Appendix D Action and Implementation

Note: The following document titled *Appendix D: Action and Implementation Plan* shall be read in conjunction with the Municipality of South Huron's Climate Change Adaptation Strategy. This appendix contains a detailed summary of the actions identified throughout the development and the associated implementation information.

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SUMMARY OF ACTION AND IMPLEMENTATION PLAN

Appendix D: Action and Implementation Plan provides a detailed summary of the action items identified through the development of the adaptation strategy. This appendix is intended to be a living document, which is to be updated as South Huron's Climate Change Adaptation Strategy undergoes an update.

A total of 38 actions were identified for the Municipality to consider for implementation to address the goals of the adaptation strategy, ranging from modest operational changes to large capital projects requiring more staff time and resources. The action items were identified through municipal staff workshops, Council and municipal staff survey responses, public survey responses and input from the Climate Change Adaptation Advisory Committee (CCAAC) members.

The following notes are important in understanding the Action and Implementation Plan:

- Action lists the general action identified.
- Description/scope provides more information about the action and the scope of the action
- Implementation Lead(s) identifies the department(s) to lead implementation of the action. Note: this can also be the Climate Change Adaptation Advisory Committee (or equivalent committee)
- **Supporting Department(s)** identifies the department(s) which will support the implementation of the action as directed by the implementation lead. Note: this can also be the Climate Change Adaptation Advisory Committee (or equivalent committee)
- **Associated plans, policies, projects and strategies** provides details on what the Municipality currently has in place that is related to the action item.
- **Anticipated Timing** provides detail on when the implementation would commence (stated as calendar year).
- **Duration and Frequency** provides detail on how long it is anticipated that the implementation process will take (e.g. <1 year, 1-3 years, 3+ years).
- **Estimated Resources** refers to the level of cost (operating and/or capital) and staff time/resources required for the implementation and ongoing requirements of the action.

ESTIMATED LEVEL OF COST	STAFF EFFORT
\$ – Low Cost	■□□ – Low staff effort
\$\$ – Medium Cost	■■□ – Medium staff effort
\$\$\$ – High Cost	■■■ – High staff effort

• **Potential partnership(s)** identifies community partners that may have resources and expertise in order to successfully implement the action. These partnerships will be confirmed prior to implementation of the action.

It is important to note that the action items outlined in this appendix are intended to be used as a guide. All lead and supporting department(s) roles and responsibilities will be identified at the beginning of the implementation planning phase. The timelines and costs are subject to final Council approval, prior to implementation.

Actions identified under Goal 1: Integrate climate change adaptation into municipal planning, asset management and operations

ACTION	DESCRIPTION/SCOPE	IMPLEMENTATION LEAD(S)	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION / FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)
1.1 Include climate change consideration section in staff reports to Council	This action item would include a heading within reports to council whether or not the staff report has considered climate change. Outcome may lead into the requirement to complete action item 1.2.	•Community Services	•Senior Management	•South Huron Strategic Plan	2020	Ongoing	Cost: \$ Staff Effort:	
1.2 Develop a qualitative climate lens tool to guide staff and Council decisionmaking.	This action item would be a high level, qualitative tool to ensure that a climate lens is applied to all projects, policies, plans and procurement considerations within the Municipality. The tool will contain questions related to the identified impacts from climate change (temperature, precipitation, seasonal changes and extreme weather).	•Community Services	•Senior Management	•South Huron Strategic Plan	2020	Ongoing	Cost: \$ Staff Effort:	
1.3 Develop a process to ensure climate change adaptation is considered during review of existing and development of new policies and plans for South Huron.	This action item would be implemented during review of existing policies/plans and during the development of new policies/plans to ensure climate change adaptation is considered.	•Community Services	•Senior Management	•South Huron Strategic Plan	2020	Ongoing	Cost: \$ Staff Effort: ■■□	
1.4 Explore the potential to integrate climate change projections into asset management planning.	This action item would involve an evaluation of the consideration of climate change into South Huron asset management planning and what steps are required for complete integration.	•Financial Services	•All Departments	Asset Management Policy and Plan	2022	~ 1-3 years	Cost: \$\$\$ Staff Effort:	

