.	The approval authorities plays the lead role and NVCA a direct role	Partial Implementation has been through the three Subwatershed Plans and the Natural Heritage Strategies	Natural Corridors are part of the Natural Heritage System in the Black Ask, Willow and Innisfil Creeks Subwatershed Plans and included in the more detailed Natural Heritage Strategies for Wasaga Beach, Essa and New Tecumseth	See revised recommendations #4,#5
8. Establish local land trusts.	NVCA played a direct role supporting the establishment of Land Trusts.	Partial Implementation as several local conservation and land trusts have been established within the watershed	The Couchiching Conservancy and the Blue Mountain Watershed Trust are examples of local trusts that have been established in NVCA's Watershed to identify and protect significant natural features. Protection is achieved through a variety of methods including conservation easements, purchases and informal agreements This recommendation has been dropped as forming a land trust it is not part of NVCA's core business. However, NVCA does protect significant natural features (e.g. Minesing Wetlands) through a land acquisition program and requiring conservation easements through the planning process.	6 The NVCA shall continue its land acquisition and securement programs to help ensure the protection of important natural features and water resources.
9. Determine the extent of woodland conservation, reforestation and restoration measures that may be required in the watershed.	NVCA plays a lead role in restoration; the approval authority is the lead for identifying significant forests	Partial Implementation has been through the Stewardship programs, the three Subwatershed Plans and the Natural Heritage Strategies plus the input and review of Planning Act applications	Woodland Conservation and the identification of potential restoration areas are part of the Natural Heritage System in the Black Ask, Willow and Innisfil Creeks Subwatershed Plans. The Natural Heritage Strategies for Wasaga Beach, Essa and New Tecumseth identify the significant forests in more detail.. The planning program has also attempted to protect identified significant forests through the input and review of Planning Act applications. NVCA's Stewardship programs provide many opportunities for restoration and reforestation.	See revised recommendations # 4, 5 7. Terrestrial and aquatic restoration opportunities shall be identified, evaluated and promoted through stewardship and resource management programs, subwatershed studies and the planning process.
10. Identify significant wildlife habitats that need protection.	The approval authorities plays the lead role and NVCA a direct role	Partial Implementation has been through the three Subwatershed Plans the three detailed Municipal Natural Heritage Studies and input and review of Planning Act applications	Wildlife habitats have been identified through the Black Ask, Willow and Innisfil Creeks Subwatershed Plans as part of the natural heritage system. In the same manner, the Natural Heritage Strategies for Wasaga Beach, Essa and New Tecumseth identify natural areas that include wildlife habitats. The planning program has also attempted to protect significant wildlife habitats that are found within wetlands, significant forests and valley lands through the input and review of Planning Act applications. The vast majority of significant wildlife habitats will be protected through the identification and protection of the natural heritage system.	See revised recommendations #4, 5

