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Item No. 15.1.4
Halifax Regional Council
March 18, 2025

TO: Mayor Fillmore and Members of Halifax Regional Council

FROM: Cathie O'Toole, Chief Administrative Officer

DATE: December 23, 2024

SUBJECT: **Case 21402 - Update to the Development Controls along the Sackville and Little Sackville River Floodplains**

ORIGIN

Regional Council, August 14, 2018, Item 14.1.3 (Sackville River Floodplain):

MOVED by Councillor Craig, seconded by Councillor Blackburn

THAT Halifax Regional Council:

Initiate a process to amend the Secondary Municipal Planning Strategies (SMPS) and Land Use By-laws (LUB) for Bedford, Sackville; Sackville Drive; Beaver Bank, Hammonds Plains, and Upper Sackville to update floodplain protection policies, regulations, and mapping based on the 2017 Sackville Rivers Floodplain Study.

MOTION PUT AND PASSED.

Regional Council, June 20, 2023, Item 18.2: (Ratification from Committee of the Whole - Case 22257: Regional Plan Review – Phase 4 Draft Plan Release)

MOVED by Deputy Mayor Austin, seconded by Councillor Cuttell

THAT Halifax Regional Council direct the Chief Administrative Officer to:

1. Accept the Draft Regional Municipal Planning Strategy included in Attachment A of the staff report dated June 16, 2023, to be used for public engagement purposes.
2. Adopt the amendments to the Public Participation Program for the Regional Plan Review in Attachment F of the staff report dated June 16, 2023, and direct the Chief Administrative Officer to follow the revised Public Participation Program for the Regional Plan Review as generally set out in Attachment B and as outlined in the Community Engagement section of the staff report dated June 16, 2023; and
3. Direct the Chief Administrative Officer to follow the revised work plan schedule as generally outlined in Attachment C of the staff report dated June 16, 2023 – Regional Plan Work Plan and Attachment D of the staff report dated June 16, 2023 – Site-Specific Requests.

MOTION PUT AND PASSED

(ORIGIN CONTINUES ON NEXT PAGE)

Regional Council, December 12, 2023 Item 15.1.9 (Case 22257: Regional Plan Review: Phase 4 Draft Plan What We Heard)

MOVED by Councillor Cuttell, seconded by Councillor Stoddard

THAT Halifax Regional Council:

1. Accept the Draft Regional Plan What We Heard Report included as Attachment A of the staff report dated November 20, 2023; and
2. Direct the Chief Administrative Officer to follow the recommended approach to site specific requests for Regional Plan amendments as generally outlined in Attachment B of the staff report dated November 20, 2023.

MOTION PUT AND PASSED

EXECUTIVE SUMMARY

This report responds to a motion of Regional Council to amend the Secondary Municipal Planning Strategies (SMPS) and Land Use By-laws (LUB) for Bedford, Sackville, Sackville Drive, and Beaver Bank, Hammonds Plains, and Upper Sackville to update floodplain protection policies, regulations, and mapping based on the 2017 Sackville Rivers Floodplain Study. The proposed amendments within this report were developed to align with the Statement of Provincial Interest for Flood Risk Areas by retaining the regulations that were applied to properties within the floodplains identified through the Canada-Nova Scotia Flood Damage Reduction Program (FDRP) in the 1980s. The amendments also apply new floodway and flood fringe overlay zones to areas outside of the 1980s floodplains that were identified within the 2017 Sackville Rivers Floodplain Study, completed by CBCL, and the 2024 update to the study, completed by DesignPoint.

This report also recommends adoption of the revised floodplain policy under the Regional Municipal Planning Strategy (Regional Plan) that ensures consistency between the proposed policies under the SMPSs and LUBs. Staff have carried out the proposed amendment to the Regional Plan floodplain policy in accordance with the 2020 public participation resolution that was adopted for the Regional Plan Review. Staff have also carried out the proposed amendments to implement the new floodplain policies under the SMPSs and LUBs affected by the Sackville Rivers floodplains in accordance with the public participation program that was adopted by Regional Council for this initiative in 2018. The proposed amendments to the floodplain policies under the Regional Plan and applicable SMPSs and LUBs are therefore being brought forward for Regional Council's consideration and adoption.

The proposed amendments outlined in this report refer to the term's floodplain, floodway and flood fringe. The definition of each is as follows:

Floodplain – the area of land that is subject to inundation (flooding) during periods of high flow; typically lands located adjacent to a river, on one or both sides of a river.

Floodway – the inner portion of the floodplain having a 5% chance of a flood in any given year (also known as the 1-in-20-year flood elevation).

Flood Fringe – the outer portion of the floodplain, between the floodway and the outer boundary of the floodplain having a 1% chance of a flood in any given year (also known as the 1-in-100-year flood elevation).

In this report, the floodplains that were mapped under the Canada-Nova Scotia FDRP in the 1980s (including the floodway and the flood fringe) are referred to as the 1980s floodplains, 1980s floodway, or 1980s flood fringe. The floodplains that were mapped under the 2017 CBCL study and the update by DesignPoint in 2024 (including the floodway and the flood fringe) will be referred to as the 2024 floodplains, 2024 floodway, or 2024 flood fringe.

RECOMMENDATION

It is recommended that Halifax Regional Council:

1. Give First Reading to consider:
 - a) Approval of the proposed amendment to the Regional Municipal Planning Strategy as set out in Attachment A;
 - b) Approval of the proposed amendments to the Secondary Municipal Planning Strategies and Land Use By-laws for Beaver Bank, Hammonds Plains, and Upper Sackville, Bedford, Sackville and Sackville Drive as set out in Attachments B1 to B4 and Attachments C1 to C4;and schedule a public hearing.
2. Adopt the proposed amendments to the Regional Municipal Planning Strategy as set out in Attachment A; and
3. Adopt the proposed amendments to the Secondary Municipal Planning Strategies and Land Use By-laws for Beaver Bank, Hammonds Plains, and Upper Sackville, Bedford, Sackville and Sackville Drive as set out in Attachments B1 to B4 and Attachments C1 to C4.

BACKGROUND

Sackville Rivers Floodplain

The Sackville River Floodplains were initially mapped under the Canada- Nova Scotia FDRP in the 1980s. This program was aimed at protecting public safety and reducing the need for the remediation of flood damage by producing floodplain mapping to illustrate areas where development should not be permitted or where development should be regulated such that it doesn't cause flooding upstream or downstream. Interprovincial Engineering produced the first series of floodplain maps for the Sackville and Little Sackville Rivers in 1981. Updated mapping for the Sackville and Little Sackville Rivers floodplains was undertaken by Nolan Davis and Associates in 1984 and 1987 respectively.

Floodplain policies and regulations were first adopted under the secondary municipal planning strategies and land use by-laws for the affected plan areas as outlined below:

- Beaver Bank, Hammonds Plains, and Upper Sackville in 1987
- Bedford in 1991
- Sackville in 1994
- Sackville Drive, assumed the floodplain regulations and policies adopted under the Sackville MPS in 1994.

The floodplain mapping for the Sackville and Little Sackville Rivers was updated in a Floodplain Study undertaken by Porter Dillon in 1998 but was never adopted into regulation.

On July 4, 2008, the Sackville Drive Business Association Board wrote to North West Community Council (NWCC), requesting that:

1. the watercourse setback for the Little Sackville River be reduced to 20 metres, consistent with the Regional Plan and the vast majority of the other watercourse setbacks in HRM; and
2. the 1998 floodplain plan be updated to reflect the more accurate 1998 floodplain study conducted by Porter Dillon.

At the request of the Sackville Business Association, North West Community Council submitted a report to Regional Council recommending the initiation of a process to amend the planning documents to take into account the most recent floodplain mapping for the Little Sackville River.

This request and other subsequent activities led to a motion of Regional Council directing staff to initiate the process of amending the appropriate planning documents in September 2012.

In August 2013, Regional Council received an Information Report regarding the need to conduct a new floodplain study to accurately depict the extent of the floodplain. Funding for the project was provided in the 2014-15 Capital Budget. In early 2015, staff engaged Dalhousie University through a research agreement to provide specialized technical expertise on the project. The Dalhousie team developed terms of reference that outlined the technical requirements for the Sackville River Floodplain Study. This was used to evaluate study proposals and guide study development.

The Sackville Rivers Floodplain Study was conducted in two phases. Phase 1 was completed by GHD in 2015, consisting of historical data analysis, high-level hydraulic modeling, and survey data collection to support Phase 2. Phase 2 was completed by CBCL in April 2017 and included data analysis, hydraulic & hydrologic modeling, flood scenario modeling, climate change impact assessment, flood line delineation, and flood mitigation recommendations. The 2017 study completed by CBCL took advantage of the availability of higher quality information, equipment, and tools, as well as higher resolution topographic data about the watershed and floodplain than would have been previously available, as well as took into account advancements in climate change models and projections.

In 2019, HRM contracted DesignPoint Engineering and Surveying to analyze the 2017 model and recommend actions to mitigate impacts related to flooding within the Sackville Rivers floodplain. The Sackville Rivers Flood Mitigation Study was completed in 2020 and included 17 actions recommended for implementation. The first and highest priority recommendation was to restrict development within the floodplain as also identified in the Phase II (CBCL, 2017) Report. The full list of recommendations can be viewed in Attachment 1.

In 2018, the Municipality held three open houses to seek community feedback on the findings of the 2017 CBCL Sackville Rivers Floodplain Study. The most common theme reiterated throughout the events was that residents support the updated floodplains and agree that flooding in the area needs to be addressed. Concerns were expressed by some participants regarding the continued reliance of the study on the 2009 LIDAR data and the accuracy of infrastructure measurements.

In 2024, HRM contracted DesignPoint Engineering & Surveying Limited to update the Sackville Rivers Floodplain Mapping in response to the community's concerns. The same model that was selected to account for Climate Change under the 2017 CBCL study was used for the mapping update. To update the 2017 mapping, the CBCL model was applied to a higher-resolution digital elevation model that was developed with more recent LIDAR data collected in 2019. Publicly accessible infrastructure along the floodway was ground-truthed against available as-built drawings and new topographic survey measurements were collected at the Lucasville Bridge and the Beaver Bank Crossroads culverts. This updated mapping demonstrated adjustments in predicated flood elevations and flood lines around Webber and McCabe Lakes, at the Lucasville Bridge, and around the Beaver Bank Crossroads. Minimal changes to the predicted flood lines were observed elsewhere.

The updated mapping was posted as an interactive mapping application on the [HRM Sackville Rivers webpage](#) in June of 2024. Notices of the updated mapping were also sent to property owners and residents living in the floodplains. 967 letters were sent, and residents were invited to attend public information meetings in August 2024 to review proposed draft regulations and policies for the floodplains.

Statement of Provincial Interest Regarding Flood Risk Areas

The Statement of Provincial Interest (SPI) Regarding Flood Risk Areas mandates that planning documents include controls on development within floodplains. This SPI specifically names the floodplains that were identified under the Canada-Nova Scotia FDRP in the 1980s as areas where development must be restricted along the 1-in-20-year floodway such that there will be no obstruction of river flows or increases in upstream or downstream flooding or flood elevations. The SPI permits development within the 1-in-100-year flood fringe but also states that the development must be floodproofed. The SPI also prohibits the

import and/or placement of off-site fill within the 1-in-20-year floodway and enables the limited placement of fill within the 1-in-100-year flood fringe for the purpose of floodproofing only.

The objective of the FDRP is to discourage development within flood-prone areas. The federal government initiated the program in 1975 to curtail escalating disaster assistance payments in known flood risk areas, and to address the reliance on costly structural flood mitigation measures. The FDRP was carried out jointly with the provinces under cost-sharing agreements. Once a flood risk area is mapped and designated, both levels of government agree not to build or support (i.e. with a financial incentive) any future flood-vulnerable development in those areas. Land use authorities, such as HRM, are required to develop land use policies and regulations that consider flood risks as set out in the SPI.

The updated floodplain areas beyond what was identified in the 1980s under the Canada-Nova Scotia FDRP are considered “known floodplains” under the SPI. The SPI indicates that planning documents should be, at a minimum, reasonably consistent with the 1-in-100-year flood fringe in known floodplain areas. The SPI also enables the consideration of development where a hydrotechnical study confirms that development will not contribute to upstream or downstream flooding or alter river flows.

Regional Plan

The Regional Plan designates areas along the Sackville and Little Sackville Rivers as Urban Settlement and Rural Commuter. It also designates Bedford and Sackville as Urban District Growth Centres and Lower and Middle Sackville as Urban Local Growth Centres.

Section 2.3.4 of the Regional Plan states land adjacent to rivers and streams that are subject to flooding is unsuitable for development. The Regional Plan requires that limitations be placed on development within the 1-in-20-year floodway and that developments within the 1-in-100-year flood fringe be floodproofed. These restrictions are to be implemented through the Secondary Municipal Planning Strategies (SMPS) and Land Use By-laws (LUB).

Municipal Planning Strategies (MPS) and Land Use By-laws (LUB)

Within the Bedford, Sackville, Sackville Drive, and Beaver Bank, Hammonds Plains, and Upper Sackville planning documents, Regional Council has established floodway designations and floodplain zones that reflect the floodplains of the Sackville Rivers as mapped in the 1980s for the FDRP. The dates for the adoption of these floodplain policies and regulations for each of these planning documents are outlined in the background section of this report.

While the specific names and provisions of the floodplain zones differ between the four plan areas, the floodplain zoning in all four planning documents represents the 1-in-20-year floodway mapped in the 1980s.

Within these floodplain zones, all four planning documents generally limit development to uses that are consistent with the SPI Regarding Flood Risk Areas. Within the floodplain zones, development is limited to conservation-related uses, public and private parks and playgrounds, recreation uses, roadways, transit shelters, and other uses of a similar nature. In addition, the use of structures for human habitation is prohibited within the floodplain zones and the placement of off-site fill is also prohibited.

Within the Bedford and Sackville plan areas, a development that is located outside of the 1-in-20-year floodplain but within the 1-in-100-year floodplain is permitted, provided adequate floodproofing measures are undertaken. Similarly, within the Beaver Bank, Hammonds Plains, and Upper Sackville plan area, development outside of the 1-in-20-year floodplain but within the 1-in-100-year floodplain is considered only by the development agreement. The development agreement policy criteria include ensuring adequate floodproofing measures and attention to the proper placement and stabilization of fill is taken into consideration.

Within all four plan areas, existing homes and businesses located within the 1-in-20-year floodplain zones are considered non-conforming uses and are subject to the restrictions and protections set out in the *HRM Charter*. Non-conforming structures can continue to exist and may be repaired and maintained provided the structure is not enlarged. However, where there is a non-conforming, non-residential use in a structure,

it may not be rebuilt or repaired if destroyed or damaged by fire or otherwise to the extent of more than seventy-five percent of the market value of the building above its foundation. In addition, a non-conforming use of land or a non-conforming use in a structure may not be permitted to restart if discontinued for a continuous period of six months.

Non-conforming residential uses have different enabling conditions for rebuilding under the *HRM Charter*. If the non-conforming structure containing the residential use is destroyed or damaged by fire or otherwise, it can be rebuilt if it is used primarily for residential purposes.

The Bedford MPS relaxes restrictions on non-conforming uses by allowing consideration of the redevelopment of existing uses within the 1-in-20-year Floodway Zone through the development agreement process, subject to the proponent agreeing to maintain or enhance, where possible, the water retention capabilities of the 1-in-20-year floodway.

Regional Plan Floodplain Policy Amendment

Regional Council initiated the Regional Plan Review in February 2020. In June 2023, the Draft Regional Plan was released for public engagement purposes. It was anticipated that refinements to the Draft Plan would result from this feedback and that a revised Regional Plan would be prepared for consideration of Regional Council in 2025.

Public engagement took place from June 20 to October 27, 2023. The Draft Regional Plan [What We Heard Report](#) was posted on the Shape Your City Webpage in December 2023. The following themes emerged relative to the mapping and management of floodplains within HRM:

- Desire for better mapping and data collection for watersheds, wetlands, and floodplains throughout HRM, and
- Limit or prohibit development in floodplains and look for applications of nature-based solutions to mitigate flooding.

In response to public input, staff adjusted the Draft Regional Plan amendments that were released in June 2023. The proposed Regional Plan was scheduled to be brought forward to Regional Council for adoption in October 2024. However, as outlined in the [staff report](#) to Regional Council on October 1, 2024, the schedule for the Draft Regional Plan has been delayed.

In order to enable the adoption of the proposed amendments to the floodplain policies for the Sackville and Little Sackville rivers as set out in this report, one of the proposed amendments contained in the Draft Regional Plan has to be brought forward for adoption under this process to update the floodplain policies and regulations as outlined in this report. The required amendment to the Regional Plan will align the floodplain policies and regulations with the Statement of Provincial Interest Regarding Flood Risk Areas. The Regional Plan floodplain policy amendment is being carried out in accordance with the public participation resolution that was adopted by Regional Council for the Regional Plan Review in February 2020.

Sackville Rivers Floodplains

The proposed Sackville Rivers Floodplain policy and regulatory amendments contained within this report were presented to the public at six public information meetings that were held over two days on August 21 and August 28, 2024. A few adjustments have been made to the proposed amendments in response to public input, as follows:

1. An adjustment was made to enable consideration of developments that are designed to withstand a flood and allow flood waters to flow through, and where a hydrotechnical study has been undertaken to verify that the proposed development will not cause an increase to upstream or downstream flooding or flood elevations or alter river flows. At the public information meetings in August, this policy was proposed to apply only to existing non-residential development. It is now proposed for consideration on vacant lands to allow innovative designs to be considered where a hydrotechnical study verifies that the development may take place without impact.

2. A change was also made to allow consideration of the uses that may be considered by development agreement in an abutting designation of a property within the proposed FFO (Flood Fringe Overlay) Zone, provided those uses are in line with those authorized under the Statement of Provincial Interest Regarding Flood Risk Areas.
3. A boat house that is accessory to an existing residential development may also be permitted around the lakes in the Beaver Bank, Hammonds Plains and Upper Sackville plan area.

Detailed information about the steps that were taken to engage the public in the development of the proposed Sackville Rivers Floodplain policies and regulations are outlined under the Community Engagement section of this report.

DISCUSSION

There have been substantial alterations made to the Sackville River and Little Sackville River floodplains since the floodplains were initially mapped under the Canada-Nova Scotia FDRP in the 1980s. Using improved tools and technologies, more precise data, modern computer models, and available knowledge about climate change, CBCL undertook a hydrotechnical study to develop updated maps that show where areas are expected to flood into the year 2100.

The differences between the 1980s floodplains and the 2024 floodplains are illustrated on Maps 1- 4. As the maps illustrate, the 1-in-20-year floodway that was mapped in 2024 now encompasses a substantially larger area than the 1-in-20-year floodway that was mapped in the 1980s.

Flooding is a natural hazard that places people, property, infrastructure, and communities at risk and the flows along the Sackville and Little Sackville Rivers are fast-flowing and hazardous during flood events. Development along the 1-in-20-year floodway should, therefore, be managed to a floodway standard as set out under the SPI.

In recognition of the substantial amount of development that has taken place within the updated floodplain areas, the proposed changes to the planning documents will take an adaptation approach to floodplain management in the newly identified floodplains.

Proposed Floodplain Policies and Regulations

Attachment 2 provides a summary of the proposed amendments to the planning documents. Below is an outline of how these changes function.

No changes to the 1980s floodplain regulations are recommended. Areas identified through the 2024 update that are no longer within the 1980s floodplains (1-in-20-year floodway and 1-in-100 flood fringe) must be retained in the Floodplain Designation to encompass all areas that were designated under the Canada-Nova Scotia FDRP. They must also be included within the Floodplain Designation to enable the creation of policies and regulations for development in a manner that is reasonably consistent with the requirements of the SPI.

The proposed Floodplain Designation encompasses the 2024 floodplains and the 1980s floodplains. To distinguish between the 1980s floodplains and the 2024 floodplains, the floodplain zone that applies to the 1-in-20-year floodway that was identified under the Canada-Nova Scotia FDRP will be renamed with the year in which those floodplains zones were first adopted. The P-3 (Floodplain) Zone that was adopted under the Sackville LUB, for example, will be renamed 1994-P-3 (Floodplain) Zone. A 2024 FWO (Floodway Overlay) Zone is proposed for the portion of the 1-in-20-year floodway that is not covered by an existing floodplain zone. A 2024 FFO (Flood Fringe Overlay) Zone is proposed for the 1-in-100-year flood fringe that was identified under the recent hydrotechnical studies.

Most areas encompassed by the 1980s floodway that are outside the 2024 floodway and are no longer subjected to the same level of flood risk, according to recent hydrotechnical studies, are proposed to be

rezoned to the adjacent non-floodplain zone. Floodproofing will be required for developments located within these areas. Most areas encompassed by the 1980s flood fringe that are now outside of the 2024 flood fringe, will also be identified as areas where floodproofing will be required under the LUBs. Even though these areas are above the 1-in-100-year elevations, as identified under the recent hydrotechnical studies, subgrade structures should be floodproofed as a precautionary measure.

The 2024 Floodway Overlay (FWO) Zone is proposed to be applied over the existing zones that are located within the 2024 floodway, starting from the outer edge of the 1980s 1-in-20-year floodplain zone. This zone will permit parks, recreation uses, conservation uses, public utilities, roads, trails, and parking areas. Resource uses will also be permitted in the FWO Zone in the Sackville and Beaver Bank, Hammonds Plains, and Upper Sackville LUBs. Boat houses that are accessory to a residential use will also be permitted in this zone under the Beaver Bank, Hammonds Plains, and Upper Sackville LUB.

Existing non-residential uses shall be permitted in the FWO Zone in all four LUBs and may be reconstructed to the same extent that they currently exist with some minor opportunities to build a universal access ramp or a loading dock. Existing non-residential uses will also be permitted to change in use to any non-residential land use permitted in the underlying zone except for residential-type institutions that would be difficult to evacuate in the event of a flood or uses involving the storage, distribution, or manufacturing of hazardous materials. Floodproofing will be required to protect the above-grade floors from flooding, and any underground structures must be designed to withstand a flood.

A 2024 Flood Fringe Overlay (FFO) Zone is proposed to be applied over the existing zones that are located within the 2024 1-in-100-year flood fringe. All uses permitted in the underlying zone are permitted within the FFO Zone except for uses that would be hard to evacuate in the event of a flood, such as shared housing, hospitals or daycares, or uses involving the storage, distribution, or manufacturing of hazardous materials. Any development within the FFO Zone must be floodproofed.

Development agreement policies are proposed to enable the expansion and redevelopment of existing non-residential developments or new developments on vacant land. Such developments may only be considered if it can be verified through a hydrotechnical study that the proposed development will not contribute to increased flooding of adjacent properties, increased upstream or downstream flooding, or altered river flows.

The proposed development will be required to be designed to withstand a flood and to allow the flow-through or storage of floodwaters associated with the 1-in-100-year design event. The proposed development site must also be designed to mimic the services of nature to mitigate flooding and manage stormwater flows through the application of nature-based solutions including Green Infrastructure. This nature-based approach aims to preserve, restore, and enhance the riverine ecosystem through resilient stormwater management.

The types of uses that may be considered by development agreement vary between the FWO and FFO zones. Within the FWO Zone, non-residential uses permitted in the underlying zones may be considered. Within the areas zoned FFO Zone, uses considered by development agreement within the abutting designation, including residential uses, may be considered if the development is floodproofed and designed to withstand a flood. No development of residential-type institutions such as hospitals, shared housing, or daycares that are difficult to evacuate during an emergency can be considered in either of these zones. No uses involving the distribution, storage, or manufacturing of hazardous materials can be considered.

The proposed floodplain policies also prohibit the placement of off-site fill within the FWO Zone except fill used for the construction of roads where a hydrotechnical study verifies that the fill will not contribute to increased flooding of adjacent properties, increased upstream or downstream flooding, or altered river flows. Limitations are also proposed for the placement of fill within the FFO Zone, except for the purposes of floodproofing. A hydrotechnical study will be required to confirm that the placement of fill and grade alteration will not contribute to the increased flooding of adjacent properties, increased upstream or

downstream flooding or altered river flows.

The need to update floodplain policies and zoning boundaries every ten years, at a minimum, is acknowledged under the proposed policies within the Floodplain Designation. This is to ensure that land use controls accurately reflect current climate change predictions, new investments in mitigation measures, and advancements in floodplain modeling techniques. Policy is proposed to direct the municipality to assess the need to update the floodplain policies every 10 years.

Regional Municipal Planning Strategy Amendment

The Regional Plan limits development in floodplains to protect the public from property damage and potential loss of life and to reduce the need for costly and environmentally damaging structural flood control measures. Policy E-21 of the Regional Plan restricts the types of structures, uses, and infrastructure that are permitted within the 1-in-20-year and 1-in-100-year floodplains and which are contingent on hydrotechnical studies that establish no increase to upstream or downstream flooding, or alteration of river flows.

The SPI enables the accommodation of existing non-residential uses and the expansion of those uses where it can be demonstrated through a hydrotechnical study that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding or alter river flows. It also allows for the consideration of proposed developments that are innovatively designed to withstand a flood and allow flow-through.

Though extensive public engagement with both the draft Regional Plan and the Sackville and Little Sackville Rivers floodplain processes, HRM has developed and presented draft proposed policies to the public that take an adaptation approach to floodplain management rather than restrictive regulations as set out in Policy E-21. The proposed amendments to the SMPs and LUBs recognize that the floodplains along the Sackville and Little Sackville Rivers are developed and seek to accommodate the existing extent of current non-residential development and allow opportunities for expansion or redevelopment. This is consistent with the allowances for development under the SPI Regarding Flood Risk Areas.

The proposed amendment to the Regional Plan repeals and replaces Policy E-21, as outlined in Attachment A. This amendment will require that floodplain policies adopted under SMPs and LUBs be reasonably consistent with the SPI Regarding Flood Risk Areas. It is recommended that Regional Council adopt the revised policy, as it provides for the development of policies and regulations that protect the public and property within flood risk areas through innovations in design and adaptation measures. This amendment is also in alignment with language that is proposed in the current Draft Regional Plan package (as discussed above).

Priority Plans

By Policy G-14A of the Regional Plan, these proposed policies and regulations were assessed against the objectives, policies and actions of the priorities plans, inclusive of the Integrated Mobility Plan, the Halifax Green Network Plan, HalifACT, and Halifax's Inclusive Economic Strategy 2022-2027. In this case, the following priority plan considerations were considered in the recommendation of this report:

- 1) **Halifax Green Network Plan** – The proposed policies and regulations will manage development along a riparian corridor which is important for wildlife movement and protection of the aquatic ecosystem.
- 2) **Integrated Mobility Plan** – No specific policy conflicts exist between the proposed policy and the Integrated Mobility Plan. The proposed policies enable the development of trails, roads and boardwalks to facilitate connectivity where a hydrotechnical study verifies that this form of development will not contribute to an increase in upstream or downstream flooding or alter river flows.
- 3) **Halifax's Inclusive Economic Strategy 2022-2027** – No specific policy conflicts arise between the proposed policy and the Inclusive Economic Strategy. The proposed policy recognizes that existing commercial developments have taken place along the floodplains and makes

accommodation for their continued development and potential expansion where a hydrotechnical study verifies that this form of development will not contribute to an increase in upstream or downstream flooding or alter river flows.

- 4) **HalifACT** - is one of the most ambitious climate action plans in Canada to achieve net-zero emissions by 2050. The proposed policies and regulations will manage development along identified flood risk areas. The HRM riparian buffer policies and new policies to reduce parking requirements for development along the floodway and the inclusion of measures that mimic natural processes within the site design can assist in the absorption of carbon and improve climate resiliency.

Conclusion

The proposed amendments are presented as Attachment A to the Regional Municipal Planning Strategy and Attachments B1-B4 and C1-C4 to the SMPs and LUBs for Beaver Bank, Hammonds Plains, and Upper Sackville, Bedford, Sackville, and Sackville Drive plan areas to update the policies and regulations for the Sackville and Little Sackville Rivers Floodplains. These amendments will protect the public from the risks of flooding by ensuring that future developments taking place within the floodplain do not contribute to an increase in upstream or downstream flooding or alter the rivers' flows. The proposed amendments will not prevent the natural occurrence of flooding along these rivers or anticipated flooding impacts on existing development within the floodway and floodway fringe. The proposed policies and regulations will, however, enable consideration of development proposals if structures are designed to withstand a flood and allow flow-through, and if the site is designed in a manner that naturally attenuates flows. The proposed amendments will also give the public knowledge of where flooding is expected to occur so they can make informed choices about development.

It is recommended that Regional Council give First Reading to adopt the proposed amendments as outlined in Attachments A, B1-B4 and C1-C4; and schedule a public hearing.

FINANCIAL IMPLICATIONS

There are no financial implications arising from these proposed amendments.

RISK CONSIDERATION

There are no significant risks associated with the proposed floodplain policy and land use regulations recommended for Regional Council's approval. The proposed amendments maintain all of the areas that were delineated under the Canada-Nova Scotia FDRP as areas that have the potential for flooding. Adjustments have been made to rezone properties determined to be beyond the 1980s floodplains under the recent hydrotechnical studies to an adjacent non-floodplain zone. These areas, however, are still within an area where proposed development will be required to be floodproofed as a precautionary measure. This is reasonably consistent with the SPI Regarding Flood Risk Areas. By adopting policies and regulations to introduce appropriate controls over developments in the areas that have been determined to be within the 2024 floodplains, Council will be reducing the risk to public safety, property damage, and costly infrastructure repairs.

This application involves proposed Regional Municipal Planning Strategy amendments, which are at the discretion of Regional Council. These amendments are not appealable to the Nova Scotia Utility and Review Board.

COMMUNITY ENGAGEMENT

The community engagement process is consistent with the intent of the HRM Community Engagement Strategy, the *Halifax Regional Municipality Charter*, and the Public Participation Administrative Order (2023-002-ADM). The level of community engagement was consultation, achieved through several public engagement opportunities since Council initiated the public participation process to amend the planning documents to implement the findings of the 2017 CBCL Floodplain Study Phase II. The following steps were taken to engage the public during this process:

- **Sackville Rivers Floodplain Webpage** was launched on the HRM website when the process to amend the affected planning documents was initiated on August 14, 2018. The site provided updates about the Sackville Rivers Floodplain project throughout its duration. The site contains information about studies that were completed to determine the extent of the 2024 floodplains, interactive mapping where residents could search and determine where the floodplains were relative to their property, answers to frequently asked questions about floodplains, information about the planning process in general and the status of the project, and information about meetings and events where the public could take part in the process.
- **Stakeholder Meetings** were held with commercial property owners in 2018 to provide information about the findings of the 2017 CBCL Sackville Rivers Floodplain Study Phase II.
- **Three open houses** were held in 2018 to seek feedback on the findings of the 2017 CBCL Sackville Rivers Floodplain Study. Approximately 100 people attended the open houses. The most common theme reiterated throughout the events was that residents supported the updated floodplains and agreed something was needed to address flooding in the area. Concerns about the potential loss of development rights and concerns about insurance coverage were also expressed, along with fear for public safety. Some residents had technical concerns and questions about the study and asked for additional information. A copy of the What We Heard Report 2018 is attached to this report as Attachment 3.
- **Six Public Information Meetings** were held in August 2024 to receive feedback on the draft floodplain regulations for the Sackville and Little Sackville Rivers. A total of 241 people attended the public meetings. A copy of the What We Heard Report 2024 is attached to this report as Attachment 4. The minutes to the August 21 and 28, 2024 public information meetings are attached to this report as Attachments 4-A and 4-B, respectively.
- **A formal public hearing** will also be required prior to Council's decision on the amendments.

ENVIRONMENTAL IMPLICATIONS

The proposed amendments are intended to restrict potentially hazardous development activity within the floodway to protect public safety and to promote the protection, retention, and restoration of the features and functions of the natural drainage system. Any future development within this floodway will be required to meet or exceed the following requirements:

- A hydrotechnical study conducted by a qualified professional engineer demonstrating the proposed development will not contribute to increased upstream or downstream flooding or alter river flows.
- Demonstration that the proposed development has been designed and will be constructed in a manner that preserves the existing natural drainage features, restores or enhances those natural drainage features that have been degraded or destroyed, and mimics those services of nature which enhance the riverine ecosystem and its functionality by restoring habitat, improving biodiversity, buffering the impacts on the riparian system, and restoring natural floodplain function.

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter (HRM Charter), Part VIII, Planning & Development

Statement of Provincial Interest (SPI) Regarding Flood Risk Areas

ALTERNATIVES

Regional Council may choose to:

1. Modify the proposed amendments to the planning documents, as set out in Attachments A, B1 to B4, and C1 to C4 of this report. If this alternative is chosen, specific directions regarding the modifications are required. Substantive amendments may require a supplementary report and another public hearing to be held before approval is granted. A decision of Council to approve or refuse the proposed amendments is not appealable to the N.S. Utility and Review Board as per Section 262 of the *HRM Charter*.
2. Refuse the proposed amendments to the Regional Plan; and amendments to the Beaver Bank, Hammonds Plains, and Upper Sackville, Bedford, Sackville, and Sackville Drive MPSs and LUBs. This is not a recommended alternative since the amendments are required to protect public safety. A decision of Council to approve or refuse the proposed amendments is not appealable to the N.S. Utility and Review Board as per Section 262 of the *HRM Charter*.

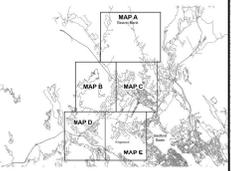
ATTACHMENTS

Map 1	Comparison of the 1980s and 2024 floodplain areas under the Beaver Bank, Hammonds Plains, and Upper Sackville Planning Documents
Map 2	Comparison of the 1980s and 2024 floodplain areas under the Bedford Planning Documents
Map 3	Comparison of the 1980s and 2024 floodplain areas under the Sackville Planning Documents
Map 4	Comparison of the 1980s and 2024 floodplain areas under the Sackville Drive Planning Documents
Attachment 1	Recommendations for Flood Mitigation under the Floodplain Mitigation Study produced by DesignPoint, 2020
Attachment 2	Summary of Proposed Amendments to the Planning Documents
Attachment 3	2018 What We Heard Report
Attachment 4	2024 What We Heard Report
Attachment 4-A	Public Information Meeting Minutes August 21, 2024
Attachment 4-B	Public Information Meeting Minutes August 28, 2024
Attachment A	Proposed Amendment to the Regional Plan Floodplain Policy
Attachment B1	Beaver Bank, Hammonds Plains, and Upper Sackville SMPS Amendments
Attachment B2	Bedford SMPS Amendments
Attachment B3	Sackville SMPS Amendments
Attachment B4	Sackville Drive SMPS Amendments
Attachment C1	Beaver Bank, Hammonds Plains, and Upper Sackville LUB Amendments
Attachment C2	Bedford LUB Amendments
Attachment C3	Sackville LUB Amendments
Attachment C4	Sackville Drive LUB Amendments

BEAVER BANK, HAMMONDS PLAINS AND UPPER SACKVILLE

-  FP Floodplain Designation (1987)
-  FO Floodway Overlay Zone (2024)
-  FFO Flood Fringe Overlay Zone (2024)

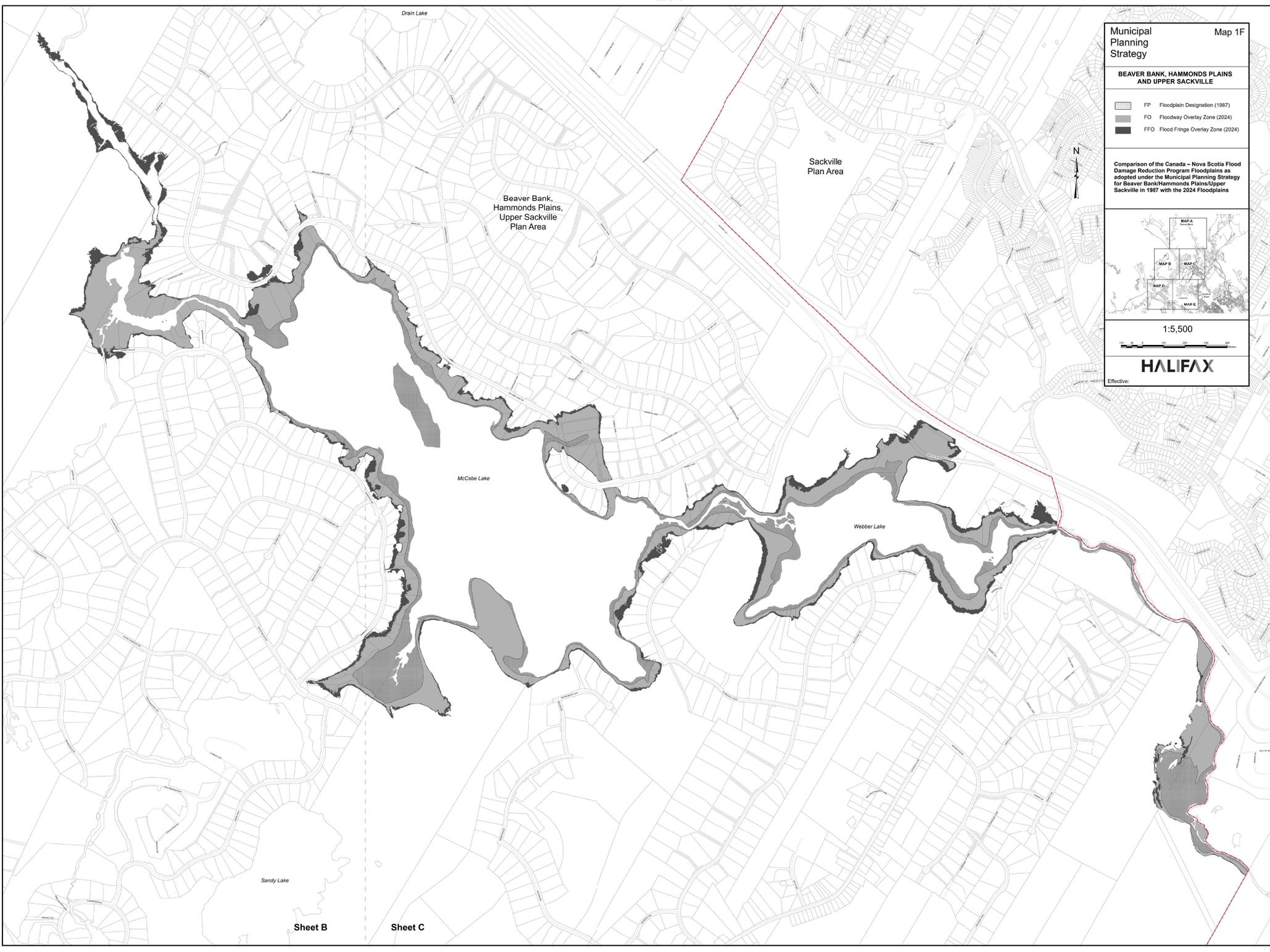
Comparison of the Canada - Nova Scotia Flood Damage Reduction Program Floodplains as adopted under the Municipal Planning Strategy for Beaver Bank/Hammonds Plains/Upper Sackville in 1987 with the 2024 Floodplains



1:5,500

HALIFAX

Effective:



Beaver Bank,
Hammonds Plains,
Upper Sackville
Plan Area

Sackville
Plan Area

McCabe Lake

Webber Lake

Sandy Lake

Sheet B

Sheet C

Municipal Planning Strategy Map 1A

BEDFORD

-  FW Floodway Designation (1991)
-  FO Floodway Overlay Zone (2024)
-  FFO Flood Fringe Overlay Zone (2024)

Comparison of the Canada - Nova Scotia Flood Damage Reduction Program Floodplains as adopted under the Municipal Planning Strategy for Bedford in 1984 with the 2024 Floodplains

1:4,000



HALIFAX

Effective:



Municipal Planning Strategy

SACKVILLE

- FP Flood Plain Designation (1994)
- FO Floodway Overlay Zone (2024)
- FFO Flood Fringe Overlay Zone (2024)

Comparison of the Canada – Nova Scotia Flood Damage Reduction Program Floodplains which was first adopted under the Municipal Planning Strategy for Sackville in 1994 and then re-adopted for Sackville Drive in 2002 with the 2024 Floodplains

1:6,000

HALIFAX

Effective:

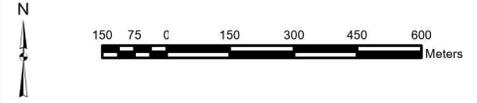


Secondary Planning Strategy

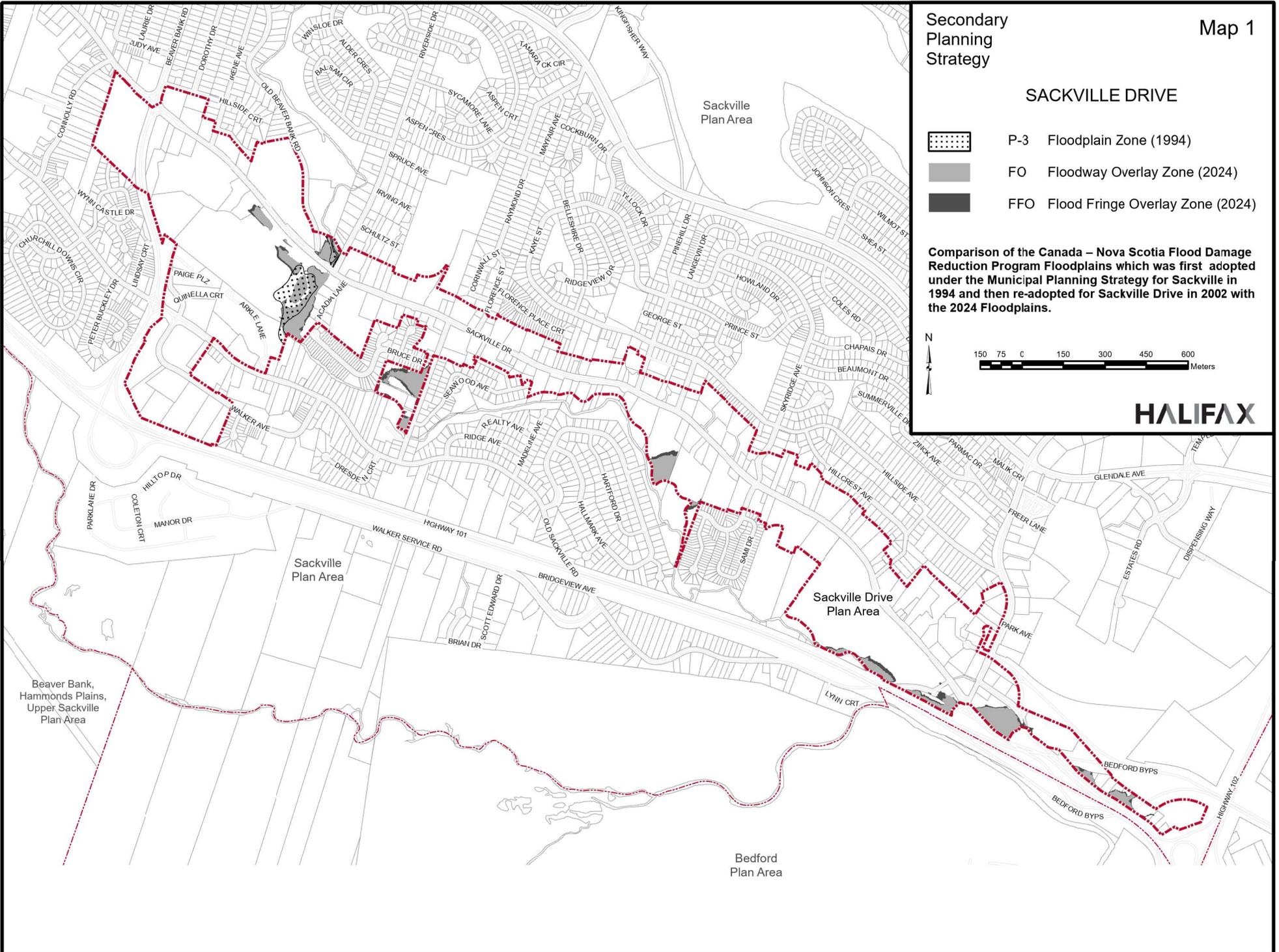
SACKVILLE DRIVE

-  P-3 Floodplain Zone (1994)
-  FO Floodway Overlay Zone (2024)
-  FFO Flood Fringe Overlay Zone (2024)

Comparison of the Canada – Nova Scotia Flood Damage Reduction Program Floodplains which was first adopted under the Municipal Planning Strategy for Sackville in 1994 and then re-adopted for Sackville Drive in 2002 with the 2024 Floodplains.



