

APPENDIX Q

Implementation Table

East Credit Subwatershed Study
Phase III – Management Plan and Implementation Report

Prepared for:

Region of Peel
Town of Caledon

Prepared by:

Credit Valley Conservation

November 2007
Printed December 2007

INTRODUCTION

This appendix provides a summary of how to implement the recommendations of the Subwatershed 13 Study. The proposed approach for implementation has been categorized under the following 5 headings:

- Planning and Policy
- Restoration and Retrofit
- Outreach and Education
- Long-term Monitoring – monitoring to take place over more than one year
- Research and Development – short-term monitoring, however may lead to long-term monitoring

Public safety, public health and resource issues have been summarized for each where applicable, and discussed under the headings of action, facilitator, related implementation mechanism, timeframe and cost.

DEFINITIONS

Facilitator – The agency/group that is responsible for taking the lead on implementing the action

Contributor – The agency/group that has the ability to offer assistance to the facilitator to implement the action

Related Implementation Mechanism – The policy, study or process that would best be used to implement the action

ACRONYM LIST

The following is a list of acronyms used in the table.

BMPs – Best Management Practices	NE – Niagara Escarpment
CCME - Canadian Council of Ministers of the Environment	NEC – Niagara Escarpment Commission
CFWIP – Community Fisheries and Wildlife Involvement Program	NGOs – Non-government Organizations
CRFMP – Credit River Fish Management Plan	OPs – Official Plans
CRWMSU – Credit River Water Management Strategy Update	OPA - Official Plan Amendment
CVC - Credit Valley Conservation	ORM – Oak Ridges Moraine
DFO - Department of Fisheries and Oceans	ORMF – Oak Ridges Moraine Foundations
EIR - Environmental Implementation Report	PAAWG – Peel Agricultural Advisory Working Group
EFP – Ontario Environmental Farm Plan	PGMN – Provincial Groundwater Monitoring Network
HADD – Harmful Alteration, Disruption, or Destruction	PTTW – Permit To Take Water
HPWWS – Halton Peel Woodlands and Wildlife Stewardship	PWQO – Provincial Water Quality Objectives
IBI – Index of Biotic Integrity	RWQ – Rural Water Quality Program
KWRMA – Ken Whillans Resource Management Area	TRCA – Toronto Regional Conservation Authority
MNR - Ministry of Natural Resources	SWM – Storm Water Management
MOE - Ministry of the Environment	WHPA – Well Head Protection Areas
N/A - Not available	WQ – Water Quality
	YPDT –York Peel Durham Toronto

SUBWATERSHEDS 13 - IMPLEMENTATION TABLE

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
<u>A-PLANNING AND POLICY</u>						
Surface Water Management Plan	Land and water use strategies and recommendations. Ensure that any development that occurs takes into consideration all of the following documents: CRWSU, CRFMP, CVC Policies e.g. Floodplain Management, Storm Water Management, Watercourse & Valleyland Protection Policies.	CVC	Town of Caledon, Region of Peel, NEC	NE Plan	Ongoing	N/A
	Setbacks should be maintained from all defined valley slopes, flood plains and watercourse channels.	CVC	Town of Caledon, Region of Peel, NEC	CVC Regulations, Planning Act, OP's and NE Plan	Immediate	N/A
	Update the Valleyland Protection Policies to include geomorphic considerations.	CVC	Town of Caledon	Provincial Policy Statement – Natural Hazards	0-5 years	N/A
	Implement planning and construction guidelines.	Municipality, CVC	Private Developers	Planning Act, Municipal Act	0-5 years	N/A
	Continue application of DFO Act and Policy in plan input and review.	CVC re: initial review and mitigation. DFO re: authorization, compensation and enforcement.	MNR re: enforcement of deleterious substances including sediment.	Federal Fisheries Act	Ongoing	N/A
	Application of Clean Water Act	CVC, MOE, Municipalities	MNR, NEC, Municipalities	Ontario Clean Water Act	Ongoing	N/A
	Implementation of the Region of Peel's Water Efficiency Plan	Region of Peel	Municipalities	Region of Peel Water Efficiency Plan, 2004	Ongoing	N/A