<p>11. Inform and education residents about the importance of wildlife and fish habitat.</p>	<p>NVCA plays a Direct role</p>	<p>Partial Implementation through the stewardship and education programs will be on-going</p>	<p>NVCA’s stewardship programs help to implement this recommendation through their education and communication components. New tools such as our website have helped to implement this recommendation. Environmental education partnerships have also been developed for example with Beyond the Horizon Outdoor Adventures delivered at the Tiffin Conservation Area.</p>	<p>See revised Recommendation #2</p>
<p>12. Protect, restore, and remediate fish habitat.</p>	<p>NVCA plays a direct role and lead role through the Level 2 agreement with DFO</p>	<p>Partial Implementation has been through our stewardship and restoration programs, the three Subwatershed Plans plus input and review of Planning Act applications</p>	<p>Fish habitats and potential restoration areas are part of the Natural Heritage System in the Black Ask, Willow and Innisfil Creeks Subwatershed Plans. Stream and tributaries and municipal drains have also been identified through fisheries habitat management, assessment, restoration and mapping programs. NVCA’s stewardship and restoration programs provide their many partners with fisheries restoration and reforestation assistance. NVCA has a level 2 agreement with DFO to protect fish habitats and will continue to develop and implement habitat management plans. The planning program also protects fish habitats through the Planning Act, Provincial Policy Statement and the Growth Plan for the Greater Golden Horseshoe.</p>	<p>See revised recommendations #4,5,8</p>
<p>13. Prepare a shoreline management plan for Nottawasaga Bay.</p>	<p>NVCA plays a lead role with municipalities providing a direct role</p>	<p>Partially Implemented: Simcoe County played a lead role through Simcoe County discussion papers on Shoreline planning and a amendment to their OP</p>	<p>NVCA staff provided input into this process which resulted into an amendment to the Simcoe County Official Plan. NVCA is also investigating the support for the preparation of a Georgian Bay fisheries shoreline management plan</p>	<p>Partially Implemented Recommendation #7 would also apply here as part of the proposed Georgian Bay Shoreline Fisheries Management Plan</p>
<p>14. Establish a wetland policy for class 4-7 wetlands and wetlands not yet classified.</p>	<p>NVCA plays a lead role through the CA regulations</p>	<p>Partially Implemented: Some municipalities have protected all wetlands in their official Plans. The ORMCP and Greenbelt Plans also protect all wetlands. NVCA will protect all wetlands through the Generic Regulations.</p>	<p>All wetlands are very important since they help to maintain and improve our water quality through trapping of sediments, retaining nutrients, contaminants and removing bacteria. Wetlands also moderate water temperature, maintain base flows, attenuate floods, store carbon, provide important groundwater recharge/discharge functions, control erosion and provide recreational and economic benefits. NVCA’s Generic Regulations will help identify and protect all wetlands.</p>	<p>See revised recommendation #5</p>
<p>15. Identify, delineate and regulate (where applicable): all headwater areas, significant recharge and discharge zones, major aquifers, contaminated wells and aquifers, and natural factors that depend on water.</p>	<p>The approval authorities plays the lead role and NVCA and MOE direct roles. NVCA plays a lead role in the coordination of Source Water Protection plans</p>	<p>Partially Implemented: Hydrologically sensitive features have been identified within the ORM and as part of the groundwater studies commissioned by MOE and coordinated by conservation authorities.</p>	<p>A Groundwater Management Program to manage and protect the groundwater resources within the watershed or ground watershed should be developed. Groundwater is vital to the livelihoods and health of the majority of watershed residents. It provides much of the water resource for domestic, agricultural, industrial use and ecological uses</p>	<p>8. The NVCA in conjunction with MOE shall develop a Groundwater Management Plan in order to manage the quantity and quality of groundwater. This could include strategic planning, development standards, policies, and stewardship initiatives for the effective management of groundwater resources</p>

			Hydrologically sensitive areas will be further identified through the Source Water Protection Plans and the Ground Water management Program. This information will then be provided to municipalities for identification and protection in their Official Plans and comprehensive zoning by-laws. NVCA staff may be expected to review the technical studies that will be required to support certain development applications within or adjacent to these sensitive areas.	9. The NVCA shall provide both ground and surface water technical support to its municipalities to enable them to implement provincially, federally and locally mandated initiatives including implementing Source Water Protection Plans.
16. Develop an action plan to collect the appropriate data required to determine: the quality and quantity of surface and groundwater; and sources of contamination	MOE has the lead role with NVCA directly involved NVCA has a coordinating role in local Source Water Protection Plan development	Partially Implemented: The Simcoe County groundwater studies were completed. Water quality is monitored via Provincial Monitoring Networks and watershed biomonitoring networks implemented by NVCA	Source Water Protection Plans under the Clean Water Act and the Assimilative Capacity Study(ACS) for the Intergovernmental Action Plan, will further this recommendation. Implementation will be through municipal planning documents and NVCA programs and policies.	10. The NVCA shall continue to play an active role in Source Water Protection Plan development and implementation, meeting its provincially and locally mandated responsibilities. 11. The NVCA shall play a major role in the implementation of the Assimilative Capacity Study recommendations partnering with the province and local municipalites to develop local implementaion strategies and actions. 12. The NVCA shall carry out Assimilative Capacity Studies for the Blue Mountain Watershed streams and where appropriate for the Severn Sound watersheds within NVCA's area of jurisdiction.
17. Coordinate the fair and equitable allocation of water resources on a watershed basis.	MOE to play a lead role with NVCA a direct role	Partially Implemented: Water Taking Permits are the responsibility of MOE. NVCA provides input and technical assistance	MOE has introduced new regulations concerning water taking and the proposed Source Water Protection legislation (<u>Clean Water Act</u>) to provide a far better handle on water taking permits and assess their impacts of the water takings on local watersheds. Controlling the fair and equitable allocation of water remains an MOE responsibility. MOE and Conservation Ontario are currently developing a protocol and MOU for CA input and support for PTTW applications	13. The NVCA shall provide technical input to MOE concerning the permits to take water to assist the decision makers in making the most informed decision possible following the Conservations Ontario and local memorandum of understanding. Revised recommendation # 10 also applies here
18. Employ effective pollution controls for Sewage Treatment Plants (STP).	MOE has the lead role and NVCA a role in providing water quality data	Partially Implemented: NVCA provides input and technical data to MOE and the municipalities on an ongoing basis.	The Assimilative Capacity Study (ACS) and the Source Water Protection Plans will provide even greater assistance to MOE and our municipalities for pollution control. NVCA will continue to assist municipalities through our monitoring program.	The Assimilative Capacity Study and Source Protection Plans will help implement this recommended action.

