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# **Work Package 3A – Floodplain Policy Analysis and Recommendations**

## **Frank Marshall Business Park Floodplain Analysis and Scoped Master Servicing Plan Study, Haldimand County**





# **Work Package 3A – Floodplain Policy Analysis and Recommendations**

## **Frank Marshall Business Park Floodplain Analysis and Scoped Master Servicing Plan Study, Haldimand County**

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# Work Package 3A – Floodplain Policy Analysis and Recommendations

## Frank Marshall Business Park Floodplain Analysis and Scoped Master Servicing Plan Study, Haldimand County

### 1.0 Introduction

Haldimand County (County) has retained J.L. Richards & Associates Ltd. (JLR) to prepare a Floodplain Analysis and Scoped Master Servicing Plan for the Frank Marshall Business Park (FMBP) in the Community of Dunnville (**Figure 1-1**). This work is carried out in support of Phase 2 of the Haldimand County Official Plan Update (by others). From the terms provided in the Request for Proposal (RFP), the Floodplain Analysis will determine if and where a two-zone concept for the floodplain can be applied within the limits of the FMBP with the goal of permitting development within the flood fringe. The Scoped Master Servicing Plan will provide recommendations on water, sanitary, stormwater, and road infrastructure to develop the FMBP into a mixed-use neighbourhood.

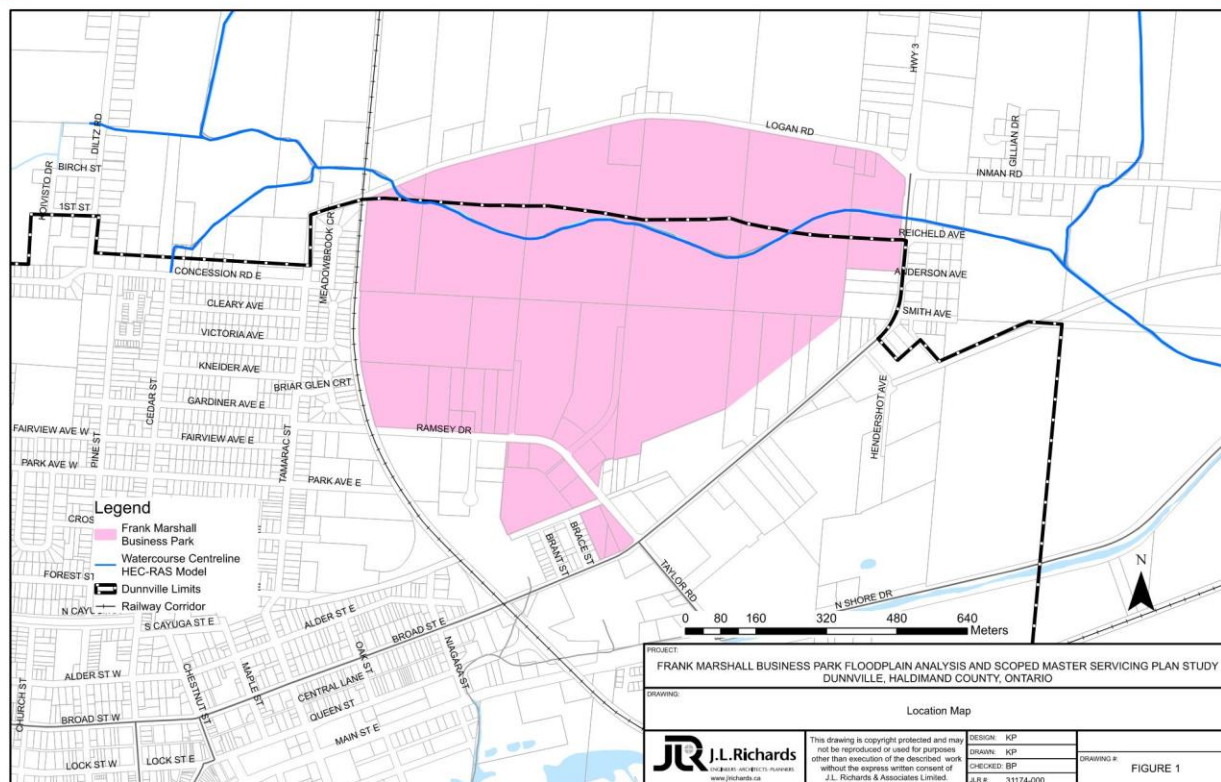


Figure 1-1. Location of Frank Marshall Business Park

The purpose of Work Package 3A is to provide a floodplain policy review, including a review of the policies already present in the Dunnville settlement in the Official Plan and other municipalities within the Grand River Conservation Authority. Using the information from this analysis, floodplain policies have been recommended for the Frank Marshall Business Park to guide potential residential and employment development within the flood fringe. This Work Package 3A report should be read in conjunction with the previous Work Package reports prepared by JLR. Work Package 2A includes floodplain mapping that has been incorporated into this Work Package.

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### **2.0 Existing Floodplain Policy**

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Two-Zone Floodplain policies are outlined at the provincial level through the Provincial Policy Statement, 2020 and regulated and enforced at the municipal level through Conservation Authorities and local governments.

#### **2.1 Provincial Policy Statement 2020**

The Provincial Policy Statement 2020 states that where the two-zone concept for flood plains is applied, development and site alteration may be permitted in the flood fringe, subject to appropriate floodproofing to the flooding hazard elevation or another flooding hazard standard approved by the Minister of Natural Resources and Forestry.

Where the two-zone concept is applied, the floodway is the contiguous inner portion of the flood plain, representing that area required for the safe passage of flood flow and/or that area where flood depths and/or velocities are considered to be such that they pose a potential threat to life and/or property damage. Where the two-zone concept applies, the outer portion of the flood plain is called the flood fringe.

Full sections of the PPS used in this analysis can be found in Appendix A.

#### **2.2 Grand River Conservation Authority (GRCA) Two-Zone Policies**

As Dunnville falls within the jurisdiction of the Grand River Conservation Authority (GRCA), it is required that the County work in collaboration with the GRCA to designate a two-zone policy. The GRCA has been circulated on all materials provided by JLR as part of the Frank Marshall Business Park Floodplain Analysis and their feedback has been incorporated into the final reports when it is available.

GRCA's Policies for the Administration of Ontario Regulation 150/06 states that regardless of the approach applied, development within the Riverine Flooding Hazard and related allowances connected with all watercourses in the Grand River watershed requires permission from the GRCA.

##### **2.2.1 General Two Zone Criteria**

The GRCA General Two Zone Concepts and Criteria document states that the general approach to developing a Two Zone flood plain policy is to identify flood plain lands where filling or construction will not create an unacceptable risk to life or property or will not result in increased flood risk upstream or downstream of the proposed Two Zone policy areas. Such lands would be identified as the Flood Fringe. Figure 2-1 depicts the Two Zone Concept.

