

# DOCUMENT 3

## Category 3 - New Community Areas

Part A) South March

Part B) Riverside South

Part C) Leirtrim East/Carlsbad West

### Introduction

This document contains a high-level evaluation of three potential new community options guided by the criteria in the Growth Management Strategy, the Five Big Moves, the evaluation criteria for urban expansion as described in Document 1. All three are options that would require significant additional information, research, analysis and investment in order to determine if urban development in any of the locations represents good land use planning.

City Council approved the 'Five Big Moves', the following statements capture the most significant policy proposals for the new Official Plan. The following lists those big moves and how they were applied to this analysis in the remainder of the document:

1. Growth: Achieve, by the end of its planning period, more growth by intensification than by greenfield development. This growth will provide a variety of affordable housing options for residents. Since this analysis is about greenfield communities, this first Big Move is not applicable to the discussion.

2. Mobility: By 2046, the majority of trips in the City of Ottawa will be made by sustainable transportation. Since this report precedes the Transportation Master Plan, staff are unable to make definitive conclusions on the three options on this second Big Move, but the analysis below does reflect some high level observations.

3. Urban Design: Improve our sophistication in urban and community design, and put this knowledge to the service of good urbanism at all scales, from the largest to the very small. Urban Design is a matter dealt with in detailed community design, so it is not applicable at this conceptual level of analysis. Consequently, this Big Move is not part of this analysis.

4. Resiliency: Embed public health, environmental, climate and energy resiliency into the framework of our planning policies. While many of the elements of this big move require detailed technical analysis that cannot occur until detailed community design, the evaluation that follows does consider include a high level analysis of natural environmental conditions and some commentary on the feasibility of creating a new standard of community plans that include sustainable mobility (see the first Big Move), 15-minute neighbourhoods, relationship to the City's food supply systems and agricultural lands as well as infrastructure resiliency.

5. Economy: Embed economic development into the framework of our planning policies. The commentary below describes the potential economic development synergies with each option.

The additional technical considerations in this evaluation include preliminary planning, servicing transportation and natural environment evaluation and implications for these potential new community cluster areas.

The land use planning overview includes commentary on existing land area, Official Plan designation(s), land use, planning context and proximity to employment, retail and recreational facilities.

The servicing evaluation and discussion considers on-site and off-site requirements and highlights factors related to water supply, wastewater and stormwater servicing, and topographic and geotechnical conditions affecting site servicing and development.

The transportation evaluation and implications focus on considerations related to transit capital and operating, road capacity, modal share and vehicle kilometres traveled (VKT) within the community area as well as beyond. Preliminary transportation gating policies are discussed.

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Gross Developable Area:	<b>345 ha (estimated)</b>	Planning Status:	no applications
Official Plan Designation:	General Rural Area	Zoning:	RU – Rural Countryside
Land Use:	Fields and forested areas with some agricultural and single residential uses. Some tributaries of Shirley's Brook and Harwood Creek can be found within the cluster.		
Description:	The South March Special Study Area includes a large cluster north of March Road and some smaller clusters to the south and are generally centered along		

## Servicing

Second Line Road. The smaller clusters were assessed as part of the incremental expansion but were excluded due mainly to servicing constraints (high cost). However, when adding these clusters to the larger cluster to the north there are economies of scale which make them more feasible to service.

A hydro corridor traverses both the large and small clusters.

The larger cluster is separated from the proposed incremental expansion lands by rural estate subdivisions which presents challenges to integration. Further expansion to the north of the large cluster is constrained by rural estate subdivisions and a Natural Heritage System Core Area and linkages. Therefore there would not be opportunities for further urban expansion in this area.

The smaller clusters are within the 1.9km capture area of the planned March Road Transitway. The larger parcel while in close proximity to the proposed terminus station and park and ride would require an extension of the Transitway system beyond what is been planned to fully be within the capture area. (see transportation section for further details).

In the absence of another major north-south arterial, this cluster relies on the March Road corridor as its primary connection to the City's broader transportation network.

In terms of scoring, with the exception of serviceability, the smaller clusters would score similar to the incremental clusters recommended for addition to the urban area. This is because they have a similar proximity to jobs (including the Kanata North Technology Park), planned transit, retail and recreational facilities, etc. The larger cluster while not scoring as well as smaller ones would still pick up points given that the parcels within this cluster are still relatively close to the existing urban area.

No parcels within this Study Area are adjacent to Agricultural Resource Area designated lands.

### **Servicing Constraints**

- 1) Water: Elevation of land requires servicing by / expansion of 3W pressure zone
- 2) Wastewater: No capacity in downstream collection system

### **Discussion**

#### Water

The 2W/WC pressure zone is closest to SMC-1 & SMC-2, but the topography is too high for satisfactory water pressure. As a result, water servicing of the area would need to be fed by the 3W pressure zone. This would involve upgrading the 3W zonal pump capacity and the construction of a transmission main along Old Second Line. In order to provide redundancy, a second feed would need to be available from the 2W/2C pressure zone – which would require a local pump station to provide acceptable water pressure in an emergency situation.

Expansion of the 3W pressure zone to SMC-1 and SMC-2 would also provide the required water infrastructure for SCAs SM-4, SM-7, and SM-9b, and enable the decommissioning of the Morgan's Grant pressure zone. Redundancy to SM-

4 could be provided with a second feed on Old Second Line or from 2W/2C during a failure in zone 3W.

Servicing these additional areas has the effect of reducing the overall per hectare cost. Future water servicing of rural lands in SMC-3 would also be possible.

#### Wastewater

Wastewater flows from the combined expansion area of the South March SCAs with SMC-1 and SMC-2 would exceed the available downstream capacity of the collector sewer system to the March Pump Station. As a result, a gravity trunk sewer outletting to a strategically located new pump station on March Valley Road, and forcemains outletting to the North Kanata sewer, just downstream of the March PS, would be required.

The servicing solution would allow for drainage from SCAs SM-1, SM-2, SM-3 and SM-6 to also be serviced by the new PS, freeing-up required capacity in the March Road and East March trunk sewers to service the remaining SCAs in South March. The PS on March Valley Road could also provide an outlet for future development in the March Valley Road area and SMC-3, should the need arise in the future.

