



OFFICIAL PLAN & ZONING BY-LAW

Monday September 25, 2017

INFORMATION UPDATE – HANDOUT

The following eight pages (four double sided) are provided for information purposes regarding the four main topics of concern with the Proposed Comprehensive Zoning By-Law and Local Official Plans.

- 1) Great Lakes “high water mark” vs “100 flood elevation” and the “Red Line”**
- 2) Inland Lakes and setbacks**
- 3) Provincially Significant Wetlands (PSW's)**
- 4) Septic Systems on Small Lots.**

Council also wants to assure everyone that they are not considering passage of either the Comprehensive Zoning By-law or the Local Official Plans at today's meeting. The purpose is to receive information from planning staff and hear from the general public.

It's important to note that there are some significant changes to the “Draft” documents in the past few weeks, that will be discussed today, such as;

- 1) Recommendation to remove the “Red Line” from lots along Lake Huron and Georgian Bay from the zoning schedules**
- 2) Reduction/changes in draft setback requirements on inland lakes (further discussion to take place)**
- 3) Considering alternative ways to address septic systems on small lots. (further discussion to take place)**

The Municipality is fully aware that there are also other items that residents have concerns/questions with, that pertain to the Comprehensive Zoning By-Law and/or Local Official Plans, and that this handout was only to provide information on the main issues that staff and council have received significant feedback on.

Council wishes to thank you for attending today's sessions.

'High Water Mark' vs. '100-year Flood Elevation' and 'RED LINE'

What is the 'High Water Mark'?

- A "High Water Mark" is included on some surveys for the purpose of establishing a boundary for the purposes of the survey
- The "High Water Mark" is commonly understood to refer to "Land covered so long by water as to wrest it from vegetation, or as to mark a distinct character on the vegetation where it extends into the water, or on the soil itself"
- In some locations the "High Water Mark" was used to establish the limits of a shoreline reserve or shore road allowance.
- Surveys may also show the property boundary to be the edge of the water on the date of the survey.

What is the "100-year Flood Line"?

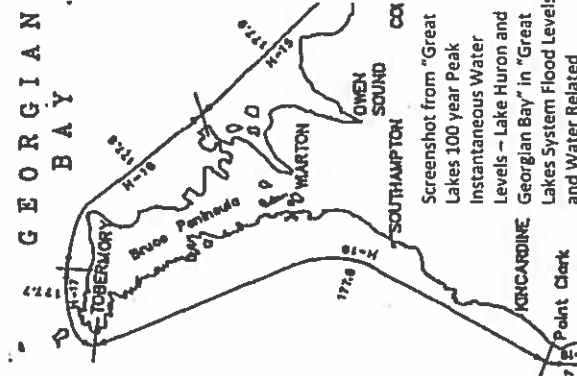
From "Understanding natural Hazards" (MNR, 2001)

The "100-year flood elevation" is the "worst scenario" flood—almost. It is the peak or flood flow with one chance in one hundred of occurring in any given year.

The 100-year flood is the minimum design flood criteria standard in Ontario.

In many areas with a century of wind and water level records, the 100 year level is based on the highest known level and the strongest wind "setup"—the combination of wind forces at a given time.

The Lake Huron/Georgian Bay 100-year flood elevations were established by the Ministry of Natural Resources in 1989 (following the 1986-1987 record high water levels)—see map at right.



How was the 100-year flood line mapped?

