



**Subject:** *Plan Update - Floodlands*  
**To:** CAO for Planning Advisory Committee, January 18, 2022  
**Date Prepared:** January 5, 2022  
**Related Motions:** None  
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**Approved by:** John Woodford, Director of Planning & Development

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### Summary

As part of the ongoing plan update, Planning staff are preparing background papers to discuss and propose approaches to different land use issues within the Municipality. The current background paper discusses land use planning for zones adjacent to major watercourses in the future planned area.

### Financial Impact Statement

The Community Plan Update has been budgeted for in the 2021/2022 Municipal Budget.

### Recommendation

Authorize staff to prepare amendments to land use policies and regulations based on the direction identified in the staff report on floodlands.

### Recommended Motion

*Planning Advisory Committee recommends that Council:*

- *Authorize staff to prepare land use policies and regulations for floodlands, based on the direction in staff's report dated January 5, 2022.*

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## Background

Floods are a natural event in Nova Scotia's ecosystems and can occur for a variety of reasons, including heavy rainfall, snow melt, ice jams, high tides and storm surges. Flooding becomes an issue when it impacts communities and causes damage to property, infrastructure or people.

Increasing urbanization and development of impermeable surfaces, as well as impacts from climate change will cause a predicted rise in instances of flooding in Nova Scotia into the future. Already, flood related property damage is one of the most costly and leading causes of property damage in Nova Scotia.

The occurrence of flooding in Nova Scotia has resulted in the development of a Statement of Provincial Interest (SPI) Regarding Flood Risk Areas, administered by the Nova Scotia department of Municipal Affairs and Housing with a goal of protecting public safety and property and reducing the requirement for flood control works and flood damage restoration in floodplains. Provisions in the SPI state that for floodplains which have not been mapped, planning documents should at minimum be reasonably consistent with provisions applicable to floodway fringe zones, indicating that development, provided it is flood proofed, may be permitted except for the storage or production of hazardous materials, and development where flooding could pose a significant threat to the safety of residents if evacuation became necessary.

Flooding is a multijurisdictional issue. The Municipal Government Act delegates power to Nova Scotia municipalities to enact many flood-related planning measures. These include regulating or prohibiting excavation or filling in of land on floodplains identified in the land use by-law, regulating or prohibiting development within a specified distance of a watercourse and prohibiting development on land that is subject to flooding or subsidence.

The Municipality of East Hants has multiple major rivers and waterways flowing through it and has taken steps in the current planned area regarding floodproofing and development management in known flood prone lands. Council commissioned a Floodplain Mapping Study in 2013, which updated the flood lines of the Shubenacadie River and mapped the floodlines of the Nine Mile River between Garden Rd. and Hwy 102. From this study, the moderate (1 in 100 year) and high risk (1 in 20 year) flood lines were updated. Council amended the Municipal Planning Strategy and Land Use Bylaw in 2016 so that the extents of the High Risk Floodplain (HF) Zone and Moderate Risk Floodplain (MF) Overlay Zone correspond to the most recent flood lines from the 2013 study. Several major rivers in the planned area of East Hants are not covered by the Floodplain Mapping Study. Council has taken steps to ensure the riparian zone around these watercourses remain healthy and provide some level of protection for properties adjacent to rivers through the establishment of the Watercourse Greenbelt (WG) Zone, which has been established generally within 30 m of the Sackville, Shubenacadie, Nine Mile, Meander, Beaverbank, and Herbert Rivers, Rhines Creek, Black Brook, and Barney's Brook, on land which is not covered by floodplain mapping. Development in the WG zone is restricted to the future development of passive recreational opportunities, conservation related uses, and development that is specifically related to the provision of Municipal services.

For watercourses not covered by the WG Zone, regulation 3.26 from the General Provisions of the Land Use Bylaw outline setback distances required for any structure located near a watercourse. Watercourses 0.5m or greater in width require a setback of 20m, while watercourses 0.5m or less in width, or which are intermittent or seasonal have a required setback of 6 m.

