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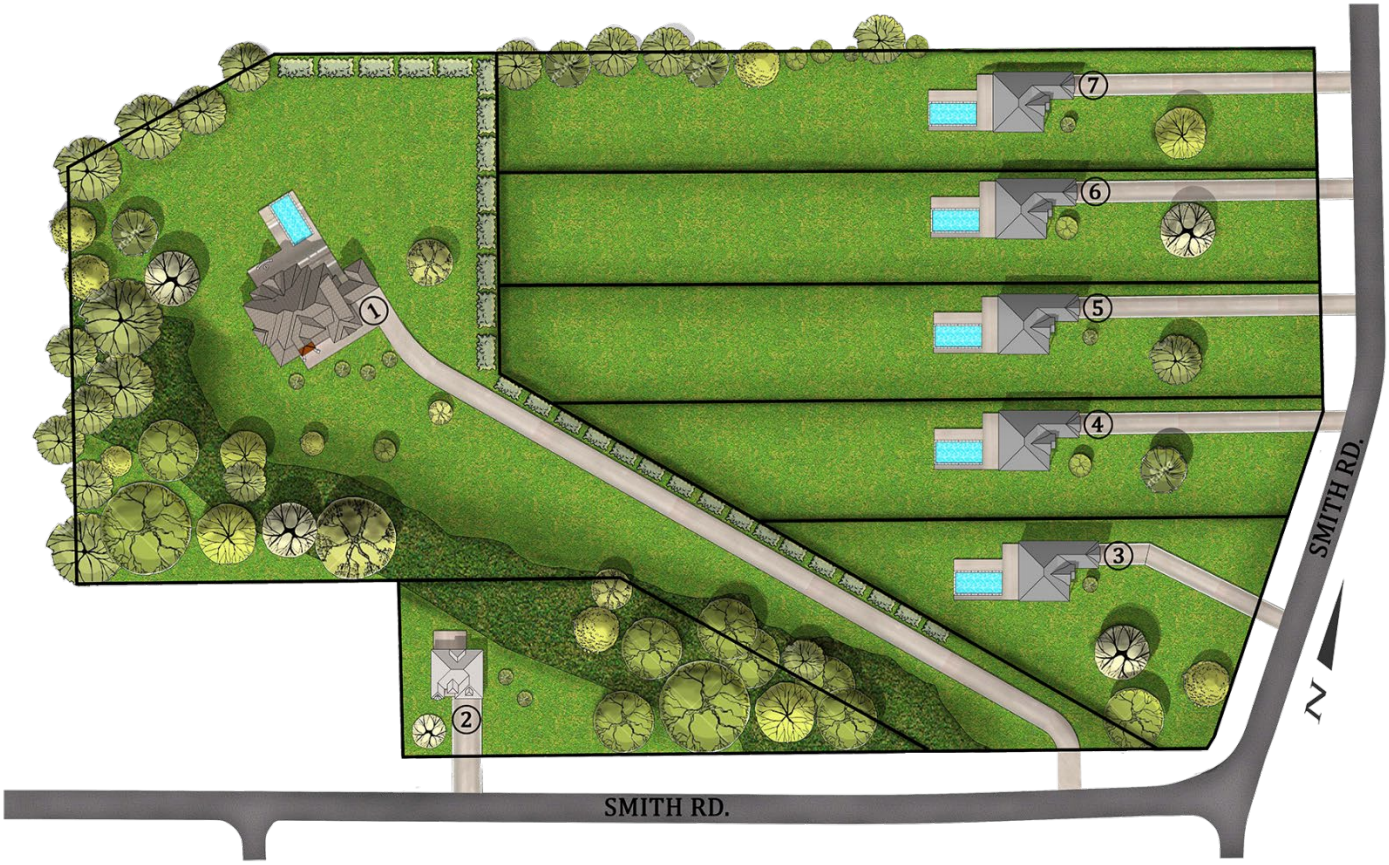
# DESIGN BRIEF

## Proposed Consent
## 930 Smith Rd | Navan, ON




**Prepared by:**
Hierarchy Development & Design Inc.
File: 20-0777
Date: July 23rd, 2024

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# 1 INTRODUCTION

This Planning Rationale has been prepared by Hierarchy Development & Design Inc on behalf of Hierarchy Custom Homes Inc. in support and to permit limited lot creation on existing public streets in villages that will not preclude future development options in the DR3 – Development Reserve Subzone 3. (By-law 2013-58). The purpose of this document is to assess the appropriateness of the proposed number of lots in the context of the surrounding community, the applicable policy, regulatory framework, and site conditions.

The subject site is a large parcel of land located in the former township of Navan, which is now located in the city of Ottawa. The subject site is currently vacant land and has not been used for agriculture in two years. In the past the land has been used for growing agricultural crops such as soy and more recently corn.

This development proposal seeks to change from a Dr3 to a V1C. The V1C has a maximum lot coverage of 40% but in discussion with the city staff, 20% is what the city would be agreeable to in the future development. The 20% coverage proposed, and the proposed zoning change will be enforced to ensure adequate space for soft landscaping and tree preservation. Recommendations made by Gemtec' s Tree Conservation Report will be prioritized to ensure the preservation and maintenance of existing trees within the development area. The 20% maximum lot coverage for as per the V1C is as follows.

- Lot 1 has an area of 218,192ft2 (20,270.7m2). A 20% maximum lot coverage would equal 43,638.40ft2 (4,054.14m2).

After the Hazard Limit is applied. The lot size is unaffected by the hazard limit set back. And meets requirements.

- Lot 2 has an area of 49,676.3ft2 (4,615.05m2). A 20% maximum lot coverage would equal 9,935.26ft2 (923.01m2).

After the Hazard Limit is applied. The lot size is unaffected by the hazard limit set back. And meets requirements.

- Lot 3 has an area of 50,678.9ft2 (4,708.22m2). A 20% maximum lot coverage would equal 10,135.78ft2 (941.64m2).

After the Hazard Limit is applied. The lot size is 41,007.57ft2 (3809.72m2). Above the minimum lot requirement of 4000m2.

- Lot 4 has an area of 56,685.75ft2 (5,266.28m2). A 20% maximum lot coverage would equal 11,337.15ft2 (1,053.25m2).

After the Hazard Limit is applied. The lot size is 50,292.91ft2 (4,672.36m2). Above the minimum lot requirement of 4000m2.

- Lot 5 has an area of 70,698.96ft2 (6,568.15m2). A 20% maximum lot coverage would equal 14,139.79ft2 (1,313.62m2).

After the Hazard Limit is applied. The lot size is 65,793.06ft2 (6,112.37m2). Above the minimum lot requirement of 4000m2.

- Lot 6 has an area of 71,035.47ft2 (6,599.41m2). A 20% maximum lot coverage would equal 14,207.09ft2 (1,319.88m2).

After the Hazard Limit is applied. The lot size is 66,739.40ft2 (6,200.29m2). Above the minimum lot requirement of 4000m2.

- Lot 7 has an area of 70,890.53ft2 (6,585.94m2). A 20% maximum lot coverage would equal 14,178.10ft2 (1,317.18m2).

After the Hazard Limit is applied. The lot size is 65,464.95ft2 (6,078.58m2). Above the minimum lot requirement of 4000m2.

Summary: All lot sizes meet the minimum lot size according to Policy 4.9.3 Policy 8b

# 2 OVERVIEW

The property is municipally known as 930 Smith road, Navan and is currently zoned as a DR3 – Development Reserve 3 Subzone. The site is located in an area (Figure2) characterized by a mix of dwelling types and sizes, lot sizes including farms and single-family homes. Most homes are single or two storey homes. There is an abutting property to the south which includes multiple farmhouse buildings and barns but is also designated DR3. Meteor Ave intersects with Smith Rd, and a new section of homes along Meteor Ave West has been recently developed into 1-1.5 acre lot parcels on relatively flat land.


FIGURE 1: LOCATION PLAN

**Summary of requested Zoning By-law amendment proposal**

The site is currently zoned Development Reserve, Subzone 3 (DR). The Development Reserve designation in the Zoning By-law identifies lands that are intended for future neighbourhood development, typically established through Plans of Subdivision, and which would require a zoning amendment process to establish regulations specific to the type of development proposed. It is proposed that the Zoning By-law be amended to a Village First Density zone to permit the creation of 0.4 hectare lots for low rise

residential uses. Further, it is proposed to establish exceptions to required setbacks and buffers that are required to mitigate sources of noise, protect the natural environment, and provide separation between existing and proposed development. Where a segment of the lands is proposed for only a road and a storm pond, this will remain zoned as Development Reserve. Details of the recommended zoning is located in Document 2 of this report.


FIGURE 2: LOCATION PLAN - HISTORY

The Lot is 13.5 acres, with 90% percent usable farmland. The remaining 10% is divided into two sections, of of which these lands have zero access from the road or the farmland, and the other is removed from the farmland through elevation differences. The northern property line neighbors Navan village with V1E Zoning. The West property line neighbors three single family homes with Dr1 Zoning. The South property line abuts Smith Road. This section of Smith Road is in a East/West direction. The East property line abuts Smith Rd as Smith Rd changes direction into a North/South direction.