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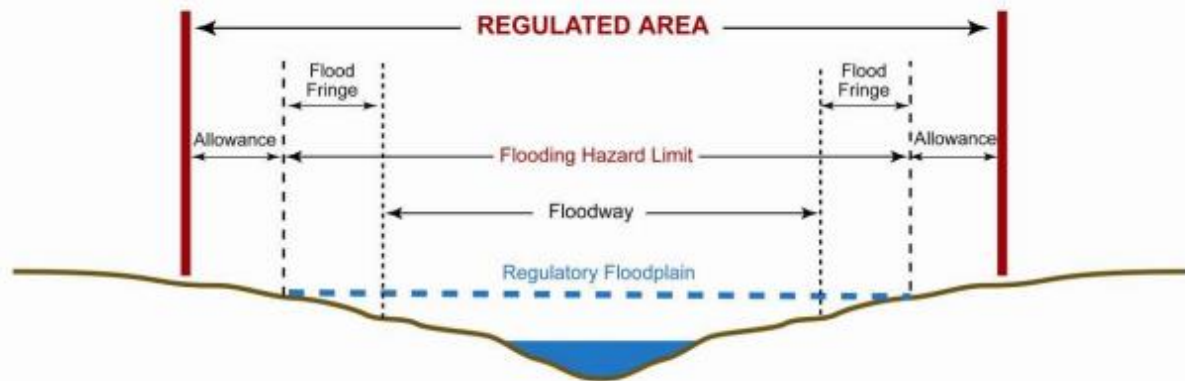


Figure 2-1. Riverine Flooding Hazard - Two Zone Policy Area (GRCA Policies for the Administration of O.Reg 150/06)

In this regard, the criteria to be employed are listed as follows:

- i. Flow velocity during the Regulatory event not to exceed 1.0m/s,
- ii. The product of depth and velocity during the Regulatory event not to exceed the 0.4m<sup>2</sup>/s (2x2 rule),
- iii. Flood Fringe not to encroach within 15m of the banks of the watercourse,
- iv. Depth of flooding along access routes to residential units not to exceed 0.8m,
- v. Depth of flooding along access routes to commercial or industrial structures not to exceed 1.2m,
- vi. Depth of flooding adjacent to residential units not to exceed 1.2m,
- vii. Depth of flooding adjacent of commercial or industrial structures not to exceed 2.0m,
- viii. Flood Fringe to apply to existing structures or infilling,
- ix. Increase in upstream flood elevation not to exceed 0.1m,
- x. No substantial loss of flood plain storage, such that downstream flow rates would increase,
- xi. Lands are not subject to frequent flooding, defined as areas within 25 year floodplain.

These criteria were used to develop the mapping created during Work Plan 2A.

#### 2.2.2 General Policies in the Flood Fringe and Floodway

The GRCA has also prepared general policies for land use in both the Flood Fringe and Floodway, as follows:

##### General Policies in the Flood Fringe

- Residential floor space above Regulatory Flood Level;
- Safe access for residential uses;
- Non-residential uses flood proofed to the Regulatory Flood level;
- No basements, except for below grade parking and/or common amenities;
- Fill permitted within Flood Fringe;

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- No hospitals, nursing homes, schools;
- Emergency services encourages to locate outside the flood plain.

#### General Policies in the Floodway

- Minor renovations, additions and accessory buildings to existing development where these do not block flow
- Structures for recreation purposes which do not block flow and are subject to little damage
- No fill, particularly within encroachment limit
- No new structures: new, redevelopment, or infilling

### **2.3 GRCA Regulated Area Policies**

A review of two zone floodplain policies within the GRCA Regulated Areas was conducted to form a best practice analysis. This analysis formed the basis of creating policy recommendations for the Frank Marshall Business Park.

There are 13 Municipalities within the GRCA Regulated Areas. Of these 13 areas, 8 have policies related to Two Zone Floodplains within their Official Plans, including Haldimand County and the Region of Waterloo and its lower tiers. The following is a selection of policies that are relevant from each municipality:

#### Brant County Official Plan

- 2.3.5.2. (b) Development in the flood fringe shall be restricted to infilling, redevelopment or replacement of existing buildings or structures and major additions or alterations to buildings existing as of October 2000
- 2.3.5.2. (c) Development in the floodway shall be restricted to minor expansions and minor alterations to buildings existing as of the date of adoption Plan, provided no new dwelling units are created
- 2.3.5.2. (f) New development in the floodplain will require:
  - A permit from the appropriate Conservation Authority
  - Flood proofing of all new structures
  - All habitable floor space and essential building services to be constructed at or above the Regulatory Flood elevation

#### Grey County Official Plan

- 7.2.4. Development and site alteration is not permitted within the floodway portion of the floodplain or defined portion of the dynamic beach. The floodway is the entire floodplain, unless the Two-Zone Concept is in use.
- 7.2.5. Implementation of existing Two-Zone Concept or Floodplain Special Policy Area is subject to:
  - (a) Appropriate development may be permitted in the flood fringe provided suitable flood damage reduction measures are undertaken to protect against Regional Storm flooding. Development and site alteration within the floodway,



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flood fringe or Regulated Area requires the approval of the conservation authority

- (b) Implementation of a new two-zone concept will be done through a municipal official plan amendment

#### City of Guelph Official Plan

- 4.4.1. Two Zone and Special Policy Area provisions may be selectively applied where development, redevelopment and rehabilitation of buildings and structures in these areas is considered vital to the continued economic and social viability of the City. The Province, in co-operation with the Grand River Conservation Authority and the City, has established Two Zone and Special Policy Areas within the city. In Two Zone and Special Policy Areas, the floodway and flood fringe areas are clearly delineated and the policies allow for development and redevelopment provided it meets the specific area flood proofing requirements
- 4.4.1.4. Development shall generally be directed to areas outside hazardous lands adjacent to rivers, streams and inland lake systems which are impacted by flooding hazards and/or erosion hazards except as provided for in the Two Zone and Special Policy Area policies.
- 4.4.1.5. Development within a floodway shall not be permitted regardless of whether the area of inundation contains high points of land not subject to flooding, except as provided for in the Two Zone and Special Policy Area policies.
- 4.4.1.7. The following uses shall not be permitted within the Regulatory Floodplain including the Two Zone and Special Policy Areas:
  - (i) institutional uses associated with hospitals, nursing homes, pre-school, school nurseries, childcare centres and schools where there is a threat to the safe evacuation of the sic, the elderly, persons with disabilities or the young during an emergency as a result of flooding, the failure of floodproofing measures and/or protection works, and/or erosion;
  - (ii) essential emergency services such as that provided by fire, police and ambulance stations and electrical substations which would be impaired during an emergency as a result of flooding, the failure of flood proofing measures and/or protection works, and/or erosion; and
  - (iii) uses associated with the disposal, manufacture, treatment or storage of hazardous substances.
- 4.4.1.18. No development is permitted within the floodway; however, existing buildings/structures within the floodway will be recognized as legal non-conforming.
- 4.4.1.19. The floodway may be used for:
  - (i) outdoor recreation, including small, municipal ancillary buildings and structures (e.g. picnic shelters) provided that damage potential is minimized and proposed structures will not affect the hydraulic characteristics of the floodplain;
  - (ii) open space and conservation areas;
  - (iii) wildlife sanctuaries;
  - (iv) nurseries and forestry; and
  - (v) urban agriculture, excluding any buildings and structures

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#### Norfolk County Official Plan

- 7.3.2.1. (c) The County, in consultation with the Conservation Authorities and the Province, may, at its sole discretion, apply a two zone concept, that is, a floodway and flood fringe, for selected portions of the flood plain. The appropriate Conservation Authority shall be consulted, with regard to site-specific detailed studies, to determine the technical justification of a two-zone approach. The appropriate Conservation Authority shall also determine the flood proofing measures required. New development shall not be permitted in the floodway. Development that may be permitted in the flood fringe area shall be protected to the level of the regulatory flood. The application of a two-zone floodway and flood fringe concept in Norfolk County will require an amendment to this Plan following public consultation in accordance with the policies of this Plan.

