



# Erbsville South Block Plan Study

Discussion Paper and Land Use Analysis

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Prepared by WSP for the City of Waterloo



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# 1 Introduction

The City of Waterloo has initiated a Block Plan Study (the “Study”) for the Erbsville South lands (the “Study Area”) within the Erbsville District in Northwest Waterloo. The City has retained WSP Canada Group Limited to undertake the Study.

## 1.1 Purpose of the Study

In 2012, City of Waterloo Council approved a Terms of Reference for the Erbsville South Block Plan Study and Environmental Study, to outline a process for these projects.

As an outcome from discussions with landowners within the Study Area, it was agreed that development in Erbsville South could precede the undertaking of a District Plan for the Erbsville Area, subject to a Block Plan Study. This approach was deemed reasonable considering the following factors:

- A Subwatershed Study has been completed for the area;
- Development within the Study Area is anticipated to be serviced by gravity sanitary sewers to; and,
- The Council-adopted Official Plan permitted this approach in Specific Provision Area 3.

This Block Plan Study is intended to be a high-level coordination exercise which sets out flexible principles, a general pattern for development, and standards for land use – including a conceptual road network and locations for stormwater management facilities. The Study will ultimately guide the future development of the Erbsville South Study Area (**Figure 1**). It is not the intent of this Study to determine the detailed lot pattern and road configuration for the Study Area or prescribe specific housing typologies and road designs. These matters would be addressed through the Official Plan Amendment and future development applications.

The City of Waterloo will be preparing a concurrent Official Plan Amendment (OPA) separately from this Study which will ultimately implement the

Block Plan. The policies of the OPA will be informed by the recommendations and principles from the Block Plan Study, and address detailed land use and built form policies.

The purpose of this report is to present the draft Block Plan options, discuss key planning considerations related to future development, summarize the findings of the Phase 1 public open house, and establish a vision and principles for development. This report will also present the draft findings from the Traffic Impact Study, which aims to consider a logical road network and identify appropriate measures to mitigate new traffic generated by development. Drawing from the work completed to date, Block Plan options are presented in this report, including a recommended methodology for evaluating the concepts.

## 1.2 Report Overview

This report is structured into ten sections:

- 1.0** Introduction
- 2.0** 2018 Erbsville South Environmental Study
- 3.0** Policy and Zoning Review
- 4.0** Servicing
- 5.0** Traffic Impact Study
- 6.0** Consultation
- 7.0** Vision and Principles
- 8.0** Block Plan Options
- 9.0** Evaluation of Block Plan Options
- 10.0** Conclusions and Recommendation



Figure 1 - Erbsville South Block Plan Study Area

**Erbsville South** is comprised of approximately 29.7 hectares of land in northwest Waterloo, as shown in **Figure 1**. The lands generally extend north from the intersection of Erbsville Road and Wideman Road along Erbsville Road to Schnarr Street.

The Erbsville South lands are situated within the broader Erbsville District, as delineated in the City of Waterloo Official Plan. The Study Area does not include the Regal Place Subdivision. Of note, the 2018 Erbsville South Environmental Study, as summarized in this report, employed an Extended Study Area to broaden the scope of habitat assessment and species inventories. This Block Plan Study will not include the lands within this Extended Study Area.

To the north of Schnarr Street are several existing residential lots. South of Schnarr Street is the existing YMCA Early Years Centre. While these lands are within the Study Area, it is anticipated that the balance of the developable lands will precede the re-development of these lands.

The Study Area lands east of Erbsville Road are agricultural lands and designated natural features. The lands to the northwest of Erbsville Road and Wideman Road also have designated natural features, and an existing single detached dwelling is accessed across from Forest Gate Crescent.

The land uses and existing conditions surrounding the Study Area include the following:

- **North:** Directly to the north of the Study Area is the former Erbsville settlement and the existing development along Snowcrest Place. North of Conservation Drive is the Creekside Church and soccer fields.
- **South:** Directly to the south of Wideman Road is the Columbia Hills District, including an established residential neighbourhood consisting primarily of low-density dwelling units. Further south near the intersection of Erbsville Road and Laurelwood Drive is a secondary school and commercial plaza.
- **East:** Directly to the east is the northern portion of the Laurelwood District, including the established residential community consisting of primarily single detached dwelling units along Forest Gate Crescent. Beyond the Erbsville Kartway, which is situated immediately adjacent to the Study Area, is the Beaver Creek Meadows District.
- **West:** Surrounded by and to the west of the Study Area boundary is the Regal Place development. The western Study Area boundary aligns with the Urban Area Boundary delineated in the Regional Official Plan. The Laurel Creek Headwaters Environmentally Sensitive Landscape and Laurel Creek border to the west.



## 2 2018 Erbsville South Environmental Study

The 2018 Erbsville South Environmental Study (the “2018 Environmental Study”) was prepared by Dougan & Associates, IBI Group, JTB Environmental Systems Inc., LVM, and C. Portt and Associates, and endorsed by City Council in June 2018. It is the intent of the 2018 Environmental Study to inform this Block Plan Study.

The purpose of the 2018 Environmental Study was to supplement existing environmental data from the Laurel Creek Watershed Study and subsequent Subwatershed Management Plan (#309 and #313). The 2018 Environmental Study identifies natural features and functions within the Study Area, delineates areas to be protected, and recommends development setbacks and mitigation measures to maintain or improve the ecological sustainability of Erbsville South, in accordance with current City, Regional, and Provincial policy.

In addition to the Study Area boundary delineated for the Block Plan Study, the 2018 Environmental Study included an Extended Study Area (**Figure 2**) to undertake habitat assessments and species inventories for the purposes of understanding the broader impacts of land use change.



Figure 2 - 2018 Environmental Study Area

The 2018 Environmental Study offers several conclusions and recommendations, as detailed below, which have been considered and integrated into the development of the Block Plan concepts.

### 2.1 Core Environmental Features

The core environmental features that have been identified, including Provincially Significant Wetlands, Environmentally Sensitive Policy Areas, areas of Significant Wildlife Habitat, and their ecological linkages are to be protected through buffer areas.

Treed areas outside of the identified Core Environmental Features (e.g., north of Schnarr Street) should be managed to avoid or mitigate potential impacts to wildlife.

### 2.2 Development Setbacks

Development setbacks, or buffers, help protect environmental features and functions. All development within the Study Area must remain outside of the recommended buffers. Only a portion of stormwater management facilities (such as

outfalls) may be considered within them in accordance with Official Plan Policy 8.2.4(9).

The following minimum development setbacks were recommended and will be confirmed at the development application stage through a subsequent detailed Environmental Impact Study:

- **Provincially Significant Wetland:** 30 metres
- **Environmental Sensitive Policy Areas** (*which includes Schaefer's Woods and Laurel Creek Forest*): 10 metres
- **Watercourses:** 30 metres
- **Woodlands:** 10 metres

The 2018 Environmental Study further recommends that buffer boundaries be smoothed to produce more uniform edges and contiguous features as a means of ecological enhancement.

### 2.2.1 Development Areas

Based on the development constraints identified in the 2018 Environmental Study, five potential development areas are identified as shown in **Figure 3**. The extent of Areas 101 and 102 are dependent on the Wideman Creek culvert being upgraded. The limits of these areas have been informed by the ecological constraints delineated in Figure 6-3, 6-4, and 6-5 of the 2018 Environmental Study.

## 2.3 Stormwater Management

The 2018 Environmental Study proposes several stormwater management criteria for the future development areas to control the quantity and quality of runoff and mitigate impacts on watercourses and tributaries. The stormwater management considerations are discussed in Section 4 of this report.

## 2.4 Corridors and Linkages

The ecological corridor associated with Wideman Creek will be enhanced through the buffers that will be established on each side of the creek. The upgrading of the Wideman Creek culvert under Erbsville Road will also improve the creek's corridor and linkage function.

With respect to trail corridors, it will be imperative to provide and maintain a low-impact, publicly accessible trail system in less sensitive areas outside of natural features. Trails outside of natural features or within the outer portion of their buffer will reduce the likelihood that informal trails will develop in sensitive areas. This will also encourage and facilitate responsible appreciation of the development surroundings. Access will be discouraged through planting areas, buffers, and barriers. Any trails and roadways which cross a watercourse must be wildlife friendly and not disrupt local animal movements and corridor functions.



Figure 3 - Potential Development / Redevelopment Areas within the Study Area as identified in the 2018 Environmental Study (shown in yellow)

## 2.5 Watercourses

To protect and enhance the existing function of the watercourses that traverse the Study Area, the 2018 Environmental Study recommends an increase in the natural cover within the floodplain and within the 30-metre watercourse buffer along Wideman Creek.

Further, the existing culvert which passes under Erbsville Road, should be upgraded to support storm flows and support passage of small to medium-sized wildlife via Wideman Creek. This upgrade will reduce the Regulatory floodline elevations upstream of Erbsville Road.

Finally, it will be important to maintain the current groundwater discharge rates as it is considered an important factor for maintaining the thermal regime which is suitable for coolwater fish species.

## 2.6 Hydrogeology

The post-development water balance should endeavour to match the pre-development water balance by maintaining the spatial distribution of groundwater infiltration across the Study Area by managing impervious surfaces. Infiltration should be directed into near surface Shallow Overburden Aquifer(s), as the Deep Overburden Aquifer is confined and protected by aquitards. Further, the Deep Overburden Aquifer is used as a source for municipal water.

The 2018 Environmental Study notes that the shift to residential land uses will likely improve the water chemistry of infiltrated water due to a reduction of agriculture-related chemicals (e.g., fertilizer) within the Study Area. However, there is a potential for an increase in chlorides due to winter maintenance activities. Chlorides typically increase in the groundwater and can adversely impact drinking water quality if not managed appropriately. The Region of Waterloo may require a chloride impact study to be completed with future development applications depending what the groundwater mapping indicates for the Study Area.

## 2.7 Future Studies and Initiatives

There are several future studies and initiatives recommended by the 2018 Environmental Study, as follows:

- A scoped Environmental Impact Study (EIS) will be required with any future development application to verify the findings and recommendations of the 2018 Environmental Study and confirm the boundaries of all Core Environmental Features so that they can be protected before, during, and after development. It must also clearly demonstrate how the natural heritage features, buffers, and linkages will be protected through the implementation of appropriate avoidance and other mitigation measures.
- Prior to development or redevelopment, pre-development monitoring is required in accordance with the City of Waterloo Development Monitoring Protocol (1999).
- Through the Environmental Assessment for the Erbsville Road widening, identified by the 2010 Region of Waterloo Transportation Master Plan to occur beyond 2041, alternative approaches should be explored to maintain the long-term protection of the functions within the small wetland feature located at the corner of Erbsville Road and Wideman Road. Further, it is recommended that alternative approaches be explored for the stormwater outflow tributary at Wideman Road.
- Distribution of the “Naturally Your Waterloo” environmental stewardship brochure to help educate new homeowners.

Additionally, the City of Waterloo has noted that an Information Gathering Form will need to be submitted to the Province for any development proposed within the Study Area. The purpose of the Information Gathering Form will be to provide the Province with the necessary information to inform whether or not the proposed development will likely impact species at risk or their habitats, and whether an authorization under the Endangered Species Act may be required.

### 3 Policy and Zoning Review

It is critical to review current Provincial, Regional, and City planning policy documents to identify policy considerations and requirements at the outset of undertaking a Block Plan Study for Erbsville South.

#### 3.1 Provincial Policy Statement

The 2014 Provincial Policy Statement (PPS) came into effect in April 2014 and represents the Province's vision for community building across Ontario. All land use planning decisions in Ontario must be consistent with the PPS. Direction is provided on land use planning under three umbrella principles of:

- Building Strong Healthy Communities;
- Wise Use and Management of Resources; and,
- Protecting Public Health and Safety.

Section 1.1 of the PPS provides direction for managing land use in a manner that achieves effective development and land use. Healthy, liveable, and safe communities are promoted through efficient land use patterns, to assist in sustaining the long-term financial well-being of a community. All new developments are intended to contribute to a range and mix of residential, employment, recreational, and open space uses. Further, the PPS promotes compact urban form to minimize land consumption and servicing costs, with higher densities encourage adjacent to existing infrastructure and public service facilities.

The PPS specifies that Settlement Areas are to be the focus of growth, and their vitality and regeneration promoted. Accordingly, land use patterns within settlement areas are intended to be based on a mixed of densities and make efficient use of land resources, infrastructure and public service facilities, and minimize negative impacts to air quality and climate change. The Study Area is within the urban area of Waterloo and is contiguous with existing built-up areas in Northwest Waterloo. Section 2 of the PPS

addresses the wise management of resources with the overall intent to protect natural heritage features and areas and to maintain or restore diversity and connectivity of features, functions and biodiversity. Development and site alteration is not permitted in significant wetlands and in other significant features (i.e., woodlands, valleylands, wildlife habitat, areas of natural and scientific interest) unless it is demonstrated there will be no negative impacts. Further, on lands adjacent to these features, development and site alteration is not permitted unless it can be demonstrated that there will be no negative impacts on the feature or its ecological functions. Development and site alteration in or near sensitive surface water features and ground water features is also restricted. The 2018 Environmental Study was conducted to identify and protect these features and the intent is to carry forward these recommendations. Further opportunity to protect and enhance these features exists in the development approval process.

Housing policies, addressed in Section 1.4 of the PPS, call for the provision of a range of housing types and densities to meet the needs of current and future residents, and new residential development is to be directed towards locations where appropriate levels of infrastructure and public service facilities are or will be located in the future. Consideration will be made to incorporate a range of appropriate housing types to support meeting housing needs and contribute to the diversification of overall housing mix across the City and Region.

#### 3.2 A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019

A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019 Growth Plan) took effect on May 16, 2019, replacing the 2017 Growth Plan for the Greater Golden Horseshoe. All land use planning decisions within the Greater Golden Horseshoe, which includes the City of Waterloo, must conform to the 2019 Growth Plan. The Region of Waterloo is currently undertaking a municipal comprehensive review to consider implementation of these policies in its Official Plan.

The 2019 Growth Plan seeks to manage outward growth and mitigate the effects of sprawl. The 2019 Growth Plan intends for the designated greenfield area (DGA) – as delineated in the Regional Official Plan, to be planned to achieve a minimum density of 50 persons and jobs combined per hectare (Section 2.2.7.2). This density target is to be measured across the entire DGA in the Region of Waterloo (Section 2.2.7.3), which presently establishes a minimum density target of 55 residents and jobs combined per hectare.