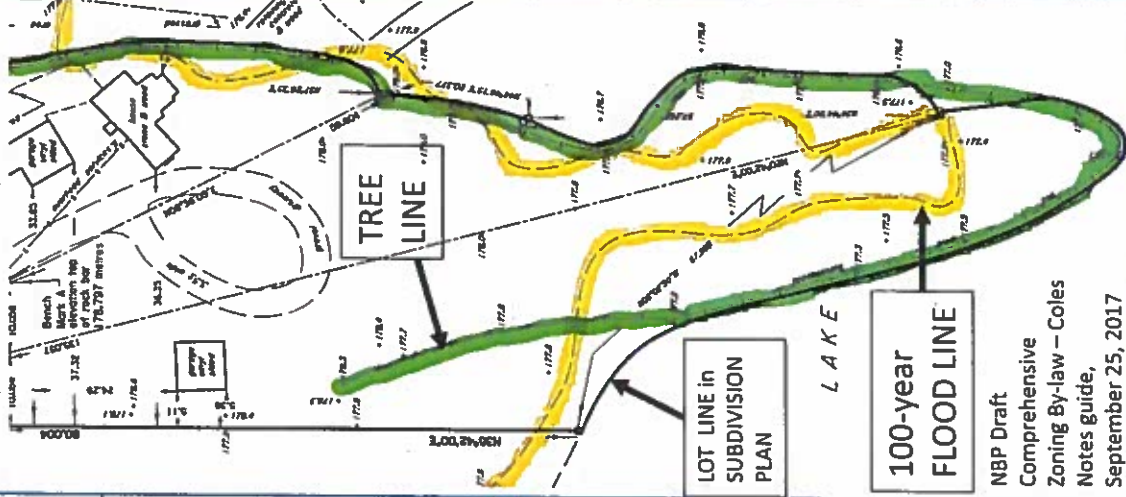
- Air photos are flown with at least 60% overlap
- Difference in perspective allows viewing in "stereo"—images have "depth" used to judge height
- Knowing the precise location of the aircraft at the time the photo was taken allows determination of the precise elevation of the ground
- Technology automatically collects elevation points; some correction is necessary in heavily treed areas; humans review results.
- Reassessments and confirmation in field at landowner request—many completed, some still underway; an updated flood line is available at the meeting and on bit.ly/nphaz
- If you still have concerns regarding 100-year flood mapping on your property contact bruce.county@greysauble.on.ca quoting your property address and/or roll number

Aren't they the same?

The surveyor's High Water Mark may be in the same spot as the 100-year flood elevation, but not necessarily.

The location of "mature" trees (versus trees that have started to grow during low water years) may also correspond to the location of the 'High Water Mark' OR the 100-year flood line. But not specifically or consistently.

The survey below was recently completed to for redevelopment of a lot (existing conditions shown).



NBP Draft Comprehensive Zoning By-law – Coles Notes Guide, September 25, 2017

RED LINE – Potential Wave Uprush Allowance

- Winds can drive waves and wave spray inland beyond 100-year flood elevation.
- Province recommends 15 metres horizontally where detailed information not available.
- Already in text of current zoning by-law (Options are 15 metre setback or floodproofing)
- Development within 15 metre requires topographic surveys to confirm development meets by-law.
- Coastal engineering studies can be used to support an application for variance to provisions
- Recommendation is that it not be included in final zoning schedules.

Proposed Shoreline Hazard Changes

Update 100 year flood elevation to MNR Model

Area	Current Zoning	Proposed Zoning
Lake Huron Pike Bay to Cape Hurd	177.6	177.6 NO CHANGE
Cape Hurd to Stormhaven	177.6	177.7 (+10 cm)
Georgian Bay	177.6	177.8 (+20 cm)

Other Hazard-related issues addressed

Issue in Current By-law

Georgian Bay Floodproofing elevation for wave uprush only 20cm higher than recommended 100-year flood elevation

Lots on a point, with lake frontage on two sides (does a 3 metre side yard setback apply?)

Floodproofing only required for additions larger than 50% of the area of the original structure – what was 'original'? still increases risk

Require any additions to be adequately floodproofed. This applies to building openings, not floor height.

Two separate sections refer to the applicable setback – yard setback to lot line and setback to EH zone; could result in inconsistent application.

State setback (7.5m) from from 100-year flood elevation (limit of EH zone)

"Habitable" use vs accessory building, change of use over time, and risk of loss in the event of flooding.

Establish provisions for a boathouse (for storing boats and related accessories), exempt from floodproofing requirements. Require setbacks/ floodproofing for all other enclosed buildings/structures.

Official Plan policy for 30m setback for "New" lots. Lots created under the old by-law become "existing" lots in new by-law.