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Surface Water Management Plan continued	Implementation of the Salt Management Plan Update. The Region's Road Salt Management Plan considers surface and ground water sensitivity to contamination and classifies areas into high, medium and low vulnerability. The Plan recommends that areas with high groundwater vulnerability (ORM Plan Area) should have highest priority for implementing best management practices.	Region of Peel	NEC	Environmental Facility Review and Salt Management Plan Update 2004, NE Plan		N/A
Fisheries Management Plan	Implementation of the Salt Management Plan. This plan strives to minimize adverse environmental impacts through a variety of strategies, including: monitoring, reviewing and upgrading the SMP on an annual basis to incorporate new technologies and/or new developments to ensure the effectiveness of the Plan; committing to ongoing winter maintenance staff training and education; and allocation of sufficient financial resources for implementation of the SMP.	Town of Caledon		Salt Management Plan 2005		N/A
	Continue DFO agreement in reviewing/mitigating potential HADDs. Provide advice to MOE regarding PTTW and PWQOs.	CVC/DFO	MNR/MOE	Formal DFO Agreement / informal MOE	Ongoing	N/A
	Apply planning guidelines (buffers, timing windows, sediment control, SWM, etc) as per CRFMP and other planning documents. Integrate with OP updates.	CVC	MNR/DFO/NEC/Province/Municipalities	Plan Review applications and Official Plans, NE Plan, PPS	Ongoing and next OP update	N/A
	Report and enforce Fish and Wildlife Conservation Act and Special Fishing Regulations. Regulate stocked fish escapees from private ponds.	MNR	CVC and Public	Fish and Wildlife Conservation Act and Fishing Regulations	Ongoing	N/A
	Prevent and control introduction of aquatic invasive exotics with existing regulations and policies. Investigate new policies for CVC and municipalities as per Invasive Species Strategy.	CVC	Municipalities, landowners, MNR, DFO	Federal and Provincial Legislation and Policies, CVC Strategy	Ongoing	N/A

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Fisheries Management Plan continued	Encourage securement of Natural Heritage System lands related to the protection and restoration of fish habitats.	CVC, Region of Peel	MNR, NEC, NGOs and municipalities	Region of Peel's Greenlands Securement Program. See Natural Heritage	Ongoing	N/A
Groundwater Management Plan	Voluntary compliance, where aggregate licenses already exist, to meet the recommendations of the subwatershed study (e.g. maintain barriers between below water table excavations so that changes to hydraulic heads are minimized). Continue to review applications for land use change and water takings to ensure that key groundwater functions in the subwatershed (e.g., recharge, baseflow) are maintained.	Town of Caledon CVC	Region of Peel, CVC, MNR Aggregate Producers, NEC Town of Caledon, Region of Peel, landowners, developers, aggregate industry, MNR, NEC, MOE	Voluntary Official Plan, Fisheries Act, Aggregate Resources Act, NE Plan, PPS	0-5 years Ongoing	N/A \$500 per application on average
Natural Heritage Plan	Official Plan policies and schedules should recognize identified and assessed terrestrial communities and watercourse/riparian and valley land corridors. Natural areas not identified within the Official Plans should be protected and/or enhanced to the extent practical.	Town of Caledon, Region of Peel, NEC	Protection: CVC, MNR, landowners Enhancement: Region of Peel, Town of Caledon, MNR, community groups, landowners	Planning Act, Town of Caledon and Region of Peel OPs, CVC Stewardship and Restoration Program, Credit River Fisheries Management Plan, MNR CFWIP, NE Plan, PPS	Immediate (0-5 years)	N/A
	A "Gap Analysis" should be carried out to ensure that all important features, functions and linkages are adequately protected in the Official Plans.	Town of Caledon, Region of Peel	CVC	Official Plans, Municipal By-Laws	0-5 years	N/A
	High and moderately sensitive corridors should be designated as "natural corridor"; low sensitivity corridors as "supportive natural system"; high and moderate priority terrestrial as "woodland core"; and low terrestrial as "woodland", as per OP; and then eventually zoned.	Town of Caledon, Region of Peel	CVC, Region of Peel, MNR	Planning Act, PPS, OPs, and by-law	0-5 years	N/A