Actions identified under Goal 1: Integrate climate change adaptation into municipal planning, asset management and operations ASSOCIATED PLANS, **IMPLEMENTATION SUPPORTING DURATION** / POTENTIAL **ESTIMATED** TIMING **ACTION** DESCRIPTION/SCOPE POLICIES, PROJECTS LEAD(S) **DEPARTMENT(S) FREQUENCY RESOURCES** PARTNERSHIP(S) **AND STRATEGIES** Members of Ongoing This action item would involve South 2020 Cost: 1.5 Continue to lobby Huron Council members to continue to Council n/a provincial and federal lobby provincial and federal government governments to support through various conferences and Staff Effort: support adaptation meetings. This action item should also n/a initiatives at the ensure regular updates are provided to the municipal level. community through Regular Council meetings.

Actions identified u	Actions identified under Goal 2: Support municipal and community resilience awareness and action											
ACTION	DESCRIPTION/SCOPE	IMPLEMENTATION LEAD(S)	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)				
2.1 Initiate community- Initiate community- wide conversation to provide information to the entire community (residents, business) about relevant climate change topics to provide the tools required to incorporate resilience on a community-wide scale.	This action item will involve initiating community wide conversations focused around climate change. The purpose will be to bring together relevant information that the community should know in order to be resilient. Information related to climate change science, impacts, actions, industry, innovated technology will be included.	•Climate Change Adaptation Advisory Committee	•Community Services		2021	< 1 year	Cost: \$ Staff Effort: ■□□					
2.2 Develop information briefing program to be regularly sent to staff and Council to inform on current climate change information.	This action item will involve communicating the most up to date information regarding climate change to staff and Council. Information related to climate change science, impacts, actions, industry, innovated technology will be included.	•Community Services	 Climate Change Adaptation Advisory Committee 		2020	< 1 year	Cost: \$ Staff Effort:					
2.3 Create and promote regularly scheduled climate change themed challenges for the community to showcase their resilience.	This action item will involve identifying scheduled themes and promoting (potentially with small incentives) the community to showcase their resilience (e.g. for the month of April show us your natural gardens, for the month of October show us your permeable pavement or other low impact development solutions).	•Community Services	 Climate Change Adaptation Advisory Committee 		2021	< 1 year	Cost: \$ Staff Effort:					

Actions identified u	Actions identified under Goal 2: Support municipal and community resilience awareness and action											
ACTION	DESCRIPTION/SCOPE	IMPLEMENTATION LEAD(S)	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)				
2.4 Develop communication strategy to showcase municipal initiatives to the community that are related to adaptation and resilience.	This action item will involve utilizing various communication tools to showcase the action items (as outlined in the climate change adaptation strategy) as well other initiatives related to climate change adaptation and resilience that the municipality is undertaking.	•Community Services	Climate Change Adaptation Advisory Committee		2021	< 1 year	Cost: \$ Staff Effort:					

Actions identified u	Actions identified under Goal 3: Ensure community readiness and coordinated responses to extreme weather events										
ACTION	DESCRIPTION/SCOPE	IMPLEMENTATIO N LEAD(S)	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)			
3.1 Investigate tools to expand municipal communications during extreme weather events to ensure information is convenient, accurately communicated and regularly updated to inform the public.	This action item would accompany existing communication pathways. It is anticipated that this action will involve the municipality investigating the potential to enter into an agreement with a provider (e.g. Municipal511, an online comprehensive map-based services) to store municipal information regarding disruptions during major events such as flooding, fires, and available shelters. This action item would also improve communication outside of the identified impacts from climate change and identify other disruptions provide an overall benefit to the community through enhanced communication (e.g. construction, load restrictions, no winter maintenance roads).	•Community Services	•All Departments		2021	<1 year	Cost: \$ Staff Effort: □□□				
3.2 Develop a current public awareness campaign to enhance community preparedness before an extreme weather event occurs.	This action will focus on emergency preparedness awareness campaign for the community. Information about what is available for supports in our community during an extreme weather event (such what you should do to prepare, what not to do during an extreme weather event, who to contact if you need assistance, where to find the most accurate information. The aim of this action item is to equip the community with this information and resources before an event occurs.	•Emergency Services	•Community Services	Emergency Preparedness ABCA: Annual Flood Emergency Planning; Flood Emergency (Contingency) Plan	2021	<1 year	Cost: \$ Staff Effort:				