HALIFAX



**Summary of Recommendations -from the Sackville Rivers Mitigation Planning Study,
(DesignPoint Engineering & Surveying Limited, 2020)**

1. Place restrictions on future development within the floodplain identified in the 2017 Phase II Study Report and include elevation restrictions based on the water surface profiles associated with Map 9, allowing adjustments to be made with topographic survey information from a licensed surveyor;
2. Implement a watershed-specific stormwater management strategy which relates development to downstream flow in the rivers and which includes the application of green infrastructure (GI) and nature-based solutions (NbS) for stormwater management (also commonly referred to as low-impact development (LID) principles, and stormwater best management practices BMPs);
3. Require stormwater management for unserviced developments within the watershed (in conjunction with recommendation 2);
4. Consider updated design flows and floodplain widths when constructing or reconstructing any structure which crosses the Sackville or Little Sackville Rivers;
5. Consider constructing a control structure at the outlet of McCabe Lake based on the 1-in 100-Year design storm and the typical range in lake level;
6. Area 1 – consider constructing an overflow diversion to keep the historical maximum flow within the riverbanks from Range Park to the Sackville River outlet;
7. Area 1 – Purchase properties in close proximity to the river as identified in this report;
8. Area 2 – Investigate the storm and sanitary sewers in this area and consider increasing capacity where needed;
9. Area 3 – Investigate local storm drainage infrastructure and consider upgrades as required to provide adequate drainage;
10. Area 4 – Evaluate local culverts in the area and consider upgrading the culverts as needed (this could be done in conjunction with Area 10);
11. Area 5 – Purchase properties within the 1 in 100-Year flood lines;
12. Area 6 – Evaluate the culvert under Millwood Drive and consider upgrading as necessary;
13. Area 7 – Evaluate local drainage routes and consider upgrading as needed;
14. Area 8 – Purchase properties within the 1 in 100-Year flood lines;
15. Area 9 – Construct a protective berm at the rear of homes within the flood lines;
16. Area 10 – Evaluate local culverts in the area and consider upgrading the culverts as needed (this could be done in conjunction with Area 4); and
17. Area 11 – Accept flooding conditions.

Summary of Proposed MPS and LUB Amendments Beaver Bank/ Hammonds Plains/ Upper Sackville, Bedford, Sackville, and Sackville Drive	
<ul style="list-style-type: none"> ● Creation of one Flood Plain Designation under the MPSs encompassing the 1980 and 2024 Floodplains. 	<p><i>(See Attachment B: Schedule B1-1 for Beaver Bank/ Hammonds Plains/ Upper Sackville; Schedule B2-1 for Bedford; Schedule B3-1 for Sackville; Schedule B4-1 for Sackville Drive)</i></p>
<ul style="list-style-type: none"> ● Renaming the existing 1-in-20-year Floodplain Zone to the date it was first established under the applicable MPS to distinguish between the 2024 floodplains and those determined through the Canada-Nova Scotia FDRP. 	
<ul style="list-style-type: none"> ● Creation of a 2024 Floodway Overlay Zone (FWO) <ul style="list-style-type: none"> ○ Only applies to areas within the 1-in-20-year floodway beyond the original floodplain zone. The existing zoning underneath the overlay zone remains in effect, and the conditions of the FWO Zone regulate permitted development. 	<p><i>(See Attachment C: Schedule C1-1 for Beaver Bank/ Hammonds Plains/ Upper Sackville; Schedule C2-1 for Bedford; Schedule C3-1 for Sackville; and Schedule C4-1 for Sackville Drive)</i></p>
<ul style="list-style-type: none"> ● 2024 Floodway Overlay Zone (FWO) permitted uses <ul style="list-style-type: none"> ○ Existing non-residential uses ○ Public and private parks and playgrounds ○ Recreation uses ○ Conservation-related uses ○ Public utilities, trails, and roadways ○ Parking areas ○ resource uses only in BB/HP/US and Sackville ○ Boat house accessory to an existing residential use in the Beaver Bank/ Hammonds Plains/ Upper Sackville, Bedford, and Sackville plan areas 	
<ul style="list-style-type: none"> ● 2024 Floodway Overlay Zone (FWO) conditions <ul style="list-style-type: none"> ○ No structure shall be used for human habitation. ○ No storage, distribution, transfer, or manufacturing of hazardous materials. ○ Any structure must be designed to withstand a flood and to allow flow through. ○ Placement of off-site fill or alteration of grades is prohibited except for road. Construction and public utilities. ○ Hydrotechnical study confirming no flooding impacts from the placement of fill for road construction and public utilities. ○ Reconstruction of existing non-residential uses permitted, provided the building is not enlarged. ○ May construct an accessibility ramp or loading dock by submitting a hydrotechnical study confirming no impact. ○ Existing non-residential use reconstruction must be floodproofed – no mechanical or electrical equipment permitted below the nearest upstream 1-in-100-year flood elevation. ○ Any structure constructed below the 1-in-100-year flood elevation must be designed to withstand a flood and allow for flow through. 	

Summary of Proposed MPS and LUB Amendments Beaver Bank/ Hammonds Plains/ Upper Sackville, Bedford, Sackville, and Sackville Drive	
<ul style="list-style-type: none"> ○ An existing non-residential use may change to another non-residential use permitted in the underlying zone – no expansion and no uses involving difficult-to-evacuate institutions such as shared housing, hospitals or daycares, or uses involving the storage, distribution, transfer, or manufacturing of hazardous materials. 	
<ul style="list-style-type: none"> ● Creation of a 2024 Flood Fringe Overlay Zone (FFO) <ul style="list-style-type: none"> ○ Only applies to areas within the 1-in-100-year flood fringe beyond the FWO Zone. The existing zoning underneath the overlay zone remains in effect, and the conditions of the FFO Zone regulate permitted development. <p style="text-align: center;"><i>(See Attachment C: Schedule C1-1 for Beaver Bank/ Hammonds Plains/ Upper Sackville; Schedule C2-1 for Bedford; Schedule C3-1 for Sackville; and Schedule C4-1 for Sackville Drive)</i></p>	
<ul style="list-style-type: none"> ● 2024 Flood Fringe Overlay Zone (FFO) permitted uses <ul style="list-style-type: none"> ○ All uses permitted in the underlying zone are permitted except for uses involving hard-to-evaluate institutions such as shared housing, hospitals, or daycares or uses involving the storage, distribution, or manufacturing of hazardous materials. 	
<ul style="list-style-type: none"> ● 2024 Flood Fringe Overlay Zone (FFO) conditions <ul style="list-style-type: none"> ○ All proposed development must be floodproofed by: <ul style="list-style-type: none"> ▪ Constructing all habitable floors above the nearest upstream 1-in-100-year flood elevation. ▪ Placing all electrical and mechanical equipment above the 1-in-100-year flood elevation. ▪ Designing and constructing all structures below the 1-in-100-year flood elevation to withstand a flood and to allow flow through. 	
<ul style="list-style-type: none"> ● Uses Considered by Development Agreement subject to Hydrotechnical Studies <ul style="list-style-type: none"> ○ Developments permitted by development agreement in areas abutting the Floodplain Designation. ○ Expansion of existing non-residential uses located within the 2024 FWO Zone and 1980s Floodplain Zones. ○ Development on vacant land permitted in the zone underlying the FWO Zone. 	
<ul style="list-style-type: none"> ● Lands no longer within the 1980s 1-in-20-year floodplain as determined under the CBCL Hydrotechnical Study are proposed to be rezoned to the adjacent non-floodplain zone on the property in most areas along the floodplain. These properties will remain within the Floodplain Designation to signify that they are areas determined to be within the 1980s floodplains as delineated under the Canada-Nova Scotia FDRP. Development, however, will be permitted as permitted by the adjacent non-floodplain zone. <p>A few properties along Sackville Drive are partially located within the Sackville Drive Secondary Plan Area and partly within the Sackville Plan Area. No abutting non-floodplain zone under the Sackville Land Use By-law can be applied to the back portion of these properties since the abutting non-floodplain zone is within the Sackville Drive Land Use By-law. A Policy (Policy FP-6D under the Amending By-law for the Sackville Municipal Planning Strategy) is proposed to enable the rezoning</p>	

**Summary of Proposed MPS and LUB Amendments
Beaver Bank/ Hammonds Plains/ Upper Sackville, Bedford, Sackville, and Sackville Drive**

of the non-floodplain portions of those properties during the Suburban Plan. A development agreement policy is proposed to allow consideration of uses permitted by development agreements within abutting plan areas to be extended. This would allow the consideration of uses permitted by development agreement within the Sackville Drive Plan Area to be extended to the back portion of these properties within the Sackville Plan Area.

(See Attachment C: Schedules C1-2, C1-3, C1-4, C1-5, C1-6 for Beaver Bank/ Hammonds Plains/ Upper Sackville; Schedules C2-2, C2-3, C2-4, C2-5 for Bedford; Schedules C3-2, C3-3, C3-4, C3-5, C3-6, C3-7, C3-8, C3-9 for Sackville; and Schedule C4-2 for Sackville Drive)

- **Lands no longer within the 1980s 1-in-100-year flood fringe or the 1980s 1-in-20-year floodway** as determined through the 2017 CBCL Sackville Rivers Floodplain Study Phase II will be maintained within the Floodplain Designation. Lands no longer within the **1980s 1-in-100-year flood fringe** are currently zoned non-floodplain. A provision will be kept under the LUBs to require that any structures developed below the nearest upstream 1-in-100-year elevation in areas previously within the **1980s 1-in-100-year flood fringe or the 1980s 1-in-20-year floodway** must be floodproofed.

(See Attachment C: Schedules C1-2, C1-3, C1-4, C1-5, C1-6 for Beaver Bank/ Hammonds Plains/ Upper Sackville; Schedules C2-2, C2-3, C2-4, C2-5 for Bedford; Schedules C3-2, C3-3, C3-4, C3-5, C3-6, C3-7, C3-8, C3-9 for Sackville; and Schedule C4-2 for Sackville Drive)

- Policy is proposed to assess the need to **update floodplain policies and zoning boundaries** every ten years.
- The proposed FWO Zone allows a **reduction in required parking** along the floodway to increase the amount of pervious surfaces to contribute to improved stormwater management and preservation of natural drainage features.

What we heard: Sackville Rivers Floodplains Open Houses:

Thursday, September 20, 2018 & Saturday, 22, 2018

Project outline:

On August 14, 2018, the Municipality published the findings of the Sackville Rivers Floodplains Study (2017). This Study assessed the Sackville River and the Little Sackville River, and their watersheds, to produce updated floodplain maps. Areas at risk of flooding were evaluated using updated information and computer modeling that forecast the impact of rain storms, snow melt, and ice jams on the rivers.

The new floodplain mapping shows a larger flood impact for the 1-in-20 and 1-in-100-year weather events when compared with older (1980s) flood risk mapping. The 1-in-20 flood event refers to floods that have a 5% chance of occurring in any given year, while the 1-in-100 flood event refers to floods that have 1% chance of occurring in any given year. The Municipality is using this new information to update planning documents to regulate the type of new development that may be allowed to take place in the floodplain areas.

Engagement approach:

We sent letters to over 900 residents whose properties were completely or partially within the updated (2017) floodplains, inviting them to our three public open houses. We also contacted 31 organizations and businesses in the area that are affected by the updated floodplains and invited them to the open houses. The first two open houses were held on Thursday, September 20, 2018, from noon-4 pm and 6-8 pm at the Kinsmen Community Centre in Lower Sackville. The third open house was held on Saturday, September 22, 2018, from noon to 5 p.m. at the LeBrun Recreation Centre in Bedford.

We had five poster boards explaining the background of the Sackville and Little Sackville Rivers floodplain mapping, information about the Sackville Rivers Watershed, the methodology used to create the updated floodplain maps, an explanation of what floodplains are and why the floodplain maps are being updated, and an outline of the planning process used to change the relevant regulations and policies. We displayed historic and present-day photographs of flooding along the Sackville and Little Sackville Rivers and projected drone footage of flooding that took place in 2014 in the area. We had four large maps displayed and the interactive map ready on our laptops so people from the area could see how their property is affected by the floodplain mapping.

We used a casual format where residents and stakeholders could look at the posters and ask questions to the several staff around the room. We also had comment forms scattered throughout the room so attendees could leave comments, concerns, and questions with us to consider when writing new regulations and policies.

Attendance:

In total, roughly 100 people attended our three open houses. Approximately 50 people attended our open house on September 20 from noon-4pm and approximately 30 people attended later that evening for our 6-8pm session. On September 22, 2018, 21 people attended our open house. Most attendees were residents from the affected areas. A considerable number were part of or supporters of the Sackville Rivers Association. A few attendees were representatives of developers with properties in the affected areas.

Common themes from comment forms:

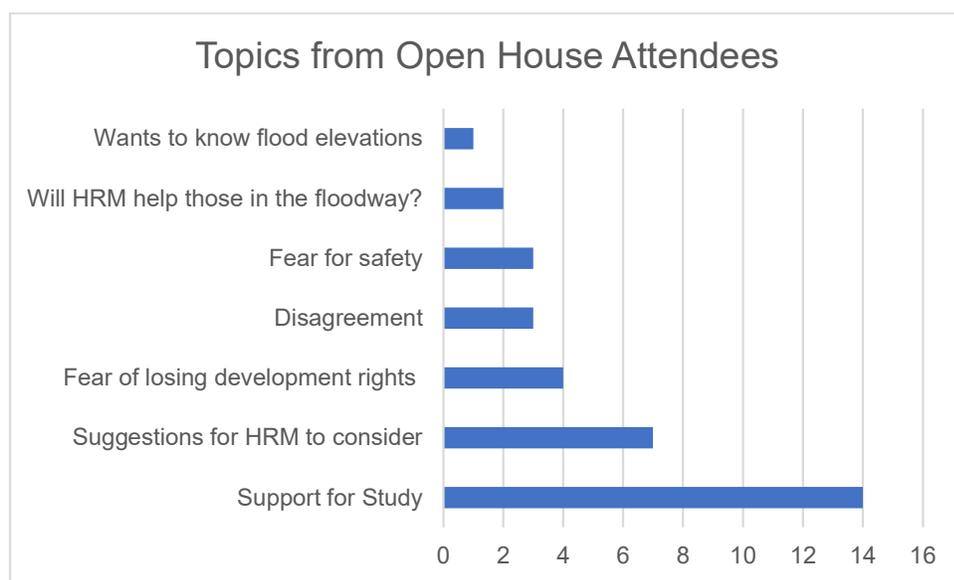
We had comments forms scattered throughout the room that attendees could fill out with questions or comments. Twenty-nine forms were filled-out (two being repeat attendees).

Out of the twenty-nine comments forms filled out, the most common theme is that residents support the updated floodplains and agree something needs to be done to address flooding in the area.

Several residents also gave suggestions of what Staff should consider when writing new policies and regulations based on the updated floodplain mapping. Suggestions for our consideration included the discouragement or restriction of development in the floodplains, infrastructure changes to lessen flood impacts or to increase floodwater storage, the possibility of Halifax purchasing houses most impacted by the floods, sharing the floodplain study with banks and the Insurance Bureau, and more intensive outreach to residents impacted by the updated floodplains.

Less common themes discussed on the comment forms are concerns over the loss of development rights, disagreement with the floodplain maps, fear for public safety, asking for help from Halifax, and wanting more information. Four comment forms address concerns about losing development and land use rights. Three residents believe our floodplain maps are incorrect. Specifically, one resident wants Halifax to formally acknowledge that his house is not within the floodplain. A few residents fear for their own and their neighbour's safety due to actual and possible flooding. The same residents want to know if Halifax will help them if there is flooding or maintain their properties that are damaged by flooding. One resident wants to know the elevation of flooding so they can understand how deep the water would be in the 1-in-20 and 1-in-100-year flood events.

Below is a graph displaying the themes discussed on the comment forms:



What we heard from conversations:

Many attendees did not fill out the comments forms, but Halifax staff and a technical expert had conversations with the attendees. Most attendees wanted to know what was considered when creating the floodplain maps. While some residents were skeptical of the accuracy of the new floodplain mapping, several residents told illuminating stories of flooding that occurred on their properties and in their homes. Many attendees wanted to see how high the floodwaters would be in a 1:20 and 1:100 flood event to get a better idea of the extent of damage that could occur. Some residents expressed fear for their own and their neighbours' safety and wanted to know if the City will be helping them to prevent flooding on their properties. Several residents expressed concerns about how the floodmapping could affect their property insurance and property values. Several residents also raised concerns about losing their development rights.

We learned about the local history of the rivers and surrounding wetlands from long-time residents such as the Barretts (of Barrett Lumber) and the Heflers (of Hefler Forest Products). Both family businesses

run alongside the rivers. The rivers play a large role in their production of lumber products, so the families have thorough understanding of the seasonal changes to the rivers and actually dam the rivers as part of the production of lumber. We also heard stories about how areas with considerable development were once know marshlands only used for cow pastures.

- Firsthand experiences of flooding (McCabe Lake new construction, sewage backup)
- History and information on floods in the area from long-time residents: Barrett Lumber family, Walter Regan, Hefler Forest Products family spoke about private dams that contain flows, culverts, and other development changes in the area
- Skepticism of the updated floodplains from residents who have lived in the area for decades
- Support for the updated floodplains (thought the floodplains were realistic, not from the area but support the protection of floodplains generally)
- Wanting to know the flood elevations
- Fear for safety
- Wanting to know how the floodplain maps were created (technical questions including what was considered and how)
- Worries about insurance and value of property/house
- Worries about development rights
- Wanting to challenge the floodplain maps
- Wanting to know if and when we will update floodplain mapping and zoning for all HRM rivers

What we heard in e-mails:

- Technical questions
- Disputing floodplain mapping

Next: Internal and External stakeholder meetings, draft policies and regulations, public hearing

What we Heard: Sackville Rivers Floodplains Public Information Meetings August 21 & 28, 2024

Halifax Regional Municipality held six public information meetings on August 21st and August 28th, 2024 to receive public input on the draft proposed regulations for future development along the Sackville River and the Little Sackville River Floodplains.

A detailed presentation outlining the history of the Sackville Rivers Floodplains Project, an update on recent modelling, and the proposed draft regulations was given at each of the six sessions. The presentation on Case 21402 - Sackville Rivers Floodplains Proposed Floodplain Regulations can be viewed via this link: [Sackville Floodlines PIM Pres 23 Aug 2024 - HL.pptx](#)

Engagement approach:

HRM sent letters to over 900 residents whose properties or residences were completely or partially within the updated (2024) floodplains, inviting them to the public meetings. HRM staff also contacted organizations and businesses in the area that are affected by the updated floodplains and invited them to the meetings. Staff also provided notices of the meetings on social media and sent public service announcements to local radio and television stations.

The first three meetings on August 21st were held at the Bedford United Church in Bedford. The second three meetings on August 28th were held at the Sackville Lions Club in Lower Sackville.

The meetings took place over the course of the day with the first meeting beginning shortly after the doors opened at 1 PM. Each meeting was preceded by an open house where people could view the poster boards displaying information about the Sackville Rivers Watershed, the Sackville Rivers Floodplain Studies, and the proposed draft regulations. This was designed to give people an opportunity to ask questions of staff one on one.

Three presentations were given each day (two during the afternoon sessions, and one during the evening sessions) followed by a question-and-answer session where individuals could ask questions at the podium and receive answers from the project team.

Attendance:

A total of 241 people attended these public meetings with approximately 77 people attending the meetings in Bedford and 164 people attending the meetings in Lower Sackville.

Themed RESPONSE

Below is a summary of what we heard:

- General concern for flooding and the impacts of natural disasters on the community/the longevity of the river – an agreement that it is important to prioritize public safety and mitigate downstream impacts.
- Comments telling HRM to move faster through this process because the floods and flood damage are going to keep happening.

- Concern that development within the floodplain will cause flooding upstream or downstream of a development. If adopted, want to see the regulations followed.
- Property owners and business owners expressed concern about changes to property value and the limited future of their undeveloped properties.
- Some questioned why other recommendations outlined under the CBCL Study and the Sackville Rivers Flood Mitigation Study are not being undertaken first. It was stated that these studies recommended the preparation of development controls as the number one priority, but some felt the priorities should be reordered or that other projects should be undertaken concurrently to mitigate flooding.
- Concern about the impacts of the floodplain modelling on the value of homes.
- Concern about the impacts of the floodplain modelling on the availability of flood insurance.
- Inquiries about how to develop properties under the proposed regulations such as floodproofing.
- Concern for the people who are consistently flooded and need to know when those properties will be bought out by the government.
- One resident suggested that HRM set up a fund for compensation or relieve property owners within the floodplain from paying taxes.
- Questions raised about how property owners who bought property in areas that are now within a floodplain will be compensated if they cannot develop their lot.
- Questions raised about whether the floodplain zones will apply to the whole property if only a portion of the property is within a floodplain. Clarification was provided to confirm that the floodplain zones would only apply to the portion of the property within the floodplain.
- Questions raised about how to contest the results of spot elevations for individual properties.
- Concern about the need for emergency evacuation plans to allow people to leave their homes and neighbourhoods in the event of a flood. This concern was raised by people who live in homes that are flooded and people who live in the surrounding area even if their homes are not flooded (e.g. Sackville River Heights).
- Some feel that the extent of the floodlines were over estimated.
- Some questioned why infrastructure developments such as the new Burnside Connector were not included in the modelling.
- Concern that the increasing amount of development around lakes and the increasing amount of impervious surfaces are increasing the impacts on stormwater systems.
- Desire for Sandy Lake and other nearby waterways to be included in the mapping or looked at next.
- Suggestions included:
 - Need to put a priority on restoration of wetlands;
 - Pursuing other recommended actions before adopting land use regulations (reordering the steps of from the CBCL report);
 - Need to prevent sewers from backing up into basements;
 - Widen and re-channel river in the lower reaches of the watershed in Bedford;
 - Use technology like sponges for water storage in the event of a flood;
 - Look at existing infrastructure (bridges, culverts) and invest in fixing those;

- Consider the current AND future/proposed impervious surfaces (e.g., road widenings) in the modeling to account for those impacts on water flow;
- Coordinate more with the Municipality of East Hants;
- Consider private culverts into HRM's understanding of the water system; and
- Evaluate the flood mapping every 5 years, not every 10 years.
- Feedback on the engagement itself:
 - Appreciated the opportunity to ask and address questions in a public forum;
 - Found the presentation very informative and valuable; and
 - Would like at least one representative from Halifax Water present.

WHAT YOU ASKED AND HOW WE ANSWERED

Below are links to the meeting notes from each recorded meeting with the questions that were raised and the responses that were given by the project team. The names of the residents asking the questions were redacted to protect the privacy of individual members of the public.

[21402-MeetingNotesRedacted-PIM-24Aug21.docx](#)

[21402-MeetingNotesRedacted-PIM-24Aug28.docx](#)

Thank-you very much for your input. HRM will now start refining the proposed policies and regulations where we can make improvements in response to the suggestions that you gave us. Please stay informed by checking this webpage.

Or by contacting me:

Maureen Ryan, Planner III
ryanm@halifax.ca
782-640-0592

**Public Information Meeting
Case 21402**

The following does not represent a verbatim record of the proceedings of this meeting.

Wednesday, August 21, 2024

1-4 pm and 6-8:30 pm

Bedford United Church, (1200 Bedford highway, Bedford, NS) – Church Hall

STAFF IN**ATTENDANCE:**

Maureen Ryan, Planner III, HRM Planning
Jessica Harper, HRM Principal Planner, Rural Policy and Applications
Tara Couvrette, Processing Coordinator - Planning, HRM Planning
Lisa Arblaster, Planning Information Analyst, Planning Information Services
Katie Clark, Planner II, Regional Planning
Claire Tusz, Planner III, Suburban Plan
Helen Langille, Program Engineer, Development Engineering
Shannon O'Connell, Senior Program Engineer, Development Engineering
Victoria Fernandez, Program Engineer, Development Engineering

ALSO IN**ATTENDANCE:**

Pam Lovelace – Councillor, District 13 (Hammonds Plains, St. Margarets)
Tim Outhit – Councillor, District 16 (Bedford, Wentworth)
Ben Jessome, Hammonds Plains-Lucasville – Liberal MLA
Steve Craig, Sackville Cobequid – PC MLA
Andy Fillmore, Former Halifax MLA

PUBLIC IN**ATTENDANCE:**

Approximately: Afternoon meetings = 45, Evening meeting = 32

1. Call to order and Introductions – Maureen Ryan, Planner

Case 21402: Sackville and Little Sackville Rivers Floodplains

Ms. Ryan introduced herself and the rest of the team. Ms. O'Connell provided the land acknowledgment.

2. Presentations**2a) Presentation by HRM Staff – Helen Langille**

Ms. Langille's presentation included information on the following:

- (a) Project history review;
- (b) Floodplain Modelling update;
- (c) a brief description of the draft regulations;
- (d) what public engagement has been done.

2b) Presentation by HRM Staff – Maureen Ryan

Ms. Ryan's presentation included information on the following:

- (a) Spoke about the plan areas that amendments are being made for,
- (b) Floodplain zones, permitted uses, conditions, existing residential uses, expansion of the existing residential uses, floodproofing,
- (c) Floodway fringe overlay zone, permitted uses, conditions, floodproofing,
- (d) Key elevations, Areas no longer in the floodplain, Policy review, next steps

3. Questions and Comments

Ms. Ryan welcomed attendees to ask questions to staff and the presenters and provide their feedback, including what they liked and disliked about the proposal.

1st Session 1:38 – 2:26 pm

Resident, Sackville:

When can we get this done? Can HRM come up with a working policy where all rivers in HRM will be mapped, zoned and protected. Why wasn't the sub watershed taken into effect, for example Sandy Lake, Lewis Lake and Tomahawk into the calculations.

Ms. Ryan – provided explanation.

Resident, Sandy Lake:

Understands that watershed is a lot bigger than the areas shown on the maps and want to express concern that they haven't been considered. There were lots of people that were drastically affected by floods of last year. Concerned about the possibility of doing any kind of grade alteration or structures being built in the floodplains as we know them now. Once something like this is done it is going to prevent water from coming into that space and water then gets displaced into somebody else's property. Doesn't see any way this can be done at all without effecting other people and that's not right. How is the information being communicated to the public – stated they did not receive any notification about any meetings and neither did one in their area.

Ms. Langille – provided explanation. They also stated Sandy Lake, Lewis Lake and Tomahawk Lake are all included in the model just not in the floodplain map and explained why.

Ms. Ryan explained a notification was sent to all property owners within the floodplain.

Association Representative, Spryfield, Ecology Action Centre:

Concerns that the modelling correctly responds to the Sandy Lake sub watershed because it is largest sub watershed is the Sackville Rivers watershed, so we want to make sure it is included in the modeling. When you were describing the modeling between 2017 and 2024 has that modeling considered the development scenario in Sandy Lake might have changed between 2017 and 2024. There could be more parts of the sub watershed that are paved over.

Ms. Langille spoke to the 2017-model vs the 2024-model.

Ms. Fernandez spoke about Halifax Water and new development.

Resident, Union St.:

Was very effected by the flooding last year. Flooding starts first with the sewer and then the river water. What do we do?

Ms. Ryan provided explanation and spoke about the recommendations.

Councillor Outhit explained that a motion was taken to council to buyout the homes on Union St. The motion was passed to write the province asking that this been done. The province distributed federal money and the province must go to the feds and ask if they can use that money to buy homes as well as fix home. We wrote the province, and that letter has been acknowledged and Councillor Outhits understanding is that they have not received an answer yet.

2nd Session 2:42 – 4:05 pm

Bedford Business Owner, Bedford Highway:

Their comments were about the history of the Sackville River. 1480 Bedford Highway is where their offices are, and they have seen all the floods/flooding – most of the floods were caused by ice backup etc. until this past July. That one was tropical, and this type of flooding has never been seen before. When they put water and sewer in Sackville they brought the main sewer line down across the island which is below the Superstore. Then they cut it across the narrowest part of the Sackville River. They made the channel where my offices are more narrow and higher than it ever was. This is what made the flooding worse. What you must do is lower the channel and widen the river so it can handle these

big floods. This way the water up stream can get out. The bridge that is at, what used to be the Tolson Woolen Mill, and now is the fish hatchery property, the bridge that is there now is in the wrong direction, that needs to be changed. Offered to sell HRM their property and then you can widen the river.

Ms. Ryan provided answer - recommendations.

Ms. Langille spoke to widening and dredging the river. It is correct that river widening and dredging projects have been implemented in several locations across the world to varying degrees of success. In many of these applications, dredging and widening activities were initially conducted to create or maintain a navigable channel for the purposes of transportation – this would not be the case for the Sackville and Little Sackville Rivers. Dredging and widening work is an ongoing process, with significant consequences for environmental and ecological health and long-term river stability being very likely. In the recommendations HRM has received to date through the numerous Sackville Rivers studies done to this point, dredging and channel widening were not recommended due to the complicated nature of the work, and the very considerable associated expense for what was likely to be only a moderate potential decrease in water levels during a high flow event. The 2020 Mitigation plan study did present the option of constructing an emergency overflow channel in “Area 1” between Range Park and Fish Hatchery Park at an estimated cost in excess of \$240M (2020 dollars), should planning and development regulations be deemed insufficient. Dredging and channel widening were not otherwise recommended, and significant additional engineering and environmental investigations would need to be completed before such a drastic and potentially hazardous action could be reasonably considered.

Resident, Shore Dr.:

Our property is a little tiny section in the floodplain zone, does that mean out whole property is going to be nonconforming?

Ms. Ryan – No, The Floodplain Zone will only be applied to the portion of the property that is within the floodplain.

Ms. Langille also spoke to future forecasting

Resident, Bedford West:

If the province acquires properties along Union St. would that not complicate things with widen sections of the Sackville River? Wouldn't the province have to transfer ownership of the properties to HRM? Does a larger block purchase like that give the municipality greater opportunity to mitigate the flooding that could occur through that channel? Are there anticipated or unanticipated downstream damages that have been caused by such a massive storm that would have had unanticipated impacts on the natural flow of Sackville River. Have there been changes to the flow that are temporary or permanent based on what happened during that flood?

Ms. Langille – stated in most case the province buys the properties but then transfers ownership to the municipalities. There is the potential to mitigate the flooding that could occur through that channel through re-naturalizing those sections of the channel that has been acquired.

Ms. Fernandez – spoke to the natural channel of a river, flooding, as well as damages and impacts.

Resident, Middle Sackville:

Currently has an approved building lot in a residential zone that is in the floodplain. So would this land be worthless if I don't get the permits before the proposed regulations take effect. Would you buy my lot out at fair market value? Who would determine that? How do I stay on top of all of this?

Ms. Ryan advised they would need an approved development permit and building permit before these new amendments go through in order to build on a lot in the floodway. You should follow the floodproofing recommendations when you are building it. You would need an approved permit for development before that first notice appears. Buying out properties is a decision beyond the scope of this project. Stay in touch with the website, stay in touch with us.

Resident:

The flood zone is only affecting the portion of the property that is in the flood zone. Only a corner of my house is in the floodplain, would it apply to the whole house or just that corner of the house?

Ms. Ryan – It would only apply to the portion of your house that is in the floodplain.

Resident, Sanwick Dr.:

One option was constructing the McCabe Lake outlet structure – just wondering what that is.

Ms. Langille – the structure already exists (it is a notch weir) – the recommendation is to reconstruct the outlet at McCabe Lake. That is all the information that we have currently.

Resident:

There is landscaping called sponges, which they have been doing in cities around the world, and one place they think a sponge could be created would be the parking lot of the Superstore.

Ms. Langille – Can't say it is possible to do that but something to think about.

Resident, Bedford West:

Respect that the study was singularly focused on the engineering aspect of how to mitigate flood damage going forward however, is there a part two that is considered, an economic impact study or forecast? Whether conducted by the city or property evaluation services to determine what the impacts would be. Not just to properties that are now in floodplains that were not before but vis versa and how that effects market value of their homes. For those property owners that now have just a portion of their properties in a floodplain zone is there some sort of priority service that is available from HRM or a related agency to survey their property and mark the boundaries of that area of their property?

Ms. Ryan – we have not done that study. Determining the impact of values of properties within the floodplain is very subjective and beyond the scope of this project. All studies that have been done are available online. We follow the rules and regulation that are in place at the time requests are made.

Bedford Business Owner, Cascades Spa

Hired an engineer to come in and check the foundation and footing to because although they had to physical damage from the flooding last year they were concerned because they are right on the river. What they were told was the new rock that was installed around the bridge, by Halifax Water, to protect their infrastructure in the area. This new rock encroaches your property and will very likely cause erosion upstream due to not providing a smooth transition along the bank. They have fought with Halifax Water who says, no it is HRM, no it's the province, no it's the Department of Environment, I am like a hamster on a wheel. The biggest part of this is that they told me it has created an ebb and flow where the flow used to come down the river and ran out to sea and now it has created this whirlpool which the engineers feel is going to cause extra problems for me. I need somebody to help me because I may not be as lucky next time.

3rd Session 7:30 - 8:35 pm**Resident, Sandy Lake:**

Wanted clarity around what could be done in the 1–100-year flood plain vs the 1-20-year floodplain.

Ms. Ryan explained that in the 1–20-year floodplain you could rebuild a commercial building in the same footprint. In the 1-100-year floodplain the building can be built in accordance with the requirements of the underlying zone that currently applies to the property but the building would have to be floodproofed.

Resident stated that even though a building is built to be floodproofed, it is still displacing water when the flood does happen, and that water must go somewhere else. That could be into a neighbouring property that wouldn't have flooded otherwise. That is one building but if you put 10 buildings that are displacing water it will affect a lot more properties. Is it the person doing the development that would pay for the engineer to make the building floodproofed? Would there be protections built into allowing somebody to build a building and like this and then they don't follow the standards?

Ms. Ryan stated buildings can be design for flowthrough and to withstand a flood. Gave an explain of sun tower on the Bedford highway. Yes, the person doing the development would be responsible for the engineering costs. The proposed regulations if adopted by Regional Council, will be enforced.

Ms. Langille It would be the financial responsibility of the developer to provide satisfactory evidence

to the municipality that the proposed development will meet the requirements (flood proofing, no negative impacts to neighbouring properties or upstream and downstream properties, ultimate land use, etc.) of regulations. If the developer/proponent does not meet the necessary requirements to build, that approval would not be granted by the municipality.

Resident, Lwr Sackville, Memory Lane:

Thinks the steps are backwards. Their suggestion would be to follow some of the other mitigation procedures first as to not destroy the value of some people's properties. Feels all the development that has happened, and the hard surfaces, increase in population, are causing the issues we are seeing today. Has this plan taken into consideration the effect it is going to have on property owners within the flood zone, when they go to renew their mortgages, and they are told they are now going to need flood insurance and the costs involved with that? What if somebody wants to sell their home – this is going to drop the property value and cause buyers to walk away from deals because we are now in a floodplain zone. Is under the understanding that if your property is within the floodplain zone and gets water on it then you are limited in the possibility of developing your property. I was at the public engagement in 2018 and that was not public engagement. Nobody could answer any of my questions. There was a step missed. This is public engagement.

Ms. Ryan explained the floodplain zones and that only the portion of the property that is encompassed by the zone will be affected by the zoning. Also spoke about the recommendations and affects of the flood zone and evaluations of properties.

Resident, River Lane:

Do you have to apply for permission to make your driveway bigger/wider? The asphalt, or whatever is used to make it wider, would create a problem because the lawns then can't absorb the water and it is causing flooding. With the housing crisis situation, we have to get more and more houses and less soil to absorb the water which will be an issue. Stated the restricting of the 102 will cause the flooding to be much worse – was this taken into consideration? If we have another storm, like the one we had last year, what are we going to do to mitigate that flooding? Suggested a monsoon rains storm, maybe not to that scale, but you could raise the sides of the river and dig it deeper to help with the flooding. You need to do some mitigation now so that there still is a Bedford in 20 years to continue to do mitigation for. If this type of flooding keeps on happening everything will be ruined to the point of no return.

Ms. O'Connell – only for the road opening, believed it would be a development permit.

Ms. Ryan agrees that the creation of more impervious surfaces could be contributing to our downstream flooding problems. We do not have authority over provincial road building. Spoke to managing water. Halifax Water would do the best that they can to mitigate any damages if another storm was to happen. We can't stop the storm from coming but we will do what we can to manage the storms as best we can. Decisions are taking place, on multiple levels, that are targeted towards addressing some of the long-term issues. Spoke about acquiring properties to help in mitigation.

Ms. Langille the report recommendations are given in the order they are given in for a good reason – this is because if we do not start with limiting development in at-risk areas, development will continue. It is irresponsible to invest in protective infrastructure while simultaneously allowing development to occur that could potentially overwhelm that same protective infrastructure. Flooding will happen, and because floodplains are part of the natural footprint of a river, it is in the best interest of residents to do our best to maintain the natural floodplains we still have. Once those areas are protected from development, we can then invest in infrastructure upgrades with an understanding of the extent of the protected floodplain.

Resident, Union St.:

Spoke about flooding over the years – what you put on these properties can affect what happens downstream and upstream.

Resident, Lucasville:

Stated this data is already 5 years old and if you plan on doing a 10-year review that LiDAR information will be 15 years old. Looking at the mapping – the grades have changed, and a lot of new structures have been built. Have you done a building permit review to see what may have changed? There is also a lot of changes due to the 2023 flood – has that been considered? None of these are

reflected in the 2019 LiDAR that was used for this study. Does LiDAR see under decks etc.? Does LiDAR determine basement levels? More detail needs to be thought into that. Hopes that there would be a simple, fair, in expensive process to correct any inaccuracies in the future.

Ms. Langille spoke to the accuracy of LiDAR and how it works. She stated that the LiDAR is accurate within 10 centimetres. Acknowledges that the tools we have are not perfect, but they are the best tools that we have right now to work with. We must make decisions with the information we have and when the technology gets better, we can make new decisions based on that.

Resident, Bedford West:

Seems like the order of operations here has a lot to do with addressing unintended consequences in what seems like the most rational order on how quickly things can be done. Does that also mean that in tandem you are looking at those mitigation efforts that are recommended much later in the order of operations? What best practices are there for those mitigation efforts and have the cost for those efforts been gained out to know how realistic they are and what type of timeframe they can be implemented? This will not reverse anything – it will just hold the line?

Ms. Langille the simple answer is yes and provided explanation. Yes, this is correct. We are also working on the additional recommendations from the reports – we are starting with the land use regulations first because that will help us establish where and what kind of additional development is and is not permitted – and this knowledge will allow us to make decisions with more certainty about infrastructure development than would have been possible otherwise.

Ms. Fernandez also spoke about mitigations and how they work and sometimes don't work.

Councillor Pam Lovelace:

In 2016 a motion was put forward to develop a Rural Action Committee. That Rural Action Committee kind of fizzled away but was brought back in 2022. The up-stream development in East Hants is costing our property taxpayers here in Sackville and Bedford. We need to be able to work better with East Hants considering those are provincial roads and they don't have water and utility managing their storm water and development leads to more unmitigated storm water. Speaking about the role of Halifax Water – much of the storm water infrastructure, the large culverts – those are owned, managed, and maintained by Halifax water. Their 2019 resource plan, I want to make sure that we are also feeding into that work that they are doing. As we are thinking about what development looks like and what changes are needed, we also need to think about those major assets that are needed as well. We don't have private mapping for the private infrastructure that exists on private property. I think we need to find a way to see that those are integrated into the overall system in some way to know if they may be adding to the problem. We also need to look at square footage of businesses of allowable commercial activity spaces for evacuation measures by square footage – they will be different depending on the size. Disagrees with the 10-year review, we are updating the Regional Plan every 5 years. That Regional Plan is having an extreme impact on looking at what those unintended consequences are in development and rethinking development. More importantly right now, we have 15 Special Planning Areas in HRM designated by the provincial government without the input of HRM leading to 300,000 units. Caution to think that 10 years is going to be adequate. It should be done every 5 years – the same as the Regional Plan.

Ms. Langille stated 10 years would be the maximum there is nothing stating that it couldn't be sooner.

Consultant:

Wanted to say you did a great job. There is flexibility in the use of the development tools and there is a lot there to work with. Appreciates this as a first step. Also knows, after looking at those maps that Dawn Amber had, how much development took place and how much of that development was not done managing storm water. This community of Bedford is losing its community because somebody else got new properties in new areas. You must get with East Hants and work out these mitigations so it can be worked out.

Mr. Langille – spoke to goals of these mitigation measures.

Ms. Ryan agrees that we need to work with East Hants more closely.

Resident, Sackville:

Thank you for coming out. This plan is long overdue, and it needs to be passed – please get it passed. The Sackville River is very important but there are over 100 rivers in HRM would you please work to make it policy to have all the other rivers be mapped, zoned, and protected for our local environments. Disappointed not to see the floodplain applied to Sandy Lake, Lewis Lake, and Tomahawk Lake. Why were these left off?

Ms. Langille - it is our plan, long term, to map all of the rivers in HRM. There is high level mapping for the municipality. Stated they know this is a missing piece of the mapping – the additional lakes are included in the modeling of the floodplain mapping that exists but was not within the original scope of the project to map the floodplains in this area. The project was designed to update the floodplain maps along the Sackville and the Little Sackville rivers.

The following does not represent a verbatim record of the proceedings of this meeting.

Wednesday, August 28, 2024

12:30-4 pm and 6-8:30 pm

Sackville NS Lions Club, (101 Old Beaver Bank rd., Lower Sackville, NS)

STAFF IN**ATTENDANCE:**

Maureen Ryan, Planner III, HRM Planning
Jessica Harper, HRM Principal Planner, Rural Policy and Applications
Tara Couvrette, Processing Coordinator - Planning, HRM Planning
Shannon England, Planning Information Analyst, Planning Information Services
Katie Clark, Planner II, Regional Planning
Claire Tusz, Planner III, Suburban Plan
Helen Langille, Program Engineer, Environment Performance
Shannon O'Connell, Senior Program Engineer, Development Engineering
Justin Smith, Planner I, Development Services

ALSO IN**ATTENDANCE:**

Paul Russell – Councillor, District 15 (Lower Sackville)
Lisa Blackburn – Councillor, District 14 (Middle/Upper Sackville – Beaver Bank – Hammonds Plains)
Hon. Kelly Regan, Bedford Basin – Liberal MLA
Hon. Steve Craig, Sackville Cobequid – PC MLA

PUBLIC IN**ATTENDANCE:**

Approximately: Afternoon meetings = (1st session – 51, 2nd session - 33) = 84
Evening meeting = 80

1. Call to order and Introductions – Maureen Ryan, Planner

Case 21402: Sackville and Little Sackville Rivers Floodplains

Ms. Ryan introduced herself and the rest of the team. Ms. O'Connell provided the land acknowledgment.

2. Presentations**2a) Presentation by HRM Staff – Helen Langille**

Ms. Langille's presentation included information on the following:

- (a) Project history review;
- (b) Floodplain Modelling update;
- (c) a brief description of the draft regulations;
- (d) what public engagement has been done.

2b) Presentation by HRM Staff – Maureen Ryan

Ms. Ryan's presentation included information on the following:

- (a) Spoke about the plan areas that amendments are being made for,
- (b) Floodplain zones, permitted uses, conditions, existing residential uses, expansion of the existing residential uses, floodproofing,
- (c) Floodway fringe overlay zone, permitted uses, conditions, floodproofing,
- (d) Key elevations, Areas no longer in the floodplain, Policy review, next steps

3. Questions and Comments

Ms. Ryan welcomed attendees to ask questions to staff and the presenters and provide their feedback, including what they liked and disliked about the proposal.

1st Session 1 – 2 pm

Resident, Bedford:

Are you going to restrict/abolish any new construction of new residential home but allow commercial? When you talk about the floors – are you talking about the basement levels or the habitable floors? For the existing homes, where are you looking at buying people out?

Ms. Ryan – we can't allow any new homes within the floodway zones. You would have to have your habitable floor above the 1-100-year elevation. There were 11 areas recommended but this project is not dealing with the acquisition of homes. Halifax Regional Council has been petitioning the province to look into acquisition of properties within the flood prone areas. The province has acknowledged receipt of that letter of request.

Resident, Seawood Dr.:

Part of the 2020 mitigation study was to investigate Seawood Drive – do you know where Halifax Water or the municipality is at implementing some of that mitigation?

Ms. Langille – explained why they are starting with the development restrictions. The municipality and Halifax Water are aware of those recommendations and that is where it is at right now.

Resident, Sandy Lake:

Buildings on a straightaway is not as prone to washout like it would be on a turn. Would development consider the flow of the river turns and stuff like that.

Ms. Ryan – In the floodway (blue area) we would only allow that for existing development.

Ms. Langille – Within the floodway, 1-20-year zone, we are not permitting new structures. Within the flood fringe overlay, 1-100-year zone, there is the possibility of certain types of new development by development agreement.

Mr. Giles – What is the difference between grade alteration and allowing fill to be brought in? The structure at McCabe Lake – is that the responsibility of HRM or the province?

Ms. Langille – grade alteration could be looked at like moving soil around from your site within your site. Offsite fill means you are bringing in fill from somewhere else. The structure that is place at McCabe Lake right now is mostly natural. Doesn't believe the structure there has been handed over to the municipality.

Resident (46:13):

Noticed on the maps that the commercial lands have been removed from the floodplain designation and noticed new construction work going on, can you explain what is going on. Feels it was a missed opportunity to re-naturalize it and improve that. Because it is above the floodplains none of this protection against bringing in off site fill seems to be in place.

Ms. Ryan – not familiar with all the development applications that are currently being evaluated. Any land that was in a floodplain P3 zone that is no longer within the floodplain areas under the new floodplain mapping are proposed to be rezoned to the adjacent zone and in this case when pointing to a map on the screen, an R-1 zone. Property owners have the right to apply for a development permit under the current regulations and if they are currently not zoned P-3 or Floodway, the municipality would have to issue the permits if the application complies with those existing regulations. When council adopts the changes, as recommended, that would change.

Resident, Sackville

This plan is 5 years done – we need to get it passed. Can HRM come up with a working policy where all rivers in HRM will be mapped, zoned and protected. Why weren't the sub watersheds, Sandy Lake, Lewis Lake, Tomahawk Lake considered in the calculations. The flow from these rivers is very important and if it isn't part of this plan, you can still build right up to the lake/rivers edge in those areas.

Ms. Langille advised HRM is moving forward with doing floodplain studies and integrated map work into the remainder of the watersheds withing HRM.

Resident, Rankin Dr:

If I want to put my house up for sale, am I legally obligated to disclose that I am in a floodplain? Are they going to do any further work to eliminate the flooding on our street?

Ms. Ryan – I can't advise on legal matters.