#### **Scope of Off-site Infrastructure Required**

##### Water

- 6 km of 406mm watermain
- 3W zonal pumping capacity upgrades
- 2W/2C local booster pump station for redundancy
- Decommissioning of Morgan's Grant pressure zone

##### Wastewater

- 4700m of 750mm sanitary sewer
- New pump station with a firm capacity of 350 l/s
- 3000m of forcemains

#### **Per hectare Cost Category**

The combined cost of off-site water and wastewater for servicing SCA E-1 is **High**

#### **Transportation Summary:**

This growth scenario would require a 2.5km extension of the planned March Road Transitway to extend the transit catchment area and additional stations to serve the new community. Growth would also require moderate lengths of rural road upgrades to urban arterial to create good connectivity at incremental cost. Despite proximity to employment in Kanata North, the location results in longer overall travel times to central area employment and to other major destinations. Development further north in this area of Kanata/South March would require a

detailed review of the broader transportation arterial network to see if it is possible to diversify the “grid” providing all mobility options to this area.

**Transit Capital and Operating:** An extension of the planned March Road median Transitway of approximately 2.5 km would be needed to serve this new community with higher-order transit. It is envisioned that the extension would run along March Road from the currently planned terminus station north to Dunrobin Road. Transit operational costs would largely stem from the need to provide additional service on the Transitway extension and local bus routes to serve the surrounding population.

**Road Capacity:** Would likely require conversion of existing rural roads primarily within the community areas to urban arterials to provide access to/from the new community (Marchurst, Dunrobin, Old Second Line, and March Roads) and from the nearby urban area and identified expansion areas with a moderate overall cost. Roads south of March Road may also have to be converted as part of the expansion areas. Would exacerbate capacity pressures across the Greenbelt, potentially triggering the need to widen Carling Avenue.

**Mode Share:** Somewhat supportive of sustainable modes. The new community is within cycling distance of a major employment hub (the Kanata North Business Park) and commercial development at Maxwell Bridge Road. However, other destinations in Kanata may be too far to easily access by active modes (such as the Kanata Town Centre). Providing new rapid transit stations to serve the new community, would tend to increase transit modal share. Moreover, with a Transitway facility, transit service within the community can connect directly with O-Train Line 3, minimizing the need for transfers. It will be difficult for transit to compete with the convenience of driving for shorter trips within the community. However, if a fast and frequent service can be provided, transit may provide an attractive option for longer trips to and from destinations east of Kanata, such as the downtown.

**VKT:** The proximity of the Kanata North Business Park provides good opportunities for people to live and work in the same community, reducing VKT for some travellers. Until the Kanata North Economic District evolves as envisioned over the long term, this location may also be relatively far from the nearest major shopping districts/mixed use destinations. However, if the objective is to reduce VKT related to the Kanata North Economic District, introducing some limited residential development in the district itself would have more impact.

**DRAFT GATING POLICY:** The following transportation-related items shall be addressed prior to plan of subdivision approval:

- Provision of rapid or equivalent quality transit service within a 1.9 km radius of the centroid of the proposed subdivision, as well as sufficient road connections and system capacity to accommodate the forecast level of demand. Road and transit facilities must either be operational at the time of development approval or have sufficient funding secured for their implementation through a Council-approved mechanism. In establishing equivalent transit service, consideration should be given to both the frequency and quality (reliability/speed) of transit operations.
- Completion of a transportation study to the satisfaction of the City which:

- Identifies any downstream transit or road capacity deficiencies triggered or made worse by the new development;
- Identifies measures to address these deficiencies (including improvements to the road, transit, and active transportation networks); and
- Sets out an implementation timeframe for each measure corresponding to the anticipated phasing of development.

A plan of subdivision shall not be approved until the required measures identified in the transportation study are in place or funding has been secured for their implementation through a Council-approved mechanism.