The future planned area of the Municipality of East Hants currently has no restrictions or zoning in place to either protect the health of the major watercourses in this area or provide flood protection for properties adjacent to major watercourses. Planning staff suggest that it is important to ensure appropriate zoning is put into place which recognizes existing uses of properties adjacent to major watercourses while also ensuring flood protection and riparian health. This background paper will analyze the current land uses within 30 m of major watercourses in the future planned area, and review planning policies for areas adjacent to major

watercourses in other Nova Scotia municipalities. Recommendations for floodland planning in the future planned area will be made based on this review.

## Current Land Uses

Municipal planning staff have completed a preliminary inventory of existing land uses within the Future Planned Area. Analysis was performed to identify the locations of major rivers within the Future Planned Area, and a layer was created showing a 30 m buffer from these waterways. The land uses which were intersected by these watercourses, and the 30 m buffer were assessed and recorded in the table below.

River	Land Uses within 30m
Walton River	Resource/ agricultural Residential/ resource/ agricultural Resource
Tennycaple River	Resource Residential
East Noel River	Agricultural Vacant Residential/ resource/agricultural Residential Residential/ resource
Five Mile River	Resource Residential/ resource Resource/ agricultural Vacant Residential/ Resource/ Agricultural
Kennetcook River	Resource Residential Residential/ resource/ agricultural Resource/ agricultural Residential/ resource Residential/ agricultural Agricultural Commercial

The majority of land within 30 m of the major rivers in the Future Planned Area is being used for resource, agricultural and/ or residential uses, with some commercial uses in close proximity of the Kennetcook River.

## Flood Zoning in Other Municipalities

### Kentville:

The Town of Kentville has some similar zoning to East Hants. The Land Use By-Law details a Conservation Zone (O1), which applies to areas affected by the floodwaters of the Cornwallis River and Mill Brook. The land in this zone is located north of the former railway line and has very limited access. Permitted uses include conservation and related projects, open space, parks and crop farming, grazing and pasturage. For the more developed areas, the Town of Kentville has a floodway overlay zone, and a floodway fringe overlay, which was applied to lands which were not previously identified as Flood Risk Areas. The overlay is intended to provide flexibility regarding development in recognition of pre-existing development patterns and hardship that strict limitations would place on property owners.

### Cumberland:

The Municipality of Cumberland faces many of the same concerns regarding flooding as East Hants. The latest MPS for the Municipality of Cumberland identifies challenges associated with planning for flooding without high-resolution information about the local topography and river characteristics or data on precipitation and long-term river gauge. As in East Hants, much of this data does not yet exist at a satisfactory level of accuracy in the Cumberland context, and developing this data will take considerable time and money. In recognition of

these constraints, The Municipality of Cumberland elected to take a cautious approach by tightly limiting development in the areas immediately adjacent to major rivers and to be cautious with development in identified geomorphic floodplains. They achieved this through implementation of a Flood Hazard Zone, intended to limit development on lands identified as presenting a higher risk of environmental hazards to development. In the Flood Hazard Zone agricultural and existing dwelling uses are permitted as-of-right, while site plan approval is required for expansion of non-conforming uses, recreational vehicle parking, short-term rentals and single-unit dwellings.

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## Public Comments

During the Plan Update Open Houses and as part of the Plan Update survey, staff received feedback regarding protection of environmentally sensitive lands. Some of the comments from the residents are listed below:

- *Living in East Hants is great but long-standing flooding issues have been ignored for far too long.*
- *I am not familiar with much of the development besides that happening near Elmsdale. With any development I am concerned with the use of flood plains or flood prone areas being developed and the effect on the environment.*
- *No, concerned about flooding and will they have affordable housing?*
- *Shoreline development Shubie River system needs protected status.*
- *First and foremost, East Hants needs strong regulations to protect the environment of the region and keep the waterways clean and accessible.*
- *With the current trend of global warming the environment should be our number one concern.*

The Plan Update survey also included questions for residents asking them about environmental conservation and preservation. Almost 70% of the residents who responded to the survey from the future planned area selected that environmental preservation should have strong regulations, approximately 25% responded that environmental preservation should have average regulations and around 5% suggested limited regulations. Responses from the Open houses and Plan Update clearly suggest that there is a strong interest from the community members for environmental preservation.