Ms. Langille – is aware that it is an area of concern and working towards addressing it. Don't have a specific plan in place at this time though.

Resident, Candlewood Lane:

The talk about the 1-20-year and 1-100-year mapping, the 1980's stuff had to be updated and that is good, but with the frequency these events are happening, what does 100 mean anymore. Why is it 100 and not 1-250 or something? 20174 is out of date, 2019 is out of date and even the 2023 is out of date. Also wanted to know why infrastructure changes were not considered.

Ms. Langille explained the study that was done included projections that are associated with climate change to the year 2100. Also provided more information about the study and why it is a 1-20-year and 1-100-year timeframe. Also explained why development restrictions were considered first before implementing flood protections or infrastructure upgrades.

Ms. O'Connell – we have to stop making it worse and then start making it better.

2nd Session 2:50 – 4:05 pm

Resident, First Lake area:

Good to see these regulations being put in place. Happy to see the prioritization of the cross regional floodplains. I would also ask the staff to consider the prioritization of restoration of wetlands particularly in the floodway area along with conservation especially where there is such of high concentration of development already. Could you talk a little bit more about the allowable resource uses in the floodway. Thinking about the ecological integrity of the red herring zone, certain activities effecting erosion and increasing sedimentation into those aquatic areas.

Ms. Ryan – currently there is a requirement of a 20-metre buffer zone but in the new Regional Plan, phase 4, is requesting an increase to 30 metres. Also spoke to the allowed resources uses within the floodplains.

Resident, Bedford:

Within the flood zone – what changes could you make to your home? Changing windows, doors, and stuff like that? Could you make it larger? The lines – how does it effect your property. Is there an option to appeal this zoning? Thinks the flood lines are overestimated.

Ms. Ryan – yes you can make changes to your home to change windows and doors, provided you do not further exacerbate the required conditions for setbacks from the floodplain. If your house or commercial building is entirely within the floodplain you cannot enlarge the building, except for the construction of a loading dock or accessibility ramp for a commercial development. We kept residential uses as a legal non-conforming use. The only portion of your property that would be affected is the portion that falls within the floodplain. We are taking the science and evidence before us and implementing that so you can contest what we are proposing before Regional Council at the public hearing. Offered to have them make an appointment to come in and review the flood lines with staff.

Ms. Langille also spoke about floodplain modeling and floodplain delineation. There is also a review frequency built into this.

Resident, Rosebank:

There are tires, oil tanks, fallen trees (huge trees) etc. in the river – who is responsible for cleaning that up? This alone will cause more flooding if it is left there.

Ms. Langille – in order to do any in water work you need the approval of province of NS and potentially the Department of Fisheries and Oceans. Encouraged them to get in touch with their MLA or the NS Department of Environment and Climate Change.

Resident, McCabe Lake:

How are water levels from last year compared to what you are predicting for the 100-year mark. 275 mls in a day and it is vastly different so is it based on 500 in 12 hours, 750 in 12 hours – how do we draw the line so far back?

Ms. Langille explained the factors that determine that.

Resident – How does last years flood compare to the last 6 or 7 serious events that you have listed?

Ms. Langille – in some areas of the watershed it lined up really well. Explained why the lines are where they are.

Resident – The amount that you are showing water levels going up – wondering where the numbers are coming from. Seems like a little bit of a stretch to go out 75 years and plan. How far apart are the elevation points that you pick on the map.

Ms. Langille provided an explanation. Design Point set the key elevations based on what was happening within the watershed. Some are closer together and some of them are further apart.

Ms. O'Connell – also explained why the lines are where they are.

Resident, Lower Sackville:

Can you expand upon the McCabe Lake outlet structure. Was there a bridge proposed for that structure at sometime? Improved channel capacity – can you expand on that one too. I think you could add another point which would be to restore and create more wetlands. This start in 2018 and here we are 6 years later – it is time to bring this home. Floodplains are critical for water quality. This is a great start.

Ms. Langille – The mitigation options from Design Point are recommended for implementation in order. When we start with development restrictions and then move into additional things. Went over the recommendation about the McCabe Lake outlet structure. The bridge is not something I am aware of, but Walter Regan said there was. Provided information about expanding the channel capacity and the re-naturalisation of the river where it is possible to do that. Restore and creating wetlands would also be part of the re-naturalisation.

Resident, Apartment in Bedford:

Improve channel capacity and compensation are 2 of the recommendations but that is way down the road. I think something must be done to help us property owners between now and then. It is crucial – we can't get flood insurance and most people can't get their mortgage renewed. We are in a crisis situation. The municipality takes our municipal taxes and has a responsibility to take care of their constituents. They strongly suggest a fund needs to be set up to help the people in the 20-year floodplain. The building they bought 30 years ago wasn't in the floodplain, but it is now. The focus needs to be to help these residents. If the municipality doesn't want to put the millions of dollars into a fund to protect us then they should have some mechanism setup whereby we would be relieved of taxes for the 2 or 3 years calculating what our expenses are. If we spend more than that to repair our facility, then something has got to be done to protect us. Feels we all need some protection. What is the municipality prepared to do?

Ms. Ryan – Spoke to the mitigation study. Also, that it would take multiple levels of government and multiple year to get through.

Resident

If you live in a trailer park – are they exempt from asking the city for things? If they want to move land back, do they have to ask the city first to make sure they are not impeding the waterflow? Who are they accountable to?

Ms. Ryan – They would have to apply for a permit. It would be under the land lease regulations.

Resident

How is first and second Lake through into the floodplain regions? All the water runs into the Sackville Rivers – its it important to consider some restrictions for development on First Lake or this reason? To maintain the buffer so the lake can rise and fall with stormwater. Sackville is going through some crazy development and all indications looks like it is development without planning. More impervious

surfaces cause more water to go into storm drains, water into natural structures, such as the streams, and then more water into the rivers and in the low areas it is going to cause and increase in flooding. The municipality needs to do something so this problem doesn't grow because of the excessive amount of development.

Ms. Langille -they are not part of this watershed. They would be part of a separate watershed study. There are restrictions in place around watercourses. There are also requirements from the province.

3rd Session 7:30 - 8:35 pm

Resident

Based on the fact that your proposal is using a model and not facts with lots of assumptions built in your assumptions, and it will irrevocably affect the evaluation of 100's of homes in the designated areas. How will the city compensate the homeowners? What are you going to do for me even though I have never had a drop of water in my house but now it is being designated as being in a flood zone? There are other impacts from your proposal – an irrevocable impairment to people's home values.

Ms. Ryan – it is a model based on scientific assumptions which appear to be valid. We are proposing a policy that would require us to review, observe and adjust lines as deemed necessary from our assessment of the situation. With respect to compensation the studies have recommended the acquisition of properties that are consistently flooded. It also recommends the acquisition of vacant properties that cannot be developed in a floodway zone. This is currently being investigated.

Resident, Memory Lane, Sackville:

If less than 10% of your property is in the flood zone the existing use on the other 90% still exists?

Ms. Ryan – Yes.

Resident – You say this is not set in stone – there is a process. In 2017 you went through public engagement – they feel that was not public engagement at all. Seven years ago you had the mitigation proposals, why haven't they been started? They should have been started in 2017. Some of these properties are no longer in the flood zone. What happened, how did they get out of the flood zone? They would suggest taking the first thing on the list, destroying the value of people's property, and move it to the bottom of the list and mitigate the problems first. Don't put it on the back of the 900+ people who you are going to affect their property values. CMHC says 8.2% of your property is devalued when it is determined to be in a floodplain. If you alter the use of it further, it further degrades the value of your property between 10-20%. The province is putting in thousands of square metres of hard surface with this new highway, we need the highway, where is all that water going to go that is being displaced? It is going to be forced into the ball field and the gun range. As you stated when you have a bowl with so many marbles in it and you put one to many in it, it overflows. So, adding all that extra water to the floodplain zone could affect somebody's house who has never had water in their basement before. Once you are deemed in a flood zone and you try to renew your mortgage they will ask if you have flood insurance, this is mandatory in a flood zone, and that is an extra 2-3 hundred dollars a month if not more. Some people can't afford that extra cost. Do the first part last, take some of these properties out of the flood zone, we know it can be done. Appreciates all the hard work that is being done but it is people's homes, which are their investments for their retirement, and that is what they worry about.

Ms. Ryan – The proposed floodplain regulations will not change the fact that the area is prone to flooding. The Insurance Bureau of Canada hires its own engineers to do its own floodplain study so they themselves know where the areas of risk are. We had to update our information because the technology is better than what we had back in the 80's.

Ms. Langille – Spoke to the mitigation study and order of implementation.

Ms. O'Connell – Stop making it worse and then we can start making it better. We are looking at some of the other mitigation measures, but this is where it needs to start.

Resident – These are regulations, but this is our homes, our legacy, our money, and I hope that council thinks about that when making their decision. Dismayed that there are people pushing this through because this is a human thing, not a regulation thing.

Resident, Middle Sackville:

Has an approved building lot that is now 90% in the floodplain zone. Doesn't believe they will be

allowed to build on it in the future. Has an assessed value for their property now but that will decrease once this new zoning comes into effect. What will be the compensation process because we can't build on this lot because it is on a floodplain? Their concern is that because of their age this timeline is going to be bad.

Ms. Ryan – stated they do have existing rights and if they get their permits before the notice of this going to council. Provided you building commences within 12 months of the issuance of that permit and constructed withing a reasonable amount of time. There is also the possibility of the acquisition of vacant properties that are consistently flooded being looked into but can make no promises about that as their part of this is to being in/propose regulation.

Resident – Understands but their point is that they were not planning on building on their lot for 5 maybe 10 years and doesn't want to be forced to go and get a permit and start building right away. With the new regulations they will not be able to build on their property at all.

Resident

Thinks this research is overdue. Has a piece of land with a significant portion in the floodplain and they don't have plains to build right away, and it is very troubling not knowing where they stand with that. They have heard that there was potentially going to be a wind farm in up by Tomahawk Lake, as well as other developments going in that area, is there any truth to that? There are a lot of unanswered questions that would seriously impact the floodplain.

Ms. Ryan – stated could only answer the question generally. They do know Lake Tomahawk is within the protected water supply and they only developments going in there would be conservation related uses and protected water supply uses. Several years ago, had heard discussion about that idea of wind energy being generated within out public water supply but can't confirm anything about that.

Public – For someone like myself to get these answer, would I show up at the public hearing because there are a lot of gray areas that we are not privy to right now.

Ms. Ryan suggested they contact her, and they together can look up the information.

Resident, Middle Sackville:

If you are not consistently flooded is there an option for compensation? What is the threshold? In the last flood a lot of the water came up through the basement – through the pipes – would that be a Halifax Water issue?

Ms. Langille stated it is not perfectly defined but are looking at those properties that are flooded more often that the properties within the 1-20-year typical event. Has no specific number at this time to provide. Provided the 11 areas of concern that were identified in the mitigation study. If water is coming into your home through the pipes that would be Halifax Water.

Ms. O'Connell – the acquisition of property is something that we have to partner with the province and potentially the federal government as well. A letter has been submitted to the province through Reginal Council and we know they have provided acknowledgement of receipt of that letter.

Resident

Wants some examples of resource uses. Keeping it naturalized is one of the best ways to prevent and mitigate floodwater. Why are we permitting resource use in the Little Sackville River when we have the perfect opportunity to put as one of your priority measures conservation of the land that is existing in its somewhat natural state. We have an opportunity to preserve and conserve in its natural state to mitigate flooding.

Ms. Ryan – because it is private property, and the Statement of Provincial Interest outlines some alternative uses that may be considered and if appropriate within a community could develop. Spoke to different resource uses.

Resident, Middle Sackville:

You had put the first 8 recommendation in your slide where do you get access to the rest of the recommendations? What about cementing the river all the way down – would that help it? It wouldn't erode the soil.

Ms. Langille explained all the mitigation study recommendation and all reports are available online. The reason we are doing the mitigation measures we are to try to avoid doing infrastructure projects like that because they have devastating environmental consequences.

Resident, McCabe Lake:

Appreciate everything that is being done here but thinks there is some doubt in the actual mapping of the new lines and a question around the prediction model being used. How does the lake rise by over 30 feet? It is subject to a lot of human biases.

Ms. Langille explained the process of setting up a flood delineation model. We need to work with the information we have available to us.

Ms. Ryan – a substantial part of the watershed is in East Hants and one of the recommendations is collaboration with the municipality of East Hants. This will give us the opportunity to look at how to manage the flows in the entirety of the watershed.

Resident

The regulations that you are proposing now – how is that going to change anything for us as far as making things better? Is there anything in the regulation when you speak about mitigation about the removal of all the debris in the river? This could be contributing to the flooding.

Ms. Ryan stated the regulations are proposed to respect the fact that you live there and that you live in a floodplain zone and there are policies under the HRM Charter that protect your existing rights. Also explained what it would do for them.

Ms. Langille spoke to the controls that are being brought in. If the debris in the river is in the coverts under HRM property it should be brought to our attention. If it is happening along provincial roads/coverts, then it needs to be brought to their attention. If we know about it, we can do something about it.

**Proposed Amendments to the
Regional Municipal Planning Strategy**

BE IT ENACTED by the Halifax Regional Council of the Halifax Regional Municipality that the Regional Municipal Planning Strategy is hereby amended as follows:

Amend policy E-21, by deleting and replacing policy E-21 as illustrated below in strike through and bold:

~~E-21 HRM shall restrict development and prohibit the placement of fill or alteration of grades in association with development that restricts the capacity of flow or increases flood levels within the 1 in 100 year and 1 in 20 year floodplains for designated watercourses, under secondary planning strategies and land use by laws. Water control structures, boardwalks and walkways, conservation uses, historic sites and monuments and wastewater, stormwater and water infrastructure shall be permitted within floodplains. Within the 1 in 20 year floodplain, treatment facilities for wastewater, storm water and water shall be limited to facilities that were in existence on or before June 25, 2014. Within the 1 in 100 year floodplain, HRM may, through secondary planning strategies and land use by laws, permit development which has been adequately flood-proofed.~~

E-21 Where the Municipality has identified the location of floodplains or flood risk areas, secondary municipal planning strategies and land use by-laws shall be amended to:

- a) be reasonably consistent with the Statement of Provincial Interest Regarding Flood Risk Areas.**
- b) prohibit or regulate development on land subject to flooding or subsidence.**
- c) prohibit or limit the placement of fill or alteration of grades in association with development in the floodway and floodway fringe areas.**

I, {Insert Name}, Municipal Clerk for the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Regional Council held on [DATE], 202[#].

Municipal Clerk

Attachment B1
Proposed Amendments to the
Municipal Planning Strategy for Beaver Bank-Hammonds Plains-Upper Sackville Plan Area

BE IT ENACTED by the Halifax Regional Council of the Halifax Regional Municipality that the Municipal Planning Strategy for Beaver Bank-Hammonds Plains-Upper Sackville is hereby amended as follows:

1. Amend Section II – Land Use Intent section by replacing the word “lands” with the words “**the floodplains**” after the words “has been applied to” in the first sentence of the section describing the land use intent for the Floodplain Designation.
2. Amend Section II – Land Use Intent by adding the words “**and to the floodplains that were identified under the 2017 CBCL Sackville Rivers Floodplain Study- Phase II and as mapped by Design Point Engineering in 2024**” after the words “Canada- Nova Scotia Flood Damage Reduction Program” in the first sentence of the section describing the land use intent of the Floodplain Designation.
3. Amend Section II Floodplain Designation by deleting the text shown as ~~strikeout~~ after the heading Floodplain Designation:

~~The identification and control of development on lands which are located adjacent to rivers and streams and which are subject to flooding during storms is premised upon the assumption that such areas are unsuitable for most developments. Limiting development on these lands, thereby maintaining natural stormwater drainage patterns, will alleviate the need for costly structural approaches to flood control such as channels, reservoirs, and dykes, as well as for providing flood damage compensation to individual property owners, both of which are normally borne by society at large. In an effort to reduce these costs, the federal and provincial governments agreed to map the flood risk areas of selected rivers within the Province and to designate them as unsuitable for certain undertakings. The Sackville River and McCabe and Webber Lakes were included among these watercourses, and a hydrotechnical study of these waterways was completed in 1981, under the joint Canada Nova Scotia Flood Damage Reduction Program.~~

~~The study identified two floodrisk areas, one for the 1:20 year storm and another for the 1:100 year storm. The recommendation of the study was that there be no development permitted within the 1:20 year flood area, and that flood proofing measures for structures located within the 1:100 year area be required.~~

~~Development pressure on lands adjacent to these watercourses has been relatively low. Adoption of protective measures prior to any increase in such pressure will serve to protect the quality of the lakes and river as well as to help prevent serious flooding problems such as occur in parts of Sackville. Within the Plan Area, the amount of land included within the floodplain is very small. The majority of identified floodrisk lands are located outside the Plan Area, along the Sackville and Little Sackville Rivers.~~

~~The Sackville Municipal Planning Strategy has implemented floodplain protection measures along the Sackville River through a FP (Floodplain) Zone. The strategy's policy encourages that future planning strategies and land use by laws encompassing the remaining portions of the identified floodplains contain appropriate policies and regulations.~~

~~P 75 — In recognition of the need to minimize the consequences of flooding along the Sackville River system and in recognition of the environmental importance of the river and its role in the natural storm drainage system, and consistent with the policies of the Sackville municipal planning strategy, it shall be the intention of Council to establish a Floodplain Designation as shown on the Generalized Future Land Use Maps (Maps 1A, 1B, 1C, 1D,~~

~~1E). This Designation shall encompass the 1:20 and the 1:100 floodplains as defined through detailed floodplain mapping.~~

~~P-76 Within the Floodplain Designation it shall be the intention of Council to establish a FP (Floodplain) Zone, encompassing the 1:20 year floodplain, in which conservation related uses, resource activities, recreation uses, and public and private parks and playgrounds shall be permitted. Notwithstanding that these uses shall be permitted, any structures intended for human habitation, whether permanent or temporary, shall be prohibited.~~

~~P-77 Within the Floodplain Designation it shall be the intention of Council to apply the MU-2 (Mixed Use 2) Zone established by Policy P-11 to those lands beyond the 1:20 year floodplain but within the 1:100 year floodplain. Notwithstanding the provisions of Policy P-11 and with the exception of buildings permitted in the floodplain zone, Council may only consider permitting buildings within the 1:100 year floodplain by development agreement and according to the provisions of the Municipal Government Act. In considering any such agreement, Council shall have regard to the following:~~

- ~~(a) that adequate flood proofing measures are undertaken for any building;~~
- ~~(b) that the type of residential development is consistent with that permitted by the zone within which the lands are located and that the minimum standards for such developments are no less than those required by the zone unless necessary for reasons of safety; and~~
- ~~(c) the environmental protection of the watercourse with respect to proper storm drainage.~~

~~P-78 In order to minimize the effects upon natural stormwater flows it shall be the intention of Council to exercise control over the placement and stabilization of fill necessary for the floodproofing of structures permitted within the Floodplain Designation. Further, through the review of subdivision applications, it shall be the intention of Council to co-operate with the Department of Transportation to ensure that any roadways proposed within the Floodplain Designation meet the requirements of the Halifax County Storm Drainage Task Force.~~

4. Amend the Floodplain Designation by inserting the text shown in bold after the heading Floodplain Designation:

Flooding is a natural hazard that places people, property, infrastructure, and communities at risk. Those living in low-lying areas along watercourses are at high risk. The Province of Nova Scotia adopted a Statement of Provincial Interest which mandates that planning documents develop controls on development within floodplains “to protect public safety and property and to reduce the requirement for flood control works and flood damage restoration in floodplains.” This Statement points to floodplains that were identified under the Canada-Nova Scotia Flood Damage Reduction Program (FDRP) in the 1980s as areas of particular concern. It also enables the application of development controls to additional floodplain areas that are identified through further investigation.

The floodplains for the Sackville and Little Sackville Rivers were initially identified as flood-risk areas under the FDRP in the 1980s. This mapping was undertaken from a hydrotechnical study of these waterways that was completed in the early 1980’s under the joint Canada Nova-Scotia FDRP. A floodplain study was undertaken by Cumming and Cockburn and by Nolan Davies and Associates under the FDRP to delineate the floodplains of the Sackville River in 1984 and the Little Sackville River in 1987. Floodplain zones were first adopted along the Sackville River based on the 1984 study, in 1987.

There have been substantial alterations made to the Sackville River and Little Sackville River floodplains since these hydrotechnical studies were undertaken. HRM contracted the services of CBCL Limited, in 2014, to undertake a hydrotechnical study using modern technology, improved data, and modern hydrologic and hydraulic computer models. This mapping shows that the floodplains along the Sackville Rivers have changed over time due to the changes that have taken place within the watershed and due to the use of modern technology and improved data. It also anticipates the effects of climate change along the Sackville Rivers Floodplains and provides more accurate mapping using precision tools to apply the modelling to the topography.

In 2017, CBCL Limited completed *the Sackville Rivers Floodplain Study - Phase II*, to update the flood lines along both the Sackville and Little Sackville Rivers. The CBCL Floodplain study established parameters based on the current scientific understanding of floodplains for the Sackville and Little Sackville Rivers to delineate updated flood lines through:

- Updated river modeling using the newest technologies and computer modeling.
- An examination of past changes to land use and projected future land use.
- An examination of historical and recent storm events including rainfall and seasonal weather characteristics.
- Topography, water level, and flow measurements.
- Ice jam analysis.
- Current research on climate change impact scenarios.
- Coastal inundation and sea level rise.
- The year 2100 modeling horizon.

The study recommended flood lines based on the most conservative model result to ensure that known risks to public safety are accounted for, including impacts of projected development and the worst-case climate change predictions into the year 2100. Based on these factors, as well as improved information and modeling techniques, the study produced floodplain mapping that generally showed a larger flood impact for the 1-in-20-year and 1-in-100-year flooding events than the floodplains that were mapped in the 1980s.

HRM commissioned Design Point Engineering Limited to update the work of CBCL using a new digital elevation model that was created with 2019 LiDAR data and new surveys of the Lucasville Bridge and the Beaver Bank Crossroads Bridge. No assumptions made by the 2017 floodplain study were changed. The 2017 CBCL model was applied to the new topographical information to update the mapping.

Through these recent hydrotechnical studies, the Municipality now has updated information of the areas that are within the floodplains of the Sackville Rivers System. Map 1F shows the areas that were initially within the 1980 floodplains that are now outside of the 2024 floodplains. It also shows the areas that are now in the 2024 floodplains that were initially outside of the 1980 floodplains.

Controlling development within the floodplains identified under the 2017 CBCL study will safeguard people and property from harm, protect the functions of the Sackville River Floodplains and reduce the need for costly infrastructure and property repairs. Rezoning properties from the 1980s floodplains that are no longer subject to flooding, as demonstrated by the 2017 hydrotechnical study, is appropriate as the study showed the proposed development of those lands will not contribute to upstream or downstream flooding or result in a change to flood water flow patterns.

The Municipality has revised its floodplain policies and regulations to reduce risks to property and public safety, as well as to reduce the need for flood control investments and clean-up responses on the properties shown to be within the floodplains under the 2017

CBCL Study and 2024 Design Point Mapping Update. This is consistent with the Statement of Provincial Interest Regarding Flood Risk Areas.

However, a substantial amount of development has occurred within the Sackville River Floodplain before these updated flood lines were produced. It is the policy of this plan to take an adaptation approach to floodplain management. Accommodations will be made to allow existing non-residential developments to be rebuilt and to change the use to some of the uses that were permitted on the property before this floodplain zoning took effect. Policies will also be created to allow consideration of new development that may occur through innovative design where a hydrotechnical study confirms that the development will not cause upstream or downstream flooding or result in a change to flood water flow patterns as provided for under the Nova Scotia Statement of Provincial Interest regarding Flood Hazards. To protect public safety, restrictions will be placed on some uses, and any reconstruction of the building shall be permitted to reconstruct to the same extent and in the same location as the existing building, provided the reconstructed building is floodproofed.

P-78A In recognition of the need to minimize the consequences of flooding along the Sackville River system and the importance of the river as a natural storm drainage system, Council shall establish a Floodplain Designation, as shown on the Generalized Future Land Use Maps 1A, 1B, 1C, 1D, and 1E. This Floodplain Designation shall encompass all areas encompassed by the 1987 Floodplain Designation adopted to encompass the areas mapped under the Canada-Nova Scotia FRDP and the floodplains mapped by Design Point in 2024.

P-78B Within the Floodplain Designation, a 1987 FP (Floodplain) Zone shall be established under the land use by-law to encompass the 1-in-20-year floodplain that was mapped under the Canada-Nova Scotia FDRP. A 2024 FWO (Floodway Overlay) Zone shall also be established under the land use by-law to encompass the 1-in-20-year known floodplain that was mapped by Design Point Engineering in 2024. Both zones have been created to distinguish between the floodplains that were established under the Canada-Nova Scotia FDRP and the 2024 floodplains to meet the requirements of the Nova Scotia Statement of Provincial Interest regarding Flood Risk Areas.

P-78C Notwithstanding Policy P-78B, in recognition of the changes that have taken place in the Sackville Rivers Watershed since the 1980s and in light of the 2017 hydrotechnical study that was undertaken with improved data, advancement in hydrologic and hydraulic computer models, scientific research about climate change and with more recent topographical information and bridge measurements to update those floodplains in 2024, all privately owned properties under the 1987 FP (Floodplain) Zone that are found to be outside the 2024 FWO (Floodway Overlay) Zone shall be rezoned to the abutting zone but still included in the Floodplain Designation where modified floodproofing will be required to protect any subgrade structures from flooding.

P-78D The 1987 FP (Floodplain) Zone shall permit conservation-related uses, resource activities, recreation uses, public and private parks and playgrounds, public utilities, trails, roadways, and existing non-residential uses. Notwithstanding that these uses shall be permitted, any structures intended for human habitation, whether permanent or temporary, shall be prohibited.

P-78E The 2024 FWO (Floodway Overlay) Zone shall permit conservation-related uses, resource activities, recreation uses, public and private parks and playgrounds, public utilities, trails, roadways, and existing non-residential uses. In addition to these requirements, the 2024 FWO (Floodway Overlay) Zone shall:

- (a) Allow limited expansion of a non-residential building for the development of a loading dock, and entryway ramp for accessibility purposes.
- (b) Allow reconstruction or repair of buildings containing existing non-residential uses provided:
 - i. there is no expansion of the existing building footprint;
 - ii. the existing building is not relocated;
 - iii. the reconstructed building is floodproofed; and
 - iv. a hydrotechnical study, carried out by a qualified person, shows that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to floodwater flow patterns.
- (c) Allow a change in use to an alternative non-residential use permitted in the underlying zone provided the use is not for any residential institutions such as hospitals, shared accommodations, or daycares where flooding could pose a significant threat to the safety of occupants if evacuation became necessary or for any commercial and industrial uses that involve the use, manufacturing or storage of hazardous materials; and
- (d) Waive applicable minimum vehicle parking space requirements to reduce the need to maintain impervious parking areas.

Notwithstanding that these uses shall be permitted, any structures intended for human habitation, whether permanent or temporary, shall be prohibited.

P-78F Within the Floodplain Designation, a 2024 FFO (Flood Fringe Overlay) Zone encompassing the 1-in-100-year floodplain, shall be established under the land use by-law. The 2024 FFO (Flood Fringe Overlay) Zone will allow most of the development permitted in accordance with the requirements of the underlying zone. Additional controls shall be established under the 2024 FFO (Flood Fringe Overlay) Zone to:

- (a) Prohibit commercial and industrial uses that involve the use or storage of hazardous materials;
- (b) Prohibit any residential institutions such as hospitals, shared accommodations, or daycares where flooding could pose a significant threat to the safety of occupants if evacuation became necessary; and
- (c) require any new structures or expansion to existing structures to be floodproofed to a 1-in-100-year elevation standard to reduce the risk of flood damage.

P-78G To minimize adverse effects on natural stormwater flows along the 1987 FP (Floodplain) Zone, and the 2024 FWO (Floodway Overlay) Zone, the placement of off-site fill shall be prohibited. The alteration of grades using offsite fill may be permitted to floodproof an existing non-residential building or for the construction of roads and public utilities if a hydrotechnical study prepared by a qualified person is submitted and confirms that the placement of off-site fill within the floodway or the alteration of grades will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

P-78H To minimize adverse effects on natural flows along the 2024 FFO (Flood Fringe Overlay) Zone, the placement of off-site fill and alteration of grades shall be permitted within the 2024 FFO (Flood Fringe Overlay) Zone to floodproof structures and for flood risk management. If off-site fill is required for development, a hydrotechnical study carried out by a qualified person shall be required to confirm that the placement of fill and grade alteration will not contribute to increased

flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

P-78I Notwithstanding Policy P-78B, Council may consider allowing, by development agreement, the expansion of existing uses or new uses on lands under Policy P-78K for lands that are located, in whole or in part, within the Floodplain Designation to enable the consideration of innovative design solutions to flood-risk problems.

P-78J No development agreement under Policy P-78K shall be considered unless:

- (a) a hydrotechnical study is prepared by a qualified person to confirm that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to floodwater flow patterns; or**
- (b) all of the lands being developed are located outside the 2024 FWO (Floodway Overlay), 2024 FFO (Flood Fringe Overlay), or 1987 FP (Floodplain) zones.**

P-78K Subject to Policy P-78L, Council may only consider the following uses by development agreement:

- (a) uses permitted within the underlying zone of the 2024 FWO (Floodway Overlay Zone);**
- (b) uses permitted within the underlying zone of the 2024 FFO (Flood Fringe Overlay) Zone; or**
- (c) where the development agreement will apply to lands located:**
 - (i) both within and outside the Floodplain Designation, or**
 - (ii) under this Plan and an abutting municipal planning strategy,**

uses enabled by the policies in the applicable municipal strategy where that portion of the lands is located; or

- (d) where the development agreement will apply to lands located:**
 - (i) both within and outside the 2024 FWO (Floodway Zone) or the 2024 FFO (Flood Fringe Overlay) Zone, or**
 - (ii) under the land use by-law and an abutting land use by-law,**

uses permitted within the applicable zone where that portion of the land is located.

P-78L The following uses shall be prohibited:

- (a) residential institutions such as hospitals, shared accommodations, or daycare where flooding could pose a risk to the safety of the occupants if evacuation becomes necessary;**
- (b) commercial or industrial uses that involve the storage, manufacturing, or distribution of hazardous materials;**

- (c) residential uses in the areas zoned 2024 (Floodway Overlay) Zone or 1987 FP (Floodplain Zone); and
- (d) the placement of off-site fill within areas zoned 2024 FWO (Floodway Overlay) or 1987 FP (Floodplain).

P-78M In considering development agreements pursuant to Policy P-78I, Council shall have regard for the following:

- (a) the use is compatible with the surrounding land use context in terms of scale, bulk, or architectural design;
- (b) the portion of the site within the Floodplain Designation is designed to prevent flooding through the incorporation of site design measures that mimic natural processes, enhance water quality, promote groundwater recharge, and enhance ecosystem services;
- (c) the development does not encroach upon the required watercourse buffers under the land use by-law;
- (d) any development within Floodplain Designation is floodproofed to an elevation that is above the 1-in-100-year elevation;
- (e) any structures within the Floodplain Designation that are below the 1-in-100-year elevation are certified by a qualified professional engineer to allow flowthrough and to withstand a flood;
- (f) that the proposed development can be accessed and egressed during a flood event without risk to public safety;
- (g) a general maintenance plan for the proposed development;
- (h) the conditions for development under all other policies and regulations applicable to the site; and
- (i) the provisions of Policy P-137.

P-78N Within the Floodplain Designation, a line corresponding to the outer edge of the 1987 Floodplain Zone that is no longer within the 2024 floodplains shall be drawn on the schedule of the Land Use By-law as the Modified Floodproofing Area. This line shall encompass areas within the Floodplain Designation that are outside of the limits of the 2024 floodplains. These areas were found to be above the 1 in 100-year flood elevation under the 2024 floodplain mapping and where development should not contribute to increased flooding on adjacent properties, upstream or downstream flooding, or flood elevations, or result in a change to flood water flow patterns. The abutting non-floodplain zone shall be applied to these properties. As a precautionary measure modified floodproofing requirements will be established under the land use by-law to require that any habitable floorspace in these areas is above the nearest 1 in 100-year flood-elevation and that buildings are floodproofed.

P-78O Council intends to assess the need to update floodplain policies and zoning boundaries every ten years to ensure the land use controls accurately reflect current climate change predictions, new investments in mitigation measures, and advancements in floodplain modeling techniques.

4. Amend the Floodplain Designation by deleting the text shown in ~~strikeout~~ and inserting the text shown in **bold** after the heading Floodrisk Areas:

~~Floodrisk Areas~~

~~As discussed above, most of the Sackville River and McCabe and Webber Lakes have been included within the federal/provincial flood reduction program. The anticipated continuation of~~

~~development and the occurrence of flooding in the Beaver Bank area indicate that additional watercourses should be considered for inclusion in this program.~~

~~P-79 — It shall be the intention of Council, in the interests of orderly development and public safety, to encourage and co-operate with senior levels of government in the development of floodplain mapping for the Beaver Bank River. Upon completion of any floodplain mapping, Council shall review this Plan in order to implement more appropriate development controls.~~

~~P-80 — In order to minimize the effects upon natural stormwater flows it shall be the intention of Council to exercise control over the placement and stabilization of fill necessary for the floodproofing of structures permitted within the Floodplain Designation. Further, through the review of subdivision applications, it shall be the intention of Council to co-operate with the Department of Transportation to ensure that any roadways proposed within the Floodplain Designation meet the requirements of the Halifax County Storm Drainage Task Force.~~

Additional Floodrisk Areas

~~As discussed above, most~~ **Most** of the Sackville River and McCabe and Webber Lakes have been included within the federal/provincial flood reduction program. The anticipated continuation of development and the occurrence of flooding in the Beaver Bank area indicate that additional watercourses should be considered for inclusion in this program.

P-81 It shall be the intention of Council, in the interests of orderly development and public safety, ~~to encourage and co-operate with senior levels of government in~~ **undertake** the development of floodplain mapping for the Beaver Bank River. Upon completion of any floodplain mapping, Council shall review this Plan to determine if further development controls are required.

5. Amending Policy P-135 (f) (i) by deleting the text shown and strike out and inserting the text shown in bold text below:

Within the Floodplain Designation:

(i) ~~structures uses permitted~~ according to Policy ~~Policy P-77~~ **P-78I**.

6. Amending Maps 1-B to 1-C – Generalized Future Land Use to designate the lands to the Floodplain Designation as shown in on Schedule B1-1, attached hereto.
7. Adding “**Map 1-F - Comparison of the Canada – Nova Scotia Flood Damage Reduction Program Mapped Floodplains**” under the Municipal Planning Strategy for Beaver Bank, Hammonds Plains, and Upper Sackville with the 2024 Mapped Floodplains, attached hereto as Schedule B1-2.

I, {Insert Name}, Municipal Clerk for the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Regional Council held on [DATE], 202[#].

Municipal Clerk

SCHEDULE B1-1

Proposed Sackville and Little Sackville River Floodplain Designations

-  Lands to be designated Floodplain Designation
-  Existing Designation Boundaries
-  Community Plan Boundaries

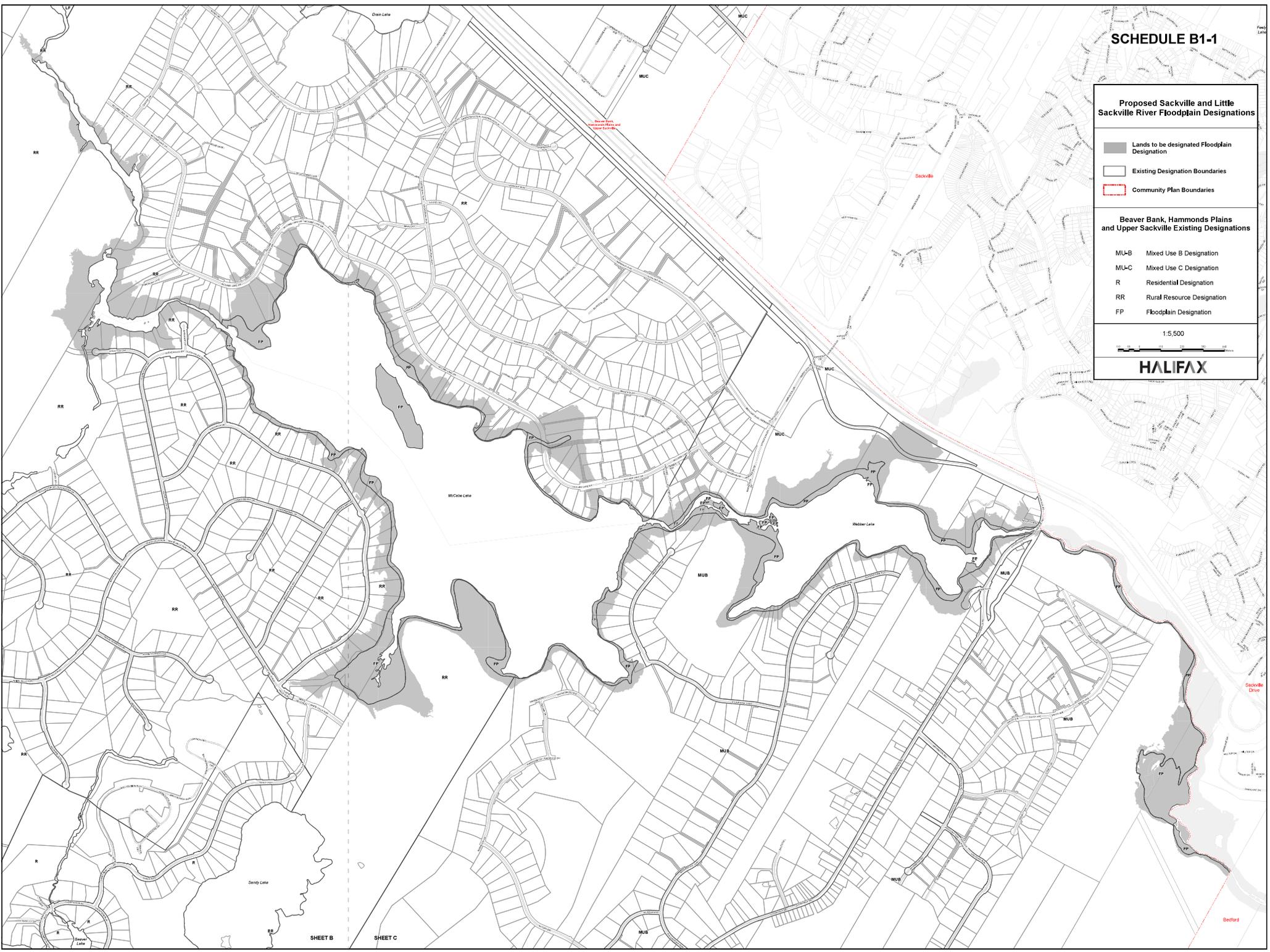
Beaver Bank, Hammonds Plains and Upper Sackville Existing Designations

- MU-B Mixed Use B Designation
- MU-C Mixed Use C Designation
- R Residential Designation
- RR Rural Resource Designation
- FP Floodplain Designation

1:5,500



HALIFAX



SHEET B

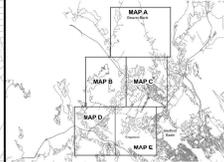
SHEET C

Bedford

BEAVER BANK, HAMMONDS PLAINS AND UPPER SACKVILLE

-  FP Floodplain Designation (1987)
-  FO Floodway Overlay Zone (2024)
-  FFO Flood Fringe Overlay Zone (2024)

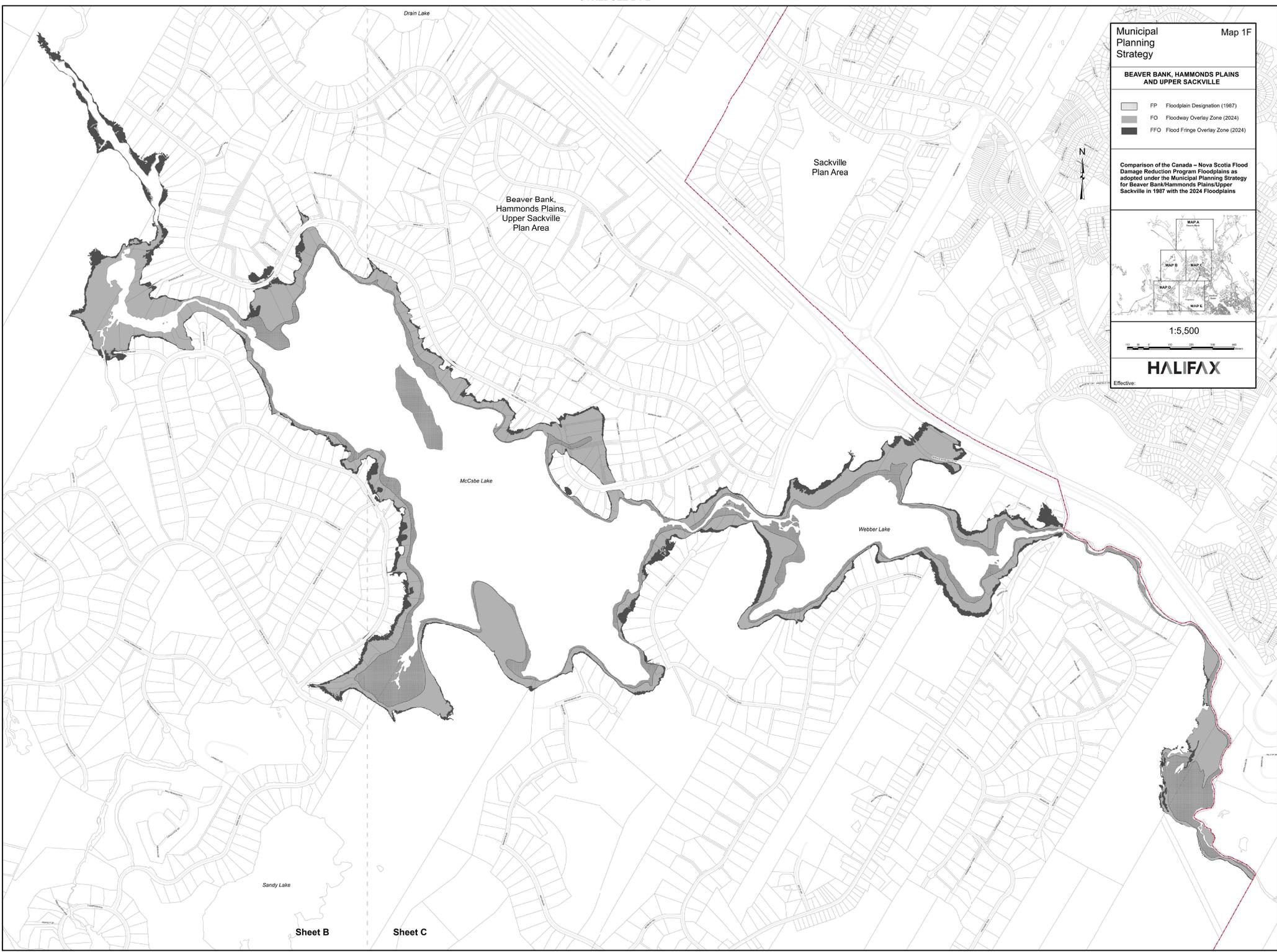
Comparison of the Canada - Nova Scotia Flood Damage Reduction Program Floodplains as adopted under the Municipal Planning Strategy for Beaver Bank/Hammonds Plains/Upper Sackville in 1987 with the 2024 Floodplains



1:5,500

HALIFAX

Effective:



Beaver Bank,
Hammonds Plains,
Upper Sackville
Plan Area

Sackville
Plan Area

McCabe Lake

Webber Lake

Sandy Lake

Sheet B

Sheet C

**Attachment B2
Proposed Amendments to the
Municipal Planning Strategy for the Bedford Plan Area**

BE IT ENACTED by the Halifax Regional Council of the Halifax Regional Municipality that the Municipal Planning Strategy for Bedford is hereby amended as follows:

1. Amend the ENVIRONMENT section by deleting the paragraph after Floodplain Protection shown below in strikeout and inserting the text shown in bold highlight below:

~~In 1984 a hydrotechnical study of the Sackville River was completed under the joint Canada-Nova Scotia Flood Reduction Program. The study identified and mapped two flood risk areas, one for the 1:20 year storm and another for the 1:100 year storm. The recommendation of the study was that no development be permitted within the 1:20 year flood area, and that floodproofing measures be required for structures located within the 1:100 year area. Within Bedford, large portions of both the 1:20 and 1:100 year flood areas have been infilled and/or developed. Further infilling and/or inappropriate development could disturb the balance which exists presently between the river and its floodway areas. In recognition of the need to minimize the consequences of flooding along the Sackville River, Policies E-9 to E-12 suggest the establishment of a floodway zone and its application to the 1:20 year floodway and the establishment of floodproofing measures for structures erected within the 1:100 year floodway fringe. Uses within the 1:20 floodway zone shall be restricted to conservation related uses and limited recreation uses. Structures intended for human habitation shall be prohibited.~~

Flooding is a natural hazard that places people, property, infrastructure, and communities at risk. Those living in low-lying areas along watercourses are at high risk. The Province of Nova Scotia adopted a Statement of Provincial Interest which mandates that planning documents develop controls on development within floodplains “to protect public safety and property and to reduce the requirement for flood control works and flood damage restoration in floodplains.” This Statement points to floodplains that were identified under the Canada-Nova Scotia Flood Damage Reduction Program (FDRP) in the 1980s as areas of particular concern. It also enables the application of development controls to additional floodplain areas that are identified through further investigation.

