



H₂O 2021: Extreme Water Levels – Impacts and Strategies
Webinar 3: Septic Systems and Potable Water – Insurance -
Action Plan 2030 – Long Term Planning Strategies
Saturday 4 December 2021, 10 am to 12 pm

SYNOPSIS

Key Takeaways

- 1) Septic-system design and construction will need to be adapted to the rising water levels that we can already anticipate, which includes siting tile fields on high ground (and can mean moving away from gravity-fed septic systems).
- 2) The many water-related consequences of climate change mean that we need to:
 - a. avoid consuming untreated surface water;
 - b. plan for an increased need for water treatment (filtration and chlorination); and
 - c. plan for the costs of upgrades to water-treatment systems.
- 3) A step-by-step approach to addressing the most common water damage-related risks includes a focus in the shorter term on completing simple, low-cost maintenance and upgrade actions, and in the longer term completing more complex upgrades after evaluating options with qualified professionals, government and insurance representatives. Select a particular approach to protecting your cottage based on:
 - a. unique flood and erosion risks;
 - b. severity of risk;
 - c. budget; and
 - d. insurance coverages.
- 4) The mindset we bring to addressing ‘flood and erosion’ is shifting towards:
 - a. management with nature in mind (i.e., using nature-based – rather than ‘hardening’ – solutions); and
 - b. management with community-level (rather than lot-by-lot) approaches and future conditions in mind.

- 5) Discuss your coverages and options with your insurance representative, ask questions about premium discounts and about building back better after a loss, and check back with your insurer periodically given the rapidly changing state of insurance for home floods, overland floods and storm surges and the limited availability of government recovery assistance after large-scale disasters.
- 6) Four Action Plan 2030 recommendations address support for individuals, businesses and municipal governments to address shoreline infrastructure impacts and shoreline resilience:
 - #4) establishing and funding shoreline resiliency priority zones;
 - #8) increasing investment in light detection and ranging (LIDAR), floodplain mapping, and monitoring/modelling data;
 - #10) ensuring access to easily understood climate change data and information; and
 - #12) supporting natural and green infrastructure solutions.
- 7) There are many benefits of long-term planning over short-term solutions, and examples of long-term planning as it pertains to crib/concrete docks, shoreline and low-elevation structures, and septic systems.

Welcome messages

- 1) Rolfe Jones, chair of the Georgian Bay Association (GBA) board of directors, offered a traditional land acknowledgement and welcomed participants on behalf of the two sponsoring organizations – GBA and Georgian Bay Forever (GBF).
- 2) Marilyn Longlade Capreol, an elder from the Shawanaga First Nation and founding member of the Conservation through Reconciliation Partnership Elder's Lodge, provided opening comments.
- 3) Adam Chamberlain, chair of the board of directors of GBF, offered his welcome and introduced the first panel

Topic A: Septic Systems and Potable Water

GBF executive director, **David Sweetnam**, introduced the first section of the webinar and the presenter, **Neil Hutchinson**, the founder of Hutchinson Environmental Services and chair of the GBF Science Committee.

This section of the webinar addressed two pairs of questions:

- 1) how vulnerable is your septic system, and what are the options to resolve septic issues?
- 2) how will potable water be affected by extreme water levels, and what techniques/technologies are available to address these impacts?

Neil Hutchison's presentation touched on four topics related to the first pair of questions:

- A. septic systems 101
- B. how do they work and what do they do?
- C. the perils of saturation
- D. implications for septic systems and Georgian Bay

Starting with **septic systems 101** (the first of the four topics), Neil explained that:

1. the purpose of any treatment system is to protect ground and surface waters by reducing the amount of nutrients and pathogens in effluent
2. the basic mechanisms of biological treatment are that micro-organisms, principally bacteria, metabolize organic materials and inorganic ions present in wastewater during growth.

