

Climate Change Strategy Action and Implementation Table

Appendix B

Plan, Policy, Procedure	Adaptation Actions	Details	Status	Impact Statement
Sediment Management Strategy Study – June 2014	Track the implementation of SMS recommendations.			6.1.1, 6.1.3
	Continue with public open houses to provide residents an opportunity to learn about the study.	First public open house was held on Thursday, October 3, 2013 // The second open house was held March 6, 2014 to present the final draft, results and recommendations. Review the second Sediment Management Strategy Study presentation. The study was presented to Council (CSC) on July 14, 2014.		6.1.1, 6.1.3
	Consider recommendations within work plan and budget development.	Work Plan is underway.		6.1.1, 6.1.3
Harbours By-law 2012-007	Continue to monitor and enforce the environmental goals within this by- law.	Need to inquire about end of season numbers.		6.1.1
	Continue to enhance the Clean Marine program action plan and track the implementation of initiatives.	Update to Clean Marine Action plancomplete, town received Platinum rating at its August 2016 audit. New 2017 initiatives planned, budget dedicated.		6.1.1
Recreation Boating Feasibility and Capacity Study	Monitor the results of the phase one.			6.1.1, 6.4.1
	Include and monitor climate change adaptation measures into phase two of this study.			6.1.1
	If a new harbour location is deemed necessary, include and monitor climate change adaptation measures into phase two of this study			6.4.1
Oakville Harbours Financial Strategic Business Plan	Conducting a detailed dredging study to focus on ways to manage required dredges in the most efficient and cost effective manner.			6.1.1
	Explore alternative approaches to dredging including but not limited to annual mini dredges to remove localized high silt areas that may increase the frequency for larger full dredging operations.			6.1.1
	Once the last mechanical dredge has been completed consider establishing a maintenance schedule associated with the section or smaller scale dredges.	Bronte Harbour dredging occurred in spring 2015.		6.1.1
	Add all new green space acquired by to the town's on-line cooling facilities map and smartphone app.	Will be done as land is acquired.		6.4.1
Livable Oakville: Official Plan – 2009	Monitor application of official plan requirements.			6.1.2, 6.2.3, 6.3.3, 6.4.1, 6.7.1, 6.7.2, 6.7.3, 6.7.4
	Monitor the encouragement, implementation and barriers associated with the implementation of the goals that relate to increased areas of permeability and maximum on-site infiltration.			6.2.1
	Track the installation of best management practices related to stormwater infiltration.			6.2.1
	Monitor and track changes to legislation to ensure compliance.			6.2.3
	Track and monitor the implementation of the Livable Oakville objectives.			6.2.4
	Protect and enhance wetlands and groundwater recharge areas in north Oakville.			6.2.4
	Define a natural heritage system for areas south of Dundas Street, including buffers, linkages and identifying areas needed for future study.			6.2.4, 6.3.3
	Continue to monitor changes to Conservation Halton design standards.			6.2.4
	Review and update Natural Heritage policies (Part D, Section 16).			6.3.3
	Monitor the encouragement of the sustainability objectives in relation to providing access to cooling facilities in Oakville.			6.4.1

Livable Oakville: Official Plan – 2009	Track the progress made on meeting the goals and objectives related to climate change mitigation and adaptation.			6.5.3
	Tracking applications showing an interest in innovative storm water management systems including rain water capture (rooftop or surface) and permeable pavements.			6.6.1, 6.8.1
	Tracking implementation and effectiveness of these systems.	Credit Valley CA hosts Low Impact Development conference and is partnering to better understand the functionality of low impact development in an urban setting		6.6.1, 6.8.1
	Promote and track implementation of the Sustainable Development Checklist.	2008 - North Oakville http://www.oakville.ca/assets/2011%20planning/nco-sustainlist.pdf Mattamy subdivision north of Dundas incorporating silva cells below grade to allow for sufficient top soil		6.6.1, 6.7.3, 6.8.1
	Continue to investigate providing a lot level stormwater incentive program.	Jan 23 webinar – Denise McGoldrick presenting // Development Engineering, Environmental Policy and Purchasing in attendance		6.6.1, 6.8.1
	Continue to support staff participation in conferences/ webinars and seminars.	Several webinars have been attended by staff across the organization.		6.6.1, 6.8.1
	Initiate a demonstration pilot project in partnership with ICLR and Western University.	Demonstration site has been requested. Town staff have partnered with ICLR and Western to utilize the IDF updating web tool - LCF Calgary September 2015		6.6.1, 6.8.1
	Track the encouragement, installation and barriers related to renewable energy installations and the location of underground utilities.	Mattamy subdivision north of Dundas LED Streetlights equalled a 45% reduction.		6.7.1, 6.7.4
	To link the town's shade mapping exercise with planning decisions for North Oakville			6.7.2
	To continue with public outreach and education campaigns related to heat and health protection.	PanAm games, website updates Heat and health protection alerts are included in our Extreme Weather protocol		6.7.2
	Track the encouragement, installation and/or barriers associated with on- site infiltration.			6.7.3, 6.7.4
	Track the awareness and effectiveness of and barriers associated with the implementation of climate change adaptation actions.	In discussing the release of the Provincial Climate Change Adaptation Plan staff have identified where the implementation of mitigation initiatives need to be complimented with an outreach and education program to ensure initiatives are functioning and being utilized as designed and planned for.		6.8.1
Shoreline Assessment Study (SAS)	Track the progress and effectiveness of remediated sites.			6.1.2, 6.2.5
	Continue to enhance the Bi-annual Shoreline Monitoring Program.			6.1.2, 6.2.5
	Monitor the maintenance of shoreline features as recommended in the study.			6.1.2, 6.2.5
	Include climate change adaptation considerations into the 2016 SAS update.			6.1.2, 6.2.5
	Support the design and construction of climate sensitive shoreline features.			6.1.2