The floodplains for the Sackville and Little Sackville Rivers were initially identified as flood-risk areas under the FDRP in the 1980s. This mapping was undertaken from a hydrotechnical study of these waterways that was completed in the early 1980’s under the joint Canada Nova-Scotia FDRP. A floodplain study was undertaken by Cumming and Cockburn and by Nolan Davies and Associates under the FDRP to delineate the floodplains of the Sackville River in 1984 and the Little Sackville River in 1987. Floodplain zones were first adopted in this plan area along the Sackville River based on the 1984 study, in 1991.

There have been substantial alterations made to the Sackville River and Little Sackville River floodplains since these hydrotechnical studies were undertaken. HRM contracted the services of CBCL Limited, in 2014, to undertake a hydrotechnical study using modern technology, improved data, and modern hydrologic and hydraulic computer models. This mapping shows that the floodplains along the Sackville Rivers have changed over time due to the changes that have taken place within the watershed and due to the use of modern technology and improved data. It also anticipates the effects of climate change along the Sackville Rivers Floodplains and provides more accurate mapping using precision tools to apply the modelling to the topography.

In 2017, CBCL Limited completed *the Sackville Rivers Floodplain Study- Phase II*, to update the flood lines along both the Sackville and Little Sackville Rivers. The CBCL Floodplain study established parameters based on the current scientific understanding of floodplains for the Sackville and Little Sackville Rivers to delineate updated flood lines through:

- Updated river modeling using the newest technologies and computer modeling.
- An examination of past changes to land use and projected future land use.
- An examination of historical and recent storm events including rainfall and seasonal weather characteristics.
- Topography, water level, and flow measurements.
- Ice jam analysis.
- Current research on climate change impact scenarios.
- Coastal inundation and sea level rise.
- The year 2100 modeling horizon.

The study recommended flood lines based on the most conservative model result to ensure that known risks to public safety are accounted for, including impacts of projected development and the worst-case climate change predictions into the year 2100. Based on these factors, as well as improved information and modeling techniques, the study produced floodplain mapping that generally showed a larger flood impact for the 1-in-20 year and 1-in-100-year flooding events than the floodplains that were mapped in the 1980s.

HRM commissioned Design Point Engineering Limited to update the work of CBCL using a new digital elevation model that was created with 2019 LiDAR data and new surveys of the Lucasville Bridge and the Beaver Bank Crossroads Bridge. No assumptions made by the 2017 floodplain study were changed. The 2017 CBCL model was applied to the new topographical information to update the mapping.

Through these recent hydrotechnical studies, the Municipality now has updated information of the areas that will be are within the floodplains of the Sackville Rivers System. Map 1A shows the areas that were initially within the 1980 floodplains that are now outside of the 2024 floodplains. It also shows the areas that are now in the 2024 floodplains that were initially outside of the floodplain areas that were mapped in the 1980 floodplains.

Controlling development within the floodplains identified under the 2017 CBCL study will safeguard people and property from harm, protect the functions of the Sackville River Floodplains and reduce the need for costly infrastructure and property repairs. Rezoning properties from the 1980s floodplains that are no longer subject to flooding, as demonstrated by the 2017 hydrotechnical study, is appropriate as the study showed the proposed development of those lands will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns. .

The Municipality has revised its floodplain policies and regulations to reduce risks to property and public safety, as well as to reduce the need for flood control investments and clean-up responses on the properties shown to be within the floodplains under the 2017 CBCL Study and 2024 Design Point Mapping Update. This is consistent with the Statement of Provincial Interest Regarding Flood Risk Areas.

There is, however, a substantial amount of development that has occurred within the Sackville River Floodplain before these updated flood lines were produced and it is the policy of this plan to take an adaptation approach to floodplain management. Accommodations will be made to allow existing non-residential developments to be rebuilt and to change the use to some of the uses that were permitted on the property before this floodplain zoning took effect. Policies will also be created to allow consideration of new

development that may occur through innovative design where a hydrotechnical study confirms that the development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns as provided for under the Nova Scotia Statement of Provincial Interest regarding Flood Hazards. To protect public safety, restrictions will be placed on some uses, and any reconstruction of the building shall be permitted to reconstruct to the same extent and in the same location as the existing building provided the reconstructed building is floodproofed.

2. Amend the ENVIRONMENTAL POLICIES section by deleting Policies after the heading Floodplain Protection shown below in ~~strikeout~~:

~~Policy E-9:~~

~~It shall be the intention of Town Council to establish a Floodway designation on the Generalized Future Land Use map which reflects the 1:20 Floodway of the Sackville River as defined by mapping of the Canada-Nova Scotia Flood Reduction Program. The 1:100 Floodway Fringe of the Sackville River shall also be defined by mapping of the Canada-Nova Scotia Flood Reduction Program.~~

~~Policy E-10:~~

~~Within the Floodway designation it shall be the intention of Town Council to establish a Floodway Zone, encompassing the 1:20-year floodway, in which conservation related uses, public and private parks and playgrounds, recreation uses, roadways, and uses of a similar nature shall be permitted. Notwithstanding that these uses shall be permitted, any structures intended for human habitation, whether permanent or temporary, shall be prohibited.~~

~~Policy E-11:~~

~~It shall be the intention of Town Council to permit the redevelopment of existing uses within the 1:20-year floodway through the development agreement process, subject to the proponent agreeing to maintain, or enhance where possible, the water retention capabilities of the floodway.~~

~~Policy E-12:~~

~~It shall be the intention of Town Council to identify the 1:100 Floodway fringe on the Zoning map by cross hatching of the zones within its boundaries. Permitted uses within the floodway fringe shall be determined by the underlying zones. Further to the applicable zone requirements, Town Council shall require floodproofing of structures erected within the 1:100 floodway fringe and shall regulate the placement and stabilization of fill necessary for the floodproofing of permitted structures unless the structures have been specifically designed to accommodate water flow and storage.~~

3. Amend the ENVIRONMENTAL POLICIES section by inserting the following policies after the heading Floodplain Protection as shown below:

Policy E-12A:

In recognition of the need to minimize the consequences of flooding along the Sackville River system and the importance of the river as a natural storm drainage system, Council shall establish a Floodplain Designation, as shown on the Generalized Future Land Use Map. This Floodplain Designation shall encompass the 1-in-20-year floodplain mapped under the Canada-Nova Scotia FRDP and the updated 1-in-20-year and 1-in-100-year floodplains mapped by Design Point in 2024.

Policy E-12B:

Within the Floodplain Designation, a 1991 Floodway (FW) Zone shall be established under the land use by-law to encompass the 1-in-20-year floodplain that was mapped under the Canada-Nova Scotia FDRP. A 2024 Floodway Overlay (FWO) Zone shall

also be established under the land use by-law to encompass the 1-in-20-year known floodplain that was mapped by Design Point Engineering in 2024. Both zones have been created to distinguish between the floodplains that were established under the Canada-Nova Scotia FDRP and the 2024 floodplains to meet the requirements of the Nova Scotia Statement of Provincial Interest regarding Flood Risk Areas.

Policy E-12C:

Notwithstanding Policy E-12B, in recognition of the changes that have taken place in the Sackville Rivers Watershed since the 1980s and in light of the 2017 hydrotechnical study that was undertaken with improved data, advancement in hydrologic and hydraulic computer models, scientific research about climate change and with more recent topographical information and bridge measurements to update those floodplains in 2024, all privately-owned properties under the 1991 Floodway Zone that are found to outside the 2024 Floodway Overlay (FWO) Zone shall be rezoned to the abutting zone but still included in the Floodplain Designation where modified floodproofing will be required to protect any subgrade structures from unintentional flooding.

Policy E-12D:

The 1991 Floodway (FW) Zone shall permit conservation-related uses, recreation uses, public and private parks and playgrounds, public utilities, trails, roadways, and existing non-residential uses. Notwithstanding that these uses shall be permitted, any structures intended for human habitation, whether permanent or temporary, shall be prohibited.

Policy E-12E:

The 2024 Floodway Overlay (FWO) Zone shall permit conservation-related uses, recreation uses, public and private parks and playgrounds, public utilities, trails, and roadways, and existing non-residential uses. In addition to these requirements, the 2024 Floodway Overlay (FWO) Zone shall:

- a) Allow limited expansion of a non-residential building for the development of a loading dock, and entryway ramp for accessibility purposes.
- b) Allow reconstruction or repair of buildings containing existing non-residential uses provided:
 - i. there is no expansion of the existing building footprint;
 - ii. the existing building is not relocated;
 - iii. the existing building is floodproofed ; and
 - iv. A hydrotechnical study, carried out by a qualified person, shows that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to floodwater flow patterns.
- c) Allow a change in use to an alternative use permitted in the underlying zone provided the use is not for any residential institutions such as hospitals, shared accommodations, or daycares where flooding could pose a significant threat to the safety of occupants if evacuation became necessary or for any commercial and industrial uses that involve the use, manufacturing or storage of hazardous materials; and
- d) Waive applicable minimum vehicle parking space requirements to reduce the need to maintain impervious parking areas

Notwithstanding that these uses shall be permitted, any structures intended for human habitation, whether permanent or temporary, shall be prohibited.

Policy E-12F:

Within the Floodplain Designation, a 2024 Flood Fringe Overlay (FFO) Zone encompassing the 1-in-100-year floodplain, shall be established under the land use by-law. The 2024 Flood Fringe Overlay (FFO) Zone will allow most of the development permitted in accordance with the requirements of the underlying zone. Additional controls shall be established under the 2024 Flood Fringe Overlay (FFO) Zone to:

- a) Prohibit commercial and industrial uses that involve the use or storage of hazardous materials.
- b) Prohibit any residential institutions such as hospitals, shared accommodations, or daycares where flooding could pose a significant threat to the safety of occupants if evacuation became necessary; and
- c) require any development be floodproofed to a 1-in-100-year elevation standard to reduce the risk of property damage.

Policy E-12G:

To minimize adverse effects on natural stormwater flows along the 1991 Floodway (FW) Zone and the 2024 Floodway Overlay (FWO) Zone, the placement of off-site fill shall be prohibited. The alteration of grades using offsite fill may be permitted to floodproof an existing non-residential building or for the construction of roads and public utilities if a hydrotechnical study prepared by a qualified person is submitted and confirms that the placement of off-site fill within the floodway or the alteration of grades will not contribute to increased flooding of adjacent properties, increased upstream or downstream flooding, increase flood elevations, or result in a change to flood water flow patterns.

Policy E-12H:

To minimize adverse effects on natural flows along the 2024 Flood Fringe Overlay (FFO) Zone, the placement of off-site fill and alteration of grades shall be permitted within the 2024 Flood Fringe Overlay (FFO) Zone to floodproof structures and flood risk management. If off-site fill is required for development, a hydrotechnical study completed by a qualified person shall be required to confirm that the placement of fill and grade alteration will not contribute to increased flooding of adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

Policy E-12I:

Notwithstanding Policy E-12B, Council may consider allowing, by development agreement, the expansion of existing uses or new uses on lands under Policy E-12K for lands that are located, in whole or in part, within the Floodplain Designation to enable the consideration of innovative design solutions to flood-risk problems.

Policy E-12J

No development agreement under Policy E-12K shall be considered unless:

- (a) a hydrotechnical study is prepared by a qualified person to confirm that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to floodwater flow patterns; or
- (b) all of the lands being developed are located outside the 2024 FWO (Floodway Overlay), 2024 FFO (Flood Fringe Overlay), or 1987 FP (Floodplain) zones.

Policy E-12K

Subject to Policy E-12L, Council may only consider the following uses by development agreement:

- (a) uses permitted within the underlying zone of the 2024 FWO (Floodway Overlay Zone);
- (b) uses permitted within the underlying zone of the 2024 FFO (Flood Fringe Overlay) Zone; or
- (c) where the development agreement will apply to lands located:
 - (i) both within and outside the Floodplain Designation, or
 - (ii) under this Plan and an abutting municipal planning strategy,

uses enabled by the policies in the applicable municipal strategy where that portion of the lands is located; or

- (d) where the development agreement will apply to lands located:
 - (i) both within and outside the 2024 FWO (Floodway Zone) or the 2024 FFO (Flood Fringe Overlay) Zone, or
 - (ii) under the land use by-law and an abutting land use by-law,

uses permitted within the applicable zone where that portion of the land is located.

Policy E-12L

The following uses shall be prohibited:

- (a) residential institutions such as hospitals, shared accommodations, or daycare where flooding could pose a risk to the safety of the occupants if evacuation becomes necessary;
- (b) commercial or industrial uses that involve the storage, manufacturing, or distribution of hazardous materials;
- (c) residential uses in the areas zoned 2024 (Floodway Overlay) Zone or 1991 Floodway (FW) Zone; and
- (d) the placement of off-site fill within areas zoned 2024 FWO (Floodway Overlay) or 1991 Floodway (FW) Zone.

Policy E-12M

In considering development agreements pursuant to Policy E-12I, Council shall have regard for the following:

- a) the use is compatible with the surrounding land use context in terms of scale, bulk, or architectural design;
- b) the portion of the site within the Floodplain Designation is designed to prevent flooding through the incorporation of site design measures that mimic natural processes, enhance water quality, promote groundwater recharge, and enhance ecosystem services;
- c) the development does not encroach upon the required watercourse buffers under the land use by-law;

- d) any development within Floodplain Designation is floodproofed to an elevation that is above the 1-in-100-year elevation;
- e) any structures within the Floodplain Designation that are below the 1-in-100-year elevation are certified by a qualified professional engineer to allow flowthrough and to withstand a flood;
- f) that the proposed development can be accessed and egressed during a flood event without risk to public safety;
- g) a general maintenance plan for the proposed development;
- h) the conditions for development under all other policies and regulations applicable to the site; and
- i) the provisions of Policy Z-3.

Policy E-12N:

Within the Floodplain Designation, a line corresponding to the outer edge of the 1991 Floodplain Zone that is no longer within the 2024 floodplains shall be drawn on the schedule of the Land Use By-law as the Modified Floodproofing Area. This line shall encompass areas within the Floodplain Designation that are outside of the limits of the 2024 floodplains. These are areas that were found to be above the 1-in-100-year flood elevation under the 2024 floodplain mapping and where development should not contribute to increased flooding of adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns. The abutting non-floodplain zone shall be applied to these properties. As a precautionary measure modified floodproofing requirements will be established under the land use by-law to require that any habitable floorspace in these areas is above the nearest 1-in-100-year elevation and that buildings are floodproofed.

Policy E-12O:

Council intends to assess the need to update floodplain policies and zoning boundaries every ten years to ensure the land use controls accurately reflect current climate change predictions, new investments in mitigation measures, and advancements in floodplain modeling techniques.

4. Amend Appendix B: Table IIIA - Generalized Future Land Use Designations by changing the name "Floodway" to "**Floodplain**" in column 9, row 1.
5. Amend Appendix B: Table IIIA - Generalized Future Land Use Designations by inserting "**2024 Floodway Overlay Uses and Abutting Uses**" in column 1, row 41, after "INFORMATION TECHNOLOGY AND RESEARCH USES".
6. Amend Appendix B: Table IIIA - Generalized Future Land Use Designations by inserting the symbol for development agreement (⊕) in column 9, row 41.
7. Amend Appendix B: Table IIIA - Generalized Future Land Use Designations by inserting "**2024 Flood Fringe Overlay Uses and Abutting Uses**" in column 1, row 42, after "**2024 Floodway Overlay Uses**".
8. Amend Appendix B: Table IIIA - Generalized Future Land Use Designations by inserting the symbol for development agreement (⊕) in column 9, row 42
9. Amending the Generalized Future Land Use map to designate the lands to the Floodplain Designation as shown in Schedule B2-1, attached hereto.
10. Adding "**Map 1A - Comparison of the Canada – Nova Scotia Flood Damage Reduction Program Mapped Floodplains as adopted under the Municipal Planning Strategy for Bedford**"

with the 2024 Mapped Floodplains” as a document to the MPS, attached hereto as Schedule B2-2.

I, {Insert Name}, Municipal Clerk for the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Regional Council held on [DATE], 202[#].

Municipal Clerk

Beaver Bank
Hammock Plains and
Upper Sackville

Sackville Drive

Sackville

Bedford

Proposed Sackville and Little Sackville River Floodplain Designations

- Lands to be designated Floodplain Designation
- Existing Designation Boundaries
- Community Plan Boundaries

Bedford Existing Designations

- R Residential Designation
- RCOD Residential Comprehensive Development District
- RR Residential Reserve Designation
- P Park and Recreation Designation
- C Commercial Designation
- IND Industrial Designation
- I Institutional Designation
- FW Floodway Designation

1:3,800

HALIFAX



Municipal Planning Strategy Map 1A

BEDFORD

	FW Floodway Designation (1991)
	FO Floodway Overlay Zone (2024)
	FFO Flood Fringe Overlay Zone (2024)

Comparison of the Canada - Nova Scotia Flood Damage Reduction Program Floodplains as adopted under the Municipal Planning Strategy for Bedford in 1984 with the 2024 Floodplains

1:4,000



HALIFAX

Effective:



Attachment B3
Proposed Amendments to the
Municipal Planning Strategy for the Sackville Plan Area

BE IT ENACTED by the Halifax Regional Council of the Halifax Regional Municipality that the Municipal Planning Strategy for Sackville is hereby amended as follows:

1. Amend Section II Natural Features and Heritage Resources by deleting the following text as shown in ~~strikeout~~ below under the Sackville River System title:

~~Past development practices along the Little Sackville River have resulted in damage to both the river's water quality and its ability to function as a stormwater course. In order to correct these problems and prevent their reoccurrence, future development that borders the river should be reviewed and carried out with the assurances of special development control through development agreements (see Policy FP-3A).~~

2. Amend Section III Floodplain Designation section by deleting the following section after the title Floodplain Designation as shown below:

~~The identification and control of development on lands which are located adjacent to rivers and streams and which are subject to flooding during storms is premised upon the assumption that such areas are unsuitable for development. Limiting development on these lands, thereby maintaining natural stormwater drainage patterns, will alleviate the need for costly structural approaches to flood control such as channels, reservoirs, and dykes, as well as for providing flood damage compensation to individual property owners, both of which are normally borne by society at large. In an effort to reduce these costs, the federal and provincial governments agreed to map the flood risk areas of selected rivers within the province and to designate them as unsuitable for certain undertakings. The Sackville and Little Sackville Rivers are included among these rivers.~~

~~Hydrotechnical studies of the Sackville River and the Little Sackville River were completed in the early 1980s under the Canada-Nova Scotia Flood Damage Reduction Program. These studies separate flood risk areas into two belts, the "floodway" and the "floodway fringe". The floodway is that part of the flood risk area that is expected to flood completely on average once in 20 years. The floodway fringe is that part of the flood risk area that is higher and generally outside the floodway, but that can be expected to flood completely once in 100 years. The recommendation of these studies was that no development be permitted within the 1:20 year floodway, and that floodproofing measures be required for structures to be located within the 1:100 year floodway fringe. Adoption of protective measures prior to increased development pressures on lands adjacent to the Sackville and Little Sackville Rivers will serve to protect the quality of these rivers as well as to help prevent serious flooding problems.~~

~~FP-1 — In recognition of the need to minimize the consequences of flooding along the Sackville River and Little Sackville River and in recognition of the environmental importance of these rivers and their role in the natural storm drainage system, it shall be the intention of Council to establish a Floodplain Designation as shown on the Map 1 — Generalized Future Land Use. This Designation shall encompass the 1:20 and the 1:100 floodplains as defined through detailed floodplain mapping as well as any lands within one hundred (100) feet of the rivers which may not be included within either of these floodplains.~~

~~FP-2 — Within the Floodplains Designation, it shall be the intention of Council to establish a floodplain zone, encompassing the undeveloped portions of the 1:20 year floodplain, in which conservation related uses, resource activities, recreation uses, and public and private parks and playgrounds shall be permitted. Notwithstanding that these uses shall be permitted, any structures intended for human habitation, whether permanent or temporary, shall be prohibited.~~

~~FP-3A Within the Floodplain Designation, except for lands located within the P-3 Zone, it shall be the intention of Council that, notwithstanding any other development provision in this strategy, no development except accessory buildings in conjunction with permitted residential uses shall be permitted within one hundred (100) feet of the Sackville or Little Sackville Rivers. Notwithstanding that no development is permitted, Council may consider development which is consistent with that permitted by the zone on adjacent lands, according to the development agreement provisions of the Planning Act. In considering such agreements, Council shall have regard to the following:~~

- ~~(a) the scale of the development;~~
- ~~(b) the environmental protection of the watercourse with respect to proper storm drainage;~~
- ~~(c) floodproofing provisions as required by the Land Use By-law; and~~
- ~~(d) the provisions of Policy IM-13.~~

~~FP-3B Within the Floodplain Designation, for those lands beyond one hundred (100) feet from the watercourse but still within the 1:100-year floodplain, it shall be the intention of Council to extend the adjacent zones and allow development as of right provided proper floodproofing measures are undertaken for any building.~~

~~FP-4 In order to minimize the effects upon natural stormwater flows it shall be the intention of Council to exercise control over the placement and stabilization of fill necessary for the floodproofing of structures permitted within the Floodplain Designation. Further, through the review of subdivision applications, it shall be the intention of Council to co-operate with the Department of Transportation and Communications to ensure that any roadways proposed within the Floodplain Designation meet the requirements of the Halifax County Storm Drainage Criteria. In addition, no fill of any kind shall be permitted within the 1:20 year floodplain.~~

~~Floodplain mapping of the Sackville River includes portions of the river situated outside of the Sackville Plan Area in the Town of Bedford and in Municipal Electoral District #18.~~

~~If overall flood damage along the Sackville River is to be minimized and its environmental quality maintained, appropriate planning policies for remaining portions of the Floodplain within the Municipality should also be adopted.~~

~~FP-5 It shall be the intention of Council to ensure that future planning strategies and land use by-laws encompassing the remaining portions of the Sackville River contain appropriate policies and regulations.~~

~~As a result of infilling and development, the floodplain of the Little Sackville River may have been altered since it was designated under the Canada-Nova Scotia Flood Damage Reduction Program in 1987. Some properties, therefore, may be designated as being within the floodplain which no longer are. Where it can be demonstrated that this is the case for existing properties, Council will consider the appropriate zoning amendment.~~

~~FP-6 Within the Floodplain Designation, on lands zoned P-3, it shall be the intention of Council, in recognition of possible changes within the floodplain of the Little Sackville River, to consider amendments to the Land Use By-law pursuant to Policy IM-6 for existing properties where it can be demonstrated through a study conducted by a qualified person that said properties are no longer within the floodplain as designated under the Canada-Nova Scotia Flood Damage Reduction Program.~~

3. Amend the Floodplain Designation section by inserting the following text after the title Floodplain Designation as shown below:

Flooding is a natural hazard that places people, property, infrastructure, and communities at risk. Those living in low-lying areas along watercourses are at high risk. The Province of Nova Scotia adopted a Statement of Provincial Interest which mandates that planning documents develop controls on development within floodplains “to protect public safety and property and to reduce the requirement for flood control works and flood damage restoration in floodplains.” This Statement points to floodplains that were identified under the Canada-Nova Scotia Flood Damage Reduction Program (FDRP) in the 1980s as areas of particular concern. It also enables the application of development controls to additional floodplain areas that are identified through further investigation.

The floodplains for the Sackville and Little Sackville Rivers were initially identified as flood-risk areas under the FDRP in the 1980s. This mapping was undertaken from a hydrotechnical study of these waterways that was completed in the early 1980’s under the joint Canada Nova-Scotia FDRP. A floodplain study was undertaken by Cumming and Cockburn and by Nolan Davies and Associates under the FDRP to delineate the floodplains of the Sackville River in 1984 and the Little Sackville River in 1987. Floodplain zones were first adopted in this plan area along the Sackville and Little Sackville rivers based on these studies in 1994.

There have been substantial alterations made to the Sackville River and Little Sackville River floodplains since these hydrotechnical studies were undertaken. HRM contracted the services of CBCL Limited, in 2014, to undertake a hydrotechnical study using modern technology, improved data, and modern hydrologic and hydraulic computer models. This mapping shows that the floodplains along the Sackville Rivers have changed over time due to the changes that have taken place within the watershed and due to the use of better tools and better data. It also anticipates the effects of climate change along the Sackville Rivers Floodplains and provides more accurate mapping using precision tools to apply the modelling to the topography.

In 2017, CBCL Limited completed *the Sackville Rivers Floodplain Study- Phase II*, to update the flood lines along both the Sackville and Little Sackville Rivers. The CBCL Floodplain study established parameters based on the current scientific understanding of floodplains for the Sackville and Little Sackville Rivers to delineate updated flood lines through:

- Updated river modeling using the newest technologies and computer modeling.**
- An examination of past changes to land use and projected future land use.**
- An examination of historical and recent storm events including rainfall and seasonal weather characteristics.**
- Topography, water level, and flow measurements.**
- Ice jam analysis.**
- Current research on climate change impact scenarios.**
- Coastal inundation and sea level rise.**
- The year 2100 modeling horizon.**

The study recommended flood lines based on the most conservative model result to ensure that known risks to public safety are accounted for, including impacts of projected development and the worst-case climate change predictions into the year 2100. Based on these factors, as well as improved information and modeling techniques, the study produced floodplain mapping that generally showed a larger flood impact for the 1-in-20 year and 1-in-100-year flooding events than the floodplains that were mapped in the 1980s.

HRM commissioned Design Point Engineering Limited to update the work of CBCL using a new digital elevation model that was created with 2019 LiDAR data and new topographical surveys of the Lucasville Bridge and the Beaver Bank Crossroads Bridge. No assumptions made by the 2017 floodplain modeling were changed. The CBCL model was applied to the new topographical information to update the mapping.

Through these recent hydrotechnical studies, the Municipality now has updated information of the areas that are within the floodplains of the Sackville Rivers System. Map 4 shows the areas that were initially within the 1980 floodplains that are now outside of the 2024 floodplains. It also shows the areas that are now in the 2024 floodplains that were initially outside of the floodplain areas that were mapped in the 1980 floodplains.

Controlling development within the floodplains identified under the 2017 CBCL study will safeguard people and property from harm, protect the functions of the Sackville River Floodplains and reduce the need for costly infrastructure and property repairs. Rezoning properties from the 1980s floodplains that are no longer subject to flooding, as demonstrated by the 2017 hydrotechnical study, is appropriate as the study showed the proposed development of those lands will not contribute to increased flooding of adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

The Municipality has revised its floodplain policies and regulations to reduce risks to property and public safety, as well as to reduce the need for flood control investments and clean-up responses on the properties shown to be within the floodplains under the 2017 CBCL Study and 2024 Design Point Mapping Update. This is consistent with the Statement of Provincial Interest Regarding Flood Risk Areas.

There is, however, a substantial amount of development that has occurred within the Sackville River Floodplain before these updated flood lines were produced and it is the policy of this plan to take an adaptation approach to floodplain management. Accommodations will be made to allow existing non-residential developments to be rebuilt and to change the use to some of the uses that were permitted on the property before this floodplain zoning took effect. Policies will also be created to allow consideration of new development that may occur through innovative design where a hydrotechnical study confirms that the development will not contribute to increased flooding of adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns as provided for under the Nova Scotia Statement of Provincial Interest regarding Flood Hazards. To protect public safety, restrictions will be placed on some uses, and any reconstruction of the building shall be permitted to reconstruct to the same extent and in the same location as the existing building, provided the reconstructed building is floodproofed.

FP-6A In recognition of the need to minimize the consequences of flooding along the Sackville River system and the importance of the river as a natural storm drainage system, Council shall establish a Floodplain Designation, as shown on the Generalized Future Land Use Map 1. This Floodplain Designation shall encompass the 1-in-20-year floodplain mapped under the Canada-Nova Scotia FRDP and the updated 1-in-20 and 1-in-100-year floodplains mapped by Design Point in 2024.

FP-6B Within the Floodplain Designation, a 1994 FP (Floodplain) Zone shall be established under the land use by-law to encompass the 1-in-20-year floodplain that was mapped under the Canada-Nova Scotia FDRP. A 2024 FWO (Floodway Overlay) Zone shall also be established under the land use by-law to encompass the 1-in-20-year known floodplain that was mapped by Design Point Engineering in 2024. Both zones have been created to distinguish between the floodplains that were established under the Canada-Nova Scotia FDRP and the 2024 floodplains to meet the requirements of the Nova Scotia Statement of Provincial Interest regarding Flooding Risk Areas.

FP-6C Notwithstanding Policy FP-6B, in recognition of the changes that have taken place in the Sackville Rivers Watershed since the 1980s and in light of the 2017 hydro

technical study that was undertaken with improved data, advancement in hydrologic and hydraulic computer models, scientific research about climate change and with more recent topographical information and bridge measurements to update those floodplains in 2024, privately-owned properties under the 1994 P-3 Floodplain Zone that are found to outside the 2024 FWO (Floodway Overlay) Zone shall be rezoned to the abutting zone but still included in the Floodplain Designation where modified floodproofing will be required to protect any subgrade structures from flooding.

FP-6D Notwithstanding Policy FP-6C, a portion of the properties that are outside of the 2024 FWO (Floodway Overlay) Zone abutting the southern side of the Sackville Drive Secondary Plan Area cannot be rezoned to the adjacent non-floodplain zones permitted under the Sackville Drive Land Use By-law without a review of the boundary lines between the Sackville and Sackville Drive planning strategies. The current 1994 P-3 Floodplain Zone shall be maintained in those areas until the zones pertaining to these properties can be reviewed in a subsequent planning process. Policies allowing consideration of proposed developments by development agreement on the properties that traverse the Sackville and Sackville Drive planning strategies are provided for in Policy FP-6J.

FP-6E The 1994 P-3 Floodplain Zone shall permit conservation-related uses, resource activities, recreation uses, public and private parks and playgrounds, public utilities, trails, roadways, and existing non-residential uses. Notwithstanding that these uses shall be permitted, any structures intended for human habitation, whether permanent or temporary, shall be prohibited.

FP-6F The 2024 FWO (Floodway Overlay) Zone shall permit conservation-related uses, resource activities, recreation uses, public and private parks and playgrounds, public utilities, trails, and roadways, and existing non-residential uses. In addition to these requirements, the 2024 FWO (Floodway Overlay) Zone shall:

- (a) Allow limited expansion of a non-residential building for the development of a loading dock, and entryway ramp for accessibility purposes;
- (b) Allow reconstruction of existing non-residential uses to the same extent as the existing building provided:
 - i. there is no expansion of the existing building footprint;
 - ii. the existing building is not relocated;
 - iii. The reconstructed building is floodproofed; and
 - iv. A hydrotechnical study, carried out by a qualified person, shows that the proposed development will not contribute to increased flooding of adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns;
- (c) Allow a change in use to an alternative non-residential use permitted in the underlying zone provided the use is not for any residential institutions such as hospitals, shared accommodations, or daycares where flooding could pose a significant threat to the safety of occupants if evacuation became necessary or for any commercial and industrial uses that involve the use, manufacturing or storage of hazardous materials; and
- (d) Waive applicable minimum vehicle parking space requirements to reduce the need to maintain impervious parking areas.

Notwithstanding that these uses shall be permitted, any structures intended for human habitation, whether permanent or temporary, shall be prohibited.

FP-6G Within the Floodplain Designation, a 2024 FFO (Flood Fringe Overlay) Zone encompassing the 1-in-100-year floodplain, shall be established under the land use by-law. The 2024 FFO (Flood Fringe Overlay) Zone will allow most of the development permitted in accordance with the requirements of the underlying zone. Additional controls shall be established under the 2024 FFO (Flood Fringe Overlay) Zone to:

- (a) Prohibit commercial and industrial uses that involve the use or storage of hazardous materials;
- (b) Prohibit any residential institutions such as hospitals, shared accommodations, or daycares where flooding could pose a significant threat to the safety of occupants if evacuation became necessary; and
- (c) Require any new structures or expansions to be floodproofed to a 1-in-100-year elevation standard to reduce the risk of property damage.

FP-6H To minimize adverse effects on natural stormwater flows along the 1994 FP (Floodplain) Zone and the 2024 FWO (Floodway Overlay) Zone, the placement of off-site fill shall be prohibited. The alteration of grades using offsite fill may be permitted to floodproof an existing non-residential building or for the construction of roads and public utilities if a hydrotechnical study prepared by a qualified person is submitted and confirms that the placement of off-site fill within the floodway or the alteration of grades will not contribute to increased flooding of adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

FP-6I To minimize adverse effects on natural flows along the 2024 FFO (Flood Fringe Overlay) Zone, the placement of off-site fill and alteration of grades shall be permitted within the 2024 FFO (Flood Fringe Overlay) Zone to floodproof structures and to allow for overall site development. A hydrotechnical study prepared by a qualified person shall be required to confirm that the placement of fill and grade alteration will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

FP-6J Notwithstanding Policy FP-6B, Council may consider allowing, by development agreement, the expansion of existing uses or new uses on lands under Policy FP-6L for lands that are located, in whole or in part, within the Floodplain Designation to enable the consideration of innovative design solutions to flood-risk problems.

FP-6K No development agreement under Policy FP-6L shall be considered unless:

- (a) a hydrotechnical study is prepared by a qualified person to confirm that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to floodwater flow patterns; or
- (b) all of the lands being developed are located outside the 2024 FWO (Floodway Overlay), 2024 FFO (Flood Fringe Overlay), or 1987 FP (Floodplain) zones.

FP-6L Subject to Policy FP-6M, Council may only consider the following uses by development agreement:

- (e) uses permitted within the underlying zone of the 2024 FWO (Floodway Overlay Zone);

- (f) uses permitted within the underlying zone of the 2024 FFO (Flood Fringe Overlay) Zone; or
- (g) where the development agreement will apply to lands located:
 - (i) both within and outside the Floodplain Designation, or
 - (ii) under this Plan and an abutting municipal planning strategy,

uses enabled by the policies in the applicable municipal strategy where that portion of the lands is located; or

- (h) where the development agreement will apply to lands located:
 - (i) both within and outside the 2024 FWO (Floodway Zone) or the 2024 FFO (Flood Fringe Overlay) Zone, or
 - (ii) under the land use by-law and an abutting land use by-law,

uses permitted within the applicable zone where that portion of the land is located.

FP-6M The following uses shall be prohibited:

- (a) residential institutions such as hospitals, shared accommodations, or daycare where flooding could pose a risk to the safety of the occupants if evacuation becomes necessary;
- (b) commercial or industrial uses that involve the storage, manufacturing, or distribution of hazardous materials;
- (c) residential uses in the areas zoned 2024 (Floodway Overlay) Zone or 1994 P-3 Floodplain Zone) and
- (d) the placement of off-site fill within areas zoned 2024 FWO (Floodway Overlay) or 1994 P-3 Floodplain Zone.

FP- 6N In considering development agreements pursuant to Policy FP-6J, Council shall have regard for the following:

- (a) the use is compatible with the surrounding land use context in terms of scale, bulk, or architectural design;
- (b) the portion of the site within the Floodplain Designation is designed to prevent flooding through the incorporation of site design measures that mimic natural processes, enhance water quality, promote groundwater recharge, and enhance ecosystem services;
- (c) the development does not encroach upon the required watercourse buffers under the land use by-law;
- (d) any development within Floodplain Designation is floodproofed to an elevation that is above the 1-in-100-year elevation;
- (e) any structures within the Floodplain Designation that are below the 1-in-100-year elevation are certified by a qualified professional engineer to allow flowthrough and to withstand a flood;
- (f) that the proposed development can be accessed and egressed during a flood event without risk to public safety;
- (g) a general maintenance plan for the proposed development;

- (h) the conditions for development under all other policies and regulations applicable to the site; and
- (i) the provisions of Policy IM-13.

FP-6O Within the Floodplain Designation, a line corresponding to the outer edge of the 1994 Floodplain Zone that is no longer within the 2024 floodplains shall be drawn on the schedule of the Land Use By-law as the Modified Floodproofing Area. This line shall encompass areas within the Floodplain Designation that are outside of the limits of the 2024 floodplains. These areas were found to be above the 1-in-100-year elevation under the 2024 floodplain mapping and where development should not contribute to increased flooding on adjacent properties, upstream or downstream flooding, or flood elevations, or result in a change to flood water flow patterns. The abutting non-floodplain zone shall be applied to these properties. As a precautionary measure, modified floodproofing requirements will be established under the land use by-law to require that any habitable floorspace in these areas is above the nearest 1-in-100-year elevation and that buildings are floodproofed.

FP-6P Council intends to assess the need to update floodplain policies and zoning boundaries every ten years to ensure the land use controls accurately reflect current climate change predictions, new investments in mitigation measures, and advancements in floodplain modeling techniques.

4. Amend Policy IM-7, Section (b) by deleting the following as shown:

~~(b) no zone or any extension of a development agreement shall be considered within any Floodplain Designation which would permit a use not otherwise permitted or considered within the Floodplain Designation.~~
5. Amend Policy IM-10, section (f), clause (i) by deleting the following provision:

~~(i) development within one hundred (100) feet of the Sackville and Little Sackville Rivers according to Policy FP-3A;~~
6. Amend Policy IM-10 by adding the following after section (f) clause (i):

(ii) **uses permitted** according to policy FP-6J.
7. Amend Policy IM-10, section (e) by inserting the words “**except the Floodplain Designation**” after the word “Within any Designation” before the colon.
8. Amending Map 1 – Generalized Future Land Use to designate the lands to the Floodplain Designation as shown in Schedule B3-1, attached hereto
9. Adding “**Map 4 - Comparison of the Canada – Nova Scotia Flood Damage Reduction Program Mapped Floodplains as adopted under the Municipal Planning Strategy for Sackville with the 2024 Mapped Floodplains**” as a document to the MPS, attached hereto, as Schedule B3-2.
10. Adding “**Map 4 - Comparison of the Canada – Nova Scotia Flood Damage Reduction Program Mapped Floodplains as adopted under the Municipal Planning Strategy for Sackville with the 2024 Mapped Floodplains**” after “Transportation,” in sentence 2 of paragraph 4 under the section INTRODUCTION.

I, {Insert Name}, Municipal Clerk for the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Regional Council held on [DATE], 202[#].

Municipal Clerk

Proposed Sackville and Little Sackville River Floodplain Designations

-  Lands to be designated Floodplain Designation
-  Existing Designation Boundaries
-  Community Plan Boundaries

Sackville Existing Designations

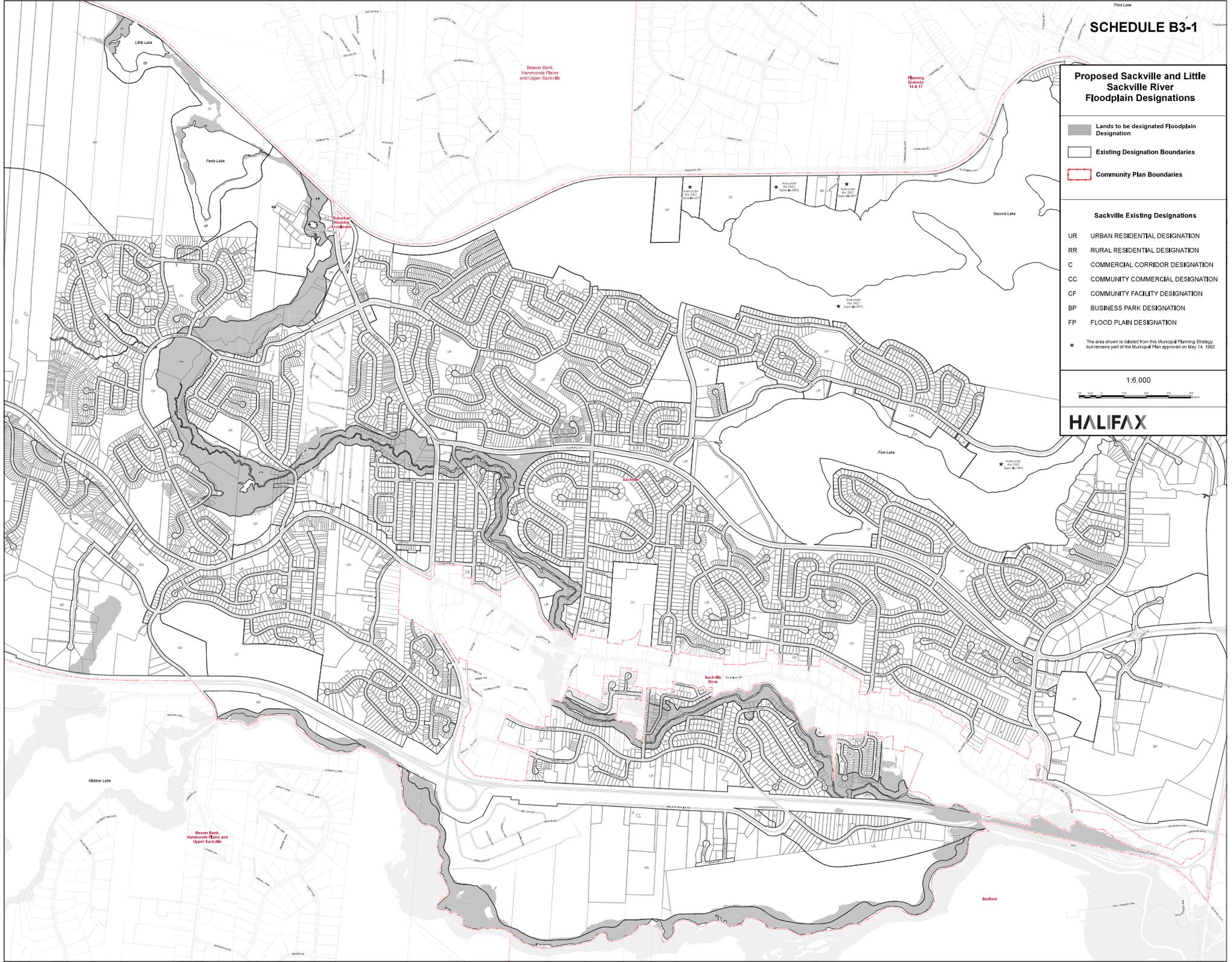
- UR URBAN RESIDENTIAL DESIGNATION
- RR RURAL RESIDENTIAL DESIGNATION
- C COMMERCIAL CORRIDOR DESIGNATION
- CC COMMUNITY COMMERCIAL DESIGNATION
- CF COMMUNITY FACILITY DESIGNATION
- BP BUSINESS PARK DESIGNATION
- FP FLOOD PLAIN DESIGNATION

* The area shown is deleted from this Municipal Planning Strategy but remains part of the Municipal Plan approved on May 14, 1992

1:6,000



HALIFAX



Municipal Planning Strategy Map 4

SACKVILLE

- FP Flood Plain Designation (1994)
- FO Floodway Overlay Zone (2024)
- FFO Flood Fringe Overlay Zone (2024)

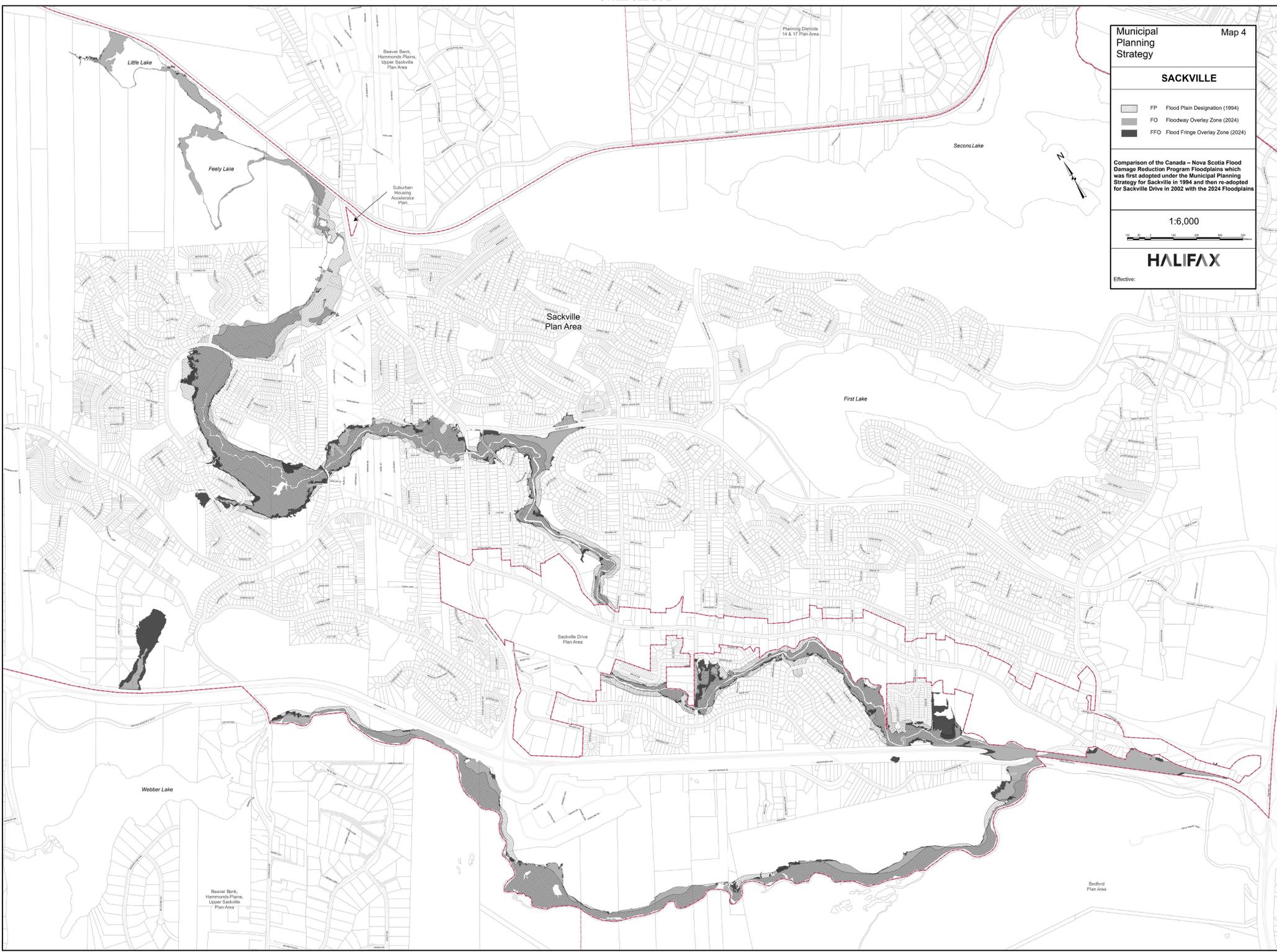
Comparison of the Canada – Nova Scotia Flood Damage Reduction Program Floodplains which was first adopted under the Municipal Planning Strategy for Sackville in 1994 and then re-adopted for Sackville Drive in 2002 with the 2024 Floodplains

1:6,000



HALIFAX

Effective:



Attachment B4
Proposed Amendments to the
Municipal Planning Strategy for the Sackville Drive Plan Area

BE IT ENACTED by the Halifax Regional Council of the Halifax Regional Municipality that the Secondary Municipal Planning Strategy for Sackville Drive Municipal Planning Strategy is hereby amended as follows:

1. Amending Section 3.7 by deleting the following:

~~In 1998, Porter Dillon Limited, in association with Cumming-Cockburn Limited, were authorized to undertake a floodplain study of the Little Sackville River. The Study was initiated in recognition of the need to agree of the impact development activity has had on the floodplain, especially since the time of an original floodplain study completed in 1987. The Final Report was provided to Halifax Regional Municipality in June 1999. The Study provides updated information for the Little Sackville River Floodplain to enable HRM to assess potential development impacts, and better regulate future development within the floodplain.~~

~~One main objective of the study was the development of 1:20 year and 1:100 year flood risk mapping. Additional technical information was provided separately. The Study also made policy recommendations that could be incorporated into the Municipal Planning Strategy and Land Use By-law for Sackville. In addition, the Study made specific recommendations for flood management.~~

~~At present, the Municipal Planning Strategy for Sackville contains seven policies related to the floodplain of the Little Sackville River. The policies establish, among other things, a special zone for the 1:20 year floodplain. The P-3 (Floodplain) Zone strictly limits development on these lands, prohibiting buildings for human habitation.~~

~~Although it is important that the Sackville MPS policies and land use By-law regulations be updated to incorporate the findings and recommendations of the Hydrological Study, to date the policies have not been amended. Recently, Regional Council has directed planning staff to commence the plan amendment process to consider the proposed changes to the MPS and LUB. In the interim, the provisions contained within the existing Sackville Land Use By-law have been incorporated into the Sackville Drive Land Use By-law.~~

2. Amending section 3.7 by adding the bold text after paragraph 2 as shown below:

Flooding is a natural hazard that places people, property, infrastructure, and communities at risk. Those living in low-lying areas along watercourses are at high risk. The Province of Nova Scotia adopted a Statement of Provincial Interest which mandates that planning documents develop controls on development within floodplains “to protect public safety and property and to reduce the requirement for flood control works and flood damage restoration in floodplains.” This Statement points to floodplains that were identified under the Canada-Nova Scotia Flood Damage Reduction Program (FDRP) in the 1980s as areas of particular concern. It also enables the application of development controls to additional floodplain areas that are identified through further investigation.