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Natural Heritage Plan continued	Require Environmental Impact Reports for development proposals which may affect natural communities or corridors either directly or indirectly.	Town of Caledon, NEC	Region of Peel, CVC	OPs, CVC EIR Guidelines, PPS	0-5 years	N/A
	Encourage securement of key significant natural areas by public agencies or groups (for example, there are approximately 4,345 acres of High and Medium Priority terrestrial lands representing forest and wetland).	Region of Peel, Town of Caledon, NEC	CVC, MNR, Interest Groups, Land Trusts, landowners	Municipal Act, OP, foundations and other charitable organizations	0-5 years and beyond	\$2500 to \$4500 per acre at market value
	Implement planning and construction guidelines.	Municipality, CVC	Private developers	Planning Act, Municipal Act	0-5 years	N/A
	Identify and protect Key Natural Heritage Features, and their Critical Function Zones and Vegetation Protection Zones	Town of Caledon, Region of Peel, NEC	CVC	Official Plans, Municipal By-Laws, NE Plan, PPS	0-5 years	N/A
	Identify building envelopes outside of natural areas and corridors, if possible, for new and existing lots of record	Town of Caledon, NEC	Region of Peel, CVC	Official Plans, Municipal By-Laws, PPS	0-5 years and beyond	N/A
<u>B-RESTORATION AND RETROFIT</u>						
Surface Water Management Plan	Identify on-line ponds (55 in total within Sub-13) that have the potential for dam failure, overtopping and property damage, and identify their impact on the fishery. If impacts are negative, mitigate or rehabilitate.	CVC	MNR, NEC, landowners	Credit River Fisheries Management Plan, NEP	As feasible	\$2000 - \$6000 per pond
Fisheries Management Plan	Follow up dam/on-line pond stewardship contacts, education and funding for dam repair, mitigation or removal. Major dam on main channel upstream of Kennedy Road is a high priority but consider invasion of brown trout if removal option is considered. 54 other dams/on-line ponds identified and landowners contacted for voluntary stewardship and grants. Also target new ponds at headwaters of Silver Creek.	CVC/MNR	DFO/NGOs/landowners	Lakes and Rivers Improvement Act, CVC policies and regulations, Stewardship Programs including CVC Fisheries and Aquatic Sciences design and grants.	Ongoing	\$1K to \$5K per pond x 25 = Total \$50K to \$150K. \$10 000 for one large dam.

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Fisheries Management Plan Continued	<p>Identify landowners with excess sand bedload, design and implement rehabilitation options of clearing thalweg, installing sand traps, improving buffers, installing artificial riffles. First priority is Silver Creek re: Hwy 10 sanding. Conservation Plan landowners and other sites identified by geomorphology. Also consider bank stabilization projects (e.g. bioengineering, woody debris management). Offer funding grants for priority projects. Investigate stream restoration on lower reaches in KWRMA as pilot project. Conservation Plan for Kennedy Road property recommends restoration of field drain.</p> <p>Identify livestock access to streams and offer advice and funding through existing CVC, ORM, RWQ programs (Peel Rural Water Quality Program, EFP) for fencing and alternative watering systems.</p>	CVC	MNR/DFO/NGOs/landowners	Stewardship Programs including CVC Fisheries and Aquatic Sciences design and grants.	Ongoing	<p>Channel rehab: \$5K/km x 5km = Total \$25K</p> <p>Bank rehab: \$2.5K/site with \$1K grant</p>
	<p>Identify priority reaches or willing landowners for buffer plantings to reduce thermal warming and nutrient pollution.</p>	CVC, Soil and Crop Improvement Association	Region of Peel, Landowners/NGOs	Stewardship Programs including CVC Fisheries and Aquatic Sciences design and grants, Region of Peel Rural Water Quality Program.	Ongoing	<p>\$10 / linear foot for combined fencing and watering system (based on 2007 example project)</p> <p>\$5 000 to \$10 000</p>
	<p>Identify willing landowners from Wetland Creation inventory sites, design and implement projects to improve baseflows and water quality for fisheries. Work with Ontario Headwaters Restoration Initiative (Ontario Streams) for Temperate Wetland Restoration at sites identified in existing landowner contact program.</p>	CVC, NEC	Landowners/NGOs	Stewardship Programs including CVC Fisheries and Aquatic Sciences design and grants, NEP Existing Uses Policies.	Ongoing	<p>\$5K grant per site x 5 = \$25K</p> <p>Total=\$50K</p>