Oakville Harbours West Shore Master Plan	Identify distinct projects based on immediate need (i.e. failing shoreline protection along west shore of 16 Mile Creek and Lake Ontario shorelines).			6.1.2, 6.1.3
	Complete approval process to adopt this document as a guideline for future development.			6.1.2, 6.2.2
	Identify and apply for federal and provincial funding opportunities for infrastructure replacements and shoreline improvements.			6.1.2, 6.2.2
	Identify and initiate process to take landscape maintenance budgets to a higher level than those currently applied.			6.1.2, 6.1.3
	Consider the installment of a wave attenuator to break wave action prior to reaching piers, shoreline structures and breakwalls.			6.1.2
	Identify shared improvement projects such as the outfall from the Region of Halton's waterworks plant.			6.1.3, 6.2.2
	Initiate applications with various approval bodies to address improvements to west shoreline, filling, fish habitat.			6.1.3, 6.2.2
Fire Master Plan (FMP)	Monitor the results of the harbour's risk assessment and include details and outcomes into the Clean Marine Action Plan.			6.1.2, 6.5.6
	Prepare fiscally for the implementation of initiatives and technologies to build the harbours resiliency to climate change impacts including account for the purchase of 10 pound fire extinguishers to provide added relief against fires.			6.1.2, 6.5.6
	Prepare fiscally for the implementation of initiatives and technologies to build the harbours resiliency to climate change impacts including extension cord maintenance and inspection program to limit fires set by faulty or malfunctioning cords.			6.1.2, 6.5.6
Beach Water Quality Testing	Provide easier access to the Region's Beach Water Quality results via website and social media.	Regional Beach Water Quality is now posted on the harbour public information board and outreach materials for blue-green algae were prepared in 2016		6.1.3, 6.5.6
	Anticipate increased water quality testing to coincide with an increase in precipitation events.	Turbidity is now being monitored at Oakville and Bronte harbour		6.1.3, 6.5.6
	Prepare for increased beach closures and communication efforts surrounding these closures.	Regional Beach Water Quality is now posted on the harbour public information board and outreach materials for blue-green algae were prepared in 2016		6.1.3, 6.5.6
Creek Erosion Inventory and Assessment	Track progress on the 2014 / 2015 update.			6.1.3
	Include climate change adaptation considerations in the 2016 update.			6.1.3
	Track and monitor remediation efforts and possible co-benefits.			6.2.2
	Continue to monitor change to sediment transport process through these studies.			6.2.2
	Continue to monitor bank stabilization through this assessment process.			6.2.2
Water Sustainability Plan	Track development of the WSP and identification of existing water management strategies.	Storm Water Master Plan Phase 2 underway.		6.1.3, 6.2.5, 6.3.4, 6.4.1, 6.8.3
	Track progress on addressing potential governance issues for delivering and managing municipal water, wastewater and stormwater services.	Town staff have attended Integrated Risk Assessment webinars based on managing municipal water resources in Ontario on Sept 9, 2014.		6.1.3, 6.2.5, 6.8.3
	Monitor and track improved environmental performance in water conservation and pollution reduction.	State of the Watercourse Reporting.		6.1.3, 6.2.5, 6.3.4, 6.4.1, 6.8.3
	Monitor the results as consideration is given to the cumulative impacts on the watershed for water quality and quantity.			6.1.3, 6.2.5, 6.8.3
	Track and research opportunities for cost savings strategies through water conservation, efficiency and re-use.	Corporate Water Conservation Strategy planned for 2016.		6.1.3, 6.2.5, 6.3.4, 6.4.1, 6.8.3

Goose Management Plan	Continue and enhance goose management program for better protection of Lake Ontario water quality.	Part of the goose management plan includes landscaping recommendations to deter geese - Coronation Park plantings and South Shell plantings (2013/14) in support of this		6.1.3, 6.8.3
	Continue and enhance public outreach and education associated with goose management program especially negative impacts associated with feeding geese.	More coyote decoys were purchased in 2016 to replace old sun damaged ones as well as to provide shoreline protectin in other areas. The solar light pilot project did not do well as the coyote decoys.		6.1.3, 6.8.3
Clean Marine Commitment	Continue to implement and monitor actions contained in town's Clean Marine Action Plan.			6.1.3
	Continuously improve and implement water quality protection measures at town harbours.	Coyote decoys. Anti-freeze removal, bottom cleaning filtration		6.1.3
	Continue to provide support for spills response training and equipment.			6.1.3
	Continue participation in the Clean Marine Program and accompanying environmental audits and performance review.	3rd party audits take place every 4 years, last audit was August 2016, where the town graduated to a Platinum clean marine rating.		6.1.3
	Increase plantings north of Lakeshore to help improve water quality.			6.1.3
	Consider an incentive program to decommission harbour vessels of 2 stroke engines.			6.1.3
	Continue to enhance safe boating initiative as a component of the Clean Marine Program.	Safe boating web page created in 2014. Keep Calm and Adapt - Emergency Preparedness and Extreme Weather event - TOWARF and Canadian Safe Boating Association were present and the event was held 2 weeks prior to Safe Boating Week in Canada. Several boating safely items (life jackets, bailers, whistles, flares) were available prizes and educational materials for adults and kids were on hand.		6.5.6
Salt Management Plan (SMP)	SMP states that road authorities will continue to research and encourage the use of viable and cost-effective new technologies and chemicals to reduce environmental impacts of winter maintenance activities.			6.1.3, 6.2.5
	Continue town support for implementation of better road salt management practices and equipment which has resulted in at least a 15 per cent reduction in salt usage.			6.1.3, 6.2.5
	To continue to support implementation of the Salt Management Goals for the Key Operational Practices and Strategies.			6.1.3, 6.2.5
	Continue to work in partnership with Halton Region and neighbouring municipalities.	Create linkages to the Oakville Wildlife Strategy.		6.2.5
Water Resource Outreach and Education	Continue with annual funding and staff support for the Halton Children's Water Festival, Yellow Fish Road and Stream of Dream programs.			6.1.3, 6.2.5
	Continue to enhance water resource protection outreach and education initiatives including the town's electronic school EcoLetter, Library Backpack Lending Program and summer EcoCamp programs.	The Library Backpack program was revamped and improved upon in 2016 and includes more information linked to climate change mitigation and adaptation.		6.1.3, 6.2.5, 6.8.3