Apply Jan 1, 2000 as the date for 15m setbacks vs. 30m setbacks. (Plan policy since 1997, Current by-law is from 2002. Most waterfront lots created in the last 17 years have site-or subdivision-specific zoning)

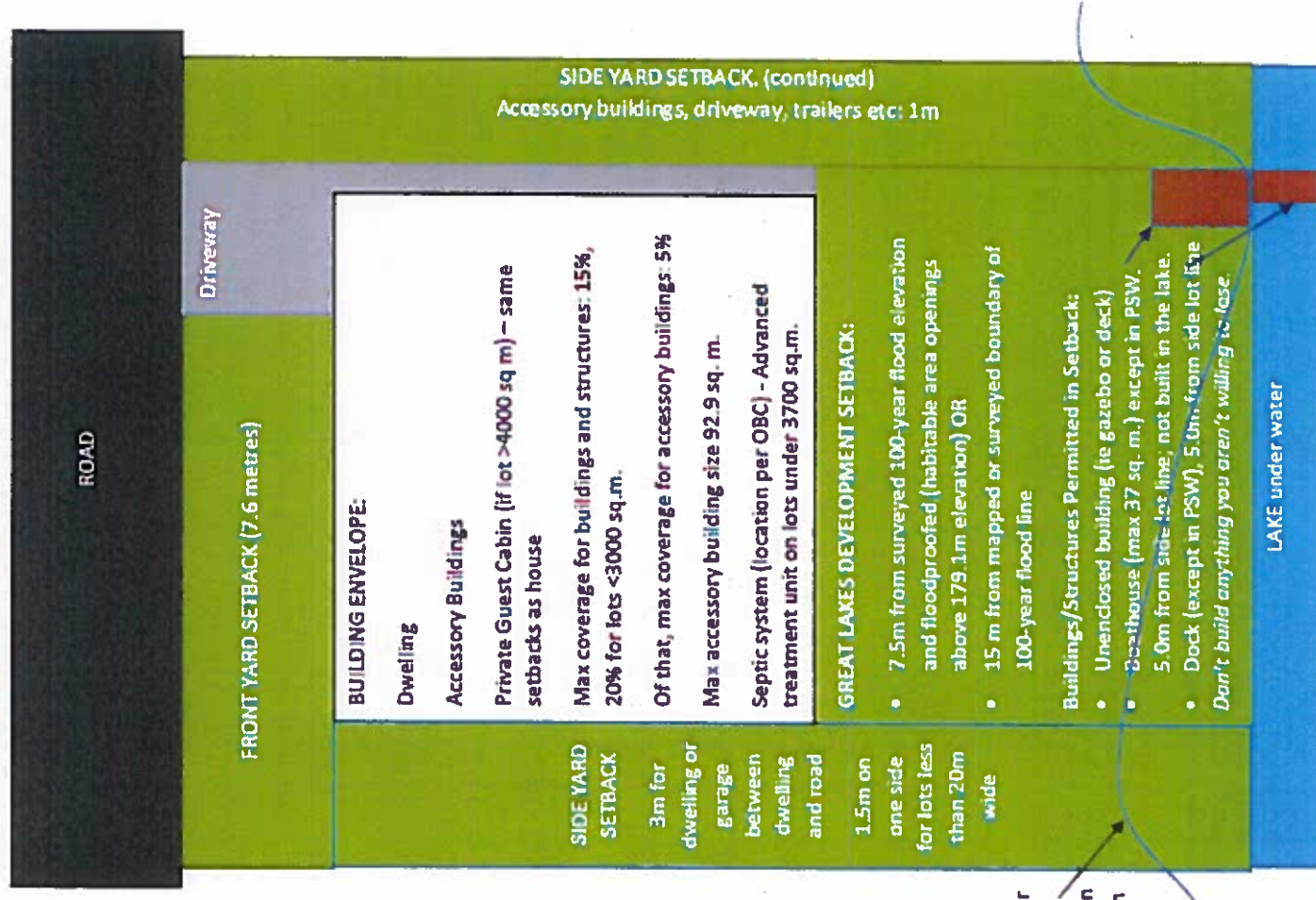
So what can I do on my R2-zoned (Great Lakes) lot?