<p>19. Develop methods to reduce water contamination.</p>	<p>MOE has the lead role and NVCA a direct role in providing water quality data</p>	<p>Partially Implemented: NVCA provides input and technical data on water quality to MOE and the municipalities on an ongoing basis.</p>	<p>NVCA will continue to collect data, monitoring information and coordinate the development of the Source Water Protection Plans. The Assimilative Capacity Study will also greatly assist in implementing this recommendation. Additional financial support is required to meet the monitoring requirements recommended by the ACS.</p>	<p>The Assimilative Capacity Study and Source Protection Plans will help implement this recommended action. Recommendation #10 also applies here</p>
<p>20. Determine the cumulative impacts of water taking, including the issuance of water taking permits.</p>	<p>MOE has the lead role with NVCA a direct role in providing water quality data</p>	<p>Partially Implemented: Water Taking Permits are the responsibility of MOE. NVCA provides technical input</p>	<p>MOE has introduced new regulations concerning water taking; in addition Source Water Protection Planning and the Assimilative Capacity Study (ACS) will provide more information on water taking permits and assess their impacts on our watersheds through a rigorous ecosystems approach. (Also see 17 above)</p>	<p>The Source Water Protection Plans and the Assimilative Capacity Study will help implement this recommended action. Recommendation # 10 also applies here</p>
<p>21. Coordinate the review and enforcement for septage and sewage spreading proposals.</p>	<p>MOE has the lead role with NVCA a direct role in providing water quality data</p>	<p>Partially Implemented: NVCA provides input and technical data on water quality and quantity to MOE on an ongoing basis.</p>	<p>The Ontario Government has passed Nutrient Management Legislation and introduced Regulations to better control the use of all nutrient spreading including septage and sewage.</p>	<p>14. NVCA should expand its Watershed Monitoring Program to provide inputs to municipalities, landowners and MOE to help ensure the most effective watershed nutrient management possible and to monitor the effectiveness of actions taken. Additional financial support is required from the province or other sources to fully implement this program. Recommendation # 10 also applies here</p>
<p>22. Inform and educate the public on proper septic system operation and maintenance.</p>	<p>Municipalities sometimes through the Health Unit are lead</p>	<p>Implemented: In 1998 the responsibility for Sewage System Regulations was transferred to local municipalities. In some cases the Health Units deliver this program for municipalities.</p>	<p>By the end of 2001 all municipalities were directly responsible for septic system review either through their building departments or their local health units. All municipalities/health units inform and educate their users on proper septic operation and maintenance through the Ontario Building Code process. This recommendation has been dropped as it now a municipal responsibility.</p>	
<p>23. Promote and raise awareness on the use of naturalization techniques for stormwater management.</p>	<p>NVCA plays a lead role along with MOE under Section 53 of the Ontario Water Resources Act</p>	<p>Partially Implemented: NVCA provides direction for the development of stormwater management plan and requires that all plans follow MOE's Stormwater Management planning and Design Manual of March 2003</p>	<p>The watershed and subwatershed planning has developed Watershed Goals, Objectives and Targets. The Assimilative Capacity(ACS) Study also developed water quality targets. Stormwater Management though best management practices (including where appropriate naturalization techniques), attempts to manage human activities to ensure we achieve these targets by maintaining the hydrologic cycle, protecting water quality and preventing increased erosion and flooding. The authority has also developed engineering standards and guidelines reflecting the current best management practices. New guidelines may be developed to assist in implementing the recommendations and targets from the ACS studies.</p>	<p>15. The NVCA shall continue to promote the use of best management practices to ensure the protection and restoration of water quality and quantity and the implementation of the current and future Assimilative Capacity Studies recommendations.</p>