Actions identified u	Actions identified under Goal 3: Ensure community readiness and coordinated responses to extreme weather events										
ACTION	DESCRIPTION/SCOPE	IMPLEMENTATIO N LEAD(S)	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)			
3.3 Identify potential partnerships and explore options to create a voluntary "Check in with your neighbour" program within South Huron.	This action item will focus on creating community partnerships around developing a voluntary, self-identified program where vulnerable populations who lack support in the community have support from someone/organization in the community during an extreme weather event. It is anticipated that this action would be voluntary, self-identified model.	•Climate Change Adaptation Advisory Committee	AdministrationCommunityServices		2021	<1 year	Cost: \$ Staff Effort: ■□□	Huron County (Social Services)Huron Perth Public Health			
3.4 Conduct vulnerability assessment of critical infrastructure within municipal facilities and prioritize deficiencies require to be addressed to ensure resiliency.	This action item will focus on identifying the vulnerabilities of municipal infrastructure. This action item may include assessment of condition, back-up generation capabilities, reliance on outside fuel sources, and any other limitations of the infrastructure. This action will identify potential upgrades that may be required to address the findings of the vulnerability assessment.	•Infrastructure and Development •Facilities	●Public Works		2023	1-3 years	Cost: \$\$\$ Staff Effort: ■■□				
3.5 Develop an internal training program for all municipal staff for coordination during extreme weather events to ensure service continuity.	This action item will focus on informing all municipal staff (outside of Managers) with the information required during an extreme weather event. Overview of sequence of events, point of contacts to be the focus.	•Human Resources	•Senior Management	•Staff training	2022	< 1 year	Cost: \$ Staff Effort:				

Actions identified u	Actions identified under Goal 4: Reduce risks to buildings, properties and people from flooding											
ACTION	DESCRIPTION/SCOPE	IMPLEMENTATION LEAD(S)	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)				
4.1 Undertake a Stormwater Master Plan for all settlement areas within the Municipality.	This action item will focus on undertaking a Stormwater Master Plan in order to manage stormwater within existing development areas and to accommodate future growth. The aim of this action item is to create a holistic plan for stormwater management within the Municipality and identify potential capital improvement projects to improve stormwater management.	•Infrastructure and Development	Building Services		2023	1-3 years	Cost: \$\$ Staff Effort: ■■□					
4.2 Support updating floodplain mapping for core development areas within the municipality.	This action item will focus on ensuring that floodplain mapping for the Ausable Bayfield and Upper Thames Conservation Authorities is updated to reflect existing conditions.	•Members of Council			2022	1-3 years	Cost: \$ Staff Effort:	•Ausable Bayfield Conservation Authority				
4.3 Develop procedure for regularly updating rain Intensity-Duration-Frequency (IDF) curves to reflect changing climate variables to inform design of all municipal infrastructure.	This action item will focus on developing a procedure for providing an update to IDF for the municipality and ensuring that the information is utilized within decision making for municipal infrastructure, in particular for stormwater and bridge/culvert infrastructure sizing.	•Infrastructure and Development	Public Works		2021	< 1 year	Cost: \$ Staff Effort: ■□□					
4.4 Develop awareness program and investigate the potential for incentives to	This action item will focus on providing information and incentives for private property owners to utilize LID strategies (e.g. rain barrels, rain gardens, permeable surfaces, bioretention, and natural infrastructure).	•Community Services	Building ServicesInfrastructure and Development		2022	< 1 year	Cost: \$ Staff Effort:					