Flood Prioritization Study	Track and monitor the completion of each study phase. 2nd / 3rd phase to be initiated in 2014 while the final phase begins in 2016.			6.2.1, 6.6.1, 6.8.1
	Future studies will look at the town's storm sewer network and overland flow routes, recognizing that these routes, if compromised, can also present a flood risk.			6.2.1, 6.6.1, 6.8.1
	Continue and enhance public outreach efforts.	January 5, 2015 Halton Region mailed a flood prevention package to all home in Halton that consisted of the 72 hour emergency preparedness booklet and Halton Region's Guide to Flooding Prevention and Recovery May 9, 2015 - Keep Calm and Adapt – climate change preparedness event		6.2.1, 6.6.1, 6.8.1
	Continue to monitor the province and other municipalities for best management practices related to climate change adaptation.	On-going		6.2.1
	Increase monitoring, maintenance and dedicated staff to the clearing of catch basins.	This action may be included in the Storm Water Master Plan Phase 2.		6.6.1
	Catchbasins are fitted with inlet control devices (ICD) that allow for only a certain amount of storm water to enter, rest runs overland. Determine if ICDs are contributing to overland flow, if so, town may consider to reassess road slopes, grading and catchbasin capacity.			6.6.1
	Research updating IDF curves and internal policies on design standards.	ICLR and Western University's webinar and training program when available. Livable Cities Conference in Calgary.		6.6.1
	Continue to increase capacity to monitor and measure meteorological conditions.	New storm water technician staff person to be hired in November 2015, this would increase capacity from a staff perspective.		6.8.1
	Increase town's capacity to predict and model peak flow conditions.	ICLR and Western University's webinar and training program (training was cancelled) Livable Cities Conference in Calgary and the Sustainable Communities Conference in Ottawa.		6.8.1
Flood Mitigation Opportunities Study for Fourteen Mile Creek/McCraney Creek Systems	Conduct a more detailed evaluation of creek flood-prone sites in an effort to determine the most viable and effective flood mitigation alternatives.	Underway.		6.2.1, 6.6.1, 6.8.1
	Determine the degree of flooding, identify and assess alternatives for mitigation, and recommend preferred alternatives to be implemented.	Storm Water Master Plan Phase 2 underway.		6.2.1, 6.6.1, 6.8.1
Water Control Program and Flood Warning Initiative	Continue to enhance communication and education efforts surrounding imminent and projected flooding, high water levels and safety around creeks and channels.	January 5, 2015 - Halton Region mailed a flood prevention package to all homes in Halton that consisted of the 72 hour emergency preparedness booklet and Halton Region's Guide to Flooding Prevention and Recovery January 2015 - Communications, Emergency Management, Environmental Policy, Roads and Works Operations and Development Engineering to update website and provide consistent messaging to promote community preparedness. May 9, 2015 - Keep Calm and Adapt – climate change preparedness event 2016 Keep Calm and Adapt event at Town Hall		6.2.1
Outfall Debris Clearing Program	Consider increasing the maintenance schedule of 'hot spot' clearing.	Will hopefully be a recommendation of the Storm Water Master Plan Phase 2 or Municipal Natural Asset Initiative		6.2.2, 6.8.1
	Monitor the efficacy of debris boom installed at Navy Flats. If functioning well, develop a maintenance plan to remove collected debris.			6.2.2, 6.8.1
	Appoint designated staff to outfall debris clearing program.	Could be combined with above action.		6.2.2, 6.8.1