# 3 HISTORY

FIGURE 2: HISTORY

The land has been used for farming up until the sale in 2022. Recently the land was farmed for soy and corn and used as some minor snowmobile access in the winter months. The Land has always been in the Smith Family until the recent purchase.

## 4 SITE DETAILS

The properties main feature is that is has been used as cornfields. The property has no existing structures. Two acres of the property sit 7-8m below the farmland elevation, cut off from the farmland with a steep hill. A one-acre section on the west side of the property has no access and a steep incline to access it, and the other accessed by smith road. See Figure 3 below. The east side of the lot has complete access from Smith Rd. The south side of the lot abutting Smith rd. has access only to a small portion of the land, roughly one acre. The green and the grey color contrasting in the figure below illustrate the large 7-8M difference in elevation.

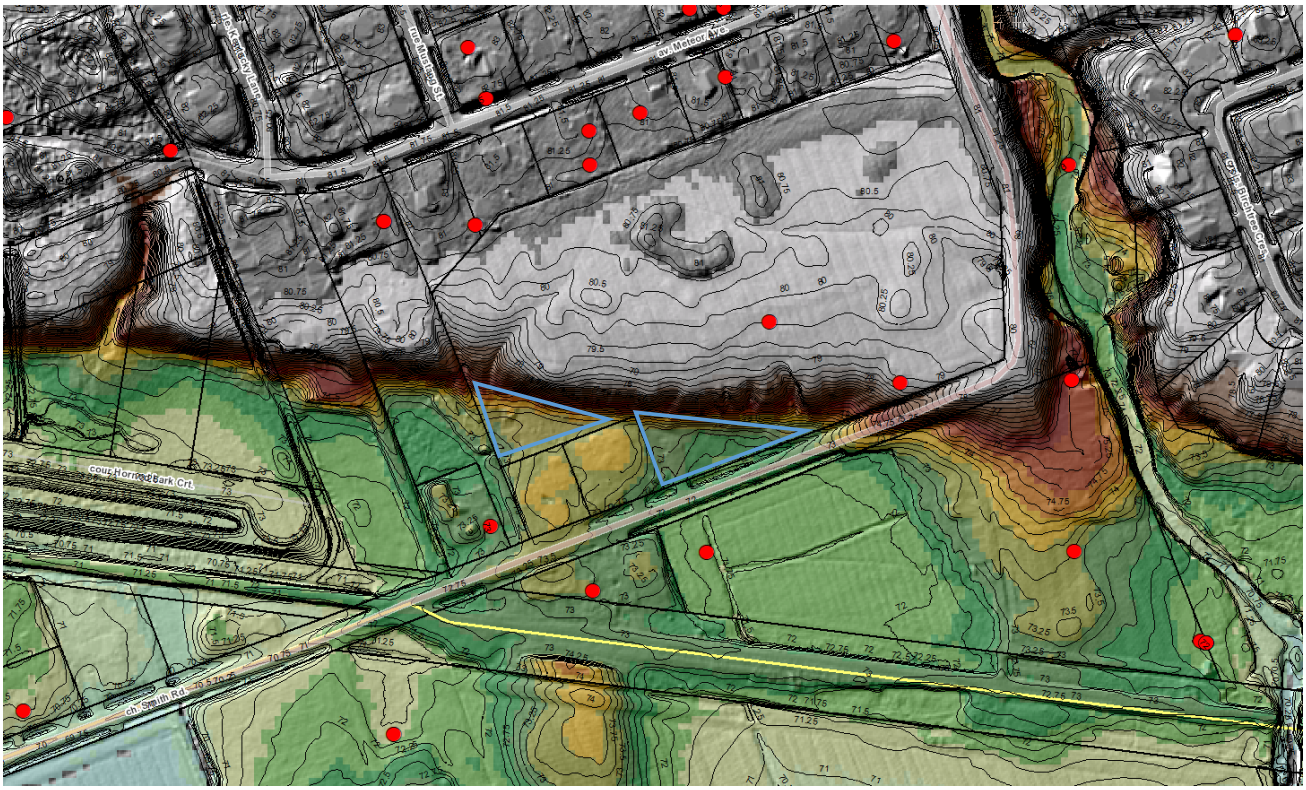


FIGURE 3: SITE DETAILS - TERRAIN

The average depth of the lot is 600' north to South x 1082' east to West. The lot is 13.5 Acres with 2.3 acres that is sloped, or without road access and not accessible from the farmland. No roadway is possible from the higher farmland down to the treed areas on the south and west ends of the property. The farmland is relatively flat.

The site is legally described as: 930 Smith Rd, Navan PCL 10-3, SEC 50-9 ; PT LT 10, CON 9 , PART 2 , 50R6242 ; CUMBERLAND. The following PIN is associated with this property: 14546-0071.

# 5 PROPOSED DEVELOPMENT

The proposed development includes six regular and one irregular sized lot depicted in figure 6, 7 & 8. Results of a terrain analysis and a nitrate dilution model provided by Gemtec, confirmed the site does not meet isolation criteria and results allow a maximum of seven lots. The on-site overburden thickness is up to 8.8 metres based on borehole/monitoring wells. The overburden is not isolated from the bedrock water supply aquifer and does not meet D-5-4 isolation requirements therefore a type III calculation and a nitrate dilution model is required.

Lot 2-7 of the proposed development of Figures 6, 7 & 8 share similar characteristics to the lots backing on the 930 Smith Road, the new development on Meteor Ave and most of the current village. A lot comparison is shown in figure 10.

The nitrate dilution calculation was essential in determining the number of allowable lots. Shaping and locating the lots had much to do with the terrain. Lot 2-7 was achievable using the V1E zoning similarly used for the new Meteor Ave development. Each lot is above 1 acre and respects the character of the village. Lot 2 in diagram 7 has a rear yard lot line that contours a steep incline, a natural severing of lot 2 with environmental features hindering any possible roadway access to the farmland above from lot 2.

The rear portion of the land shown as Lot 1 has very little road access while creating 6 other lots. Lot 1 is achievable through a large access road. Lot 1, the largest of the lots has a road access along the ridge of the rear of lot 2. The access road meets all set back criteria from the ridge including the slopes associated with the McKinnon's Creek ravine and all geotechnical reporting.

All lots within the DR3 zone would be rezoned to a residential zone as a condition of approval. Seeking a V1E zoning amendment. The subject lands are currently zoned Development Reserve (DR). The purpose of the DR zone is to identify lands intended for future urban development and to limit permitted uses to those that will not preclude future

development options. In order to facilitate the proposed development, the applicant is proposing to re-zone the site to V1- Village Residential First Density Zone (Section 231-232).

The following includes further information about the requested zoning by-law amendment and the statistics are as follows when comparing a DR3 to a V1E. Within the V1E zoning, there are additional proposed changes to the V1E as per figure 5.

- Increased lot width from DR3 - 20m requirement to V1C 30m proposal
- Minimum lot area of DR3 – 4000m2 to V1E 2000m2 Proposal
- Reduce front yard set back from DR3 7.5m to V1E 7m proposal
- Reduce corner side yard set back from DR3 7.5m to V1E 4.5m proposal
- Reduce interior side yard set back from DR3 3m to V1E 2m proposal.
- Maximum lot coverage from DR3 N/A to V1E 15% maximum coverage.

**5. Annex 1 - Zoning Confirmation Report Checklist**

| A. Project Information | | | |
|---|---|---|---|
| Review Date: | | Official Plan designation: | |
| Municipal Address(es): | 930 Smith Rd, Navan, K4B 1N8 | Legal Description: | Part of Lot 10, Concession 9, Geographic Township of Cumberland |
| Scope of Work: | rezoned for residential | | |
| Existing Zoning Code: | DR3 | By-law Number: | 2008-250 |
| Schedule 1 / 1A Area: | | Overlays Applicable[1]: | no |

[1] Mature Neighbourhoods Overlay, Floodplain Overlay, and/or Heritage Overlay.

| B. Zoning Review<br>For Zoning By-law Amendments, please use the proposed zone and subzone requirements, if different than existing. | | | |
|---|---|---|---|
| Proposed Zone/Subzone (Zoning By-law Amendments only): | V1C | | |
| Zoning Provisions[1] | By-law Requirement or Applicable Section, Exception or Schedule Reference | Proposal | Compliant (Y/N) |
| Principal Land Use(s) | currently empty land | Residential | Y |
| Lot Width | 20m | 30m | N |
| Lot Area | 4000m2 | 4000m2 | N |
| Front Yard Set Back[2] | 7.5m | 7m | N |
| Corner Side Yard Setback | 7.5m | 4.5m | N |
| Interior Side Yard Setback | 3m | 1m | N |
| Rear Yard Setback | 7.5m | 9m | Y |
| Lot Coverage Floor Space Index (F.S.I.) | N/A | 40% | N |
| Building Height[3] | 11M | 11M | Y |
| Accessory Buildings Section 55 | Yes | Yes | Y |

FIGURE 3: ZONING PROVISIONS

| | | | |
|---|---|---|---|
| Projections into Height Limit Section 64 | Yes | Yes | Y |
| Projections into Required Yards Section 65 | Yes | Yes | Y |
| Required Parking Spaces Section 101 and 103 | Y | Y | Y |
| Visitor Parking spaces Section 102 | Y | Y | Y |
| Size of Space Section 105 and 106 | Y | Y | Y |
| Driveway Width Section 107 | 2.6M | 2.6M | Y |
| Aisle Width Section 107 | N/A | N/A | Y |
| Location of Parking Section 109 | N/A | N/A | Y |
| Refuse Collection Section 110 | N/A | N/A | Y |
| Bicycle Parking Rates Section 111 | N/A | N/A | Y |
| Amenity Space Section 137 | N/A | N/A | Y |
| Other applicable relevant Provision(s) | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

[1] This template represents a small selection of applicable provisions. Please consider the lot's geography (i.e. corner/through lot, proximity to water, inside/outside Greenbelt) and proposed land use (i.e. drive through operation, outdoor commercial patio, Planned Unit Development, long semi) and consult the by-law to determine which other sections of the By-law must be met. This can be attached in a separate document.