#### Oxford County Official Plan

- 3.2.8.1.2. Development in the floodway will be consistent with the policies of the One Zone Flood Plain.
  - Development in the flood fringe will be restricted to infilling, redevelopment, replacement and additions or alterations of buildings and structures existing
  - Conversions of non-residential buildings to residential use in the flood fringe may be permitted, provided that all other development criteria are satisfied.
  - All development in the flood fringe will be in conformity with the underlying land use designation.
  - A permit is required from the Conservation Authority to permit development within the flood fringe, in addition to the development being suitably floodproofed, and all habitable floor space and essential services constructed above the Regulatory Flood elevation

#### Perth County Official Plan

- 13.4. In general, when considering new development, the One Zone concept shall be applied. When reviewing extensions to existing development or re-development, the Two Zone concept may be applied. In order for the Two Zone concept to be employed, the physical characteristic of the flood plain at the subject site must be such that there is an area where the combination of depth and velocity of flood waters would result in an area of flood fringe.
- 13.5.2. With the two-zone concept, new buildings and structures and/or expanded buildings and structures may be permitted in the flood fringe portion of the "Flood Plain" designation provided that any flood hazard constraint can be overcome to the satisfaction of the appropriate Conservation Authority. Written confirmation from the appropriate Conservation Authority and a permit, if required, stating that it approves of the development and that it is satisfied with the floodproofing measures proposed must be provided to the local municipality before being approved/permitted or issuance of a building permit by the local municipality

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#### 2.4 Haldimand County Official Plan

Section 2 (C) (provided in Appendix B) of the Haldimand County Official Plan outlines Hazard Land Policies, and in particular Riverine Hazard Lands. Large parts of the Frank Marshall Business Park are designated Riverine Hazards Lands (**Fig 2-2**). Subsection 1 states that a one-zone concept will generally be utilized for these lands, but that a two-zone concept may be utilized in specific portions of urban areas in consultation with the Province and appropriate conservation authority. In unique cases, Special Policy Areas may be developed. A Special Policy Area has been approved by the Province and is in effect for the Dunnville urban area, which does not include the FMBP.

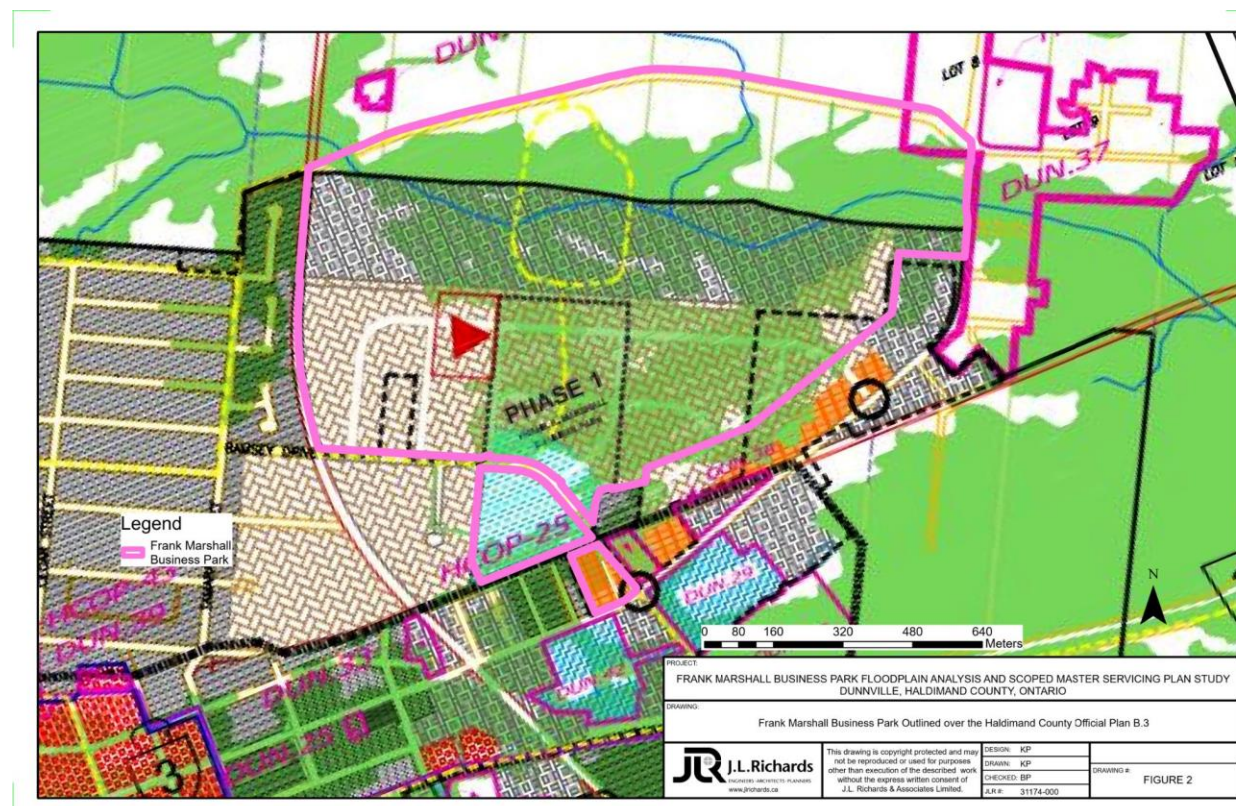


Figure 2.2 – Current Land Uses Within Business Park

Subsection 2 states that a two-zone concept may be implemented for a selected portion of the flood plain in the urban area of Dunnville through an Official Plan Amendment. The approval of this two-zone concept will require a review of the technical justification and flood proofing measures from the conservation authority.