Oakville Wildlife Strategy	Protect and enhance wetlands and groundwater recharge areas in north Oakville.	Recommendations of the NOCSS are being implemented as development comes online.		
	Track progress on recommended development of a comprehensive biodiversity monitoring program.	Conservation Halton has a Long Term Environmental Monitoring Program (LEMP) that encompasses biodiversity in the urban creek systems in Oakville. Details on the program can be found here http://www.conservationhalton.ca/long-term-environmental-monitoring .		6.2.3
	Support ongoing policies, procedures and programs.			6.2.3
	Continue to monitor the province and other municipalities for changes and direction on climate change adaptation.	Comments on Species at Risk and other provincial regulations have been made.		6.2.3
	Develop invasive species strategy in collaboration with key agencies (Conservation Halton).	Currently EAB, Emerald Ash Borer, gypsy moth. Town staff are also working with the Ontario Invasive Plant Council and partners on a joint pilot project for Peel-Halton to monitor invasive plant species and train local community members to address threats from invasive species.		6.2.3, 6.3.3
	Develop an overall Biodiversity Strategy.	A biodiversity strategy is in development.		6.2.3
	The Ministry of Natural Resources (MNR) has a pilot program for habitat banking. Development projects that impact the natural environment may be subject to regulations requiring compensation for destroyed habitat. The habitat banking program allows organizations (e.g. Town) to submit habitat restoration projects they would like completed. The program then matches those who have compensation requirements with those who would like projects completed. Creek and waterway projects are prominent in this program.	As part of the William Halton Parkway development, Conservation Halton and Halton Region carried out an agreement to undertake a compensation plan to restore grasslands in Glenorchy as compensation. This work is being completed.		6.2.4
	The development of an effective salt management strategy adjacent to environmentally sensitive areas as part of the road ecology strategy.	On August 5, 2015 the Minister of the Environment and Climate Change approved the source protection plans for the Halton Region and the Hamilton Region Source Protection Areas. As part of this plan, sensitive recharge areas were evaluated and strategies developed to address threats and risks to these areas.		6.2.4
	To address the likely northern migration of wildlife with warming conditions, identification and enhancement of wildlife corridors and habitat to allow for adequate movement of species.			6.2.4
	Continuation and enhancement of effective monitoring and data collection for Oakville's creeks and waterways. Both Conservation Halton and the town have existing programs that can be built upon. More effective data sharing should be explored.	See the LEMP program above. (Dev. Engineering conducts ongoing monitoring in North Oakville). Data sharing is being explored and there have already been a number of collaborative efforts to share data.		6.2.4
	Expanded staff resources to address natural heritage systems and biodiversity should be considered.			6.2.4
	Track the development of an Invasive Species Strategy.			6.3.1
	Participate in invasive species pilot project for early detection and management (collaboration with the Invasive Species Center, planned for 2015-2018).	Staff is attending workshops and working with local volunteer groups (Oakville Horticultural Society has participated in training through the Trillium funded pilot project).		6.3.1
	Identify and map publicly owned lands for restoration priority.	This would be part of a biodiversity strategy. Currently undertake restoration projects in collaboration with community partners including Evergreen, OakvilleGreen, Conservation Halton and others.		6.3.3
	Research and consider reclassifying lands, identified through the 2005 Halton Natural Areas Inventory, for inclusion in the Environmentally Sensitive Area (ESA) system.	Municipal integrated biodiversity strategy scheduled for 2016.		6.3.3
	Research and consider identifying and mapping key wildlife corridors and habitats as per the province's 2010 Natural Heritage Manual.	Municipal integrated biodiversity strategy scheduled for 2016.		6.3.5, 6.6.6
	Research and develop wildlife friendly development options and construction guidelines (e.g. development checklists, site plan guidelines, best management practices (BMP) for town infrastructure and development projects, staff/contractor training).	Some existing protocols and additional review of processes are being undertaken as part of the road ecology strategy.		6.3.5, 6.6.6

Sustainable Building Design Guidelines	Continue to enhance staff awareness and use of the Sustainable Design Guidelines.	An updated version of the guidelines should address landscaping practices in fuller details than previous versions.		6.2.3, 6.3.1, 6.3.3, 6.3.4, 6.7.1, 6.7.2, 6.7.3
	Begin to monitor the implementation of goals and actions related to climate change mitigation and adaptation.			6.2.3, 6.3.1, 6.3.3, 6.7.1, 6.7.2, 6.7.3
	To monitor the implementation of sustainable landscaping guidelines			6.3.1
	Monitor implementation of water conservation aspects of town projects.			6.3.4
	Monitor the implementation of rainwater harvesting measures and their associated benefits.			6.7.1, 6.7.3
Oil/Grit Separator Units	Research implementing a dedicated OGS maintenance program.			6.2.5, 6.8.3
	On-going updates need to be made to the GIS database.			6.8.3
Stormwater Quality Monitoring Program	Track the progress of this program's development.			6.2.5, 6.8.3
	Increase monitoring to coincide with wet weather events.	New staff position filled in November 2015.		6.2.5, 6.8.3
	Implement dedicated staff time to the maintenance of oil/grit separator unit.			6.2.5, 6.8.3
	Expand meteorological monitoring network to include North Oakville development.			6.8.3
Urban Forest Strategic Management Plan	Track the implementation of following action item as it relates to building resilience to non-native and invasive species: · The adoption of adaptive management fill urban forestry policy objectives in light of the constantly changing ecological, social and regulatory environments.			6.3.1
	Track the implementation of the following action item as it relates to building resilience to non-native and invasive species: · Ensure there is adequate species diversity throughout the urban forest.			6.3.1
	Track the implementation of the following action item as it relates to building resilience to non-native and invasive species: · Ensure, that when possible, the seed source is within the collection zone for Oakville as established by the Forest Gene Conservation Authority			6.3.1
	Track the active adaptation management process and tools used to manage our urban forests.	Media Release 2014 -Tree pruning near hydro lines begins in east Oakville in January.		6.3.1, 6.3.3
	Continue to monitor and track changes to the ecological, social and regulatory environments as they are impacted by climate change.	Staff are monitoring and have provided comment on the recently passed Great Lakes Protection Act (passed October 2015), Invasive Species Act (pending) and the proposal for looking at increased protection for Oakville's forests. Wetland Conservation in Oakville A Discussion Paper		6.3.3
	Monitor and amend, if needed, the procurement process to ensure seed diversity.			6.3.1
Urban Forest Strategic Master Plan – North Oakville	Monitor and track the implementation and associated results of the above initiatives.			6.3.3