[2] Note that different performance standards apply to low-rise residential development inside the Greenbelt. Please reference Section 144 for these standards, where applicable.

FIGURE 4: ZONING PROVISIONS

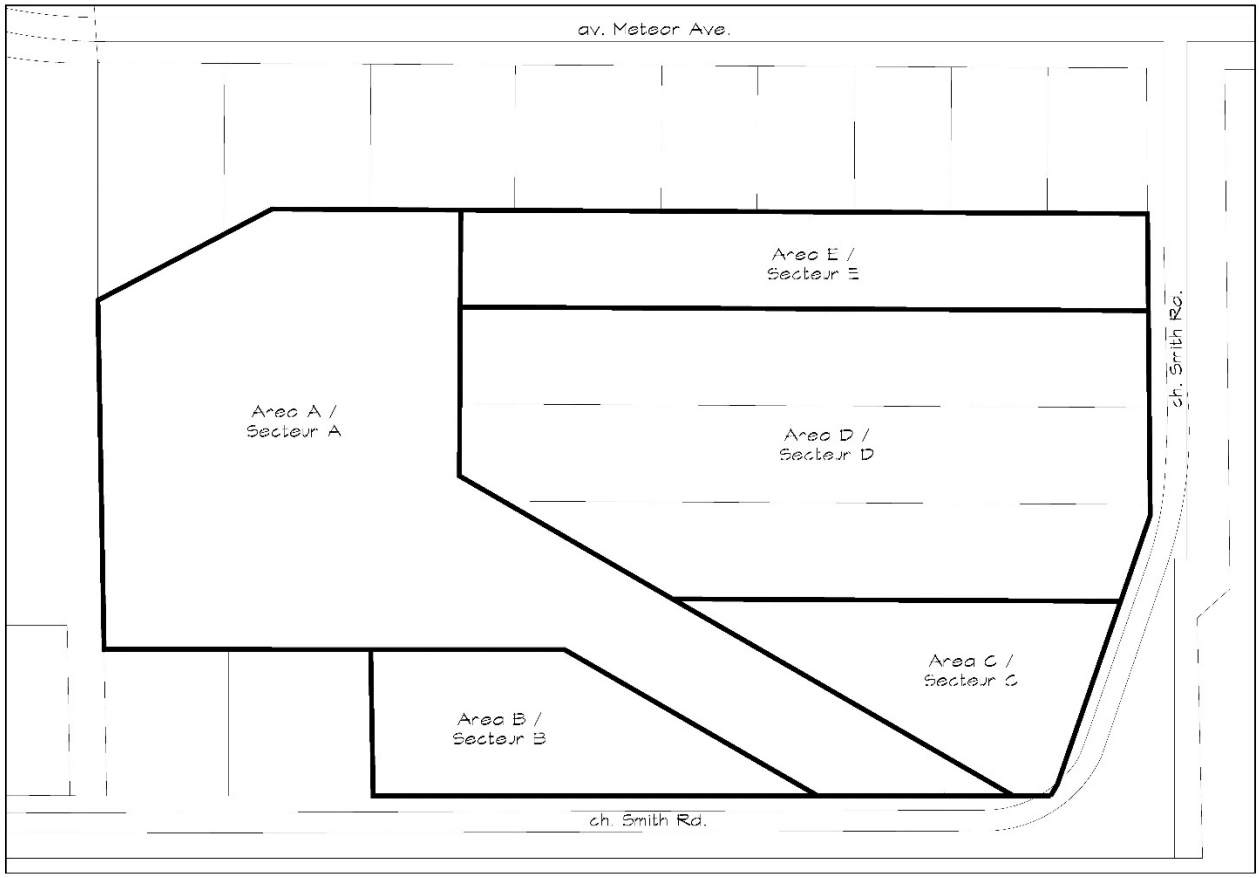


FIGURE 5: ZONING PROVISIONS TO V1E

The proposed changes to the City of Ottawa Zoning By-law 2008-250 for 930 Smith Road:

1) Rezone the lands shown in Document 1 as follows:

a) Area A from DR3 to V1C[xx1r];

b) Area B from DR3 to V1C;

c) Area C from DR3 to V1C[xx2r];

d) Area D from DR3 to V1C[xx3r];

e) Area E from DR3 to V1C[xx4r];

2) Create a new exception V1C[xx1r] with provisions similar in effect to the following: Area A

- Minimum Front Yard Setback is 27 metres.
- Minimum Rear Yard Setback is 7.5 metres.
- Minimum Side Yard Setback is 2 metres.
- Minimum lot width of 30m.
- Maximum Lot Coverage of 20%.

3) Create a new exception V1C[xx2r] with provisions similar in effect to the following: Area B

- Minimum Front Yard Setback is 15 metres.

- Minimum Rear Yard Setback is 7.5 metres.
- Minimum Side Yard Setback is 2 metres.
- Minimum lot width of 30m.
- Maximum Lot Coverage of 20%.

4) Create a new exception V1C[xx2r] with provisions similar in effect to the following: Area C

- Minimum South side Yard Setback is 7.5 metres.
- No buildings, structures, or hard landscaping may be located within 27 metres of a front lot line. Minimum Front Yard Setback is 27 metres.
- Minimum Rear Yard Setback is 7.5 metres.
- Minimum Side Yard Setback is 2 metres.
- Minimum lot width of 30m.
- Maximum Lot Coverage of 20%.

5) Create a new exception V1C[xx3r] with provisions similar in effect to the following: Area D

- No buildings, structures, or hard landscaping may be located within 27 metres of a front lot line. Minimum Front Yard Setback is 27 metres.
- Minimum Rear Yard Setback is 7.5 metres.
- Minimum Side Yard Setback is 2 metres.
- Minimum lot width of 30m.
- Maximum Lot Coverage of 20%.

5) Create a new exception V1C[xx4r] with provisions similar in effect to the following: Area E

- Minimum North side Yard Setback is 7.5 metres.
- No buildings, structures, or hard landscaping may be located within 27 metres of a front lot line. Minimum Front Yard Setback is 27 metres.
- Minimum Rear Yard Setback is 7.5 metres.
- Minimum Side Yard Setback is 2 metres.
- Minimum lot width of 30m.
- Maximum Lot Coverage of 20%.

The Village of Navan policies are within the Consolidated Villages Secondary Plan. Objective 1.2 states that the village should expand slowly with development that respects the character of the village, and we believe the seven consent applications does respect the characteristics of the village.

Objective 2.1 states that there should be an improvement of pedestrian connectivity along Colonial Road, Smith Road and Trim Road as well as having sidewalks on these roads. We recognize that creating pedestrian paths

would improve pedestrian connectivity to the schools, stores, and shops in this area, the parcel of land in questions is not far off from the commercial zones.

The site is currently zoned Development Reserve, Subzone 3, which is a designation that identifies future residential development. The proposed zoning details were identified as they relate to the surrounding context. The proposed building setbacks are such that the homes and outdoor amenity areas will not be impacted by noise. The proposed provision restricting development of buildings, structures, or hard-landscaping, has the effect of encouraging homeowners to maintain the trees as opposed to replacing them with grass or shrubs. The proposed residential uses are consistent with the existing neighborhood to the North and is supported by the Official Plan.

The zoning by-law regulates the development of the lots, such as, types of building/uses and size, lot sizes, and building setbacks. The lots are proposed to be rezoned for lowrise single residential homes and does not permit for commercial uses or higher density uses such as semi-detached dwellings and townhouses which is consistent with the Official Plan. The proposed amendments also include special setback requirements to establish appropriate locations for homes on the lot.

Pre-Amalgamation, the Rural Official Plan for Cumberland (Village of Navan), designated the lands as village-residential. Through the Village review in 2012, the plan was reflected in the current Secondary Plan. During the Village review, two meetings with the public were held at the community centre to discuss the plan. The Development Reserve, Subzone 3 zoning was implemented in 2008. Prior to this it was Development Reserve, Subzone 1.