Turning to **how septic systems work and what they do** (the second of the four topics), Neil described the two phases of the treatment process:

- 1) raw wastewater is introduced to a septic tank for a combination of solids separation and anaerobic digestion; then
- 2) the primary effluent from the septic tank is treated by physical and biological processes in the disposal area and surrounding soil.

With the latter, biological mats develop on the sides and bottoms of the trenches and add to a biological filtration of the effluent passing through it into the soil environment. Neil noted that:

- A. living organisms make septic systems work; and
- B. both aerobic and anaerobic environments are important (in the right place);

and strongly emphasized that treatment can be highly effective as long as an adequate unsaturated zone is maintained.

Transitioning to the **perils of saturation** (the third of the four topics), Neil noted that retained microbes in dry soils can be released by surface or ground water saturation. High water tables risk flooding septic systems, which means:

- break out of bacterial contamination and faster transport in groundwater; and
- reduced oxygen inflow to create anoxic conditions within the tile field

which in turn means:

- a) reduced breakdown of carbonaceous materials and biochemical oxygen demand;
- b) reduced nitrification (oxidation) of toxic ammonia to less toxic nitrate; and
- c) reduced acid generation and reduced phosphorus mineralization (which allow the formation of soluble Fe-P complexes).

Neil quoted a 2019 report by Robertson et al:

In our view, the main threat of phosphorus loading to surface waters from septic systems is likely to be from failing systems, where surface breakout of untreated wastewater is occurring from overloaded or saturated drain fields, or through short circuiting via drainage ditches and pipes. Sites on clay-rich sediments with shallow water tables, may be more vulnerable to such failures.

and again emphasized that treatment can be highly effective as long as an adequate unsaturated zone is maintained.

Neil wrapped up his coverage of the first pair of questions with the **implications for septic systems and Georgian Bay** (the fourth of the four topics), specifically the importance of proper siting of the tile field as required by the Ontario Building Code, which means above the water table year-round and with at least 0.9m of unsaturated soil between pipes and groundwater or impermeable surface (rock). Neil noted that rising water levels in Georgian Bay can be anticipated, and that septic-system design and construction will need to be adapted to rising water levels, which includes siting tile fields on high ground (and can mean moving away from gravity-fed septic systems).

Neil then turned to topics – potable water, water levels and climate change – related to the second pair of questions, and described **three consequences of climate change that in turn have important implications for potable water and water levels:**

- 1) increased storm severity;
- 2) warmer winters; and
- 3) warmer summers.

Increased storm severity means:

- increased erosion from urban and agricultural areas in watershed, which in turn means increased suspended solids and associated contaminants (bacteria, nutrients);
- increased water levels and wave heights, which in turn means: a) increased erosion of soft shorelines, b) increased resuspension of sediments, and c) increased suspended solids and associated contaminants (bacteria, nutrients); and
- increased potential for infrastructure failure, which means: a) more breakage and spills, and more frequent sewage bypasses.

Warmer winters mean more temperature excursions +/- freezing, which in turn means more road salt, higher chloride levels in the water, and an altered food web.

Warmer summers mean:

- warmer water, which favours cyanobacteria;
- earlier thermal stratification, which means increased potential for hypolimnetic anoxia; and
- an altered food web.

Neil also noted that the increased potential for algal blooms means a loss of water supply, higher cost of treatment, and a loss of recreational aesthetics.

Neil concluded with a call to ‘get serious about our CO₂ footprint, noting that even so the many water-related consequences of climate change mean that we need to:

- avoid consuming untreated surface water
- plan for an increased need for water treatment (filtration and chlorination); and
- plan for the costs of upgrades to water-treatment systems.

Topic B: Insurance

GBA executive director, **Rupert Kindersley**, introduced the second section of the webinar and the presenter, **Cheryl Evans**, who is the director of flood and wildfire resilience at the University of Waterloo’s Intact Centre on Climate Adaptation.

This section of the webinar addressed two questions related to flooding, extreme storm events, and damage from wind and waves:

- A. what are the potential impacts on property insurance?
- B. what risks can be insured?