Development potential in the area identified as being subject to the two-zone concept will be limited to the Flood Fringe with any potential development protected to the level of the Regulatory Flood. In accordance with subsection 6, the following uses are permitted within the two components of the two-zone concept, provided the hazard will not be aggravated and the

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requirements of the conservation authority or other approval agencies are met. Such approvals will be required at the time of the adoption of the Official Plan and Zoning Amendments and at site plan/building permit. The uses in the two portions of the two-zone concept are:

#### Permitted Uses in the Floodway

- Established agriculture and related uses, excluding new buildings and structures;
- Outdoor recreation, parks, and open space;
- Forestry;
- Uses which assist in conserving or managing water supplies, wildlife, fisheries, or other natural features;
- Limited marine commercial and marine industrial uses, including buildings and structures normally associated therewith along river edges and shorelines;
- Wastewater treatment facilities and expansions thereto, subject to applicable provincial legislation; water facilities and outstations; and utilities with adequate flood-proofing measures;
- Flood erosion and control structures; and,
- Continued maintenance of existing buildings and structures and replacement of existing buildings and structures lost to fire or other natural disasters provided that they can be protected by flood proofing measures.

#### Permitted Uses in the Flood Fringe

The uses permitted in the underlying land use designation (see Section 3) are permitted subject to consultation with the GRCA and the following:

- The nature and scale of the development proposed;
- The flooding effect of the proposal on upstream and downstream areas;
- The feasibility of employing flood damage reduction measures or flood proofing (feasibility of placing fill to attain desired lot elevation, feasibility of construction on organic soils, increased structural requirements, sump pumps, one way valves, availability of suitable outlets for storm sewers, weeping tile, drains, etc.); and,
- Uses permitted in the underlying designations.

#### Prohibited Uses in the Floodplain and Flood Fringe:

- Institutional uses including hospitals, nursing homes, pre-school, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly,

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persons with disabilities or the young during an emergency as a result of flooding, failure of floodproofing measures or protection works, or erosion;

- An essential emergency service such as that provided by fire, police, and ambulance stations and electrical substations, which would be impaired during an emergency as a result of flooding, the failure of floodproofing measures protection works, or erosion; and,
- Uses associated with the disposal, manufacture, treatment, or storage of hazardous substances.

Subsection 9 permits replacements and minor expansions in some areas of existing development which lie in Riverine Hazard Lands subject to a study that meets specific criteria.



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### 3.0 Flood Fringe Policies for FMBP

#### 3.1 Proposed Land Uses

The County has indicated potential land uses (industrial, open space, and residential) within the Frank Marshall Business Park assuming the entire site was to be open to development (**Fig 3-1**). These land uses will be confirmed through the ongoing update to the County's Official Plan and are informed by this report and subject to concurrence from the GRCA, including any required updates to the flood risk mapping and associated Regulations.

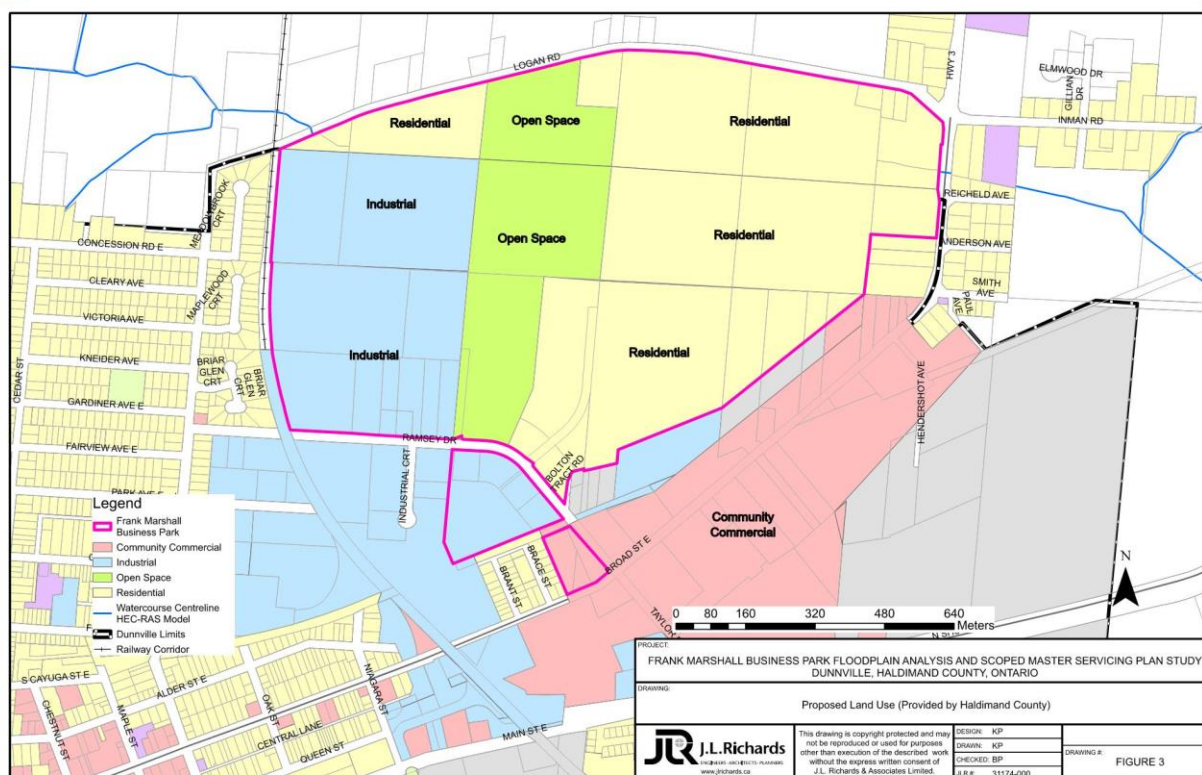


Figure 3.1 - Proposed Land Uses

The current Official Plan underlying designations for these lands are Urban Business Park to the north, Urban Industrial in the centre, and a mixture of Business Park, Business Park/Commercial, and Industrial, to the south (**Figure 2-2**).

The current Zoning for these lands includes Agriculture, Hamlet Residential, Neighbourhood Institutional, Urban Residential Type 1-A, Development, Service Commercial, Rural Industrial, and General Industrial.

As previously mentioned in Work Package 2A, the proposed land uses include industrial to the west of the site along the rail corridor with an open space buffer between industrial and the existing

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arena site. To the east of the arena site is proposed residential with affordable housing to be developed by the County. Along the Highway 3 corridor at the west boundary of the site, community commercial has been proposed.

The Frank Marshall Business Park presents opportunities for the land uses proposed by the County, pending approval of the two-zone floodplain approach by the GRCA. As the County is currently in the process of updating their Official Plan, a two-zone concept for the business park area could be created at this time in consultation with the GRCA.

#### **3.2 Recommended Flood Fringe and Floodway Areas**

The proposed flood fringe areas maximise the available development within the proposed land uses while maintaining the following criteria:

- Flow velocity during the Regulatory event not to exceed 1.0m/s;
- The product of depth and velocity during the Regulatory event not to exceed the 0.4m<sup>2</sup>/s (2x2 rule);
- Flood Fringe not to encroach within 15m of the banks of the watercourse;
- Depth of flooding not to exceed 0.8m (most critical depth from GRCA criteria);
- Flood Fringe to apply to existing structures or infilling;
- Increase in upstream flood elevation not to exceed 0.1m;
- No substantial loss of flood plain storage, such that downstream flow rates would increase; and,
- Lands are not subject to frequent flooding, defined as areas within the 25 year floodplain.

