

HALIFAX

**Sackville Rivers
Floodplain Proposed
Development
Regulations**

Case 21402

Public Information Meetings

21 & 28 August 2024

Land Acknowledgement

I would like to begin by acknowledging that we are in Mi'kma'ki , the traditional (or ancestral) and unceded territory of the Mi'kmaq people. This territory is covered by the treaties of peace and friendship. We are all Treaty people, and our relationship is based on peace and friendship.

Project Team

Team Member	Role
Maureen Ryan, Planner III	Project Manager – Planning & Development
Helen Langille, Program Engineer	Project Manager – Engineering
Victoria Fernandez, Program Engineer	Technical Advisor
Shannon O’Connell, Senior Program Engineer	Technical Advisor
Jessica Harper, Principal Planner	Resource Coordinator and oversight

Agenda

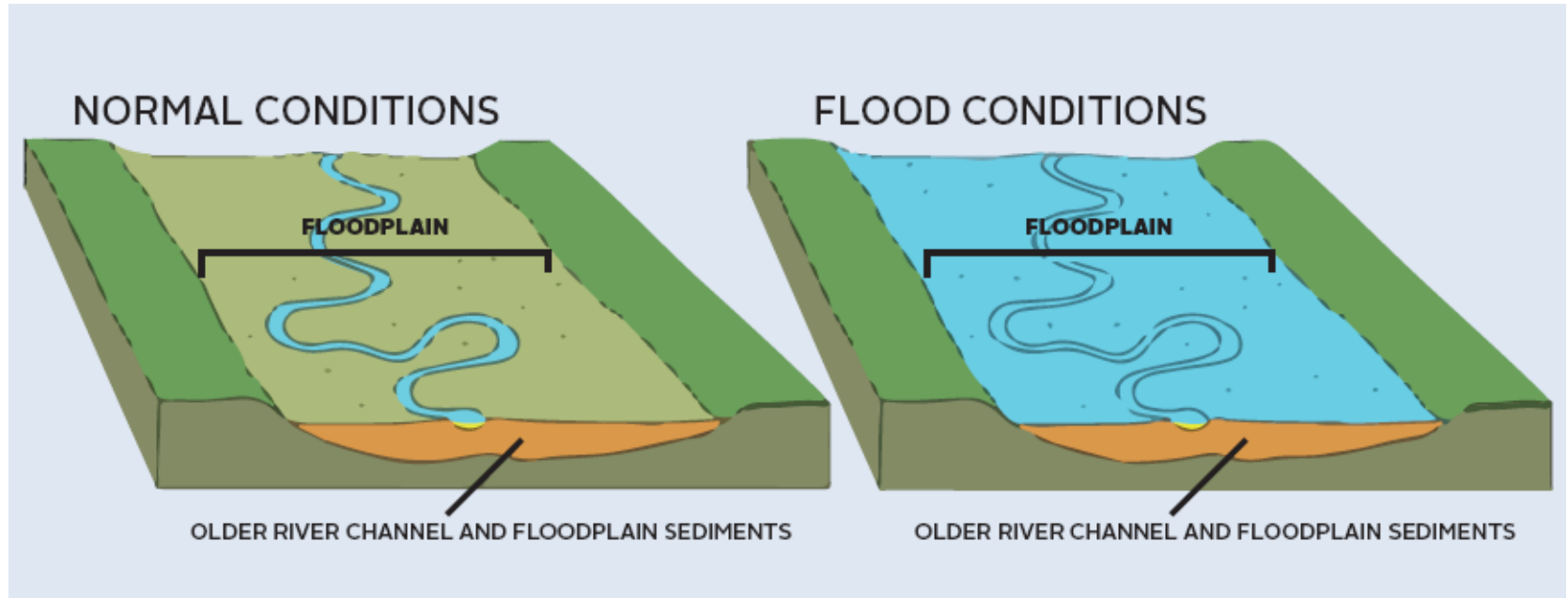
- Project History Review
- Floodplain Modelling Update
- Draft Regulations
- Public Engagement