Invasive Species Monitoring Program	Continue to be proactive regarding invasive species identification and eradication.	Forestry programs, involvement in EDDMaps steering committee, involvement in Ontario Invasive Plant Council (OIPC) pilot program to address early detection and management of invasive species in Peel/Halton. Also - town staff deal with removal programs for poison ivy and giant hogweed and other plans presenting health and safety risks.		6.3.1, 6.5.4
	Continue to partner with external agencies and levels of government to track migration patterns, presence and best management practices associated with eradication.	Pilot program - see above.		6.3.1, 6.5.4
	Monitor invasive and non-native pests to south due to the anticipated northerly migration.	Asian long horned beetle is determined to be the next problematic bug for Oakville. A demonstration tree and educational signage has been set up by the Bronte Harbour to educate the public on identifying ALBH damage and the threat it poses.		6.3.1, 6.5.4
Healthy Green Spaces Strategy	Track the implementation and success of 'future opportunities' and action items contained in the strategy.			6.3.1, 6.3.3
	Continue to support and expand partnership network.	The town works with an extensive network of community partners on restoring and maintaining our greenspaces (Conservation Halton, Halton Region, Evergreen, OakvilleGreen, Forest Ambassador Program, Parks Ambassador Program).		6.3.1, 6.3.3
Invasive Species Outreach and Education	Continue to conduct outreach and education program on problematic invasive species.	Invasive Species info page (website), fact sheets and signage (hogweed), invasive species removals in collaboration with volunteer groups (garlic mustard pulls).		6.3.1
	Continue to track this programs success through outreach events, social media and website interactions.	Promoting use of EDDMaps (provincial initiative) to encourage members of public to track and report invasive species in Oakville. Website information is available.		6.3.1
	Continue with and expand local community group partnerships to organize and execute invasive species removal and community action to eliminate invasive species.	Ontario release new invasive species guidelines to further protect 19 species on November 10, 2016.		6.3.1
Extreme Weather Response	Review operational impacts of recent extreme weather events in Oakville.	Training exercise was conducted with EMT involving an extreme weather scenario		6.3.2
	Consider increasing after-hour staff resources to be better equipped to respond.	Service Oakville, call out set-up		6.3.2
	Track incorporation of extreme weather response protocols in the town's Emergency Management Plan.			6.3.2
	Continue to help and solicit help from neighbouring municipalities and the provincial government.			6.3.2
	Increase extreme weather response training and awareness.	Tree pruning near hydro lines begins in Oakville		6.3.2
Weather Related Closures	Begin to track closures and remediation efforts related to extreme weather events.			6.3.2
	Continue to enhance communication efforts surrounding park and trail closures.	GIS being utilized after 2015 ice storm to show which trails were open, closed or currently being worked on		6.3.2
Halton Region Water Use By-law and Water Conservation	Sharing of regional drinking water system management processes with town staff.			6.3.4
	Work in partnership with Halton Region to develop a comprehensive town water conservation strategy.	In progress, scope of work complete, conservation planning scheduled for 2017.		6.3.4
Road Ecology Strategy	Implement recommendations of the road ecology strategy and integrate into transportation infrastructure management processes and town policies.	Underway.		6.3.5, 6.6.6
	Define a natural heritage system for areas south of Dundas Street, including buffers, linkages and identifying areas needed for future study.	Halton Region's approval of NHS policies and mapping were approved in 2015 and qualifies as Oakville's NHS. This will be further refined through the development of the MIBS.		6.3.5

Coyote Management Strategy (CMS)	Compare coyote sightings per season to annual weather patterns to see if a correlation exists.	Not correlating to weather patterns - remove as a measure - coyotes are originally southern animals and are so adaptable they would likely do very well regardless of climate change - they're not a sensitive species and therefore not a good indicator.		6.3.5
	Compare increased coyote sightings to areas where development is occurring to see if a correlation exists. If correlations exist, proactively target education campaigns accordingly.	Reports (currently around 700) are mapped and have started to analyze patterns and factors contributing to coyote sightings. Food availability and coyote health (e.g. presence of mange) are greatest predictors of sightings. Extensive education program includes online, presentations/workshops, training of staff and residents, fact sheets, presentations to other municipalities/groups involved with coyote management.		6.3.5
	Continue to implement the coyote management program to address potential risks.			6.6.6
Town of Oakville's West Nile Virus (WNV) Protocol	Prepare for a longer WNV season and response to more calls per season (as temperatures and precipitation increase)			6.3.6, 6.6.7
	Continue to support and participate in Halton Region's WNV Surveillance program.			6.3.6, 6.6.7, 6.8.4
	Continue to enhance WNV response, remediation and communication efforts.			6.5.4
	Continue to enhance outreach and education initiatives.			6.6.7
	Continue to implement and carry out the town's internal protocol for limiting mosquito breeding sites on town and residential properties.	19 standing water complaints in 2016 season		6.8.4
Litter By-Law	Track compliance issues and barriers to compliance.	Through special events team and review of special events.		6.3.7
	Continue to implement parks recycling and waste diversion programs.	Purchased 50 lids on fall of 2014 - \$5000 - Environmental Policy and Parks and Open Space share this responsibility.		6.3.7
Litter Abatement Outreach	Incorporate Halton Region's recycling box litter control messaging and devices into town outreach displays.	Used Halton's messaging regarding wind and recycling used in late September on Twitter.		6.3.7
	Continue to participate and encourage others to participate in the Great Canadian Shoreline Clean-up, Operation Clean Sweep, all Earth Day clean-up efforts, and other community clean up activities.	Project Aware is a new litter collection program		6.3.7
Parks, Recreation, Culture and Library Master Plan	Amend cooling map and smartphone app to include all new infrastructure.	Being completed on an on-going basis		6.4.1
	Continue to engage the public through citizen surveys to identify needs and gaps in relation to a changing climate.			6.4.1
Extreme Weather Protocol (EWP)	Track the use of facilities during extended hours of operation to gauge use related to heat events.			6.4.1
	Promote parks and outdoor shaded facilities as cooling infrastructure.			6.4.1
	Prepare for the increased enactment and review of Extreme Weather Protocols.			6.5.1, 6.5.3
	Monitor changes made to alert criteria.			6.5.1
	Continue to review and revise protocols as necessary.			6.5.1
	Enhance communication efforts surrounding the protocols.			6.5.1
	Ensure that protocols are in place and operational.			6.5.1
	Monitor employee medical leaves (ie. sick days) in relation to local air quality reports.			6.5.3
Sport Field Irrigation and Monitoring	Continue to partner and share information with Health Canada and Toronto Public Health to develop the 2015 Cooling Centre smartphone app to be launched for the PanAm Games.	Underway. Pan Am Launch was successful.		6.5.3
	Track the number of field closures per season and resulting revenue impact.			6.4.2