Cheryl Evans’ presentation touched on six topics:

- 1) introduction to the Intact Centre on Climate Adaptation;
- 2) impacts of a changing climate (which addressed question 1);
- 3) identifying your cottage and property’s unique risks (which addressed part of question 2);
- 4) reviewing your options for managing risks;
- 5) insurance considerations (which addressed another part of question 2); and
- 6) free training and resources.

Cheryl began by introducing the **Intact Centre on Climate Adaptation**, or ICCA (the first of the six topics), an applied climate-adaptation research centre with a national focus that was launched in 2015 and is headquartered at the University of Waterloo. ICCA has two main goals:

1. to change the national conversation about climate change to address climate adaptation
2. to help homeowners, communities and businesses to reduce risks associated with climate change and extreme weather events

Cheryl then turned to the **impacts of a changing climate** (the second of the six topics), noting first three aspects of the changing climate:

- A. Canada’s climate has warmed and will warm further in the future, driven by human influence;
- B. both past and future warming in Canada is, on average, about double the magnitude of global warming; and
- C. warming is effectively irreversible.

Cheryl then described:

- climate impacts
- the changes and impacts predicted by the year 2100, and
- the bad and good news in these respects.

The **climate impacts** include:

- A. more extreme heat and less extreme cold
- B. shorter seasonal coverage of snow and ice
- C. melting of glaciers and permafrost
- D. rise in sea level.

Climate impacts also include the intensification of certain extremes:

- intense rainfall and urban flooding
- coastal flooding
- severity of heat waves
- risk of drought and forest fire

The costs of extreme weather in Canada are very high, with catastrophic insurable losses running around \$1.8 to \$2 billions of dollars per year. Cheryl gave some examples of how the Great Lakes region changed in the 1951-2017 period:

- a 2.3 degree Fahrenheit increase in average temperature
- a 16-day increase in the frost-free season
- a 14% increase in total precipitation
- a 35% increase in heavy precipitation events.

The **changes predicted by 2100** include an average temperature increase of 3.3 to 6.1 degrees Celsius and more precipitation on average, but overall drier in summer and more in winter, as well as the following impacts in this same time period:

- warmer temperatures may lead to more winter rain and earlier peak stream flows;
- more frequent summer droughts could affect soil moisture, surface waters, and groundwater supply;
- projected increases in droughts, severe storms, and flooding events may amplify the risk of erosion, sewage overflow, interference with transportation, and flood damage; and
- greater variation in lake levels.

Cheryl noted that the **bad news** is that:

- climate change is real, is happening and will continue to impact Canada
- climate change is contributing to significant increases in home flood losses
- residents are largely unaware of their risks
- residents commonly misunderstand their insurance coverages.

But there is **good news**, notably that a variety of free resources are available to help residents, including information on how to:

- understand your home and property's unique risks
- understand your options for managing risks
- take action to limit damage
- 'build back better' if flood damage occurs

Cheryl transitioned to **identifying your cottage and property's unique risks** (the third of the six topics) and began by providing some home water-damage facts:

- the majority (60%) of water-damage claims are caused by leaking appliances and water pipes
- the remainder (40%) are split between sewer back-ups, sump-pump failure, and overland flooding caused by heavy rainfall

Cheryl noted that all Canadian homes are at risk of flooding from the above risks, and that about 5% of Canadian homes are exposed to additional structural damage risks associated with flooding and erosion from rivers, lakes and oceans. Cheryl recommended assessing your lot-level risks with a home flood-protection check-up, which is a free, confidential, visual home flood-risk assessment tool developed by her centre. It looks at the 15 most common flood risks to homes and is applicable to all Canadian homes (although it does not include structural risks posed by river or coastal flooding). Cottagers can complete an assessment by taking five to 10 minutes to answer a series of yes or no questions about flood risks inside and outside of the home. You will then have a confidential, custom home flood-protection report emailed to you, or you can download it directly onto your device

Cheryl also reviewed **options for managing risks** (the fourth of the six topics), covering both:

- protecting your cottage from rain-related flooding
- managing flood and erosion risks.