Disclaimer: This representation is intended as an aid to interpreting the proposed by-law and should not be relied upon separately from the proposed zoning by-law

- Dwelling – Minimum size reduced to 70 square metres (754 square feet) gross floor area. yard setbacks other than setback to Lake and lot coverage remain the same as current by-law
- Home Occupations – Bed and Breakfast
- Home Occupations - Domestic and Professional Uses, now includes home child care or unlicensed child care per Provincial regulations. Up to 30% of the building, but no more than 28 square metres (301 square feet)
- Accessory Buildings and Structures – max 5% lot coverage, max. gross floor area for an accessory building is 1000 square feet
- Private Guest Cabin (detached bedroom) new minimum size is 10.2 sq. m. / 110 - ft² requires permit under building code, septic review.
- New Bunkies not permitted on lots under 4000 sq.m. (to address total human occupancy). Where permitted, subject to same setbacks as the dwelling
- Private guest cabins are for accommodation of non-paying guests – not for renting out, not for staying in while renting out your place.
- Tents and Trailers permit occasional use of tents, trailers on a lot with a dwelling – in conformity with Tent and Trailer by-law
- Boathouse (on the property, not in the water) permitted with 5m side yard setback, max. 37 square metres (400 s.f.).
- Docks including a canopy over boat lift permitted, min. 5 metres from side lot line
- Unenclosed building (like a gazebo or a deck) permitted within the inland lake setback
- Parking vehicles – trailers, campers, etc – not in the front yard setback (first 7.6 metres) other than the driveway. if in the driveway, back from the road to ensure visibility; if in a side or rear yard, at least 1 metre from the lot line. Must have current license plates or be in a building.

See sketch at right for illustration of setbacks, etc.

Note: some R2 zoned lots are within 120m of Provincially Significant Wetlands and may be subject to Site Plan Approval to address potential impacts to the PSW



Inland Lakes

Hazard Mapping

- Zone schedules initially included a mapped 15 metre setback within the EH zone to address flooding and erosion hazards
- Understand public concerns regarding this mapping
- Zone schedules have been revised to show only areas below the ordinary high water mark within the EH Environmental Hazard Zone
- Still concerned with Hazard Mapping on your property? Please contact bruce.county@greysauble.on.ca and quote your address or tax assessment roll number.