Field Closure Policy	Raise community awareness of the potential for field closures during and after extreme weather events.	Oakville Soccer Club has been added to town's heat and air quality emails.		6.4.2
	Ensure sporting groups are aware of town's field closure policy prior to requesting their use.			6.4.2
Standard Operating Procedures (SOP)	Prepare for the increased enactment and review of SOPs.			6.5.1
	Identify gaps if gaps exist in SOP coverage and amend as needed.			6.5.1
	Continue to monitor changes to alert criteria.			6.5.1
Emergency Management Plan	Prepare for the increased enactment of the EMP.			6.5.1, 6.6.1, 6.8.1
	Continue with legislated detailed annual review and report to Council to incorporate necessary updates in response to climate change impacts.			6.5.1, 6.5.2
	Track lessons learned in regard to past extreme weather events such as the Midnight Madness micro burst storms and the December 2013 ice storm.	Extreme weather emergency preparedness was a training scenario conducted with and by the emergency management team.		6.5.1
	Track the progress made on railway and pipeline plans.	Meeting was held with Enbridge to alert town staff of the pipeline locations		6.5.2
	Be cognizant of what is being transported through Halton Region especially through Oakville.	Goods Movement Study received by Community Services Council on November 7, 2016.		6.5.2
	Continue to provide support and response training to staff.			6.6.1, 6.8.1
Emergency Preparedness Outreach and Education	Primer will be posted on-line and promoted to the public.	Climate Change Primer posted on-line and promoted.		6.5.1
	Increase education efforts surrounding the importance of preparedness in dealing with protection against extreme weather impacts.	Increased website presence and new web pages created. Emergency Preparedness and Oakville's Climate Change Primer. (2015 & 2016) Keep Calm and Adapt - Emergency and Extreme Weather Preparedness event Weather Network commercials		6.5.1
	Utilizing and equipping faith based organizations with emergency preparedness training.	Currently being discussed with Emergency Preparedness Team and Halton Environmental Network. Presentation was delivered by City of Brampton's faith based emergency preparedness program and		6.5.1, 6.5.2
	Continue to provide 72 hour emergency preparedness checklists and information at public outreach events.	CC outreach and education tracking table is being populated.		6.5.1, 6.5.2
	Continue the organization and execution of Emergency Preparedness Week and Fire Prevention Week activities.	Continued and enhanced with new emergency preparedness event in April		6.5.1, 6.5.2
	Continue to provide information to staff at annual Health and Wellness Fair.	Additional focus was provided on topics of extreme weather preparedness		6.5.1
	Continue to participate and gain knowledge of various dangers and emergency preparedness surrounding railways and pipelines in Oakville.	Meeting was held with Enbridge to alert town staff of the pipeline locations		6.5.2
Special Events User Guide (SEUG)	Town staff requires evacuation plans are submitted for large scale community events. Town staff demonstrate leadership by using tent weight (sandbags or other), communicating weather patterns and always making plans and decisions considering safety first.	Currently being implemented with new special events position added in 2015.		6.5.1
	New event coordinator position created in 2014.	New special Event coordinator position was filled in 2015.		6.5.1
Spills Response	To investigate and record current spills response protocols, responsibilities and procedures.			6.5.2
	To increase the level of staff training in relation to spills response, remediation and management.			6.5.2
	To create a formalized approach and protocol for responding to spills in Oakville.			6.5.2
	Continue to work in partnership with the Halton Co-operative Purchasing Group to retain a spills response contractor.			6.5.2
	To continue to work cooperatively with other agencies involved in spills response.			6.5.2

Partners for Climate Protection (PCP) Program	Track the progress made on meeting the goals and objectives related to climate change mitigation and adaptation.	On track.		6.5.3
	Participate in additional greenhouse gas emission tracking and reduction programs	Oakville joined the Compact of Mayors in 2016.		
	Track the integration of this program into the Energy Conservation and Demand Management Plan.	On track.		6.5.3, 6.7.4
Urban Forest: Our Solution to Our Pollution	Track progress made on urban forest initiatives.			6.5.3
	Communicate the health benefits of a mature canopy cover in Oakville.	Park Ambassador and Forest Ambassador Program. Outreach conducted by Environmental Policy on behalf of Parks and Open Space.		6.5.3
	Continue to track tree planting initiatives across town and refer to cooling facility map to determine areas in most need.	GIS being improved relating to the parks and shade projects.		6.5.3
Clean Air Plan	Update the Clean Air Plan to incorporate climate change impacts.			6.5.3
	Enhance outreach and education efforts to town staff at Wellness Fair, Earth Day and seasonal staff training events.			6.5.3
Sustainable Green Fleet Procedure	Track progress made on limiting idling times and the addition of fuel friendly vehicles into the town fleet.	New electric vehicles being incorporated into Fire fleet, Sustainable Green Fleet Procedure tracks progress and reports to Council annually.		6.5.3
	Track the air quality benefits and greenhouse gas emission reduction resulting from the procurement and use of these vehicles and technologies.	This is being done on a purchase by purchase bases with the most recent monitoring being done on electric vehicles and street sweepers.		6.5.3
Active Transportation Master Plan	Track staff participation in these initiatives over time.			6.5.3
	Continue to participate and enhance participation in events including Car Free Day, Bike Week.	Environmental policy staff conducted outreach at several recreation centres during the 2015 bike week.		6.5.3
	Consider hosting Summer Fun Bus and Bike Day in partnership with the Halton Environment Network and Oakville Public Libraries.			6.5.3
Health Protection Air Quality By-Law	Continue to implement the requirements of the HPAQ By-Law.			6.5.3
	Track the successes related to air quality improvements resulting from the by-laws implementation.			6.5.3
	Raise awareness of the HPAQB impacts in improving local air quality.			6.5.3
Air Quality Monitoring Program	Continue to work in partnership with all levels of government to help mitigate negative impacts of poor air quality.			6.5.3
	Continue to implement and strengthen municipal by-laws to strengthen the town's commitment to improving local air quality.			6.5.3
	Continue to monitor province for changes to local air quality regulations.			6.5.3
Idling By-Law- 2002-153	Continue to enhance public education program with schools and community groups.	New school campaign includes Idling Officer badges that children can decorate themselves, mock idling tickets that children can fill out and pass to idling cars. If budget permits investigate new outdoor banners. Additional schools have requested outdoor metal idling signs, more may need to be produced.		6.5.3
	Continue to monitor provincial action on regulating idling in Ontario.	No movement being made at the Provincial level		6.5.3
	Continue to track idling complaints within Oakville.	Tracking is completed through AMANDA, reports on idling infractions can be generated at will.		6.5.3
	Investigate potential for strengthening the town's by-law.	Town will not be amending it's by-law over the next few years, as changes were just made to the offences act. Bylaw will be issuing information leaflets to cars found idling starting in December of 2015. Town staff is looking at strengthening Oakville's idling by-law, lowering the allowable idle time and revisiting soem of the exemptions		6.5.3