The 2019 Growth Plan also promotes development of complete communities which feature a mix of housing options, expand access to range of transportation options, and promote sustainability and resiliency (Section 2.2.1.4). It is the intent of the Growth Plan to coordinate land use planning and infrastructure to optimize the use of existing infrastructure systems by planning for a more compact built form (Section 3.2.1). Policy 2.2.1(2)(c) stipulates that, within settlement areas, growth will be focused within delineated built-up areas, strategic growth areas, locations with existing or planning transit, and areas with existing or planned public service facilities. Policy 2.2.1.4 provides that a complete community will be achieved through a diverse mix of land uses, improved social equity and overall quality of life, and a mix of housing options which accommodate all household sizes and incomes.

### 3.3 Region of Waterloo Official Plan

The Regional Official Plan (“ROP”) was adopted by the Region of Waterloo in June 2009 and received final approval from the Ontario Municipal Board (“OMB”) on June 18, 2015.

The ROP provides policy direction on planning matters for the Region. The following provides a summary of the relevant ROP policy considerations as related to Erbsville South. The Study Area is located within the Urban Area Boundary and is designated as an Urban Designated Greenfield Area in Map 3A of the ROP (**Figure 4**). The Urban Area, including Urban Designated Greenfield Areas, are intended to accommodate the majority of population

and employment growth in the Region to 2031, and be planned to create a more compact urban form.

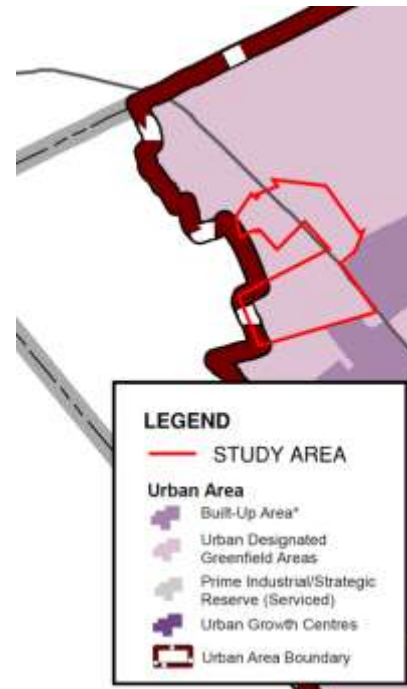


Figure 4 - Urban Area - Region of Waterloo Official Plan Map 3a

Section 2.D outlines policies which apply to development in the Urban Area. It is the intent of the ROP that these areas be municipally serviced, contribute to building complete communities, and protect the natural environment.

In accordance with Policy 2.D.17 (b), developments within Urban Designated Greenfield Areas are required to meet or exceed a minimum density target of 55 residents and jobs per hectare. The ROP contains policies regarding housing and density.

Further, Policy 2.D.17(c) directs that a network of continuous sidewalk, community trails and pathways, linkages to other neighbourhoods including transit stops and school sites, be established in the Urban Designated Greenfield Area.

The ROP establishes a Greenlands Network in Chapter 7 which is comprised of a Regional network of natural heritage features and linkages (**Figure 5**). The ecological and hydrological functions of these features are to be maintained, enhanced, or restored (Section 7.1). The *Regional Greenlands Network*

*Implementation Guideline*, established through Policy 7.A.4, guides the implementation of the Greenlands Network. The 2018 Environmental Study identifies the detailed delineation of these boundaries, including required buffers. Policy 7.A.6 permits the interpretation of boundaries through the completion of an Environmental Impact Statement (EIS). An EIS would be prepared in support of any future development application.



Figure 5 - Greenlands Network - Region of Waterloo Official Plan - Map 4

### 3.4 City of Waterloo Official Plan

The City of Waterloo Official Plan, adopted by Council in 2012, designates much of the Study Area ‘Low Density Residential’ with some lands designated ‘Open Space’, per Schedule A: Land Use Plan (**Figure 6**). The Study Area is within the ‘Designated Greenfield Area’ as shown on Schedule B3, and is subject to Specific Provision Area (SPA) 3 on Schedule A6.

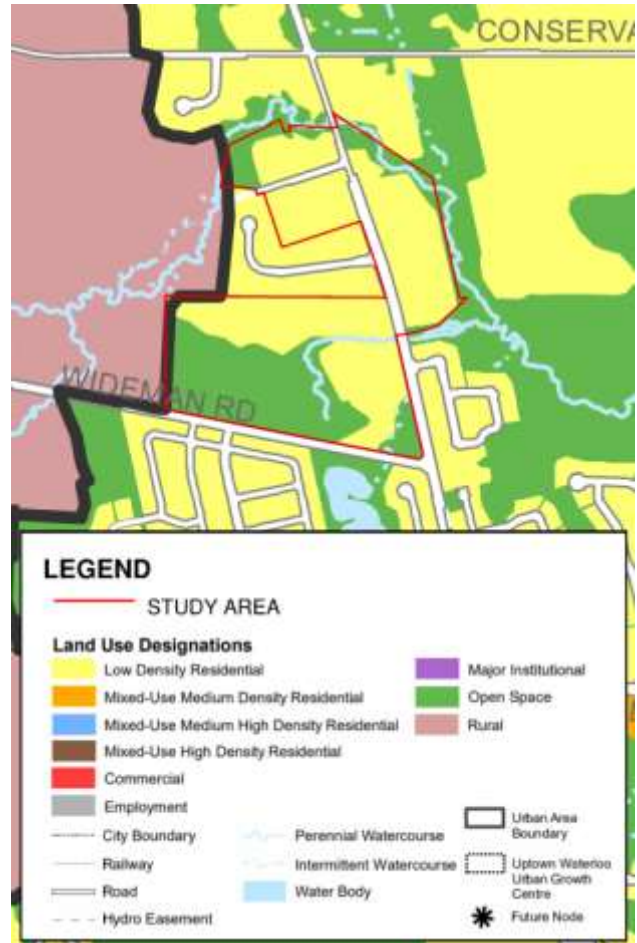


Figure 6 - Land Use Plan - City of Waterloo Official Plan Schedule 'A'

Policy 10.1.3(1) of the Official Plan states that a range of single-detached, semi-detached, duplex, triplex, townhouses, and terrace dwellings are permitted within the Low Density Residential Designation. A range of complementary uses, such as child care centres, community uses and spiritual uses are also permitted, in addition to residential uses (10.1.3(2)).

Within the Open Space designation, Policy 10.5.1(2) permits a range of uses including parks, green spaces, recreation uses, community gardens, and elements of the natural system.

It is the intent of the Official Plan that development within the Designated Greenfield Area contribute to the overall Region-wide density target of 55 persons and jobs per hectare across all Designated Greenfield lands in the City (Section 3.5).

Schedule A4: Natural System (**Figure 7**) of the Official Plan establishes the City’s Natural System which builds upon the Region of Waterloo’s Greenlands Network. Chapter 8 of the Official Plan sets out policies for the protection of this natural system and minimizing the impacts of natural hazards. It is the intent of the Official Plan to maintain, enhance, or restore the diversity, connectivity, and ecological functions of the City’s natural features through prohibiting incompatible lands uses and activities within or contiguous to the Natural System (8.2.2(2)).

Further, the Official Plan recognizes that a portion of the trail network will be within Core Natural Features and Supporting Natural Features of the Natural System. The alignment of new trails or expansions to the existing network will be evaluated through an appropriate study (8.2.2(11)).

To protect Core Natural Features from adverse impact and preserve their ecological function, appropriate buffers will be delineated through an Environmental Impact Statement through development application process (8.2.4(6)). These buffers are to remain in a primarily natural state. Approved works associated with public trails and stormwater management are generally permitted where there is no adverse environmental impact (8.2.4(9)).

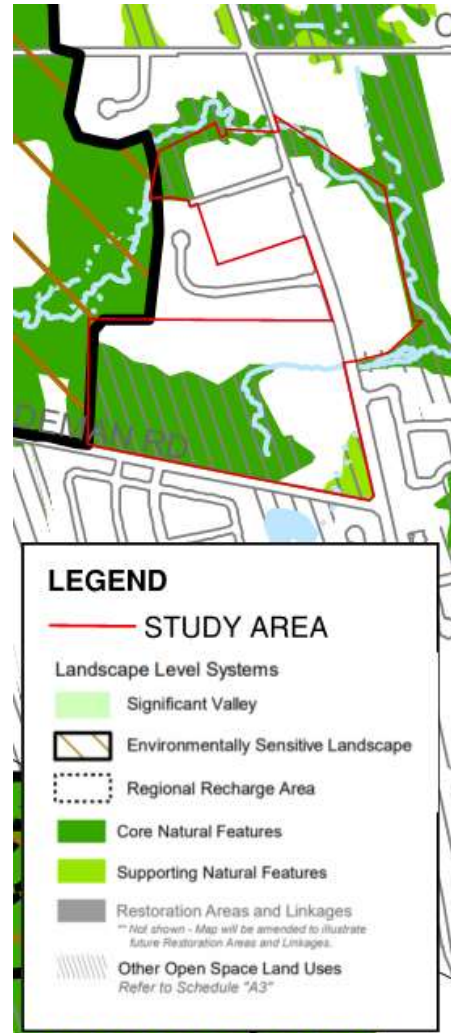


Figure 7 - Natural System - City of Waterloo Official Plan Schedule 'A4'

### 3.4.1 Specific Provision Area 3 (SPA 3)

A Specific Provision Area (SPA) provides greater clarity regarding the future use of land and development policy in specific areas identified across the City of Waterloo. The Study Area is subject to Policy 11.1.3 as it relates to SPA 3 (**Figure 8**). The policy directs that:

*“For lands in the area Erbsville community shown as SPA 3 on Schedule ‘A6’ – Specific Provision Areas, notwithstanding policies contained elsewhere in this Plan, development of these lands may proceed prior to the preparation of a revised District Plan, provided a block planning exercise has been completed for all lands subject to*



*the Specific Provision Area to the satisfaction of the City. In addition to any studies required as part of a development application, excluding site plan applications, the City will require necessary studies to ascertain that a pumping station is not required to service these lands. Any proposed development must demonstrate to the satisfaction of the City of Waterloo that the development will not interfere with any existing wells.”*



Figure 8 - Specific Provision Areas - City of Waterloo Official Plan Schedule 'A6'

### 3.5 Erbsville Implementation Plan (1979)

The Erbsville Implementation Plan is a policy document, approved in 1979, for the hamlet of Erbsville to guide the type and extent of future development in Erbsville through 1991. A portion of the Erbsville Implementation Plan will be replaced by this Block Plan to reflect the present-day state of the Erbsville South area.

### 3.6 City of Waterloo Zoning By-law

In September 2018, Council adopted Zoning By-law 2018-050 which regulates the use of land, buildings and structures across the City. Zoning By-law 2018-050 has been appealed and was not in effect at the time of completing this Report.

Much of the Study Area is zoned FD – Future Determination which only permits legally existing uses and buildings (**Figure 9**). The portion of the Study Area north of Regal Place and west of Erbsville Road is zoned a mix of Institutional (I), which permits a range of institutional and community uses, and Residential Three (R3), which permits single detached dwellings.

A small portion of the lands east of Erbsville Road, known as the Trillium Lands, are zoned Residential Eight with a holding symbol applied ((H)R8). This reflects a prior draft approved plan of subdivision for the site which is subject to a holding provision and may only proceed to development in conjunction with the development of the broader lands east of Erbsville Road within the Study Area. The R8 zone permits townhouses, freehold townhouses, stacked townhouses, and a triplex building.



Figure 9 - Zoning Map - City of Waterloo Zoning By-law 2018-050

Any future development applications within the Study Area (other than the Trillium Lands) will be subject to a zoning by-law amendment to apply an appropriate zone to facilitate development.

### 3.7 Draft Inventory of Significant Cultural Heritage Landscapes, 2019

The City of Waterloo is currently undertaking an inventory of significant Cultural Heritage Landscapes (CHLs) to identify and appropriately plan for areas valued by the community. On March 25, 2019, City Council received the draft CHL inventory report which describes and maps areas of heritage importance that are valued by the community.

The draft CHL report identifies the Erbsville residential neighbourhood, including the northern portion of the Study Area, as a potential CHL having

cultural heritage value or interest (Figure 10). The report states that:

*“Erbsville (WL-NBR-2) is a former pioneer settlement, is characterized by low density residential structures, several of which date to the mid-19th century. The former village contained a cluster of non-Mennonite immigrants, mainly European Germans, who developed the area post-1835. Natural features of the Erbsville area include Laurel Creek, two Environmentally Sensitive Policy Areas, a portion of Erbsville Park, and the Wideman Tributary.”*



Figure 10 - Map of Candidate Cultural Heritage Landscapes (Figure 2) - City of Waterloo

Further, two of the properties on the north side of Schnarr Street, and one outside of the Study Area along Erbsville Road have been identified as Listed Heritage properties.

The Erbsville landscape will be the subject of further study to identify heritage attributes and conservation actions. Until the study is undertaken, the landscape’s full heritage value and related conservation strategies are unknown.

## 4 Servicing

The scope of this Block Plan Study with respect to servicing such as water and wastewater and stormwater management, has been limited to a review of existing work and studies that have been completed, including the 2018 Environmental Study, to identify servicing considerations which may impact the Block Plan options. A detailed functional servicing review has not been completed for the Study Area and is anticipated to be completed in conjunction with future development applications.

### 4.1 Servicing Considerations

The City of Waterloo 2017 Water Distribution Master Plan delineates pressure zones across the City. The Study Area is outside of the pressure zone areas. Watermains extend along Erbsville Road and service the Regal Place subdivision.

As stipulated in the Specific Provision Area for Erbsville South, the servicing strategy prepared in support of future development applications must demonstrate that a pumping station is not required to service the lands. Future development applications should consider the Beaver Creek Road and Conservation Drive Upgrades and Extension of Municipal Services Class Environmental Assessment Study and the Staging and Implementation Plan for Consolidating Pressure Zones in North-Central Waterloo.

There is an existing 200 mm diameter watermain along Regal Place. As part of the development of the Study Area, and in particular Schnarr Street, the looping of this watermain should be investigated. For new development areas where a cul-de-sac is proposed, dead-end watermains should be avoided. If a dead-end watermain is necessary, it must comply with Section B.2.5.8 of the Region of Waterloo and Area Municipalities Design Guidelines and Supplemental Specifications for Municipal Services.

The City of Waterloo 2015 Sanitary Master Plan notes that the area around the intersection of Wideman Road and Erbsville Road can be serviced by a gravity sewer. It is anticipated that future

development would feed into the existing sanitary sewer network along Forest Gate Crescent. However, the capacity of the downstream sewer at this connection at Forest Gate Crescent needs to be confirmed with the City's sanitary sewer model.