The County indicated a desire to maintain the industrial portion with access to the rail corridor, allow flooding on the open space areas, and facilitate development of the residential parcel next to the arena site.

Delineation of the proposed flood fringe areas also followed the general principals of facilitating development of entire parcels where possible and keeping the flood fringe delineation to parcel boundaries or allowing an ideal distance of 160 metres from right of way corridors to facilitate development with local roads in residential or industrial lots. Flood Fringe Iteration 6 from Work Package 2A is recommended as the flood fringe area as it:

- Provides the County with residential land uses internal to the Frank Marshall Business Park area and along Logan Road to the north of Maple Creek with flooding depth less than 800 mm;
- Provides the County with industrial development adjacent to the railway line with flooding depths less than 800 mm;
- Provides the County with community commercial development land along the Highway 3 corridor with flooding depths less than 800mm; and,
- Is consistent with Grand River Conservation Authority criteria to maintain increases in flood elevations less than 100 mm in the regional storm event.

The recommended flood fringe for the Frank Marshall Business Park is provided in **Figure 3-2**.

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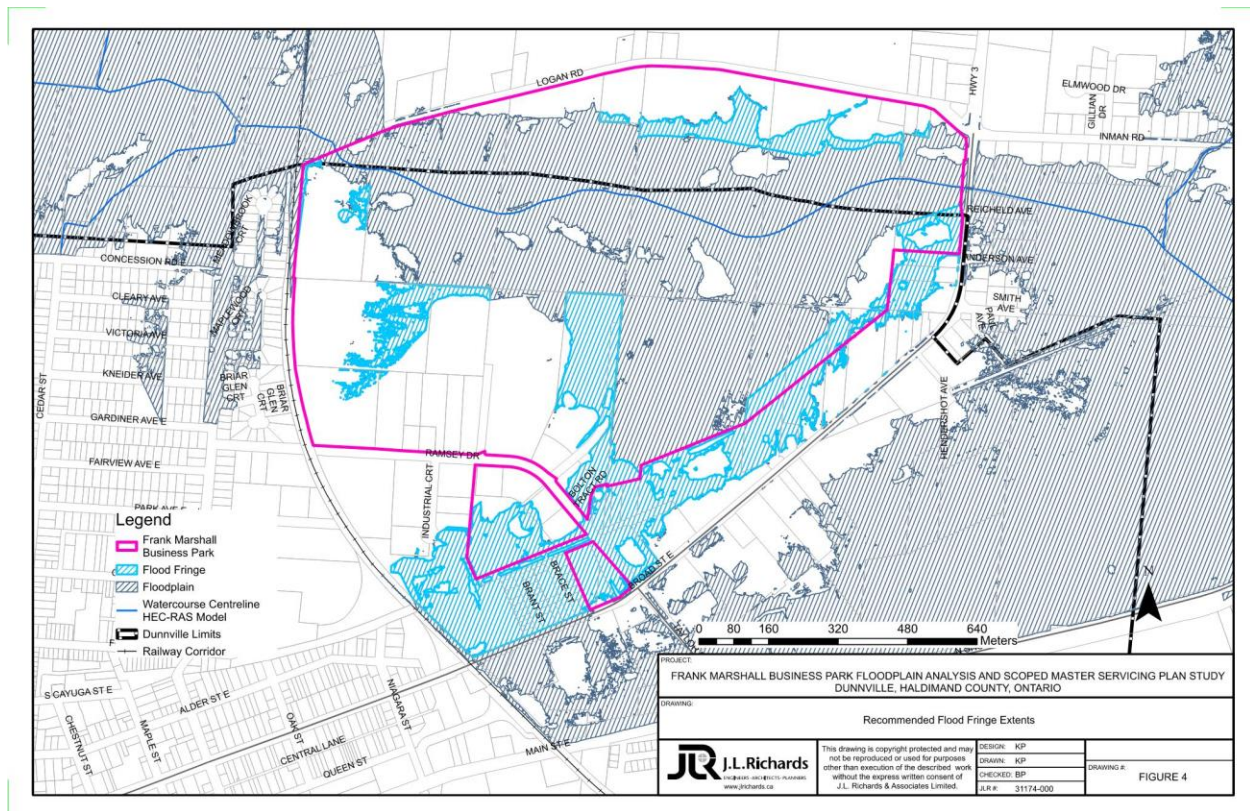


Figure 3.2 - Recommended Flood Fringe Extents

Implementing the two-zone approach with the recommended flood fringe extents in Figure 3.2 would provide an additional 15.7 hectares of land within the Frank Marshall Business Park over the current one zone approach, as shown in Table 3-1:

Table 3-1: Developable Area in the FMBP, One Zone vs Two Zone

Land Use	Area of development available under Regulatory Floodplain (ha)	Area of development available under two zone (includes flood fringe area) (ha)	Increase in development opportunity area (ha)
Industrial	22.93	25.90	2.97
Open Space	2.15	5.39	3.24
Commercial	0.62	1.25	0.63
Residential	13.32	22.21	8.89
<b>Total</b>	<b>39.01</b>	<b>54.74</b>	<b>15.73</b>



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The “islands” of developable area that are entirely surrounded by floodplain / floodway have been excluded as developable area. When lands intended to be designated Open Space are removed, the total developable area gained by the two-zone approach is 12.5 hectares.

The information in Table 3-1 is graphically illustrated in Figures 3-3 and 3-4 below:

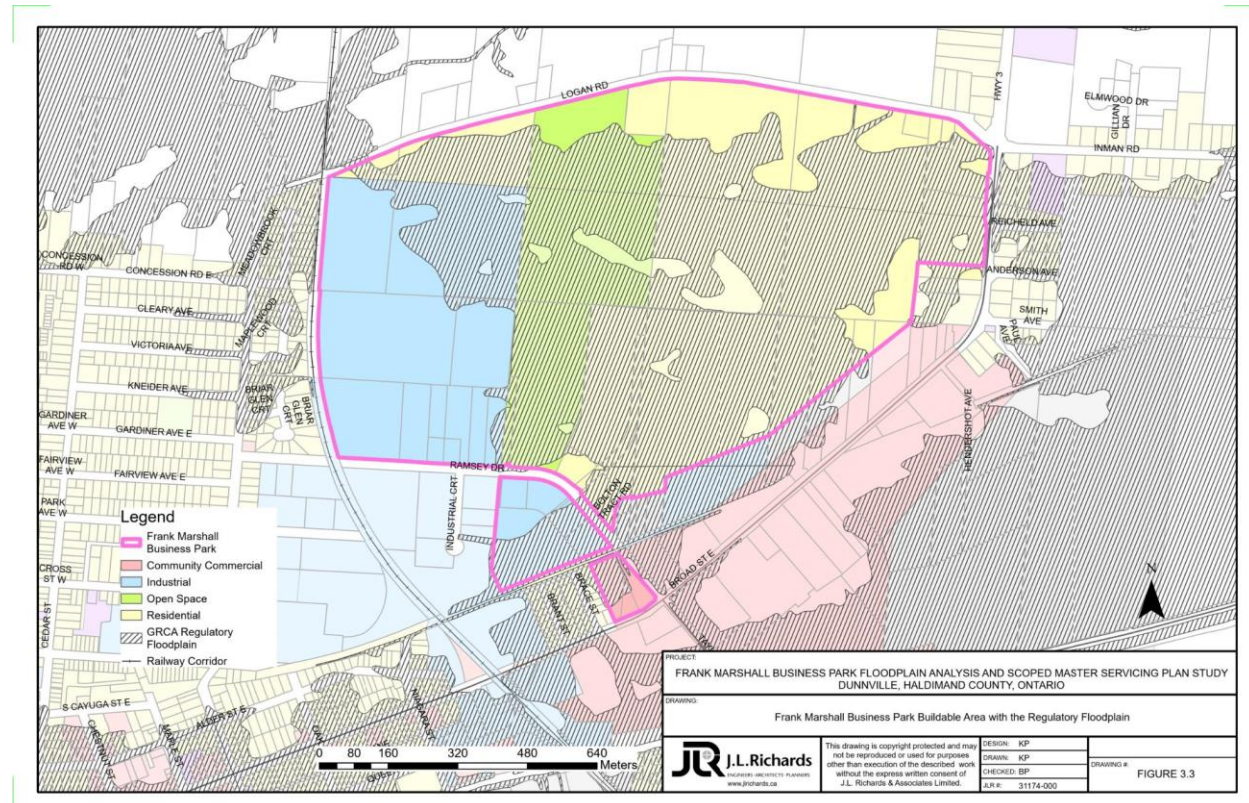


Figure 3.3 – Buildable Area Within the Regulatory Floodplain (One Zone Approach) – Floodplain in Hatch

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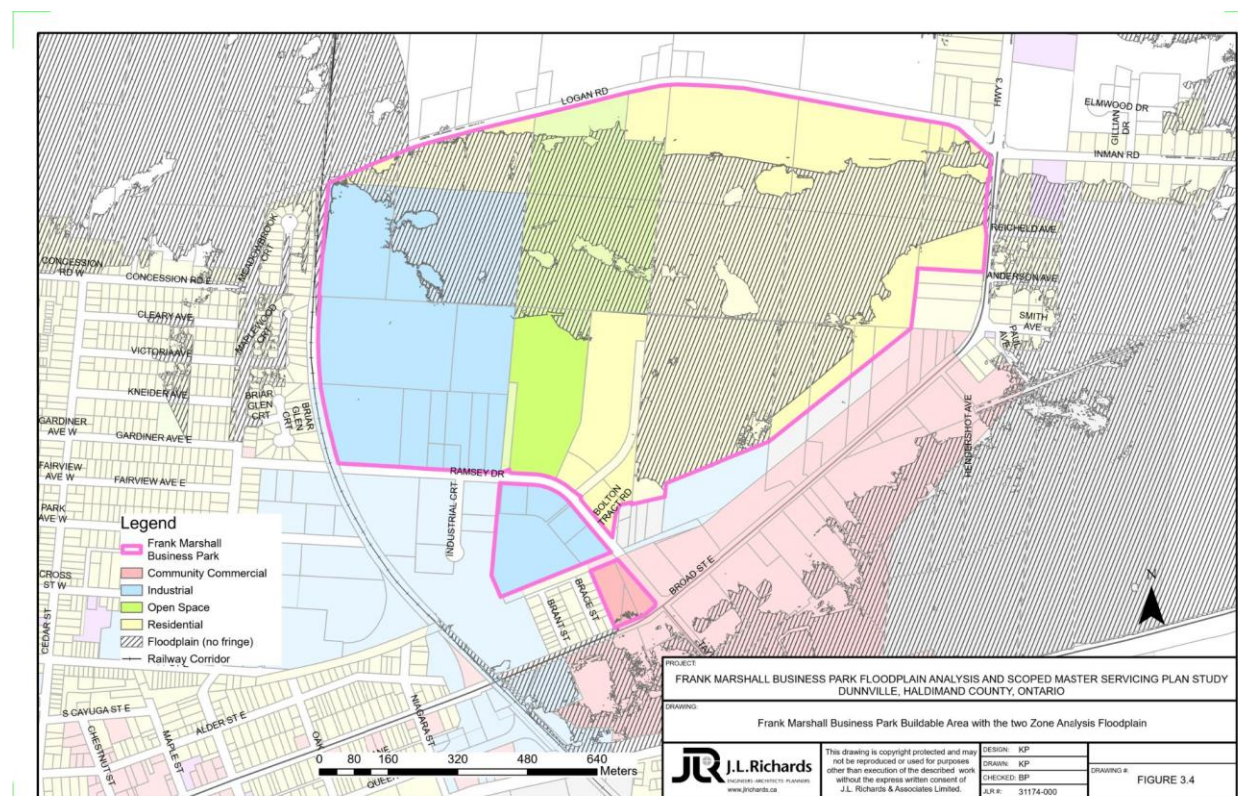


Figure 3.3 – Buildable Area with the Two-Zone Approach – Floodway in Hatch

If the two-zone approach were implemented it would result in a net gain of approximately 144,236 square feet of industrial space, a net gain of approximately 54,000 square feet of commercial space, and a gain of 168 residential units, as shown in Table 3-2:

Table 3-2: Development Impacts of the Two-Zone Approach

Land Use	Change in development opportunity area (ha)	Density (PPH) <sup>1</sup>	Change in Density in the Two-Zone Approach (Persons)	Estimated Floor Area / Units
Industrial	2.97	125	371	1.34 ha 144,236 s.f. <sup>2</sup>
Commercial	0.63	90	57	0.50 ha 53,820 s.f. <sup>3</sup>
Residential	8.89	55	489	168 units
<b>Total</b>	<b>12.49</b>		<b>917</b>	

1 - From Haldimand's Design Criteria (Engineering Services), Equivalent Population Density by Type of Development

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*2 – Based on 45% lot coverage, as permitted in the Light Industrial (ML) Zone. If the General Industrial (MG) zone is used, the lot coverage increases to 60% and the estimated impact of the two-zone approach is 1.78 ha (191,597.6 s.f.) of industrial space.*

*3 – Based on 80% lot coverage of the General Commercial (CG) Zone.*

*4 – Based on 2.904 PPU for single and semi-detached dwellings from the 2019 Development Charges Update Study (Addendum #2), prepared by Watson & Associates*

#### **3.3 Recommended Flood Fringe Policies for the FMBP**

Section C.1 of the Haldimand County Official Plan currently provides policy direction for Riverine Hazard Lands using the one-zone concept. If the County desires to implement a two-zone concept for the FMBP a Site-Specific Policy Area must be added to the Official Plan by way of an Amendment to establish a two-zone concept for the FMBP. Recommended policies are provided below.