The floodplains for the Sackville and Little Sackville Rivers were initially identified as flood-risk areas under the FDRP in the 1980s. This mapping was undertaken from a hydrotechnical study of these waterways that was completed in the early 1980’s under the joint Canada Nova-Scotia FDRP. A floodplain study was undertaken by Cumming and Cockburn and by Nolan Davies and Associates under the FDRP to delineate the floodplains of the Sackville River in 1984 and the Little Sackville River in 1987. Floodplain zones were first adopted in this area along the Sackville and Little Sackville River system under the Sackville Municipal Planning Strategy on the basis of these studies in 1994. The portions of the Little Sackville

River floodplains within the Sackville Drive plan area was readopted under the Sackville Drive Secondary Planning Strategy in 2002.

There have been substantial alterations made to the Sackville River and Little Sackville River floodplains since these hydrotechnical studies were undertaken. HRM contracted the services of CBCL Limited, in 2014, to undertake a hydrotechnical study using modern technology, improved data and modern hydrologic and hydraulic computer models. This mapping shows that the floodplains along the Sackville Rivers have changed over time due to the changes that have taken place within the watershed and due to the use of modern technology and improved data. It also anticipates the effects of climate change along the Sackville Rivers Floodplains and provides more accurate mapping using precision tools to apply the modelling to the topography.

In 2017, CBCL Limited completed *the Sackville Rivers Floodplain Study- Phase II*, to update the flood lines along both the Sackville and Little Sackville Rivers. The CBCL Floodplain study established parameters based on the current scientific understanding of floodplains for the Sackville and Little Sackville Rivers to delineate updated flood lines through:

- Updated river modeling using the newest technologies and computer modeling.
- An examination of past changes to land use and projected future land use.
- An examination of historical and recent storm events including rainfall and seasonal weather characteristics.
- Topography, water level, and flow measurements.
- Ice jam analysis.
- Current research on climate change impact scenarios.
- Coastal inundation and sea level rise.
- The year 2100 modeling horizon.

The study recommended flood lines based on the most conservative model result to ensure that known risks to public safety are accounted for, including impacts of projected development and the worst-case climate change predictions into the year 2100. Based on these factors, as well as improved information and modeling techniques, the study produced floodplain mapping that generally showed a larger flood impact for the 1-in-20 year and 1-in-100-year flooding events than the floodplains that were mapped in the 1980s.

HRM commissioned Design Point Engineering Limited to update the work of CBCL using a new digital elevation model that was created with 2019 LiDAR data and new topographical surveys of the Lucasville Bridge and the Beaver Bank Crossroads Bridge. No assumptions made by the 2017 floodplain study were changed. The 2017 CBCL model was applied to the new topographical information to update the mapping to account for change.

Through these recent hydrotechnical studies, the Municipality now has updated information of the areas that are within the floodplains of the Sackville Rivers System. Map 1A of the Sackville Municipal Planning Strategy shows the areas that were initially within the 1980 floodplains (referred to as 1994 being the date the floodplain regulations were originally adopted under the Sackville Municipal Planning Strategy) that are now outside of the floodplains. It also shows the areas that are now in the 2024 floodplains that were initially outside of the floodplain areas that were mapped in the 1980 floodplains.

Controlling development within the floodplains identified under the 2017 CBCL study will safeguard people and property from harm, protect the functions of the Sackville River Floodplains and reduce the need for costly infrastructure and property repairs. Rezoning properties from the 1980s floodplains that are no longer subject to flooding, as demonstrated by the 2017 hydrotechnical study, is appropriate as the study showed the

proposed development of those lands will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

The Municipality has revised its floodplain policies and regulations to reduce risks to property and public safety, as well as to reduce the need for flood control investments and clean-up responses on the properties shown to be within the floodplains under the 2017 CBCL Study and 2024 Design Point Mapping Update. This is consistent with the Statement of Provincial Interest Regarding Flood Risk Areas.

There is, however, a substantial amount of development that has occurred within the Sackville River Floodplain before these updated flood lines were produced and it is the policy of this plan to take an adaptation approach to floodplain management. Accommodations will be made to allow existing non-residential developments to be rebuilt and to change the use to some of the uses that were permitted on the property before this floodplain zoning took effect. Policies will also be created to allow consideration of new development that may occur through innovative design where a hydrotechnical study confirms that the development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns as provided for under the Nova Scotia Statement of Provincial Interest regarding Flood Hazards. To protect public safety, restrictions will be placed on some uses and any reconstruction of the building shall be permitted to reconstruct to the same extent and in the same location as the existing building provided the reconstructed building is floodproofed.

3. Amend PART 7, by deleting the following from paragraph 1 as illustrated below:

~~It should be noted that the policies and regulations currently contained within these documents are slated for review in 2002. The focus of this review will be to ensure that policies and controls are relevant and correspond to the recent floodplain mapping exercise undertaken with the Little Sackville River Floodplain Study.~~

4. Amend Section 7.4 by deleting Policy LSR-10 as outlined below

Policy LSR-10

~~Within the Downsview-Beaver Bank Designation, a Flood Plain Zone shall be established under the Land Use By-law. The Zone shall permit conservation, storm water engineering, recreation and parks uses, including board walks, arcades and esplanades. Any structures intended for human habitation, whether permanent or temporary, shall be prohibited.~~

5. Amend Policy LSR-11 by inserting the number “1994” before the words “Floodplain Zone” in the last sentence.
6. Amend Section 7.4 by inserting the following in bold after the deleted Policy LSR-10:

Policy LSR-10A

In recognition of the need to minimize the consequences of flooding along the Sackville River system and the importance of the river as a natural storm drainage system, the Floodplain Designation shall be established as shown on the Generalized Future Land Use Map. This Floodplain Designation shall encompass the 1-in-20 year floodplain mapped under the Canada-Nova Scotia FRDP and the updated 1-in-20 and 1-in-100-year floodplains mapped by Design Point in 2024.

Policy LSR-10B

Within the Floodplain Designation, a 1994 P-3 (Floodplain) Zone shall be established under the Sackville Drive Land Use By-law to encompass the 1-in-20-year floodplain that was

mapped under the Canada-Nova Scotia FDRP. A 2024 FWO (Floodway Overlay) Zone shall also be established under the land use by-law to encompass the 1-in-20-year known floodplain that was mapped by Design Point Engineering in 2024. Both zones have been created to distinguish between the floodplains that were established under the Canada-Nova Scotia FDRP and the 2024 floodplains to meet the requirements of the Nova Scotia Statement of Provincial Interest regarding Flood Risk Areas.

Policy LSR-10C

Notwithstanding Policy LSR-10B, in recognition of the changes that have taken place in the Sackville Rivers Watershed since the 1980s and in light of the 2017 hydrotechnical study that was undertaken with improved data, advancement in hydrologic and hydraulic computer models, scientific research about climate change and with more recent topographical information and bridge measurements to update those floodplains in 2024, all properties under the 1994 P-3 (Floodplain) Zone that are found to outside the 2024 FWO (Floodway Overlay) Zone shall be rezoned to the abutting zone but still included in the Floodplain Designation where modified floodproofing will be required to protect any subgrade structures from flooding.

Policy LSR-10D

The 1994 P-3 (Floodplain) Zone shall permit conservation, stormwater engineering, recreation, and park uses, including boardwalks, arcades, esplanades, roadways, and existing non-residential uses. Any structures intended for human habitation, whether permanent or temporary, shall be prohibited.

Policy LSR-10E

The 2024 FWO (Floodway Overlay) Zone shall permit conservation-related uses, recreation uses, public and private parks and playgrounds, public utilities, trails, and roadways, and existing non-residential uses. In addition to these requirements, the 2024 FWO (Floodway Overlay) Zone shall:

- (a) Allow limited expansion of a non-residential building for the development of a loading dock, and entryway ramp for accessibility purposes.
- (b) Allow reconstruction of existing non-residential uses provided:
 - (i) there is no expansion of the existing building footprint;
 - (ii) the existing building is not relocated;
 - (iii) the reconstructed building is floodproofed; and
 - (iv) a hydrotechnical study, carried out by a qualified person, shows that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to floodwater flow patterns;
- (c) Allow a change in use to an alternative use permitted in the underlying zone provided the use is not for any residential institutions such as hospitals, shared accommodations, or daycares where flooding could pose a significant threat to the safety of occupants if evacuation became necessary or for any commercial and industrial uses that involve the use, manufacturing or storage of hazardous materials; and
- (d) Waive applicable minimum vehicle parking space requirements to reduce the need to maintain impervious parking areas

Notwithstanding that these uses shall be permitted, any structures intended for human habitation, whether permanent or temporary, shall be prohibited.

Policy LSR-10F

Within the Floodplain Designation, a 2024 FFO (Flood Fringe Overlay) Zone encompassing the 1-in-100-year floodplain, shall be established under the land use by-law. The 2024 FFO (Flood Fringe Overlay) Zone will allow most of the development permitted in accordance

with the requirements of the underlying zone. Additional controls shall be established under the 2024 FFO (Flood Fringe Overlay) Zone to:

- (a) Prohibit commercial and industrial uses that involve the use or storage of hazardous materials;
- (b) Prohibit any residential institutions such as hospitals, shared accommodations, or daycares where flooding could pose a significant threat to the safety of occupants if evacuation became necessary; and
- (c) require any new structures or expansions to be floodproofed to a 1-in-100-year elevation standard to reduce the risk of property damage.

Policy LSR-10G

To minimize adverse effects on natural stormwater flows along the 1994 P-3 (Floodplain) and the 2024 FWO (Floodway Overlay) zones, the placement of off-site fill shall be prohibited. The alteration of grades using offsite fill may be permitted to floodproof an existing non-residential building or for the construction of roads and public utilities if a hydrotechnical study prepared by a qualified person is submitted and confirms that the placement of off-site fill within the floodway or the alteration of grades will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

Policy LSR-10H

To minimize adverse effects on natural flows along the 2024 FFO (Flood Fringe Overlay) Zone, the placement of off-site fill and alteration of grades shall be permitted within 2024 FFO (Flood Fringe Overlay) Zone to floodproof structures and to allow for overall site development. A hydrotechnical study completed by a qualified person shall be required to confirm that the placement of fill and grade alteration will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

Policy LSR-10I:

Notwithstanding Policy LSR-10B, Council may consider allowing, by development agreement, the expansion of existing uses or new uses on lands under Policy LSR-10-K for lands that are located, in whole or in part, within the Floodplain Designation to enable the consideration of innovative design solutions to flood-risk problems.

Policy LSR-10J

No development agreement under Policy LSR-10K shall be considered unless:

- (a) a hydrotechnical study is prepared by a qualified person to confirm that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to floodwater flow patterns; or
- (b) all of the lands being developed are located outside the 2024 FWO (Floodway Overlay), 2024 FFO (Flood Fringe Overlay), or 1987 FP (Floodplain) zones.

Policy LSR-10K

Subject to Policy LSR-10L, Council may only consider the following uses by development agreement:

- (a) uses permitted within the underlying zone of the 2024 FWO (Floodway Overlay Zone);
- (b) uses permitted within the underlying zone of the 2024 FFO (Flood Fringe Overlay) Zone; or

- (c) where the development agreement will apply to lands located:
 - (i) both within and outside the Floodplain Designation, or
 - (ii) under this Plan and an abutting municipal planning strategy,

uses enabled by the policies in the applicable municipal strategy where that portion of the lands is located; or

- (d) where the development agreement will apply to lands located:
 - (i) both within and outside the 2024 FWO (Floodway Zone) or the 2024 FFO (Flood Fringe Overlay) Zone, or
 - (ii) under the land use by-law and an abutting land use by-law,

uses permitted within the applicable zone where that portion of the land is located.

Policy LSR-10L

The following uses shall be prohibited:

- (a) residential institutions such as hospitals, shared accommodations, or daycare where flooding could pose a risk to the safety of the occupants if evacuation becomes necessary;
- (b) commercial or industrial uses that involve the storage, manufacturing, or distribution of hazardous materials;
- (c) residential uses in the areas zoned 2024 (Floodway Overlay) Zone or 1994 P-3 (Floodplain) Zone; and
- (d) the placement of off-site fill within areas zoned 2024 FWO (Floodway Overlay) or 1994 P-3 (Floodplain) Zone.

Policy LSR-10M

In considering development agreements pursuant to Policy LSR-10I, Council shall have regard for the following:

- (a) the use is compatible with the surrounding land use context in terms of scale, bulk, or architectural design;
- (b) the portion of the site within the Floodplain Designation is designed to prevent flooding through the incorporation of site design measures that mimic natural processes, enhance water quality, promote groundwater recharge, and enhance ecosystem services;
- (c) the development does not encroach upon the required watercourse buffers under the land use by-law;
- (d) any development within Floodplain Designation is floodproofed to an elevation that is above the 1-in-100-year elevation;
- (e) any structures within the Floodplain Designation that are below the 1-in-100-year elevation are certified by a qualified professional engineer to allow flowthrough and to withstand a flood;
- (f) that the proposed development can be accessed and egressed during a flood event without risk to public safety;
- (g) a general maintenance plan for the proposed development;

- (h) the conditions for development under all other policies and regulations applicable to the site; and
- (i) the provisions of Policy I-5.

Policy LSR-10N

Within the Floodplain Designation, a line corresponding to the outer edge of the 1994 Floodplain Zone that is no longer within the 2024 floodplains shall be drawn on the schedule of the Land Use By-law as the Modified Floodproofing Area. This line shall encompass areas within the Floodplain Designation that are outside of the limits of the 2024 floodplains. These are areas that were found to be above the 1-in-100-year elevation under the 2024 floodplain mapping and where development should not cause upstream or downstream flooding or alter river flows. The abutting non-floodplain zone shall be applied to these properties. As a precautionary measure, modified floodproofing requirements will be established under the land use by-law to require that any habitable floorspace in these areas is above the nearest 1-in-100-year elevation and that buildings are floodproofed.

Policy LSR – 10O

Council intends to assess the need to update floodplain policies and zoning boundaries every ten years to ensure the land use controls accurately reflect current climate change predictions, new investments in mitigation measures, and advancements in floodplain modeling techniques.

- 7. Amend Section 10.3, subsection 10 by inserting “**1994**” before the words “Floodplain Zone”.
- 8. Amend Section 10.3, subsection 10 by inserting “**11) 2024 FWO (Floodway Overlay) Zone**” under “1994 Floodplain Zone”.
- 9. Amend Section 10.3, subsection 10 by inserting “**12) 2024 FFO (Flood Fringe Overlay) Zone**” under “11) 2024 FFO (Flood Fringe Overlay) Zone”.
- 10. Adding the following text shown in bold after subsection (e) of Policy I-4
 - (f) **Within the Floodplain Designation:
uses according to policies LSR-10I.**
- 11. Amending **Map 1 – Generalized Future Land Use to designate the lands shown in Schedule B4-1, attached hereto.**
- 12. Adding “**Map 1 - Comparison of the Canada – Nova Scotia Flood Damage Reduction Program Mapped Floodplains as adopted under the Secondary Planning Strategy for Sackville Drive with the 2024 Mapped Floodplains**” to the Sackville Drive Secondary Planning Strategy, attached hereto, as Schedule B4-2.
- 13. Amending PART 10 Section 10.3 by adding “**11) 2024 Floodway Overlay Zone**” and “**2024 Flood Fringe Overlay Zone**” after “10) Floodplain Zone”

I, {Insert Name}, Municipal Clerk for the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Regional Council held on [DATE], 202[#].

Municipal Clerk

Secondary Planning Strategy
Proposed Sackville and Little Sackville River Floodplain Designations

-  Lands to be designated Floodplain Designation
-  Existing Designation Boundaries
-  Community Plan Boundaries

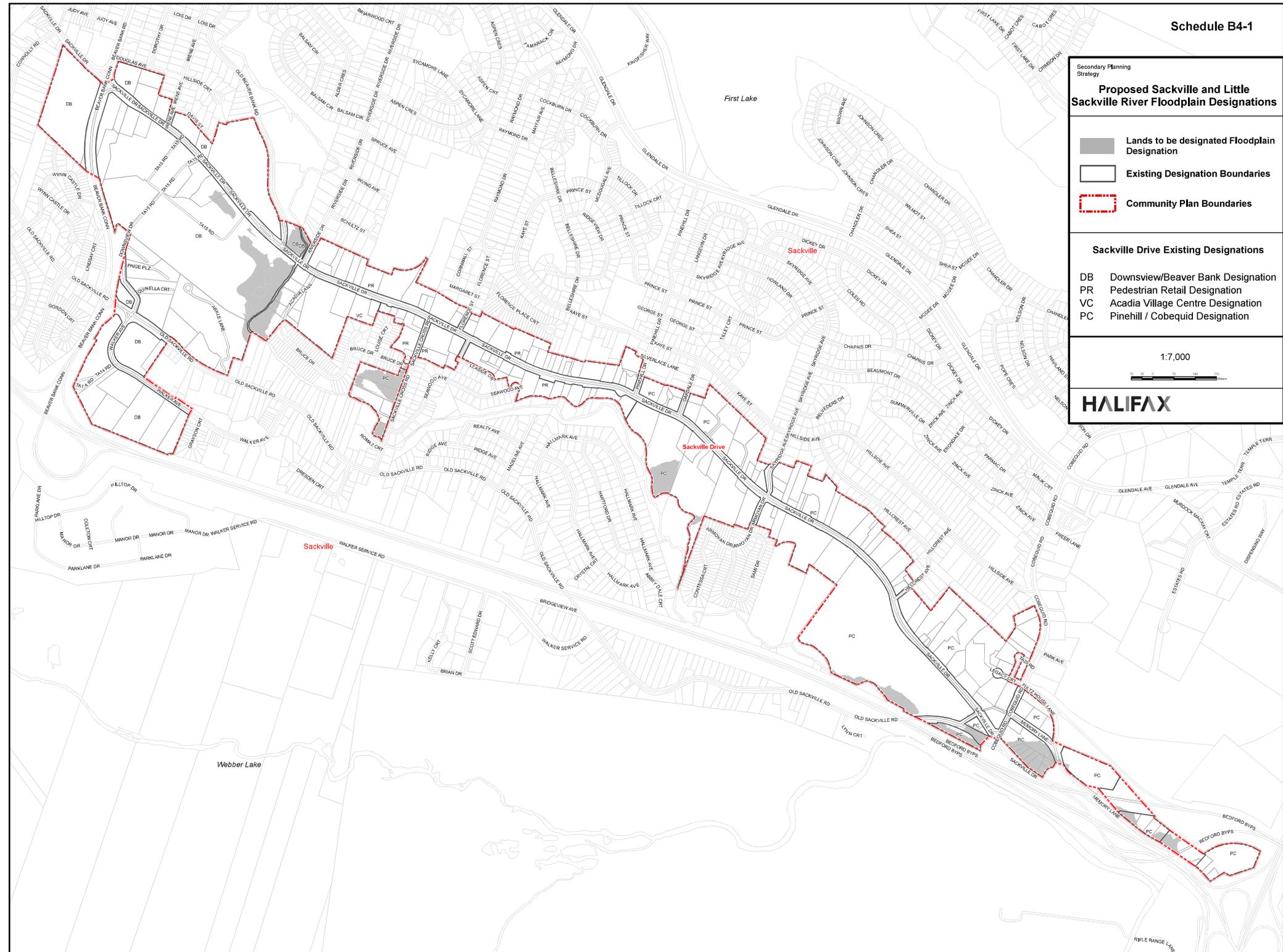
Sackville Drive Existing Designations

- DB Downsview/Beaver Bank Designation
- PR Pedestrian Retail Designation
- VC Acadia Village Centre Designation
- PC Pinehill / Cobequid Designation

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Secondary Planning Strategy

SACKVILLE DRIVE



P-3 Floodplain Zone (1994)

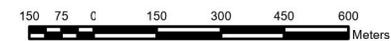


FO Floodway Overlay Zone (2024)

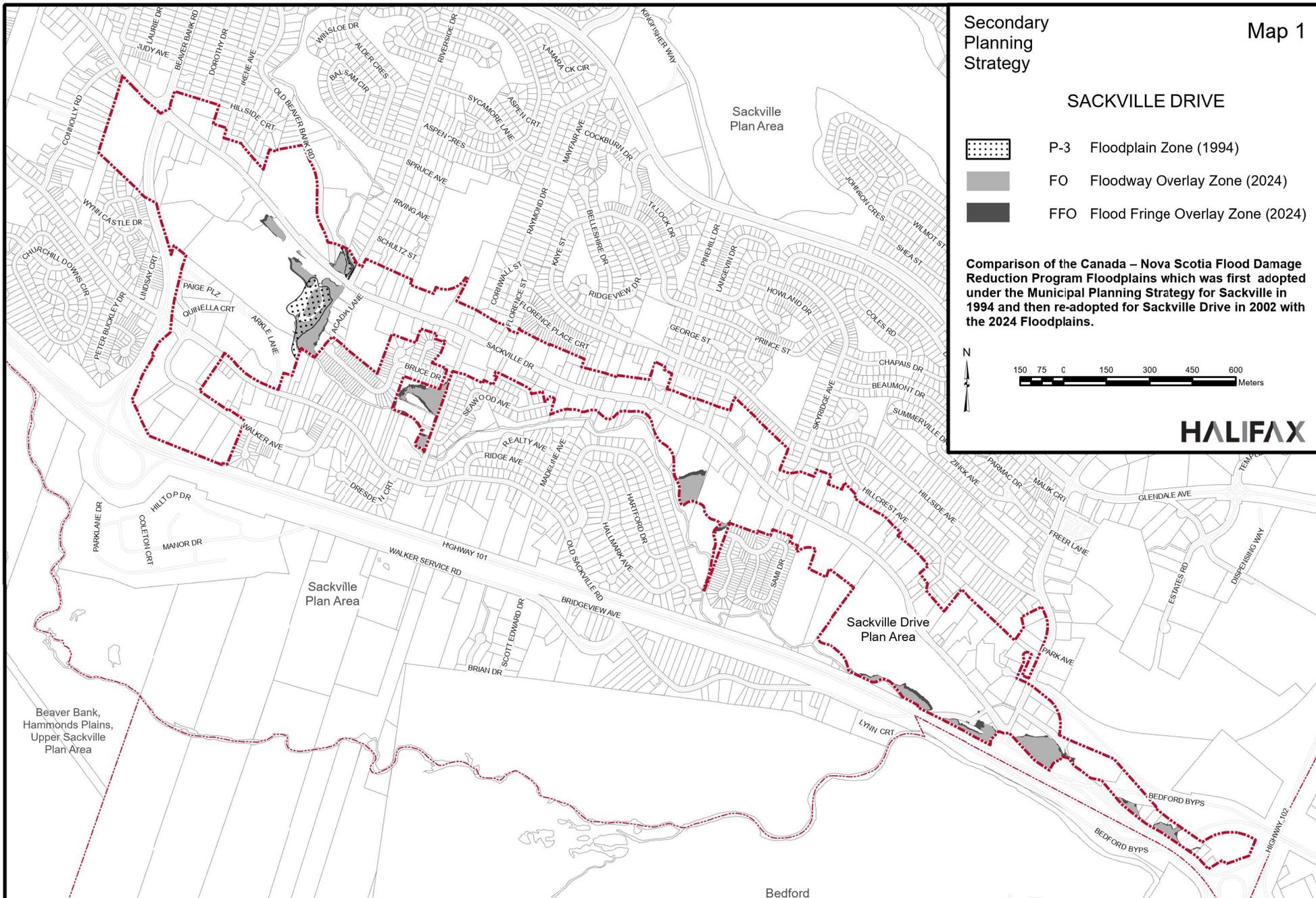


FFO Flood Fringe Overlay Zone (2024)

Comparison of the Canada – Nova Scotia Flood Damage Reduction Program Floodplains which was first adopted under the Municipal Planning Strategy for Sackville in 1994 and then re-adopted for Sackville Drive in 2002 with the 2024 Floodplains.



HALIFAX



Attachment C1
Proposed Amendments to the
Land Use By-law for Beaver Bank-Hammonds Plains-Upper Sackville Plan Area

BE IT ENACTED by the Halifax Regional Council of the Halifax Regional Municipality that the Land Use By-law for Beaver Bank-Hammonds Plains-Upper Sackville is hereby amended as follows:

1. Amend the Table of Contents by adding “**1987**” before FP (FLOODPLAIN) ZONE after the words “PART 25”.
2. Amend the Table of Contents by adding “**PART 25A 2024 FWO (FLOODWAY OVERLAY) ZONE**” after “PART 25 FP (FLOODPLAIN) ZONE”.
3. Amend the Table of Contents by adding “**PART 25B 2024 FFO (FLOOD FRINGE OVERLAY) ZONE**” after “PART 25A 2024 FWO (FLOODWAY OVERLAY) ZONE”.
4. Amend PART 2: DEFINITIONS by inserting the following definitions immediately after Section 2.26:

2.26A FLOODWAY means the inner portion of the floodplain having a 5% chance of flood occurring in any given year (the 1-in-20-year flood elevation). Under this by-law, the Floodway flood elevation is derived from the model that accounts for Climate change conditions for the Western University IDF-CC Tool upper bound result for the 2070 – 2099 period under the Sackville Rivers Floodplain Study Phase II produced by CBCL in 2017.

2.26B FLOOD FRINGE means the outer portion of the floodplain, between the 1-in-20-year floodway and the outer boundary of the floodplain, having a 1% chance of flood occurring in any given year (the 1-in-100-year flood elevation). Under this by-law, the Flood Fringe flood elevation is derived from the model that accounts for Climate change conditions for the Western University IDF-CC Tool upper bound result for the 2070 – 2099 period under the Sackville Rivers Floodplain Study Phase II produced by CBCL in 2017.
5. Amend PART 2: DEFINITIONS by inserting the following definition after Section 2.50:

2.50A Off-site Fill means fill imported from outside the floodplain or fill transported from the Flood Fringe to the Floodway.
6. Amend PART 3, Section 3.1 by inserting the number “**1987**” before “FP,” the acronym for “Floodplain Zone” under the Community Uses Section.
7. Amend PART 3, Section 3.1 by inserting the words “**2024 FWO (Floodway Overlay) Zone**” after “FP Floodplain Zone” under the Community Uses Section.
8. Amend PART 3, Section 3.1 by inserting the words “**2024 FFO (Flood Fringe Overlay) Zone**” after “2024 FO (Floodway Overlay) Zone” under the Community Uses Section
9. Amend Section 3.6 OTHER USES CONSIDERED BY DEVELOPMENT AGREEMENT by inserting the following after the first clause (i)

(j) Subject to Policy P-78I, a development agreement may be considered to permit additional development within the Floodplain Designation.

10. Amend PART 3: ZONES AND ZONING MAPS by adding the following immediately after Section 3.8:

INTERPRETATION OF 1-in-100-YEAR FLOOD ELEVATION

3.9 Reference point elevations for the 1-in-100-year flood elevation are outlined in Schedule K of this By-law for the administration of requirements of PART 25A – 2024 FWO (Floodway Overlay Zone) and PART 25B – 2024 FFO (Flood Fringe Overlay) Zone. Site-specific elevations may be determined by a qualified professional engineer or Licensed Nova Scotia Land Surveyor and used for administering these sections of the by-law when greater precision is required.

HYDROTECHNICAL STUDIES

3.10 Hydrotechnical studies submitted to fulfill the requirements for developments as outlined in PART 25A – 2024 FWO (Floodway Overlay) Zone and PART 25B – 2024 FFO (Flood Fringe Overlay) Zone must be developed following the methodology outlined in the Nova Scotia Municipal Flood Line Mapping Document.

11. Amend PART 4 by inserting Section 4.9A immediately after Section 4.9 as follows:

4.9A EXISTING NON-RESIDENTIAL USES

Notwithstanding Section 4.9, where uses are permitted as existing non-residential uses within PART 25 – 1987 FP (Floodplain) Zone and PART 25A – 2024 FWO (Floodway Overlay) Zone, they shall be considered as fully conforming uses and as such are permitted to change in use to a use permitted in the zone, resume operation if discontinued, or be replaced, or rebuilt if destroyed, on the lot which they occupied on [coming in force date of this section] subject to the requirements of the zone. An existing non-residential use includes a non-residential use that existed on or before [coming in force date of this section].

12. Amend PART 4 by adding the following immediately after subsection 4.35

4.36 – Modified Floodproofing Area Special Requirements:

No building, structure, or use shall be permitted within the area identified on the Zoning Map as areas requiring modified floodproofing unless the following special requirements are met:

- a) All habitable floorspace shall be constructed above the nearest upstream 1-in-100-year flood elevations outlined on Schedule K or the site-specific 1-in-100-year flood elevation as determined by a professional engineer or licensed Nova Scotia Land Surveyor;
- b) All electrical and mechanical equipment within a building must be located above the 1-in-100 flood elevation unless designed by a professional engineer to withstand a flood; and
- c) All structures that extend below the 1-in-100-year flood elevation must be designed and certified by a professional engineer to withstand a flood.

13. Amend the heading of PART 25: FP (FLOODPLAIN) ZONE by replacing “FP (FLOODPLAIN) ZONE” with “**1987 FP (FLOODPLAIN) ZONE**”.
14. Amend PART 25:1 FP Uses Permitted by adding the following heading and text after the word “following:” and before the heading Resource Uses:

Existing Uses

Non-residential uses that existed on or before [coming in force date of this amendment].

15. Amend PART 25:1 FP Uses Permitted by adding “**Boat house accessory to an existing residential use**” after “Recreation Uses” and before “Conservation related uses” under the heading “Open Space Uses”.
16. Amend PART 25.1 FP Uses Permitted by adding “**roads and public utilities**” at the end of this section under the heading “Open Space Uses”.
17. Amend PART 25: 1987 FP (FLOODPLAIN) ZONE by repealing Section 25.4 OTHER REQUIREMENTS: AGRICULTURAL USES and Section 25.6 FILL REQUIREMENT
18. Amend PART 25: 1987 FP (FLOODPLAIN) ZONE by adding **Section 25.7 RESTRICTIONS ON PLACEMENT OF FILL** immediately following the repealed section 25.6 as follows:

25.7 RESTRICTION: PLACEMENT OF OFF-SITE FILL

The placement of off-site fill or alteration of grades is prohibited within the 1987 FP (Floodplain) Zone, except for road construction and public utilities. The placement of off-site fill or alteration of grades will only be permitted for road construction or public utilities where a professional engineer undertakes a hydrotechnical study to certify that the fill will not contribute to upstream or downstream flooding, increase flood elevations, or alter river flows.

19. Insert **PART 25A: 2024 FWO (FLOODWAY OVERLAY) ZONE** immediately after PART 25: 1987 FP (FLOODPLAIN) ZONE as follows:

25A PART 25A: 2024 FWO (FLOODWAY OVERLAY) ZONE

25A.1 FWO USES PERMITTED

No development permit shall be issued in any FWO (Floodway Overlay) Zone except for the following:

Existing Uses

Non-residential uses that existed on or before [coming in force date of this section]

Resource Uses

**Agricultural uses, except buildings and structures related to agricultural uses
Forestry uses**

Fishing and fishing-related uses

Open Space Uses

Public and private parks and playgrounds

Recreation uses

Boathouse accessory to an existing residential use

Conservation related uses

Other Uses

Public utilities, trails, and roadways

Parking areas

Change in use permitted uses

Subject to section 25A.9, an existing non-residential use may change in use to a use permitted in the underlying zone except for any of the following:

Automotive Repair

Heavy equipment services

Gas Stations

Dry cleaners

Industrial uses

Construction & Demolition uses

Any use for the storage, distribution, or manufacturing of hazardous materials

Medical Facilities and hospitals

Daycares

Shared Housing

Hotels and motels

25A.2 FWO ZONE REQUIREMENTS: RESOURCE USES

In any FWO Zone, where uses are permitted as Resource Uses, no development permit shall be issued except in conformity with the following:

Minimum Lot Area	29,064 square feet (2700 m ²)
Minimum Frontage	100 feet (30.5 m)
Minimum Front or Flankage Yard	20 feet (6.1 m)
Minimum Rear or Side Yard	8 feet (2.4 m)
Maximum Lot Coverage	35 percent

25A.3 FWO ZONE REQUIREMENTS: OPEN SPACE USES

In any FWO Zone, where uses are permitted as Open Space Uses, no development permit shall be issued except in conformity with the provisions of Sections 25A.4, 25A.5, 25A.6 of Part 25 and Sections 22.3 and 22.5 of Part 22.

25A.4 OTHER REQUIREMENTS: PROHIBITED USES AND STRUCTURES

Notwithstanding the provisions of Section 25A.1:

- a) no structure shall be used or constructed to be used for human habitation, whether permanent or temporary, in any FWO Zone;
- b) no structure shall be used for the storage, distribution, or manufacturing of hazardous materials; and
- c) any structure must be designed by a professional engineer to withstand a flood and allow flow through.

25A.5 RESTRICTION: PLACEMENT OF OFF-SITE FILL

The placement of off-site fill or alteration of grades is prohibited within the FWO Zone, except for road construction and public utilities. The placement of off-site fill or alteration of grades will only be permitted for road construction or public utilities where a professional engineer undertakes a hydrotechnical study to certify that the fill will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

25A.6 OTHER REQUIREMENTS: GRADE ALTERATION FOR FLOODPROOFING

Notwithstanding Section 25A.5, alteration of grades is permitted for floodproofing required under Sections 25A.7 and 25A.8 subject to the following:

- a) grade alteration is limited to the existing building footprint with associated slope stabilization to floodproof a building or structure.
- b) a grading plan has been prepared and certified by a professional engineer or licensed Nova Scotia Land Surveyor showing the final grade is above the nearest upstream 1-in-100-year flood elevation shown on Schedule K or at a site-specific elevation above the 1-in-100-year elevation as determined by a professional engineer or Nova Scotia Land Surveyor;
- c) a professional engineer, through a hydrotechnical study, certifies that the grading will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns; and
- d) all other grading legislation is met.

25A.7 OTHER REQUIREMENTS: EXISTING USES EXPANSION

Notwithstanding Sections 4.9 and 25A.1, where a hydrotechnical study undertaken by a professional engineer certifies that an expansion to an existing use will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, result in a change to flood water flow patterns, existing uses permitted under Section 25A.1 are permitted to expand provided the expansion is for:

- a) alterations and expansions to entranceways needed for accessibility purposes; or
- b) alterations and expansions to loading areas.

25A.8 OTHER REQUIREMENTS: EXISTING USE RECONSTRUCTION AND FLOODPROOFING

Existing uses permitted under Section 25A.1, are permitted to be reconstructed provided the structure is constructed in the same location and to the same extent as the existing building, there is no increase in the building footprint, and a hydrotechnical study, carried out by a qualified person, shows that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to floodwater flow patterns. Where an existing use is permitted to be reconstructed the following floodproofing conditions must be met:

- a) all floors must be constructed above the nearest upstream 1-in-100-year flood elevation outlined on Schedule K or above the site-specific 1-in-100-year elevation as determined by a professional engineer or Nova Scotia land surveyor.

- b) all electrical and mechanical equipment within a building must be located above the 1-in-100-year elevation unless designed by a qualified professional engineer to withstand a flood; and
- c) any structure constructed below the 1-in-100-year flood elevation must be designed by a professional engineer to withstand a flood and allow for flow through.

25A.9 OTHER REQUIREMENTS: EXISTING NON-RESIDENTIAL USES CHANGE IN USE

An existing non-residential use may change to another non-residential use permitted in the underlying zone subject to the following requirements:

- a) there is no expansion of the structure(s);
- b) the change in use is not for any residential institutions such as hospitals, shared accommodations, or daycares as outlined in Section 25A.1; and
- c) the use change is not for commercial or industrial uses involving the use or storage of hazardous materials.

25A.10 PARKING

The minimum parking requirements, as set out in Section 4.26, shall not apply to any use permitted in the Floodway Overlay Zone.

20. Amend the Beaver Bank-Hammonds Plains-Upper Sackville Land Use Bylaw by adding **PART 25B 2024 FFO (FLOOD FRINGE OVERLAY) ZONE** as shown in bold immediately after PART 25A: 2024 FWO (FLOODWAY OVERLAY) ZONE.

PART 25B 2024 FFO (FLOOD FRINGE OVERLAY) ZONE

In addition to the regulations of the underlying zone, development in the 2024 FFO (Flood Fringe Overlay) Zone shall be subject to the following requirements:

25B.1 PROHIBITED USES

Notwithstanding the uses permitted in the underlying zone, the following uses are prohibited:

- Automotive Repair
- Heavy equipment services
- Gas Stations
- Dry cleaners
- Industrial uses
- Construction & Demolition uses
- Any use for the storage, distribution, or manufacturing of hazardous materials
- Medical Facilities and hospitals
- Daycares
- Shared Housing
- Hotels and motels

25B.2 FLOODPROOFING BUILDING REQUIREMENTS

All new or expanded structures are permitted subject to the following floodproofing requirements:

- a) all floors must be constructed above the nearest upstream 1-in-100-year flood elevation outlined on Schedule K or above the site-specific

1-in-100-year elevation as determined by a professional engineer or Nova Scotia land surveyor, except for a parking area that may be constructed below the 1-in-100-year elevation if designed by a professional engineer to allow flow-through of floodwaters and to withstand a flood;

- b) all electrical and mechanical equipment within a building must be located above the 1-in-100-year elevation unless designed by a professional engineer to withstand a flood; and
- c) all below-grade parking or other structures below the 1-in-100-year elevation must be designed by a professional engineer to withstand a flood and to allow flow through.

25B.3 RESTRICTION: OFF-SITE FILL FOR FLOODPROOFING

The placement of off-site fill shall not be permitted unless it is required for floodproofing subject to the following:

- a) the placement of off-site fill is limited to the building footprint and associated slope stabilization to place the building above the nearest upstream 1-in-100-year elevation outlined in Schedule K or the site-specific 1-in-100-year elevation as determined by a professional engineer or Nova Scotia Land Surveyor;
- b) a grading plan has been prepared by a professional engineer or Licensed Nova Scotia Land Surveyor that clearly shows the final grade is above the nearest upstream 1-in-100-year flood elevation shown on Schedule K or at an elevation certified by a professional engineer or Licensed Nova Scotia Land Surveyor to be above the 1-in-100-year elevation at the site;
- c) a professional engineer certifies, through a hydrotechnical study, that the infill and grading will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns; and
- d) all other grading legislation is met.

25B.4 RESTRICTION: GRADE ALTERATION

Alterations of topography shall be permitted to allow for necessary grading for permitted uses, provided the following conditions can be met:

- a) a grading plan has been prepared by a professional engineer or Licensed Nova Scotia Land Surveyor that clearly shows the final grade is above the nearest upstream 1-in-100-year flood elevation shown on Schedule K or at an elevation certified by a professional engineer or Licensed Nova Scotia Land Surveyor to be above the 1-in-100-year elevation at this site.
- b) a professional engineer certifies and confirms, through a hydrotechnical study, that the grading will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.
- c) all other grading legislation is met.

25B.5 SECONDARY SUITES AND BACKYARD SUITES

Where a residential use is located within the 2024 FFO (Flood Fringe Overlay) Zone, the following conditions shall be applied to Secondary Suites and Backyard Suites in addition to the requirements set out in Section 4.12A:

- a) the habitable floorspace of a secondary suite shall not be permitted unless it is above the nearest upstream 1-in-100-year flood elevation outlined on Schedule K or above a site-specific 1-in-100-year flood

elevation as determined by a professional engineer or Licensed Nova Scotia Land Surveyor after (insert date of First Notice); and
b) a new backyard suite constructed after (insert date of First Notice) shall be floodproofed as per the floodproofing requirements of 25B.2 of the 2024 FFO (Flood Fringe Overlay) Zone.

21. Amend PART 26A: CD-1 (C&D MATERIALS TRANSFER STATIONS) ZONE by replacing “1-in-100-year floodplain” with the words “**Flood Fringe Overlay**” in Subsection 26A.4 (g).”
22. Amend Schedules 1-B and 1-C Zoning to apply a 2024 FWO (Floodway Overlay) Zone and a 2024 FFO (Flood Fringe Overlay) Zone and to amend the zoning on certain lots as illustrated on Schedule C1-1 to C1-6, attached hereto.
23. Inserting Schedule K – 1-in-100-year Flood Elevation Markers as shown on Schedule C1-7, attached hereto.

I, {Insert Name}, Municipal Clerk for the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Regional Council held on [DATE], 202[#].