Heat, Health and Smog Outreach and Education	Continue to expand outreach to staff throughout all facilities.			6.5.3
	Continue to partner and share information with Health Canada and Toronto Public Health to develop the 2015 Cooling Centre smartphone app to be launched for the PanAm Games.	Oakville as pilot GTA municipality took part in successful PanAM app		6.5.3
	Consider implementation of innovative cooling or shade structures to be installed in high use parks and sports fields.	Received list of shade structures in parks and currently discussing need for shade structures in parks.		6.5.3
WNV and Noxious Plant - Staff Education	Continue to enhance staff training pertaining to noxious plants and vector borne diseases.	All seasonal town staff receive this messaging at the beginning of each contract, existing staff receive this information through etalk, Portico and Wellness Fair.		6.5.4
	Include discussions on Lyme disease, tick identification and removal into seasonal employee training.	Complete and delivered each spring		6.5.4
	Track any instance of WNV and Lyme disease in Halton Region.	Information is available from Halton Region, has not been requested of town staff.		6.5.4
Halton Region's Lyme Disease	Continue to inquire and research migration of ticks and Lyme disease in Halton Region.	Halton Region to attended the May 9th event with health information.		6.5.4
	Support the opportunity to partner with Halton Region on an education or surveillance program.	information on the Submit a Tick program available at outreach events.		6.5.4
Education and Outreach - Oakville's Climate Change Primer	Make information available at public outreach events and on the town's website.			6.5.5
	Raise awareness of actions the public can take to stay safe during a power outage.			6.5.5
TOWARF	Continue and enhance relationship with TOWARF and partner with TOWARF on boating safety week and a Harbours outreach and education event.	Website updated in 2013, TOWARF attended Keep Calm and Adapt on May 9, 2015 and 2016		6.5.6
Ministry of Agriculture and Food	To provide support to groups working to grow and distribute fresh produce within Oakville.	Town's community garden program was revamped and enhanced in 2014. Information on Oakville Sustainable Food Partnership is included in Oakville's Climate Change Primer and Living the Green Life - Oakville's Guide to Environmental Sustainability.		6.5.7
	To provide support for the implementation of goals and outcomes associated with the Local Food Fund.			6.5.7
Halton Region Agricultural Forum	Consider how town staff can support on-going efforts associated with strengthening agricultural sector in Oakville.	Town's community garden program was revamped and enhanced in 2014. Information on Oakville Sustainable Food Partnership is included in Oakville's Climate Change Primer and Living the Green Life - Oakville's Guide to Environmental Sustainability.		6.5.7
Community Gardens	Consider expanding the existing program to satisfy the annual wait list.	Expanded in 2016		6.5.7
	Continue to research best management practices related to small scale agriculture and community garden plots.	Parks and Open Space revamped the program in 2014.		6.5.7
	Encourage food sharing programs such as the programs developed by the Oakville Sustainable Food Partnership.	Stewardship Guide, Website and Climate Change Primer all work to encourage participation in OSFP programs and services		6.5.7
Inlet Monitoring and Maintenance Program	Prepare for increased frequency of inlet monitoring and maintenance.			6.6.1
	Review program to gauge whether a more formalized and proactive approach is needed.			6.6.1
	Increased monitoring and maintaining of conveyance.			6.6.1, 6.8.1, 6.8.2
	Continue to research best management practices.			6.6.1, 6.8.1, 6.8.2
	Ensure only minimal level of infiltration into pipe is occurring.			6.6.1, 6.8.1, 6.8.2
	Research and implement best management practices related to pipe depth and location.			6.6.1, 6.8.1, 6.8.2
	Monitor Conservation Halton for changes to design standards.			6.6.1
	Investigate implementation of actions related to decreasing inflow / infiltration issues.			6.8.1