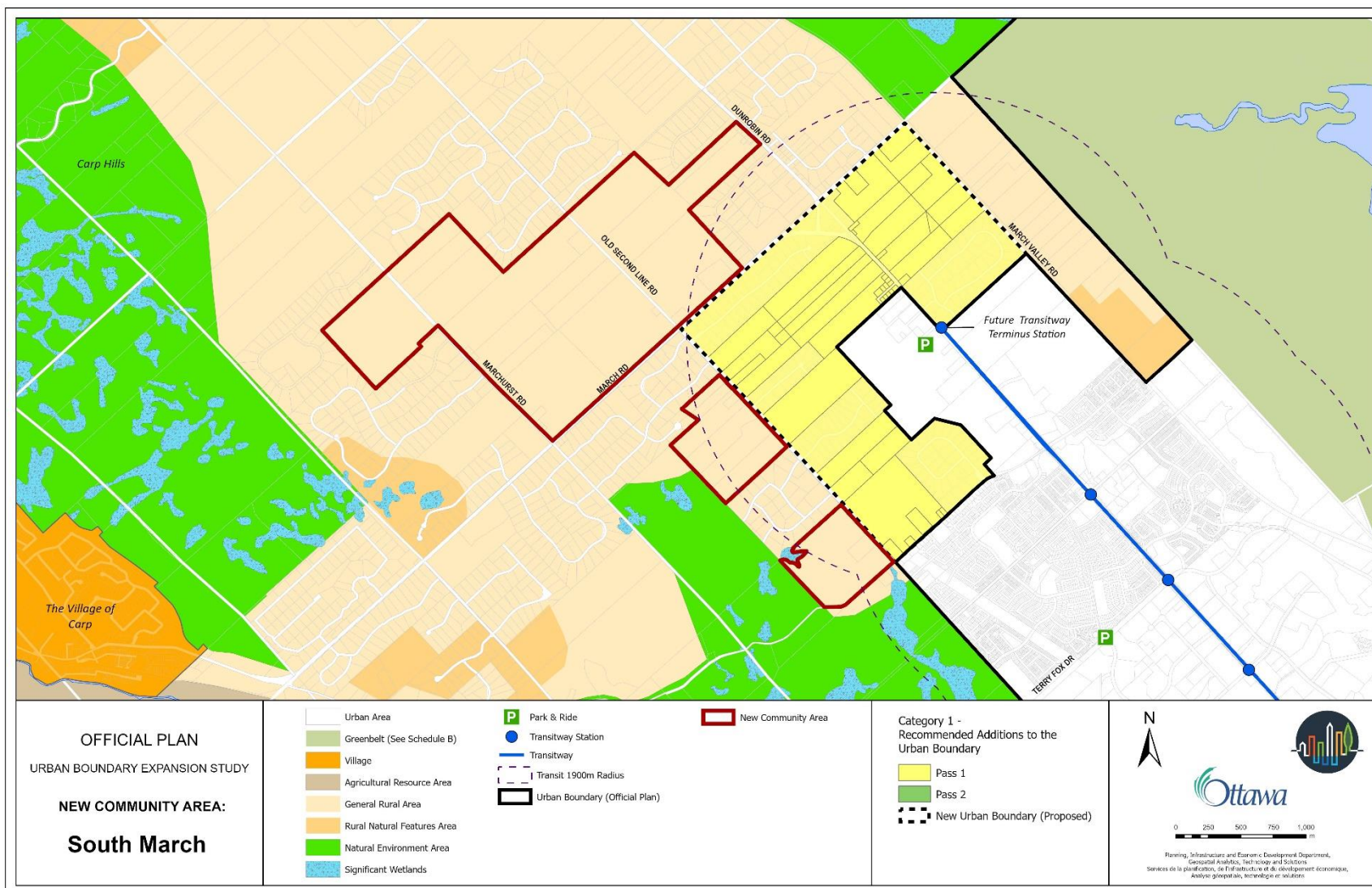
#### Natural Environment

The large cluster lies adjacent to the Carp Hills Core Natural Area. The smaller clusters lie adjacent to the South March Highlands Core Natural Area. Development of these clusters would increase recreational use of the Carp Hills and the South March Highlands. Increased traffic along March Road would further isolate the South March Highlands from the Carp Hills. Mitigation of these impacts, including wildlife passages, would be required. Even with mitigation, these impacts would negatively affect the natural condition of these core natural areas, especially as habitat of species at risk.

Development in proximity to the South March Highlands Wetland Complex and the Carp Hills Wetland Complex would increase community pressure for expansion of the Kanata North Nuisance Mosquito Control Program. Community exposure to Lyme disease would increase due to the high densities of infected black-legged ticks in the adjacent natural areas.

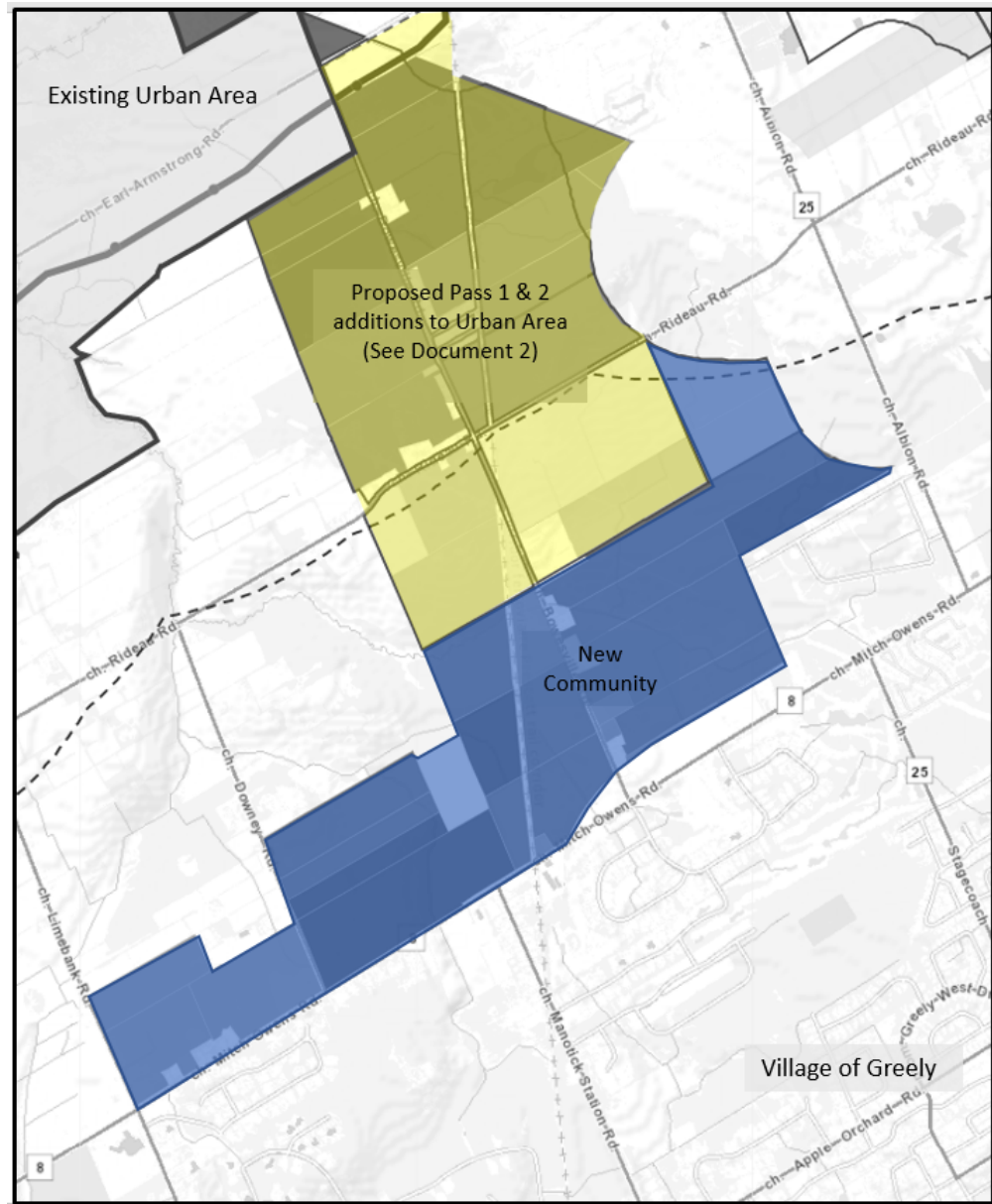
#### Economic Potential

The location of these lands far from the major transportation network means that they would likely evolve to provide housing as a bedroom community to support the broader Kanata community. This area would not be suitable to introduce a new concentrated business area or major mixed use area.