Cheryl recommended a step-by-step approach to addressing the most common water damage-related risks, with a focus in the shorter term on completing simple, low-cost maintenance and upgrade actions and in the longer term completing more complex upgrades after evaluating options with qualified professionals, government and insurance representatives. You should select an approach to protecting your cottage based on:

- A. unique flood and erosion risks
- B. severity of risk
- C. budget
- D. insurance coverages.

Approach	Type of actions	Level of risk
Defend	Dry flood proofing	Lower
	Temporary barriers	Medium
Adapt	Wet flood proofing	High
	Elevate buildings	Higher
Relocate	Relocate buildings	Highest

Temporary flood-protection barriers:

- 1) are a physical barrier that is installed temporarily during an emergency situation;
- 2) include both opening barriers that block water from entering an opening in a building (e.g., windows, doors, drains) and perimeter barriers that block water from flowing onto a property;
- 3) are installed ahead of flooding events caused by rainfall, riverine and coastal to reduce flood damages; and
- 4) advance-notice requirements vary widely because barrier installation times can range from minutes (click-in door barriers) to days (thousands of sandbags along waterfront properties).

Cheryl noted that the mindset we bring to addressing 'flood and erosion' is shifting towards:

- management with nature in mind (i.e., using nature-based – rather than 'hardening' – solutions)
- management with community-level (rather than lot-by-lot) approaches and future conditions in mind.

Management with nature in mind: attempts to control natural-erosion processes by straightening and 'hardening' riverbanks and coastlines was considered best practice for many decades, but from 1990 onwards a growing number of government and not-for-profit organizations started to integrate the use of 'softer' management techniques, called nature-based solutions, that mimic nature to manage flooding and erosion by restoring natural processes.

Harder (grey) techniques tend to be linear, concrete, wood or stone, and are used more often at sites with higher forces from water, limited space, and buildings closer to water, and that softer (green) techniques tend to mimic nature with form, function and plantings, and are used more often at sites with lower forces from water, more available space, and buildings farther from the water. There are two community organizations that support nature-based management options: [Ecology Action Centre](#) and [Greenshores for Homes Program](#).

Management with community-level approaches: Cheryl noted that, while piecemeal (lot-by-lot) erosion-management approaches can still be seen widely today, especially on privately owned lands, lot-level management decisions are now being guided by government to consider community-level impacts and future climate risks.

Cheryl provided a lot of detail about **insurance considerations** (the fifth of the six topics), leading off with the importance of discussing your coverages and options with your insurance representative, asking questions about premium discounts (e.g., related to reducing risk of using flood-resilient materials when building or renovating) and about building back better after a loss, and checking back with your insurer periodically given the rapidly changing state of insurance for home floods, overland floods and storm surges and the limited availability of government recovery assistance after large-scale disasters. Examples of current flood-resilience insurance discounts are:

Category	Flood-protection measures
Sump pumps	Sump pump
	Sump pump with monitored alarm
	Backup sump pump
	Backup power source for sump pump
	Sump pump discharge > 1.8 m or to nearest swale
Backwater valves	Backwater valves
	Backwater valve with monitored alarm
Overland drainage	Downspout extension > 1.8 m or to nearest swale
	Sump pump discharge > 1.8 m or to nearest swale
Plumbing and fixtures	Automatic water shut off
	New water tank
	Tankless hot-water heater

Cheryl then provided an overview of the availability of insurance for home floods, overland floods and storm surges and of government recovery assistance after large-scale disasters.

Home-flood insurance (which insurers typically call water-damage insurance) is widely available in Canada and covers sudden and accidental damage caused by the escape of water from plumbing pipes, appliances and fixtures. There is also limited availability of optional coverages for sudden and accidental damage caused by:

- sewer backup flooding
- groundwater flooding
- flooding from water and sewer lines
- overland flooding.

