



CITY OF
Lethbridge

West Highlands Area Structure Plan



CITY OF
Lethbridge

**WEST HIGHLANDS
AREA STRUCTURE PLAN**

**City of Lethbridge
910 – 4 Avenue South
Lethbridge, Alberta T1J 0P6**

Adopted by City of Lethbridge By-law No. 5287, October 4, 2004

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PREAMBLE

The West Highlands Area Structure Plan Bylaw No. 4779 was originally adopted by the City of Lethbridge in June, 1996. The original ASP accounted for development of a portion of the NE ¼ Sec.34-8-22-4, and was prepared prior to the development of any of these lands. In early 2004, the owner of a portion of the NW ¼ Sec. 34-8-22-4 approached the City to determine the best method of preparing these lands for development. It was determined, due in part to the proposed alignment of Benton Drive, and also as a result of the desire to plan for complete neighbourhoods, that the most appropriate course of action was to include portions of the NW ¼ Sec. 34-8-22-4 within the boundaries of the West Highlands Area Structure Plan. As part of this change Bylaw 4779 will be repealed and replaced with a new bylaw.

1.0 INTRODUCTION

1.1 Area Structure Plan Purpose and Objectives

Section 633 of the Municipal Government Act, 1995 states: "(1) For the purpose of providing a framework for subsequent subdivision and development of an area of land, a council may, by bylaw, adopt an Area Structure Plan."

The purpose of this Area Structure Plan is to provide a framework for preparing previously undeveloped areas for new development. To this end, it is intended that the plan identifies and provides for a range of development opportunities.

The objectives of the plan are as follows:

- To ensure that future development in the plan area conforms to the general goals and objectives of the Municipal Development Plan (MDP).
- To ensure that the pattern of land use reflects opportunities afforded through the area's proximity to major arterial roads, and the adjacent developments.
- To ensure that the placement and design of roads in the area forms rational linkages to University Drive, Garry Drive, Walsh Drive, and Benton Drive.
- To ensure a logical sequence of development in relation to utility servicing concepts for the plan area.

1.2 Background Context of West Lethbridge

The westward expansion of the City across the Oldman River and onto the West Lethbridge peninsula was recommended as a major direction for growth in the 1964 General Plan. Following this recommendation, the Oldman River Regional Planning Commission prepared a report titled: "The Urbanization of West Lethbridge" in 1969, the approval of which by City Council established the principles for West Lethbridge development. It was proposed that development should follow a "Village Concept".

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The Area Structure Plan (ASP) must comply with higher level plans that have previously been adopted. Specifically, the ASP must be in compliance with the Municipal Development Plan, which in turn must conform to the generally broad policies set out in the Intermunicipal Development Plan. In this way, a hierarchy of mutually supporting plans is established.

1.2.1 The Intermunicipal Development Plan

A new Intermunicipal Development Plan (IDP) between the City of Lethbridge and the County of Lethbridge has been adopted by both Councils. In accordance with the policies of the new IDP, this plan has been circulated to the County for their review and comment.

1.2.2 The Municipal Development Plan

The City of Lethbridge Municipal Development Plan, Bylaw No. 5205 is a "long range land use plan. It is used to help guide the City's future growth and physical development and ensure that our community remains a pleasant and attractive place to live. It deals with: how land is used in the City; the City's physical form; and, where the City will grow in the future."

1.2.3 The "Urbanization of West Lethbridge" Report

Although not a statutory plan, this document is significant in terms of past implementation of the City's policy decision made in an earlier (1964) General Plan to expand the City west of the Oldman River. The "Urbanization of West Lethbridge" Report also established the Village development planning concept.

The Village development planning concept evolved largely from planning principles introduced in the early 1900's in Europe and the United States by proponents of the "neighbourhood" and "garden city" ideas. A sense of community and identity were both considered to be important components of the Village planning concept. Generally, with a school at its centre, the Neighbourhood was intended to be an area to which a small child could relate; the Village, with a major park and commercial centre, would be the area to which an adult would frequently relate. A network of pedestrian walkways and green spaces would add to the Village's open and park-like setting.

In West Lethbridge, each Village was intended to be approximately one square mile in area and contain two Neighbourhoods of roughly 6,000 persons each. Neighbourhood level services and facilities would be centrally located in relation to each Neighbourhood, while services requiring a larger threshold population would be centrally located between two Neighbourhoods to serve the entire Village.

The Village development planning concept has served as the framework for planning and development to date in West Lethbridge.