## Part B) Riverside South Potential New Community



Gross Developable Area:	<b>290 ha (estimated)</b>	Planning Status:	no applications
Official Plan Designation:	General Rural Area	Zoning:	RU – Rural Countryside
	Rural Natural Feature		AG2,3 - Agricultural Subzone

Land Use:	<p>Fields, forest, some single detached residential uses.</p> <p>Some tributaries of Mosquito Creek can be found within the cluster, including the Spratt Drain, Nolan Drain, Dancy (also Osgoode) Drain and Downey Drain among others.</p>
Description:	<p>The Riverside South Special Study Area cluster is located southeast of the Riverside South urban area, north of the Village of Greely just beyond the 1km village exclusion area and south of the proposed incremental additions to the urban area (See document 2). Its limits are Mitch Owens Road to the south, Limebank Road to the west and Albion Road to the east.</p> <p>There is a large area of land to the northwest of the cluster that is designated as Agricultural Resource Area (AG). The barrier created by these AG lands as well as the irregular shape of the cluster could present some integration and connectivity challenges, particularly for the parcels located towards Limebank Road.</p> <p>Some other constraints include a former landfill owned by the City located at northwest corner of Albion Road and Rideau Road as well as a sand and gravel extraction pit operation located at the southeast corner of Rideau Road and Albion Road. The Special Study Area cluster excludes lands within the 500m influence area of the landfill and the 300m buffer of the sand and gravel pit operation. These two land uses mainly impact portions of land along the Albion Road and Rideau Road frontages and would prohibit residential and other sensitive uses.</p> <p>The former Prescott rail corridor (Non-Active) owned by the City of Ottawa traverses the cluster and is currently used as a multipurpose pathway (MUP) known as the Doug Thompson Pathway, however it is reserved for potential future rail transportation.</p> <p>Hydro and pipeline corridors cut across the eastern area of the cluster.</p> <p>In terms of scoring criteria, the parcels within this cluster score poorly due to their distance from planned or existing transit and from amenities and services found within the existing urban area and due to servicing challenges.</p>
Servicing	<p><b>Servicing Constraints</b></p> <ol style="list-style-type: none"> <li>1) Water: Ottawa South pump station capacity</li> <li>2) Wastewater: Spratt Road collector sewer</li> <li>3) Storm drainage: Insufficient storm drainage outlet</li> </ol> <p><b>Discussion</b></p> <p>The rural lands between Rideau Road and Mitch Owens Road, south of the Riverside South Community are one of only a few large rural land masses in the City where a new Community could be possible.</p> <p>Preliminary examination of these lands found that, except for a small pocket of higher lying land along Bowesville Road, the area south of Mosquito Creek / Spratt Drain is entirely low-lying, and urban development would require</p>

extensive fill placement, and downstream drainage improvements to municipal drains crossing agricultural land.

Modelling of water and wastewater systems found that little capacity is available to the area south of R-5 and R-6. Upgrades to the South Ottawa water pump station capacity and to the capacity of the Spratt Road sanitary sewer would be triggered if development of just 100 ha of the land south of R-5 & R-6 occurred – which in itself would require placement of 1-2m of fill or more to establish a viable storm outlet.

### Scope of Off-site Infrastructure Required

#### Water

- Additional 1.5km of 406mm watermain to that required to service R-5 & R-6
- Upgrade South Ottawa PS capacity

#### Wastewater

- Increase firm capacity of PS required to service R-5 & R-6 from 150 L/s to 250 - 350L/s depending on scale of development in new community area
- Increase forcemain length by 1000m
- Upgrade 2500m of sanitary sewer on Spratt Road to 900mm
- 1-2 local sanitary PSs depending on grading plan

### Per hectare Cost Category

The combined cost of off-site water and wastewater for servicing to expand development south of SCAs R-5 & R-6 is **Very High**.

#### Transportation

This new community option is beyond the transit catchment area but the north-easterly portion abuts potential expansion areas to the north. It benefits from and supports the investment in potential capacity increase created by future O-Train Line 2 twinning. It results in an overall cost increase for measures to create quality transit connections along roads directly leading to the Bowesville and Limebank O-Train stations, and rural road conversions to urban arterial standard. And it supports the future local network but downstream road capacity constraints for this area remain. Provision of future expanded O-Train capacity combined with down-stream road capacity challenges could result in strong transit mode share.

**Transit Capital and Operating:** This area benefits from potential rapid transit capacity expansions already needed to serve the planned build-out of Riverside South within the existing urban boundary. This may include twinning of Line 2 or alternatively, serving the community through some other rapid transit connection (such as a connection utilizing the Alta Vista Parkway alignment). As a result, it is anticipated that residual transit capacity will be available to serve a new community in this area. Since there would be no rapid transit stations directly within the new community, transit facilities would be needed, such as at-grade bus rapid transit or bus transit priority measures, to improve transit connections to Line 2 stations resulting in increased capital costs. Incremental increases to operating costs may be required to provide extra capacity for travelers on O-

Train and bus service (vehicles and operators), as well as to provide local bus service within the community.

**Road Capacity:**

May require conversion of existing rural roads primarily within the community areas to urban arterials to provide access to/from the new community (including Bowesville, Limebank, Albion, and Rideau) and from the nearby urban area and identified expansion areas with a moderate overall cost. Several recent and planned road expansion projects would benefit this new community, including projects on Earl Armstrong, Leitrim, Albion, Lester / Airport Parkway and the Alta Vista Transportation Corridor. However, the residual road capacity from these projects is expected to be limited. As a result, downstream capacity constraints will require assessment and mitigation. In particular, further development in this area will put more pressure on roads crossing the Greenbelt.