Municipal Clerk

SCHEDULE C1-1

Proposed Sackville and Little Sackville River Floodplain Zones

-  Lands to be zoned 2024 FMO (Floodway Overlay) Zone (1-in-20 Return Event)
-  Lands to be zoned 2024 FFO (Flood Fringe Overlay) Zone (1-in-100 Return Event)
-  Lands Requiring Modified Floodproofing
-  Existing Zoning Boundaries
-  By-law Boundaries

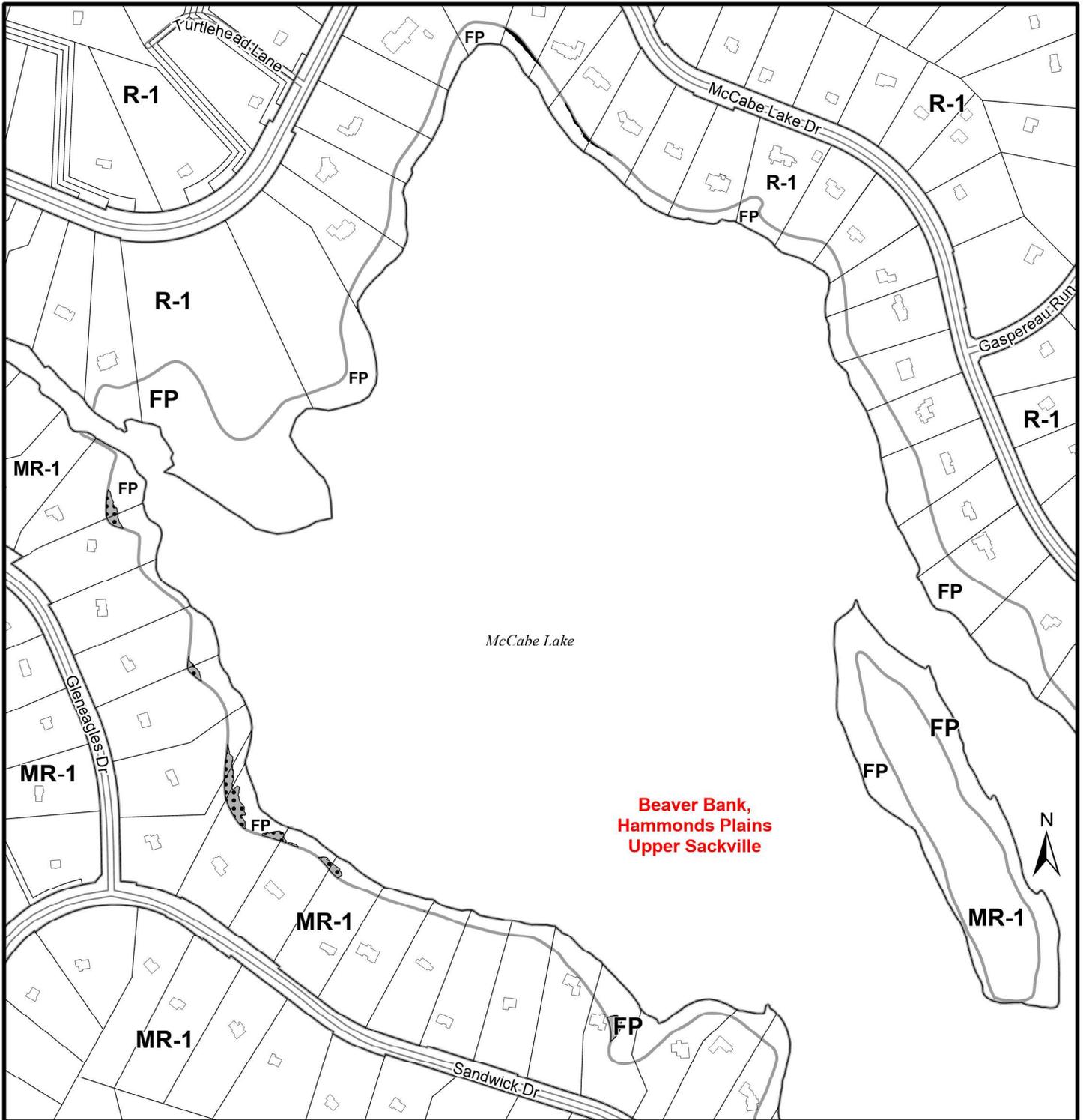
Beaver Bank, Hammonds Plains and Upper Sackville Existing Zoning

- R-1 Single Unit Dwelling Zone
- R-6 Rural Residential Zone
- MU-2 Mixed Use 2 Zone
- I-4 Former Sanitary Landfill Site Zone
- MR-1 Mixed Resource Zone
- FP Floodplain Zone
- PWS Protected Water Supply Zone

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Schedule C1-2

Beaver Bank, Hammonds Plains,
Upper Sackville

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- Lands to be rezoned from FP to R-1
- Lands to be rezoned from FP to MR-1

Zone

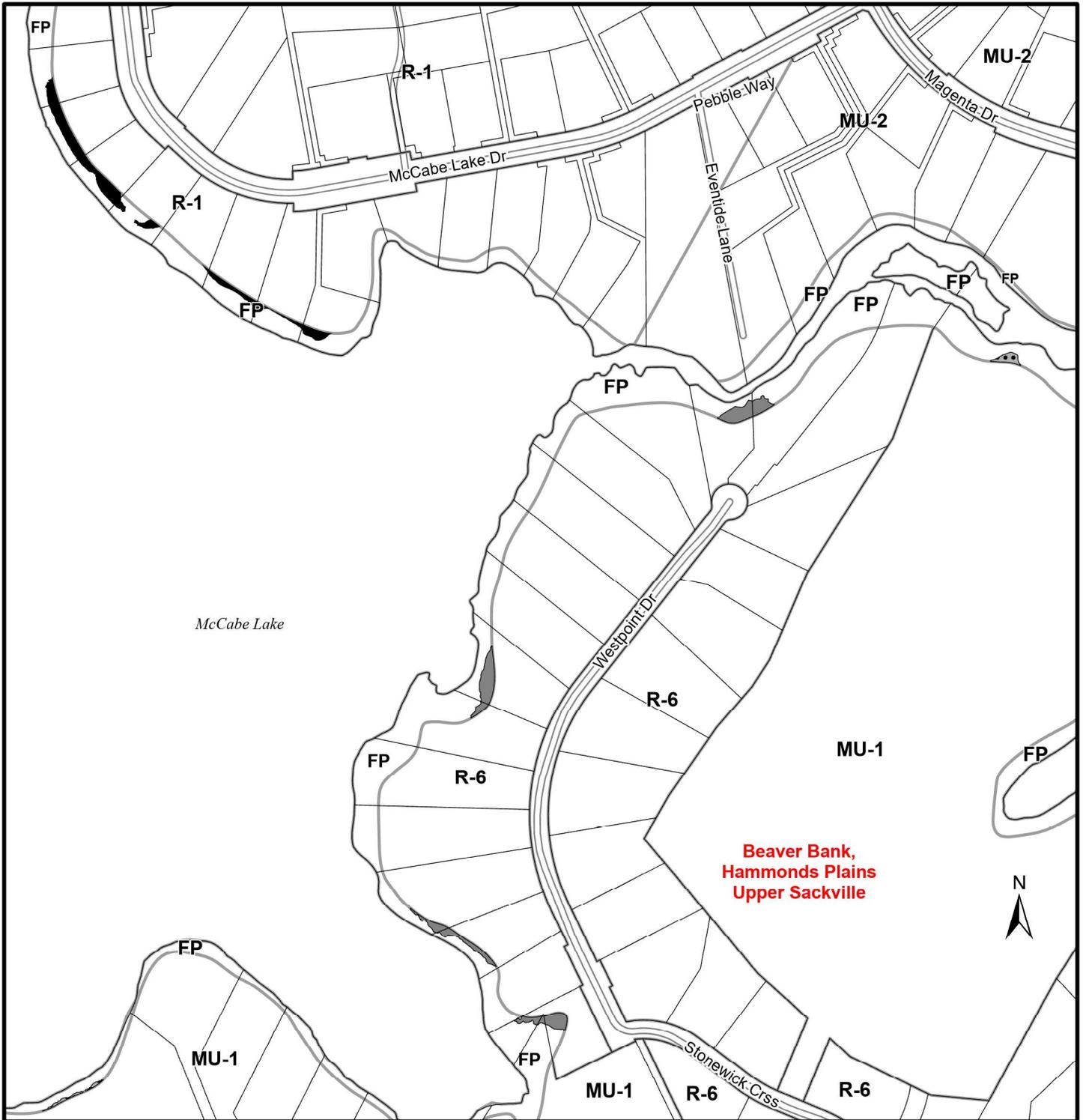
- R-1 Single Unit Dwelling Zone
- MR-1 Mixed Resource Zone
- FP Floodplain Zone



This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.

Beaver Bank, Hammonds Plains, Upper Sackville
Land Use By-Law Area



Schedule C1-3

Beaver Bank, Hammonds Plains, Upper Sackville

-  Lands to be rezoned from FP to R-1
-  Lands to be rezoned from FP to R-6
-  Lands to be rezoned from FP to MU-1

Beaver Bank, Hammonds Plains, Upper Sackville
Land Use By-Law Area

Zone

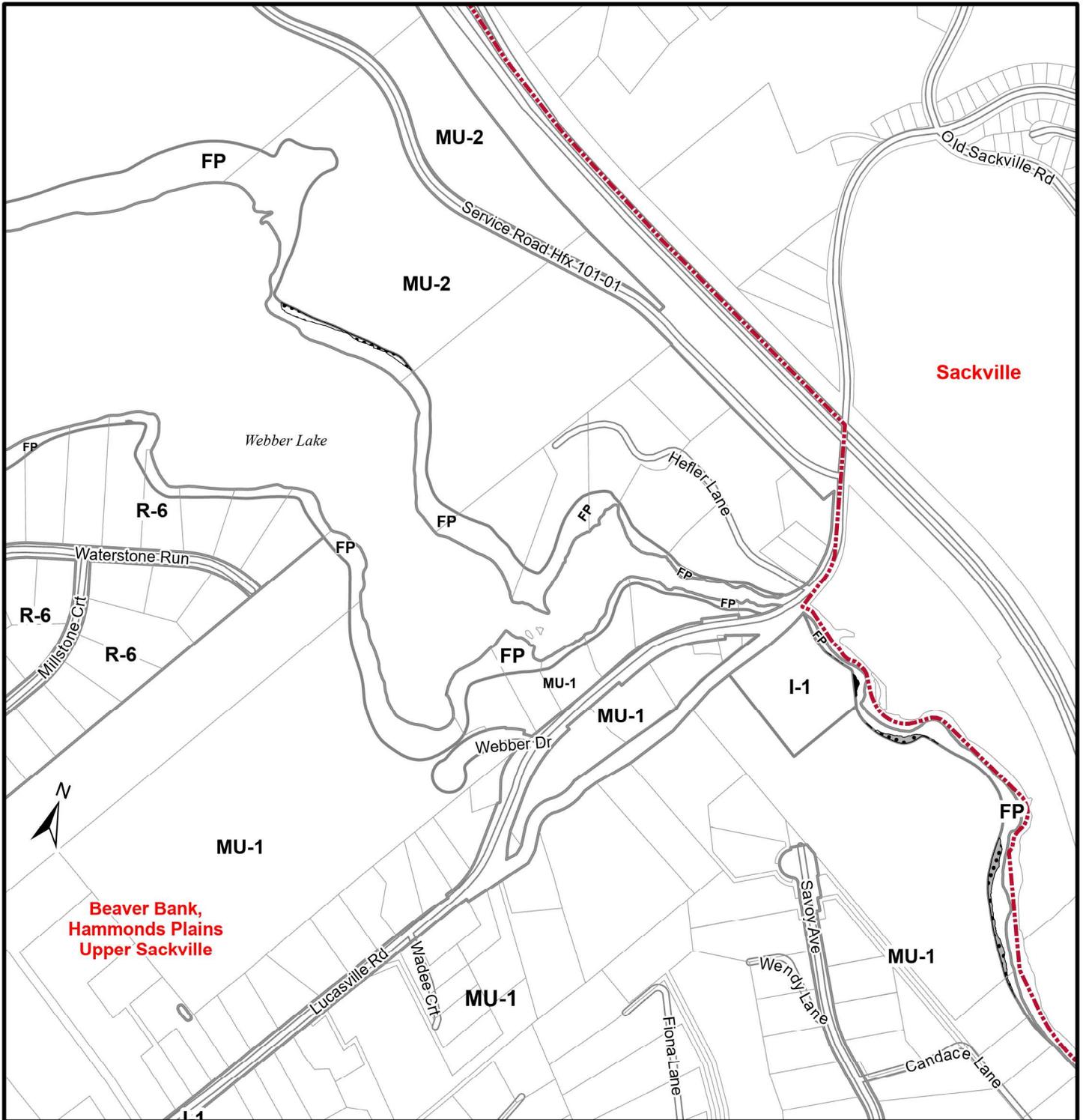
- R-1 Single Unit Dwelling Zone
- R-6 Rural Residential Zone
- MU-1 Mixed Use 1 Zone
- MU-2 Mixed Use 2 Zone
- FP Floodplain Zone

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The accuracy of any representation on this plan is not guaranteed.



Beaver Bank,
Hammonds Plains
Upper Sackville

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Schedule C1-4

Beaver Bank, Hammonds Plains,
Upper Sackville

Zone

-  Lands to be rezoned from FP to I-1
-  Lands to be rezoned from FP to MU-1
-  Lands to be rezoned from FP to MU-2
-  Lands to be rezoned from FP to R-6

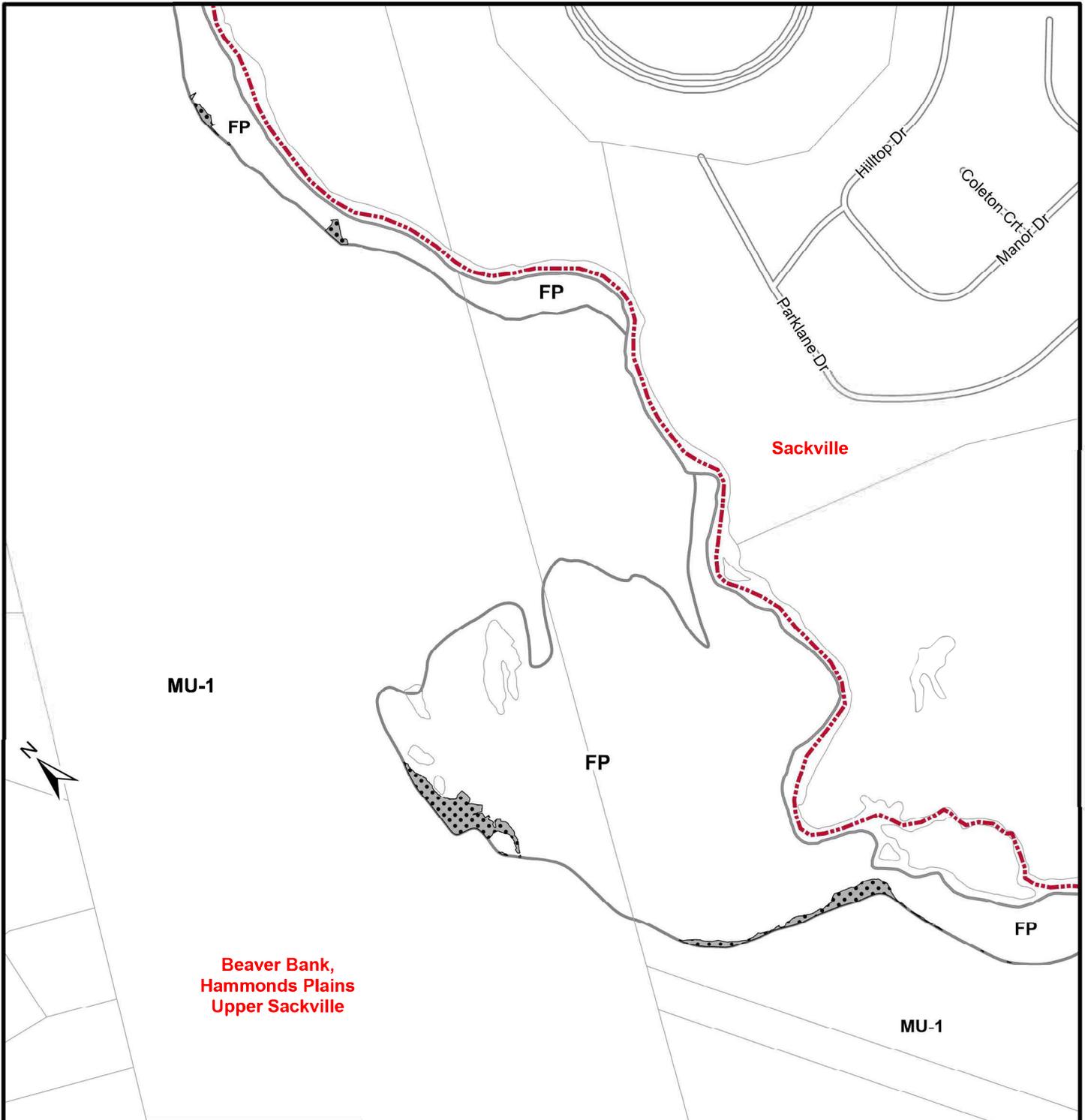
- R-6 Rural Residential Zone
- MU-1 Mixed Use 1 Zone
- MU-2 Mixed Use 2 Zone
- I-1 Mixed Industrial Zone
- FP Floodplain Zone



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The accuracy of any representation on this plan is not guaranteed.

Beaver Bank, Hammonds Plains, Upper Sackville
Land Use By-Law Area

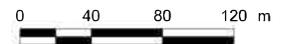


Schedule C1-5

Beaver Bank, Hammonds Plains,
Upper Sackville

HALIFAX

Zone



 Lands to be rezoned from FP to MU-1

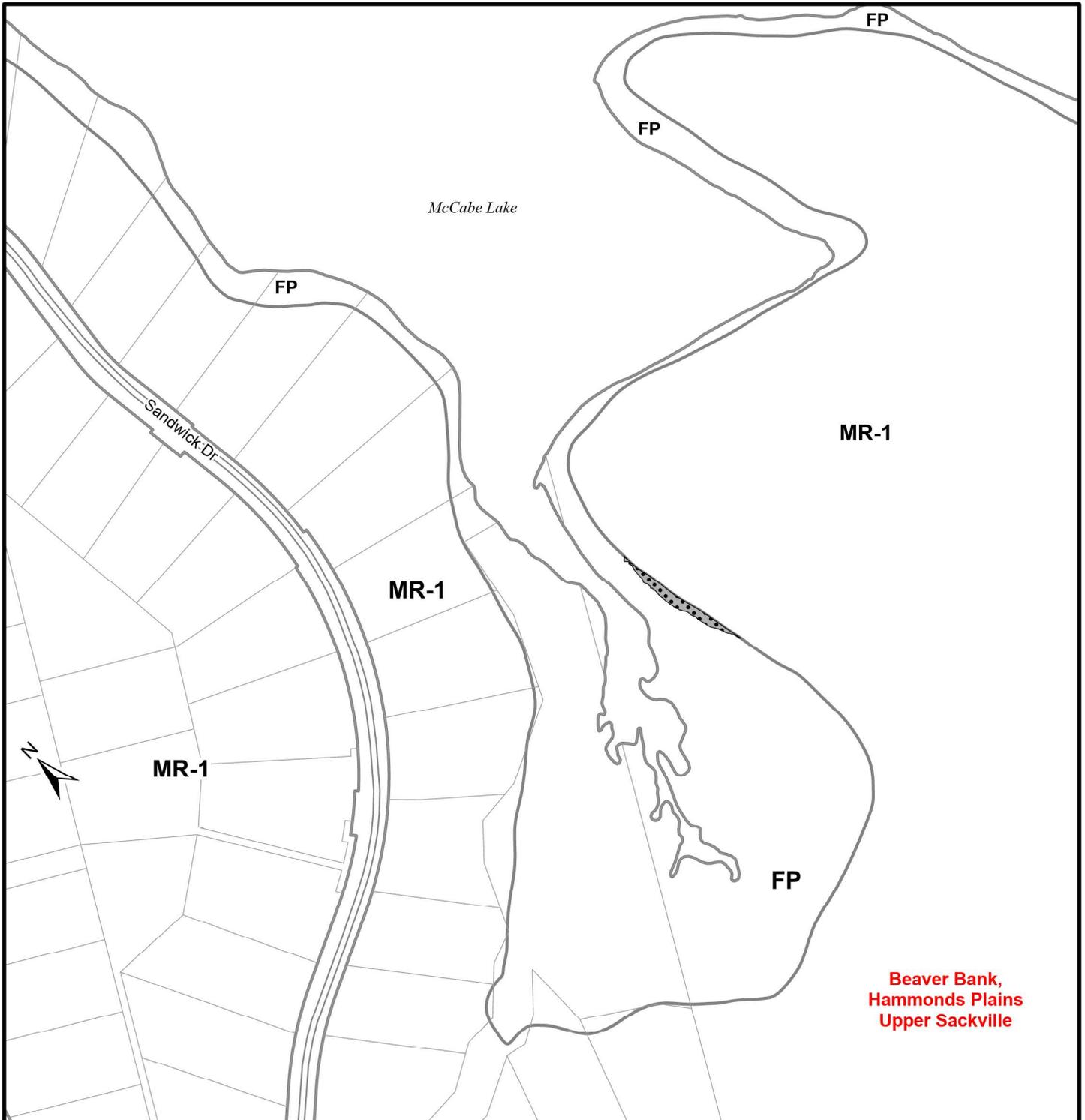
MU-1 Mixed Use 1 Zone

FP Floodplain Zone

This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

Beaver Bank, Hammonds Plains, Upper Sackville
Land Use By-Law Area

The accuracy of any representation on this plan is not guaranteed.



Schedule C1-6

Beaver Bank, Hammonds Plains,
Upper Sackville

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Zone



Lands to be rezoned from FP to MR-1

MR-1 Mixed Use 1 Zone

FP Floodplain Zone



This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.

Beaver Bank, Hammonds Plains, Upper Sackville
Land Use By-Law Area

Schedule K – Key 1-in-100-year flood elevations by location

1-in-100-year Flood Elevation Markers by Location (2024) (NAD83 MTM 5, CGVD2013)

Location	ID	Location Description	Northing	Easting	1-in-100-year flood elevation (water level)
Sackville River upstream of confluence	1	McCabe Lake	4959740.8	25560147.4	77.47 m
	2	Webber Lake outlet	4959673.5	25562024.7	76.02 m
	3	Upstream of Lucasville bridge	4959697.4	25562188.1	75.55 m
Little Sackville River upstream of confluence	4	Little Lake	4963191.4	25563512.0	75.38 m
	5	Feely Lake outlet	4962481.1	25563773.9	68.77 m
	6	Barrett Pond outlet	4961756.9	25563773.9	62.33 m
	7	Upstream of Millwood Drive crossing	4961648.0	25563038.7	54.97 m
	8	Upstream of Beaver Bank Cross Road crossing	4960780.9	25563175.8	53.00 m
	9	Upstream of Beaver Bank Road crossing	4960469.0	25563909.5	50.78 m
	10	Upstream of Sackville Drive crossing	4959240.5	25564166.5	40.26 m
	11	Upstream of Sackville Cross Road crossing	4958582.7	25564317.1	29.22 m
Sackville River downstream of confluence	12	Confluence of Sackville River and Little Sackville River	4957321.0	25565858.2	14.32 m
	13	Upstream of Rifle Range Lane crossing	4956550.8	25566466.8	9.96 m
	14	Upstream of Highway 102 crossing	4956130.5	25566575.8	9.87 m
	15	Upstream of River Lane crossing	4955678.0	25566944.6	9.20 m
	16	Upstream of Sunnyside Mall "A"	4955431.8	25566898.5	9.03 m
	17	Upstream of Sunnyside Mall "B"	4955297.1	25566859.6	8.95 m
	18	Upstream of Bedford Highway Crossing	4954860.7	25566374.7	7.44 m
	19	Upstream of Railway Crossing	4954703.5	25566345.6	4.40 m

**Attachment C2
Proposed Amendments to the
Land Use By-law for Bedford Plan Area**

BE IT ENACTED by the Halifax Regional Council of the Halifax Regional Municipality that the Land Use By-law for Bedford is hereby amended as follows:

1. Amend the Table of Contents by adding “**1991**” before FLOODWAY (FW) ZONE after the words “PART 24”.
2. Amend the Table of Contents by adding “**PART 24A 2024 FLOODWAY OVERLAY (FWO) ZONE**” after “PART 24 1991 FLOODWAY (FW) ZONE”.
3. Amend the Table of Contents by adding “**PART 25B 2024 FLOOD FRINGE OVERLAY (FFO)**” after “PART 24A 2024 FLOODWAY OVERLAY (FWO) ZONE”.
4. Amend PART 2: DEFINITIONS by inserting the following definitions immediately after the definition of “Food and Beverage Use”:

FLOODWAY means the inner portion of the floodplain having a 5% chance of occurring in any given year (the 1-in-20-year flood elevation). Under this by-law, the Floodway flood elevation is derived from the model that accounts for Climate change conditions for the Western University IDF-CC Tool upper bound result for the 2070 – 2099 period under the Sackville Rivers Floodplain Study Phase II produced by CBCL in 2017.

FLOOD FRINGE means the outer portion of the floodplain, between the 1-in-20-year floodway and the outer boundary of the floodplain, having a 1% chance of occurring in any given year (the 1-in-100-year flood elevation). Under this by-law, the Flood Fringe flood elevation is derived from the model that accounts for Climate change conditions for the Western University IDF-CC Tool upper bound result for the 2070 – 2099 period under the Sackville Rivers Floodplain Study Phase II produced by CBCL in 2017.

5. Amend PART 2: DEFINITIONS by inserting the following definition immediately after Local Office:
Off-site Fill means fill imported from outside the floodplain or fill transported from the Flood Fringe to the Floodway.
6. Amend PART 3, Section 3.1 by inserting the number “1991” before “FW,” the acronym for “Floodway Zone” under the Environmental Zones Section.
7. Amend PART 3 by inserting the words “2024 Floodway Overlay (FWO) Zone” immediately after FW Floodway” Zone under the Environmental Zones Section.
8. Amend PART 3, Section 3.1 by inserting the words “**2024 FFO (Flood Fringe Overlay) Zone**” immediately after “2024 FO (Floodway Overlay) Zone” under the Environmental Zones Section.
9. Amend PART 3 by inserting the following headings and sections immediately after Section 7 “Amendment of By-law”:

8. Hydrotechnical Studies

Hydrotechnical studies submitted to fulfill the requirements for developments as outlined in PART 24A: 2024 Floodway Overlay (FWO) Zone and PART 25B – 2024 Flood Fringe Overlay (FFO) Zone must be developed following the methodology outlined in the Nova Scotia Municipal Flood Line Mapping Document.

9. Interpretation of 1-in-100-year Flood Elevation

Reference point elevations for the 1-in-100-year flood elevation are outlined in Schedule K of this By-law for the administration of requirements of PART 24A – 2024 FWO (Floodway Overlay Zone) and PART 24B – 2024 FFO (Flood Fringe Overlay) Zone. Site-specific elevations may be determined by a qualified professional engineer or licensed Nova Scotia land surveyor and used to administer these sections of the by-law when greater precision is required.

10. Amend PART 4: USES PERMITTED BY DEVELOPMENT AGREEMENT, Section 3, by removing the text shown in strikethrough and adding the text shown in bold as illustrated below:

The Municipal Planning Strategy provides that the following shall be dealt with by Development Agreement in accordance with Residential Policies R-8 to R-17, R-27, R-27A, R-27B (RC-Jan 13/09;E-Feb 28/09), R-28 and R-31 (RC-Mar 6/07;E-Apr 7/07); Commercial Policies C-4, C-4a (RC-Mar 6/07;E-Apr 7/07), C-5, C-7 to C-15, C-18, C-20, C-29A, C-31 to C-32; Waterfront Policies WF-20 to WF-23; Industrial Policies I-2, I-4 and I-7; Institutional Policy S-7; Environmental Policies E-4 to E-8, ~~E-11~~, **E-12G, E-12K**, E-14, **E-5** and E-45; and Implementation Policy Z-2. ...

i) ~~Within the Floodway designation on the Generalized Future Land Use Map, a development agreement may be considered to permit the redevelopment of existing uses within the 1:20 year floodway subject to the restoration or enhancement of the capabilities of the floodway (Policy E-11);~~

ia) Subject to Policy E-12I, a development agreement may be considered to permit additional development within the Floodplain Designation;

11. Amend PART 5 Section 12B by adding “**1991**” before “Floodway Zone (FW)” in the heading and the first line of the Section.
12. Amend PART 5 Section 12B by adding “**and 2024 Floodway Overlay Zone (FWO)**” after “Floodway Zone (FW)” in the heading.
13. Amend PART 5 Section 12B by adding “**and 2024 Floodway Overlay Zone (FWO)**” immediately following “Floodway Zone (FW)” and before “, public transit facilities”.
14. Amend PART 5 by adding the following Section 18A after immediately Section 18 as shown in bold text below:

18A EXISTING NON-RESIDENTIAL USES

Where uses are permitted as existing non-residential uses within PART 24 - 1991 Floodway (FW) Zone and PART 24A – 2024 Floodway Overlay (FWO) Zone, they shall be considered as fully conforming uses and as such are permitted to change in use to a use permitted in the zone, resume operation if discontinued, or be

replaced, or rebuilt if destroyed, on the lot which they occupied [coming in force date of this section] subject to the requirements of the zone. An existing non-residential use includes a non-residential use that existed on or before [coming in force date of this section].

15. Amend PART 5 by repealing Section 27 and replacing it by inserting the text in bold immediately following the repealed Section 27:

27A – Modified Floodproofing Area Special Requirements:

No building, structure, or use shall be permitted within the area identified on the Zoning Map as areas requiring modified floodproofing unless the following special requirements are met:

- a) **All habitable floorspace shall be constructed above the nearest upstream 1-in-100-year flood elevations outlined on Schedule K or above the site-specific 1-in-100-year flood elevation as determined by a professional engineer or licensed Nova Scotia land Surveyor;**
- b) **All electrical and mechanical equipment within a building must be located above the 1-in-100 flood level unless designed by a professional engineer to withstand a flood; and**
- c) **All structures that extend below the 1-in-100-year flood elevation must be designed and certified by a professional engineer to withstand a flood.**

16. Amend PART 24: FLOODWAY (FW) ZONE by inserting “1991” before the word “Floodway.”

17. Amend PART 24 Section 1 by adding the following at the end of this section immediately after clause “j”:

- k) **roads and public utilities; and**
- l) **Non-residential uses that existed on or before [coming in force date of clause k and l].**

18. Insert **PART 24A: 2024 FLOODWAY OVERLAY(FWO) ZONE** after PART 24: 1991 FLOODWAY (FW) ZONE as follows:

PART 24A: 2024 FLOODWAY OVERLAY(FWO) ZONE

1 FWO USES PERMITTED

No development permit shall be issued in any FWO Zone except for the following:

Existing Uses

Non-residential uses that existed on or before [coming in force date of this section]

Open Space Uses

Public and private parks and playgrounds
Recreation uses
Boathouse accessory to an existing residential use
Conservation related uses

Other Uses

Public utilities, trails, and roadways
Parking areas

Change in use permitted uses

Subject to section 24A.8, an existing non-residential use may change in use to a use permitted in the underlying zone except for any of the following:

Automotive Repair
Heavy equipment services
Gas Stations
Dry cleaners
Industrial uses
Construction & Demolition uses
Any use for the storage, distribution, or manufacturing of hazardous materials
Medical Facilities and hospitals
Daycares
Shared Housing
Hotels and motels

2 FWO ZONE REQUIREMENTS: OPEN SPACE USES

In any FWO Zone, where uses are permitted as Open Space Uses, no development permit shall be issued except in conformity with the provisions of Sections 24A.3, 24A.4, 24A.5 of Part 24A and Part 22 and 23.

3 OTHER REQUIREMENTS: PROHIBITED USES AND STRUCTURES

Notwithstanding the provisions of Section 24A.1,

- a) no structure shall be used or constructed to be used for human habitation, whether permanent or temporary, in any FWO Zone;
- b) no structure shall be used for the storage, distribution, or manufacturing of hazardous materials; and
- c) any structures must be designed by a professional engineer to withstand a flood and to allow flow through.

4. RESTRICTION: PLACEMENT OF OFF-SITE FILL

The placement of off-site fill or alteration of grades is prohibited within the FWO Zone, except for road construction and public utilities. The placement of off-site fill or alteration of grades will only be permitted for road construction or public utilities where a professional engineer undertakes a hydrotechnical study to certify that the fill will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

5. OTHER REQUIREMENTS: GRADE ALTERATION FOR FLOODPROOFING

Notwithstanding Section 24A.4, alteration of grades is permitted for

floodproofing required under Sections 24A.6 and 24A.7 subject to the following:

- a) grade alteration is limited to the existing building footprint with associated slope stabilization to floodproof a building or structure;
- b) a grading plan has been prepared by a professional engineer or Licensed Nova Scotia Land Surveyor showing the final grade is above the nearest upstream 1-in-100-year elevation shown on Schedule K or above a site-specific elevation above the 1-in-100-year elevation as determined by a professional engineer or Nova Scotia Land Surveyor;
- c) a professional engineer, through a hydrotechnical study, certifies that the grading will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns; and
- d) all other grading legislation is met.

6. OTHER REQUIREMENTS: EXISTING USES EXPANSION

Notwithstanding Sections 24A.1, where a hydrotechnical study undertaken by a professional engineer certifies that an expansion to an existing use will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, result in a change to flood water flow patterns, existing uses permitted under Section 24 A. 1 are permitted to expand provided the expansions are for

- a) alterations and expansions to entranceways needed for accessibility purposes; or
- b) alterations and expansions to loading areas.

7 OTHER REQUIREMENTS: EXISTING USE RECONSTRUCTION AND FLOODPROOFING

Existing uses permitted under Section 24A.1, are permitted to be reconstructed provided the structure is constructed in the same location and to the same extent as the existing building, there is no increase in the building footprint, and a hydrotechnical study, carried out by a qualified person, shows that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to floodwater flow patterns. Where an existing use is permitted to be reconstructed, the following floodproofing conditions must be met:

- a) All floors must be constructed above the nearest upstream 1-in-100-year flood elevation outlined on Schedule K or above the site-specific 1-in-100-year flood elevation as determined by a professional engineer or Nova Scotia land surveyor.
- b) All electrical and mechanical equipment within a building must be located above the 1-in-100-year flood elevation unless designed by a qualified professional engineer to withstand a flood.
- c) Any structure constructed below the 1-in-100-year flood elevation must be designed by a professional engineer to withstand a flood and allow for flow through.

8. OTHER REQUIREMENTS: EXISTING NON-RESIDENTIAL USES CHANGE

An existing non-residential use may change to another non-residential use permitted in the underlying zone subject to the following requirements:

- a) there is no expansion of the structure(s);
- b) the change in use is not for any residential institutions such as hospitals, shared accommodations, or daycares as outlined in Section 24A.1; and

- c) the change in use is not for commercial or industrial uses involving the use or storage of hazardous materials.

9. **PARKING**

The minimum parking requirements in section 34 shall not apply to any use permitted in the Floodway Zone.

19. Amend the Bedford Land Use Bylaw by adding PART 24B 2024 FLOOD FRINGE OVERLAY (FFO) ZONE as shown in bold immediately after PART 24A: 2024 FLOODWAY OVERLAY (FWO) ZONE.

PART 24B 2024 Flood Fringe Overlay (FFO) Zone

In addition to the regulations of the underlying zone, development in the 2024 Flood Fringe Overlay (FFO) Zone shall be subject to the following requirements:

1. **PROHIBITED USES**

Notwithstanding the uses permitted in the underlying zone, the following uses are prohibited:

Automotive Repair
Heavy equipment services
Gas Stations
Dry cleaners
Industrial uses
Construction & Demolition uses
Any use for the storage, distribution, or manufacturing of hazardous materials
Medical Facilities and hospitals
Daycares
Shared Housing
Hotels and motels

2. **FLOODPROOFING BUILDING REQUIREMENTS**

All new or expanded structures are permitted subject to the following floodproofing requirements:

- a) all floors must be constructed above the nearest upstream 1-in-100-year flood elevation outlined on Schedule K or above the site-specific 1-in-100-year flood elevation as determined by a professional engineer or Nova Scotia land surveyor, except for a parking area that may be constructed below the 1-in-100-year flood elevation if designed by a professional engineer to allow flow-through of floodwaters and to withstand a flood;
- b) all electrical and mechanical equipment within a building must be located above the 1-in-100-year flood elevation unless designed by a professional engineer to withstand a flood; and
- c) all below-grade parking or other structures below the 1-in-100-year flood elevation must be designed by a professional engineer to withstand a flood and to allow flow through.

3. **RESTRICTION: OFF-SITE FILL FOR FLOODPROOFING**

The placement of off-site fill shall not be permitted unless it is required for floodproofing subject to the following:

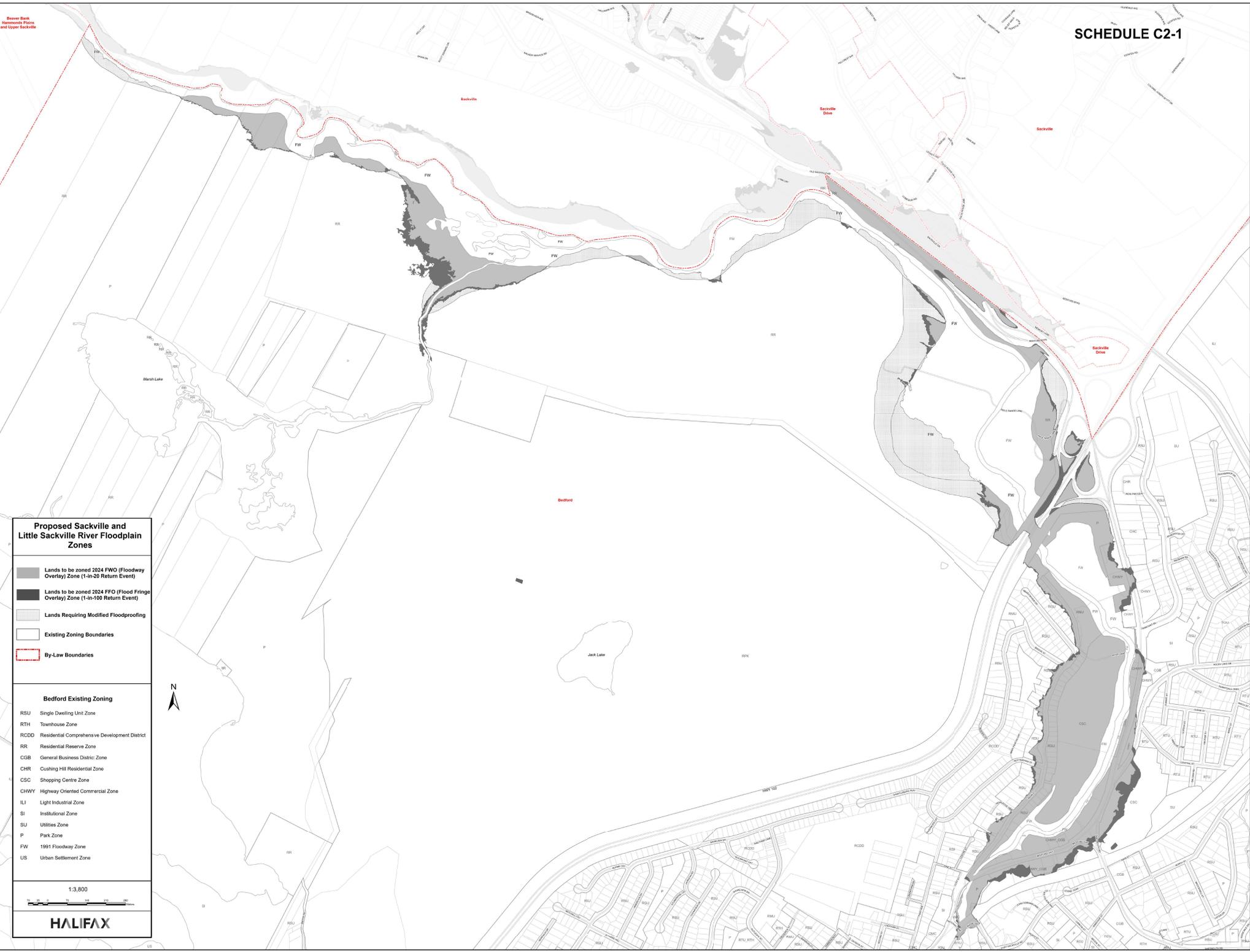
- a) the placement of off-site fill is limited to the building footprint and associated slope stabilization to place the building above the nearest

- upstream 1-in-100-year flood elevation outlined in Schedule K or the site-specific 1-in-100-year elevation as determined by a professional engineer or Licensed Nova Scotia Land Surveyor;
 - b) a grading plan has been prepared by a professional engineer or Licensed Nova Scotia Land Surveyor that clearly shows the final grade is above the nearest upstream 1-in-100-year flood elevation shown on Schedule K or at an elevation certified by a professional engineer or Licensed Nova Scotia Land Surveyor to be above the 1-in-100-year elevation at this site;
 - c) a professional engineer certifies, through a hydrotechnical study, that the infill and grading will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns; and
 - d) all other grading legislation is met.
- 4. **RESTRICTION: GRADE ALTERATION**
Alterations of topography shall be permitted to allow for necessary grading for permitted uses, provided the following conditions can be met:
 - a) a grading plan has been prepared by a professional engineer or Licensed Nova Scotia Land Surveyor that clearly shows the final grade is above the nearest upstream 1-in-100-year flood elevation shown on Schedule K or at an elevation certified by a professional engineer or Licensed Nova Scotia Land Surveyor to be above the 1-in-100-year flood elevation at the site;
 - b) a professional engineer certifies and confirms, through a hydrotechnical study, that the grading will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns; and
 - c) all other grading legislation is met.
- 5. **SECONDARY SUITES AND BACKYARD SUITES**
Where a residential use is located within the 2024 Flood Fringe Overlay (FFO) Zone, the following conditions shall be applied to Secondary Suites and Backyard Suites in addition to the requirements of Section 29B:
 - a) the habitable floorspace of a secondary suite shall not be permitted unless it is above the nearest upstream 1-in-100-year flood elevation outlined on Schedule K or above a site-specific 1-in-100-year flood elevation as determined by a professional engineer or Licensed Nova Scotia Land Surveyor after (insert date of First Notice).
 - b) a new backyard suite constructed after (insert date of First Notice) shall be floodproofed as per the floodproofing requirements of 24B.2 of the 2024 Flood Fringe Overlay (FFO) Zone.
- 20. Amending Schedule A Zoning Map to apply a 2024 Floodway Overlay (FWO) Zone and a 2024 Flood Fringe Overlay (FFO) Zone and to change the zoning as illustrated on Schedule C2-1 to C2-5 attached hereto.
- 21. Inserting Schedule K – 1-in-100-year Flood Elevation Markers as shown on Schedule C2-6, attached hereto.

I, {Insert Name}, Municipal Clerk for the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Regional Council held on [DATE], 202[#].