The Erbsville community, north of the Study Area, is currently un-serviced by municipal sanitary sewers and would require a force main/pumping station to be fully municipally serviced. Future development applications should consider the Beaver Creek Road and Conservation Drive Upgrades and Extension of Municipal Services Class EA Environmental Assessment Study and the Staging and Implementation Plan for Consolidating Pressure Zones in North-Central Waterloo.

### 4.2 Stormwater Management

The 2018 Environmental Study offers several stormwater management recommendations for the Study Area as a whole and for each development area as shown in **Figure 3**.

Due to the relatively small drainage areas for the various development parcels, which limit the viability of constructed wetlands within the Study Area, a treatment-train approach is recommended, which starts with source level protections such as permeable surfaces. Low Impact Development (LID) should be employed through a servicing strategy, subject to soil type, to reduce alteration of water quality or quantity interactions between development sites and wetlands, such as the use of oil and grit separators.

The following principles and objectives are to be considered when developing the stormwater management strategy for the Study Area:

- Stormwater management facilities are required to provide peak flow control for the 5, 25, and 100-year storms.
- Regional storm peak flows and flood levels must be maintained or reduced where possible to mitigate the flooding risk to the broader Erbsville community.
- Low impact development measures (e.g., bioswales) should be considered on a site-

specific basis to reduce the alteration of water quality and quantity interactions between development sites and wetlands.

- The topographic low point around Wideman Creek could be an appropriate location for a stormwater management to maintain higher ground which is more suitable for the development of residential dwelling units.
- Extended detention control for erosion control is required for runoff volume.
- Development is to achieve an enhanced level of water quality control, in accordance with targets established by the Ministry of Environment.
- Negative thermal impacts on Laurel Creek and Wideman Tributary are prohibited.
- Development is required to provide both infiltration and maintain seepage towards wetland areas.
- Where infiltration is proposed, stormwater management facilities should include a winter bypass to reduce the impact of chlorides.
- Portions of stormwater management facilities, such as pond outfalls, will only be considered within the established buffer areas in accordance with Policy 8.2.4(9) of the Official Plan.
- Stormwater management facilities for Area 103 (**Figure 3**) must include or contemplate those in Area 105.
- If the existing driveway culvert serving Area 102 (**Figure 3**) requires replacement, it must be confirmed that it has the capacity to convey the 100-year peak flow from the Laurel Creek Village Subdivision stormwater management pond.

Within each of the development areas in **Figure 3**, the 2018 Environmental Study details the proposed stormwater management facilities for each area. The locations of the stormwater management facilities are shown conceptually, and opportunities to consolidate facilities should be explored through future development applications.

**Area 101** (approximately 2.7 ha.): Two ponds are proposed within Area 101. The first, located in the southeast portion of the property to provide

stormwater quantity and erosion control. The second is to be located at the western end of the parcel, and should provide stormwater quantity and erosion control for lands draining west toward Laurel Creek. This pond will also be linked to the Regal Place pond.

**Area 102** (approximately 0.9 ha.): This area currently drains towards Wideman Creek. Due to the small size of this area, stormwater management is recommended at the site level. If a pond is required in the opinion of the city, it should be situated in the northwest portion of the area.

**Area 103** (approximately 3.1 ha.) **and Area 105** (approximately 0.7 ha.): Area 103 was not included in the field surveys as it has already gone through extensive review and evaluation of environmental constraints and received planning approvals. The stormwater management strategy for Area 103 must also apply to that for Area 105, per a condition of draft approval of the plan of subdivision. One stormwater management pond is recommended in the southeast corner of Area 103. The pond should outlet to the buffer area in the southeast portion of the area, with flows then discharging to Laurel Creek.

**Area 104** (approximately 3.8 ha.): Due to the existing uses along Schnarr Street, there are no stormwater management ponds proposed for this area. A conceptual location is shown in Area 104, based on the lower topographic location within this area, which would drain towards Laurel Creek.

## 5 Traffic Impact Study

A Traffic Impact Study (TIS) has been prepared in accordance with the Region of Waterloo Transportation Impact Study Guidelines, adopted on September 18, 2013, and focuses on determining the incremental traffic impact on the proposed road network operations and surrounding boundary road network resulting from the proposed Block Plan.

This Traffic Impact Study has been prepared on the basis of conservative density assumptions which reflect the net developable areas identified in the 2018 Environmental Report and precedes the development of the Block Plan options presented in this report. These conservative assumptions will continue to be appropriate once the final development yields of the Block Plan are determined.

### 5.1 Existing Conditions

#### 5.1.1 Boundary Road Network

The Erbsville South Block Plan Study Area is accessible via the following roadways:

- **Erbsville Road** – is a north-south roadway classified as an arterial roadway under the jurisdiction of the Region of Waterloo. Erbsville Road has a two-lane cross-section within the Study Area. The posted speed limit varies along Erbsville Road within the Study Area, at a point located approximately 130m south of Regal Place. A posted speed limit of 60km/h is applicable along Erbsville Road south of that point, while a posted speed limit of 50km/h is applicable along Erbsville Road north of that point.
- **Conservation Drive** – is an east-west roadway classified as a major collector roadway under the jurisdiction of the City of Waterloo. Conservation Drive has a two-lane cross-section within the Study Area, with a posted speed limit of 50 km/h.
- **Wideman Road** – is an east-west roadway classified as a local road under the jurisdiction of the City of Waterloo. Wideman Road has a

two-lane cross-section to the south of the Study Area, with a posted speed limit of 60 km/h.

#### 5.1.2 Existing Transit Services

There are no transit routes currently servicing the Study Area frontage along Erbsville Road or Conservation Drive. The closest transit stops are located at the intersection of Erbsville Road at Laurelwood Drive, approximately 600m south of Wideman Road, which are serviced by Grand River Transit (GRT) Route 13.

Route 13 – Laurelwood, provides services between the Boardwalk and the University of Waterloo. It travels within the southeast quadrant of the Laurelwood Drive at Erbsville Road intersection. Route 13 has peak hour headways of approximately 20 minutes during the weekday AM and PM peak hours, 30 minutes on Saturday and 45 minutes on Sunday and holidays.

To address the challenges of providing conventional transit services in Northwest Waterloo, including a non-linear road network and lower residential density, Grand River Transit is piloting Route 903 Flex in Northwest Waterloo. Route 903 Flex is a pilot rideshare service which connects customers to existing bus stops or virtual bus stops between the hours of 6:15am-8:45pm.

#### 5.1.3 Existing Active Transportation Services

Within the Study Area, sidewalks are located on the south side of Wideman Road west of Erbsville Road, as well as the both sides of Erbsville Road south of Wideman Road and the east side of Erbsville Road between Wideman Road and Forest Gate Crescent. No sidewalks are located along Conservation Drive or Erbsville Road at the Study Area frontage.

Various cycling facilities are also located within the Study Area. Wideman Road is classified as a signed bike route, while Erbsville Road currently provides accessibility to cyclists via a paved shoulder. There are no cycling facilities along Conservation Drive near Erbsville Road.

**5.1.4 Traffic Data**

Based on the pre-consultation held with the City and Region of Waterloo staff, at which the Terms of Reference for this Study were confirmed, the following intersection assumptions have been established for review through the TIS:

- Conservation Drive at Erbsville Road (Existing);
- Erbsville Road at Wideman Road (Existing); and,
- Assumed Study Area access intersections with Erbsville Road (Proposed).

Turning movement counts (TMC) at the study intersection of Conservation Drive at Erbsville Road were provided to WSP by Region staff. The TMC were collected on September 26<sup>th</sup>, 2017. WSP used the 2017 volumes as a base to derive 2019 volumes using growth rates based on the *Conservation Drive and Beaver Creek Road Upgrades and Extension of Municipal Services* report completed by Stantec in 2015 and updated in 2017 (hereinafter referred to as the Stantec report). Details with regards to the derived growth rates have been included in Section 5.1.11 of this report.

Table 5.1 - 2019 Existing Traffic Operations

Intersection Name	2019 Existing Conditions					
	AM Peak Hour			PM Peak Hour		
	V/C	Delay (sec.)	LOS	V/C	Delay (sec.)	LOS
<b>Conservation Drive at Erbsville Road</b>						
Eastbound Left/Through/Right	0.14	15	B	0.09	15	C
Westbound Left/Through/Right	0.38	18	C	0.71	32	D
Northbound Left/Through/Right	0.00	0	A	0.00	0	A
Southbound Left/Through/Right	0.05	3	A	0.04	2	A
<b>Erbsville Road at Wideman Road</b>						
Eastbound Left/Right	0.22	12	B	0.09	13	B
Northbound Left/Through	0.02	1	A	0.06	2	A
Southbound Through/Right	0.15	0	A	0.23	0	A

For the intersection of Erbsville Road at Wideman Road, WSP commissioned TMC completed by Accu-Traffic Inc. on March 6<sup>th</sup>, 2019. Northbound and Southbound through volumes were then balanced with the derived 2019 volumes at the intersection of Erbsville Road at Conservation Drive in order to provide a more conservative analysis along the corridor.

**Figure 11** and **Figure 12** illustrate the 2019 existing traffic volumes during the AM and PM peak hours, respectively. The traffic data has been included in **Appendix A**.

**5.1.5 Existing Traffic Operations**

Intersection capacity analyses were completed for the study intersections to determine the existing Level of Service (LOS) during the weekday AM and PM peak hours. The intersection analyses were completed using Synchro 10.0 software.

The traffic operations analysis summary under existing conditions has been summarized in **Table 5.1** below. The Level of Service Definitions have been included in **Appendix B**. The Synchro analysis results have been included in **Appendix C**.

The study intersections operate with good Level of Service (LOS) under existing conditions. All turning movements operate with LOS C or better during the study periods, with the exception of the westbound left-turn movement at the intersection of Erbsville Road at Conservation Drive operating at LOS D during the PM peak hour. Both intersections show available capacity for future traffic growth.

### 5.1.6 Existing Sightline Obstructions and Remedial Measures

Based on feedback received through public consultation, WSP was informed of an existing sightline obstruction at the intersection of Erbsville Road at Conservation Drive.

Members of the public present at the public open houses voiced their concerns regarding the lack of available sightline for vehicles stopped at the westbound approach of Conservation Drive looking at vehicles travelling northbound along Erbsville Road.

According to the Transportation Association of Canada (TAC) Table 9.9.4, for a design speed of 60km/h a sightline of 130 m is required when looking at oncoming vehicles from the left. WSP completed a review of the existing sightline based on the intersection pavement marking (i.e. location of the stop bar). Review of existing conditions shows that the existing sightline is in fact obstructed by an existing barn located at the southeast corner of the intersection. Currently, vehicles are required to move forward closer to the intersection and place themselves into a potentially compromising position in order to see oncoming traffic, before being able to proceed through the intersection.

In order to improve the sightline at the study intersection, WSP recommends a shift of the stop bar along the westbound approach of Conservation Drive by 2.3m to the west towards the intersection. Using the recommended pavement marking, the sightline experienced by vehicles stopped at the intersection would no longer be obstructed by the existing barn. Vehicles would be able to see oncoming vehicles along Erbsville Road while stopped at the stop bar, no longer needing to move

forward closer to the intersection. The sightline of 130 m would be met with this modification.

Please refer to **Appendix H** for a review of the existing sightline, as well as an illustration of the recommended stop bar location and associated sightline analysis. Future Background Traffic Conditions

### 5.1.7 Horizon Year

As established per correspondence with the City and Region of Waterloo staff, a 10-year study horizon to 2029 has been selected to assess the impacts of the proposed block plan site generated traffic onto the study intersections.

### 5.1.8 Planned Roadway Improvements

As part of this 10-year horizon to 2029, a reconstruction of Conservation Drive is planned to be completed by 2022. This reconstruction is planned to improve the active transportation facilities along the study roadway (as detailed in **Section 5.1.9**), with no change to the traffic lanes. A potential widening of Erbsville Road is planned beyond 2029 from Columbia Street West to Wideman Road based on the Region of Waterloo Transportation Master Plan. As per the horizon year, it was not included within our analysis.

Additionally, an improvement has been recommended for the intersection of Erbsville Road at Conservation Drive as part of the Stantec report, as well as within the *Draft Waterloo Integrated Multi-Modal Transportation Study* completed by WSP in 2018 (hereinafter referred to as the IMMTS report). This recommendation consists of upgrading the existing two-way stop-control to an all-way stop control and implementing a westbound left-turn lane. As this proposed improvement has not been included in the Region's 10-year Capital Program, WSP will review future traffic operations at the study intersection as part of this study and assess the need for these improvements.

### 5.1.9 Planned Transit Improvements

There are no planned transit improvements for Conservation Drive or Erbsville Road at the Study Area frontage. However, as part of the IMMTS report, recommendations were made to explore

alternative transit service delivery models for isolated areas such as the subject lands (e.g. community bus route, subsidized taxi, home to hub). Therefore, improved transit service may be considered by the GRT to the Study Area in the future, but there are no current commitments by GRT to improve transit in the area.

#### 5.1.10 Planned Active Transportation Improvements

Road reconstruction is planned for Conservation Drive within the Study Area, which is planned to include a 1.8 metre raised bike lane and on both sides of the roadway, a sidewalk on the north side of the roadway and a 3.0 metre multi-use path on the south side of the roadway. These improvements are projected to be operational by 2022 per the City's capital project plan.

Additionally, based on correspondence with Region Staff, the implementation of sidewalks on both sides of Erbsville Road is planned in conjunction with the implementation of the proposed development, and funded through development charges.

As part of the IMMTS report, WSP recommended separate cycling facilities along Erbsville Road between Regal Place and Erb Street West, as well as pedestrian crossing improvements at the intersection of Erbsville Road at Conservation Drive. Please refer to **Figure 13** for an illustration of the existing, planned and proposed active transportation facilities within the Study Area.

#### 5.1.11 Traffic Growth

The forecasted 10-year traffic growth was established using growth rates derived from the Stantec report. As confirmed with Region staff, the traffic forecast completed as part of the Stantec report accounts for the changes in traffic volumes associated with background developments within the Study Area. Most of the growth is associated with the Beaver Creek Meadows District Plan, which will ultimately include 6,790 people and 406 jobs.

Using the 2015 Existing Traffic Volumes and 2035 Ultimate Traffic Volumes from the Stantec report, WSP derived annual compounded growth rates for Erbsville Road and Conservation Drive.