**Mode Share:** The area is not directly connected to rapid transit (or within the desired rapid transit catchment area). As a result, the transit mode share is expected to be lower, as future residents would not be living within a walking/cycling or short bus ride distance of a rapid transit station. There are plans for multiple rapid transit connections within the vicinity of the community, each serving different areas of the city (Line 2, Line 1 extension to Barrhaven, Southeast Transitway). However, access to the downtown will generally require 2 transfers (e.g. local bus to Line 2 to Line 1). Given downstream capacity constraints within the road network, much of the future growth in the Riverside South area will need to be accommodated through transit; as transit becomes more attractive relative to driving, the transit modal share is expected to increase.

**VKT:** Has a relatively central location for accessing destinations in east, west, and central Ottawa, reducing VKT. The potential for residents to live and work within the same community will depend on the ability of Riverside South to attract new jobs. Given current employment levels, the extent of trip internalization (i.e. trips that start and end in the same community) is expected to be low over the short to medium term. The nearby Riverside South town centre will have commercial/community destinations.

**DRAFT GATING POLICY:** The following transportation-related items shall be addressed prior to plan of subdivision approval:

- Provision of rapid or equivalent quality transit service within a 1.9 km radius of the centroid of the proposed subdivision, as well as sufficient road connections and system capacity to accommodate the forecast level of demand. Road and transit facilities must either be operational at the time of development approval or have sufficient funding secured for their implementation through a Council-approved mechanism. In establishing equivalent transit service, consideration should be given to both the frequency and quality (reliability/speed) of transit operations.
- Completion of a transportation study to the satisfaction of the City which:
  - Identifies any downstream transit or road capacity deficiencies triggered or made worse by the new development;
  - Identifies measures to address these deficiencies (including improvements to the road, transit, and active transportation networks); and

- Sets out an implementation timeframe for each measure corresponding to the anticipated phasing of development.

A plan of subdivision shall not be approved until the required measures identified in the transportation study are in place or funding has been secured for their implementation through a Council-approved mechanism.

#### Natural Environment

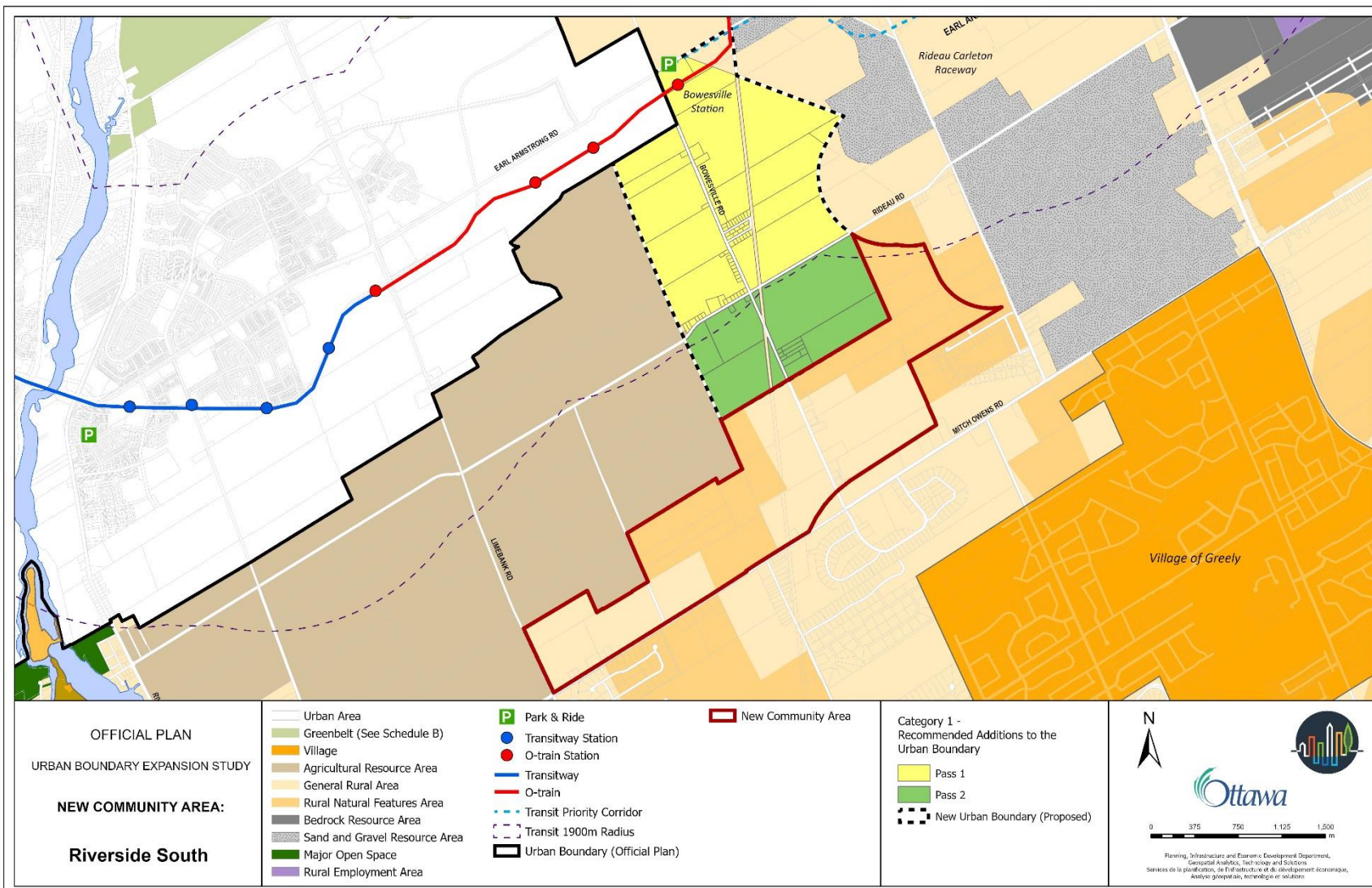
Annex 16 of the existing Official Plan identifies a potential natural linkage through the special study area, as well the staff-recommended urban expansion lands. This long, narrow linkage follows roughly the Doug Thompson Pathway (Prescott rail corridor MUP) and was identified for potential restoration in order to connect the south Greenbelt and Leitrim Wetland to the Osgoode West Wetland approximately 10 km to the south. Urban development of the recommended expansion lands and the special study area would prevent the conservation and improvement of this potential linkage.