Proposed by-law – Lake Setbacks

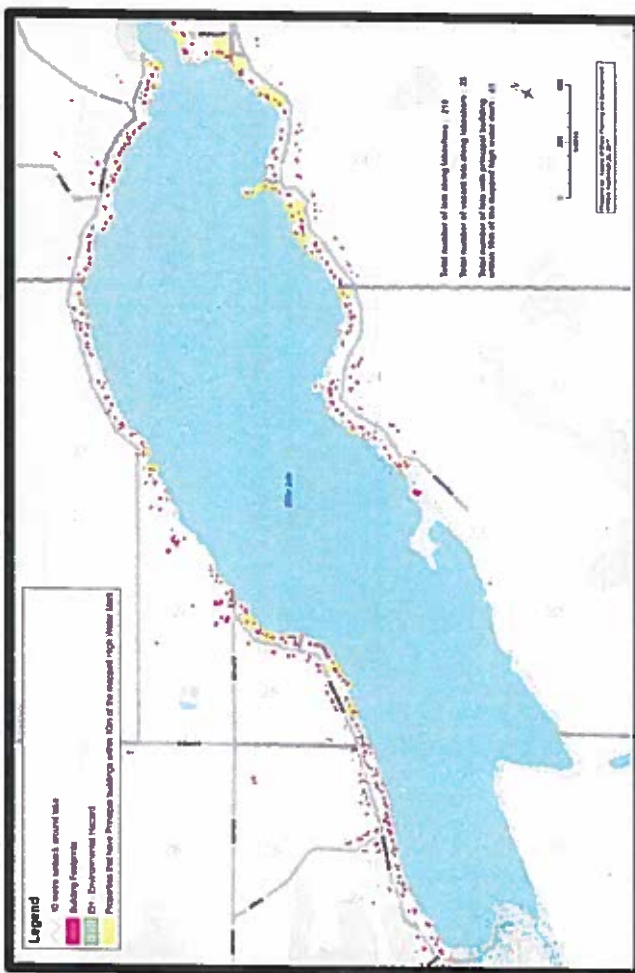
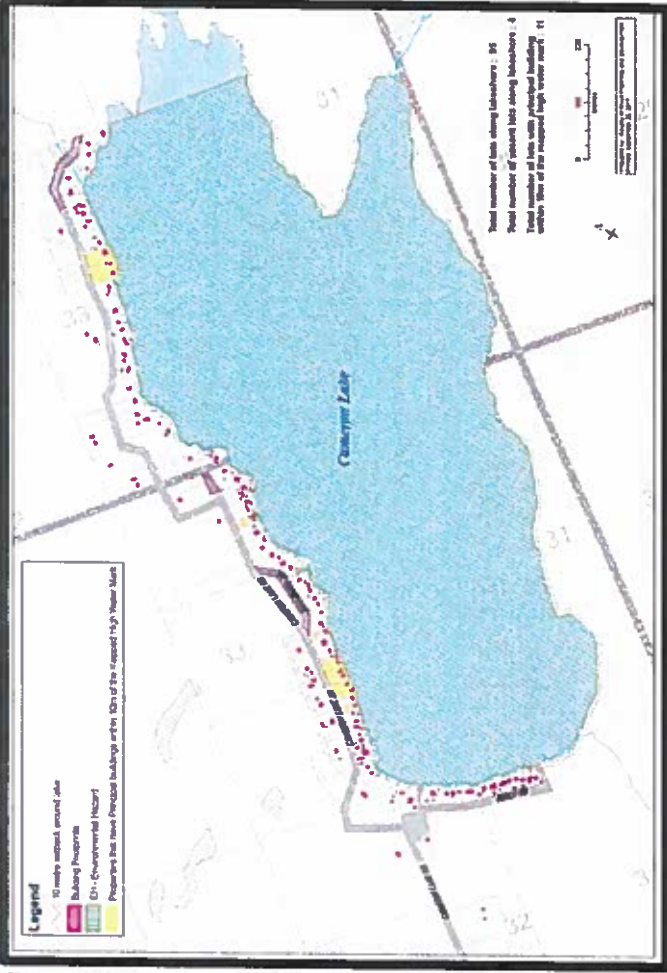
- In addition to potential hazards, development/redevelopment creeping closer to the lake can change the shoreline character (neighbourhood issue) and have adverse impacts on water quality and fish habitat (neighbourhood and environmental issue)
- Initially included provisions for redevelopment /additions were no closer to lake than existing within 15 metres and no additions some existing properties with dwellings within 10 metres of Lake.
- These were revised to establish 15 metres for new development and permit additions to existing dwellings, but not permit additions within 10 metres of the lake
- Provisions would permit unenclosed accessory buildings, and a “boathouse” on the property within the inland lake setback – flip over for a review of proposed zoning.



Existing Development Setbacks

- Current by-law uses Rear yard setbacks for the zone (7.5 metres)
- Majority of development is located at least 10 metres from the lake,
- Some dwellings and accessory buildings are located closer to the lake

Lake	# of shoreline Lots with road access	# of Developed Lots	# of Lots with principal building within 10m of the mapped High Water Mark	% of Lots with Principal building more than 10m from mapped High Water Mark
Little Lake (Barrow Bay)	76	69	10	85%
Cameron Lake	95	91	11	88%
Gillies Lake	25 (not including lands in DC Area)	22	15	32%
Miller Lake	210	185	41	78%