Based on the traffic growth calculations (detailed in **Appendix A**), WSP derived an annual compounded traffic growth rate of 3.46% for Conservation Drive and 2.60% for Erbsville Road. An industry standard traffic growth rate of 2.00% was applied to Wideman Road for the purpose of conservative analysis.

#### 5.1.12 Future Background Traffic Volumes

As stated previously, the Stantec report accounts for future background developments that would impact traffic along the study roadways. Therefore, 2029 future background traffic volumes were derived by applying the growth rates mentioned previously to the 2019 existing traffic volumes. **Figure 14** and **Figure 15** indicate the 2029 future background traffic volumes during the AM and PM peak hours, respectively.

#### 5.1.13 Left-Turn Lane Warrant Analysis Under Future Background Conditions

Based on the forecasted 2029 future background traffic volumes, WSP completed a left-turn lane warrant for the intersection of Erbsville Road at Wideman Road to determine if an exclusive turning lane was warranted along Erbsville Road. The left-turn lane warrant was completed using graphs provided in the Geometric Design Standards for Ontario Highways.

Results confirmed that a northbound left-turn lane is warranted for the study intersection (as detailed in **Appendix D**). Therefore, future background traffic operations were assessed assuming implementation of the 25 m auxiliary turning lane.

#### 5.1.14 2029 Future Background Traffic Operations

The traffic operations analysis summary under 2029 future background conditions has been summarized in **Table 5.2** below. The Level of Service Definitions have been included in **Appendix B**. The Synchro analysis results have been included in **Appendix C**.

The study intersection of Erbsville Road at Wideman Road is projected to operate with good LOS under future background conditions. All



turning movements are projected to operate with LOS C or better, showing available capacity for future traffic growth generated by the proposed development.

At the intersection of Erbsville Road at Conservation Drive, the westbound left-turn movement is projected to operate under critical conditions with a LOS E during the AM peak hour and LOS F during the PM peak hour. This is due to the high volume of left-turning vehicles during the study periods operating under stop control, in conjunction with a higher volume of traffic along Erbsville Road travelling under free-flow conditions.

To improve traffic operations at the Erbsville Road and Conservation Drive intersection, WSP recommends an all-way stop control and the addition of an exclusive westbound left-turn lane, which is in accordance with the recommendations made as part of the Stantec report and IMMITS report. With these recommendations in place, the study intersection is projected to operate with good LOS, with all turning movements operating at LOS C or better.

With applied recommendations, both the study intersections show available capacity for future traffic growth generated by the proposed development.

Table 5.2 - 2029 Future Background Traffic Operations

Intersection Name	2029 Future Background Conditions						2029 Future Background Conditions with Recommendations					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	V/C	Delay (sec.)	LOS	V/C	Delay (sec.)	LOS	V/C	Delay (sec.)	LOS	V/C	Delay (sec.)	LOS
<b>Conservation Drive at Erbsville Road</b>							<b>0.58</b>	<b>13</b>	<b>B</b>	<b>0.66</b>	<b>18</b>	<b>C</b>
Eastbound Left/Through/Right	0.25	19	C	0.16	19	C	0.15	10	B	0.10	11	B
Westbound Left							0.28	12	B	0.48	16	C
Westbound (Left)/Through/Right	0.71	37	E	1.35	209	F	0.18	9	A	0.35	12	B
Northbound Left/Through/Right	0.00	0	A	0.01	0	A	0.58	15	B	0.70	22	C
Southbound Left/Through/Right	0.07	3	A	0.05	2	A	0.40	13	B	0.66	20	C
<b>Erbsville Road at Wideman Road</b>												
Eastbound Left/Right	0.32	15	C	0.13	15	B						
Northbound Left	0.03	8	A	0.08	9	A						
Northbound Through	0.21	0	A	0.23	0	A						
Southbound Through/Right	0.19	0	A	0.30	0	A						

### 5.2 Future Total Traffic Conditions

As part of the traffic operations completed for the 2029 future total traffic conditions, WSP assessed the impact of site generated traffic assuming the most conservative scenario, which consists of the following development components:

- The estimated capacity for the Study Area – 311 dwelling units.
- The minimum number of accesses to the Study Area – 3 site accesses to Erbsville Road.

These assumed development yields were calculated based on the net developable areas identified in the 2018 Environmental Study and in consideration of greenfield take-out areas. A density of 55 persons and jobs per hectare and 3 persons per unit was assumed in estimating the development yield.

In determining the minimum number of accesses to the Study Area, it was assumed that the fewest number of connections to Erbsville Road would be made at Schnarr Street, Regal Plan, and Forest Gate Crescent.

These conservative assumptions will not have to be revisited should the Block Plan options evolve over the course of the Study.

Details regarding the site access layout and trip generation associated with this conservative analysis have been provided in the following sections.

#### 5.2.1 Site Access Layout Assessed

As part of this conservative analysis, WSP considered a scenario with the least amount of site accesses. As such, WSP assessed future total conditions assuming the following three accesses:

- Access via Schnarr Street.

- A site access opposing Regal Place, providing access to the east side of the subject lands (referred to as the East Access).
- A site access opposing Forest Gate Crescent, providing access to the west side of the subject lands (referred to as the West Access).

Should the finalized Block Plan include more site accesses, traffic operations would be projected to operate with better level of service and reduced delays compared to the findings of this TIS analysis as site generated traffic would be distributed amongst more intersections. The traffic analysis completed within this report is representative of the most conservative site access configuration for the Study Area.

**5.2.2 Trip Generation**

A trip generation model was completed for the Study Area based on density and dwelling unit capacity assumptions for the Study Area. A total of 311 dwelling units were used as the assumption for this analysis. Future development applications may propose a different number of dwelling units and achieve a different development yield.

Trip generation was completed using the Institute of Transportation Engineers (ITE) Trip Generation Manual (10<sup>th</sup> Edition), using the Land Use Code 210 for Single-Family Detached Dwelling Units. The number of dwelling units accessible via each of the three accesses considered was based on the location of each development block. **Table 5.3** shows the number of units for each development block and the associated access.

*Table 5.3 - Proposed Site Access and Associated Development Blocks*

Access	Development Block – Assumed Dwelling Units
Schnarr Street	Block 104 – 85 Dwelling Units
East Access	Blocks 103 & 105 – 89 Dwelling Units
West Access	Blocks 101 & 102 – 137 Dwelling Units

The trip generation associated with the overall Study Area and each access has been detailed within **Table 5.4**.

Based on **Table 5.4**, a total of 230 trips are projected to be generated by the proposed development during the AM peak hour (59 inbound and 171 outbound), and a total of 308 trips are projected to be generated during the PM peak hour (195 inbound 113 outbound), assuming the maximum number of dwelling units are developed within the Study Area.

**5.2.3 Trip Distribution and Assignment**

The trip distribution for the proposed Study Area generated trips is based on existing traffic patterns. The trip distribution is shown in **Table 5.5**.

Site generated traffic has been assigned to Conservation Drive and Erbsville Road based on the 2019 traffic volumes. No site generated traffic was assigned to Wideman Road as it only provides connection to other residential developments, as well as to Wilmot Line. Wilmot Line does not provide direct access to existing or proposed developments and there is a limited number of trips anticipated between the proposed development and the Township of Wilmot. For example, the Stantec report documents that the trip distribution of the Beaver Creek Meadows District Plan traffic to the Township of Wilmot is 1%. The 2016 Transportation Tomorrow Survey (TTS) shows that 1% of auto trips originating in the City of Waterloo during the AM peak period (6:00-9:00AM) are destined to the Township of Wilmot (as detailed in **Appendix E**). Therefore, site generated traffic was not assigned to Wideman Road.

**Figure 16** and **Figure 17** identify the site-generated trip assignment at the study intersections under the AM and PM peak hours.

Table 5.4 - Trip Generation

Development Component per Access	Density (units)	Trip Generation Source	Trip Generation Components	AM Peak Hour			PM Peak Hour		
				IN	OUT	TOTAL	IN	OUT	TOTAL
				T = 0.74 * X			T = 0.99 * X		
			Rate	25%	75%	100%	63%	37%	100%
			Directional Distribution						
Schnarr Street	85	ITE 10th Edition (LUC 210)	Volume	16	47	63	53	31	84
East Access	89			17	49	66	56	32	88
West Access	137			26	75	101	86	50	136
<b>Overall Development</b>			<b>Volume</b>	<b>59</b>	<b>171</b>	<b>230</b>	<b>195</b>	<b>113</b>	<b>308</b>

Table 5.5 - Trip Distribution

INBOUND Distribution		AM Peak Hour	PM Peak Hour
Conservation Drive	Eastbound	1%	1%
	Westbound	22%	23%
Erbsville Road	Southbound	29%	35%
	Northbound	48%	41%
<b>Total</b>		<b>100%</b>	<b>100%</b>
OUTBOUND Distribution		AM Peak Hour	PM Peak Hour
Conservation Drive	Westbound	0%	1%
	Eastbound	26%	20%
Erbsville Road	Northbound	33%	31%
	Southbound	41%	48%
<b>Total</b>		<b>100%</b>	<b>100%</b>

**5.2.4 Future Total Traffic Volumes**

The 2029 future total traffic volumes were derived by adding the site generated traffic volumes to the

future background traffic volumes. **Figure 18** and **Figure 19** provide the 2029 future total traffic volumes under the AM and PM peak hours.

### 5.2.5 Left-Turn Lane Warrant Analysis Under Future Total Conditions

Based on the future total traffic volumes at the site accesses, WSP completed left-turn lane warrant analyses to determine if exclusive left-turn lanes along Erbsville Road were warranted to facilitate access to the proposed development. The left-turn lane warrants were completed using graphs provided in the Geometric Design Standards for Ontario Highways.

Results show that exclusive left-turn lanes are warranted at all three site accesses along Erbsville Road (as detailed in **Appendix D**). Therefore, the 2029 future total traffic operations analysis was completed assuming implementation of the turning lanes as follows:

- A 15-metre northbound left-turn lane at the intersection of Erbsville Road at Schnarr Street.
- A 15-metre southbound left-turn lane at the intersection of Erbsville Road at East Access.
- A 15-metre northbound left-turn lane at the intersection of Erbsville Road at West Access.

A sketch illustrating the recommended lane configuration at the study intersections has been completed by WSP and included in **Appendix F**.

### 5.2.6 Future Total Traffic Operations

The traffic operations analysis summary under 2029 future total conditions has been summarized in **Table 5.6**. The Level of Service Definitions have been included in **Appendix B**. The Synchro analysis results have been included in **Appendix C**.

The study intersections of Erbsville Road at Wideman Road and Erbsville Road at all three site accesses are projected to operate with good LOS under future total conditions. All turning movements are projected to operate with LOS C or better.

The intersection of Erbsville Road at Conservation Drive is projected to operate with good LOS during the AM peak hour, with all turning movements operating with LOS C or better. During the PM peak hour, the northbound and southbound approaches are projected to operate at LOS E. Both approaches are projected to operate below capacity, with a

maximum delay of 42 seconds for the northbound approach. The remaining turning movements are projected to operate with LOS C or better.

All intersections and turning movements are projected to operate below capacity with no critical delay. Therefore, the intersections are not projected to be classified as critical per the Region of Waterloo Traffic Impact Study Guidelines. The 2029 future total traffic operations are projected to be acceptable within the Study Area.

For the purpose of a thorough analysis, WSP completed a signal warrant analysis for the study intersection of Erbsville Road at Conservation Drive (detailed in **Appendix G**). Results show that a signal is not warranted for the study intersection under 2029 future total conditions.

Finally, the traffic operations assessment completed as part of this study considers the maximum development density for the Study Area with the minimum number of access points. The forecasted traffic operations detailed in the table below reflects the most conservative assessment for the Study Area intersections. Therefore, the study intersections are projected to operate at acceptable conditions as shown in **Table 5.6**, or improved operations should additional accesses or a lesser density be implemented within the subject lands.

### 5.2.7 Conclusions

Overall, it is WSP's opinion that the traffic generated by the proposed development is projected to be accommodated by the future boundary road network. This paper includes a series of recommendations that will accommodate and mitigate traffic impacts. Should the nature of development change substantially from the assumptions used for this analysis, then the conclusions of the study may need to be revisited. This study also examined Erbsville Road at Conservation Drive, given the number of public comment received regarding safety concerns at this intersection. WSP's analysis confirms that an all-way stop is warranted at this intersection, as has been previously recommended, but a signal is not warranted. The City and Region will need to

coordinate with respect to planning for improvements at this intersection.

Table 5.6 - 2029 Future Total Traffic Operations

Intersection Name  Movement	2029 Future Total Conditions					
	AM Peak Hour			PM Peak Hour		
	V/C	Delay (sec.)	LOS	V/C	Delay (sec.)	LOS
<b>Conservation Drive at Erbsville Road</b>	<b>0.65</b>	<b>18</b>	<b>C</b>	<b>0.75</b>	<b>33</b>	<b>D</b>
Eastbound Left/Through/Right	0.16	11	B	0.12	13	B
Westbound Left	0.33	13	B	0.63	23	C
Westbound Through/Right	0.19	10	B	0.38	14	B
Northbound Left/Through/Right	0.76	23	C	0.89	42	E
Southbound Left/Through/Right	0.46	14	B	0.86	38	E
<b>Erbsville Road at Wideman Road</b>						
Eastbound Left/Right	0.37	17	C	0.15	17	C
Northbound Left/	0.03	8	A	0.08	9	A
Northbound Through	0.23	0	A	0.28	0	A
Southbound Through/Right	0.24	0	A	0.33	0	A
<b>Erbsville Road at Schnarr Street</b>						
Eastbound Left/Right	0.12	15	B	0.11	18	C
Northbound Left	0.01	8	A	0.03	9	A
Northbound Through	0.29	0	A	0.27	0	A
Southbound Through/Right	0.20	0	A	0.37	0	A
<b>Erbsville Road at East Access</b>						
Westbound Left/Right	0.12	14	B	0.10	17	C
Northbound Through/Right	0.28	0	A	0.28	0	A
Southbound Left	0.01	8	A	0.03	9	A
Southbound Through	0.21	0	A	0.34	0	A
<b>Erbsville Road at West Access</b>						
Eastbound Left/Right	0.19	15	C	0.17	19	C
Northbound Left	0.01	8	A	0.04	9	A
Northbound Through	0.25	0	A	0.27	0	A
Southbound Through/Right	0.22	0	A	0.35	0	A

### 5.3 Transportation Demand Management

The objective of Transportation Demand Management (TDM) programs is to maximize the capability of the transportation system to carry people and reduce the number of vehicles using the road. These TDM programs are typically aimed at increasing vehicle occupancy, providing incentives or disincentives to change the time one takes a trip or the need to take the trip at all. They are aimed at managing demand rather than increasing supply, by providing a comprehensive range of mobility alternatives. In effect, its aim is to reduce automobile use while accommodating travel demand by transit, walking, cycling, car sharing, or higher occupancy vehicles, and reducing the number of overall trips or trips taken in the peak period of demand.