Project History

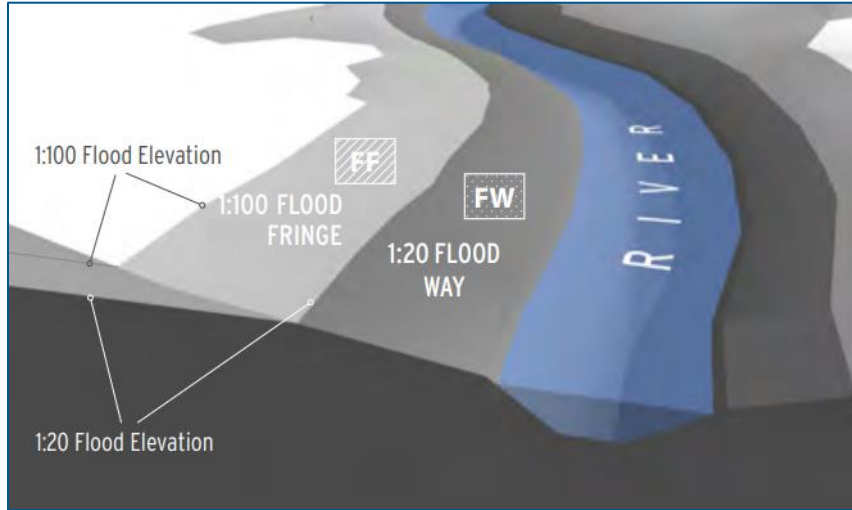
Background

- 2008 request by the Sackville Drive Business Association Board
- 2012 Regional Council direction
- 2013 Information report identified need for a new floodplain study
- 2015 GHD Sackville Rivers Floodplain Study Phase I
- 2017 CBCL Sackville Rivers Floodplain Study Phase II (proposed base mapping for planning amendments)
- 2018 Regional Council Initiated Process to amend planning documents
- 2020 DesignPoint Sackville Rivers Mitigation Planning Study
- 2024 DesignPoint Sackville Rivers Floodplain Mapping Update (update to base mapping)

What is a Floodplain?



What are “1-in-20” and “1-in-100” year floodplains?



These terms refer to the statistical probability of a flood event occurring in any given year.

- The 1-in-20-year floodplain has a 5% chance of flooding in **any given year**
- The 1-in-100-year floodplain has a 1% chance of happening in **any given year**

Why Prepare Floodplain Mapping?

- Increase Public Safety
- Improve Environmental Protection
- Reduce risk of property damage
- Reduce the need for flood control works
- Reduce the need for flood damage restoration
- Benefit from technological advancements and improved techniques

Past Flooding Events to Note

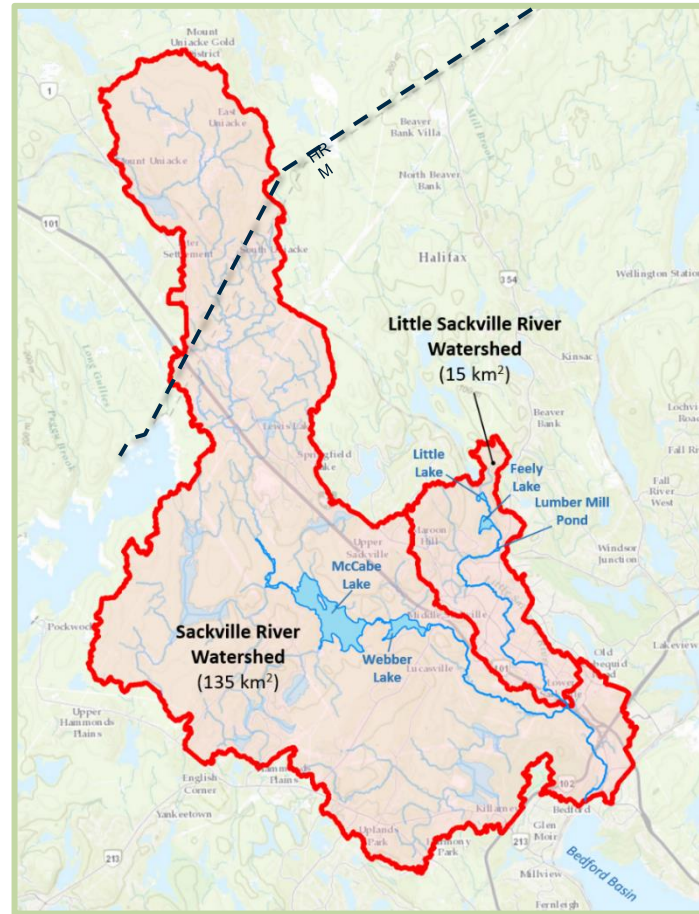
- Winter 1956
- August 15, 1971
- August 6, 1983
- November 11, 2011
- December 10, 2014
- July 22, 2023