Municipal Clerk

Rever Bank
Hornum's Plains
and Upper Sackville



Proposed Sackville and Little Sackville River Floodplain Zones

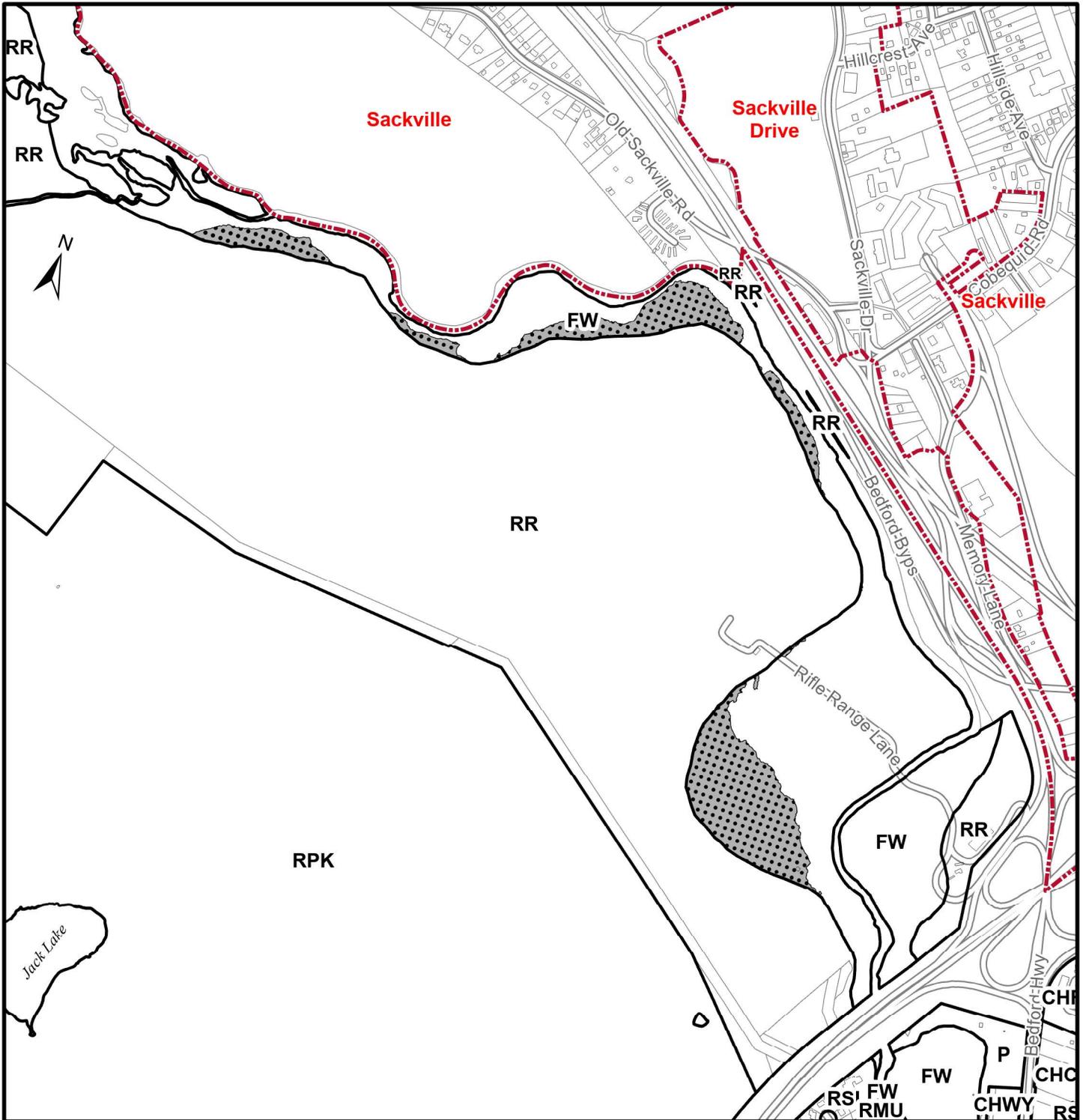
- Lands to be zoned 2024 FWO (Floodway Overlay) Zone (1-in-20 Return Event)
- Lands to be zoned 2024 FFO (Flood Fringe Overlay) Zone (1-in-100 Return Event)
- Lands Requiring Modified Floodproofing
- Existing Zoning Boundaries
- By-Law Boundaries

Bedford Existing Zoning

- RSU Single Dwelling Unit Zone
- RTM Townhouse Zone
- RCDD Residential Comprehensive Development District
- RR Residential Reserve Zone
- CGB General Business District Zone
- CHR Cushing Hill Residential Zone
- CSC Shopping Centre Zone
- CHWY Highway Oriented Commercial Zone
- ILI Light Industrial Zone
- SI Institutional Zone
- SU Utilities Zone
- P Park Zone
- FW 1991 Floodway Zone
- US Urban Settlement Zone

1:3,800

HALIFAX



Schedule C2-2

Bedford

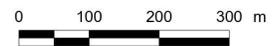
 Lands to be rezoned from FW to RR

Bedford Land Use By-Law Area

Zone

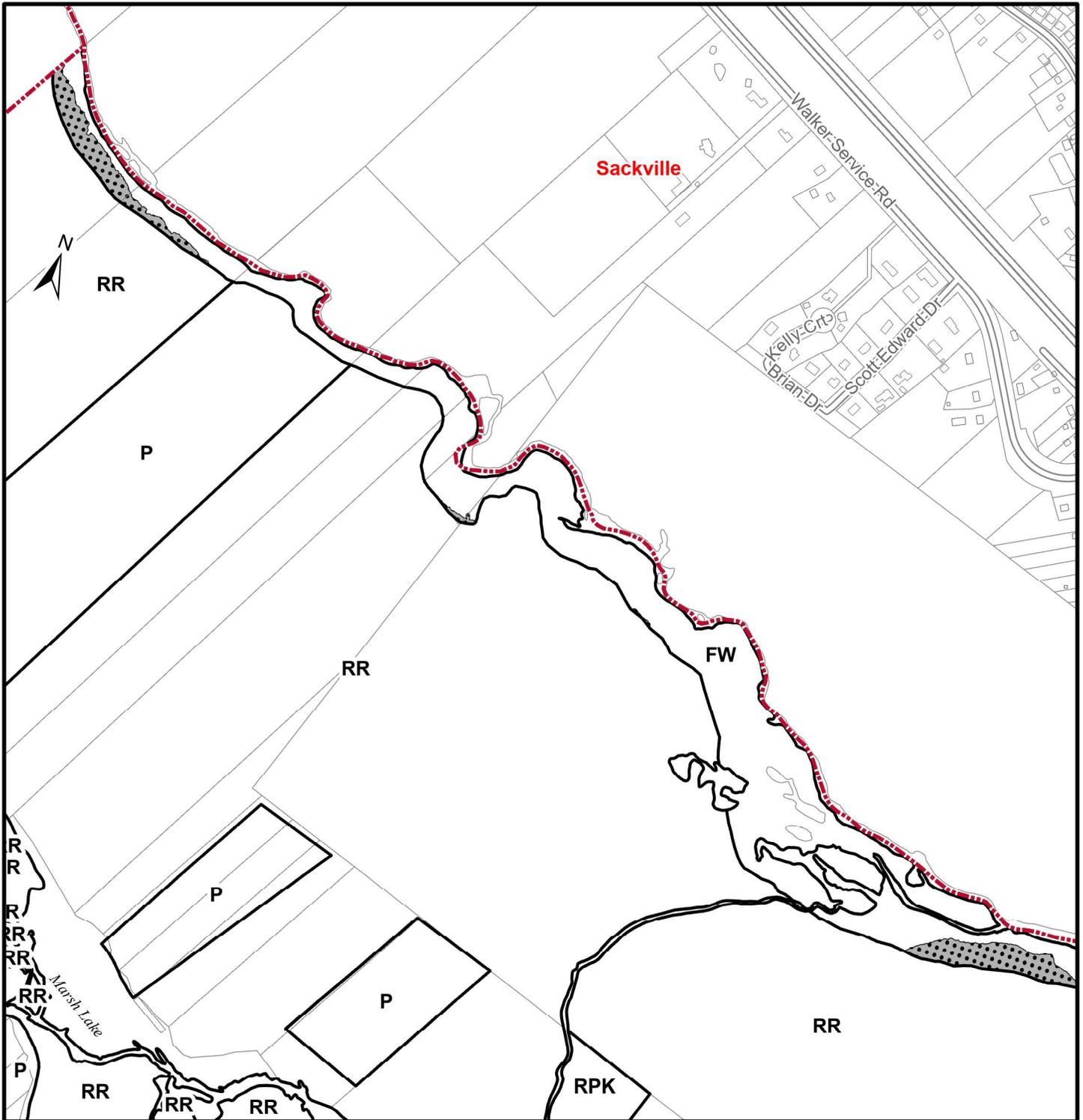
RSU	Single Dwelling Unit Zone
RR	Residential Reserve Zone
CHWY	Highway Oriented Commercial Zone
P	Park Zone
RPK	Regional Park Zone
FW	1991 Floodway Zone

HALIFAX



This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.



Schedule C2-3

Bedford

HALIFAX

 Lands to be rezoned from FW to RR

Zone

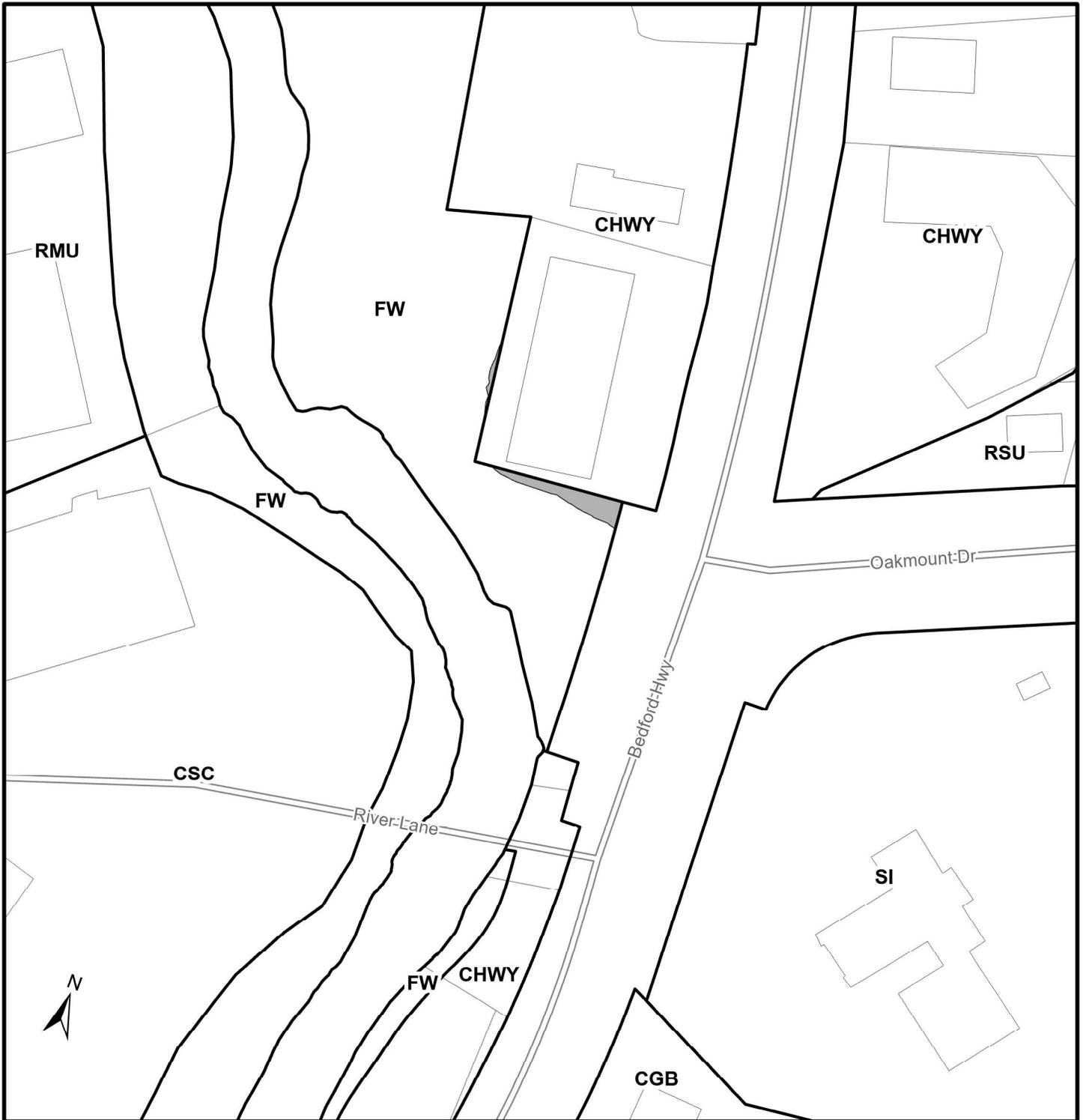
- RR Residential Reserve Zone
- P Park Zone
- RPK Regional Park Zone
- FW 1991 Floodway Zone



This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.

Bedford Land Use By-Law Area



Schedule C2-4

Bedford

 Lands to be rezoned from FW to CHWY

Zone

- RSU Single Dwelling Unit Zone
- CGB General Business District Zone
- CHWY Highway Oriented Commercial Zone
- SI Institutional Zone
- FW 1991 Floodway Zone

HALIFAX



This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.

Bedford Land Use By-Law Area

Schedule K – Key 1-in-100-year flood elevations by location

1-in-100-year Flood Elevation Markers by Location (2024) (NAD83 MTM 5, CGVD2013)

Location	ID	Location Description	Northing	Easting	1-in-100-year flood elevation (water level)
Sackville River upstream of confluence	1	McCabe Lake	4959740.8	25560147.4	77.47 m
	2	Webber Lake outlet	4959673.5	25562024.7	76.02 m
	3	Upstream of Lucasville bridge	4959697.4	25562188.1	75.55 m
Little Sackville River upstream of confluence	4	Little Lake	4963191.4	25563512.0	75.38 m
	5	Feely Lake outlet	4962481.1	25563773.9	68.77 m
	6	Barrett Pond outlet	4961756.9	25563773.9	62.33 m
	7	Upstream of Millwood Drive crossing	4961648.0	25563038.7	54.97 m
	8	Upstream of Beaver Bank Cross Road crossing	4960780.9	25563175.8	53.00 m
	9	Upstream of Beaver Bank Road crossing	4960469.0	25563909.5	50.78 m
	10	Upstream of Sackville Drive crossing	4959240.5	25564166.5	40.26 m
	11	Upstream of Sackville Cross Road crossing	4958582.7	25564317.1	29.22 m
Sackville River downstream of confluence	12	Confluence of Sackville River and Little Sackville River	4957321.0	25565858.2	14.32 m
	13	Upstream of Rifle Range Lane crossing	4956550.8	25566466.8	9.96 m
	14	Upstream of Highway 102 crossing	4956130.5	25566575.8	9.87 m
	15	Upstream of River Lane crossing	4955678.0	25566944.6	9.20 m
	16	Upstream of Sunnyside Mall "A"	4955431.8	25566898.5	9.03 m
	17	Upstream of Sunnyside Mall "B"	4955297.1	25566859.6	8.95 m
	18	Upstream of Bedford Highway Crossing	4954860.7	25566374.7	7.44 m
	19	Upstream of Railway Crossing	4954703.5	25566345.6	4.40 m

**Attachment C3
Proposed Amendments to the
Land Use By-law for Sackville Plan Area**

BE IT ENACTED by the Halifax Regional Council of the Halifax Regional Municipality that the Land Use By-law for Sackville is hereby amended as follows:

1. Amend Table of Contents by adding “**1994**” before P-3 (FLOODPLAIN) ZONE after the words “PART 21”.
2. Amend Table of Contents by adding “**PART 21A 2024 FWO (FLOODWAY OVERLAY) ZONE**” after “PART 21 P-3 (FLOODPLAIN) ZONE”.
3. Amend Table of Contents by adding “**PART 21B 2024 FFO (FLOOD FRINGE OVERLAY) ZONE**” after “PART 21A 2024 FWO (FLOODWAY OVERLAY) ZONE”.
4. Amend PART 2: DEFINITIONS by inserting the following definitions immediately after Section 2.26:
 - 2.26A **FLOODWAY** means the inner portion of the floodplain having a 5% chance of occurring in any given year (the 1-in-20-year flood elevation). Under this by-law, the Floodway flood elevation is derived from the model that accounts for Climate change conditions for the Western University IDF-CC Tool upper bound result for the 2070 – 2099 period under the Sackville Rivers Floodplain Study Phase II produced by CBCL in 2017.
 - 2.26B **FLOOD FRINGE** means the outer portion of the floodplain, between the 1-in-20-year floodway and the outer boundary of the floodplain having a 1% chance of occurring in any given year (the 1-in-100-year flood elevation). Under this by-law, the Flood Fringe flood elevation is derived from the model that accounts for Climate change conditions for the Western University IDF-CC Tool upper bound result for the 2070 – 2099 period under the Sackville Rivers Floodplain Study Phase II produced by CBCL in 2017.
5. Amend PART 2: DEFINITIONS by inserting the following definitions immediately after Section 2.49:
 - 2.49A **Off-site Fill** means fill that has been imported from outside the floodplain or fill that is transported from the Flood Fringe to the Floodway.
6. Amend PART 3, Section 3.1 by inserting the words “**2024 FWO (Floodway Overlay) Zone**” after P-3 Floodplain” Zone under Community Uses Section and before “P-4 Park Reserve Zone”.
7. Amend PART 3, Section 3.1 by inserting the number “**1994**” immediately before “P-3 Floodplain Zone under Community Uses Section.
8. Amend PART 3, Section 3.1 by inserting the words “**2024 FFO (Flood Fringe Overlay) Zone**” after “2024 FWO (Floodway Overlay) Zone” under the Community Uses Section and before “P-4 Park Reserve Zone”.

9. Amend Section 3.6 OTHER USES CONSIDERED BY DEVELOPMENT AGREEMENT by inserting the following after immediately after clause 3.6(a)
(xxx) Subject to Policy FP-6J, a development agreement may be considered to permit additional development within the Floodplain Designation.
10. Amend PART 3 by adding the following immediately after Section 3.7:

INTERPRETATION OF 1-in-100-YEAR FLOOD ELEVATION

- 3.8 Reference point elevations for the 1-in-100-year flood, are outlined in Schedule K of this By-law for the administration of requirements of PART 21A – 2024 FWO (Floodway Overlay Zone), and PART 21B – 2024 FFO (Flood Fringe Overlay) Zone. Site-specific elevations may be determined by a qualified professional engineer or qualified Licensed Nova Scotia Land Surveyor and used for the administration of these sections of the by-law when greater precision is required.

Hydrotechnical Studies

- 3.9 Hydrotechnical studies submitted to fulfill the requirements for developments as outlined in PART 21A – 2024 FWO (Floodway Overlay) Zone, and PART 21B – 2024 FFO (Flood Fringe Overlay) Zone must be developed following the methodology outlined in the Nova Scotia Municipal Flood Line Mapping Document.
11. Amend PART 4 by adding the following Section 4.8A immediately after Section 4.8 as shown in bold text below:

4.8A EXISTING NON-RESIDENTIAL USES

Notwithstanding Section 4.8, where uses are permitted as existing non-residential uses within PART 21 - 1994 P-3 (Floodplain) and PART 21A – 2024 Floodway Overlay (FWO) Zone, they shall be considered as fully conforming uses and as such are permitted to change in use to a use permitted in the zone, resume operation if discontinued, or be replaced, or rebuilt if destroyed, on the lot which they occupied on [the coming in force date of this section] subject to the requirements of the zone. An existing non-residential use includes a non-residential use that existed on or before [the coming in force date of this section].

12. Amend PART 4 by repealing section 4.28. FLOODPROOFING REQUIREMENTS.
13. Amend PART 4 by adding section 4.28A immediately after the repealed section 4.27 as follows:

4.28A MODIFIED FLOODPROOFING REQUIREMENT AREA

No building, structure, or use shall be permitted within the area identified on the Zoning Map as areas requiring modified floodproofing, unless the following special requirements are met:

- a) All habitable floorspace shall be constructed above the nearest upstream 1-in-100-year flood elevations outlined on Schedule K or above the site-specific 1-in-100-year flood elevation as determined by a professional engineer or licensed Nova Scotia land Surveyor;
- b) All electrical and mechanical equipment within a building must be located above the 1-in-100 flood level unless designed by a professional engineer to withstand a flood; and
- c) All structures that extend below the 1-in-100-year flood elevation must be designed and certified by a professional engineer to withstand a flood.

14. Amend PART 4 by repealing Section 4.29 PLACEMENT OF FILL IN A FLOODPLAIN.

15. Amend PART 21: P-3 (FLOODPLAIN) ZONE by replacing “P-3 (FLOODPLAIN) ZONE” with “**1994 P-3 (FLOODPLAIN) ZONE**”.

16. Amend PART 21:1 Uses Permitted by adding the following text shown in bold after the word “following:” and before the heading “Resource Uses”:

Existing Uses

Non-residential uses that existed on or before [coming into force date of this amendment.]

17. Amend section 21.1 by adding “**roads**” at the end of section 21.1 under the heading “Open Space Uses”.

18. Amend PART 21: P-3 (FLOODPLAIN) ZONE by repealing Section 21.4 OTHER REQUIREMENTS: AGRICULTURAL USES.

19. Amend PART 21: P-3 (FLOODPLAIN) ZONE by adding **Section 21.7 RESTRICTIONS ON PLACEMENT OF FILL** immediately following section 2.16 as follows:

21.7 RESTRICTION: PLACEMENT OF OFF-SITE FILL

The placement of off-site fill or alteration of grades is prohibited within the P-3 (Floodplain) Zone, except for road construction and public utilities. The placement of off-site fill or alteration of grades will only be permitted for road construction or public utilities where a professional engineer undertakes a hydrotechnical study to certify that the fill will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

20. Insert **PART 21A: 2024 FWO (FLOODWAY OVERLAY) ZONE** immediately after PART 21: 1994 P-3 (FLOODPLAIN) ZONE as follows:

21A PART 21A: 2024 FWO (FLOODWAY OVERLAY) ZONE

21A.1 FWO USES PERMITTED

No development permit shall be issued in any FWO (Floodway Overlay) Zone except for the following:

Existing Uses

Non-residential uses that existed on or before [coming in force date of this section]

Resource Uses

Agricultural uses, except buildings and structures related to agricultural uses

Forestry uses

Fishing and fishing-related uses

Open Space Uses

Public and private parks and playgrounds

Recreation uses

Boat house accessory to an existing residential use

Conservation related uses

Other Uses

Public utilities, trails, and roadways

Parking areas

Change in use permitted uses

Subject to section 21A.9, an existing non-residential use may change in use to a use permitted in the underlying zone except for any of the following:

Automotive repair

Heavy equipment services

Gas Stations

Dry cleaners

Industrial uses

Construction & Demolition uses

Any use for the storage, distribution, or manufacturing of hazardous materials

Medical Facilities and hospitals

Daycares

Shared Housing

Hotels and motels

21A.2 FWO ZONE REQUIREMENTS: RESOURCE USES

In any FWO Zone, where uses are permitted as Resource Uses, no development permit shall be issued except in conformity with the following:

Minimum Lot Area	29,064 square feet (2700 m2)
Minimum Frontage	100 feet (30.5 m)
Minimum Front or Flankage Yard	20 feet (6.1 m)
Minimum Rear or Side Yard	8 feet (2.4 m)
Maximum Lot Coverage	35 percent

21A.3 FWO ZONE REQUIREMENTS: OPEN SPACE USES

In any FWO Zone, where uses are permitted as Open Space Uses, no development permit shall be issued except in conformity with the provisions of Sections 21A.4, 21A.5, 21A.6 and PART 19.

21A.4 OTHER REQUIREMENTS: PROHIBITED USES AND STRUCTURES

Notwithstanding the provisions of Section 21A.1:

- a) no structure shall be used or constructed to be used for human habitation, whether permanent or temporary, in any FWO Zone;
- b) no structure shall be used for the storage, distribution or manufacturing of hazardous materials; and
- c) any structure must be designed by a professional engineer to withstand a flood and to allow flow through.

21A.5 RESTRICTION: PLACEMENT OF OFF-SITE FILL

The placement of off-site fill or alteration of grades is prohibited within the FWO Zone, except for road construction and public utilities. The placement of off-site fill or alteration of grades will only be permitted for road construction or public utilities where a professional engineer undertakes a hydrotechnical study to certify that the fill will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

21A.6 OTHER REQUIREMENTS: GRADE ALTERATION FOR FLOODPROOFING

Notwithstanding Section 21A.5, alteration of grades is permitted for floodproofing required under Sections 21A.7, and 21A.8 subject to the following:

- a) grade alteration is limited to the existing building footprint with associated slope stabilization to floodproof a building or structure;
- b) a grading plan has been prepared by a professional engineer or Licensed Nova Scotia Land Surveyor showing the final grade is above the nearest upstream 1-in-100-year flood elevation shown on Schedule K, or above a site-specific elevation above the 1-in-100-year elevation as determined by a professional engineer or Nova Scotia Land Surveyor;
- c) a professional engineer, through a hydrotechnical study, certifies that the grading will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns; and
- d) all other grading legislation is met.

21A.7 OTHER REQUIREMENTS: EXISTING USES EXPANSION

Where a hydrotechnical study undertaken by a professional engineer certifies that an expansion to an existing use will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, result in a change to flood water flow patterns, existing uses permitted under Section 21A.1 are permitted to expand provided the expansions are for :

- a) alterations and expansions to entranceways needed for accessibility purposes; or
- b) alterations and expansions to loading areas.

21A.8 OTHER REQUIREMENTS: EXISTING USE RECONSTRUCTION AND FLOODPROOFING

Existing uses permitted under Section 21A.1, are permitted to be reconstructed provided the structure is constructed in the same location

and to the same extent as the existing building and there is no increase in the building footprint, and a hydrotechnical study, carried out by a qualified person, shows that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to floodwater flow patterns. Where an existing use is permitted to be reconstructed the following floodproofing conditions must be met:

- a) All floors must be constructed above the nearest upstream 1-in-100-year flood elevation outlined on Schedule K or above the site-specific 1-in-100-year flood elevation as determined by a professional engineer or Nova Scotia land surveyor;
- b) All electrical and mechanical equipment within a building must be located above the 1-in-100-year flood level unless designed by a qualified professional engineer to withstand a flood; and
- c) Any structure constructed below the 1-in-100-year flood elevation must be designed by a professional engineer to withstand a flood and allow for flow through.

21A.9 OTHER REQUIREMENTS: EXISTING NON-RESIDENTIAL USES CHANGE IN USE

An existing non-residential use may change to another non-residential use permitted in the underlying zone subject to the following requirements:

- a) there is no expansion of the structure(s);
- b) the change in use is not for any residential institutions such as hospitals, shared accommodations, or daycares as outlined in Section 21A.1; and
- c) the change in use is not for commercial or industrial uses, involving the use or storage of hazardous materials.

21A.10 PARKING

The minimum parking requirements, as set out in Section 4.24, shall not apply to any use permitted in the Floodway Zone.

21. Amend the Sackville Land Use Bylaw by adding **PART 21B 2024 FFO (FLOOD FRINGE OVERLAY) ZONE** as shown in bold immediately after PART 21A: 2024 FWO (FLOODWAY OVERLAY) ZONE.

PART 21B 2024 FFO (Flood Fringe Overlay) Zone

In addition to the regulations of the underlying zone, development in the 2024 FFO (Flood Fringe Overlay) Zone shall be subject to the following requirements:

21B.1 PROHIBITED USES

Notwithstanding the uses permitted in the underlying zone, the following uses are prohibited:

Automotive repair
Heavy equipment services
Gas Stations
Dry cleaners
Industrial uses
Construction & Demolition uses

Any use for the storage, distribution, or manufacturing of hazardous materials
Medical Facilities and hospitals
Daycares
Shared Housing
Hotels and motels

21B.2 FLOODPROOFING BUILDING REQUIREMENTS

All new or expanded structures are permitted subject to the following floodproofing requirements:

- a) all floors must be constructed above the nearest upstream 1-in-100-year flood elevation outlined on Schedule K or above the site-specific 1-in-100-year flood elevation as determined by a professional engineer or Nova Scotia land surveyor, except for a parking area that may be constructed below the 1-in-100-year flood elevation if designed by a professional engineer to allow flow-through of floodwaters and to withstand a flood;
- b) all electrical and mechanical equipment within a building must be located above the 1-in-100-year flood elevation unless designed by a professional engineer to withstand a flood; and
- c) all below-grade parking or other structures below the 1-in-100-year flood elevation must be designed by a professional engineer to withstand a flood and to allow flow through.

21B.3 RESTRICTION: OFF-SITE FILL FOR FLOODPROOFING

The placement of off-site fill shall not be permitted unless it is required for floodproofing subject to the following:

- a) the placement of off-site fill is limited to the building footprint and associated slope stabilization to place the building above the nearest upstream 1-in-100-year flood elevation outlined in Schedule K or the site-specific 1-in-100-year elevation as determined by a professional engineer or Nova Scotia Land Surveyor;
- b) a grading plan has been prepared by a professional engineer or Licensed Nova Scotia Land Surveyor that clearly shows the final grade is above the nearest upstream 1-in-100-year flood elevation shown on Schedule K or at an elevation certified by a professional engineer or Licensed Nova Scotia Land Surveyor to be above the 1-in-100-year elevation at the site;
- c) a professional engineer certifies, through a hydrotechnical study, that the infill and grading will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns; and
- d) all other grading legislation is met.

21B.4 RESTRICTION: GRADE ALTERATION

Alterations of topography shall be permitted to allow for necessary grading for permitted uses, provided the following conditions can be met:

- a) a grading plan has been prepared by a professional engineer or Licensed Nova Scotia Land Surveyor that clearly shows the final grade is above the nearest upstream 1-in-100-year flood elevation shown on Schedule K or at an elevation certified by a professional engineer or Licensed Nova Scotia Land Surveyor to be above the 1-in-100-year elevation at this site;
- b) a professional engineer certifies and confirms, through a hydrotechnical study, that the grading will not contribute to flooding on adjacent

properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns; and
c) all other grading legislation is met.

21B.5 SECONDARY SUITES AND BACKYARD SUITES

Where a residential use is located within the 2024 FFO (Flood Fringe Overlay) Zone, the following conditions shall be applied to Secondary Suites and Backyard Suites in addition to the requirements of Subsections 4.11B (a) and (b):

- a) the habitable floorspace of a secondary suite shall not be permitted unless it is above the nearest upstream 1-in-100-year flood elevation outlined on Schedule K or above a site-specific 1-in-100-year flood elevation as determined by a professional engineer or Licensed Nova Scotia Land Surveyor after (insert date of First Notice).
 - b) a new backyard suite constructed after (insert date of First Notice) shall be floodproofed as per the floodproofing requirements of 21B.2 of the 2024 FFO (Flood Fringe Overlay) Zone.
22. Amend PART 23A: CD-1 (C&D MATERIALS TRANSFER STATIONS) ZONE by replacing “1-in-100-year floodplain” with the words “**Flood Fringe**” in Subsection 23A.4 (g).
 23. Amending Schedule A Zoning Map to apply a 2024 FWO (Floodway Overlay) Zone and a 2024 FFO (Flood Fringe Overlay) Zone and to change the zoning as illustrated on Schedule C3-1 to C3-9, attached hereto.
 24. Inserting Schedule K – 1-in-100-year Flood Elevation Markers AS shown on Schedule C3-10, attached hereto.

I, {Insert Name}, Municipal Clerk for the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Regional Council held on [DATE], 202[#].

Municipal Clerk

Proposed Sackville and Little Sackville River Floodplain Zones

-  Lands to be zoned 2024 FWO (Floodway Overlay) Zone (1-in-20 Return Event)
-  Lands to be zoned 2024 FFO (Flood Fringe Overlay) Zone (1-in-100 Return Event)
-  Lands Requiring Modified Floodproofing
-  Existing Zoning Boundaries
-  By-law Boundaries

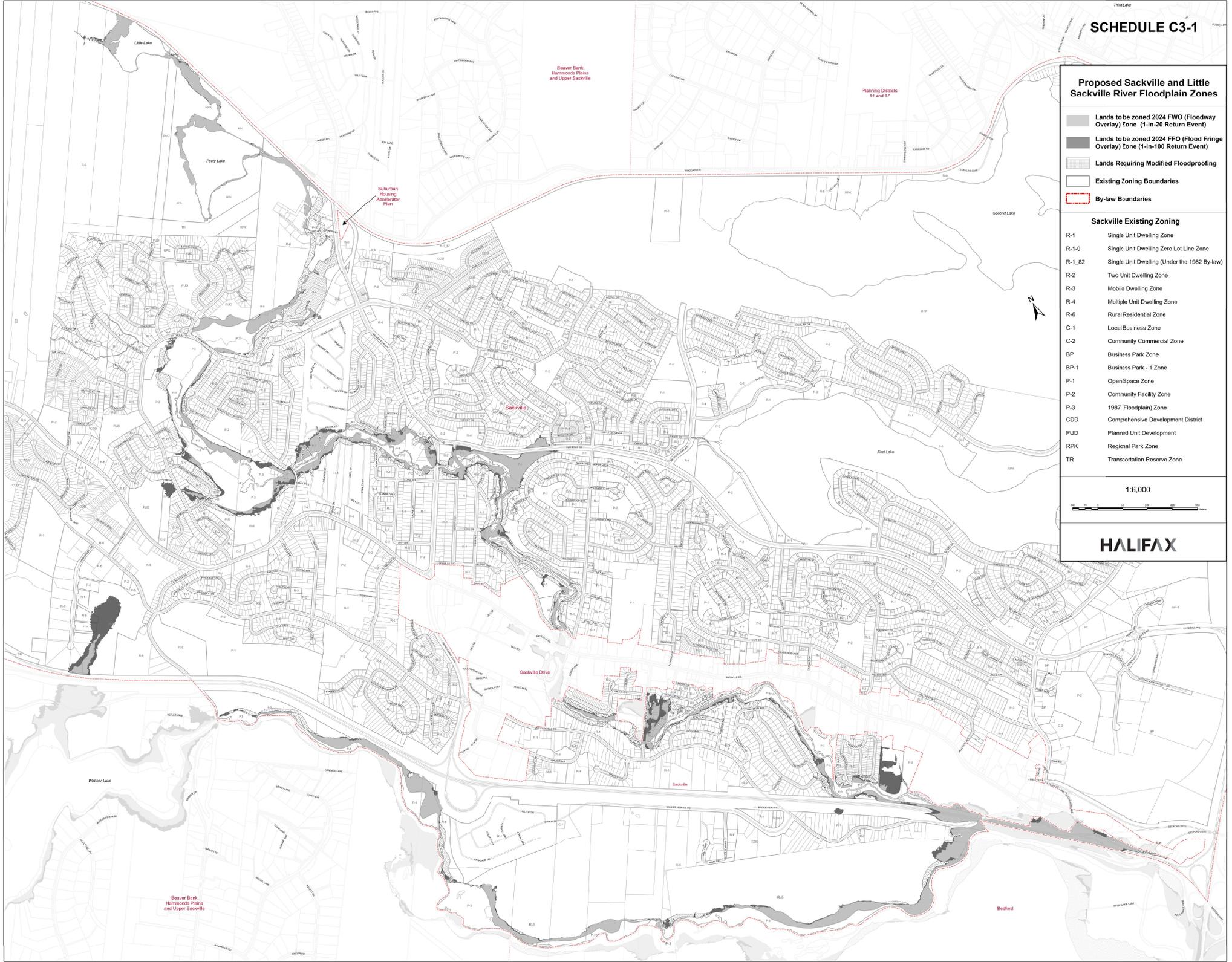
Sackville Existing Zoning

- R-1 Single Unit Dwelling Zone
- R-1.0 Single Unit Dwelling Zero Lot Line Zone
- R-1.82 Single Unit Dwelling (Under the 1982 By-law)
- R-2 Two Unit Dwelling Zone
- R-3 Mobile Dwelling Zone
- R-4 Multiple Unit Dwelling Zone
- R-6 Rural Residential Zone
- C-1 Local Business Zone
- C-2 Community Commercial Zone
- BP Business Park Zone
- BP-1 Business Park - 1 Zone
- P-1 Open Space Zone
- P-2 Community Facility Zone
- P-3 1987 Floodplain) Zone
- CDD Comprehensive Development District
- PUD Planned Unit Development
- RPK Regional Park Zone
- TR Transportation Reserve Zone

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HALIFAX



Beaver Bank, Hammonds Plains and Upper Sackville

Planning Districts 14 and 17

Suburban Housing Accelerator Plan

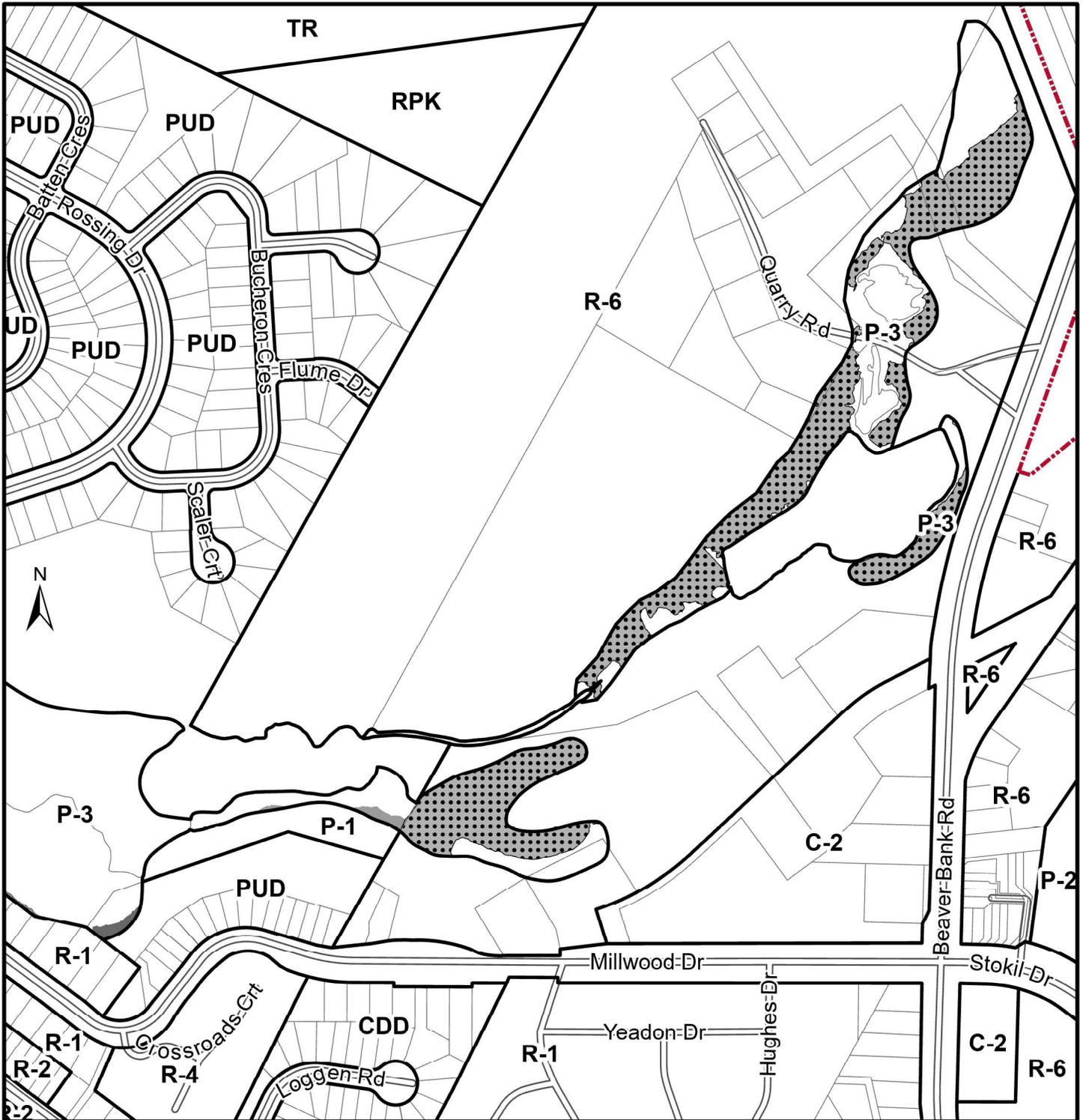
Sackville

Sackville Drive

Sackville

Beaver Bank, Hammonds Plains and Upper Sackville

Bedford



Schedule C3-2

Sackville

-  Lands to be rezoned from P-3 to R-6
-  Lands to be rezoned from P-3 to PUD
-  Lands to be rezoned from P-3 to P-1

Sackville Land Use By-Law Area

Zone

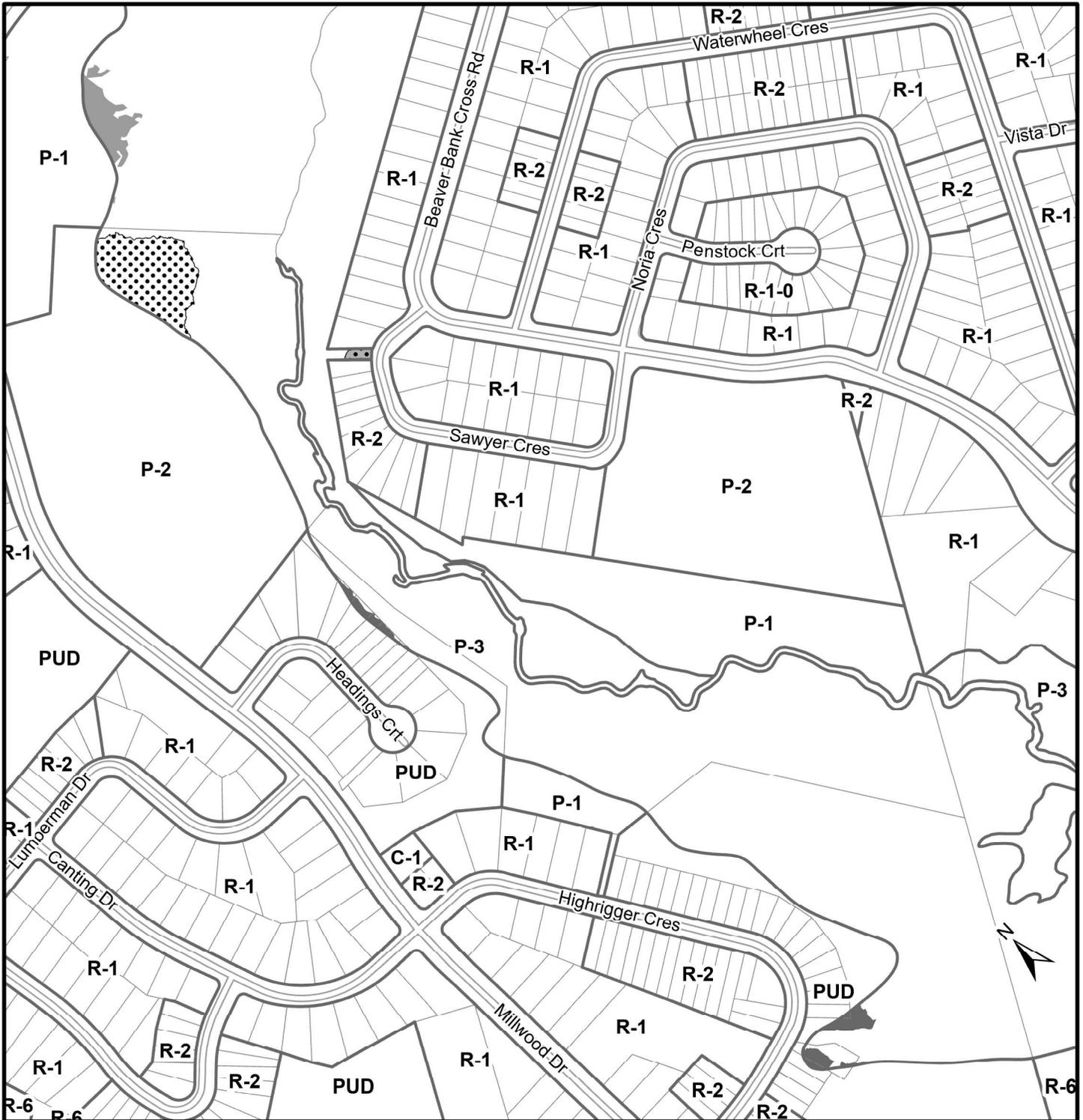
- R-1 Single Unit Dwelling Zone
- R-2 Two Unit Dwelling Zone
- R-4 Multiple Unit Dwelling Zone
- R-6 Rural Residential Zone
- C-2 Community Commercial Zone
- P-1 Open Space Zone
- P-2 Community Facility Zone
- P-3 1987 (Floodplain) Zone
- PUD Planned Unit Development
- RPK Regional Park Zone
- TR Transportation Reserve Zone

HALIFAX



This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.