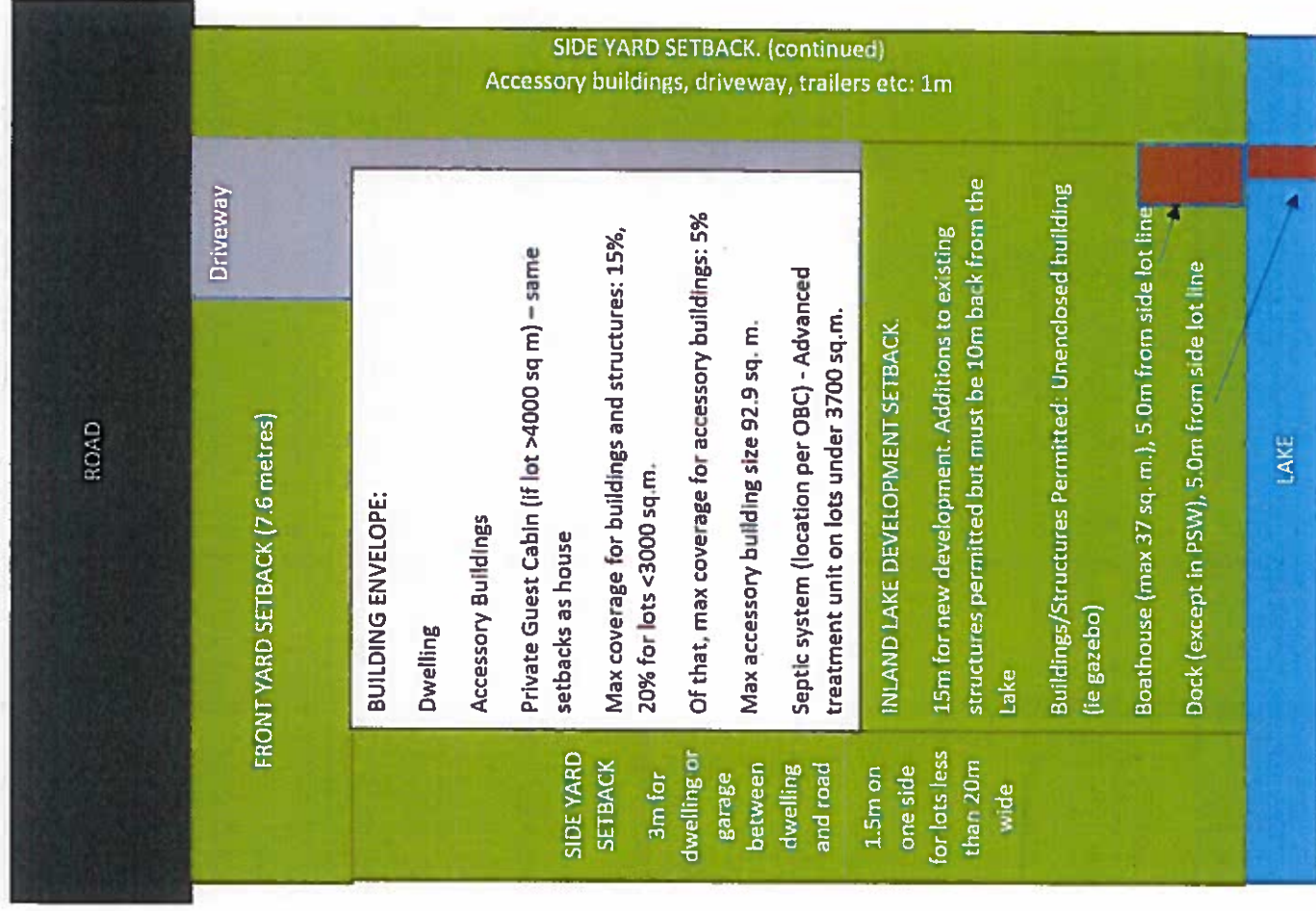


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Provincially Significant Wetlands (PSWs) (page 1)

What are they?

- The Most valuable Wetlands in Ontario; "Value" is determined through a criteria-based ranking system (the Ontario Wetland Evaluation System or "OWES")
- OWES process identifies and measures wetland functions, and provides a means of evaluating the relative importance of individual wetlands based on perceived societal values.
- Wetlands are examined for Biological, Social, Hydrological and Special Features components and are then scored using a point- based system as outlined in the OWES.
- A Significant wetland is one that has a total score of 600 or more points OR receives 200 or more points in either the Biological Component or the Special Features Component.
- All evaluators must have taken the Ontario Wetlands Evaluation System course for their evaluations to be accepted.