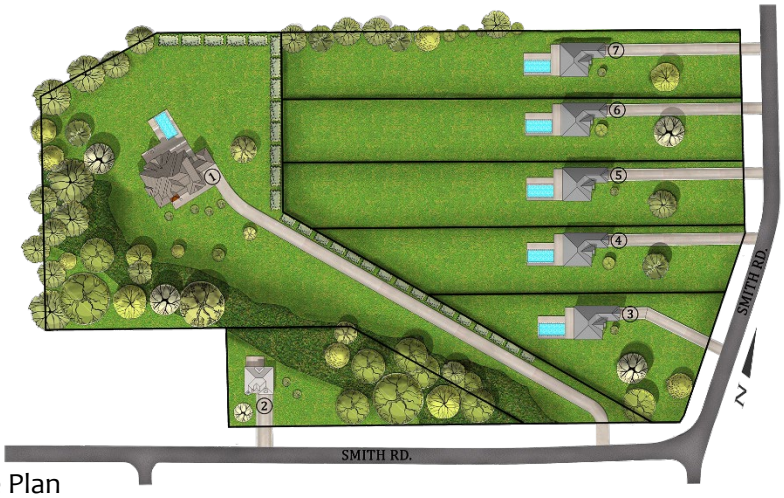


FIGURE 6: Extract of Site Plan

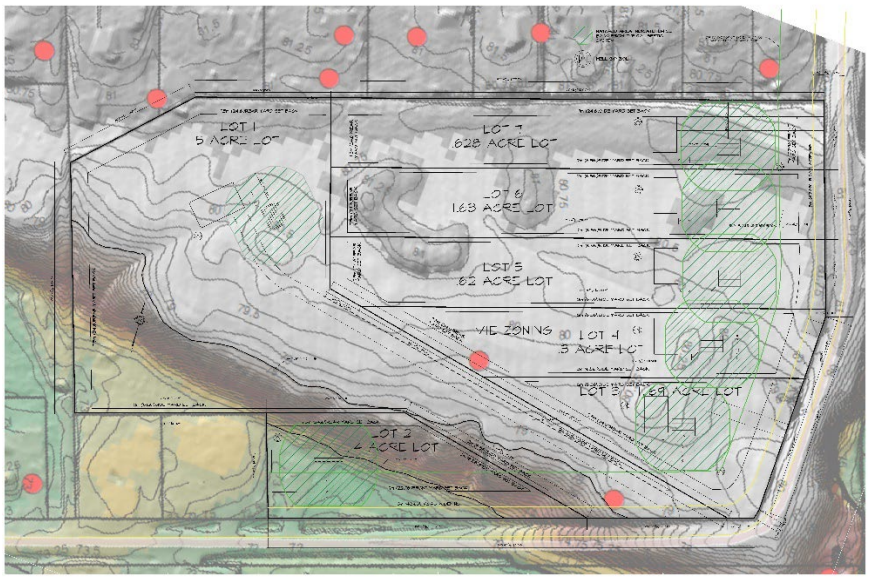


FIGURE 7: Extract of Site Plan - Overlay on the Terrain

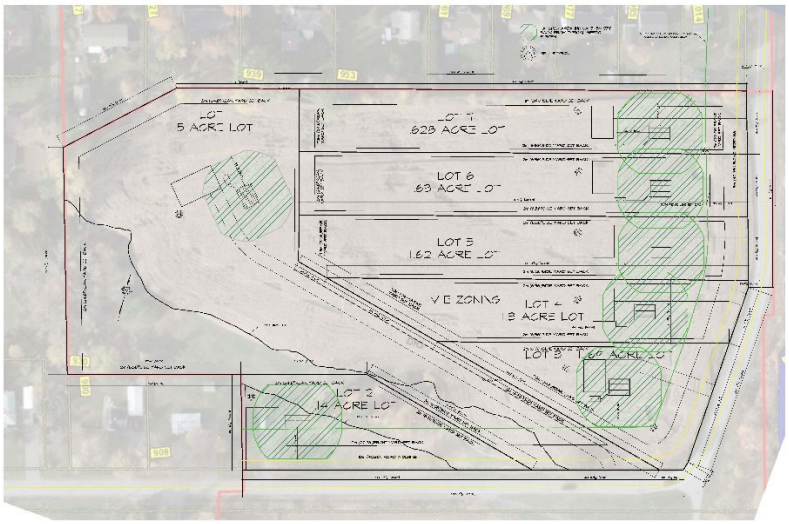


FIGURE 8: Extract of Site Plan – Overlay on the Farm

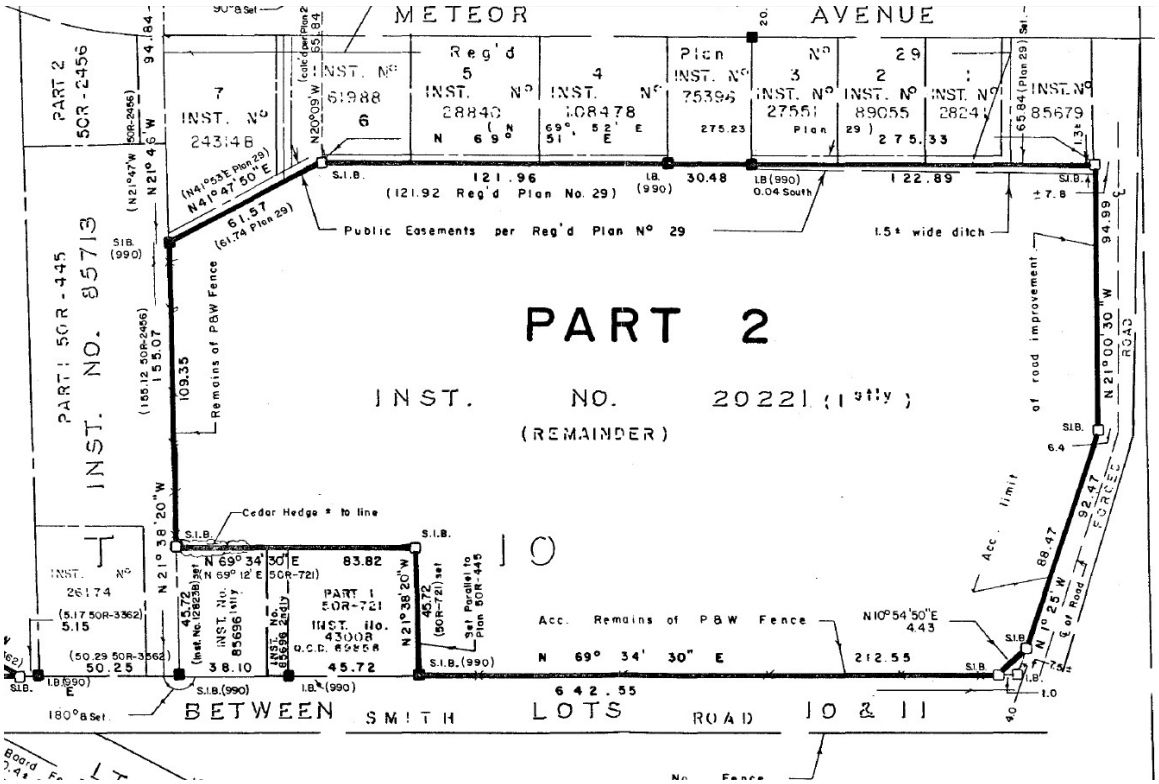


FIGURE 9: SITE PLAN


FIGURE10: Extract of Site Plan – Lot Comparison

# 6 LIMIT OF DEVELOPMENT & HAZARD LANDS

6.1 All plans and reports referencing any limit of development or hazard lands is provided on plan 23-13277 set backs and existing wells for OSSO Rev 2 & 930 Smith Rd Concept Plan