Overland-flood insurance first became available in Canada in 2015 and is now quite widely available for low-medium risk homes at affordable prices. It covers flooding from heavy rainstorms, snow melt, rivers overtopping their banks, and other types of overland flooding. Approximately 5% of homes are considered to be at high risk of flooding and are generally **not eligible for affordable overland insurance** because they are:

- a) within a floodplain of a river;
- b) **on the coast of an ocean or lake**; or
- c) in an area with a history of sewer-backup flooding.

Storm-surge insurance is now being included by some insurers in Ontario in all comprehensive policies, while optional storm surge coverage for high-risk property owners has been available from a small number of companies since August 2018. It covers the specific type of overland flooding caused by rising water levels and waves during storms, which can present a significant risk in coastal regions around lakes and oceans where extreme weather patterns have intensified with the changing climate.

Government recovery assistance after large-scale disasters – the government disaster financial assistance arrangement (DFAA) program – is only available to Canadians who do not have access to overland flood insurance or storm surge coverage by private insurers at a reasonable price. The DFAA is not a viable alternative to private insurance and is used as a last resort to recover from large-scale disasters. If insurance is available and is affordable, but a property owner does not purchase it, they are not eligible for government assistance. DFAA coverage is only available for primary residences, not for properties such as cottages or second homes. The Federal Government Task Force on Flood Insurance and Relocation is reviewing options to create a ‘high risk insurance pool’ to provide affordable overland insurance coverage to high-risk properties.

Cheryl concluded by describing **free training and action-focused resources** (the sixth of the six topics), including both government sources and her centre’s website (www.HomeFloodProtect.ca). The government sources include both those related to conservation authority responsibilities and those related to local municipal government responsibilities.

The former includes:

- local flood messaging (river and shoreline flood status)
- flood risk mapping
- regulation and permits (e.g., construction, renovation, shoreline/ riverbank amendments, safe egress).

Example of such authorities include the Grey Sauble Conservation Authority and the Nottawasaga Valley Conservation Authority. Areas not serviced by conversation authorities can get help from the [Ministry of Natural Resources and Forestry district office](#). The latter includes development approvals and by-laws, as well as on-the-ground flood response. The website provides:

- flood and erosion protection training program
- flood insurance literacy information
- flood protection fact sheets and how-to videos
- home flood-protection checkup app
- available municipal subsidy information.

Topic C: Action Plan 2030 Key Recommendations Long Term Planning Strategies

Severn Sound Environmental Association water scientist, **Aisha Chiandet**, introduced the third section of the webinar and the first presenter in this section, **Nicola Crawhall**, who is a principal in the consulting firm, Westbrook Public Affairs, that led the secretariat that developed Action Plan 2030. and she has worked as deputy director of the Great Lakes and St. Lawrence Cities Initiative and as a senior policy advisor to two ministers of the environment and to the Association of Municipalities of Ontario.

This section of the webinar:

- 1) provided an overview of Action Plan 2030 with regard to its key recommendations concerning support for individuals, businesses and municipal governments to address shoreline infrastructure impacts and shoreline resilience; and
- 2) addressed the question: what are the benefits of long-term planning versus executing short-term solutions?

Nicola Crawhall addressed the first of these topics, and began by describing the goals of **Action Plan 2030**:

- A. an integrated Great Lakes-St. Lawrence vision;
- B. an increase in investments in Great Lakes St. Lawrence protection, with the inspiration for these investments inspired by the US Great Lakes Restoration Initiative, a US federal program that has delivered over \$2 billion in investments in the Great Lakes region over the last ten years;
- C. innovative approaches;
- D. alignment across governments; and
- E. engagement with stakeholders, experts and First Nations.

The four challenges facing the region are: 1) climate change; 2) beaches; 3) nutrients; and 4) toxics and harmful pollutants.