For this Study, the Region of Waterloo Transportation Demand Management Checklist and associated rating was not used as it not designed for residential properties. Using the WSP TDM Matrix, as well as our experience in development TDM initiatives for proposed developments, WSP developed the following TDM recommendations:

- The provision of an information package to each household, which would include information on all transit services closest to the Study Area (route itinerary, transit stop location, service frequency) and the active transportation network within the Study Area.
- The provision of sidewalks within the Study Area, connected to the planned sidewalks along Erbsville Road. This will create a connection for the development's future residents to the City's pedestrian facilities network and help encourage non-auto travel modes.
- The provision of roadways within the Study Area that include shared lanes with sharrow markings, connected to the existing and future cycling facilities along Erbsville Road. As with the pedestrian facilities, this will create a connection for the future residents to the City's cycling facilities network and help encourage non-auto travel modes.

### 5.4 Active Transportation

The future active transportation network is detailed in **Section 5.1.10** and **Figure 13**. Additionally, during the pre-consultation meeting with City and Region of Waterloo staff, WSP was asked to consider pedestrian islands where applicable.

WSP reviewed the *Context Sensitive Regional Transportation Corridor Design Guidelines* prepared by Brook McIlroy Planning & Urban Design Inc. / Pace Architect with AECOM in March 2013. Based on the guidelines, consideration should be given to providing a pedestrian refuge island for a regional transportation corridor, particularly where the distance to the nearest controlled intersection is in the range of 500 metres or greater, and where there are seniors or school children (from junior kindergarten to grade 8) crossing the road.

Based on the first criteria (i.e., 500 metres from the nearest crossing) a crossing could be provided since much of the Study Area will be located over 500 metres from a crossing (i.e., the existing crossing at Creekside Drive and the proposed crossing at Conservation Drive). However, for the second criteria, the nearby schools are located near Laurelwood Drive south of the Study Area and pedestrians have the opportunity to cross Erbsville Road at Creekside Drive and Laurelwood Drive.

Since left-turn lanes are being recommended at the site accesses and Wideman Road, WSP recommends providing a refuge island north of Forest Gate Crescent as shown in **Appendix F**.



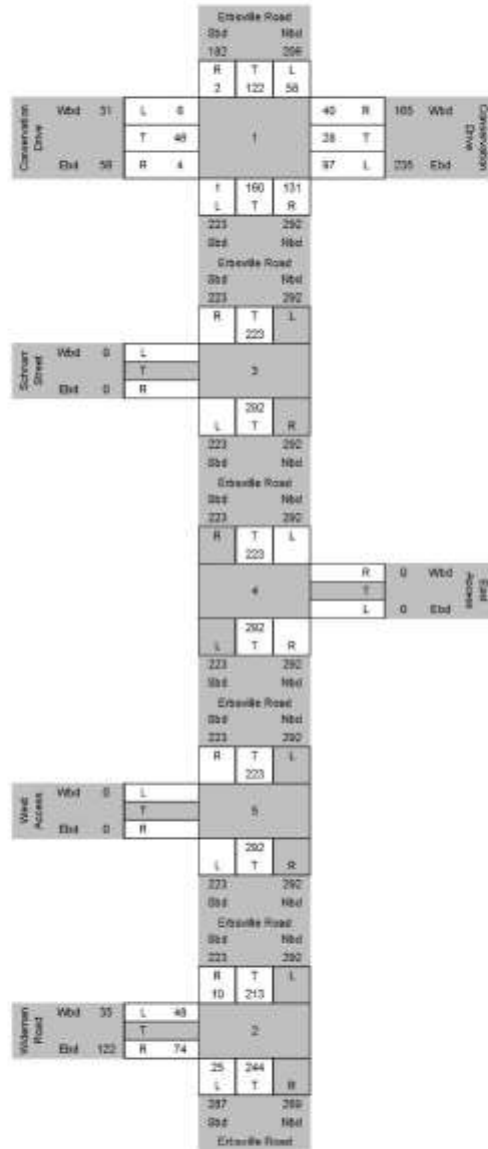


Figure 5-1  
 2019 Existing Traffic Volumes Balanced - Weekday AM Peak Hour  
 Erbsville South Block Plan Transportation Study



Figure 11 - 2019 Existing Traffic Volumes – Weekday AM Peak Hour

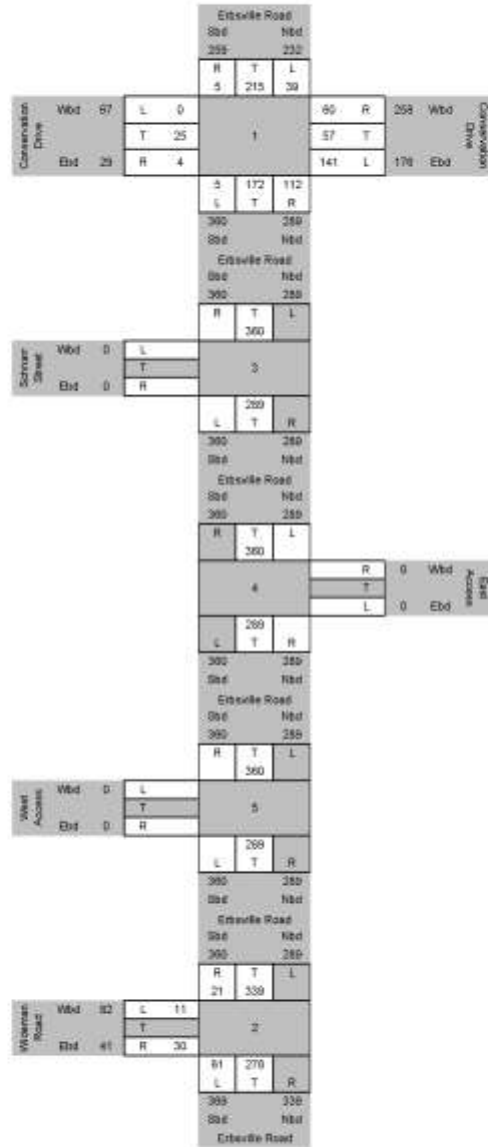


Figure 5-2  
2019 Existing Traffic Volumes Balanced - Weekday PM Peak Hour  
Erbsville South Block Plan Transportation Study



Figure 12 - 2019 Existing Traffic Volumes – Weekday PM Peak Hour



**Figure 5-3**  
**Future Active Transportation Network**  
**Erbsville South Block Plan Transportation Study**  
18M-02095-PIC Board\_20190328.dwg\_AT Network



Figure 13 - Future Study Area Active Transportation Network

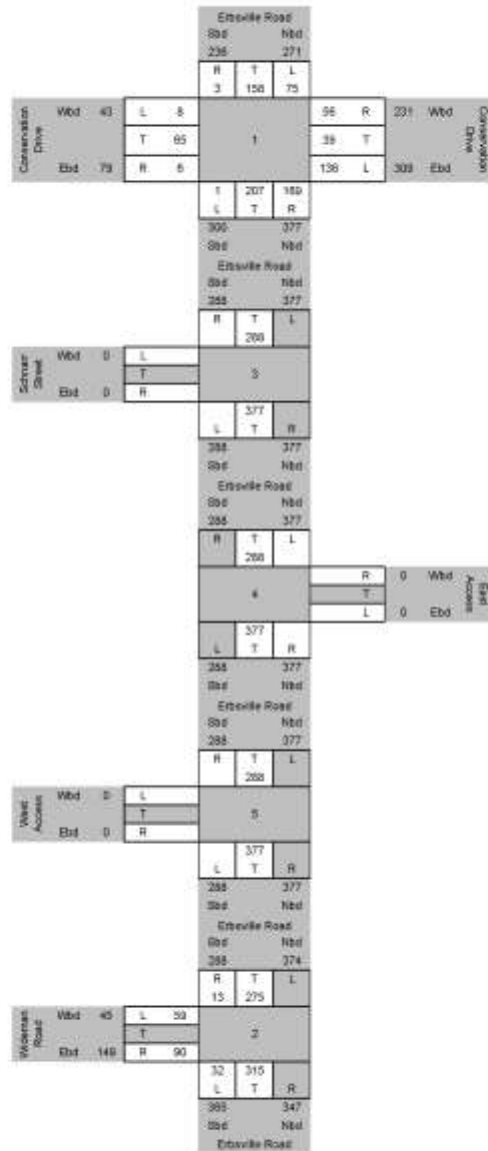


Figure 5-4  
 2029 Future Background Traffic Volumes - Weekday AM Peak Hour  
 Erbsville South Block Plan Transportation Study

Scale: NTS



Figure 14 - 2029 Future Background Traffic Volumes - AM Peak Hour

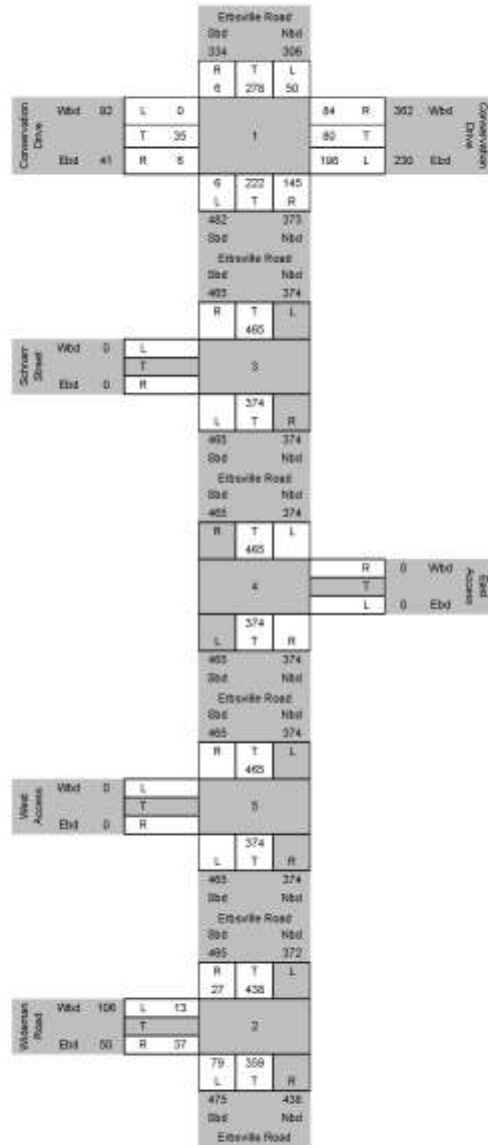


Figure 5-5  
2029 Future Background Traffic Volumes - Weekday PM Peak Hour  
Erbsville South Block Plan Transportation Study



Figure 15 - 2029 Future Background Traffic Volumes - PM Peak Hour

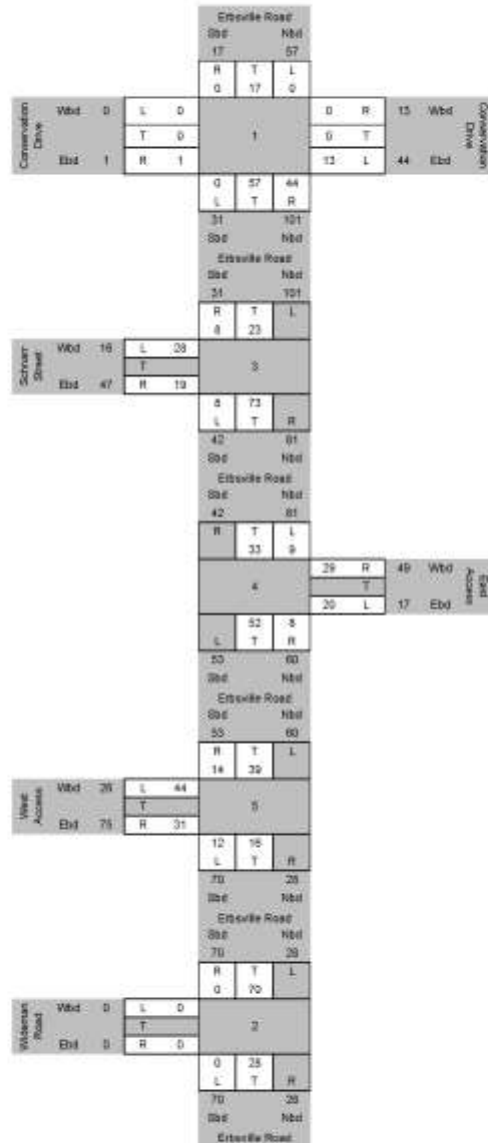


Figure 5-6  
 Site Generated Trip Assignment - Weekday AM Peak Hour  
 Erbville South Block Plan Transportation Study



Figure 16 - Site Generated Trip Assignment - Weekday AM Peak Hour

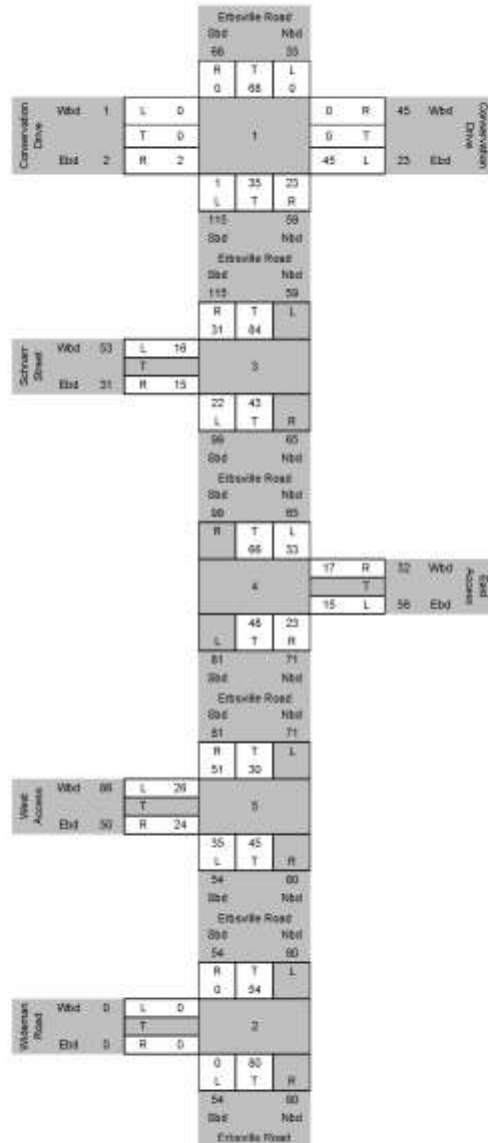


Figure 5-7  
Site Generated Trip Assignment - Weekday PM Peak Hour  
Erbville South Block Plan Transportation Study