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Fisheries Management Plan continued	Implement appropriate control programs for aquatic invasive species when identified (refer to CVC Invasive Species Strategy).	CVC/MNR	NGOs/ landowners	Credit River Fisheries Management Plan, Ontario Clean Water Act, Stewardship Programs, Natural Heritage Program	Ongoing	\$300/CYC crew day
Groundwater Management Plan	Work with other disciplines to determine where their rehabilitation/retrofit initiatives can benefit groundwater conditions (e.g., plantings in areas of high recharge).	CVC, NEC		Stewardship Programs, NEP Development Permits	0-5 years	Minimal cost for input from hydrogeologists
Natural Heritage Management Plan	Restore or enhance fragmented communities: A. Increase buffer around wetlands (336 ha of adjacent lands within 100 m of high priority wetland suitable for restoration; or 266 ha of adjacent lands within 50 m of high priority wetland suitable for restoration). Buffer width to be determined based on site characteristics (i.e. Wetland significance and sensitivity, topography, soils, drainage, and location) B. Increase total wetland area - cultural meadows (i.e. old fields), cultural savanna, wet meadows (i.e. wet agricultural lands), and non-intensive agriculture on bottomland and muck soils on 415 hectares in Sub 13.	CVC, Town of Caledon, NEC	Region of Peel, landowners, Interest Groups	CVC Stewardship Program, Wetland Habitat Canada, MNR – CWFIP, NE Plan	High Priority 0-5 years, Medium Priority 5-10 years, Low Priority 10-20 years	\$163 000 for planting 100 m buffers (Total 336 ha) adjacent to high priority
		CVC, Town of Caledon	Region of Peel, landowners, Interest Groups	CVC Stewardship Program, Wetland Habitat Canada, MNR – CWFIP	0-10 years	\$201 000 + [415 ha at approximately \$485/ha]

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Natural Heritage Management Plan continued	<p>C.1 Reconnect high priority forest and wetland to main branch of the East Credit along 2.8 km tributary corridor adjacent to Old Baseline from Airport Road to St. Andrew's Road</p> <p>C.2 Reconnect "Claude Swamp Wetland" and high priority forest at headwaters of the Etobicoke Creek to the main branch of the East Credit; 1.8 km downstream along tributary corridor.</p> <p>C.3 Connect the high quality natural areas of Subcatchment 13-12 in the headwaters to the main branch of the East Credit; 1.7 km downstream along tributary corridor.</p> <p>C.4 Connect the high quality natural areas of Subcatchment 13-03 in the headwaters to the main branch of the East Credit; 1.5 km downstream along tributary corridor.</p> <p>C.5 Connect high priority forest unit north of Old Baseline & east of Hwy. 10 to the natural areas of the main branch of the East Credit; 400 m downstream along swale.</p> <p>D. Increase total forest cover by restoring 121 hectares in Subwatershed 13.</p>	CVC, Town of Caledon	Region of Peel, landowners, Interest Groups, NEC	CVC Stewardship Program, Wetland Habitat Canada, MNR – CWFIP, NE Plan	0-5 years	C.1 \$13,600 C.2 \$8,700 C.3 \$8,250 C.4 \$7,300 C.5 \$1,900 = 39,750
		CVC, Town of Caledon	Region of Peel, landowners, Interest Groups, NEC	CVC Stewardship Program, Wetland Habitat Canada, MNR – CWFIP, NE Plan	High priority corridors and Interior Habitat areas 0-5 yrs., moderate priority 5-10 yrs., low 5-15 yrs.	\$58 700
	<p>E. Valley, and Stream Corridor Restoration – Naturalize to protect quantity and quality of streams and valleylands; and maintain and restore connectivity of natural areas. Identify old field, cultural savanna, intensive agriculture and non-intensive agriculture within Valley, and Stream Corridors.</p> <p>High Priority Corridors – 330 ha. Moderate Priority Corridors – 49 ha. Low Priority Corridors – 25 ha.</p>	CVC, Town of Caledon	Region of Peel, landowners, Interest Groups	Credit River Fisheries Management Plan, Ontario Clean Water Act, Stewardship Programs, Natural Heritage Program, Wetland Habitat Canada, MNR – CWFIP	High priority corridors 0-5 yrs., moderate priority 5-10 yrs., low priority 5-15 yrs.	\$195,000