2017 CBCL Floodplain Study – Phase II

Study Area

Sackville River & Little Sackville River Watersheds



2017 CBCL Study Recommendations

Primary Recommendation (immediate)

1. Adopt the proposed floodlines and establish development restrictions



We are here

Recommendations for future implementation (requires coordination across multiple levels of government)

1. Adopting Green Infrastructure practices for stormwater management throughout the watershed
2. Increasing channel capacity through river restoration and re-naturalization where practicable
3. Purchase properties with a history of significant flood damage and undeveloped floodplain lands
4. Flood protection infrastructure (for consideration as an option only after previous rec's)

2018 Public Consultation

- Held Open Houses for feedback on 2017 CBCL Study
 - Kinsmen Centre – 20 September 2018
 - LeBrun Centre – 22 September 2018
- Approximately 100 people over 3 events

What we Heard – Common Themes

- General expression of and support for a need to do something
- Concern about public safety, loss of flooding insurance, & decrease in property value
- Technical limitations about 2017 CBCL Study identified:
 - Need to update some bridge and culvert measurements (addressed in 2024 update)
 - Need to update 2009 LIDAR data (addressed in 2024 update)

2020 DesignPoint Sackville Rivers Mitigation Planning Study

Sackville Rivers Mitigation Plan Study (2020)

- National Disaster Mitigation Program (NDMP) Study
- Based on the Phase II (2017 CBCL) Model and Study Report
 - **11 “Areas of Concern”**
 - **17 recommendations**

Area of Concern	Description
1	Bedford Hwy Bridge to Hwy 102 (NDMP 25)
2	Rankin Drive at Glendale Drive (NDMP 20)
3	Sunnyvale Cres @ Cobequid Rd (NDMP 21)
4	Sackville Dr @ Cobequid Rd/Hwy 101 (NDMP 26)
5	Beaver Bank Cross Road/Brook St Ext
6	Millwood Dr @ Jackladder Dr
7	Millwood Dr near Sackville Dr
8	Seawood Ave @ Sackville Cross Road
9	Hallmark Ave
10	Memory Lane @ Bedford Bypass
11	Range Park

Mitigation Plan Study Priority Recommendations

In order of proposed implementation (17 total):

- 1. Immediately adopt development restrictions based on the Phase II (2017 CBCL) Report**
2. Watershed-specific stormwater management strategy
3. Detailed mapping, protection, and preservation of wetlands
4. Require “natural” stormwater management (LID, GI, etc) for unserviced developments
5. Consider updated flows when replacing or building structures
6. McCabe Lake outlet structure
7. Improve channel capacity
8. Acquire at-risk properties