West Highlands Area Structure Plan City of Lethbridge

The basic principles of the Village development planning concept are as follows:

- A Village is normally formed by a coalition of two Neighbourhoods. Each Village will contain two Public elementary schools and each school will represent a nucleus for a Neighbourhood of approximately 5 - 6,000 persons. A Separate elementary school, serving an area equal in size to a Village should be centrally or conveniently located within each Village.
- The Village is the major unit of residential development. The Village unit is approximately one square mile in area and is bounded on all sides by arterial roadways. Each Village will contain approximately 11-12,000 people.
- Each Village unit will be designed to be energy efficient. Services such as commercial centres, health clinics, and schools, as well as medium and high density housing, will be centrally or conveniently located and strategically placed along major public transit routes. Placement of all land uses should ensure that roadways and services are used as efficiently as possible. Residential layout and lot design shall be as energy efficient as possible.
- Each Village unit should contain one Village commercial centre located at the intersection of an arterial and collector roadway, and designed to provide a wide range of goods and services. Each Village commercial centre will be designed for a trade area of approximately 11 - 12,000 persons.
- Each Village may contain local commercial facilities located at the interior of the Village and designed to provide a limited range of convenience goods and services. The local commercial centre will be designed for a trade area of approximately 5,000 persons.
- Each Village will contain a variety of housing types. Residential dwellings of similar types should be arranged in small clusters and these clusters dispersed throughout each development stage.
- The park classification system proposed in the City of Lethbridge Draft Open Space Plan will be used to define and organize open space in each Village. An open space linkage must be a functional and enjoyable part of the overall open space system, and may consist of a combination of sidewalks, boulevards or separately-dedicated open space walkways.

The "Urbanization of West Lethbridge" report identifies a regional commercial site located in the vicinity of the intersection of Highway 3A/Highway 25 and the University Drive. It also identifies the area north of this intersection as industrial uses. The salient features of this plan included (reference page 18): "The industrial service and regional commercial uses have been grouped around the major transportation network of road and rail providing the ease of accessibility from Lethbridge and the surrounding area that these activities are designed to serve. The activities conceived for this area are (a) a regional shopping centre, (b) an industrial park, comprised of industries and warehousing activities, (c) regional oriented transient accommodations and services."

2.0 SITE ANALYSIS

2.1 Location, Legal Description and Land Ownership

The West Highlands planning area is outlined in **Figures 1 and 2**. The plan area encompasses approximately 78.8 hectares and is bound on the east by University Drive, on the north by Walsh Drive, on the south by the future extension of Garry Drive, and to the west by the future extension of Benton Drive.

Table 2.1 and Figure 3 outlines the current major landowners included in the West Highlands Area Structure Plan, as below:

Table 2.1 – Land Ownership

OWNER	APPROX. AREA	% OF TOTAL
1. * Pt. of NE¼ 34-8-22-4 West Highlands Land Development Corp.	52.50ha	66.62 %
2. Pt. of NW¼ Sec. 34-8-22-4 838 Land Developments	26.30 ha	33.38%
TOTAL AREA	78.80 ha	100 %

* Portions of these lands have been subdivided and sold to individual developers and landowners.

2.2 Topography and Drainage

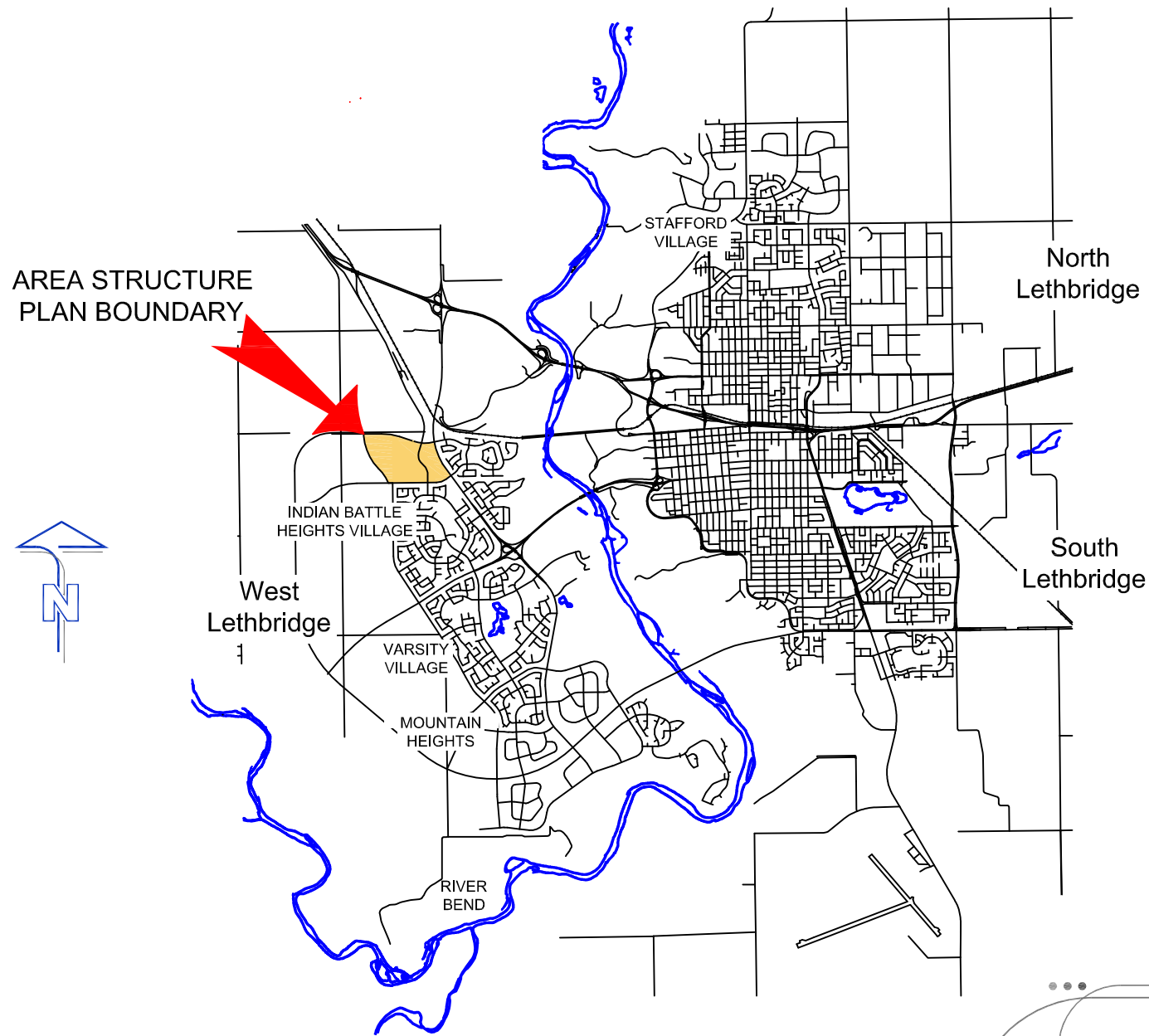
The general topography exhibits an undulating or rolling character with several existing sloughs and poor drainage areas. The planning area has a general slope to the northeast (see **Figure 4**).