<p>24. Develop flood line mapping.</p>	<p>NVCA plays a lead role in the review of flood plain mapping</p>	<p>Partially Implemented: Will be on-going. NVCA has worked with municipalities and will continue to work with developers in flood vulnerable areas to develop flood plain mapping</p>	<p>NVCA has partnered with Essa Township to update the Angus flood plain mapping and with the Town of Collingwood to update the Black Ash Creek Mapping.</p> <p>However, now all development proposals that are located adjacent to flood prone areas are required to prepare flood plain mapping to provincial standards prior to approval. The costs of mapping will borne by the developers.</p>	<p>NVCA will continue to provide municipalities with technical and planning support in the review of the flood plain mapping submitted by a proponent.</p>
<p>25. Develop flood contingency plans.</p>	<p>Municipalities have the lead role NVCA plays a direct role</p>	<p>Partially Implemented: Municipalities have the lead role in flood contingency planning through their overall emergency response plan</p>	<p>To assist municipalities NVCA operates a flood forecasting and warning program. This program meets provincial standards for its operation and will take steps to ensure compatibility with adjacent Conservation Authorities through a “GTA specific” standards document. We will undertake testing and verification of our computer model’s predictive capability on our watershed. This will include working with the province and Conservation Ontario to factor in appropriate changes that may result from climate changes. As confidence in the modelled results vs. observed results increases, further and more detailed flood forecast and watershed response information will be available to our stakeholders.</p>	<p>16. The NVCA shall continue to update the flood forecasting and warning methodology and assist municipalities in their emergency response planning.</p>
<p>26. Develop 100 year erosion limits.</p>	<p>NVCA plays a lead role</p>	<p>Implemented through the process for developing NVCA’s Generic Regulations. The NVCA also follows MNR’s Technical Guidelines for Erosion Hazards in its planning and permitting programs.</p>	<p>This Innisfil Creek Subwatershed Plan has developed a pilot erosion protocol to assess impacts on erosion rates from development. Application of an appropriate model to the entire watershed or subwatersheds will follow.</p>	<p>17. The NVCA shall develop a watershed wide erosion control model.</p>
<p>27. Develop subwatershed plans.</p>	<p>NVCA plays the lead role</p>	<p>Partially Implemented: NVCA has completed three priority subwatershed plans for Black Ash, Willow, and Innisfil Creeks</p>	<p>The ACS and local Growth Management Plans should provide NVCA with a much clearer picture of where the future development pressures will occur. The studies will also highlight the need for more information and monitoring. The authority will use this information along with other data and issues assessment to set priorities for subwatershed planning</p>	<p>18. The NVCA shall use the information from the provincial and local growth management plans to assist in setting priorities for Subwatershed Plans</p>