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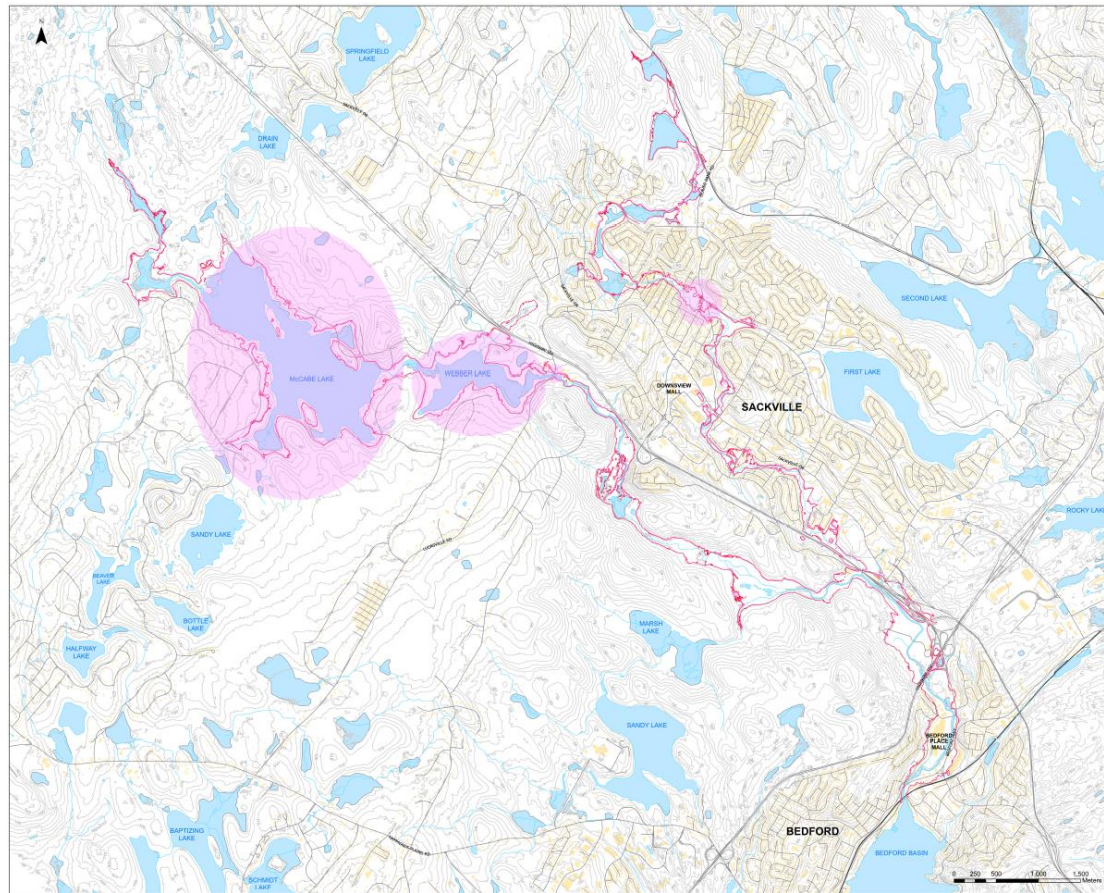
2024 DesignPoint Sackville Rivers Floodplain Mapping Update

2024 Mapping Update Project

- DesignPoint Engineering & Surveying
 - newer LiDAR (2019)
 - new topographic survey (2024)
- No additional changes were made to the 2017 CBCL Model
 - Future planning assumptions and climate change considerations remain consistent
 - Allow for an apples-to-apples evaluation on a short timeline
- Using the updated information the CBCL Model was applied to a new DEM

What changed between the 2017 mapping and the 2024 update?

- In most areas, the differences between the 2017 model and 2024 update are minimal.



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Halifax Regional Municipality

Sackville Rivers
Model Updates

Flood Line Delineation

1 in 100 Flood Line Comparison

Future IDF & Sea Level, Future Development
(Western University IDF-CC Tool - Upper Bound Result)

Legend

- 1 in 100 Year Flood Line - 2024 Model Update
- 1 in 100 Year Flood Line - Original Model
- Buildings
- Road
- Railway
- Waterbody
- Watercourse