Winter Control – Roads and Works	Track and monitor the installation of equipment requested in the capital budget.			6.6.2
	Amend budget allocations to meet projected changes in weather.			6.6.2
	Increase number of monitoring sensors installed on maintenance equipment.			6.6.2
	Research new winter weather equipment and materials.	Salt brine study underway.		6.6.2
	Increase level of resources needed for response to long duration events - staff coverage – ex. Implement 3 shift system to deal with long duration events – increase the number of RWIS stations which forecast existing and expected conditions.			6.6.2
Winter Control- Oakville Transit	Increased resources needed to handle long duration events. Stops are often cleared multiple times per events.			6.6.2
	Increase winter maintenance to transit vehicles (wear and tear, increase salt build-up) shelters and concrete pads.			6.6.2
	Prepare for increased calls and rescheduling of service during extreme weather events.			6.6.2
Winter Control - other	Amend budget allocations to meet projected changes in weather.	Extreme weather reserve has been created		6.6.2
	Increase level of resources needed for response to long duration events - staff coverage			6.6.2
	Research winter performance of permeable pavements and other asphalt mixes.			6.6.2
RoadMatrix	Prepare fiscally for increased monitoring and maintenance.			6.6.3
	Need to ensure on-line application is taking climate change (increased freeze thaw cycles and extreme heat) into consideration.			6.6.3
	Consider utilizing specific assessment tools and protocols to better assess the vulnerability of town infrastructure.			6.6.3
Report a Problem	Increase communication to residents promoting this service.	Service Oakville, website, newspaper advertisements, electronic screens within facilities		6.6.3, 6.6.4
	Prepare to increase level of service in relation to requests and associated remediation.			6.6.3, 6.6.4
	Track and tally the increase of requests and remediation.	Done by Service Oakville, not yet requested in regard to climate change.		6.6.3, 6.6.4
Bridge and Culvert Database	Prepare fiscally for increased monitoring and maintenance.			6.6.4
	Determine if appropriate data sets are being used to predict changing weather patterns as related to wear and tear on infrastructure.			6.6.4
	Consider utilizing specific assessment tools and protocols to better assess vulnerability of town infrastructure.			6.6.4
Construction Site Requirements	Prepare for increased monitoring and maintenance of construction site requirements and amend as necessary.			6.6.5
Energy Conservation Outreach and Education	Continue to enhance annual Energy Conservation Fair and link to climate change.	Energy and Sustainability Fair has had a climate change portion since 2014		6.7.2, 6.7.4
	Enhance promotion of the Watt Not, Waste Not, Earth House and Energy Conservation backpack programs.	EcoLetter, events, website, Earth Day displays		6.7.2, 6.7.4
	Post <i>Oakville's Climate Change Primer</i> to the town's website.	Completed and first revisions already made		6.7.2
	Research and record which town and community facilities are equipped with back-up generators.	Queen Elizabeth Cultural and Community centre - EMP.		6.7.2
	Research possible implementation of using faith based organizations as emergency community hubs.	Research done and discussion have been held with Greening Sacred Spaces. Community may proceed. Staff could work to provide information to residents using faith newsletters, websites and bulletin boards.		6.7.2

National and Ontario Building Codes	To support and encourage strengthening of building code standards related to extreme weather impacts on infrastructure.	Being addressed through Building Impact Team. Comments to strengthen the Building Code in relation to climate change are being submitted until		6.7.3
	Encourage builders and developers to give our changing climate consideration during each phase of construction.			6.7.3
	Investigate opportunities at the municipal level to strengthen new construction requirements to extreme weather.	Internal Building Code team formed and is working to research and record BMP taking place across municipalities as well as work to see where we can strengthen requirements within the building codes or go above and beyond current requirements.		6.7.3
	Once endorsed, start to promote use of Oakville's Climate Change Primer to educate homeowners on how they can protect themselves and their properties.			6.7.3
Energy Conservation and Demand Management (CDM) Plan	Track implementation of actions related to climate change adaptation and mitigation.	Latest implementation report was received by CSC on November 7, 2016		6.7.4
	Promote successes of the CDM through climate change outreach and education.	Will commence with the implementation of the CDM goals and actions		6.7.4
LEED Commitment	LEED designation for renovation projects as well as new construction.			6.7.4
	Consider a LEED GOLD minimum standard.			6.7.4
	Investigate BOMA Best certification or municipal facilities pilot project.	Looking at Town Hall for BOMA– water conservation plan, environmental management system are gaps		6.7.4
LEED AP Training	Track and encourage employee participating in energy management and conservation training.	Taking place through the implementation of the CDM and Energy Management Training program.		6.7.4
	Inclusion of energy demand management training as a pre-requisite for hiring.			6.7.4
Renewable Energy Projects	Expand support and implementation of renewable energy projects in Oakville.			6.7.4
	Continue to work in partnership with Oakville Hydro to support installation of renewable energy projects in Oakville.			6.7.4
Storm Water Master Plan	Future phases of this study will work to prioritize capital projects for storm sewer improvements.			6.8.1
	Town will develop and analyze possible solutions to deficiencies.			6.8.1
	Public Information Centres will be scheduled to provide the public with an opportunity to review and discuss the findings.			6.8.1, 6.8.2
	Catch basins are fitted with inlet control devices (ICD) that allow for only a certain amount of storm water to enter, the rest runs overland. Determine if ICDs are contributing to overland flow, if so, the town may need to reassess road slopes, grading and catch basin capacity.			6.8.1
Development Engineering Guideline Manual	Improve practices related to development near to natural drainage systems and within known vulnerable areas.			6.8.1
	Investigate updating IDF curves.	Registered for Western University and ICLR's IDF updating tool when available. Town staff participated in a workshop in partnership with ICLR and utilized the IDF curve updating tool related to storm water management in Oakville.		6.8.1
	Continue with on-going verification of design criteria established through subwatershed studies.			6.8.1
Storm Sewer Use By-law	Continue to review and amend by-law as needed.			6.8.3
	On-going monitoring of storm sewer outlets and manholes adjacent to various land uses.			6.8.3
WNV Outreach and Education	Continue to enhance outreach and education efforts.			6.8.4