When was this wetland evaluated on my property? Why isn't it on other properties?

- Many wetlands were evaluated historically, such as the 1980s-1990s. Field visits to update PSW information and boundaries are conducted with landowner consent
- PSWs have to meet the scoring criteria
- Not all PSWs have been evaluated

Why is it being zoned now?

- Provincial policy requires that Development and Site Alteration be prohibited in PSWs; the PSW needs to be zoned to prohibit development and site alteration.
- PSW have not formed part of the Hazard layers in previous comprehensive zoning by-laws.

Expropriation without Compensation?

- PSW designation does not remove the land from your ownership; uses noted above are permitted.
- Landowners with PSW on their property can participate in the Conservation Land Tax Incentive Program
- This is an Optional program; whether or not you participate does not impact the status of the wetland on your property
- Find out more at: <https://www.ontario.ca/page/conservation-land-tax-incentive-program>

What if the Boundaries are not correctly mapped?

- PSW Boundaries are established, maintained, and supplied to us for mapping by the Ministry of Natural Resources and Forestry. The local MNRF biologist can be reached at Kathy.dodge@Ontario.ca

Provincially Significant Wetlands (PSWs) (page 2)

Can I do anything with it?

The proposed by-law permits:

'forestry/silviculture' and the following existing uses: agriculture, outdoor recreational activities which are non-intensive in nature and are compatible with the surrounding natural environment including uses such as nature interpretation, hiking and walking trails, cross-country skiing, fishing and hunting in accordance with the 'EH' Zone

filling or excavation to allow existing agricultural uses to continue

The proposed by-law prohibits:

All buildings and structures except those necessary for flood and/or erosion control purposes in accordance with Section 24.3.

Site alteration, such as filling or excavation is not permitted within the 'EH-PSW' zone except to allow existing agricultural uses to continue.

A "boathouse" or "boat launching and docking" (involving site alteration) – do not qualify as structures necessary for flood / erosion control purposes.

What is the "Green Line"?

- Includes lands within 120 metres of a Provincially Significant Wetland
- **Not** an Environmental "Hazard" zone
- Provincial policy directs that development on lands adjacent to a Provincially Significant Wetland be prohibited unless the function of the lands has been evaluated and it can be demonstrated that there will be no negative impact on the wetland feature or its ecological functions. This policy is not intended to limit the ability of agricultural uses to continue.
- Province recommends that approval authorities use 120m as the adjacent lands.
- Recognition that there are many properties that are entirely within this area, and that many of these properties have already been developed.
- 120 metre area is proposed as a "Site Plan Control" area. The Municipality's Hazards committee recommends that the Municipality "develop and adopt site plan control standards to the extent that the requirements for site plan approvals on "adjacent lands" are known and predictable."
- This approach does not require a zoning by-law amendment prior to development – intended that level of review be scoped to the project, and that "best practices" to avoid impacts to the wetland be employed.

Learn More:

<https://www.ontario.ca/page/wetland-conservation>

Septic Systems on Small Lots

What's the Issue?

- Risk of Cumulative (adverse) Impacts to groundwater due to clustered development on onsite sewage disposal systems
- Includes areas of Tobermory (not on sewer) and Lions Head (no sewer available) and clusters in Hamlets and along the shoreline
- Risk is a product of the **quantity** of effluent/sewage and the ability for it to be diluted into the ground.
- Factors include rainfall, ability of rainwater to **infiltrate** the ground (related to soil type and depth, lot coverage, and tree cover)
- Background concentrations can also be a factor
- Risk to groundwater is higher in areas with sparse soil over rock, particularly with fractured and karstic bedrock with vulnerable aquifers – like much of the Bruce Peninsula
- Risk can be reduced with larger lot areas (**dilution – more land for rain to fall on**) and by improved sewage disposal system technologies which can pre-treat effluent before it is discharged to the tile bed / environment (**reduce quantity**).
- Development typically evaluated using MOE D5-4 Guidelines for Groundwater Quality Impacts. Guidelines uses Nitrate as a base as there is a maximum allowable concentration in drinking water (10mg/L).
- Huron GeoSciences completed pilot study in 2013 for Lions Head Area
- Indicated very few lots (shown in white) would be able to “pass” a nitrate study threshold of 10mg/L Nitrates at the lot line using a conventional onsite sewage disposal system for a single dwelling unit; largely a function of lot area