Note:
Elevations including contours based on vertical datum CGVD2013

SCALE: 1:18,000

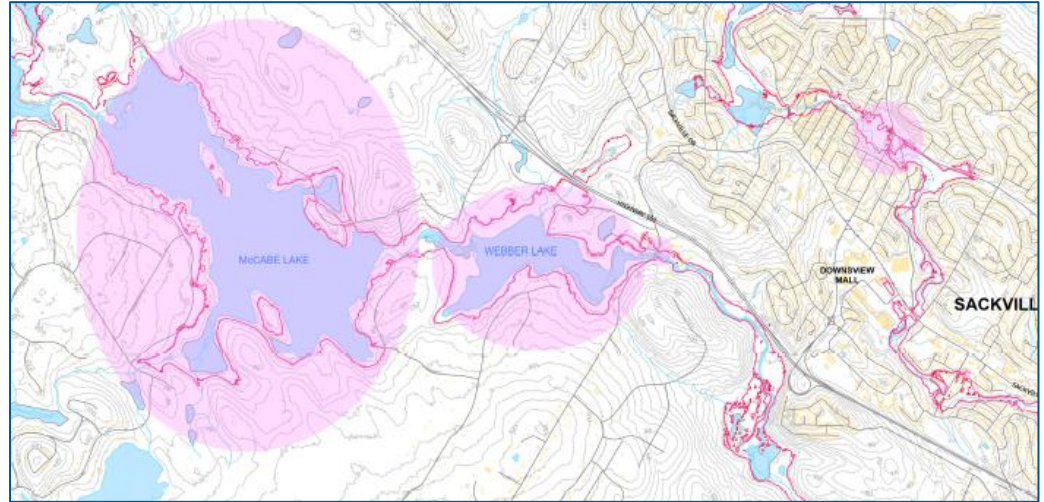
DATE: MARCH 2024
DesignPoint Project #: 19-174

DESIGNPOINT
engineering • surveying • solutions

ORIGINAL MODEL COMPLETED BY GCSL LIMITED (2017)

What changed between the 2017 and 2024 mapping?

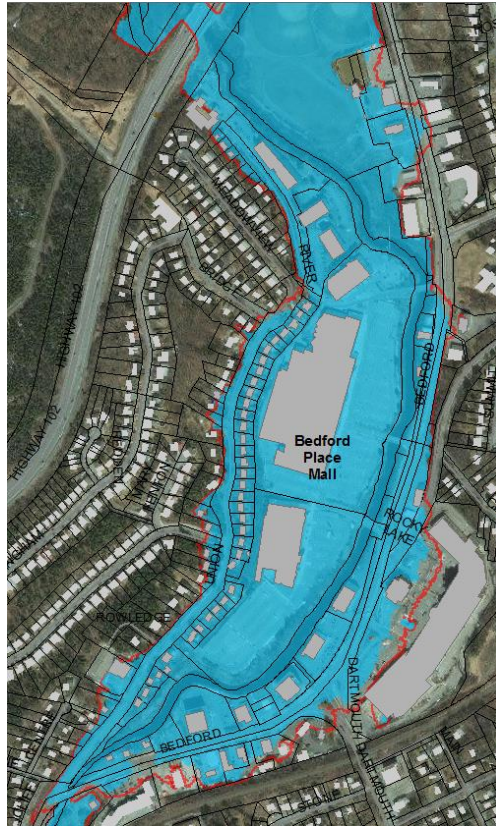
- The areas of most significant change identified in the technical memo are:
 - Upstream and downstream of the Lucasville Bridge
 - Upstream and downstream of the Beaver Bank Cross Road Bridge
 - Webber Lake
 - McCabe Lake



Existing Regulated (1980's)