The Mosquito Creek headwaters include areas of cool to coldwater fish habitat, as described in the Shields Creek Subwatershed Study. These habitats will need to be protected from potential impacts of urbanization.

#### Economic Potential

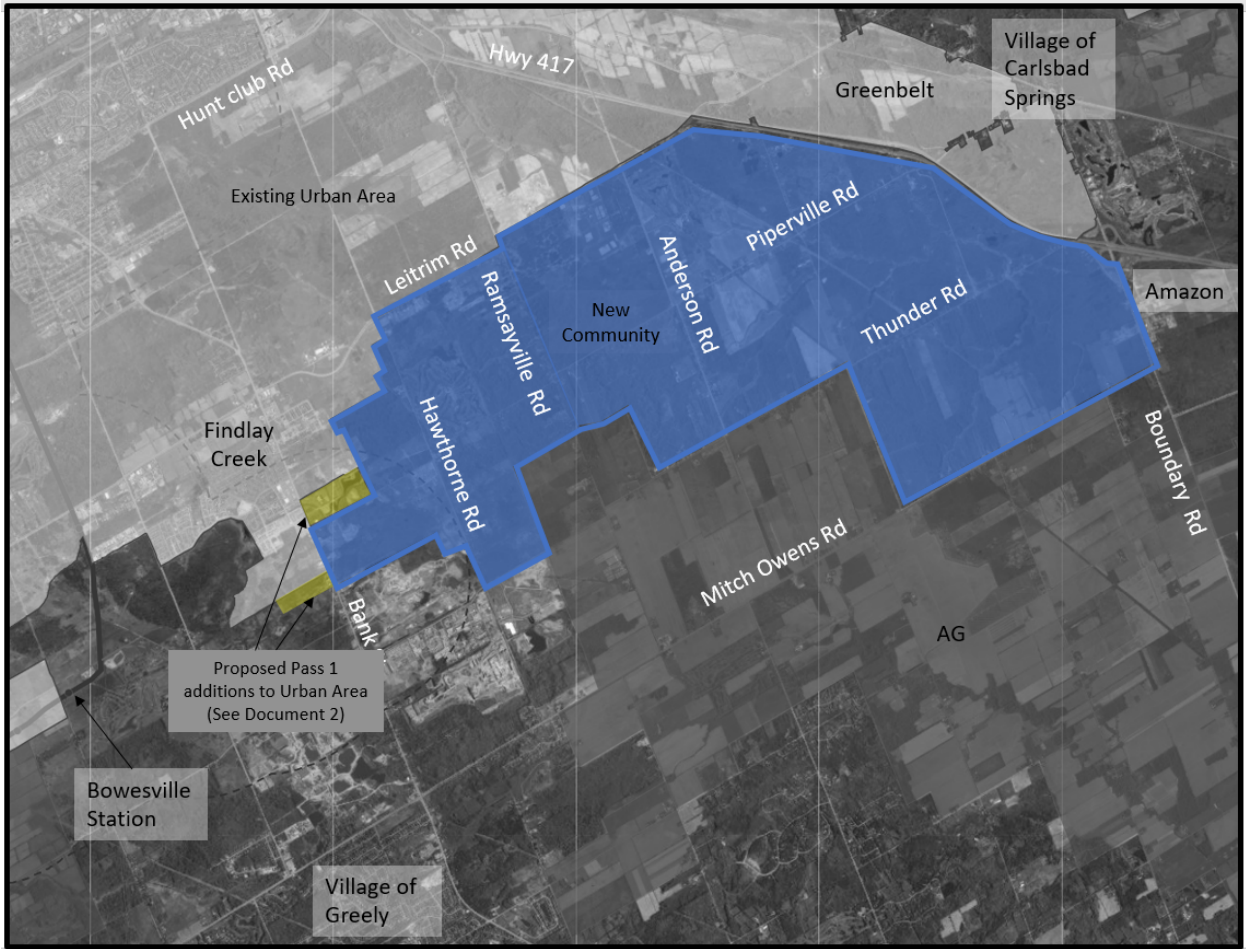
This area has reasonable economic potential over time given its capacity to be a connecting piece between Riverside South and Osgoode, proximity to Hard Rock Casino and the airport.

However, there is an economic risk with this cluster. By creating a “C” shape of urban development around a pocket of agricultural resource lands, it could create the opportunity for future Councils to erode the Countryside Belt and the availability of high viability agricultural lands.





# Part C) Leitrim East/Carlsbad West Potential New Community



Gross Developable Area:	Overall Total: 4500 ha  Tewin: Total 3600ha 2100 ha developable (estimated), with environmental exclusions Hawthorne Lands: Approximately 980ha gross. Note no exclusions have been applied.	Planning Status:	no applications
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	Actual developable area would be reduced.		
Official Plan Designation:	General Rural Area  Rural Natural Feature	Zoning:	Mainly, RU – Rural Countryside  O1 – Open Space  RR – Rural Residential  RI – Rural Institutional  RC – Rural Commercial  RH – Rural Heavy Industrial
Land Use:	Mainly forested, natural areas and fields, includes some single residential uses and residential clusters, agricultural uses, a couple of golf courses (Anderson Links and The Meadows) and some rural employment/industrial uses.		
Description:	<p>The LeitrimEast/Carlsbad West Special Study Area cluster is located in the southeast area of Ottawa. South of Highway 417 between Bank Street and Boundary Road. On the east side of Boundary Road is a rural employment area that includes the Amazon facility among other industrial uses, to the north is the greenbelt and south are lands designated as Agricultural Resource Area, west are other rural lands consisting mainly of forested areas and fields and further east is the urban community of Leitrim. Valley-lands and various watercourses transverse the study area which includes the Smith – Gooding Municipal Drain, the Rochon Municipal Drain, and the Bearbrook Municipal Drain. A Bedrock Resource Area is located southeast of the Study Area.</p> <p>The Study Area is adjacent to Highway 417 which can be accessed by two interchanges at Anderson Road and Boundary Road. The Study Area is not within the capture area of any existing or planned transit lines, except for a portion of the area west of Hawthorne Road adjacent to the community of Leitrim.</p> <p>A hydro corridor traverses the Study Area from north to south near the western edge of the Core Natural Area and the Trans-Canada Pipeline traverses the easterly portion of the study area west of Ramsayville Road.</p> <p>While the two other study areas, South March and Riverside South, are limited in size ranging from 290 to 345 ha due to surrounding constraints, the LeitrimEast/Carlsbad West Special Study Area (even with the constraints applied) could have an ultimate developable area of approximately 3000ha.</p> <p>This area contains sensitive marine clay soils which may impact the potential density and building heights within the new community. It is anticipated that there would be higher construction costs for structures that are four-storeys or higher, where there will be a need for pilings to support foundations. Further investigation however is required to determine the potential impacts.</p> <p>In terms of scoring, these lands score poorly due to a lack of existing or planned infrastructure including servicing and transit as well as amenities such as recreational facilities and retail. Therefore, there are greater challenges and/or costs associated with servicing and transit, and to avoid new residents of this community having to travel greater distances to access amenities and services in existing communities they would all need to be developed and provided within the LeitrimEast/Carlsbad West Special Study Area.</p>		