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## Recommended Approach

Analysis of the existing land inventory suggests that the major rivers in the future planned area intersect with resource, residential, agricultural, vacant and commercial land. Anecdotal evidence suggests flooding is not a frequent issue on the major river flowing through the future planned area, with the exception of the Kennetcook River where it flows through the village of Kennetcook. However, there is very limited information available on the topic, and no floodplain mapping completed for rivers in the future planned area. Over time, with climate change, the impact from flooding on the rivers could become more of an issue.

Planning Staff recommend that the Watercourse Greenbelt (WG) Zone regulations be used along the five more significant waterways (identified earlier in the staff report) along with the portion of the Shubenacadie River within the future planned area. These regulations will: protect properties from the risk of flooding; protect the quality of water; control sedimentation and erosion; and will also help to maintain rural character. It is recommended that these regulations apply to the area of land inwards 30 metres from the river. Land uses would be limited to include passive recreation, conservation related, and development specifically related to the provision of municipal services. This will mirror existing regulations in the planned area of the municipality. A copy of the regulations for the WG Zone have been appended to this staff report.

For smaller waterways and in order to ensure protection of these watercourses in the future planned area, it is recommended that regulation 3.26 from the General Provisions of the Land Use Bylaw be adopted into the future planned area. Watercourses 0.5m or greater in width require a setback of 20m for any structure, while

watercourses 0.5m or less in width, or which are intermittent or seasonal have a required setback of 6 m. These regulations would also apply to setbacks from lakeshores. A copy of the existing regulations in section 3.26 of the Land Use Bylaw has been appended to this staff report.

Without any existing floodplain mapping for the Kennetcook River, it is difficult to create potential flood zones with any high level of accuracy. Floods are not uncommon in this area, with well known examples of community flooding in Kennetcook Village, most recently in heavy downpours in December of 2014. In order to create regulations which most effectively and efficiently protect property and river health from flood risk, Council may wish to consider undergoing floodplain mapping for the Kennetcook River in the future.

The introduction of development regulations will not only protect communities from potential flooding in the future but also reflect development patterns that serve the interest of the rural communities in East Hants.

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## Conclusions

This community engagement undertaken for the plan update has suggested that for the people who responded, the majority are in support of environmental land use regulations. Staff are recommending that the regulations for the Watercourse Greenbelt (WG) Zone be applied to the five more major rivers in the future planned area - Walton, Tennycape, East Noel, Five Mile and Kennetcook Rivers. In addition to these rivers staff also recommend that the WG regulations also apply to the area of Shubenacadie River which flows through the future planned area.

There is a stretch of the Shubenacadie River located from the start of the river at the Minas Basin through to South Maitland which is being studied in the Fundy Shore Vulnerability Study. For this area, other regulations may be appropriate but this can be investigated once the Vulnerability Study is completed.

For other, smaller watercourses and lakeshores, staff recommend applying the regulations covered in 3.26, General Provisions of the Land Use Bylaw.

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## Recommendations

Authorize staff to prepare amendments to land use policies and regulations based on the direction identified in the staff report on floodlands.

# Appendix A - Existing Watercourse Greenbelt (WG) Zone regulations

## PART 10 - ENVIRONMENTAL ZONES

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### 10.4. Watercourse Greenbelt (WG) Zone

#### 10.4.1. Permanent Structures

No permanent structures shall be permitted in a WG Zone unless the structure is accessory to the lawfully existing main use of the property.

#### 10.4.2. Vegetation Retention

To permit the control and management of subsurface and surface runoff, sedimentation and erosion lands within the WG Zone shall be maintained with existing vegetation. Where it is not practicable to maintain existing vegetation, a landscaped buffer shall be substituted. An environmental study completed by a qualified professional must demonstrate the ability of the buffer to provide for sedimentation and erosion control and management of subsurface and surface runoff.