Figure 17 - Site Generated Trip Assignment - Weekday PM Peak Hour

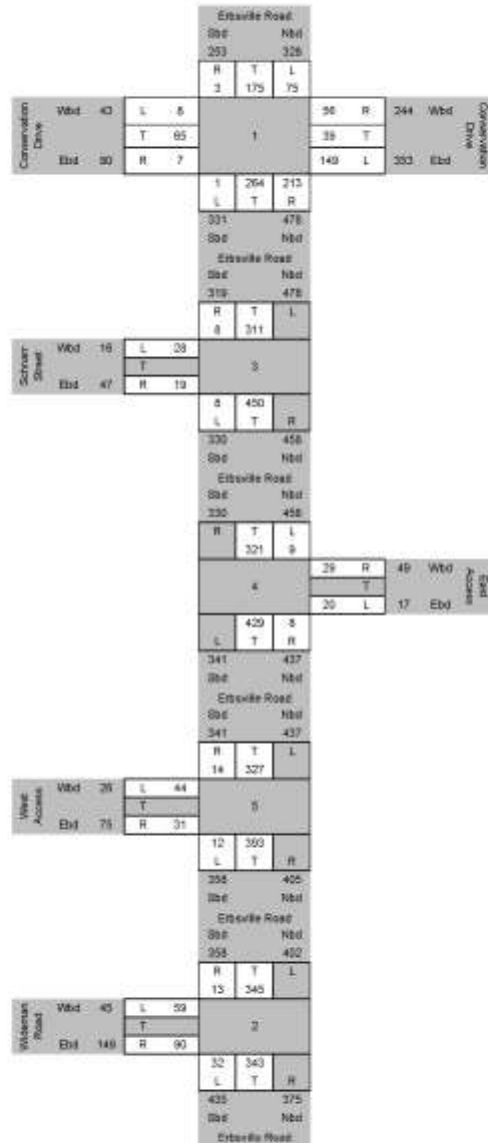


Figure 5-8  
2029 Future Total Traffic Volumes - Weekday AM Peak Hour  
Erbsville South Block Plan Transportation Study



Figure 18 - 2029 Future Total Traffic Volumes - Weekday AM Peak Hour



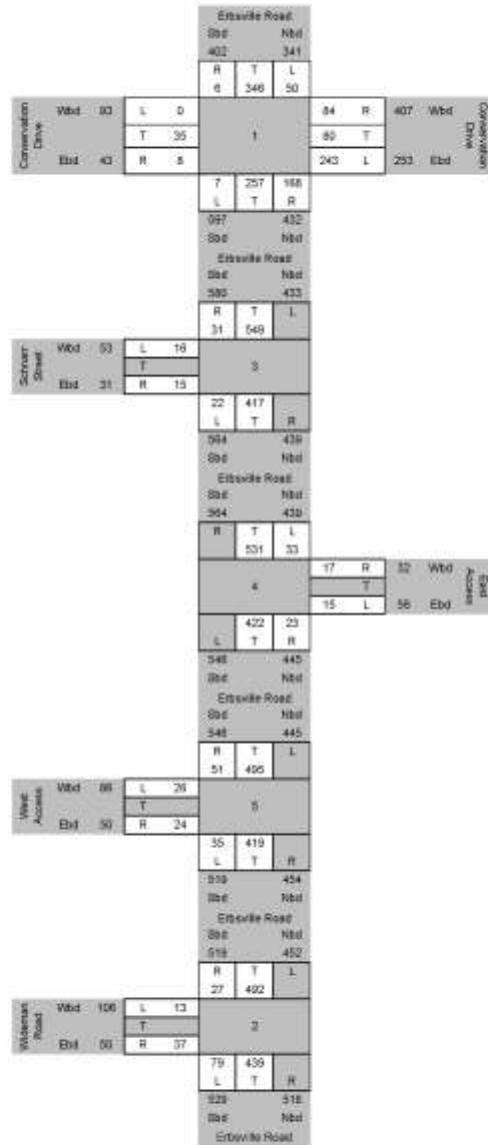


Figure 5-9  
2029 Future Total Traffic Volumes - Weekday PM Peak Hour  
Erbsville South Block Plan Transportation Study



Figure 19 - 2029 Future Total Traffic Volumes - Weekday PM Peak Hour

## 6 Consultation

A series of public consultation opportunities have been facilitated through this Study. The Study began with an initial public open house where the project team introduced the Study and received input on the types of concerns and considerations to be addressed. Following the completion of the Draft Discussion Paper and Block Plan options, a second public open house was held to receive comments and feedback on the work completed to-date.

Throughout this Study, the City of Waterloo also hosted a project webpage on its Engage Waterloo engagement portal where community members could leave comments, pose questions, and review project documents.

### 6.1 Public Open House #1

An initial public open house was held at the outset of the Study and was intended to introduce the Block Plan Study and seek input on the issues and opportunities that needed to be considered and addressed and gather the perspective and knowledge of area residents.

The public open house was held on February 21, 2019 at the YMCA Ontario Early Years Centre, which is located within the Study Area. The open house was attended by approximately 40 participants (**Figure 20**).



Figure 20 - Attendees at Public Open House #1

Open house participants had the opportunity to review display boards which outlined the

background of the Study and presented the Project Team's preliminary findings. This information engaged residents in conversations with the Project Team. These informal discussions with residents and stakeholders highlighted some of the key concerns and considerations to be addressed in this Study.

Attendees were also asked to share their knowledge of the Study Area to help in developing the Block Plan through an interactive map with sticky notes. A questionnaire was also provided to attendees; however, no responses or comments were received through this form.

Key themes of the comments received at the open house include:

- **Connections**, including multi-use trails and mid-block crossings to connect to key destinations such as schools, and pedestrian and cyclist safety.
- **Traffic**, including managing traffic flows to and through the community as well as safety of intersections.
- **Protecting key environmental features**, such as wetlands and sensitive habitats, and the use of buffers to enhance these areas. There is a strong presence of wildlife in and around the Study Area.
- **Built form**, including maintaining the low-density, historic character of the area.

### 6.2 Public Open House #2

A second public open house was held on June 11, 2019 to seek feedback and input on the Block Plan options and the results of the Traffic Impact Study. The public open house was held at the YMCA Ontario Early years Centre, which is located within the Study Area, and was attended by approximately 25 community members (**Figure 21**).



Figure 21 - Attendees at Public Open House #2

Open house attendees had the opportunity to review display boards which outlined the findings of the Draft Discussion Paper, including the Traffic Impact Study. The Block Plan concepts were also presented as ‘table top’ maps which allowed participants to gather around and share their thoughts and feedback.

Comments were received on the maps, through questionnaires available at the open house, and through the City’s online engagement portal (**Figure 22**).



Figure 22 - Attendees discussing the Block Plan concepts

Key themes of the comments received at and following the public open house include:

- **Protecting sensitive wildlife habitats and corridors**, including ensuring safe passage of

wildlife through the Study Area and across Erbsville Road.

- **Traffic flow**, including intersection design, flow and safety and the broader impacts of development in Northwest Waterloo.
- **Pedestrian and cyclist safety**.
- **Development density**, including ensuring that appropriate densities are contemplated at the periphery of the City.

### 6.3 Engage Waterloo Website

The City’s project webpage allowed visitors to leave comments about the Study and review project documents. As of June 2019, seven comments have been received. Key themes of the comments received online include:

- **Traffic flow**, and ensuring that traffic through the Study Area is adequately managed, particularly at the Erbsville Road and Conservation Drive intersection.
- **Active transportation**, including incorporating better sidewalks and cycling connections into the community.
- **Pedestrian access**, through the use of mid-block crossings and efficient pedestrian accesses to improve connectivity and safety.
- **Parks and open space**, including children’s play areas and sports fields should be incorporated into the Block Plan.
- **Environmental linkages**, to maintain and enhance connections across Erbsville Road towards the Laurel Creek conservation area.

## 7 Vision and Principles

The Erbsville South Study Area is a unique area within Waterloo that is planned for development with some unique characteristics and environmental constraints and opportunities.

The background work which has been completed for Erbsville South has identified some key constraints in the Study Area, which include:

- Environmental constraints which limit the feasible development options for the various blocks in the Study Area.
- Limited options to make logical road connections with existing development (i.e., Regal Place) and the need to meet Regional transportation guidelines.

Given this context, there are several opportunities which can be contemplated and incorporated into the Block Plan options. The Block Plan should ultimately:

- Establish principles for how to best design development to respect nature;
- Contemplate opportunities for passive recreation and walkability;
- Ensure there is visual and physical connectivity to the surrounding natural heritage areas; and,
- Provide opportunities for passive recreation.

At Public Open House #1, a series of preliminary development principles were presented for review and feedback. Stemming from these, the following draft vision and implementing development principles are proposed. These development principles account for the range of policy requirements, the Study Area context, and the 2018 Environmental Study.

### 7.1 Vision

The vision for Erbsville South is to create a complete and pedestrian-oriented community. Given environmental constraints, development will occur in smaller enclaves that are connected with their rich natural surroundings and the broader community. Generally, the intent of the Block Plan should be to

maintain and enhance the character of the former Erbsville settlement. The pattern of development should facilitate access to and conservation of nature and promote walkability for new residents through a clear pedestrian and vehicular street network that is supported by pedestrian scaled built form and streetscapes.

### 7.2 Development Principles

The Erbsville South Block Plan will be crafted in consideration of several guiding development principles which help achieve the vision. These principles will also serve as an initial framework to identify and evaluate the overall Block Plan options. Section 9.0 of this report will provide a preliminary evaluation based on these principles:

#### Environment

Natural features and environmentally-sensitive lands identified in the 2018 Environmental Study will be protected and natural hazards will be avoided by way of buffer areas and limiting development to areas outside of the regulatory floodplain. Opportunities to transfer ownership of environmentally-sensitive lands to the City of Waterloo should be explored.

A sustainable design should be employed that will help minimize the environmental impact of development, strive to implement low impact development principles, and reduce the need for dedicated stormwater management facilities.

Proposed residential blocks will not encroach beyond the developable areas, however, the trails may encroach slightly.

The Wideman Creek corridor and hedgerow is to be maintained and enhanced as a high-quality linkage feature within the Study Area, and an appropriate culvert with terrestrial benches is to be provided across Erbsville Road. Until such time that the Wideman Creek corridor is enhanced, the Regal Place hedgerow (along the southern edge of the Regal Place subdivision) is to be maintained.

Where appropriate, minor adjustments to the buffer area may be permitted to facilitate a more

contiguous protected environmental area and efficient built form.

**Built Form**

Shorter block lengths are used to improve the human scale of a neighbourhood and pedestrian experience. Where feasible, shorter block lengths are preferred. Feasibility is not demined by yield.

Multiple breaks along the street network are encouraged to show a strong visual connection to the natural area.

Visual connections to natural areas which improve the community’s sense of place, can be maximized by not orienting the rear of development (i.e., backyards) to block natural areas.

A mix of housing unit types will be encouraged to increase housing options and ensure a diversity of land uses.

Consideration for a variety of residential housing tenure and built form should be considered for development of irregular blocks within the developable areas.

Where possible, built form should face or flank onto open space, proposed parks, and roads. Reverse lotting onto Erbsville Road will be discouraged, but may be permitted on a limited basis to accommodate development constraints and ensure the efficient use of land.

Lands on the east side of Erbsville road, which consist of multiple properties, will need to be developed in a coordinated manner, particularly with respect to road access.

**Context and Compatibility**

Transition and compatibility to existing residential neighbourhoods will be important. To this end, similar types of housing (i.e., low and medium density residential) are encouraged immediately adjacent to existing low-rise residential uses to best maintain privacy for these uses.

To promote efficient use of land, more compact lot frontages and residential block sizes are encouraged. Along Erbsville Road, development will be

encouraged to face or flank onto the corridor, through the provision of single-loaded streets. Where a rear lotting condition is unavoidable, rear elevations will include architectural features and details that address views from the road. In addition, noise mitigation features that include both fencing and landscaping, will be provided.

**Mobility Network**

Logical access points onto Erbsville Road will be identified that consolidate accesses where possible and meet the Region of Waterloo guidelines – improving pedestrian and traffic flow, and overall continuity across the community.

By planning for the future introduction of Grand River Transit service to the Erbsville District, the neighbourhood will become more accessible and support other modes of transportation. This goal can be supported through appropriate roadway width and design, and ensuring that residential lots are generally located within 400 metres of any planned transit stops to promote walkability to transit stops.

Streetscape design should adopt a complete streets approach – and include elements such as sidewalks on both sides of roadways, short blocks, and where warranted, mid-block crossings and pedestrian refuge islands to increase safety and avoid the need for pedestrian backtracking.

The planned widenings or improvements to Erbsville Road and Conservation Drive should also adopt a complete streets approach, and are to include separated (raised) bicycle lanes and, where feasible, a multi-use trail.

Where possible, new cul-de-sacs and dead-end roadways should be avoided to promote circulation and optimize the use of land. Where they are provided due to development site constraints, they should terminate towards a view or natural heritage area. This ensures visual connectivity to the surrounding areas and the potential for connection points to future trails.

Development should provide connections with potential trails and plan for a full range of modes including cycling, walking, and transit. Safe trail

crossings across Erbsville Road and Conservation Drive should be provided.

### **Cultural Heritage**

In the interest of maintaining the cultural heritage value of the Erbsville settlement area, development is encouraged to address the street and not back onto Erbsville Road, and encourage an appreciation of the community's rich natural surroundings.

Development should be limited to 2- to 3-storeys and a variety of architectural styles and setbacks would be desirable in the interest of maintaining the character of the historic settlement area. Increased height may be permitted where appropriate to ensure housing variety (e.g. low-rise multi unit buildings in suitable locations).

The sensitive habitats and woodlots along the north side of Schnarr Street should be maintained.

## 8 Block Plan Options

Given the variety of conditions across the Study Area, the process of determining a preferred Block Plan will be an iterative process that begins with several high-level Block Plan concepts. Through evaluating the community and stakeholder response, and the performance of each option, the consulting team will be able to work towards crafting a Final Block Plan.