<p>28. Share communications resources among resource management agencies.</p>	<p>NVCA plays a lead role</p>	<p>Partially Implemented: and will be on-going Partnerships with other Conservation Authorities, stewardship groups and municipalities and others have resulted in a great deal of shared communication resources.</p>	<p>Examples of inter-agency sharing of communication and other resources include the Assimilative Capacity Study, Ploughing Match, the Latornell Conference, Oak Ridges Moraine Coalition and Source Water Protection. In addition, Conservation Ontario shares distribution of program pamphlets and brochures. This approach is now part of NVCA's regular business practices; as a result this specific recommendation is no longer required.</p>	<p>On-going as part of NVCA's regular business practices (See recommendation #2)</p>
<p>29. Provide watershed stakeholders with resource management information as it becomes available.</p>	<p>NVCA plays a lead role</p>	<p>Implemented: NVCA's program provides resource management information, advice and assistance on an ongoing basis. Reports, data and other information are also available on our website.</p>	<p>Providing stakeholders with advice, and resource management data and information as it become available is one of the main roles of all of NVCA's resource management programs. In recent years one of the most efficient and cost effective ways of making it available has been through NVCA's website Large reports and maps are also distributed cheaply on CDs. This role is part of our regular business practices and as a result this specific recommendation is no longer needed</p>	<p>On-going as part of NVCA's regular business practices (See recommendation #2_</p>
<p>30. Monitor the health of the watershed and the success of the Watershed Plan.</p>	<p>NVCA plays the lead role</p>	<p>Partially Implemented: NVCA has developed an extensive watershed monitoring program. This strategic review is monitoring the success of plan implementation</p>	<p>Environmental monitoring assesses watershed health and supports other programs by providing surveillance and program performance data. This information answers questions such as: Which streams are healthy (unimpaired)? Which subwatersheds have enough forest cover to support robust ecosystem function? Are stewardship efforts effective in improving stream health? Are planning policies adequately protecting our streams? How is watershed health changing over time? The establishment of specific watershed management targets in this Watershed Plan Strategic Review provides the opportunity for measurement of success and accountability.</p>	<p>19. A Watershed Health Report should be produced annually to communicate monitoring results to watershed stakeholders. Staff should prepare report cards every five years for each subwatershed. This should be a phased approach with 2-3 subwatershed report cards produced each year.</p> <p>20 Watershed management targets shall be established specific to all four watershed objectives.</p>

Table 2 Revised Recommendations, Priorities, Funding and Timing			
Revised Recommendations	Priority It is recognized that all recommendations are important. However to assign a level of significance reflecting their importance to <u>directly</u> assist the NVCA in achieving our vision of “ <i>Conserving our Health Waters</i> ”, we have used High, Medium, and Low	Funding It must be emphasised that to implement any of these recommendation requiring additional funding, they must go through the normal business and budget planning process. The cost estimates are “ball park” figures.	Timing 1 st 5 yrs (By 2011) 2 nd 5 yrs (2011 to 2016) On-going (to 2016)
1. Provide municipalities with technical and planning assistance to incorporate environmental and natural hazards policies into planning documents.	High	Within Current Budgets	On-going
2. All NVCA programs and services shall continue to build-in an education and communication component within their programs to effectively inform key audiences on the importance of all aspects of wise watershed management and conservation.	Medium	<\$100,000	On-going
3. All programs shall continue to search for new and innovative funding sources and partnerships.	Medium/High	Within Current Budgets	On-going
4. A watershed wide natural heritage strategy shall be developed in support of the provincial and local growth management plans.	High	< \$100,000	1 st 5 yrs
5. The NVCA shall promote policies protecting the natural heritage system.	High	Within Current Budgets	On-going

<p>6. The NVCA shall continue its land acquisition and securement programs to help ensure the protection of important natural features and water resources.</p>	<p>High - Conservation easements Medium - Acquisition</p>	<p>> \$100,000</p>	<p>On-going</p>
<p>7. Terrestrial and aquatic restoration opportunities shall be identified, evaluated and promoted through stewardship and resource management programs, subwatershed studies and the planning process.</p>	<p>High</p>	<p>Within current budgets and through partnerships, with the province, municipalities and perhaps eventually through the planning process (nutrient trading if supported by the province)</p>	<p>On-going</p>
<p>8. The NVCA in conjunction with MOE shall develop a Groundwater Management Plan in order to manage the quantity and quality of groundwater. This could include strategic planning, development standards, policies, and stewardship initiatives for the effective management of groundwater resources</p>	<p>High</p>	<p>Within Current Budgets, through Source Water Protection funding from the province</p>	<p>1st 5 yrs</p>
<p>9. The NVCA shall provide both ground and surface water technical support to its municipalities to enable them to implement provincially, federally and locally mandated initiatives including implementing Source Water Protection Plans.</p>	<p>High</p>	<p>Within Current Budgets, Hydrogeologist's position is supported through Source Water Protection funding from the province. This position is required to support municipalities in the implementation of the <u>Clean Water Act</u> .</p>	<p>1st 5 yrs</p>
<p>10 The NVCA shall continue to play an active role in Source Water Protection Plan development and implementation, meeting its provincially and locally mandated responsibilities.</p>	<p>High</p>	<p>Within Current Budgets funded through Source Water Protection from the province</p>	<p>On-going</p>
<p>11 The NVCA shall play a major role in the implementation of the Assimilative Capacity Study recommendations partnering with the province and local municipalities to develop local implementation strategies and actions.</p>	<p>High</p>	<p>> \$100,000 Funded through partnerships with the province, municipalities, and the development community to implement the ACS targets and recommendations</p>	<p>On-going</p>