Climate change: in 2019 and 2020, lake and river levels were at historical highs, and caused flooding, erosion, and infrastructure damage. The US [National Coastal Zone management program](#) has provided government and local agency coordination since 1972, and there are eight regional coastal zone management programs in the US Great Lakes region. This voluntary partnership between the federal government and U.S. coastal and Great Lakes states and territories to address national coastal issues could serve as a model for shoreline priority zones.

Nicola highlighted the **four Action Plan 2030 Recommendations** that address support for individuals, businesses and municipal governments to address shoreline infrastructure impacts and shoreline resilience that are relevant to Georgian Bay residents:

Recommendation #4: establishing and funding shoreline resiliency priority zones

Recommendation #8: increasing investment in light detection and ranging (LIDAR), floodplain mapping, and monitoring/modelling data

Recommendation #10: ensuring access to easily understood climate change data and information

Recommendation #12: supporting natural and green infrastructure solutions

Recommendation #4 called for establishing and funding shoreline resiliency priority zones and management teams to identify and address significant threats from climate change. These zones include the areas:

- between Chatham-Kent and Leamington on Lake Erie
- between Amberley and Grand Bend on Lake Huron
- between the City of Toronto and Prince Edward County, on Lake Ontario
- between Fort William First Nation and Thunder Bay on Lake Superior
- **between Penetanguishene and Tiny Township on Georgian Bay**

The significant threats from climate change that need to be addressed are:

- high water levels
- stronger wind/wave energy
- erosion
- sudden spring thaws
- ice jams.

This recommendation included a call for an *investment of \$800 million*.

Recommendation #8 called for increasing investment in light detection and ranging (LIDAR), floodplain mapping, and monitoring/modelling data to benefit shoreline communities.

Recommendation #10 called for ensuring access to easily understood climate change data and information for local communities and for supporting the development of information based on current and futures needs of communities. The types of climate change data and information that would be of benefit to Georgian Bay communities include impacts on:

- water levels
- water temperature
- air temperature
- wind and wave action
- ice cover
- precipitation
- evaporation
- run off and groundwater

Recommendation #12 called for supporting natural and green infrastructure solutions in land use and infrastructure management, particularly in developing a plan for land acquisition in underdeveloped zones.

GBF and GBA executive directors, **David Sweetnam** and **Rupert Kindersley**, addressed the second of the two topics for this section of the webinar, namely the **benefits of long-term planning versus executing short-term solutions** and examples of long-term planning as it pertains to crib/concrete docks, shoreline and low-elevation structures, and septic systems.

David began by listing the benefits of long-term planning:

- more cost effective
- maintains safe use of property
- avoids rapid-onset disasters
- avoids costs of multiple future disasters
- allows for planning for incremental changes
- allows risk assessments to be updated
- allows for adaptation of the plan as it progresses
- takes advantage of developing technologies.

Starting with crib/concrete docks, Rupert noted that there are likely to be major issues for crib/concrete docks with increasing water levels variability. The next extreme event could be water levels lower than 2013, which will create access issues for many residences and practical problems for most municipal, marina and other shoreline businesses. Future high water levels could be higher than 2019/20, which will make crib/concrete docks unusable for many residences, municipal, marina and other shoreline businesses. A suggested solution is to convert to floating docks with ramps and flexible shoreline connections as needed **before** the next extreme water level event occurs.

Turning to shoreline and low-elevation structures, David noted that high-water challenges like access and flooding are likely to emerge here as well. However, there should be a reasonable lead time before the next high water level event, and we therefore have time to carefully plan how to address levels higher than 2019/20. Every property is unique and therefore has distinct challenges and potential solutions. Major investments may be needed by municipalities, marinas and other shoreline businesses, and Action Plan 2030 and others have called for government support to help with these investments. They suggested that one solution could be to raise or relocate (to higher ground) shoreline structures to prevent flooding and ensure continued access.