## **Servicing Overview**

Preliminary assessment of servicing of the Leitrim East/Carlsbad West community option indicates that it would likely proceed in two distinct parts:

- 1) Expansion of Leitrim Village, serviced by the 3C/SUC water pressure zone, and construction of a new wastewater pumping station with gravity outlet to the Green Creek Collector; and
- 2) Servicing of the Tewin Community area that would be serviced by the 2C pressure zone, and construction of a deep gravity wastewater trunk outlet connected to the South Ottawa Tunnel sewer.

### **1) Expansion of Leitrim Village**

#### **Servicing Constraints**

- 1) Water: Development west of Hawthorne Road could be feasible with minimal upgrades to the water distribution system.
- 2) Wastewater: No available capacity in existing Leitrim Pumping Station and Conroy Trunk Sewer. Construction of a new pumping station with trunk sewer outlet to Green Creek Collector would be required.
- 3) Storm drainage: additional study is required, but limited topographic relief to the west of Hawthorne Road, in combination with increasing depths of marine clay soils could result in submerged storm sewers and/or the need for sump pumps in eastern parts of the development area.

#### **Water**

The servicing of Leitrim Village expansion could occur via upgrades to about 1 km of watermain on Analdea Drive and looping through nearby streets and a connection to the watermain on Bank Street at Blais Road.

#### **Wastewater**

A new pump station (+/-200 l/s) would need to be constructed south of Blais Road, west of Hawthorne Road, with a forcemain length of 3.5 km outletting into a new 3.5 km long 600mm diameter gravity sewer on Hawthorne Road with outlet to the Green Creek collector sewer.

#### **Stormwater**

There are two storm drainage outlets available: Findlay Creek to service lands generally south of Blais Road and west of Findlay Creek, and the Smith-Gooding Municipal Drain to service the remaining lands. Grade raise restrictions may

exist in areas immediately west of Hawthorne Road that could impact grading and result in the need for sump pumps and/or submerged sewers in local areas.

### **Scope of Off-site Infrastructure Required**

#### Water

- 1 km of 300mm watermain

#### Wastewater

- New (+/- 200 L/s) pumping station
- 3500m dual forcemains & 3500m 600mm diameter sanitary sewer

### **Per hectare Cost Category**

The combined cost of off-site water and wastewater servicing of the Leitrim East Village expansion is **High**.

## **2) Tewin Community**

### **Servicing Constraints**

- 1) Water: No nearby primary or secondary water transmission mains
- 2) Wastewater: No nearby sanitary collection system
- 3) Storm drainage: Sensitive soils and grade raise restrictions would require servicing by sump pumps throughout community, with storm outlet to a watercourse with sensitive valley slopes and insufficient outlet downstream

### **Discussion**

There is uncertainty regarding the potential area to be added and the servicing options. The evaluation was based on an assumed initial settlement area roughly bounded by Leitrim Road to the north, Thunder Road to the south, Ramseyville Road to the West, and Farmers Way to the east.

#### **Water**

The Tewin community would be serviced by the 2C Pressure Zone. This would require the very expensive and challenging construction of both primary and secondary transmission lines (about 20 km of 600mm pipe in total) and upgrades to the 2C Zone capacity. During the initial buildout of the community water quality would be a concern, which would result in greater operational costs and significant wasting of water due to the expected system flushing requirements.

## **Wastewater**

The servicing of the Tewin community is anticipated to best commence in the Piperville Road and Farmers Way area and proceed westward. The Tewin community could be serviced by a gravity trunk sewer, connecting to the South Ottawa tunnel. Although wastewater servicing can be achieved without the need for a pump station, the trunk sewer will need to be constructed at depths of 10m or more to cross under several watercourses on its route to its outlet. Due to the sensitive marine clays in the area, sewer installation will require the additional expense and complexity of sheet-piling of construction trenches. This will result in costs significantly greater than other new community areas under consideration.

Additional maintenance costs over the estimated 8.3 km long sanitary sewer should also be expected during the early buildout of the community due to low flows and likely sedimentation problems before the conditions for self-cleansing of the sewer are likely to materialize.

## **Stormwater**

Due to the sensitive marine clays, it is expected that grade raise restrictions in the Tewin community all housing would rely, in perpetuity, on sump pumps for foundation drainage. Due to limited topographic relief, stormwater would likely have to be directed eastward via trunk sewers to stormwater facilities that discharge to ravines that have cut through the clays, and discharge into Bear Brook.

Construction of the storm drainage system would likely prove to be challenging because of the sensitive marine clays and lack of a sufficient outlet on Bear Brook (this has delayed development in the East Urban Community which is part of the same watershed). The depth of excavation of required stormwater ponds is likely to involve loose grey clays that pose construction and long-term operation and maintenance difficulties. Discharge from the stormwater ponds would be to the Bear Brook valley where hazardous slopes in leda clay make the area prone to landslides.

## **Scope of Off-site Infrastructure Required**

### Water

- 20 km of 600mm transmission main (includes redundancy)
- Pressure Zone 2C Zonal pump station capacity upgrade
- Elevated storage tank

Water quality concerns / higher operational costs and wasting of water in the short to mid-term buildout of community.