Such a change would not affect the current Special Policy for the balance of Dunnville.

HCOP-XX156 That on the lands shown on Schedule “B.3” as having reference to this Site-Specific Policy Area for the Frank Marshall Business Park the following Riverine Hazard Lands policies shall apply:

1. The two-zone Floodway and Flood Fringe concept shall apply to the areas as shown on Schedule “G.2”
2. No new development is permitted within the floodway, including new structures, redevelopment, or infilling. Permitted uses within the floodway are limited to the following:
  - a) Established agriculture and related uses, excluding new buildings and structures;
  - b) Outdoor recreation, parks, and open space;
  - c) Forestry;
  - d. Uses which assist in conserving or managing water supplies, wildlife fisheries, or other natural features;
  - e. Limited marine commercial and marine industrial uses, including buildings and structures normally associated therewith along river edges and shorelines;
  - f. Wastewater treatment facilities and expansions thereto, subject to applicable provincial legislation; water facilities and outstations; and utilities with adequate flood-proofing measures;
  - g. Flood erosion and control structures; and,
  - h. Continued maintenance of existing buildings and structures and replacement of existing buildings and structures lost to fire or other



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natural disasters provided that they can be protected by flood proofing measures.

3. Permitted uses and land use policies within the flood fringe are established by the underlying land use designation and are subject to the following additional criteria:
  - a) Floodproofing to the elevation of the Regulatory Flood to the satisfaction of the Grand River Conservation Authority;
  - b) All new dwelling units must be above the elevation of the Regulatory Flood;
  - c) All habitable floor space and electrical, mechanical, and heating services must be above the elevation of the Regulatory Flood;
  - d) No basements are permitted, except in the case of buildings containing multiple dwelling units. In buildings containing multiple dwelling units, a basement must be floodproofed to the elevation of the regulatory flood and be limited to parking below grade or common amenity space;
  - e) Ingress and egress to the building or structure must be “dry” where this standard can be practically achieved, or floodproofed to an elevation which is practical and feasible, but no less than “safe” to the satisfaction of the Grand River Conservation Authority;
  - f) All development within the flood fringe is subject to Site Plan Control and shall require written confirmation from the Grand River Conservation Authority stating that it approves the development and the proposed floodproofing measures. This written confirmation shall be required prior to final approval of a Site Plan.
4. The following uses are prohibited in both the floodplain and the flood fringe:
  - a) Institutional uses including hospitals, nursing homes, pre-school, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of flooding, failure of floodproofing measures or protection works, or erosion;
  - b) An essential emergency service such as that provided by fire, police, and ambulance stations and electrical substations, which would be impaired during an emergency as a result of flooding, the failure of floodproofing measures protection works, or erosion;
  - c) Uses associated with the disposal, manufacture, treatment, or storage of hazardous substance; and,
  - d) Flood protection works and bank stabilization works to allow for future or proposed development.
5. The following uses are additionally prohibited within the floodway:

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- New dwelling units;
- A new parking lot associated with residential uses;
- Underground parking;
- A driveway or access way to lands outside of the Riverine Flooding Hazard where safe access is not achievable and no alternative access way providing safe access is available.

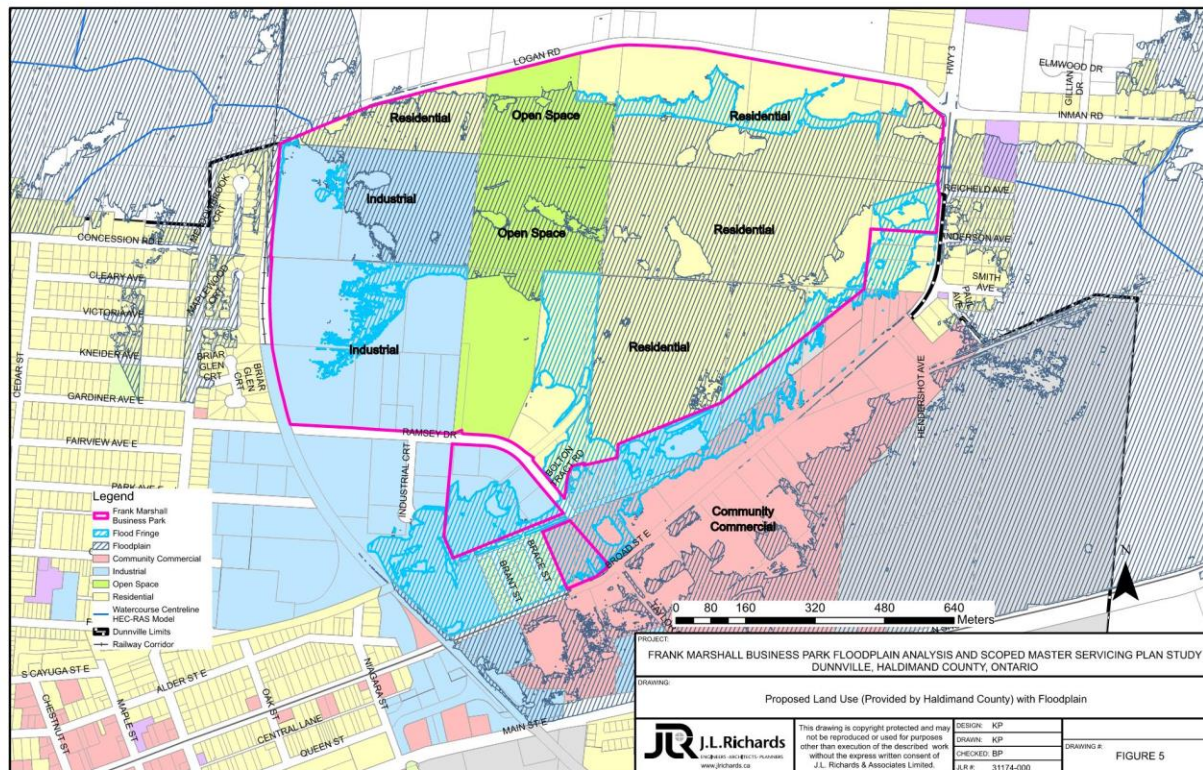


Figure 3.3 – Proposed Land Uses with Flood Fringe Overlay

## Work Package 3A – Floodplain Policy Analysis and Recommendations

### Frank Marshall Business Park Floodplain Analysis and Scoped Master Servicing Plan Study, Haldimand County

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#### 4.0 Recommended Next Steps

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If the County would like to implement the two-zone approach for the FMBP, we recommend that the land uses and proposed two-zone policies and mapping within the FMBP are considered by the Planning Department and the GRCA for incorporation into the County Official Plan and Zoning By-law. This feedback will be incorporated into JLR's Work Package 4, which will include finalized policies and graphics in the County's preferred format.