Concluding with septic systems, Rupert noted that high water could result in the flooding of class 4 systems. There are limited solutions if high water floods the leaching bed. Relocating to higher ground is expensive and may not be possible, or may be insufficient as a long-term solution. Municipalities can allow storage tanks if no other option works. A suggested solution is to switch to alternative technologies, such as composting toilet (numerous options) and a grey water pit. Limited allowable technologies is an issue that GBA and GBF will be addressing with the Ontario government.

This section of the webinar was wrapped up with some closing thoughts by **Aisha Chiandet** and by **David Sweetnam** and **Rupert Kindersley**. They noted that the webinar series was intended to provide you with an overview of the information you need and describe what is currently being done to address future impacts. They concluded that things are changing (and many have already changed), careful thought and planning are needed to protect people and property, and we need to consider all the issues. They concluded by providing a brief review of all the key takeaways from the previous two webinars.

Questions and Answers

Answers to the questions posed in the Q&A session and on registration have been collected into a document that will be posted on the GBA and GBF websites.

Final observations

The webinar led to significant improvements in awareness and knowledge.

On registration:

Question	Responses
Do you understand the future uncertainty predicting a broader range of extreme high and low water levels and the potential impacts on your septic system, water supply, and annual budget, e.g., insurance costs, taxes for municipal infrastructure repair?	<p>Yes - I am an expert on water level fluctuations and future forecasts and their impacts to my property's operations and future costs/expenses: 1.5%</p> <p>No, I am looking for help: 15.5%</p> <p>Somewhat, but I would like more up-to-date information and more advice on what to do and what's coming: 82%</p> <p>I don't think extreme water levels changes are an issue for the future of my property and its costs/expenses: 1%</p>

During the webinar:

Webinar segments	Before presentations	After presentations
Topic A - Septics	Do you understand the risks?	Has your understanding improved?
Water contamination risks from septic systems posed by more extreme high water levels	<p>Yes: 40%</p> <p>Somewhat: 45%</p> <p>No: 15%</p>	<p>Yes: 80%</p> <p>Somewhat. I need to get more information and review it: 15%</p> <p>No. I need to get more information and review it: 5%</p>
Topic B - Insurance	Do you understand what is available?	Do you have a better understanding of what is available?
Insurance to address the risks to your property from extreme water levels conditions and higher winds and waves and what can and cannot be insured.	<p>Yes: 8%</p> <p>Somewhat: 32%</p> <p>No: 60%</p>	<p>Yes: 77%</p> <p>Somewhat. I need to get more information and review it: 21%</p> <p>No. I need to get more information and review it: 2%</p>

Topic C - Action Plan 2030	Do you have an understanding of how it is helping?	Do you have a better understanding of how it is helping?
How Action Plan 2030 is helping Georgian Bay residents by requesting government funding to address threats to the Great Lakes.	Yes: 16% Somewhat: 22% No: 62%	Yes: 63% Somewhat: 32% No: 5%
Topic B – Long Term Strategy	Do you have a long term strategy?	Will you put a long term strategy in place?
Dealing with any threats to your docks, shoreline structures and/or septic system from extreme water levels.	Yes: 40% Maybe: 29% No, I will deal with any issues as they arise: 18% No, I don't face any of those threats: 13%	Yes: 69% Maybe: 13% No, I will deal with any issues as they arise: 3% No, I don't face any of those threats: 15%

Exit Poll:

Question	Responses
Rate your experience of this webinar: Septic Systems and Potable Water Vulnerabilities, Insurance & Planning, and Coastal Infrastructure:	Met my expectations: 62% Exceeded my expectations: 31% I did not find it relevant: 1% Did not meet my expectations: 5%
Given the information you learned in the webinar on Septic Systems and Potable Water Vulnerabilities, Insurance & Planning, Coastal Infrastructure, will you take action?	Yes. I will plan for the long-term, and take one or more actions accordingly: 72% I would, but I have already taken all actions I can: 18% I would, but I have other reasons I can't take action: 3% I don't need to take action: 5% I don't believe extreme water levels create conditions that require action; 0%