The setbacks include,

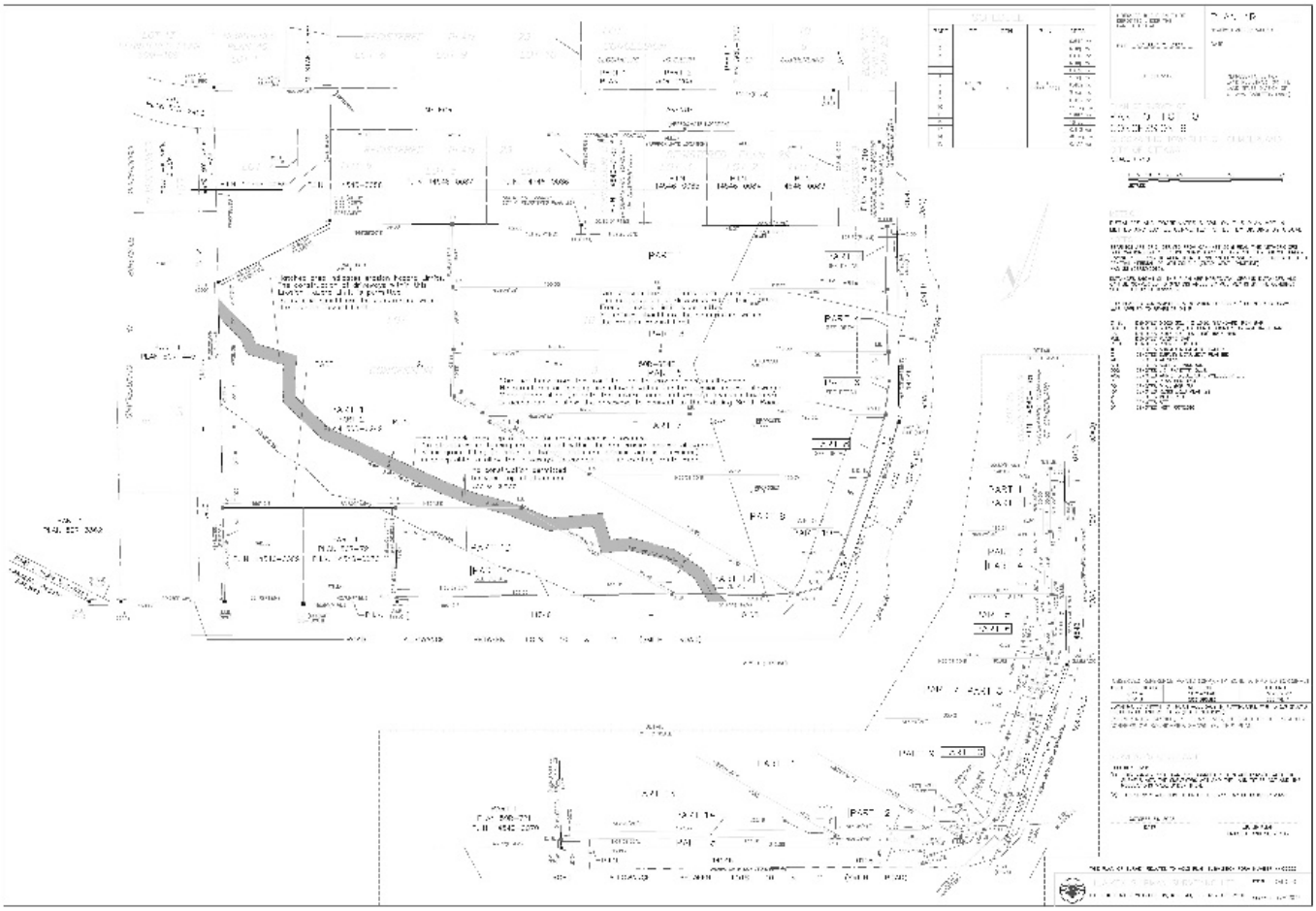

FIGURE11: 23-13277 set backs and existing wells for OSSO Rev 2 illustrating limit of development & Hazard Lands

Sound and Vibration study:

lot 1-7 shall have a 7m front yard set back. Lot 2 shall use V1E zoning set backs. Lot 3 shall have a 7.5m South side & rear yard set back. The results of STAMSON modelling also indicate that the noise levels at all proposed dwellings will be below 65 dBA, and therefore standard building materials are acceptable to provide adequate soundproofing.

Geotechnical:

A 6m set back NE to SW direction from top of slop for erosion access allowance is highlighted on the slope nearly all on lot 1. No structures or fencing are permitted within the 6m erosion access allowance. Minor grade filling (in both the hazard lands and the erosion access allowance) is acceptable to allow the driveways to connect to the existing Smith Road.

A 15m (set back N to S direction along lot 3-7) erosion hazard limits from top of slope of McKinnon's Creek. The construction of driveways within this erosion Hazard Limit is permitted. Structures should not be constructed within the erosion Hazard Limit.

A 6m set back (N to S direction on lots 3-7) from the 30m limit of hazard lands for erosion access allowance. No structures or fencing are permitted within the 6m erosion access allowance. Minor grade filling (in both the hazard lands and the erosion access allowance) is acceptable to allow the driveways to connect to the existing Smith Road. This setback shall ensure people and vehicles have a way of safely entering and exiting the area during emergencies or following an erosion event. (10.1.4, Policy 3c). Erosion events are less likely to occur in winter months when the soil is frozen. Most erosion occurs during high-intensity rainstorms. Access from neighboring lots should only be required when snow is gone from the ground and driving is possible across the land.

No construction is permitted between top of slope and toe of slope indicated on lot 1&2 as per the geotechnical report.

Lot 7 shall have a 7.5m side yard set back on the North lot line.

A 27m front yard set back (N to S direction on lots 3-7) from the front yard lot line for erosion access allowance and shall ensure people and vehicles have a way of safely entering and exiting the area during emergencies or following an erosion event. (10.1.4, Policy 3c). The 27m front yard set back will be submitted as an easement. The easement shall be submitted in tandom with the zoning application.

Erosion events are less likely to occur in winter months when the soil is frozen. Most erosion occurs during high-intensity rainstorms. Access from neighboring lots should only be required when snow is gone from the ground and driving is possible across the land.. No structures or fencing are permitted within the 27m easement. Minor grade filling (in both the hazard lands and the erosion access allowance) is acceptable to allow the driveways to connect to the existing Smith Road.

# 7 PROVINCIAL POLICY STATEMENT,

4.1 Conformity with the Provincial Policy Statement The Provincial Policy Statement (PPS) sets out a vision for land use planning in the Province of Ontario that encourages planning and development that is environmentally-sound, economically-strong and that enhances quality of life. Land planning policies are intended to promote efficient development patterns with an appropriate mix of housing, employment, open spaces and multi-model transportation which are appropriate for and make efficient use of existing and planned infrastructure and public service facilities. The relevant policies to the subject application are as follows.

Section 1.1.1 provides policy guidance for efficient development and land use patterns. This section states: “Healthy, liveable, and safe communities are sustained by:

a) promoting efficient development and land use patterns which sustain the financial well-being of the Province and municipalities over the long term;

b) accommodating an appropriate range and mix of residential (including second units, affordable housing and housing for older persons), employment (including industrial and commercial), institutional (including places of worship, cemeteries and long-term care homes), recreation, park and open space, and other uses to meet long-term needs;

c) avoiding development and land use patterns which may cause environmental or public health and safety concerns;

d) avoiding development and land use patterns that would prevent the efficient expansion of settlement areas in those areas which are adjacent or close to settlement areas;

e) promoting cost-effective development patterns and standards to minimize land consumption and servicing costs;

f) improving accessibility for persons with disabilities and older persons by identifying, preventing and removing land use barriers which restrict their full participation in society;

g) ensuring that necessary infrastructure, electricity generation facilities and transmission and distribution systems, and public service facilities are or will be available to meet current and projected needs; and

h) promoting development and land use patterns that conserve biodiversity and consider the impacts of a changing climate.

### 1.1.4 Rural Areas in Municipalities

Rural areas are important to the economic success of the Province and our quality of life. Rural areas are a system of lands that may include rural settlement areas, rural lands, prime agricultural areas, natural heritage features and areas, and other resource areas. Rural areas and urban areas are interdependent in terms of markets, resources and amenities.

It is important to leverage rural assets and amenities and protect the environment as a foundation for a sustainable economy.

Ontario's rural areas have diverse population levels, natural resources, geographies and physical characteristics, and economies. Across rural Ontario, local circumstances vary by region. For example, northern Ontario's natural environment and vast geography offer different opportunities than the predominately agricultural areas of southern regions of the Province.

### 1.1.4.1 Healthy, integrated and viable rural areas should be supported by:

a) building upon rural character, and leveraging rural amenities and assets;

b) promoting regeneration, including the redevelopment of brownfield sites;

c) accommodating an appropriate range and mix of housing in rural settlement areas;

d) encouraging the conservation and redevelopment of existing rural housing stock on rural lands;

e) using rural infrastructure and public service facilities efficiently;

f) promoting diversification of the economic base and employment opportunities through goods and services, including value-added products and the sustainable management or use of resources;

g) providing opportunities for sustainable and diversified tourism, including leveraging historical, cultural, and natural assets;

h) conserving biodiversity and considering the ecological benefits provided by nature; and

i) providing opportunities for economic activities in prime agricultural areas, in accordance with policy 2.3.

1.1.4.2 In rural areas, rural settlement areas shall be the focus of growth and development and their vitality and regeneration shall be promoted.

1.1.4.3 When directing development in rural settlement areas in accordance with policy 1.1.3, planning authorities shall give consideration to rural characteristics, the scale of development and the provision of appropriate service levels.

1.1.4.4 Growth and development may be directed to rural lands in accordance with policy 1.1.5, including where a municipality does not have a settlement area.

### 1.1.5 Rural Lands in Municipalities

1.1.5.1 When directing development on rural lands, a planning authority shall apply the relevant policies of Section 1: Building Strong Healthy Communities, as well as the policies of Section 2: Wise Use and Management of Resources and Section 3: Protecting Public Health and Safety.

1.1.5.2 On rural lands located in municipalities, permitted uses are:

a) the management or use of resources;

b) resource-based recreational uses (including recreational dwellings);

c) residential development, including lot creation, that is locally appropriate;

d) agricultural uses, agriculture-related uses, on-farm diversified uses and normal farm practices, in accordance with provincial standards;

e) home occupations and home industries;

f) cemeteries; and

g) other rural land uses.

1.1.5.3 Recreational, tourism and other economic opportunities should be promoted.

1.1.5.4 Development that is compatible with the rural landscape and can be sustained by rural service levels should be promoted.

1.1.5.5 Development shall be appropriate to the infrastructure which is planned or available, and avoid the need for the unjustified and/or uneconomical expansion of this infrastructure

1.1.5.6 Opportunities should be retained to locate new or expanding land uses that require separation from other uses.
1.1.5.7 Opportunities to support a diversified rural economy should be promoted by protecting agricultural and other resource-related uses and directing non-related development to areas where it will minimize constraints on these uses.
1.1.5.8 New land uses, including the creation of lots, and new or expanding livestock facilities, shall comply with the minimum distance separation formulae.