2.3 Soils and Vegetation

The majority of the plan area is currently in agricultural use. The Canada Land Inventory designates land in the plan area as predominantly Class 3 for agriculture, having moderately severe limitations that restrict the range of crops. With irrigation and good management these lands are fair to moderately high in productivity for a fair range of crops.

Soils conditions pose no constraints to conventional building practices associated with residential and commercial construction.

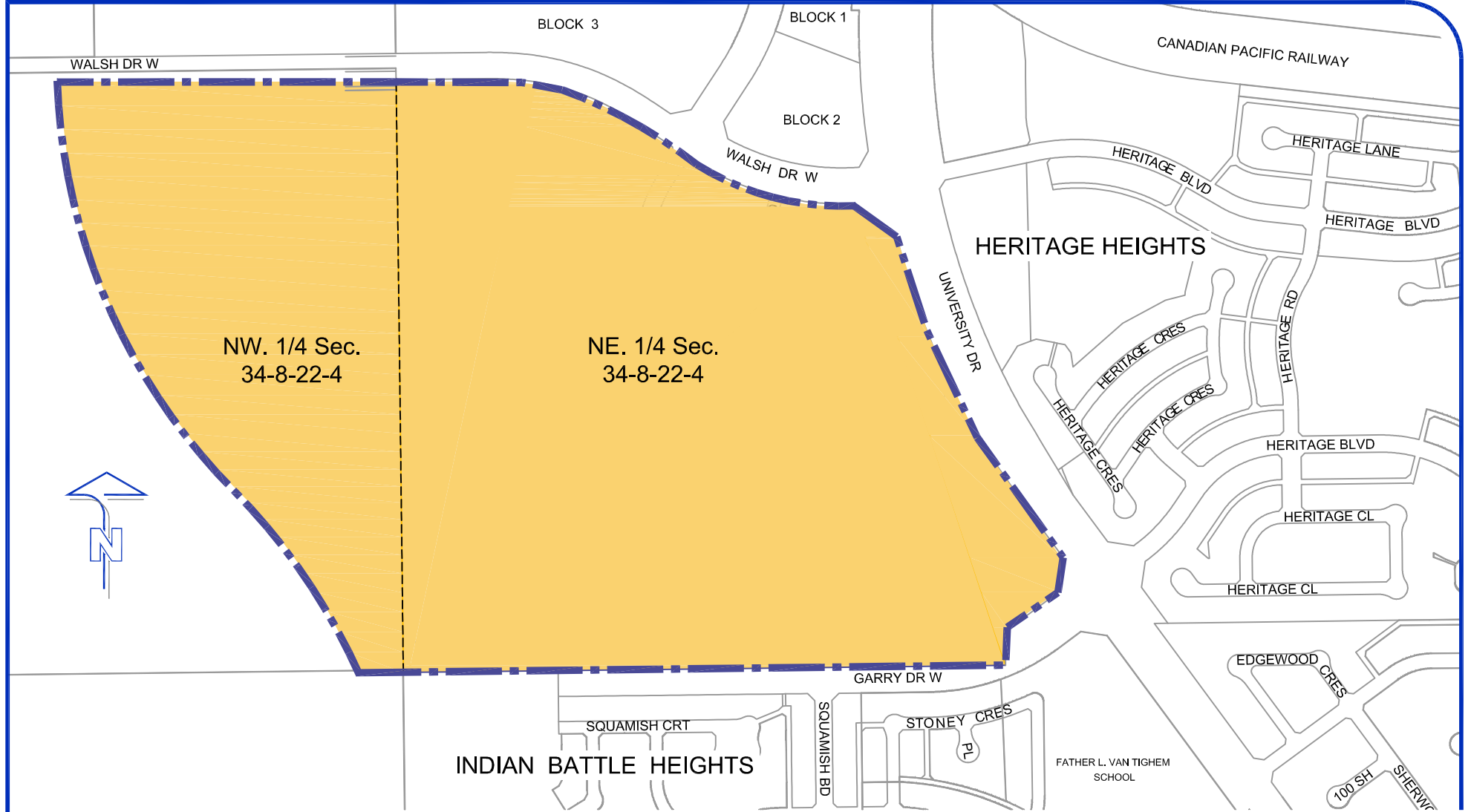
The site has been cultivated and there are no existing trees.