Consideration of Lot Area

- Compared findings relative to recently completed Nitrate Studies for specific development proposals
- input the same parameters for background nitrate levels, runoff coefficient (combination of soil, surface, and ground cover), annual precipitation, transpiration, and runoff/infiltration values.
- Used 1000L/day of effluent, Nitrate concentration 40mg/L as outlined in the MOE D5-4 guideline, and solved for lot area that would yield 10mg/L Nitrate at the property boundary.

General area	Lot area to hit 10mg/L at lot line	Notes
Lions Head	2385 square metres	Larger lot with some depth of material to bedrock (more water mixing with effluent)
Eastnor Township	3670 square metres	Very little soil (higher runoff coefficient, less water mixing with effluent) typical of many areas of the Peninsula

- Subsequently located 2 additional studies from areas with more soil, suggesting 2800-3000 square metres could support conventional septic system

Higher Density Development in Settlement Areas?

- Assuming “best conditions” (Lion’s Head characteristics) there is limited potential for intensification, even with advanced sewage disposal systems (this is why the townhouse blocks are on larger lots).

Septic Systems on Small Lots

Concept

- Lots that cannot meet 10mg/L concentration of nitrates at the lot line with a conventional system should use an advanced system.
- Studies at the lot level are costly to complete
- Suggested lot area thresholds of 2400 square metres (Lions Head – best case) and 3700 sq. m. (elsewhere – limited soil). Could consider applying 2400 sq. m. throughout the Municipality – premise that some is better than none.
- Advanced systems use a treatment “unit” with active or passive technology
- Unit pre-treats sewage effluent before it is discharged into the distribution system
- Can often occupy a smaller “footprint” on the site, but may require an imported sand mantle
- Advanced systems must pass tests to meet specific treatment parameters
- Currently 4 system types approved for use in Ontario
- Some operating costs (maintenance (all systems); 2/4 use electricity (2/4), 1 requires filter media to be replaced after 8-15 years.
- Find out more at <http://www.oowa.org/consumer-information/2017-options-onsite-residential-wastewater-treatment-technologies/>

Concerns

- **Do they work as advertised?** As of 2017, New Testing regime (“made in Canada” test) has standards and testing requirements for colder climates
- **Cost more to install.** Local contractors we talked to referred to projects ranging from \$6000 more than a conventional system to \$35,000.00. One supplier we talked to suggested costs in the range of \$20-30,000
- **Forced Replacement?** Provision is Intended to provide for improvement / maintenance of water quality through new development and over the long term on existing lots as existing systems require replacement – well-maintained existing systems last 25-30 years

Summary

- Groundwater quality is important to protect over the long term; septic systems can affect surface water quality
- Groundwater quality on the Peninsula is vulnerable due to generally shallow soils and fractured bedrock environment
- Groundwater quality is not compatible with higher-density development on septic systems and is a constraint to development potential
- May be appropriate to replace Current Official Plan policies (urban areas) with policy that allows Zoning to set minimum lot areas below which advanced systems are needed for existing lots
- May also be appropriate to apply a minimum lot area in other areas with clustered development on septic systems
- Where development is clustered and lots are small and cannot be increased, an advanced sewage system is likely better than a conventional system
- May not be a great idea to create new lots that rely upon advanced systems in order to protect groundwater
- Costs are also a factor, and system requirements are different which may suit different people
- May be appropriate to balance application of proposed by-law with maintaining flexibility, recognizing some variation in conditions throughout the Municipality