## 8 CITY OF Ottawa New official plan – Design Guidelines for Rural Villages

The vision for Navan is to remain a rural village where residents of all ages enjoy the peaceful and beautiful natural environment. The community will have ample opportunities for recreation, community events and activities, and thriving local businesses that provide goods and services for residents and visitors. The village will retain its bilingual character and culture while respecting its long history as it grows at a modest pace.

### The design guidelines for Villages are organized into the following sections:

**Guideline 1:** Define community entry points such as major entranceways. Entry point features should reflect village character and may include elements such as landscaping, lighting, public art and signage.

In the proposed development, all existing entryways, features landscaping are existing, and will be maintained.

**Guideline 2**: Ensure new development respects the natural topography of land, and integrates existing landforms such as hills, terraces, cliffs, valleys, rocky outcrops and watercourses. Avoid altering natural terrain to accommodate development.

**Guideline 3:** Avoid the development of looping, circuitous, suburban-style roadway patterns. New roadway patterns should be direct and reflect the traditional development pattern that exists in the village core. Patterns should also provide multiple pedestrian, bicycle and vehicular connections to adjacent and future development.

**Guideline 4**: If a direct connection is not possible, develop roadways that terminate onto adjacent open space and/or agricultural land to create attractive, natural view corridors. Ensure turnarounds provide sufficient space for maintenance vehicles.

The proposal did not utilize Guideline 2-4, as the proposal is for a severance of a large parcel and no new roads and such will be created. The existing road connections will not be altered.

**Guideline 5:** Establish a variety of lot sizes in residential developments. Creating a mix of lot sizes promotes a range in dwelling types and, in turn, creates housing options for residents. Explore innovative servicing methods where lot sizes may be restricted by servicing capabilities.

In the proposed development, a variety of lot sizes were created, promoting a range of dwelling types.

**Guideline 6:** Develop of mix of housing designs along neighbourhood blocks to avoid a mass produced or "cookie cutter" appearance. Varied housing styles, colours and materials create a visually interesting streetscape and village atmosphere.

This development will have a variety of architecture, as every lot will be owned by a different individual.

**Guideline 7:** Concentrate a mix of uses – commercial, residential, recreational and institutional – within the village core. Locating uses within walking distance of each other strengthens community interaction and viability. The development of "big-box" stores on the periphery of the village or just outside the village boundaries is discouraged.

**Guideline 8:** Focus multi-unit residential housing in, or very close to, village cores to create an active pedestrian environment where residents can support a mix of uses and activities. Historic buildings in the village core should not be demolished in favour of developing multi-unit residential housing. Vacant lots or underutilized buildings may offer good opportunities for residential infill or residential conversion.

Guideline 7-8: The site is currently zoned Development Reserve, Subzone 3, which is a designation that identifies future residential development, and not commercial or multi-residential use.

**Guideline 9:** Provide direct pedestrian connections between adjacent uses within villages to ensure safe and convenient pedestrian movement.

The proposed development seeks to establish a pedestrian connections within the neighbourhood, including to the walking paths along the property. A paved shoulder will be implemented along the entire length of the developed land.

**Guideline 10:** Ensure prominent buildings, open spaces, public art and/or other attractive features are developed at highly visible locations. Highly visible locations are corner sites, sites that terminate roadways and sites that frame community gathering places. Height, massing, architectural elements and landscaping should be used to create visual interest.

The site is currently zoned Development Reserve, Subzone 3, which is a designation that identifies future residential development.

**Guideline 11:** Identify opportunities to site, stage or install public art in key locations within the community. Art selection should be done in collaboration with the community.

The site is currently zoned Development Reserve, Subzone 3, which is a designation that identifies future residential development.

**Guideline 12:** Identify, preserve and/ or revitalize community landmarks, focal points and vistas to support village identity and a 'sense of place'

**Guideline 13:** Preserve and enhance historic resources such as heritage buildings and structures.

**Guideline 14:** Refer to historic buildings in the village for architectural cues, as redevelopment occurs. Acknowledging the historic context of the village facilitates the integration of new development among existing buildings.

**Guideline 15:** Adapt old buildings for new uses to preserve village history, landscape and identity. Historic buildings and sites, no longer in use, should be rehabilitated to serve new purposes.

**Guideline 16:** Adapt closed schools and churches for new purposes such as specialty schools, libraries, day cares, community centres, youth centres and recreational centres. Closed schools and churches that are structurally appropriate, safe and have the capacity for modification may be good candidates for adaptive reuse.

**Guideline 17:** Ensure alterations, additions and renovations made to historical buildings complement the scale and character of the original.

**Guideline 18:** Consider using a historic palate with complimentary colours for new buildings developed in older areas and village cores. Historic colours can be rich, neutral tones inspired by the original colours found on old village homes and historical buildings.

The proposal did not utilize Guideline 12-18, as the proposal is for a severance of a large parcel and no historical buildings are considered.

**Guideline 19:** Reduce the environmental footprint of buildings by meeting or exceeding environmental and energy efficiency rating standards*, incorporating renewable or alternative energy systems, maximizing indoor water efficiency, retaining stormwater on site, reducing the use of potable water for irrigation, and reducing resource consumption.

Guidelines 19 will be closely reviewed and considered, all future homes will follow strict OBC guidelines.

**Guideline 20:** Ensure new buildings are compatible with adjacent development by using a common scale, massing and height to complement the existing context. New buildings, including gas stations, should respond to the village context.

Guidelines 20 will be closely reviewed and considered, all future homes will follow strict OBC guidelines. The new zoning proposed is an adjacent development with similar characteristics.

**Guideline 21:** In rare cases where new development is significantly taller than adjacent development, create transitions using built form. Maintain a lower building profile along the street and set back the upper storeys, away from the existing buildings.

Guidelines 21 will be closely reviewed and considered, all future homes will follow strict OBC guidelines. The new zoning proposed is an adjacent development with similar characteristics.

**Guideline 22:** Avoid developing buildings with blank facades along public rights-of-way. New buildings should follow the existing architectural pattern and rhythm established by adjacent development. Visually divide large facades into smaller sections using a human-scale, windows, bays and articulation to reduce the perception of massing.

Guidelines 22 will be closely reviewed and considered, all future homes will follow strict OBC guidelines. The new zoning proposed is an adjacent development with similar characteristics.

**Guideline 23:** Orient buildings to frame the street. Primary façades should parallel the street and entries should be clearly visible and connect to the public sidewalk.

Guidelines 23 will be closely reviewed and considered, all future homes will follow strict OBC guidelines. The new zoning proposed is an adjacent development with similar characteristics.

**Guideline 24:** Unless the village core is historically characterized by a wide variety of setbacks, align new building facades to create a visually continuous streetscape.

Guidelines 24 will be closely reviewed and considered, all future homes will follow strict OBC guidelines. The new zoning proposed is an adjacent development with similar characteristics.

**Guideline 25:** Ensure buildings on corner sites have facades that address both streets to define the public space. Front and side building elevations at these locations should incorporate enhanced design, features and architecture.

Guidelines 25 will be closely reviewed and considered, all future homes will follow strict OBC guidelines. The new zoning proposed is an adjacent development with similar characteristics.

**Guideline 26:** Set back garages from principal buildings and/or locate parking to the side or rear of principal buildings. Proper orientation of parking mitigates its impact on the public street.

Guidelines 26 will be closely reviewed and considered, all future homes will follow strict OBC guidelines. The new zoning proposed is an adjacent development with similar characteristics.

**Guideline 27:** Enhance gathering places by including design elements such as play areas, landscaping, street furniture, public art and/or other attractive features that reflect community character. Gathering places have activities and/or services that promote safe community interaction, exchange and congregation.

The proposal did not utilize Guideline 27, as the proposal is for a severance of a large parcel and no commercial buildings are considered.

**Guideline 28:** Develop lively frontages along mainstreets to support pedestrian activity. Lively, active frontages may be characterised by a human-scale, reduced building setbacks, visible entries, wide sidewalks, highly transparent facades, patios and varied decorative paving. Clearance requirements for at-grade and overhead utility distribution equipment shall be respected.

Guidelines 28 will be closely reviewed and considered, all future homes will follow strict OBC guidelines. The new zoning proposed is an adjacent development with similar characteristics.

**Guideline 29:** Where possible, cluster utilities together to minimize visual impact. When determining locations for large utility equipment and cluster sites, utility providers are encouraged to consider innovative methods of containing utility services on, or within streetscape features such as gateways, lamp posts and transit shelters. Guideline 30: Develop generous sidewalks on both sides of the streets for mainstreets, village cores and areas with high pedestrian traffic (for example, near schools) to promote walkability. Sidewalks on both sides of the street facilitate safe, easy and convenient pedestrian travel to community amenities. Sidewalks should be wide enough to accommodate maintenance vehicles and snow storage.

Guidelines 29 will be closely reviewed and considered, all future homes will follow strict OBC guidelines. The new zoning proposed is an adjacent development with similar characteristics.

**Guideline 31:** Develop crosswalks along mainstreets to have contrasting paving or impressed concrete to make them visually different from the street.

The proposal did not utilize Guideline 31, as the proposal is for a severance of a large parcel and not road creation.

**Guideline 32:** Encourage the use of awnings, seasonal plantings and/or signage in storefront design along mainstreets to add visual interest to streetscape. Attachments made to hydro poles shall follow the requirements of affected utility providers.