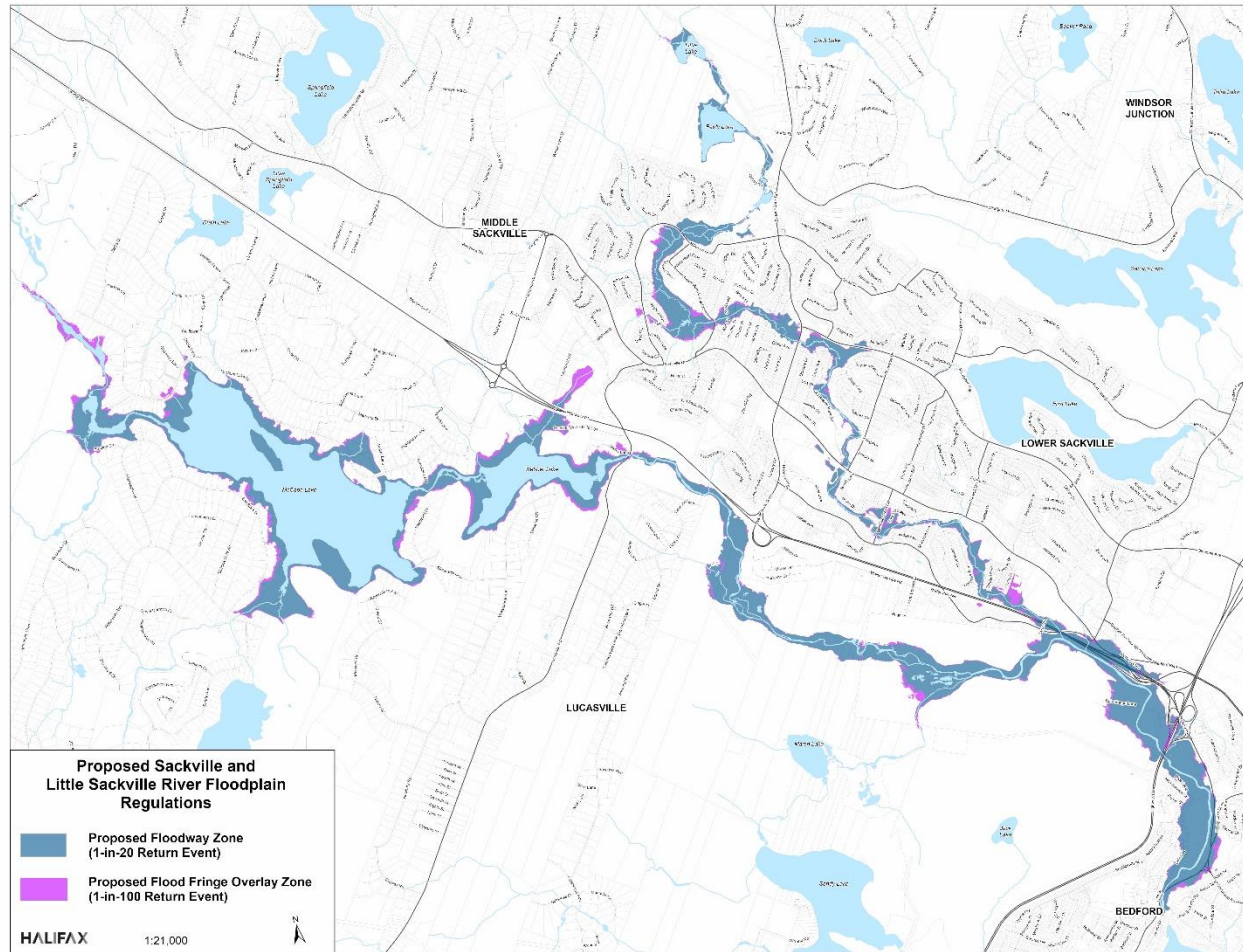


2017 Study Results



2024 Model Re-Run Results (Updated LiDAR + survey)





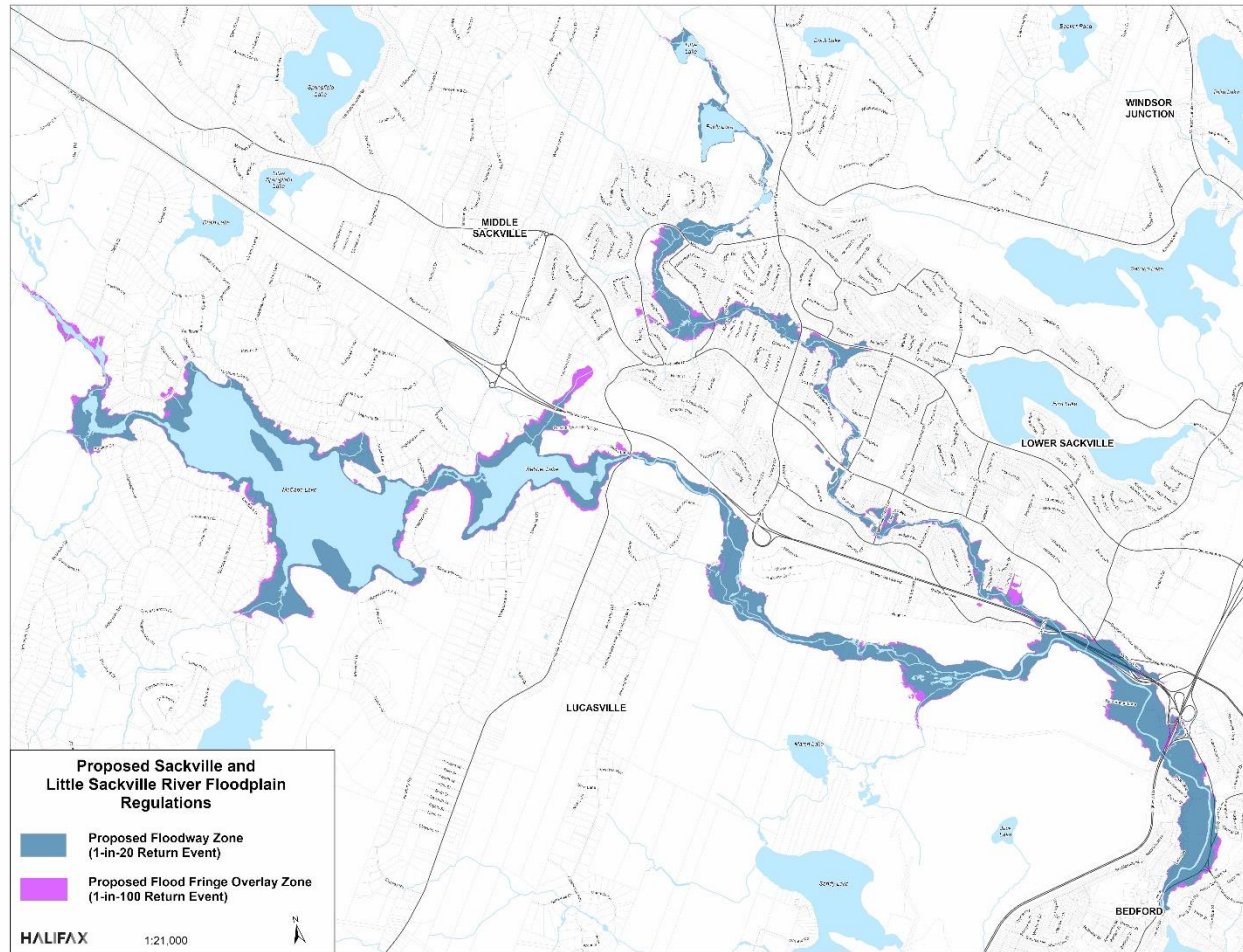
Statement of Provincial Interest Regarding Flood Hazard Area

- **Floodway Zone for the 1-in-20 floodplain**
 - prohibit all uses except those uses that would not obstruct the floodway or pose a risk to public safety
 - prohibit off-site or the alteration of grades
 - prohibit hazardous materials
- **Flood Fringe Zone for the 1-in-100 floodplain**
 - Prohibit residential institutions
 - Floodproof building to a 1-in-100 flood elevation
 - Carefully regulate the placement of fill or alteration of grades