<p>12. The NVCA shall carry out Assimilative Capacity Studies for the Blue Mountain Watershed streams and where appropriate for the Severn Sound watersheds within NVCA's area of jurisdiction.</p>	<p>High</p>	<p><100,000</p>	<p>1st 5 yrs</p>
<p>13. The NVCA shall provide technical input to MOE concerning the permits to take water to assist the decision makers in making the most informed decision possible following the Conservation Ontario and local Memorandum of Understanding</p>	<p>Med</p>	<p>Within Current Budgets or through partnerships and user fees, and supported by the results from the ACS and Source Water Protection Plans</p>	<p>On-going</p>
<p>14. The NVCA should expand its Watershed Monitoring Program to provide inputs to municipalities, landowners and MOE to help ensure the most effective watershed nutrient management possible and to monitor the effectiveness of actions taken. Additional financial support is required from the province or other sources to fully implement this program</p>	<p>High</p>	<p>> \$100,000 Through partnerships with the province, municipalities, and the development community to monitor the implementation of the ACS and IGAP studies</p>	<p>On-going</p>
<p>15. The NVCA shall continue to promote the use of best management practices to ensure the protection and restoration of water quality and quantity and the implementation of the current and future Assimilative Capacity Studies recommendations</p>	<p>High</p>	<p>It will cost approximately \$149 million to fully achieve the ACS Targets with approved growth in current Official Plans. This must be achieved through partnerships with the province, municipalities and perhaps eventually with developers through the planning process (nutrient trading if supported by the province)</p>	<p>On-going</p>
<p>16. The NVCA shall continue to update the flood forecasting and warning methodology and assist municipalities in their emergency response planning.</p>	<p>High</p>	<p>< \$50,000 Costs may be reduced depending on the information that will be provided through the Source Water Protection Plans</p>	<p>On-going</p>

17. The NVCA shall develop a watershed wide erosion control model	Medium	< 100,000	2 nd 5 yrs
18 The NVCA shall use the information from the provincial and local Growth Management Plans to assist in setting priorities for Subwatershed Plans	High	> 100,000	On-going
19. A Watershed Health Report should be produced annually to communicate monitoring results to watershed stakeholders. Staff should prepare report cards every five years for each subwatershed. This should be a phased approach with 2-3 subwatershed report cards produced each year.	High	Within Current Budgets and through partnerships with the province, municipalities and perhaps eventually through the planning process (nutrient trading if supported by the province)	On-going
20. Watershed management targets shall be established specific to all four watershed objectives.	High	Within Current Budgets	1 st 5yrs

Appendix B

PLANNING POLICY FORMULATION PROCESS

PLANNING POLICY FORMULATION PROCESS

This process will be used for the formulation of all policy (and significant amendments) related to planning, development, and the environment. Interim policies may be passed by the NVCA without following all of the steps below.

STEP 1
Confirmation of Need for Policy
→ Verified by Planning Advisory Committee (PAC)

STEP 2
Establishment of Working Group
→ Group members verified by PAC

STEP 3
Preparation of *Draft* Policy
→ Undertaken by Working Group

STEP 4
Establishment of Public Meetings as determined by NVCA
→ *Draft* Policy presented by Working Group and Political Representatives

STEP 5
Preparation of revised *Draft* Policy
→ Undertaken by Working Group

STEP 6
Circulation of *Draft* Policy to Municipalities and Applicable Stakeholders
→ 30 day review period

STEP 7
Preparation of *Final Draft* Policy
→ Undertaken by Working Group

STEP 8
Recommendation of *Preliminary* Approval
→ Undertaken by PAC

STEP 9
Recommendation of *Final* Approval
→ Undertaken by Executive Committee

STEP 10
Authorization of *Final* Approval
→ Undertaken by Full Authority

The Full Authority by resolution approved this Process on May 9, 2003.