West Highlands
Area Structure Plan

Location Plan

Figure - 1



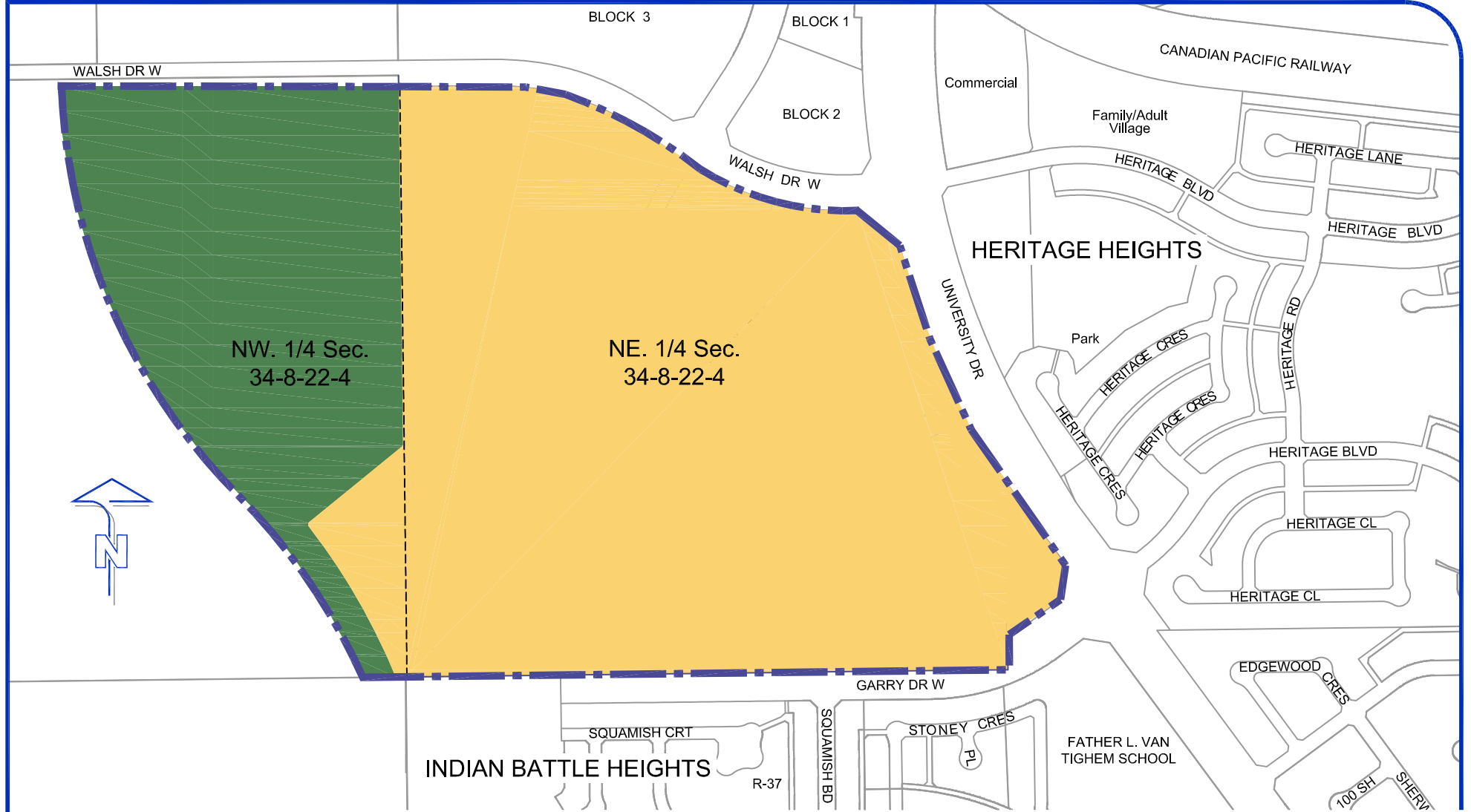
LEGEND

- AREA STRUCTURE PLAN BOUNDARY
Gross Area = 78.80 ha
- AREA STRUCTURE PLAN BOUNDARY

**West Highlands
Area Structure Plan**

Plan Boundaries

Figure - 2



LEGEND

 AREA STRUCTURE PLAN BOUNDARY

Ownership:

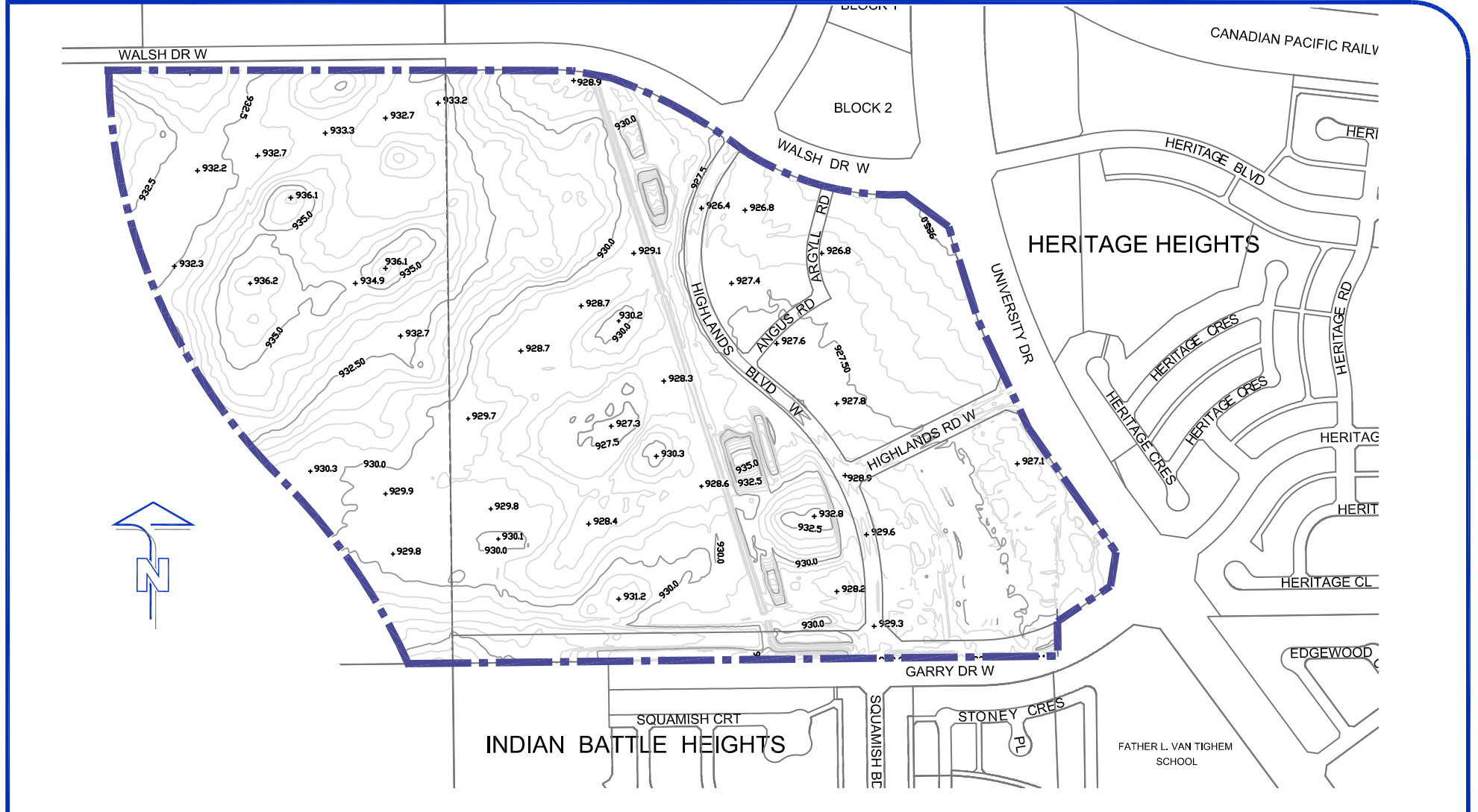
 West Highlands Development Corp.

 838 Land Development LTD.

**West Highlands
Area Structure Plan**

Land Ownership

Figure - 3



LEGEND

 AREA STRUCTURE PLAN BOUNDARY

Elevations are in metres and are referenced to geodetic datum.

**West Highlands
Area Structure Plan**

Contour Analysis

Figure - 4

2.4 Archeological

The topography of the area combined with the distance from the escarpments suggests a low probability for the presence of prehistoric archeological sites. No known historic period sites have been recorded in the proposed development area. Cultivation will have likely destroyed any archeological evidence that may have existed. At the time of Outline Plan preparation, Alberta Community Development will be contacted to determine the need, if any, for any further historical resources work in this area.

2.5 Coal Mine Subsidence

It is recommended that a geotechnical study be undertaken to specifically address the West Highlands area prior to the approval of an Outline Plan or any tentative plans of subdivision.