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Natural Heritage Management Plan continued	F. Bioregional Corridor Restoration – Increase forest cover on 191 ha of lands along the Niagara Escarpment currently identified as old field or non-intensive agriculture.	CVC, Town of Caledon	Region of Peel, landowners, Interest Groups, NEC	CVC Stewardship Program, Wetland Habitat Canada, MNR – CWFIP, NE Plan	0-10 yrs.	\$93,000
	G. Wetland Creation - A Gartner Lee report commissioned by CVC and TRCA identified a 16 ha opportunity in the East Credit Subwatershed for wetland creation	CVC, Town of Caledon	Region of Peel, landowners, Interest Groups, NEC	CVC Stewardship Program, Wetland Habitat Canada, MNR – CWFIP	0-10 yrs.	\$8 000 +
C-OUTREACH AND EDUCATION						
Surface Water Management Plan	Periodically advertise water quality issues in local newspapers and at CVC website.	CVC	Environment Canada, MOE, CCME		0-5 years	\$1000
	On CVC website, provide linkages to other websites with more detailed information on water-quality related environmental issues.	CVC				\$1000
	Educate local Fast food outlets in regards to septic and grease.	CVC	Town of Caledon - Building Official	Ontario Clean Water Act	0-5 years	\$500
	Implementation of the Town of Caledon's pesticides awareness and education program. Continuing implementation of pesticide best management practices, including the elimination of the use of pesticides in Town-owned parks and for road side weed control.	Town of Caledon			Healthy Horticultural Landscapes By-law, By-law 2003-81, as amended by By-law 2005-82	Ongoing
	Implementation of the Peel Public Health 'Be Pesticides Aware' public education campaign. This will raise awareness of pesticide issues and encourage Peel residents to reduce their pesticide use on lawns and gardens. The materials for the campaign include a tear-off sheet, a CDROM and a website (www.reducepesticidespeel.ca) which were developed in partnership with staff from the area municipalities.	Region of Peel	NEC	NE Plan Existing Uses Policy	Ongoing	N/A

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Surface Water Management Plan continued	Approach and educate individual landowners in key poor Water Quality Areas – implement BMPs.	CVC	MNR, landowner	Credit River Fisheries Management Plan, Ontario Clean Water Act, Canada-Ontario Environmental Farm Plan	Ongoing as opportunities arise	Background review and site visits \$500. Implementation of BMP costs see below.
	Peel Rural Water Quality Program – technical and financial assistance for farmers implementing water quality improvement projects (i.e. cattle access restriction, fencing, buffer creation, manure storage).	CVC/TRCA	Region of Peel/PAAWG/ Great Lakes Sustainability Fund	Stewardship Programs	Ongoing as projects arise	\$500 to \$1000 per project
	Peel Farm Program – project technical and funding assistance for general soil and water conservation measures.	CVC	Agricultural Community Groups/ PAAWG	Stewardship Programs	Ongoing as projects arise	N/A
Fisheries Management Plan	Continue education (brochures, signage, and website), advice and funding related to fisheries and wetland restoration through CVC Stewardship Programs (ORM, EFP, and Ontario Headwaters Restoration Initiative). Consider pilot projects and interpretation at KWRMA and Warwick.	CVC	MNR/NGOs	Stewardship Programs	Ongoing	Brochure production \$5000; Workshop \$1000
	Educate and mitigate property damage from beavers.	CVC	MNR	Stewardship Programs	Ongoing	Free information, cost to landowner.
	Educate and control aquatic invasive species as per CVC Strategy.	CVC	MNR/NGOs/ municipalities	CVC Invasive Strategy and Stewardship Programs	Ongoing	Free information, costs unknown until problem identified.

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Groundwater Management Plan	Implement Source Water Protection Stewardship Program within designated portion of WHPA.	CVC, Region of Peel, Town of Caledon	MOE, Conservation Ontario	Clean Water Act, Stewardship Programs	Expected to begin in 2007	To be determined – up to \$2M available from Source Protection Stewardship Fund
	Develop an education and stewardship program to protect significant recharge areas.	CVC	Region of Peel, Town of Caledon, MOE, landowners	Ontario Clean Water Act	Expected to begin in 2008	\$10,000 to \$30,000
	Continue well abandonment program and education program for WHPAs.	Region of Peel	Support from CVC through raising public awareness of Peel's program		Ongoing	Based on response from public; Estimated \$2,000 to \$4,000 per well abandonment
Natural Heritage Plan	"City and Country Connections", sustainable farming practices at Ken Whillans.	CVC			2008	Unknown at this point
	Peel Rural Non-Farm Program - project technical advice and funding available to undertake pond naturalization, riparian/buffer and upland plantings to increase forest cover and enhancement of natural features (ex. Caring for the Moraine Project).	CVC/ORMF	HPWWS, NEC	Stewardship Programs	Ongoing since 2006	\$250 per site visit plus staff time
	Caring for the Moraine Project will provide advise and educate landowners (directly – mail out, phone calls, workshops; indirectly – news releases, news articles, fact sheets) related to the Oak Ridges Moraine, wetland naturalization, pond restoration, conservation planning, tree planting, environmental best practices.	CVC/ORMF	HPWWS	Stewardship Programs	Ongoing since 2006	\$5000 to \$10 000