Ac	Actions identified under Goal 4: Reduce risks to buildings, properties and people from flooding											
AC	TION	DESCRIPTION/SCOPE	IMPLEMENTATION LEAD(S)	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)			
	encourage lot level stormwater controls for private property.											
4.5	Investigate grading control measures to be implemented for infill lots designated for development.	This action item will focus on investigating various measures to be implemented related to ensuring the finish grade for infill lots is adequate based on adjacent overland flow routes.	Building Services	•Infrastructure and Development		2021	< 1 year	Cost: \$ Staff Effort:				
4.6	Incorporate low impact development (LID) strategies into lot design of municipal facility upgrades and new municipal facilities.	This action item will focus on the incorporation of LID strategies to ensure lot level stormwater management is considered when upgrading existing or designing new municipal facilities. This action item to include measures such as permeable pavements, vegetation filter strips, and enhanced grass swales.		•Senior Management	●Municipal Procurement Policy	2021	< 1 year	Cost: \$ Staff Effort:				
4.7	Reintroduction and update of sewage backflow value/ sump pump program.	This action item will focus on providing educational information to the public and update program details.	•Infrastructure and Development	Building ServicesCommunity Services	•Existing Municipal Program	2021	<1 year	Cost: \$\$ Staff Effort:				
4.8	Develop a guide for public to provide information to them when they inquire about what to do when private property buildings are flooded.	This action item will focus on providing private property owners with the information they need to know when addressing flooded buildings.	Building Services	•Community Services		2021	<1 year	Cost: \$ Staff Effort:				

Actions identified u	Actions identified under Goal 4: Reduce risks to buildings, properties and people from flooding										
ACTION	DESCRIPTION/SCOPE	IMPLEMENTATION LEAD(S)	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)			
4.9 Require developers to utilize best practices within site plan design to ensure risk of flooding within new developments is reduced.	This action item will focus on endorsing the draft Huron County Site Plan Development Technical Servicing Guide with a focus on communication between the municipality and the developer to recognize their responsibilities during site plan design.	•Infrastructure and Development	•Members of Council		2021	< 1 year	Cost: \$ Staff Effort:	•County of Huron			

Actions identified	Actions identified under Goal 5: Minimize disruption to municipal service delivery										
ACTION	DESCRIPTION/SCOPE	IMPLEMENTATION LEAD	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)			
5.1 Enhance communication pathways between departments to ensure efficient response to and recovery from disruptions to services.	This action item will focus on improvement of communication pathways and between departments.	•Senior Management	•All Departments		2021	<1 year	Cost: \$ Staff Effort:				
5.2 Identify critical services; develop, document and train on contingency procedures.	This action item will include identifying escalation thresholds for triggering contingency procedures for each service.	•Senior Management	•All Departments		2021	<1 year	Cost: \$ Staff Effort:				

Actions identified u	Actions identified under Goal 6: Reduce health and safety risks to municipal workers and community members from extreme temperatures											
ACTION	DESCRIPTION/SCOPE	IMPLEMENTATION LEAD	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)				
6.1 Establish municipal facility locations and operating parameters to function as temporary warming and cooling centres for community members.	This action item will focus on developing operating parameters which may include threshold to trigger operation of warming/cooling centre, hours of operation, staffing requirements, security measures, and maximum capacity for each facility.	•Emergency Services	•All Departments		2021	< 1 year	Cost: \$ Staff Effort:	•Local organizations focused on community well-being				
6.2 Develop a public awareness campaign to provide education to the community on how to stay safe during an extreme temperature events.	This action item will focus on providing education to the public on the including recognizing health impacts and what options are available during these events for relief.	•Community Services	•Emergency Services		2021	< 1 year	Cost: \$ Staff Effort:	•County of Huron •Huron Perth Public Health				
6.3 Develop extreme temperature training program for municipal staff.	This action item will focus on providing training to municipal staff related to extreme temperatures. The training will including recognizing threshold limit values, temperature related symptoms, appropriate personal protective equipment, scheduling of outdoor work for maximizing productivity during events, and ensuring appropriate reliefs and breaks are identified.	•Human Resources	•Senior Management	•Existing Municipal staff training	2021	<1 year	Cost: \$ Staff Effort:					
6.4 Establish tree planting guidelines to assist in mitigating the effects of	This action item will include identifying a strategic approach to tree planting within urban boundaries that will not have a negative impact on private and municipal	•Community Services	•Infrastructure and Development	•Existing Municipal Tree By-law	2021	< 1 year	Cost: \$ Staff Effort:					

Actions identified under Goal 6: Reduce health and safety risks to municipal workers and community members from extreme temperatures ASSOCIATED PLANS, **DURATION IMPLEMENTATION** SUPPORTING **ESTIMATED** POTENTIAL DESCRIPTION/SCOPE POLICIES, PROJECTS **ACTION** TIMING AND LEAD **DEPARTMENT(S) RESOURCES** PARTNERSHIP(S) **AND STRATEGIES FREQUENCY** infrastructure. The action will include tree extreme heat, Public Works planting best practices including preferred particularly within species that are resilience to the changes urban settlement in climate, native species, minimum boundaries. distance and site considerations. (related to action item 7.1) This action item will include education Community 2021 Cost: 6.5 Increase public Emergency < 1 year education and about fire risk during extreme heat events Services Services and increased communication during an communication extreme heat event relating to fire Staff Effort: related to fire risk bans/by-laws in place. during extreme heat events.