Guidelines 32 will be closely reviewed and considered, all future homes will follow strict OBC guidelines. The new zoning proposed is an adjacent development with similar characteristics.

**Guideline 33:** Ensure signage is made of high-quality, durable materials that complement the architectural surroundings. Sign illumination should be task-oriented and avoid glare/light spillover toward adjacent land uses.

The proposal did not utilize Guideline 33, as the proposal is for a severance of a large parcel and no commercial buildings are considered.

**Guideline 34:** Provide consistent, human-scaled, decorative street lighting along village mainstreets to create a distinct character, to animate the area and to minimize glare.

The proposal did not utilize Guideline 34, as the proposal is for a severance of a large parcel and not road creation.

**Guideline 35:** Unless the village core is historically characterized by a variety of street tree plantings, plant deciduous trees in a consistent pattern along both sides of the street in areas with pedestrian traffic. Street trees define the street edge, and protect and shade pedestrians. Consider planting trees behind sidewalks, away from the road edge, to increase the tree's chance of survival. Ensure that tree planting is coordinated with the installation of utility distribution poles.

The proposal did not utilize Guideline 35, as the proposal is for a severance of a large parcel and all tree conservation reports will be utilized.

**Guideline 36:** In consultation with the community, incorporate traffic calming measures such as curb and median extensions, pedestrian refuges and raised crosswalks in village cores and along main streets.

The proposal did not utilize Guideline 36, as the proposal is for a severance of a large parcel and not road creation.

**Guideline 37:** Consider providing on-street parking along mainstreets and/or in the village core to calm traffic, lower vehicle speeds and create a more walkable village atmosphere.

The proposal did not utilize Guideline 37, as the proposal is for a severance of a large parcel and not road creation.

**Guideline 38:** For small commercial lots in the village core, seek reduced parking requirements to facilitate redevelopment. Additionally, look for opportunities to share parking with adjacent land uses.

The proposal did not utilize Guideline 38, as the proposal is for a severance of a large parcel and no commercial applications are considered.

**Guideline 39:** Plant landscaped buffers for parking lots that are adjacent to, or visible from, public rights-of-way.

The proposal did not utilize Guideline 39, as the proposal is for a severance of a large parcel and no commercial applications are considered.

**Guideline 40:** Ensure the pedestrian and cycling network is continuous and connects to the village core and village destinations. Protect connections that can be filled-in over time as development and redevelopment permits, and ensure existing connections are not closed or disconnected.

The proposed development seeks to establish a pedestrian connections within the neighbourhood, including to the walking paths along the property. A paved shoulder will be implemented along the entire length of the developed land.

**Guideline 41:** Connect and integrate natural areas such as lakes, rivers and wetlands, and stormwater management ponds into the pedestrian and cycling network. Where possible, include opportunities for passive recreation such as hiking trails and seating areas.

Guidelines 41 will be closely reviewed and considered. Existing stormwater management will not change on site.

**Guideline 42:** Design trails and pathways to match the aesthetic and function of their surrounding space.

The proposed development seeks to establish a pedestrian connections within the neighbourhood, including to the walking paths along the property. A paved shoulder will be implemented along the entire length of the developed land.

**Guideline 43:** Retain healthy mature trees, hedgerows and historic forests and incorporate them into development, park space and community designs.

All healthy and mature trees will be retained. Driveway placement considers existing t5ree cover.

In conclusion, the proposed Plan of Subdivision is consistent with the direction provided in the Design Guidelines for Rural Villages, as evidenced in this review of the guidelines.

The site is currently zoned Development Reserve, Subzone 3, which is a designation that identifies future residential development. A recent 3455 Milton road development, which is now an extension of Meteor Ave on the west end of the street, has been developed much in the same way as our proposal. The land at 3455 Milton Road was rezoned to V1E with exception to the zoning, similarly to what we have put forth in section 5 of the planning rationale. The proposed V1E rezoning, avoids altering natural terrain, watercourses, and ensures abundant natural landscaping. V1E zone will maintain and promote relatively low-density and small-scale development.

Lot 3 will have a side yard set back change from 2m to 7.5m. This lot will be treated like a corner yard, this will help with the home being to close to Smith Rd.

Lot 1 & 2 shall have a Front yard set backs of 7m to 7.5m. Lot 3-7 will have a 27m front yard set back to allow for erosion access allowance. 27 m set back shall be an easement.

Lot 7 additionally will have a 7.5m side yard set back instead of a 2m set back, to allow a retention of trees on the lot boundary on the Northern side of lot 7.

# 9 CITY OF OTTAWA ZONING BY-LAW

**The site is zoned** DR3 **– DR3 - Development Reserve 3 Subzone (Sections 238)**


FIGURE 12: ZONING MAP

Purpose of the Zone

*The purpose of the DR - Development Reserve Zone is to:*

1. *recognize lands intended for future urban development in areas designated as* ***General Urban Area*** *and* ***Developing Communities*** *in the Official Plan, and future village development in areas designated as* ***Village*** *in the Official Plan;*

2. *limit the range of permitted uses to those which will not preclude future development options; and*

3. *impose regulations which ensure a low scale and intensity of development to reflect the characteristics of existing land uses.*

4. *permit limited lot creation on existing public streets in villages that will not preclude future development options in the DR3 – Development Reserve Subzone 3.* (By-law 2013-58)

*DR3 Subzone*

3. In the DR3 Subzone, the following use is also permitted subject to the use being located on a lot abutting a public street if that public street existed as of June 25, 2008:
   detached dwelling (By-law 2013-58)

The proposed development meets the zoning requirements as required by **DR3 Zone provisions (By-law 2013-58)**

# 10 EXECUTIVE SUMMARY

This report has been prepared in support of a consent application(s) for a new village residences known as Navan Hills.

The proposed consent application(s) are consistent with the provincial policy statement in that the proposed use in located within designated Settlement Area and is compatible with its surroundings and does not interfere with any natural heritage, agricultural, mineral, or cultural heritage resources.

Schedule 'A' of the City of Ottawa Official Plan (adopted by By-law 2021-386) designates the subject land as a "village". The proposed Consent application(s) will implement the goals and objectives of the "village" policies in the official plan.

The consent application(s) meets the requirements of the Navan Visions Statement both in terms of the residential use proposed, as well as Maintain the village's rural character and open space.

The proposal is consistent with the existing form of development in the vicinity and represents the logical completion of a developed neighborhood within the designated village.

Tree Conservation

Opportunities exist along the perimeter of the proposed development, primarily along the southern and eastern property boundaries fronting Smith Road, to retain a majority of the trees present onsite, under the current proposed development concept. In effort to offset the effect of vegetation removal where required, consideration has been given to landscape planting with native tree species indicative of the Great Lakes – St. Lawrence Forest Region, such as white cedar, white spruce, red maple and red oak. This will be recommended to all land purchasers.

The trees present on-site at 930 Smith Rd, Navan do not represent exceptional tree specimens. One butternut tree was observed on the adjacent property addressed as 911 Meteor Avenue. A minimum setback of 25 m around each identified butternut is required to minimize disturbance and protect trees from encroachment. Currently the conceptual development plan occurs outside of the 25 m radius.

Per the City of Ottawa By-law No. 2020-340, the site is outside of the urban boundary area which means distinctive trees are defined as those with a DBH greater than 50 cm. No distinctive trees (DBH > 50 cm) were identified on-site. No wildlife trees were observed on-site.

Based on a review of the information summarized in Section 3.2, Table C.1 in Appendix C and the conceptual development plan illustrated on Figure A.2, the following conclusions are provided:

- Four trees (#8, #10, #11, and #109), none of them being City trees, were identified as nonretainable, under the conceptual development plan;
- Eight distinctive trees, meeting the City of Ottawa By-Law No. 2020-340 requirements, were identified on-site;
- Trees on-site are of a typical peri-urban and opportunistic or early successional species;
- 250 trees are in good/healthy condition, 14 trees are in moderate condition, 13 trees are dying or in poor condition, and 13 trees on-site are dead;
- One butternut tree (#207) was identified as Possible Conflict and was located on a neighbouring property adjacent to the site. No Butternut trees were identified on-site; and
- None of the 290 trees present on-site represent exceptional native tree specimens.

**Preliminary Site Grade Raise Restrictions**

Based on the results of the subsurface investigation, the maximum thickness of any grade raise filling should be limited to about **1.2 metres** above original grade. Conversely light weight fill materials (e.g. clear stone) could be used to increase the thickness of grade raise fill that could be achieved.

**Seismic Site Class**

Based on the results of the in-situ shear vane testing and the standard penetration testing, the proposed lot severances should be designed for seismic Site Class D.
There is no potential for liquefaction of the overburden deposits at this site.

**Geotechnical Hazard Limit**

The Stable Slope Allowance, as described in the MNR procedures, encompasses the area where a factor of safety of less than 1.5 against overall rotational failure is calculated. The Stable Slope Allowance described in the MNR procedures extends about 15 metres horizontally from the crest of the slope.

Based on the results of the slope stability assessment carried out for McKinnon's Creek, it is understood that the proposed houses and any grade raise filling will be located outside of the limit of hazard lands and therefore the additional loading from the houses and grade raise fill will not have a negative impact on the stability of McKinnon's Creek.