Schedule C3-3

Sackville

-  Lands to be rezoned from P-3 to P-2
-  Lands to be rezoned from P-3 to PUD
-  Lands to be rezoned from P-3 to P-1
-  Lands to be rezoned from P-3 to R-1

Sackville Land Use By-Law Area

Zone

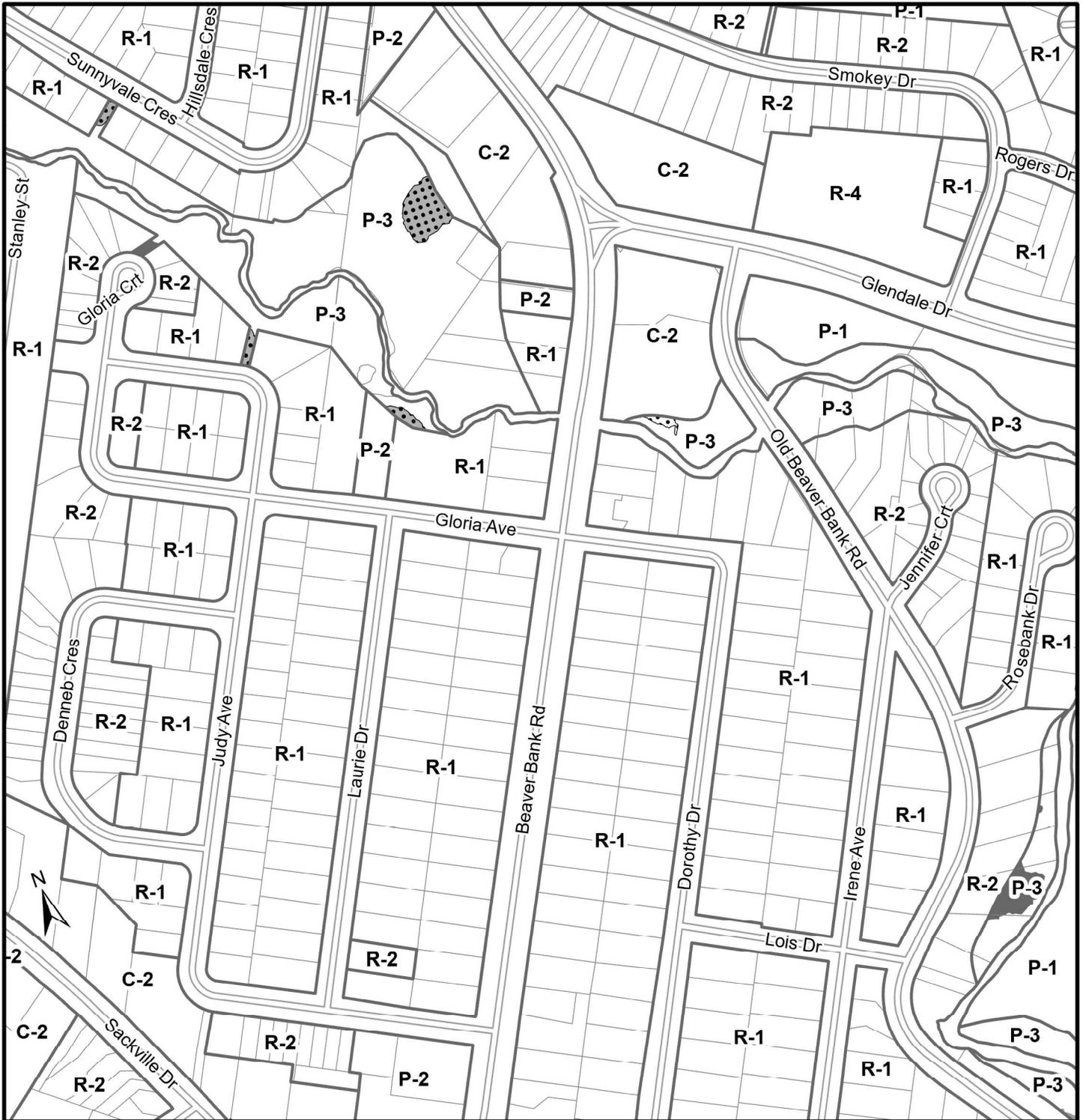
- R-1 Single Unit Dwelling Zone
- R-1-0 Single Unit Dwelling Zero Lot Line Zone
- R-2 Two Unit Dwelling Zone
- R-6 Rural Residential Zone
- C-1 Local Business Zone
- P-1 Open Space Zone
- P-2 Community Facility Zone
- P-3 1987 (Floodplain) Zone
- PUD Planned Unit Development

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Schedule C3-4

Sackville

HALIFAX

-  Lands to be rezoned from P-3 to R-2
-  Lands to be rezoned from P-3 to P-1
-  Lands to be rezoned from P-3 to R-1

Zone

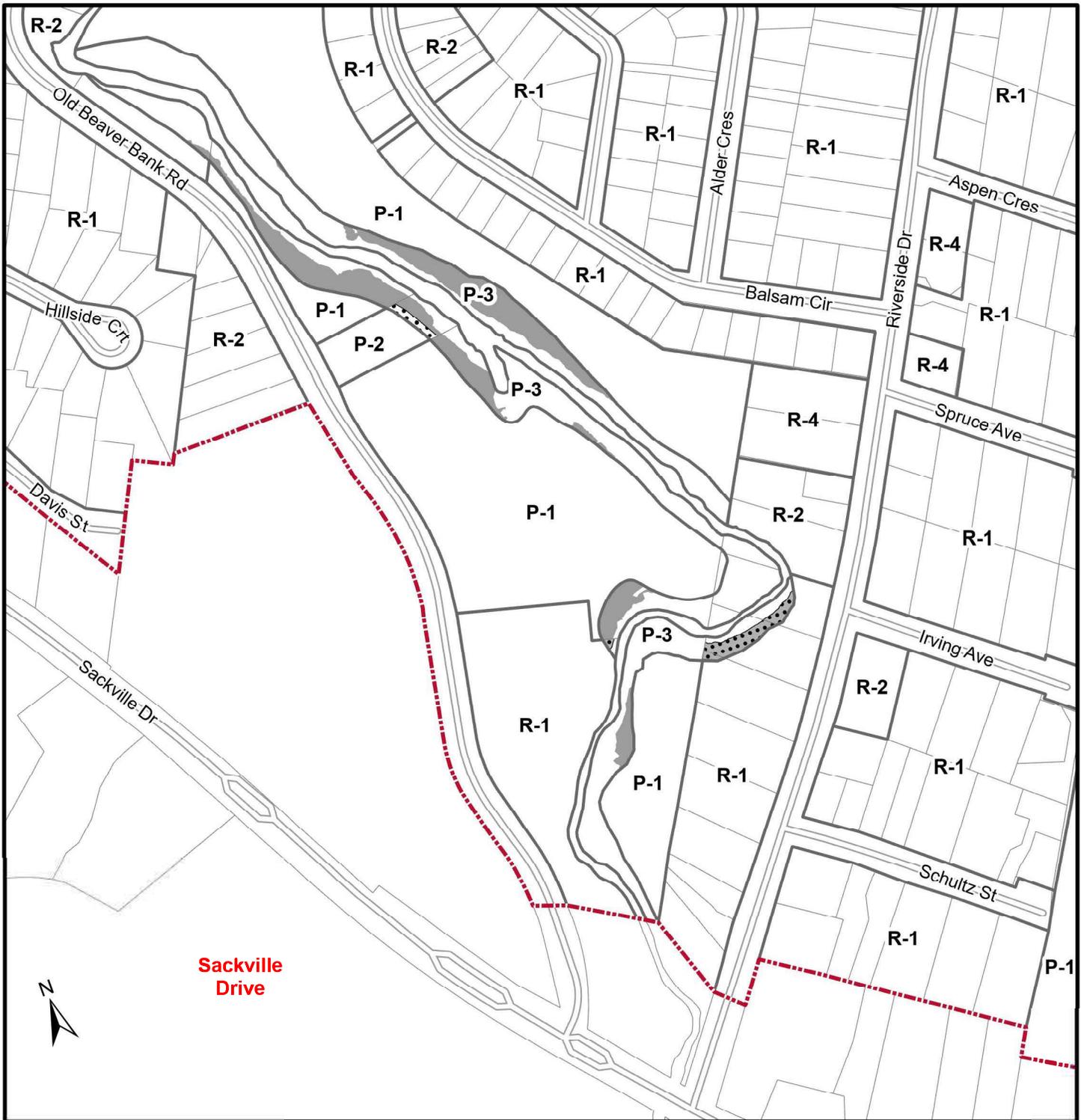
- R-1 Single Unit Dwelling Zone
- R-2 Two Unit Dwelling Zone
- C-2 Community Commercial Zone
- P-1 Open Space Zone
- P-2 Community Facility Zone
- P-3 1987 (Floodplain) Zone



This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

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Sackville Land Use By-Law Area



Sackville Drive

Schedule C3-5

Sackville

-  Lands to be rezoned from P-3 to P-1
-  Lands to be rezoned from P-3 to P-2
-  Lands to be rezoned from P-3 to R-1

Zone

- R-1 Single Unit Dwelling Zone
- R-2 Two Unit Dwelling Zone
- R-4 Multiple Unit Dwelling Zone
- P-1 Open Space Zone
- P-2 Community Facility Zone
- P-3 1987 (Floodplain) Zone

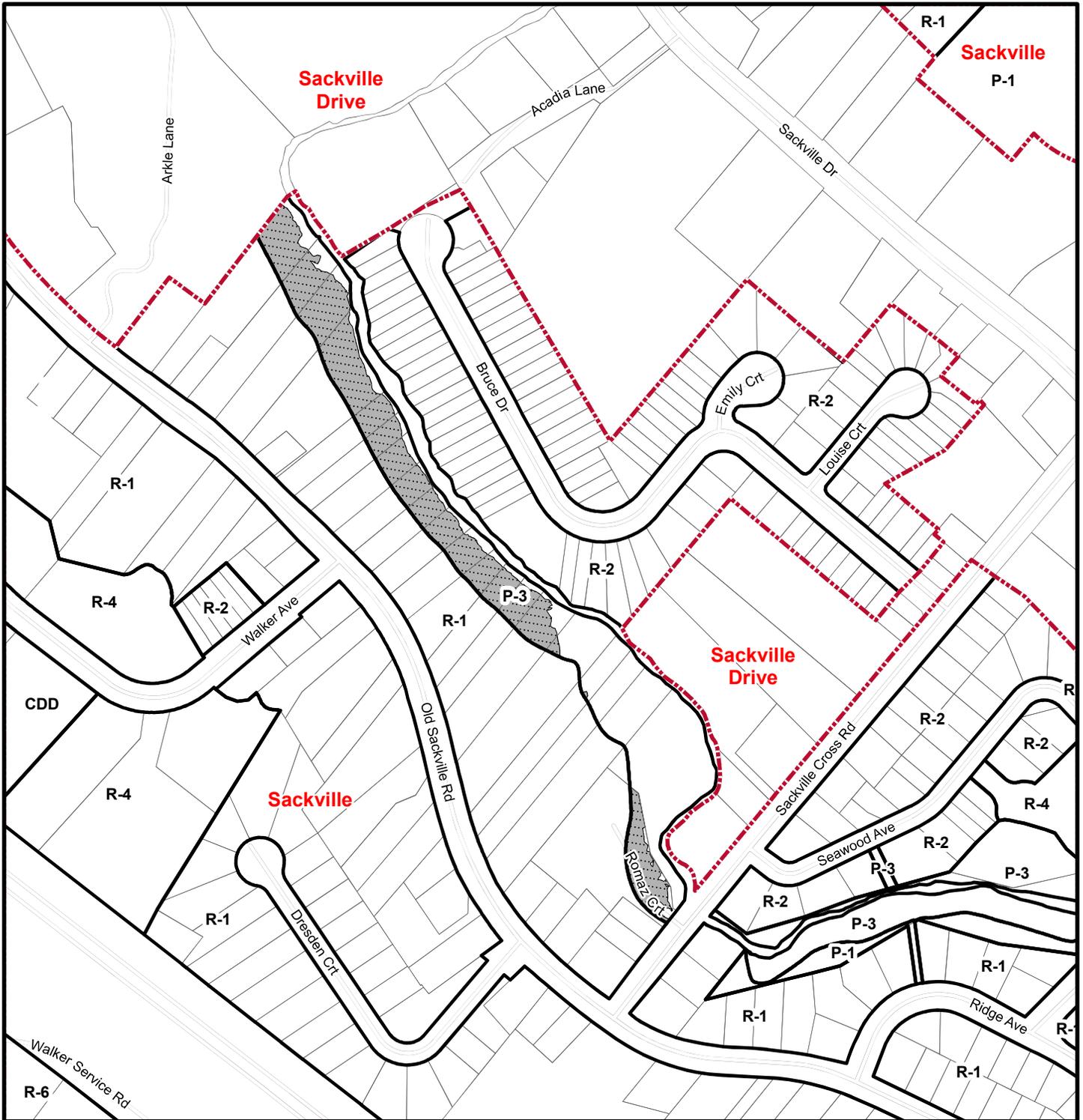
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Sackville Land Use By-Law Area



Schedule C3-6

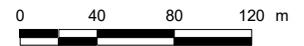
Sackville

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Zone

 Lands to be rezoned from P-3 to R-1

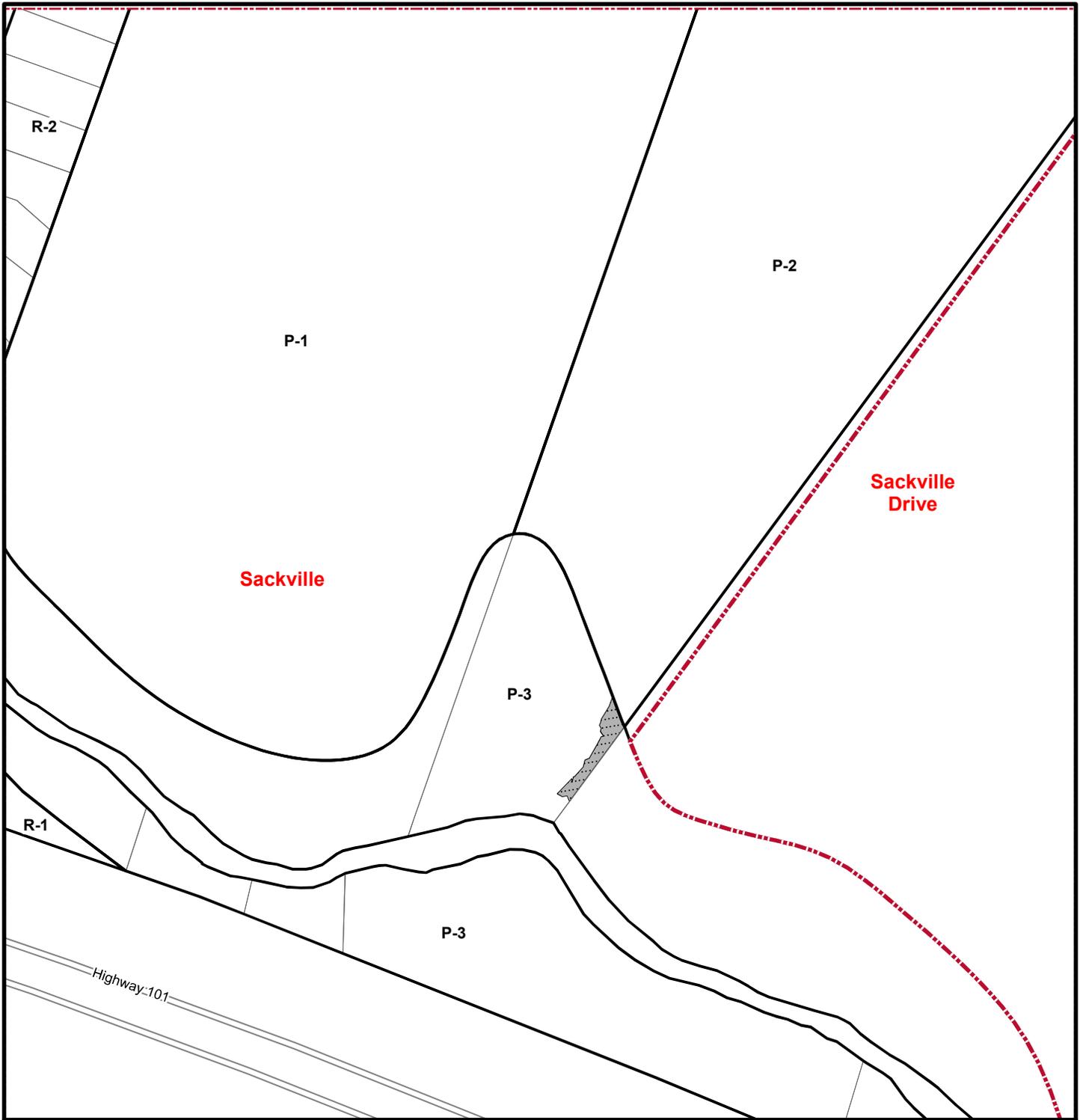
- R-1 Single Unit Dwelling Zone
- R-2 Two Unit Dwelling Zone
- R-4 Multiple Unit Dwelling Zone
- P-1 Open Space Zone
- P-3 1987 (Floodplain) Zone
- CDD Comprehensive Development District



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Sackville Land Use By-Law Area



Schedule C3-7

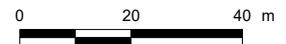
Sackville

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Zone

 Lands to be rezoned from P-3 to P-2

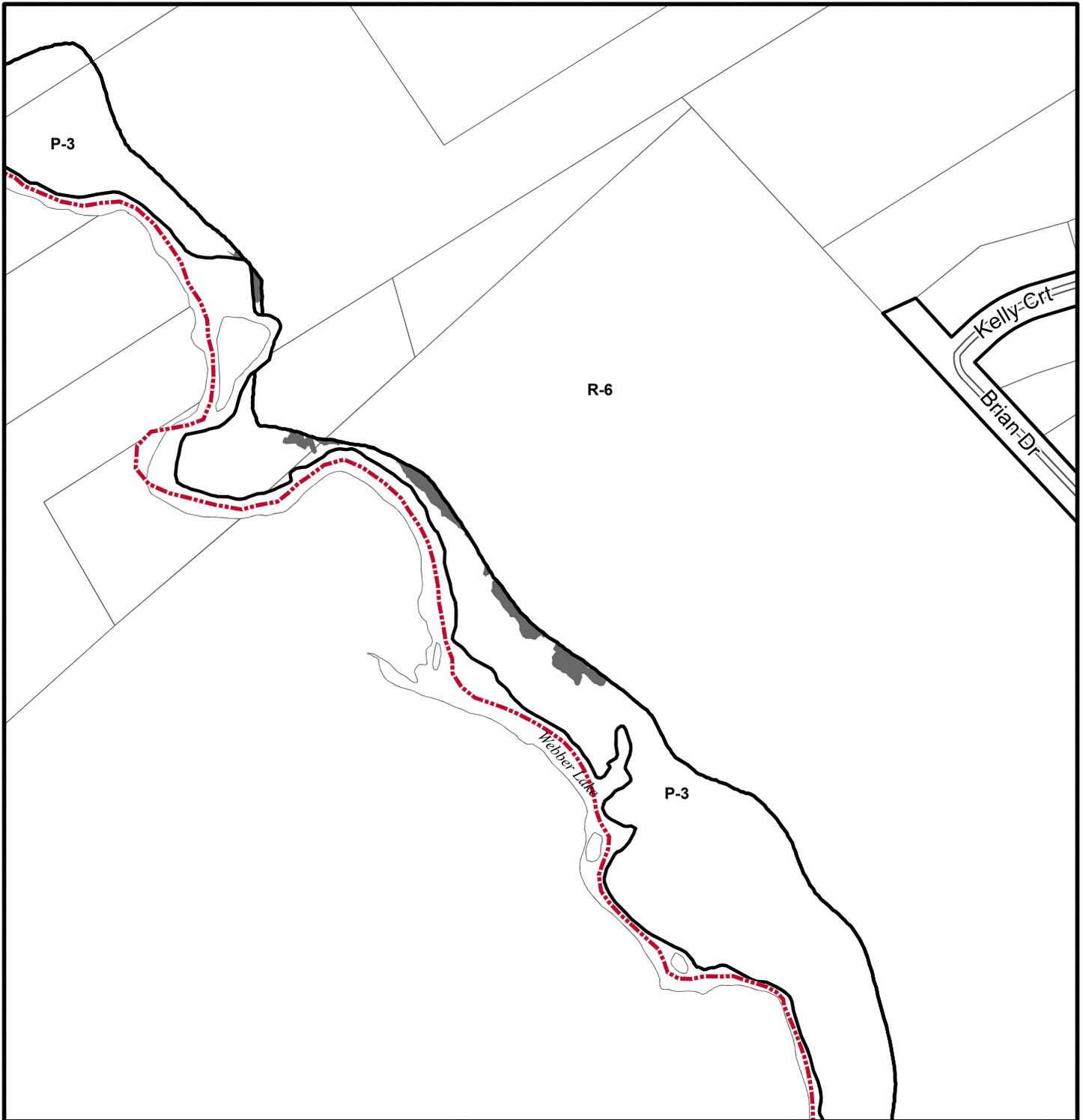
- R-1 Single Unit Dwelling Zone
- R-2 Two Unit Dwelling Zone
- P-1 Open Space Zone
- P-2 Community Facility Zone
- P-3 1987 (Floodplain) Zone



This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

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Sackville Land Use By-Law Area



Schedule C3-8

Sackville

HALIFAX

 Lands to be rezoned from P-3 to R-6



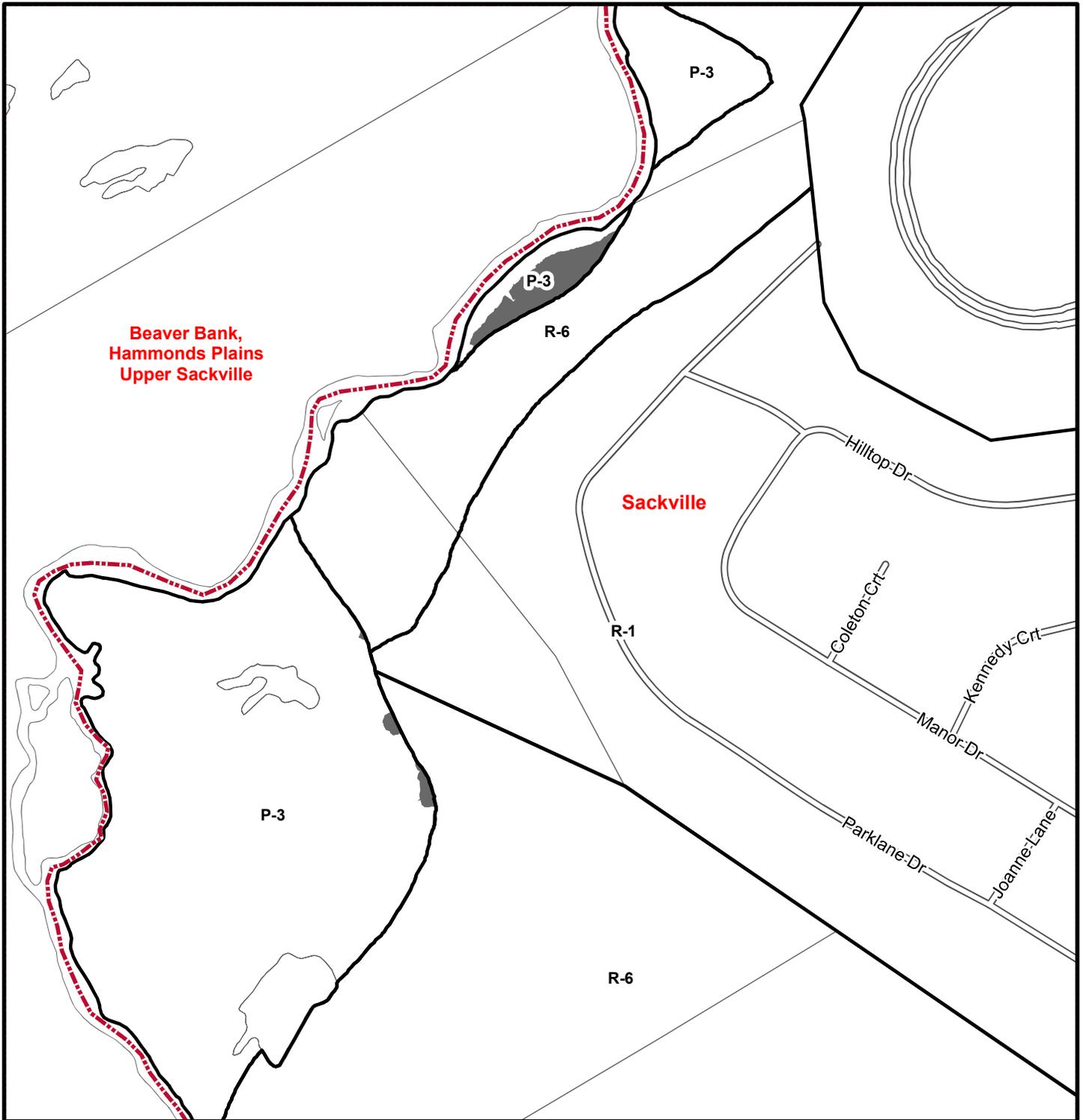
Zone

- R-6 Rural Residential Zone
- P-3 1987 (Floodplain) Zone

This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.

Sackville Land Use By-Law Area



Schedule C3-9

Sackville

HALIFAX

■ Lands to be rezoned from P-3 to R-6

Zone

- R-1 Single Unit Dwelling Zone
- R-6 Rural Residential Zone
- P-3 1987 (Floodplain) Zone



This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.

Sackville Land Use By-Law Area

Schedule K – Key 1-in-100-year flood elevations by location

1-in-100-year Flood Elevation Markers by Location (2024) (NAD83 MTM 5, CGVD2013)

Location	ID	Location Description	Northing	Easting	1-in-100-year flood elevation (water level)
Sackville River upstream of confluence	1	McCabe Lake	4959740.8	25560147.4	77.47 m
	2	Webber Lake outlet	4959673.5	25562024.7	76.02 m
	3	Upstream of Lucasville bridge	4959697.4	25562188.1	75.55 m
Little Sackville River upstream of confluence	4	Little Lake	4963191.4	25563512.0	75.38 m
	5	Feely Lake outlet	4962481.1	25563773.9	68.77 m
	6	Barrett Pond outlet	4961756.9	25563773.9	62.33 m
	7	Upstream of Millwood Drive crossing	4961648.0	25563038.7	54.97 m
	8	Upstream of Beaver Bank Cross Road crossing	4960780.9	25563175.8	53.00 m
	9	Upstream of Beaver Bank Road crossing	4960469.0	25563909.5	50.78 m
	10	Upstream of Sackville Drive crossing	4959240.5	25564166.5	40.26 m
	11	Upstream of Sackville Cross Road crossing	4958582.7	25564317.1	29.22 m
Sackville River downstream of confluence	12	Confluence of Sackville River and Little Sackville River	4957321.0	25565858.2	14.32 m
	13	Upstream of Rifle Range Lane crossing	4956550.8	25566466.8	9.96 m
	14	Upstream of Highway 102 crossing	4956130.5	25566575.8	9.87 m
	15	Upstream of River Lane crossing	4955678.0	25566944.6	9.20 m
	16	Upstream of Sunnyside Mall "A"	4955431.8	25566898.5	9.03 m
	17	Upstream of Sunnyside Mall "B"	4955297.1	25566859.6	8.95 m
	18	Upstream of Bedford Highway Crossing	4954860.7	25566374.7	7.44 m
	19	Upstream of Railway Crossing	4954703.5	25566345.6	4.40 m

**Attachment C4
Proposed Amendments to the
Land Use By-law for Sackville Drive Plan Area**

BE IT ENACTED by the Halifax Regional Council of the Halifax Regional Municipality that the Land Use By-law for Sackville Drive is hereby amended as follows:

1. Amend the Table of Contents by adding “**1994**” before P-3 (FLOODPLAIN) ZONE after the words “PART 17”.
2. Amend the Table of Contents by adding “**PART 17A 2024 FWO (FLOODWAY OVERLAY) ZONE**” after “PART 17 -3 (FLOOD PLAIN) ZONE”.
3. Amend the Table of Contents by adding “**PART 17B 2024 FFO (FLOOD FRINGE OVERLAY) ZONE**” after “PART 17A 2024 FWO (FLOODWAY OVERLAY) ZONE”.
4. Amend PART 2: DEFINITIONS by inserting the following definitions immediately after the definition for “Flea Market”.

FLOODWAY means the inner portion of the floodplain having a 5% chance of occurring in any given year (the 1-in-20-year flood elevation). Under this by-law, the Floodway flood elevation is derived from the model that accounts for Climate change conditions for the Western University IDF-CC Tool upper bound result for the 2070 – 2099 period under the Sackville Rivers Floodplain Study Phase II produced by CBCL in 2017.

FLOOD FRINGE means the outer portion of the floodplain, between the 1-in-20-year floodway and the outer boundary of the floodplain, having a 1% chance of occurring in any given year (the 1-in-100-year flood elevation). Under this by-law, the Flood Fringe flood elevation is derived from the model that accounts for Climate change conditions for the Western University IDF-CC Tool upper bound result for the 2070 – 2099 period under the Sackville Rivers Floodplain Study Phase II produced by CBCL in 2017.
5. Amend PART 2: DEFINITIONS by inserting the following definitions immediately after the definition for “Office”.

Off-site Fill means fill imported from outside the floodplain or fill transported from the Flood Fringe to the Floodway.
6. Amend PART 4, Section 1 by inserting “**1994**” before “Floodplain Zone: P-3”
7. Amend PART 4, Section 1 by inserting the words “**2024 FWO (Floodway Overlay) Zone**” after 1994 Floodplain Zone: P-3
8. Amend PART 4, Section 1 by inserting the words “**2024 FFO (Flood Fringe Overlay) Zone**” after “2024 FO (Floodway Overlay) Zone”.
9. Amend PART 4 by adding Sections 8 and 9 immediately after Section 7 as illustrated in bold text below:

INTERPRETATION OF 1-in-100 FLOOD ELEVATION

8. Reference point elevations for the 1-in-100-year flood are outlined in Schedule K of this By-law for the administration of requirements of PART 17A – 2024 FWO (Floodway Overlay Zone) and PART 17B – 2024 FFO (Flood Fringe Overlay) Zone. Site-specific elevations may be determined by a qualified professional engineer or licensed Nova Scotia land surveyor and used to administer these sections of the by-law when greater precision is required.

HYDROTECHNICAL STUDIES

9. Hydrotechnical studies submitted to fulfill the requirements for developments as outlined in PART 17A – 2024 FWO (Floodway Overlay) Zone and PART 21B – 2024 FFO (Flood Fringe Overlay) Zone must be developed following the methodology outlined in the Nova Scotia Municipal Flood Line Mapping Document.

10. Amend PART 5 USES PERMITTED BY DEVELOPMENT AGREEMENT by inserting the following subheading and subsection immediately after Section 1 (11):

(12) Subject to Policy LSR-10I, a development agreement may be considered to permit additional development within the Floodplain Designation.

11. Amend PART 6 by repealing section 8 under the heading “Flood Proofing”.

12. Amend PART 6 by adding section 8A under the heading “Flood proofing” immediately following the repealed section 8 as follows:

8A. No building, structure, or use shall be permitted within the area identified on the Zoning Schedule as areas requiring modified floodproofing unless the following special requirements are met:

 - (1) All habitable floorspace shall be constructed above the nearest upstream 1-in-100-year flood elevations outlined on Schedule K above the site-specific 1-in-100-year flood elevation as determined by a professional engineer or licensed Nova Scotia land Surveyor.
 - (2) All electrical and mechanical equipment within a building must be located above the 1-in-100 flood level unless designed by a professional engineer to withstand a flood.
 - (3) All structures that extend below the 1-in-100-year flood elevation must be designed and certified by a professional engineer to withstand a flood.

13. Amend PART 6 by adding the following Section 13A immediately after Section 13 as shown in bold text below:

EXISTING NON-RESIDENTIAL USES

13A. Notwithstanding Section 13, where uses are permitted as existing non-residential uses within PART 17 - 1994 P-3 (Flood Plain) and PART 21A – 2024 Floodway Overlay (FWO) Zone, they shall be considered as fully conforming uses and, as such, are permitted to change in use to a use permitted in the zone, resume operation if discontinued, or be replaced, or rebuilt if destroyed, on the lot which they occupied on [coming in force date of this section] subject to the requirements of the zone. An existing non-residential use includes a non-residential use that existed on or before [coming in force date of this section].

14. Amend the heading of PART 6, Section 42 by adding “**1994**” before the word “Flood Plain.”
15. Amend the first sentence of PART 6, Section 42 by adding “**1994**” before the word “Flood Plain” and adding “**2024 FWO (Floodway Overlay Zone and 2024 FFO (Flood Fringe Overlay) Zone**” after “1994 Flood Plain (P-3) Zone”.
16. Amend the heading of Part 17 by adding “1994” before the words “P-3 (Flood Plain) Zone”.
17. Amend PART 17:1 Permitted Uses by adding the heading and the following text in bold after the word “following:” and before the heading “Open Space Uses”:

Existing Uses

Non-residential uses that existed on or before [coming in force date of this amendment].

18. Amend PART 17, Section 1 by adding the word “,roads” under the Open Space Uses heading after the word “walking trails”.
19. Amend PART 17 by adding the following immediately after Section 6:

7. RESTRICTION: PLACEMENT OF OFF-SITE FILL

The placement of off-site fill or alteration of grades is prohibited within the 1994 Floodplain (FP) Zone, except for road construction and public utilities. The placement of off-site fill or alteration of grades will only be permitted for road construction or public utilities where a professional engineer undertakes a hydrotechnical study to certify that the fill will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns.

20. Insert **PART 17A: 2024 FWO (FLOODWAY OVERLAY) ZONE** after PART 17: 1994 P-3 (FLOODPLAIN) ZONE as follows:

17A PART 17A: 2024 FWO (FLOODWAY OVERLAY) ZONE

17A.1 FWO USES PERMITTED

No development permit shall be issued in any FWO (Floodway Overlay) Zone except for the following:

Existing Uses

Non-residential uses that existed on or before [coming in force date of this section].

Open Space Uses

Parking areas involving no grade alterations provided the capacity of the floodway is not reduced.

Public and private parks and playgrounds

Conservation related uses

Arcades, boardwalks, esplanades, hiking and walking trails

Other Uses

Public utilities, trails, and roadways

Parking areas

Change in use permitted uses

Subject to section 17A.9, an existing non-residential use may change in use to a use permitted in the underlying zone except for any of the following:

Automotive Repair

Heavy equipment services

Gas Stations

Dry cleaners

Industrial uses

Construction & Demolition uses

Any use for the storage, distribution, or manufacturing of hazardous materials

Medical Facilities and hospitals

Daycares

Shared Housing

Hotels and motels

17A.2 FWO ZONE REQUIREMENTS: OPEN SPACE USES

In any FWO Zone, where uses are permitted as Open Space Uses, no development permit shall be issued except in conformity with Sections 17A.3, 17A.4, and 17A.5 provisions.

17A.3 OTHER REQUIREMENTS: PROHIBITED USES AND STRUCTURES

Notwithstanding the provisions of Section 17A.1,

- a) no structure shall be used or constructed to be used for human habitation, whether permanent or temporary, in any FWO Zone;
- b) no structure shall be used for the storage, distribution, or manufacturing of hazardous materials; and
- c) any structure must be designed by a professional engineer to withstand a flood and to allow flow through.

17A.4 RESTRICTION: PLACEMENT OF OFF-SITE FILL

The placement of off-site fill or alteration of grades is prohibited within the FWO Zone, except for road construction and public utilities. The placement of off-site fill or alteration of grades will only be permitted for road construction or public utilities where a professional engineer undertakes a hydrotechnical study to certify that the fill will not contribute to flooding on adjacent properties, increased upstream or downstream flooding,

increased flood elevations, or result in a change to flood water flow patterns.

17A.5 OTHER REQUIREMENTS: GRADE ALTERATION FOR FLOODPROOFING

Notwithstanding Section 17A.4, alteration of grades is permitted for floodproofing required under Sections 17A.6 and 17A.7 subject to the following:

- a) grade alteration is limited to the existing building footprint with associated slope stabilization to floodproof a building or structure;
- b) a grading plan has been prepared by a professional engineer or Licensed Nova Scotia Land Surveyor showing the final grade is above the nearest upstream 1-in-100-year elevation shown on Schedule K or at a site-specific elevation above the 1-in-100-year elevation as determined by a professional engineer or Nova Scotia Land Surveyor;
- c) a professional engineer, through a hydrotechnical study, certifies that the grading will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns; and
- d) all other grading legislation is met.

17A.6 OTHER REQUIREMENTS: EXISTING USES EXPANSION

Where a hydrotechnical study undertaken by a professional engineer certifies that an expansion to an existing use will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns, existing uses permitted under Section 17.1 are permitted to expand, where the expansion is for:

- a) alterations and expansions to entranceways needed for accessibility purposes; or
- b) alterations and expansions to loading areas.

17A.7 OTHER REQUIREMENTS: EXISTING USE RECONSTRUCTION AND FLOODPROOFING

Existing uses permitted under Section 17A.1 are permitted to be reconstructed provided the structure is constructed in the same location and to the same extent as the existing building and there is no increase in the building footprint, and a hydrotechnical study carried out by a qualified person, shows that the proposed development will not contribute to increased flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to floodwater flow patterns. Where an existing use is permitted to be reconstructed, the following floodproofing conditions must be met:

- a) All floors must be constructed above the nearest upstream 1-in-100-year elevation outlined on Schedule K or above the site-specific 1-in-100-year elevation as determined by a professional engineer or Nova Scotia land surveyor.
- b) All electrical and mechanical equipment within a building must be located above the 1-in-100-year elevation unless designed by a qualified professional engineer to withstand a flood.
- c) Any structure constructed below the 1-in-100-year elevation must be designed by a professional engineer to withstand a flood and allow flow through.

17A.9 OTHER REQUIREMENTS: EXISTING NON-RESIDENTIAL USES CHANGE IN USE

An existing non-residential use may change to another non-residential use permitted in the underlying zone subject to the following requirements:

- a) there is no expansion of the structure(s);
- b) the change in use is not for any residential institutions such as hospitals, shared accommodations, or daycares as outlined in Section 17A.1; and
- c) the use change is not for commercial or industrial uses involving the use or storage of hazardous materials.

17A.10 PARKING

The minimum parking requirements, as set out in Section 16, shall not apply to any use permitted in the Floodway Overlay Zone.

21. Amend the Sackville Land Use Bylaw by adding **PART 17B 2024 FFO (FLOOD FRINGE OVERLAY) ZONE** as shown in bold immediately after PART 17A: 2024 FWO (FLOODWAY OVERLAY) ZONE.

PART 17B 2024 FFO (Flood Fringe Overlay) Zone

In addition to the regulations of the underlying zone, development in the 2024 FFO (Flood Fringe Overlay) Zone shall be subject to the following requirements:

17B.1 PROHIBITED USES

Notwithstanding the uses permitted in the underlying zone, the following uses are prohibited:

Automotive Repair
Heavy equipment services
Gas Stations
Dry cleaners
Industrial uses
Construction & Demolition uses
Any use for the storage, distribution, or manufacturing of hazardous materials
Medical Facilities and hospitals
Daycares
Shared Housing
Hotels and motels

17B.2 FLOODPROOFING BUILDING REQUIREMENTS

All new or expanded structures are permitted subject to the following floodproofing requirements:

- a) all floors must be constructed above the nearest upstream 1-in-100-year elevation outlined on Schedule K or above the site-specific 1-in-100-year flood elevation as determined by a professional engineer or Nova Scotia land surveyor, except for a parking area that may be constructed below the 1-in-100-year elevation if designed by a professional engineer to allow flow-through of floodwaters and to withstand a flood;
- b) all electrical and mechanical equipment within a building must be located above the 1-in-100-year flood elevation unless designed by a professional engineer to withstand a flood; and

- c) all below-grade parking or other structures below the 1-in-100-year flood elevation must be designed by a professional engineer to withstand a flood and to allow flow through.

17B.3 RESTRICTION: OFF-SITE FILL FOR FLOODPROOFING

The placement of off-site fill shall not be permitted unless it is required for floodproofing subject to the following:

- a) the placement of off-site fill is limited to the building footprint and associated slope stabilization to place the building above the nearest upstream 1-in-100-year flood elevation outlined in Schedule K or the site-specific 1-in-100-year elevation as determined by a professional engineer or Licensed Nova Scotia Land Surveyor;
- b) a grading plan has been prepared by a professional engineer or Licensed Nova Scotia Land Surveyor that clearly shows the final grade is above the nearest upstream 1-in-100-year flood elevation shown on Schedule K or at an elevation certified by a professional engineer or Licensed Nova Scotia Land Surveyor to be above the 1-in-100-year flood elevation at this site;
- c) a professional engineer certifies, through a hydrotechnical study, that the infill and grading will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns; and
- d) all other grading legislation is met.

17B.4 RESTRICTION: GRADE ALTERATION

Alterations of topography shall be permitted to allow for necessary grading for permitted uses, provided the following conditions can be met:

- a) a grading plan has been prepared by a professional engineer or Licensed Nova Scotia Land Surveyor that clearly shows the final grade is above the nearest upstream 1-in-100-year flood elevation shown on Schedule K or at an elevation certified by a professional engineer or Licensed Nova Scotia Land Surveyor to be above the 1-in-100-year elevation at the site;
- b) a professional engineer certifies and confirms, through a hydrotechnical study, that the grading will not contribute to flooding on adjacent properties, increased upstream or downstream flooding, increased flood elevations, or result in a change to flood water flow patterns; and
- c) all other grading legislation is met.

17B.5 SECONDARY SUITES AND BACKYARD SUITES

Where a residential use is located within the 2024 FFO (Flood Fringe Overlay) Zone, the following conditions shall be applied to Secondary Suites and Backyard Suites in addition to the requirements of Subsections 34B (1) and (2):

- a) the habitable floorspace of a secondary suite shall not be permitted unless it is above the nearest upstream 1-in-100-year flood elevation outlined on Schedule K or above a site-specific 1-in-100-year flood elevation as determined by a professional engineer or Licensed Nova Scotia Land Surveyor after (insert date of First Notice).
- b) a new backyard suite constructed after (insert date of First Notice) shall be floodproofed as per the floodproofing requirements of 17B.2 of the 2024 FFO (Flood Fringe Overlay) Zone.

- 22. Amending Schedule B Sackville Drive Zoning Map to apply a 2024 FWO (Floodway Overlay) Zone and a 2024 FFO (Flood Fringe Overlay) Zone and to change the zoning as illustrated on Schedule C4-1 and C4-2, attached hereto.

23. Inserting Schedule K – 1-in-100-year Flood Elevation Markers as shown on Schedule C4-3, attached hereto.

I, {Insert Name}, Municipal Clerk for the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Regional Council held on [DATE], 201[#].

Municipal Clerk

SCHEDULE C4-1

Sackville Drive Secondary Planning Strategy

-  Lands to be zoned 2024 FWO (Floodway Overlay) Zone (1-in-20 Return Event)
-  Lands to be zoned 2024 FFO (Flood Fringe Overlay) Zone (1-in-100 Return Event)
-  Lands Requiring Modified Floodproofing
-  Existing Zoning Boundaries
-  By-law Boundaries

Existing Sackville Drive Zoning

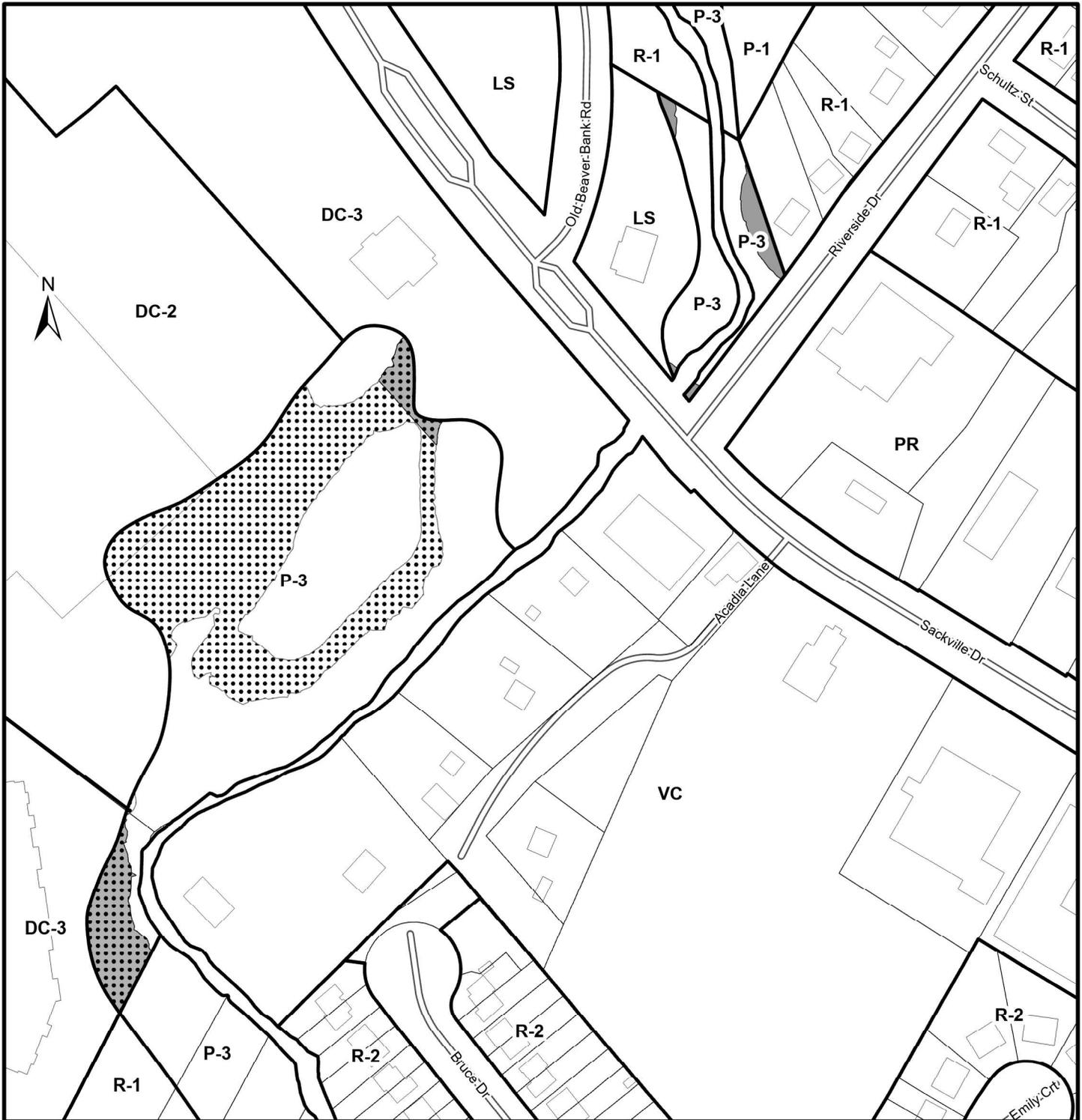
- DC-1 Downsview Complex-1 Zone
- DC-2 Downsview Complex-2 Zone
- DC-3 Downsview Complex-3 Zone
- LS Large Scale Commercial Zone
- PR Pedestrian Retail Zone
- VC Acadia Village Centre Zone
- PC Pinehill / Cobequid Zone
- CP Community Parkland and Facility Zone
- P-3 Floodplain Zone

1:10,000



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Schedule C4-2

Sackville Drive

-  Lands to be rezoned from P-3 to DC-3
-  Lands to be rezoned from P-3 to DC-2
-  Lands to be rezoned from P-3 to LS

Sackville Drive
Land Use By-Law Area

Zone

- DC-2 Downsview Complex-2 Zone
- DC-3 Downsview Complex-3 Zone
- LS Large Scale Commercial Zone
- PR Pedestrian Retail Zone
- VC Acadia Village Centre Zone
- PC Pinehill / Cobequid Zone
- P-3 Floodplain Zone

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This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.

Schedule K – Key 1-in-100-year flood elevations by location

1-in-100-year Flood Elevation Markers by Location (2024) (NAD83 MTM 5, CGVD2013)

Location	ID	Location Description	Northing	Easting	1-in-100-year flood elevation (water level)
Sackville River upstream of confluence	1	McCabe Lake	4959740.8	25560147.4	77.47 m
	2	Webber Lake outlet	4959673.5	25562024.7	76.02 m
	3	Upstream of Lucasville bridge	4959697.4	25562188.1	75.55 m
Little Sackville River upstream of confluence	4	Little Lake	4963191.4	25563512.0	75.38 m
	5	Feely Lake outlet	4962481.1	25563773.9	68.77 m
	6	Barrett Pond outlet	4961756.9	25563773.9	62.33 m
	7	Upstream of Millwood Drive crossing	4961648.0	25563038.7	54.97 m
	8	Upstream of Beaver Bank Cross Road crossing	4960780.9	25563175.8	53.00 m
	9	Upstream of Beaver Bank Road crossing	4960469.0	25563909.5	50.78 m
	10	Upstream of Sackville Drive crossing	4959240.5	25564166.5	40.26 m
	11	Upstream of Sackville Cross Road crossing	4958582.7	25564317.1	29.22 m
Sackville River downstream of confluence	12	Confluence of Sackville River and Little Sackville River	4957321.0	25565858.2	14.32 m
	13	Upstream of Rifle Range Lane crossing	4956550.8	25566466.8	9.96 m
	14	Upstream of Highway 102 crossing	4956130.5	25566575.8	9.87 m
	15	Upstream of River Lane crossing	4955678.0	25566944.6	9.20 m
	16	Upstream of Sunnyside Mall "A"	4955431.8	25566898.5	9.03 m
	17	Upstream of Sunnyside Mall "B"	4955297.1	25566859.6	8.95 m
	18	Upstream of Bedford Highway Crossing	4954860.7	25566374.7	7.44 m
	19	Upstream of Railway Crossing	4954703.5	25566345.6	4.40 m