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Natural Heritage Plan continued	Identify landowners to engage in Rural landowner Stewardship Guide program.	CVC	Natural Spaces Project Team / University of Guelph	Stewardship Programs	Ongoing starting Fall 2007	Staff time
	Present the Rural Landowner Stewardship Guide Workbook through introductory workshops and assist landowners in completing the self-assessment of their rural property and devising an action list.	CVC	Natural Spaces Project Team / University of Guelph	Stewardship Programs	Ongoing starting Fall 2007	\$4000/year for 100 participants
	Provide technical support in action implementation through on-site follow-up and workshops on land management issues (Rural Landowner Stewardship Guide).	CVC	Natural Spaces Project Team / University of Guelph	Stewardship Programs	Ongoing starting Fall 2007	\$1000/work shop; \$250/site visit in staff time
<u>D-LONG-TERM MONITORING</u>						
Surface Water Management Plan	Continue annual sampling of benthic macroinvertebrates at 3 established sites in the subwatershed and consider new sites in cooperation with other disciplines and priorities.	CVC/MOE		CVC Integrated Watershed Monitoring Program	Ongoing	\$200 per site
	Monitor water quality chemical parameters at target locations to quantify temporal change, including climate change.	CVC	MOE	Fisheries Act, Water Resources Act, Environmental Protection Act, CVC Integrated Watershed Monitoring Program	0-5 years	\$350 /sample per site
	Conduct continuous temperature monitoring at established site (East Credit at Hwy 10).	CVC		CVC Integrated Watershed Monitoring Program, Credit River Fisheries Management Plan	Ongoing	\$200 per site

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Surface Water Management Plan continued	Monitor fisheries, benthics, water quality, hydrology, and stream morphology in aggregate areas to gather background information prior to secondary aggregate area development.	CVC	Town of Caledon, Region of Peel, landowners, NEC		In response to change in aggregate plan status (secondary to primary) for 0-5 years.	\$25,000-40,000 depending on size of aggregate area
	Fisheries Management Plan	CVC	MNR	CVC Integrated Watershed Monitoring Program	Ongoing	\$300/site for crew = \$1200/year
Groundwater Management Plan	Design and implement other fish monitoring in conjunction with restoration projects.	CVC	MNR		Ongoing	Staff time
	Where accessible conduct spawning surveys of brook trout. Focus on potential impacts from aggregate extraction and water taking.	CVC	Consultants	Plan Input and Review process	Ongoing	\$200/day for Assistant Bio or paid by proponent.
	Monitor for introduction and trends in aquatic invasive species.	CVC	MNR	CVC Invasive Species Strategy	Ongoing	Staff time
	Continue monitoring of Warwick PGMN well (deep buried bedrock valley) and sharing of information with YPDT to better understand this feature.	CVC	YPDT, Region of Peel		Ongoing	\$3,000 per year
Implement proactive monitoring program in any sensitive areas targeted for land use change with the potential to negatively impact the environment.	CVC	Town of Caledon, Region of Peel, landowners			In response to land use change application.	\$2,000 per site per year