**Setback Requirements from McKinnon's Creek**

It is understood that, based on Section 4.9.3, policy 2 of the City of Ottawa Official Plan, the minimum setback from a surface water feature will be the greater of the following setbacks:

- The conservation authority's hazard limit (including the geotechnical hazard limit);
- The geotechnical hazard limit based on the City of Ottawa's Slope Stability Guidelines for Development Applications. It is assumed that this geotechnical hazard limit, as described in Section 6.4.2, above, is the same as the conservation authority's geotechnical hazard limit;
- 30 metres from the top of bank. Since the top of bank was not measured, it was conservatively taken as approximately elevation 76 metres, which is located about 2 metres above the approximate location of the creek; and,
- 15 metres from the stable top of slope. It is assumed that the stable top of slope is defined as the "stable slope allowance" as described in Section 6.4.2, above.

It is also understood that a 27 metre setback, applied from the property limit, for development will be provided as a condition of development by Hierarchy Development and Design Inc.

- The above setbacks are provided on Figure 2 and, as provided by the City of Ottawa Official Plan, the minimum setback from McKinnon's Creek should be taken as the greater of the setbacks.

**Potential for Cyclic Softening**

Based on the results of the assessment, the silty clay soils at this site have a factor of safety greater than 1.5, and therefore, are not considered to undergo cyclic softening during the design earthquake event.

**Potential for Retrogressive Earth Flow Sliding**

The City of Ottawa has provided high level screening criteria to assess the potential where retrogressive earth flow slide failure may occur along the slopes. The following are the criteria to assess the potential for retrogressive earth flow slide failures:

i The height of the slope must be greater than 8 metres;

ii The top and bottom of the slope are to be determined where the slope has a gradient of less than 14 percent over a distance of greater than 15 metres; and,

iii At least 35 to 40 percent of the slope height above the critical failure surface must consist of sensitive marine clay.

Based on the comments provided by the City of Ottawa, if one of the above criteria is not met, the slope is not considered to be at risk of retrogressive earth flow slide.

**Results of Retrogressive Earth Flow Sliding Potential**

Since the slope does not meet criteria i and ii, as described above (i.e., slope height, as defined by the top and bottom of slope at the elevation where the gradient is less than 14 percent, is less than 8 metres), the slope along the west side of McKinnon's Creek would be considered to have a low risk of retrogressive landslide failure, as per the high-level screening criteria from the City of Ottawa.

**Hydrogeological Investigation & Terrain Analysis.**

**Test Well Construction**

A total of six test wells were utilized in the hydrogeological investigation, consisting of five onsite and one off-site test well. The six test wells can be separated into two categories: three deep test wells completed in the bedrock aquifer (PW21-01, TW22-01 and TW22-02) and three test wells completed in the interface aquifer consisting of gravel overburden and/or upper bedrock (TW22-03, TW22-04 and TW24-05).

**Pumping test details**

Constant rate pumping tests were completed in all six on site test wells. The three deep test wells (PW21-01, TW22-01, and TW22-02) sustained pumping rates of 44 to 96 litres per minute over a six hour period with minimal drawdown, i.e., less than 14% of available drawdown. Due to Ontario Drinking Water Quality Standards (ODWOS) maximum acceptable concentration exceedances, discussed in section 3.4 below, the deep water supply aquifer is not proposed as the preferred water supply aquifer and as such, aquifer properties are not discussed in detail.

**Summary of Water Quality Exceedances for Deep Bedrock Aquifer**

Based on the lab results, elevated fluoride concentrations were identified in two of the three deep bedrock test wells, TW22-01 and TW22-02 with concentrations ranging from 2.6 to 3.3 mg/L (Appendix F). The fluoride concentrations exceed the ODWQS maximum acceptable concentration of 1.5 mg/L and as such, the deep bedrock water supply is not suitable for consumption. The deep aquifer also exceeded the operational guideline for hardness, and esthetic objectives of sulphide, colour, and iron.

These exceedances are not further discussed as the deep aquifer is not considered to be representative of the proposed water supply aquifer for the development.

**Summary of Water Quality Exceedances for Gravel/Shallow Bedrock Interface Aquifer**

The gravel/shallow bedrock interface water bearing unit is the proposed water supply aquifer. The ODWQS exceedances and notable parameters of this aquifer are discussed in detail in the report, based on water quality samples collected from on-site test wells TW22-04 and TW24-05 and technically representative homeowner wells PW903, PW939 and PW1014.

**Nitrate dilution calculation**

The nitrate dilution calculations are provided in Appendix H of the hydro G report. The calculated nitrate concentration at the Site boundary, assuming seven residential lots was calculated to be 9.83 mgL. The Site can support up to seven residential lots. The total site area was considered for the proposed residential lots. The nitrate impact assessment for the Site meets the acceptable nitrate impact requirement of 10 mg/L established by the MECP. The background nitrate concentration is considered to be negligible based on non-detectable (<0.20 mg/L) nitrate concentrations in the receiving aquifer.

**Septic System Recommendations**

The proposed lots will be serviced by individual Class IV septic sewage disposal systems designed according to the Ontario Building Code. A site-specific visit should be conducted on the lot for septic system design requirements.

Environmental Noise Control Study

**Indoor Living Areas and Ventilation**
The results of the STAMSON modelling indicate that the Leq(16) ranges between 44.30 dBA and 62.57 dBA. Some of the values calculated exceed the limit of 55 dBA as specified by the ENGCC and therefore warning clauses will be required to be stated on any deeds of sale. The applicable warning clauses are summarized in Table 12 on the following page.

**Outdoor Living Areas**
Outdoor living area – at-grade rear yard is anticipated at each subdivided lot (Lot 1 to Lot 7). One receptor (REC 7) was selected in the centre of the rear yard at Lot 3, 1.5 m, where the noise level is expected to be the highest among all rear yards. It is assumed that the rear yards will only be utilized as outdoor living areas provided that the proposed dwellings are constructed. Utilizing the exteriors of proposed dwellings as noise barriers, the proposed Leq(16) at the rear yards will be up to 55 dBA, which is equal to the 55 dBA threshold value specified by the ENCG. Therefore, no further noise attenuation measures are required.

Ground-borne vibration and noise assessment is required for the VIA-Train Railway. However, VIA-Train Railway is located at distances greater than the screening distances specified in The Federal Transit Administration's Transit Noise and Vibration Impact Assessment Manual. Therefore, ground-borne vibration and noise assessment is not required.

The proposed development will consist of seven two-storey residential dwellings, one in each lot. It is noted that no major source of surface transportation noise is identified within the 100 m and 300 m radius of the proposed Lot 1 dwelling. Therefore, surface transportation analysis is not required for Lot 1 dwelling. Several reception points were selected at the proposed dwellings for the surface transportation noise analysis, where the noise levels are expected to be the highest. The results of STAMSON modelling indicate that noise levels at the proposed Lot 2 dwelling and Lot 3 dwelling are expected to exceed the 55 dBA threshold specified by the ENCG. Therefore, design with the provision for a central air conditioning unit, along with a warning clause Type C, will be required for the proposed Lot 2 dwelling and Lot 3 dwelling. The results of STAMSON modelling also indicate that the noise levels at all proposed dwellings will be below 65 dBA, and therefore standard building materials are acceptable to provide adequate soundproofing.

Fluvial Geomorphology study

GEO Morphix was retained to complete a fluvial geomorphological assessment of a section of McKinnon's Creek located in Ottawa. The desktop assessment included a review of available reporting and surficial geology and topographic mapping, as well as reach delineation. A historical assessment was also completed using imagery available from the geoOttawa web mapping application.

The desktop assessment was confirmed through the completion of reach-based field reconnaissance on October 24, 2023. **Reach MC2** was evaluated to be in transition, with an RGA score of 0.36. The RSAT score of 30 indicated that the reach was in good condition. Evidence of adjustment was observed throughout the reach during field reconnaissance, including undercutting, exposed tree roots, and valley wall contacts. However, no significant planform migration was observed in the historical assessment in parts of the channel that were not entirely obscured by tree cover between the years 1999 and 2021.

Where channel systems are confined, the erosion hazard can be defined using the 100-year erosion limit or through the selection of an appropriate toe erosion allowance based on MNR (2002) guidelines. For this study, channel migration rates could not be measured along **Reach MC2** due to tree cover within the creek valley, which obscured a clear view of the channel planform. GEMTEC recommended a 15 m toe erosion allowance following Table 3 of the MNR (2002) guidelines. This is the maximum value outlined in MNR (2002), is greater than the 100-year meander migration rates measured along McKinnon's Creek upstream of the subject site as part of a previous study, and is considered a conservative approach. The ultimate erosion hazard limit includes the toe erosion allowance, stable slope allowance and a 6 m erosion access allowance as outlined by GEMTEC (2024). The erosion hazard has been adequately addressed from a fluvial geomorphological perspective.

We recognize that creating pedestrian paths would improve pedestrian connectivity to the schools, stores, and shops in this area,

the parcel of land in questions is not far off from the commercial zones.  A 1.4m pedestrian connection will be created for the

residents on Navan. See 930SmithRdPedestLaneGeometry in the reports distributed for engineering.

*John Paul S Boisvert*

***Hierarchy Development & Design Inc.***