### 8.1 Basis and Assumptions

In preparing the Block Plan concepts, several assumptions were made in consideration of the Study Area opportunities and constraints. The Erbsville South Study Area is heavily constrained by environmental features and the existing road network which limits access points, which together restrict the options for configuring the Block Plan. The Block Plan concepts have been prepared within the development areas proposed in the 2018 Environmental Study, and carry forward the stormwater management recommendations which are summarized in Section 2.1.4 of this report. Further, it was assumed that residential and open space uses would be contemplated as the principal land uses within the Study Area. However, there may also be opportunities to consider institutional or community service uses to the south of Schnarr Street. To the south of Erbsville, at Laurelwood Drive, a commercial plaza, mixed-use node, and secondary school will provide opportunities and amenities to residents.

Maximizing and efficiently using the land within the Study Area will be critical to optimizing its development potential. The primary distinguishing feature between the Block Plan options will be the proposed access points, which will in turn influence the block pattern and overall built form of Erbsville South.

Due to the size and access constraints of the area along Schnarr Street, there is less flexibility in the lot configuration, which limits the ability for development to address Erbsville Road through the provision of a single-loaded local road. The lands to

the east of Erbsville Road offer the most flexibility in terms of lot patterns and road network configuration. The areas south of Regal Place and west of Erbsville Road are heavily constrained with environmental features, and the existing road network within the Study Area limits options for efficient road connections.

### 8.2 Block Plan Options

Three Block Plan options have been developed to conceptualize future possible layouts of the Study Area which show the conceptual access points, configuration of development blocks, and general locations of open spaces and stormwater management facilities (**Figure 23, 24, and 25**).

The conceptual road network shown in each of the options is for discussion purposes only and to show how future development could proceed and function in the Study Area. The road networks can therefore be altered to reflect detailed requirements such as stormwater management requirements and detailed lot patterns. The Final Block Plan will not show a conceptual local road network.

It is not the intent of this Study to provide definitive recommendations regarding the road network, but rather to confirm desirable design principles and to consider the feasibility of development at a high level, which will inform and guide future development applications.

Additionally, all three options maintain the existing land uses on the north side of Schnarr Street and further contemplate the small development block at the south end of the Study Area for a mid-rise apartment building or townhouse development. As such, no detailed right-of-way is shown connecting this block to Erbsville Road.

#### 8.2.1 Option 1

Option 1 (**Figure 23**) minimizes the number of units that back onto the eastern side of Erbsville Road using window streets and flanked lots to promote visibility between the street and natural areas. It is also comprised of the following elements:

- Low- to medium-rise residential uses are the predominant land use.

- A new road access connecting across to Schnarr Street and a new east-west connection south of Regal Place.
- All the streets which are perpendicular to Erbsville Road on the west side terminate towards the natural features, allowing for permeable views into these areas.
- All areas are shown for residential uses, and locations for stormwater management facilities are identified. The residential areas have the flexibility to be developed as stormwater management facilities where needed.
- The narrow development block to the south of Regal Place is connected to Erbsville Road via one access which terminates into a cul-de-sac – where a park and stormwater management facilities would be located. The residential lots in this area front onto an internal parkette.

### 8.2.2 Option 2

Option 2 (**Figure 24**) is intended to show a mix of different residential and community uses that could be contemplated in the Study Area. However, this diversity of uses limits opportunities to establish views to the natural areas. It is also comprised of the following elements:

- A diversity of proposed uses, including residential low- to medium residential including apartment units, as well as institutional/community service uses south of Schnarr Street on the existing City-owned lands. While the lands north of Schnarr Street are not anticipated to be redeveloped, should this occur, medium density uses should be promoted due to their proximity to the institutional/community use.
- The institutional/community use is pulled closer to Erbsville Road for greater visibility and presence along the street. The potential park is situated closer to the natural area, and the stormwater management facilities proposed to the northwest can be incorporated into the design of this park/open space.
- The block to the east of Erbsville Road reflects the draft approved plan of subdivision. It provides a connection across Erbsville Road

from Regal Place, and has units either flanking or facing onto Erbsville Road through window streets;

- The narrow development block south of Regal Place is proposed as a low-rise development with one main access terminating into a cul-de-sac. A parkette is proposed along the south of the right-of-way as a visual break in the development and to integrate into the natural area.

### 8.2.3 Option 3

Option 3 (**Figure 25**) is intended to demonstrate possible alternate configurations of the conceptual road network and follows the existing neighbourhood character by establishing connections to existing streets. It is also comprised of the following elements:

- Low- to medium-rise residential uses are the predominant land use;
- The block south of Schnarr Street is comprised of residential units backing onto Regal Place and towards Erbsville Road. A parkette is proposed towards the western corner of the area which can be incorporated with potential stormwater management facilities.
- New road accesses connecting across to Regal Place and Schnarr Street on the east side of Erbsville Road. These would also provide visual connections to the natural features.
- Development would either flank or back onto Erbsville Road which is consistent with the character of the surrounding neighbourhood.
- The narrow development block to the south of Regal Place has units fronting onto the right-of-way which would run behind the existing units along Regal Place. Further into this development block, other units would flank onto the right-of-way or front onto a potential park or stormwater management facility. The cul-de-sacs in this block also allow for permeability into the natural areas.