Actions identified u	nder <i>Goal 7: Protect and enhanc</i>	e the natural la	ındscape to m	itigate impacts				
ACTION	DESCRIPTION/SCOPE	IMPLEMENTATION LEAD	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)
7.1 Development of a municipal wide forest strategy. (related to action item 6.4)	This action item will identify municipally owned property that present the opportunity for naturalization. The focus will be to gather baseline data on the canopy cover in the municipality. Also included in this action will be tree planting guidelines and best practices; see action item 6.4 for description.	•Community Services	•Public Works	•Existing Municipal Tree By-law	2022	1-3 years	Cost: \$\$ Staff Effort:	
7.2 Develop a naturalization strategy focused on riparian areas located on municipal properties.	This action item will identify riparian areas located on municipally owned property that provide an opportunity for naturalization. The focus of this action item will be to utilize natural infrastructure to protect watercourses from erosion and sedimentation. Included in this action item may be consideration of property usage and potential enhancement to encourage synergies between public usage and ecological function.	•Public Works	•Community Services		2022	< 1 year	Cost: \$ Staff Effort:	
7.3 Develop awareness and investigate an incentive program to encourage naturalization and environmental stewardship on private property.	This action item will provide property owners the information on the benefit and importance of natural features on private property. Investigation of potential incentive programs (e.g. Huron Clean Water Project) to be included in this action item.	•Community Services	•Building Services		2022	1-3 years	Cost: \$\$ Staff Effort:	• Conservation Authorities

7.4 Investigate the	This action item will investigate the	•Financial Services	•All	Asset Management	2023	1-3 years	Cost:	
feasibility of	feasibility of integrating municipal natural		Departments	Policy and Plan			\$	
integrating municipal	assets into the municipality's asset							
natural infrastructure	management plan. The action item will						Staff Effort:	
into asset	include steps required to fully integrate						■■□	
management.	natural infrastructure and may include							
	identification and valuation of natural							
	assets.							

Actions identified under Goal 8: Strengthen the resiliency of municipal infrastructure and facilities								
ACTION	DESCRIPTION/SCOPE	IMPLEMENTATION LEAD	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)
8.1 Incorporate climate change impacts into inspection process and identified deficiencies related to municipal infrastructure and facilities are completed and remediated on a regular basis.	This action item will include incorporating climate change impacts into inspection processes.	•Infrastructure and Development •Facilities	•Senior Management		2022	1-3 years	Cost: \$ Staff Effort:	
8.2 Provide municipal staff information on green infrastructure (natural) as a means to provide support to grey infrastructure (human engineered) within municipal projects.	This action item will include providing information to staff on current and relevant green infrastructure projects that will provide support (and reduce impact on) grey infrastructure.	•Infrastructure and Development	•Community Services		2021	< 1 year	Cost: \$ Staff Effort:	

Additional Actions Identified								
ACTION	DESCRIPTION/SCOPE	IMPLEMENTATION LEAD	SUPPORTING DEPARTMENT(S)	ASSOCIATED PLANS, POLICIES, PROJECTS AND STRATEGIES	TIMING	DURATION AND FREQUENCY	ESTIMATED RESOURCES	POTENTIAL PARTNERSHIP(S)
9.1 Eliminate of single use plastics within Municipal offices	This action item will include providing information to staff on alternatives to single use plastics and procurement considerations for purchasing.	•Community Services	•All Departments •Members of Council	•Municipal Procurement Policy	2021	< 1 year	Cost: \$ Staff Effort:	
9.2 Creation of a Municipal Backyard Composting Program	This action item will include providing information to the public on backyard composting and feasibility for subsidizing composters or securing funding to provide the community with composters.	•Community Services	•Infrastructure and Development		2022	1 -3 years	Cost: \$\$ Staff Effort:	