2.6 Visual Analysis

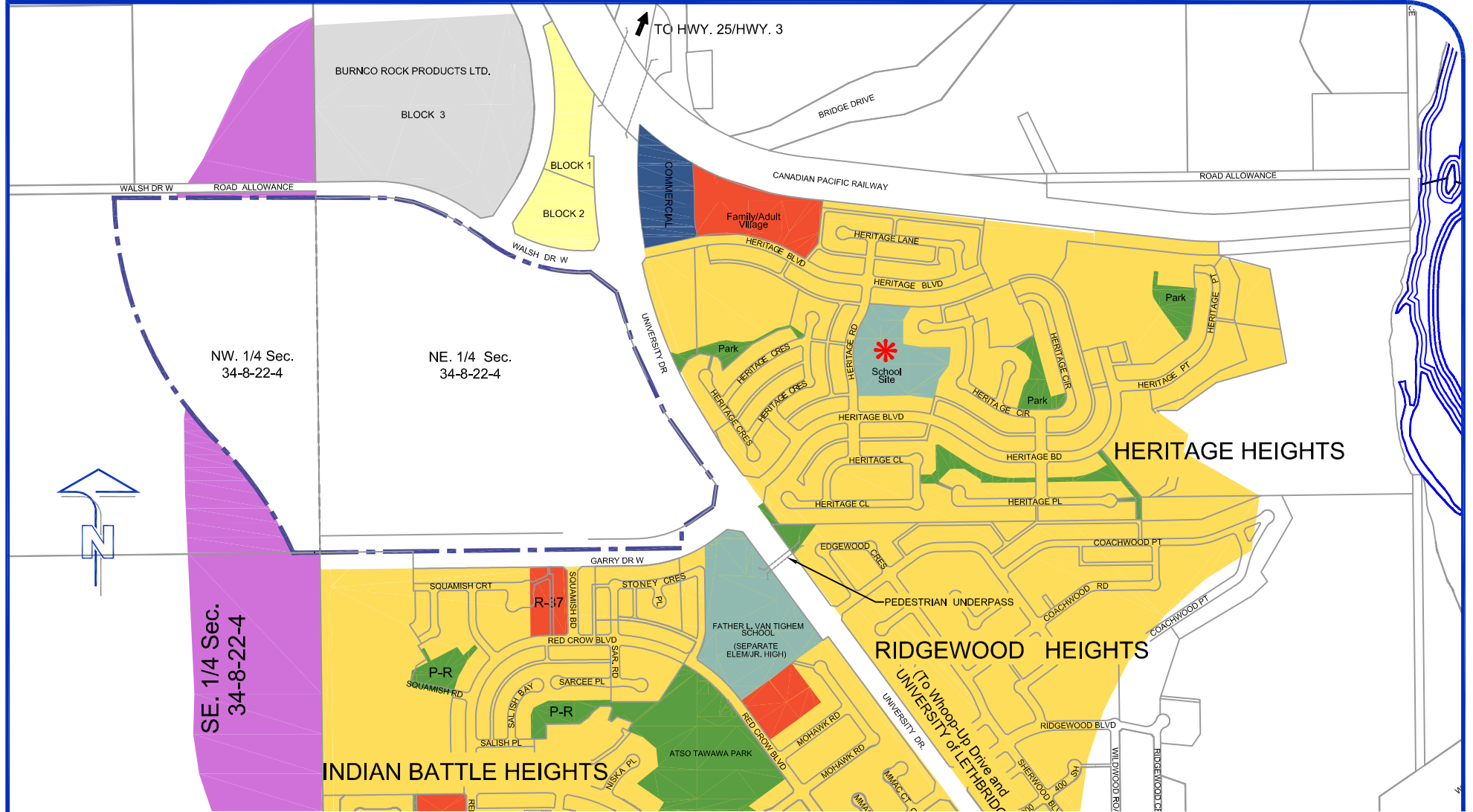
The topography in the Heritage Heights development to the east is relatively flat and therefore river valley views will be lost once development occurs in this area. The view to the west is perhaps the best as it encompasses a gently rolling landscape and a view of the mountains. This view will disappear when development occurs to the west.

2.7 Existing and Adjacent Land Uses











The plan area contains natural and man-made features which offer opportunities and which will impact planning for the area.

Man-made features in the immediate surroundings include: (see Figure 5)

- University Drive, Walsh Drive and the Canadian Pacific Railway.
- The High Level Railway Bridge located about 1.5 km east of the site.
- The Burnco Rock Products Ltd. plant adjacent to the northern boundary of the site.
- Possible undermining of the plan area from previous coal mining operations.
- Indian Battle Heights development adjacent to the south boundary of the site.
- Heritage Heights development across University Drive adjacent to the east boundary of the site.
- Atso Towaawa Village Park in Indian Battle Heights approximately 0.5 km south of Garry Drive/University Drive intersection.
- Mike Mountain Horse Public Elementary School located on Jerry Potts Boulevard, approximately 1.0 km southwest of Garry Drive/University Drive intersection
- Father Leonard Van Tighem Catholic Elementary/Junior High School on the south side of the Garry Drive/University Drive intersection
- Pedestrian underpass under University Drive that provides major pedestrian linkage through Heritage Heights to the river valley and to the amenities in Indian Battle Heights.



LEGEND

	AREA STRUCTURE PLAN BOUNDARY		RESIDENTIAL		PARK
	PROPOSED SCHOOL SITE		MULTI-FAMILY		URBAN RESERVE VACANT
			COMMERCIAL		URBAN RESERVE INDUSTRIAL USAGE
			SCHOOL SITE		URBAN RESERVE AGRICULTURAL USAGE

West Highlands
Area Structure Plan

Adjacent Land Use

Figure - 5

**West Highlands Area Structure Plan
City of Lethbridge**

- Nicholas Sheran Leisure Centre (includes indoor swimming pool and arena) located 3.0 km south of the Garry Drive/University Drive intersection.
- University of Lethbridge campus located 2.5 km south of the Garry Drive/University Drive intersection.