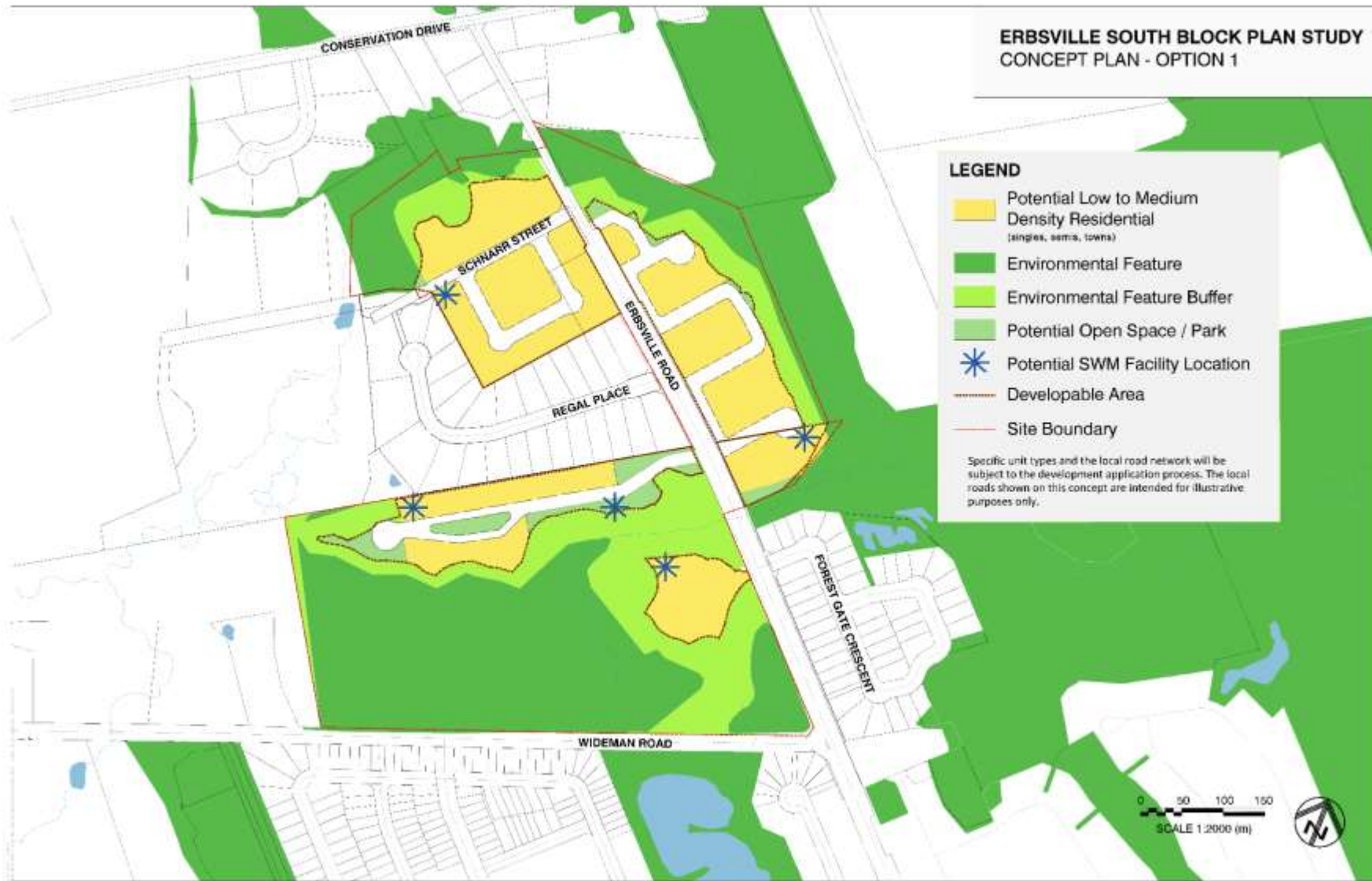


Figure 23 - Concept Block Plan Option 1

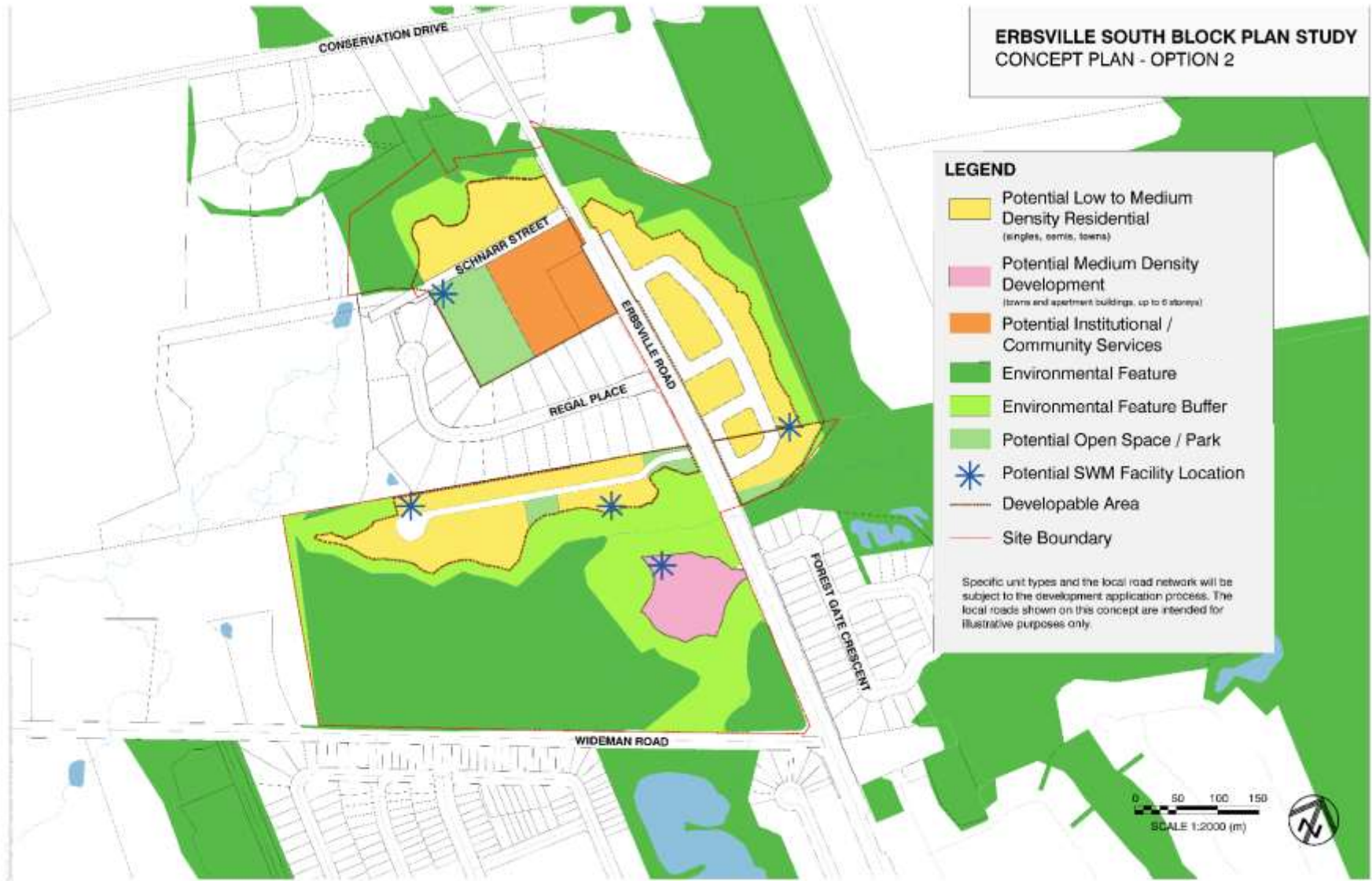


Figure 24 - Concept Block Plan Option 2

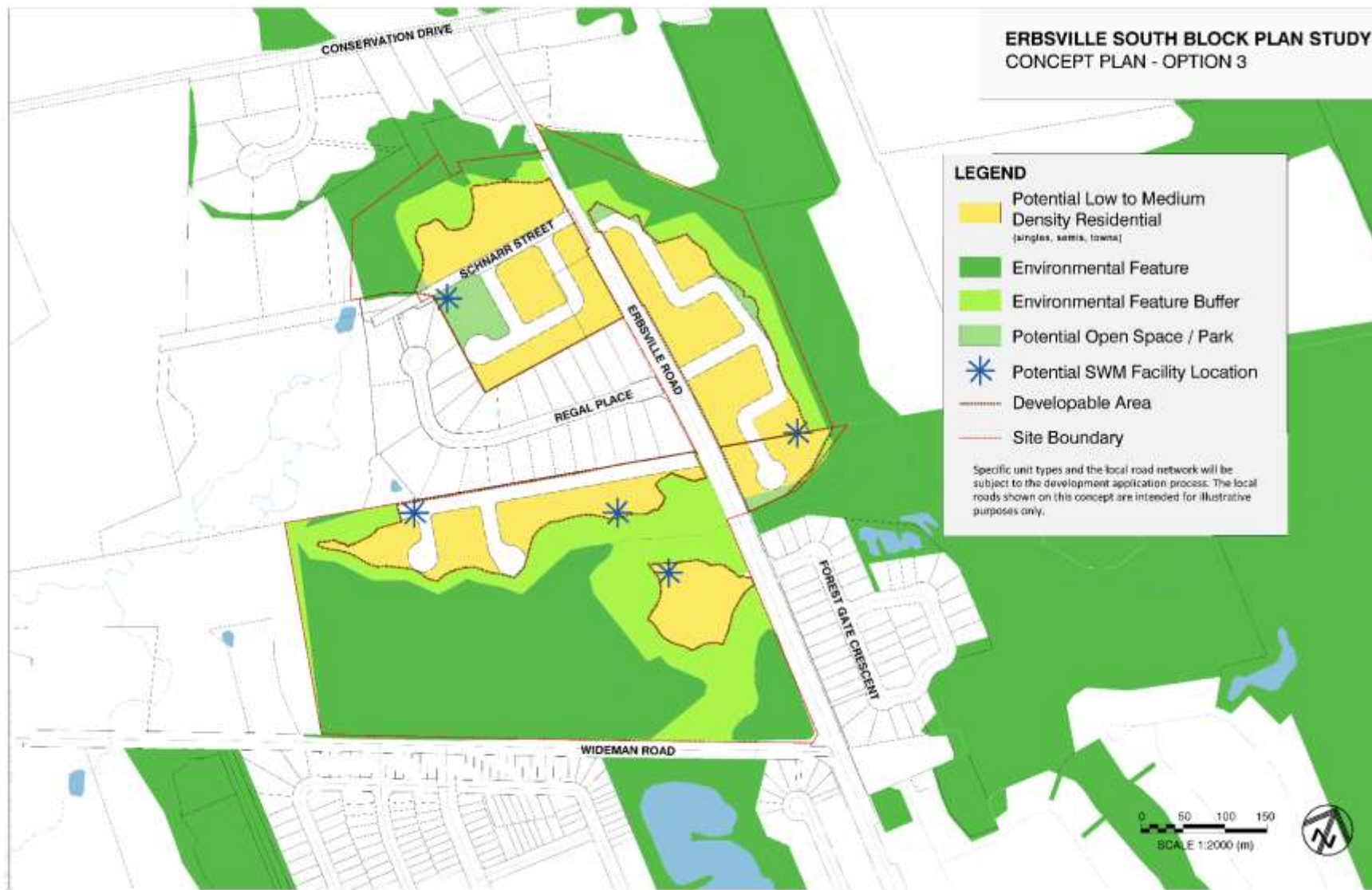


Figure 25 - Concept Block Plan Option 3

## 9 Evaluation of Block Plan Options

The Block Plan options have been evaluated to understand the degree to which they achieve the vision and principles set out in Section 7. Following this evaluation, a preferred Block Plan option will be prepared to confirm the findings and recommendations of the Traffic Impact Study. The preferred Block Plan will represent a hybrid option between the three concepts, informed by community and stakeholder feedback and project team refinements.

The evaluation Block Plan options is organized into the principles presented earlier in this Report

### Environment

The intent of this Block Plan Study is principally to carry forward the recommendations of the 2018 Environmental Study to protect the natural features and environmentally-sensitive lands in and around the Study Area.

All of the Block Plan options limit the extent of development to be outside of the buffer areas and outside of the regulatory floodplain, ensuring development does not encroach into protected areas identified in the 2018 Environmental Study. Through the development of implementing policy and through the preparation of scoped Environmental Impact Studies as part of development applications, the recommendations of the 2018 Environmental Study will be carried forward, and thus all options can achieve the stated principles.

Each option depicts the potential locations of stormwater management facilities across the Study Area, based on the 2018 Environmental Study. Through the detailed design process, there will likely be opportunities to consolidate stormwater management facilities and employ low impact development measures to reduce the need for dedicated stormwater management ponds. Further, the potential open space/park blocks shown in each

of the concepts could be logical places to integrate stormwater management facilities.

The 2018 Environmental Study recommends that the Wideman Creek corridor and hedgerow be maintained and enhanced as a high-quality linkage feature. Until such time that the Wideman Creek corridor is enhanced, the Regal Place hedgerow (along the southern edge of the Regal Place subdivision) is to be maintained. The road network as depicted in Options 1 and 2 presents the best opportunity to adequately buffer the Regal Place hedgerow along the Study Area boundary, behind the proposed future development parcels. These options will also allow for the enhancement of the Wideman Creek corridor which acts as a significant wildlife linkage across the Study Area.

Further, the configuration of planned open spaces/parks adjacent to the buffer areas in Option 1 south of Regal Place and east of Erbsville Road will help create a more contiguous environmental area and provide an additional buffer between development and environmentally-sensitive areas. This approach to smoothing of buffers to create more uniform edges is supported by the 2018 Environmental Study.

Climate change is an important consideration, and the City must to consider the potential impacts of climate change that may increase the risk associated with natural hazards (Section 3.1.3 of the Provincial Policy Statement).

Riverine floodplains are regulated by the Grand River Conservation Authority. Regulations are based on flood standards set by the Province. For this area, the standard is the Hurricane Hazel storm event – Hurricane Hazel was a storm that hit the Toronto area in October 1954 that saw 285 millimetres (11.22 inches) of rain fall in 48 hours. Both the City and the Grand River Conservation Authority have policies that set out what development can and cannot happen in the regulatory floodplain. For this area, only minor alterations and additions to existing buildings or structures may be permitted subject to meeting a number of technical criteria.

Climate change will result in an increased frequency and severity of extreme weather events. As set through Provincial regulation, floodplain limits are based on a rainfall distribution patterned after Hurricane Hazel. In considering climate change, the issue at hand is the need to incorporate appropriate margins of safety. City staff understand that Hurricane Hazel has an estimated 0.3%-0.1% chance of occurring any given year. Given the sheer magnitude of Hurricane Hazel, coupled with the fact that it remains the Provincially-mandated Regulatory Storm, City staff are of the opinion that the Hurricane Hazel standard incorporates a sufficient margin of safety to address climate change at this time. Also, the Province recently released the Ontario's Special Advisor on Flooding Report – *An Independent Review of the 2019 Flood Events in Ontario*. The report contains 66 recommendations. One of those recommendations is for the Province to undertake a review of the flood event standards (e.g. Hurricane Hazel), with a view to providing for current science and climate change, such as a specified minimum freeboard. This may result in further guidance from the Province in the future which can be incorporated into the Official Plan.

### **Land Use and Built Form**

All three options focused principally on residential and recreational, with some options identifying potential community uses in conjunction with the existing City-owned lands. Commercial uses were not contemplated within any of the options because there was no interest expressed by landowners to develop commercial uses, the development sites were constrained, and there is a commercial node just to the south of the study area, at Erbsville Road and Laurelwood Drive.

A cohesive and efficient built form, which reflects the unique function and identify of Erbsville South is desirable. Overall, all three Block Plan options contemplate low- to medium-density residential uses across the Study Area. In Option 2, the medium-density residential development block at the northwest corner of Erbsville Road and Wideman Road has been contemplated to accommodate a low

rise apartment building. All options can support the principle of achieving a mix of different unit types.

One of the built form principles identified is to ensure that development fronts or flanks onto roads, open space, and park space. Instances where development backs onto these features is discouraged – particularly along Erbsville Road. Options 1 and 2 present the strongest opportunities to have development front or flank onto Erbsville Road through window streets and single-loaded roads. The configuration of the conceptual road network in Option 3 would orient a significant amount of development to rear-lot onto Erbsville Road.

Further, Options 1 and 2 introduce multiple breaks in the blocks along the internal street network east of Erbsville Road which helps establish a strong visual connection to the surrounding natural areas and improve pedestrian connectivity.

Through this Study, it has been noted that the City of Waterloo is considering its future needs and options as they relate to the parcel of City-owned land currently occupied by the YMCA Early Years Centre. Option 2 was developed to demonstrate that community service or institutional uses may be appropriate on these lands. Should these lands remain in City ownership and be developed with institutional or open space uses, there would be opportunities to provide a transition to the existing development along Schnarr Street, and offer community uses to the Erbsville area. To this end, Block Plan policies should reflect that both residential and City-related uses are permitted in this area.

Further, the conceptual road network shown in Option 2 reflects the 2010 Draft Approved Plan of Subdivision for what was formerly known as the Trillium Lands, at the southern corner of the Study Area, east of Erbsville Road, which contemplated bungalow-style townhouse units.

All of the options proposed meet the vision and principles. The Block Plan should not be highly prescriptive about the types of units permitted, as most lots are generally appropriate for a mix of unit

types. Compatibility is further discussed later in this evaluation. With respect to the City owned land, it is desirable to maintain dual permission for institutional, park or residential uses, as all of these uses are appropriate and achieve the principles.

A related consideration is the need to provide opportunity for affordable housing. In the context of this study, a flexible range of unit types, ranging from single detached, semi-detached, townhouse units and apartment units will help contribute to the City's mix of housing types. This must also be balanced with the need to align the permitted uses with the developer/market needs and to ensure compatibility. Consideration may also be made to integrate policies regarding laneway housing and to permit second suite units as a potential source of more affordable housing options.

### **Context and Compatibility**

Ensuring that future development fits within the context of the Study Area and is compatible with adjacent neighbourhoods is a key consideration. The immediately neighbouring areas are characterized by single detached dwelling units. To that end, low- and medium-density residential land uses are shown in each option, which is similar to and can be designed to be compatible with surrounding developments.

The medium-density development block at the northwest corner of Erbsville Road and Wideman Road is well separated from immediately neighbouring development and would be an appropriate location to contemplate an apartment dwelling development of up to 4 storeys, which is the maximum height permitted in the Official Plan's Residential land use designation. Taller buildings are not recommended as they are not contemplated in the Official Plan, which identifies other areas of the City as the focus of taller buildings and greater densities. There would be opportunity in the Block Plan and through the development application process to further ensure compatibility, such as the provision of buffers, separation/setbacks and landscaping to ensure there will be no impacts on adjacent uses. A 4-storey building would also

represent a modest increase in height compared with adjacent residential areas,

### **Mobility Network**

Each option shows a conceptual road network which accounts for the various access options and development block patterns. It is desirable to consolidate road access points to Erbsville Road where feasible to meet Regional guidelines and improve traffic flow. Overall, Options 2 and 3 best utilize the existing road connections to Erbsville Road, including those across from Regal Place, and across from Schnarr Street.

It is desirable to plan for the introduction of Grand River Transit service to the Study Area and broader Erbsville area. This can be achieved through appropriate roadway design and by ensuring that residential lots are located within a 400-metre walk of possible future transit routes. The configuration of the development areas in Option 1 and 2 create greater permeability through the neighbourhood from Erbsville Road, which would facilitate more direct walking routes to potential future transit stops. Further, the medium-density development block in Option 2 will support the introduction of transit services with a greater population density within the Erbsville South area.

Where possible, new cul-de-sacs and dead-end roadways should be avoided to promote both pedestrian and vehicular circulation and optimize the use of land. Given the constraints on the block south of Regal Place, there are limited options to avoid a cul-de-sac or dead-end condition on all options. Overall, Option 2 limits the number of cul-de-sacs and dead-end roadways on the east side of Erbsville Road.

There are significant opportunities to establish connections with the existing and planned trail system in and around the Study Area. Each option presents opportunities to establish trail connections – either through mid-block pathways or via park/open space blocks, to promote active transportation.

Ultimately, the Erbsville South Block Plan should not prescribe an internal road network; rather, it should establish core principles to guide the ultimate

configuration of development, which will influence the design of the local road network. This will allow the developer with appropriate flexibility to meet the principles of the Block Plan while providing for efficient, compact development. Conceptual locations of trails and active transportation facilities should be shown in the Block Plan but would be subject to implementation in the development approval process.

strong physical and visual connection to the surrounding natural areas from Erbsville Road.

### **Cultural Heritage**

The historic settlement area of Erbsville to the north of the Study Area boundary is a former pioneer settlement characterized by low-density residential structures, which together with the surrounding natural features, have warranted a portion of the Study Area being identified as a potential Cultural Heritage Landscape (CHL) having cultural heritage value or interest through the City’s Cultural Heritage Landscape Inventory Project. Cultural heritage can include structures, spaces, or natural elements that are valued in conjunction for their meaning or relationship.

Generally, all three options achieve the cultural heritage principles for the Study Area. These principles relate to the built form of the community and protecting sensitive landscapes.

Low- to medium-density residential uses (e.g., single detached, semi-detached, townhouse units) are shown as the primary land use. Adjacent to the CHL, the low- to medium-density residential uses shown in all three Block Plan options will help maintain the character of the historic settlement area.

Options 2 and 3 present the greatest opportunity to enhance and protect the Laurel Creek Corridor north of Schnarr Street, which also includes heritage-designated residential units. The added open space and institutional uses shown in these options will allow for greater control and compatibility with the existing development north of Schnarr Street.

The single-loaded roads – whereby development would face towards Erbsville Road, present an opportunity to employ high-quality architecture in buildings and form a visually appealing street. Further, the use of window streets will allow for a

## 10 Conclusions and Recommendations

The preparation of a Block Plan for Erbsville South represents the final step in satisfying the policy requirements of Specific Provision Area 3 in the City of Waterloo Official Plan. The Block Plan will ensure the orderly and thoughtful development of the Erbsville South Area, and will ensure that significant environmental features are protected and enhanced.

A core principle of the Block Plan will be to carry forward and implement the findings and recommendations of the 2018 Environmental Study. The 2018 Environmental Study provides guidance on the measures and consideration which need to be taken to ensure the sensitive environmental features surrounding the Study Area are protected and enhanced.

Through the public and stakeholder consultation conducted to-date, environmental protections, traffic concerns, and a coordinated approach to development within the Study Area and with its broader surroundings became clear considerations to address.

Given the constraints to development in the Study Area (e.g., environmental features and existing development), it became evident that a Block Plan which permits a certain degree of flexibility in development is preferred, while setting out the foundational design and other principles to guide future development applications. A flexible approach to the Block Plan will allow for more detailed design of the internal road network, will permit a range of low- to medium-density housing types, and will facilitate a coordinated approach to development through future applications.

Implementation of the Block Plan will require an amendment to the City of Waterloo Official Plan. This will include integration of policies to address the overall vision and principles, along with policies to support the intended land use structure and urban design objectives.

Additional supportive policies regarding transportation, stormwater management and water/wastewater servicing will also help to ensure that development occurs in an orderly and thoughtful manner which best optimizes development opportunities while achieving the land use and design intent.

This Discussion Paper provides the basis for developing the Block Plan. The Block Plan will be subject to further refinement.