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Groundwater Management Plan continued	Continue the monitoring program in WHPA for Inglewood Well No. 3 municipal well, update WHPAs and implement monitoring program for any future municipal wells.	Region of Peel	CVC	Ontario Clean Water Act	Ongoing	Est. \$10,000 to \$15,000 per municipal well for monitoring program; \$50,000 to delineate WHPA
Natural Heritage Plan	Landscape monitoring of the amount, distribution, and potential function of natural areas to be carried out by the Terrestrial component of the Integrated Watershed Monitoring Program Monitoring of representative forest, wetland, and riparian flora and fauna communities according to CVC's Terrestrial Monitoring Protocols	CVC		CVC Integrated Watershed Monitoring Program CVC Integrated Watershed Monitoring Program	Ongoing Ongoing	\$3,600 per assessment Approx. \$3,000 per new site
E-RESEARCH AND DEVELOPMENT						
Surface Water Management Plan	Develop a protocol to maintain barriers between water table excavations so that changes to hydraulic heads are minimized.	MNR, DFO	CVC, Town of Caledon, Region of Peel, NEC	Fisheries Act, Aggregate Resources Act, Planning Act	2 years	N/A
	Develop an interactive database to include all critical infrastructure including, culverts, bridges, road crossings and on-line ponds.	CVC, Municipality	CVC, Town of Caledon	CVC Dam Inventory project and Floodline Mapping Projects	2 years	\$10000
	Monitor sediment quality chemical parameters at target locations to quantify metal and pesticide contamination. This study will be coordinated with fish collection for tissue analysis for zinc analysis.	CVC	Landowners	Fisheries Act, Water Resources Act, Environmental Protection Act, CVC Integrated Watershed Monitoring Program and Stewardship Program	0-5 years	\$350 per sample per site

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Surface Water Management Plan continued	Conduct continuous temperature monitoring at target locations in conjunction with restoration projects (e.g. removal of dams, buffer plantings).	CVC		CVC Integrated Watershed Monitoring Program, Credit River Fisheries Management Plan	Ongoing	\$200 per site
	Investigate reasons for low O ₂ in identified reaches. Determine effect from wetlands and whether unnatural problems exist such as nutrient loading from agricultural activities. Consider temperature reductions through riparian plantings/dam mitigation/artificial riffles to improve dissolved oxygen.	CVC	Landowners/ NGOs/MNR/ NEC	IWMP and Stewardship Program including CVC Fisheries and Aquatic Sciences design and grants, NE Plan.	1 year	\$1000/year Or \$300/day investigation by CVC staff.
Fisheries Management Plan	Conduct site specific fisheries research related to problems identified or success of restoration projects through the monitoring program (e.g. zinc sources, wetland degradation). Collect fish samples for contaminant tissue analysis (e.g. zinc) and identify/mitigate sources. Research potential effects of climate change on fisheries and adaptations.	CVC	Other agencies, educational institutions, landowners MOE/MNR	Guide to Eating Fish Program	Ongoing	Subject to annual budgets/workplans \$500/sample
	Investigate source of high sand bedloads.	CVC	MNR/DFO	CVC Fisheries and Aquatic Sciences Program	2008	Subject to annual budgets/workplans N/A
Groundwater Management Plan	Update the groundwater flow model as significant new information becomes available (e.g., buried bedrock valley, new municipal wells), and develop land use change and/or climate change impact scenarios as necessary	CVC	Landowner Municipality YPDT, Region of Peel	CVC Fisheries and Aquatic Sciences Program	As opportunities arise with landowners 2008 or 2009	\$30,000 to \$50,000 for subwatershed
Natural Heritage Plan	Collect data on wildlife and wildlife habitat to better understand species relationships.	Interest Groups, researchers	CVC, Region of Peel, Town of Caledon, MNR, NEC	CVC Natural Heritage Program	0-10 years	N/A

PLAN COMPONENT	ACTION	FACILITATOR	CONTRIBUTOR	RELATED IMPLEMENTATION MECHANISM	TIMEFRAME	COST
Natural Heritage Plan continued	<p>Monitor changes in terrestrial communities and success of restoration projects.</p> <p>Research the socio-economic benefits of the subwatershed features and functions to the community. This work can help place values on the Ecological Goods and Services that the subwatershed provides and how their quality may change over time.</p>	<p>CVC, Interest Groups, Researchers</p> <p>CVC</p>	<p>Region of Peel, Town of Caledon, MNR, Interest Groups, NEC</p> <p>Region of Peel, Academic Research Community</p>	<p>CVC Integrated Watershed Monitoring Program</p> <p>CVC Stewardship, Education and Communication Programs</p>	<p>Ongoing</p> <p>Ongoing</p>	<p>Max. \$3,000 per new site</p> <p>Subject to annual budgets/workplans and external funding opportunities</p>