Developments which have occurred within the plan area include:

- West Lethbridge Towne Centre, a regional shopping centre, at the intersection of Garry Drive and University Drive.
- The Church of Jesus Christ of Latter-Day Saints, located at the intersection of Garry Drive and Highland Blvd. West.
- Multi-family residential developments located both east and west of Highlands Blvd. West, between Garry Drive and Walsh Drive.

Natural features in the plan area and its immediate surroundings include:

- The Oldman River valley and adjacent coulee slopes east of Heritage Heights (approximately 1.5 km east of University Drive) which connects to the Lethbridge River Valley Parks System and its associated trail system.
- The general topography west of the site has rolling hills and the higher portions west of the site provide partial view of the mountains to the south-west.

3.0 PROPOSED LAND USES AND DESIGN CONSIDERATIONS

3.1 Land Use Concept

The proposed land uses are outlined in **Figure 6** and summarized in **Table 3.1**.

Table 3.1 Land Use Allocations

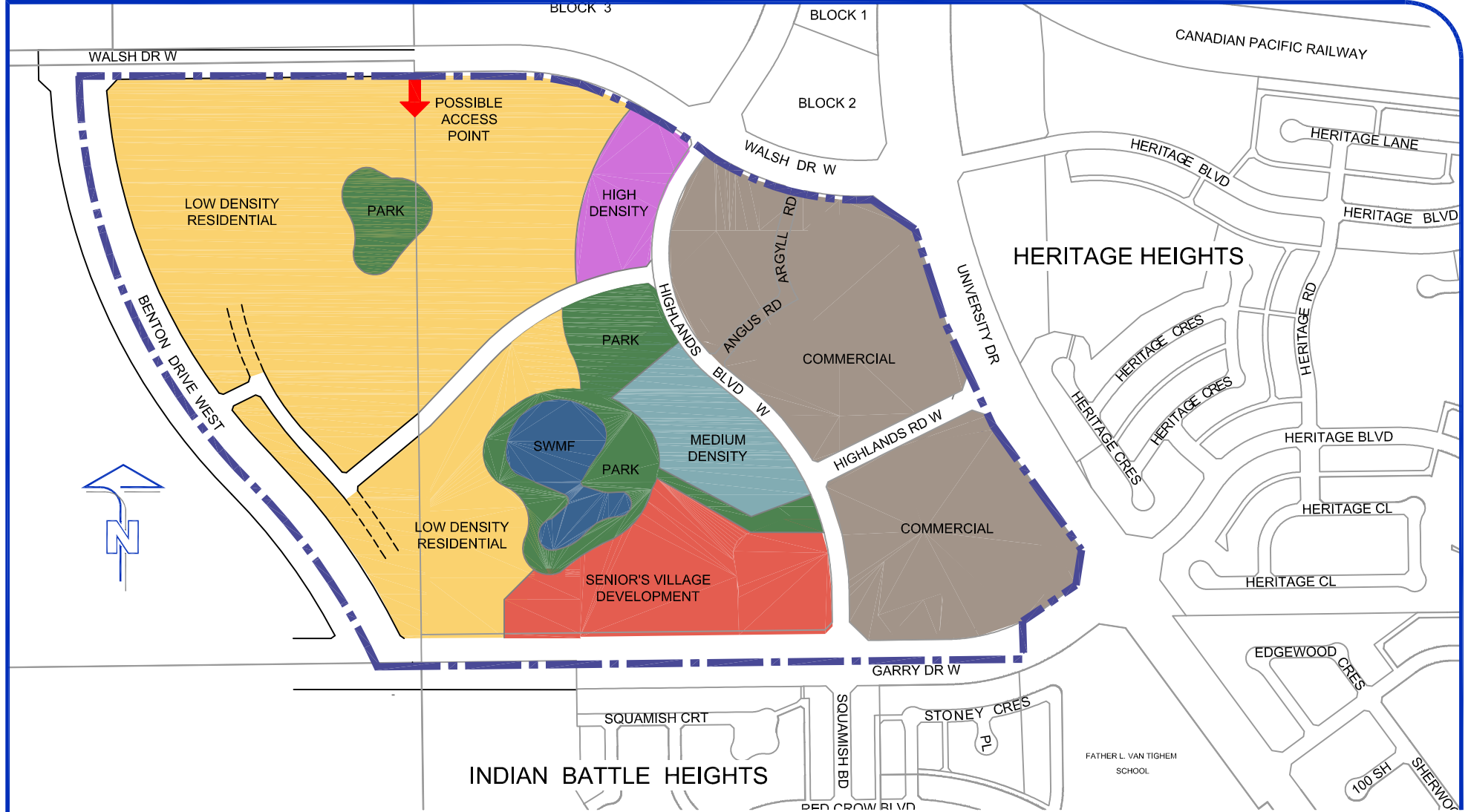
LAND USE	APPROX. AREA GROSS (Ha)	% OF TOTAL AREA
RESIDENTIAL:		
A) Low Density (Detached & Duplex)	33.00	39.50 %
B) Medium Density	2.25	2.84 %
C) High Density	2.25	2.70 %
COMMERCIAL	16.50	20.84 %
SENIORS VILLAGE	6.00	10.18 %
RECREATIONAL/OPEN SPACE	5.60	7.11 %
MAJOR COLLECTOR AND ARTERIAL ROADWAYS	13.20	16.83 %
AREA TOTAL	78.80ha	100 %