This report has been prepared for the exclusive use of Haldimand County, for the stated purpose, for the Frank Marshall Business Park Floodplain Mapping. Its discussions and conclusions are summary in nature and cannot be properly used, interpreted or extended to other purposes without a detailed understanding and discussions with the client as to its mandated purpose, scope and limitations. This report was prepared for the sole benefit and use of Haldimand County and may not be used or relied on by any other party without the express written consent of J.L. Richards & Associates Limited.

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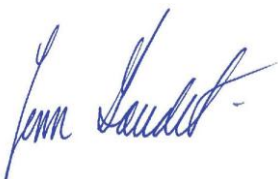


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**Work Package 3A – Floodplain Policy Analysis and  
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**Appendix A**

Provincial Policy Statement, 2020

## **Work Package 3A – Floodplain Policy Analysis and Recommendations**

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- 3.12 Development and site alteration may not be permitted within:
- c) areas that would be rendered inaccessible to people and vehicles during times of flooding hazards, erosion hazards and/or dynamic beach hazards, unless it has been demonstrated that the site has safe access appropriate for the nature of the development and the natural hazard; and
  - d) a floodway regardless of whether the area of inundation contains high points of land not subject to flooding.
- 3.14 Despite policy 3.1.2, development and site alteration may be permitted in certain areas associated with the flooding hazard along river, stream and small inland lake systems:
- a) in those exceptional situations where a Special Policy Area has been approved. The designation of a Special Policy Area, and any change or modification to the official plan policies, land use designations or boundaries applying to Special Policy Area lands, must be approved by the Ministers of Municipal Affairs and Housing and Natural Resources and Forestry prior to the approval authority approving such changes or modifications; or
  - b) where the development is limited to uses which by their nature must locate within the floodway, including flood and/or erosion control works or minor additions or passive non-structural uses which do not affect flood flows.
- 3.16 Where the two-zone concept for flood plains is applied, development and site alteration may be permitted in the flood fringe, subject to appropriate floodproofing to the flooding hazard elevation or another flooding hazard standard approved by the Minister of Natural Resources and Forestry.
- 3.17 Further to policy 3.1.6, and except as prohibited in policies 3.1.2 and 3.1.5, development and site alteration may be permitted in those portions of hazardous lands and hazardous sites where the effects and risk to public safety are minor, could be mitigated in accordance with provincial standards, and where all of the following are demonstrated and achieved:
- a) development and site alteration is carried out in accordance with floodproofing standards, protection works standards, and access standards;
  - b) vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies;
  - c) new hazards are not created and existing hazards are not aggravated; and d) no adverse environmental impacts will result.



**Work Package 3A – Floodplain Policy Analysis and  
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**Appendix B**

Haldimand County Official Plan

# **Work Package 3A – Floodplain Policy Analysis and Recommendations**

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### **C. Hazard Land Policies**

#### **1) Riverine Hazard Lands**

1. For Riverine Hazard lands, the County will generally utilize a one-zone concept. A two-zone (floodway/flood fringe) concept may be utilized in specific portions of the various affected urban areas or hamlets in consultation with the Province and appropriate conservation authority. . In unique cases, Special Policy Areas may be developed in consultation with the Province and appropriate conservation authority.

The County supports appropriate flood control management programs of the conservation authorities.

4. In consultation with the Province and appropriate conservation authority, the County, may opt to apply a two-zone concept (floodway/flood-fringe) for selected portions of the flood plain, including but not limited to, portions of the urban areas of Townsend, Jarvis, Caledonia, Cayuga and Dunnville through an official plan amendment. The conservation authority will need to review the technical justification and determine flood proofing measures that should be required. New development will not be permitted in the floodway. Development that may be permitted in the flood fringe area will need to be protected to the level of the Regulatory Flood.

5. Where strict adherence to the one-zone or two-zone concept would affect the economic and social viability for areas of existing development within a community, a special policy area may be considered and implemented through an Official Plan Amendment following consultation with the Province and the appropriate conservation authority. The County must apply for special policy area status in accordance with established procedures. Once such status is obtained, controlled development may be permitted subject to the special policies. The County will define special policy areas in the Official Plan in consultation with the conservation authority and the Province and set out policies for appropriate development. The minimum acceptable level of flood protection for all development will be identified.

6. In both the one-zone and two-zone concepts, the following uses may be permitted in the Floodway provided the hazard will not be aggravated and the requirements of the conservation authority or other approval agencies are met:

- a) established agriculture and related uses, excluding new buildings and structures;
- b) outdoor recreation, parks and open space;
- c) forestry;
- d) uses which assist in conserving or managing water supplies, wildlife, fisheries or other natural features;
- e) limited marine commercial and marine industrial uses, including buildings and structures normally associated therewith along river edges and shorelines;
- f) wastewater treatment facilities and expansions thereto, subject to applicable provincial legislation; water facilities and outstations; and, utilities with adequate flood-proofing measures;
- g) flood and erosion control structures; and

## **Work Package 3A – Floodplain Policy Analysis and Recommendations**

### **Frank Marshall Business Park Floodplain Analysis and Scoped Master Servicing Plan Study, Haldimand County**

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h) continued maintenance of existing buildings and structures and replacement of existing buildings and structures lost to fire or other natural disasters provided that they can be protected by flood proofing measures.

7. In the two zone concept, and where a hazard land designation overlays another land use designation (excluding agriculture), the appropriate conservation authority shall be consulted and consideration given to the following factors before development is allowed in the Flood Fringe:

- a) the nature and scale of the development proposed;
- b) the flooding effect of the proposal on upstream and downstream areas;
- c) the feasibility of employing flood damage reduction measures or flood proofing (feasibility of placing fill to attain desired lot elevation, feasibility of construction on organic soils, increased structural requirements, sump pumps, one way valves, availability of suitable outlets for storm sewers, weeping tile, drains, etc.); and
- d) uses permitted in the underlying designations.

8. The following uses are prohibited in Riverine Hazard Lands:

- a) institutional uses including hospitals, nursing homes, pre-school, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of flooding, failure of floodproofing measures or protection works, or erosion;
- b) an essential emergency service such as that provided by fire, police and ambulance stations and electrical substations, which would be impaired during an emergency as a result of flooding, the failure of floodproofing measures protection works, or erosion; and
- c) uses associated with the disposal, manufacture, treatment or storage of hazardous substances.

9. Replacement and minor expansion may be permitted in some areas of existing development which lie in Riverine Hazard Lands. To assess such development proposals within Riverine Hazard Lands, a study is required to demonstrate how all the following can be achieved:

- a) Flooding and erosion hazards can be safely addressed;
- b) Existing physical hazards are not aggravated or new hazard areas created;
- c) No negative impact on identified Natural Environment features will result;
- d) Vehicles and pedestrians have safe access and exit during times of flooding an erosion emergencies; and
- e) Development and maintenance can be carried out in accordance with established standards and procedures.

The study should be prepared by a qualified professional at the proponent's expense to address the above noted items. Approval should be provided by the applicable conservation authorities and/or other appropriate agencies in consultation with the County. The proponent may be required to enter into a site plan approval process with the County regarding the undertaking of the measures outlined in the study and subsequent approval process.



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