#### 10.4.3. Site Plan Approval

All permitted uses are subject to the approval of a site plan. The Development Officer shall approve a site plan where the following matters have been addressed:

- a) Site design and layout shall take into consideration the soil conditions and shall minimize the amount of clearing and grubbing on steep slopes or erosive soils.
- b) A minimum of 60% of the vegetation shall be retained.
- c) Measures including lot grading shall be required to adequately dispose of storm and surface water from the site. This may also include measures to direct overland flows away from downslope development areas.
- d) All items required by this policy shall be adequately maintained in a manner which will not have adverse impacts on the adjacent aquatic environment.

Application for site plan approval shall be in the form specified in Appendix C and shall be accompanied by a sketch in sufficient detail to address all of the matters identified above. The refusal or approval of a site plan is appealable to Council in the same manner as an appeal for a variance.

#### 10.4.4. Altering Land Levels

Other than for the permitted uses in this section, placing of fill or significant alteration of topography shall not be permitted in the (WG) Zone unless:

- a) An environmental study in conformance with the format in Appendix D has been conducted and clearly shows that there will be no increase in flood elevation affecting other lands or areas, and no impairment of flood flows, flood water storage or ice passage, and no constriction likely to cause ice jamming that will deleteriously affect development on adjacent properties.
- b) Significant alteration of topography means cutting or filling of more than 10% of the lot area zoned WG or in excess of 93 m<sup>2</sup> of WG zoned land area, whichever is more stringent. Non-structural agriculture and gardening, and accessory recreation uses, road and utility construction and impoundment for fire fighting purposes are not subject to this requirement.

## Appendix B - Existing Regulations - 3.26 of the Land Use Bylaw

### 3.26. Setback from Watercourses

- a) The following setback distances shall be required for any structure to be located near a watercourse, and such setbacks shall be in accordance with the following standards:

Watercourse Type	Setback
0.5 m or greater in width <sup>A</sup>	20 m
0.5 m or less in width	6 m
Intermittent or seasonal	6 m

<sup>A</sup> Watercourse Greenbelt (WG) Zone applies to all major watercourses in this Bylaw

- b) Where the setback from the watercourse, noted in the table above, cannot be met for existing structures and for existing undersized lots due to topography or the placement of an on-site disposal system, the setback may be reduced to no less than 15 m where all other requirements under the Land Use Bylaw are met.
- c) Setback from Lakeshore - a 30 m setback shall be required from the high water mark of all lakes and the

nearest wall of any permanent structure. Where the 30 m setback cannot be met for existing structures and for existing undersized lots due to topography or the placement of an on-site disposal system, the setback may be reduced to no less than 15 m where all other requirements under the Land Use Bylaw are met.

- d) No significant alteration of topography, being the cutting or filling of more than 10% of the land area within the setback or 93 m<sup>2</sup> of area within the setback, whichever is less, shall be permitted with the exception of:
- Instances where an environmental study, as outlined in Appendix D of the Land Use Bylaw, has been conducted determining that there will be no deleterious environmental impacts or impacts on adjacent properties as a result of an impairment of stormwater drainage or storage. Under no circumstances shall a significant alteration of lands in excess of 50% within the setback area, be permitted.
- e) To permit the control and management of subsurface and surface runoff, sedimentation and erosion lands within the watercourse setback shall be maintained with existing vegetation. Where it is not practicable to maintain existing vegetation, a landscaped buffer shall be substituted. An environmental study completed by a qualified professional must demonstrate the ability of the buffer to provide for sedimentation and erosion control and management of subsurface and surface runoff.
- f) With the exception of the subsection dealing with the significant alteration of topography, the regulations for setbacks from watercourses above do not apply to fire fighting impoundments and related structures to water systems, or where otherwise permitted under the Land Use Bylaw.

*Appendix C - Map of rivers with recommended WG applied to*