Wastewater

- 8300 m of 900 mm pipe

Low flow in the short to mid-term buildout of community will lead to additional trunk sewer maintenance due to lack of self-cleansing and sedimentation of the long, mild grade sewer.

**Per hectare Cost Category**

The combined cost of off-site water and wastewater for servicing the Tewin Community is **Very High**.

**Transportation Summary**

This easterly portion of this new community option is located far from existing and planned higher-order transit. This creates transit service challenges (financially and technically) and makes provision of early high-order rapid transit impractical. There is also a high cost to convert longer lengths of rural road to urban arterial standards (including through the Greenbelt). Highway 417 proximity is a benefit but with downstream connectivity and capacity challenges (capacity is reached at the split). The westerly portion has proximity to the Findlay Creek community. The area to the west of Hawthorne Road is partially within the 1.9km transit radius from the easterly terminus of the future Earl Armstrong Road extension transit priority corridor.

Longer travel times through the Greenbelt to the central area and major destinations, and the possibility of delayed quality transit service, contributes to weaker transit mode share and greater VKT for much of the easterly part of this area.

**Transit Capital and Operating:** Small initial population would be isolated from existing or planned transit service and could not support the early provision of high order transit (level of service A) and would therefore be served by lower levels of service for a longer period of time. New extensive transit measures for the majority of the easterly part of this area, such as extension to rapid transit (Transitway or O-Train) or other higher order transit service such as dedicated road and highway transit lanes would be required over longer distances (without intermediate stops) to provide rapid transit or access to rapid transit to achieve the goal of having most trips by 2046 by sustainable modes. This would result in specific new operational costs (vehicles and operators) and limited or no benefit from existing or planned service. These transit improvements would require approx. 11 km of new dedicated lanes along the highways to connect to Line 1 at St. Laurent Station along with connections to the future Baseline-Walkley Transitway at Heron and at Innes, and a further 6 km extension of Earl Armstrong with its planned transit priority measures to create a connection to Line 2 at Bowesville Station. These substantial additional transit facilities would uniquely serve much of this community and there would be little or no benefit to existing communities.

**Road Capacity:** Will require conversion of several rural roads over a considerable distance, through the Greenbelt, to provide access to the site (those requiring conversion to an urban profile include Anderson, Ramseyville, Russell and Hawthorne Roads). It is estimated that the upgrade distances of rural roads to higher order arterials, through the Greenbelt range from 3 to 6 km

to reach the new community. Limited downstream road capacity issues on urban arterials as well as potentially on the highway and at the 417/174 split requires additional assessment and probable mitigation. Earl Armstrong could require further extension for approximately 6 km from Hawthorne Road to the new community core.

Subject to Provincial approval, Highway access via Hwy 417 could contribute road capacity to this community assuming further widening in each direction and the need for this future widening of 417 could also create additional dedicated transit lanes. The planned Alta Vista Transportation Corridor and Conroy Road may also provide some benefit which can be analysed further through the Transportation Master Plan.

**Mode Share:** Except for a small portion of the westerly part of this area, no existing or planned rapid transit stations are located within walking or cycling distance of the community. Most residents, especially in early phases of development, would need new local bus service with greater travel times to access rapid transit stations, resulting in lower anticipated transit modal shares. However, as described above, it is envisioned that the community could eventually be served by direct connections to multiple rapid transit lines, each providing access to different areas of the city (Lines 1/3, Line 2, Baseline/Heron/Walkley Transitway). With more options available to residents, the attractiveness of transit could increase in the decades after 2046. There will be limited shopping or recreational opportunities within or in proximity to most the community initially and it will take many years to form a “complete community” where the city can anticipate that residents will be able to walk/cycle to neighbourhood shops and services.

**VKT (Vehicle Kilometres Travelled):** Limited potential for residents to live and work within the same community will result in high VKT. However, the site is in proximity to industrial and employment areas in the urban area north of the Greenbelt.

**DRAFT GATING POLICY:** The following transportation-related items shall be addressed prior to plan of subdivision approval:

- Provision of rapid or equivalent quality transit service within a 1.9 km radius of the centroid of the proposed subdivision, as well as sufficient road connections and system capacity to accommodate the forecast level of demand. Road and transit facilities must either be operational at the time of development approval or have sufficient funding secured for their implementation through a Council-approved mechanism. In establishing equivalent transit service, consideration should be given to both the frequency and quality (reliability/speed) of transit operations.
- Completion of a transportation study to the satisfaction of the City which:
  - Identifies any downstream transit or road capacity deficiencies triggered or made worse by the new development;
  - Identifies measures to address these deficiencies (including improvements to the road, transit, and active transportation networks); and
  - Sets out an implementation timeframe for each measure corresponding to the anticipated phasing of development.

## Natural Environment

A plan of subdivision shall not be approved until the required measures identified in the transportation study are in place or funding has been secured for their implementation through a Council-approved mechanism.

A large area within the Tewin boundary consists of the Bear Brook Headwaters Core Natural Area (which is generally located in the northeast section of the Study Area along Highway 417 and the Greenbelt and stretches down to Mitch Owens Road). This Core Natural Area as well as other natural features take up almost half the area within the Tewin Area and is not included in the developable area calculation. The Core Natural Area includes important features, such as watercourses, wetlands, woodlands and a “Bog to Bog” natural landscape linkage between Mer Bleue in Ottawa and Alfred Bog to the east. If added to the urban area this feature would need to be preserved.

The Core Natural Area presents somewhat of a barrier between the rural employment lands on Boundary Road and the bulk of the remaining lands to the west where potential residential development could occur. This constraint would also limit potential growth around Boundary Road. Necessary improvements to transportation links through this area would require substantial wildlife protection and mitigation, including wildlife passages or overpasses for large mammals such as moose which are known to move through the area.

## Economic Implications

This vast area is not contiguous to existing economic clusters so it would not have immediate synergistic relationships to the existing economic base of the City. That being said, the site is prominent in its location to Highway 417 between Ottawa and Montreal, and with careful planning, it could evolve as a new eastern gateway to the City.

The most significant economic benefit of adopting this area for growth would be that a large proportion of the lands in the eastern part of the cluster are owned by the Algonquins of Ontario for the purposes of creating economic development for their member Algonquin communities through the development of land.