HRM Proposed Land Development Regulations

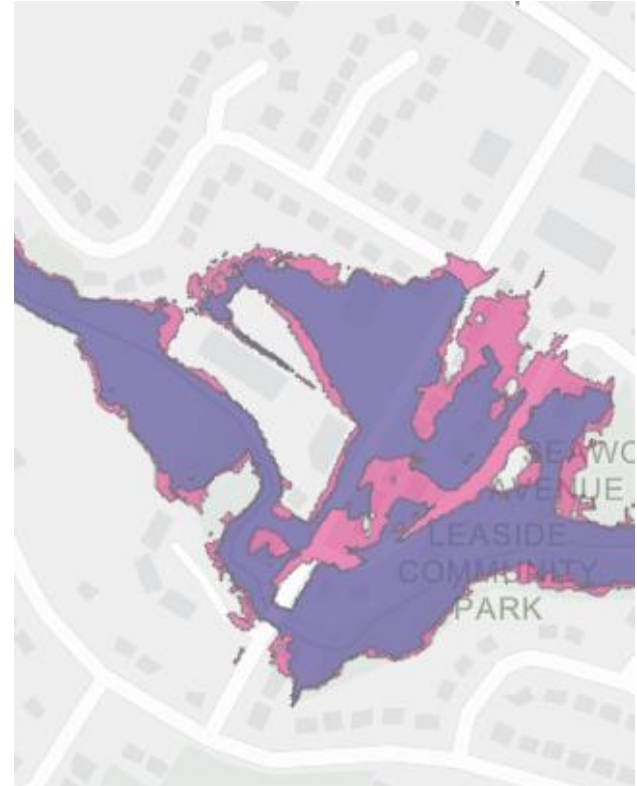
Plan Areas

- Amendments to MPSs & LUBs for:
 - Bedford
 - Sackville
 - Sackville Drive
 - Beaver Bank/Hammonds Plains/Upper Sackville



Floodplain Zones

- **Floodway Zone** – 1-in-20-year floodplain (Purple)
- **Flood Fringe Overlay Zone** – 1-in-100-year floodplain (Pink)



Floodway Zone – Permitted Uses

- Resource uses (where appropriate)
- Conservation uses
- Roads
- Public utilities
- Recreation uses
- Trails
- Parking lots
- All existing non-residential uses

Floodway Zone Conditions

- No new buildings or structures permitted
- No off-site fill permitted
- Grade alterations allowed with a hydrotechnical study

Floodway Zone – Existing Non-Residential Uses

- Existing Non-residential uses
 - Change in use to another non-residential use (permitted in previous zone)
 - Hazardous materials storage prohibited
 - Limited expansion to allow a loading dock or ramp for accessibility
 - Buildings can be reconstructed if floodproofed
 - Must maintain the same building envelop

Floodway – Existing Non-residential Use Expansion

- Expansion of existing non-residential development within the floodway zone may be considered by development agreement.
- Hydrotechnical study required to confirm that the expansion will not contribute to upstream or downstream flooding or alter river flows.

Floodway Zone - Floodproofing

- All floors above the nearest upstream 1-in-100 flood-elevation
- Electrical and mechanical equipment above the 1-in-100 flood level unless designed by an engineer to withstand a flood

Existing Residential Uses

- Permitted as legal non-conforming use
- Can be reconstructed as it exists
- Can continue to be used as a residential use
- Existing means that the residential building is constructed or has an approved permit for construction before first notice

Floodway Fringe Overlay Zone – Permitted Uses

- All uses permitted under the underlying zone already applicable to the property **except**:
 - Automotive repair
 - Heavy equipment services
 - Gas stations
 - Dry cleaners
 - Industrial uses
 - Construction and demolition
 - Hospitals & clinics
 - Shared housing
 - Hotels
 - Daycares

Flood Fringe Overlay Zone Conditions

- Off-site fill permitted for floodproofing
- Grade alterations allowed
- Placement of fill and grade alterations require a hydrotechnical study

Flood Fringe Overlay Zone - Floodproofing

- All floors above the nearest upstream 1-in-100 flood-elevation
- Electrical and mechanical equipment above the 1-in-100 flood level unless designed by an engineer to withstand a flood

Key Elevations

- Creating a schedule under the land use by-laws showing key 1-in-100 elevations along the river
- These will form the elevation point over which a building would have to be built to meet the floodproofing conditions
- Alternatively, applicant may hire a professional engineer or land surveyor to mark a site specific 1-in-100 elevation

Areas No Longer in Floodplain

Areas no longer in the floodplains under the 2024 Floodplain Map, are proposed to be rezoned and redesignated from Floodplain to the adjacent zone and land use designation applied to the property.



Policy to Review

- Proposed policy 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.

Next Steps

- Proposed policies and regulations will be posted on the Sackville Rivers Floodplain Website for comment – early Fall
- Targeting Public Hearings after the adoption of the Regional Plan Phase 4
- Anticipated public hearing before Regional Council later Fall/early Winter

Stay in touch

- [Halifax.ca/sackvillefloodplain](https://halifax.ca/sackvillefloodplain)
- Contact:
 - Maureen Ryan, HRM Planner III
 - ryanm@halifax.ca
 - 782-640-0592



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Thank You