*All numbers are approximate and are subject to minor revision and refinement through Outline Plan and Subdivision approvals









3.1.1 Residential Land Uses

One of the goals of the MDP is to achieve "balanced neighbourhoods with a mix of housing types and densities." It also recommends that high density housing be concentrated along collector roads and close to commercial facilities. Accordingly, the West Highlands ASP recommends that the land adjacent to the north-south collector on the west side of the commercial area be designed for medium to high density use (see **Figure 6**). In order to achieve the MDP goal of a mix of housing types planning includes provisions for both medium and high density housing forms.

Low Density will, however, be the primary residential land use. This use will provide for a mix of single family and duplex (semi-detached) housing types. In keeping with the MDP goal of affordable home ownership, single family lots in West Highlands should be designed as narrower lots with good access to park facilities and public transit. In addition, the final layout should provide for smaller cells of housing units allowing for a greater sense of neighbourhood.



LEGEND

	AREA STRUCTURE PLAN BOUNDARY		LOW-DENSITY RESIDENTIAL		SENIOR'S VILLAGE
	COMMERCIAL		MEDIUM-DENSITY RESIDENTIAL		PARK
			HIGH-DENSITY RESIDENTIAL		STORM WATER MANAGEMENT FACILITY

**West Highlands
Area Structure Plan**

Land Use Concept

Figure - 6

West Highlands Area Structure Plan City of Lethbridge

Population densities for developed or planned village units in the city range from 36.4 persons per gross hectare (p.p.g.ha.) in Varsity Village, to a planned 45.3 p.p.g.ha. in the Mountain Heights and River Bend area. The trend toward higher population densities in newer developments has resulted from the desire to make more efficient use of land and infrastructure and is reaffirmed in the "Strategy for Energy Efficient Residential Land Use for the City of Lethbridge", approved in principle by City Council.

The intent of this development is to develop an appropriate mix of land uses that serves the needs of residents of West Lethbridge, and blends effectively with existing and proposed adjacent developments. To this end, overall population densities for this area are proposed to be in the range of 15.0 units/gross developable ha, including commercial lands, or approximately 26.0 units/ net developable ha excluding park space, commercial lands, and arterial and collector roadways.

Population is projected to be in the range of 3000 people, consisting of approximately 600 units in the Low Density Residential areas, along with another 600 units in the Medium/High Density Residential, and Seniors Village development areas.

3.1.2 Commercial Land Uses

In keeping with the recommendations of the MDP and the Urbanization of West Lethbridge document, a commercial/employment area is proposed for the site (see **Figure 6**). This commercial/employment area is located adjacent to University Drive between Garry Drive and Walsh Drive.

The MDP recommends a site of at least 4.0 ha. which would provide multi-village level of services to residents of West Lethbridge. The proposed commercial site contains approximately 16.5 ha, upon which approximately 35,000 to 40,000 square metres of building development could be accommodated, with major uses such as a food store, home improvement centre, super drug store, financial institution, automotive services and eating/drinking establishments being planned. The size of the commercial site has been planned to allow for a "critical mass" of development with generous parking allocations necessary to make the provision of the varied commercial facilities economical, accessible and practical. It is proposed that berming and landscaping be installed along Garry Drive on the south boundary of the commercial area as well as locations on the east and west sides of University Drive. This would provide a visual barrier for existing residents in neighbouring Indian Battle Heights and Heritage Heights.

3.1.3 Senior's Village

As suggested in the MDP, there is a greater demand for non-traditional housing that is oriented more towards adults or seniors in a "lifestyle" community setting.

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The West Highlands ASP designates a 6.00 ha (approximately) site south of the proposed lake and public open space amenity for a Seniors Village (see **Figure 6**). This village will be designed to reflect a variety of housing types including walk up apartments, townhouses, four-plex, duplex and single family housing. These housing units should be designed to accommodate the varying needs of seniors. Their needs would include those for seniors in good health as well as those with special needs. Nursing homes, senior citizen group homes and senior care homes should therefore be part of the housing mix.

In addition to meeting the varied housing needs of seniors; provisions should be made to accommodate their recreational and personal service needs. Outdoor recreational needs could be met by utilizing the open space/lake on the north side of the site as well as through open space provisions within the site. An on-site private recreational building could also be built to provide year-round indoor recreational opportunities for seniors. Additional on-site facilities could also include a medical clinic, pharmacy, hair salon, religious assembly, as well as other commercial facilities to accommodate the day to day personal service needs of seniors.

3.2 Parks and Open Space

The proximity of West Highlands to the River Valley and Urban Parks and to Atso Towasa Valley Park in Indian Battle Heights; as well as the relatively small population suggests that a large district park is not necessary at this time.

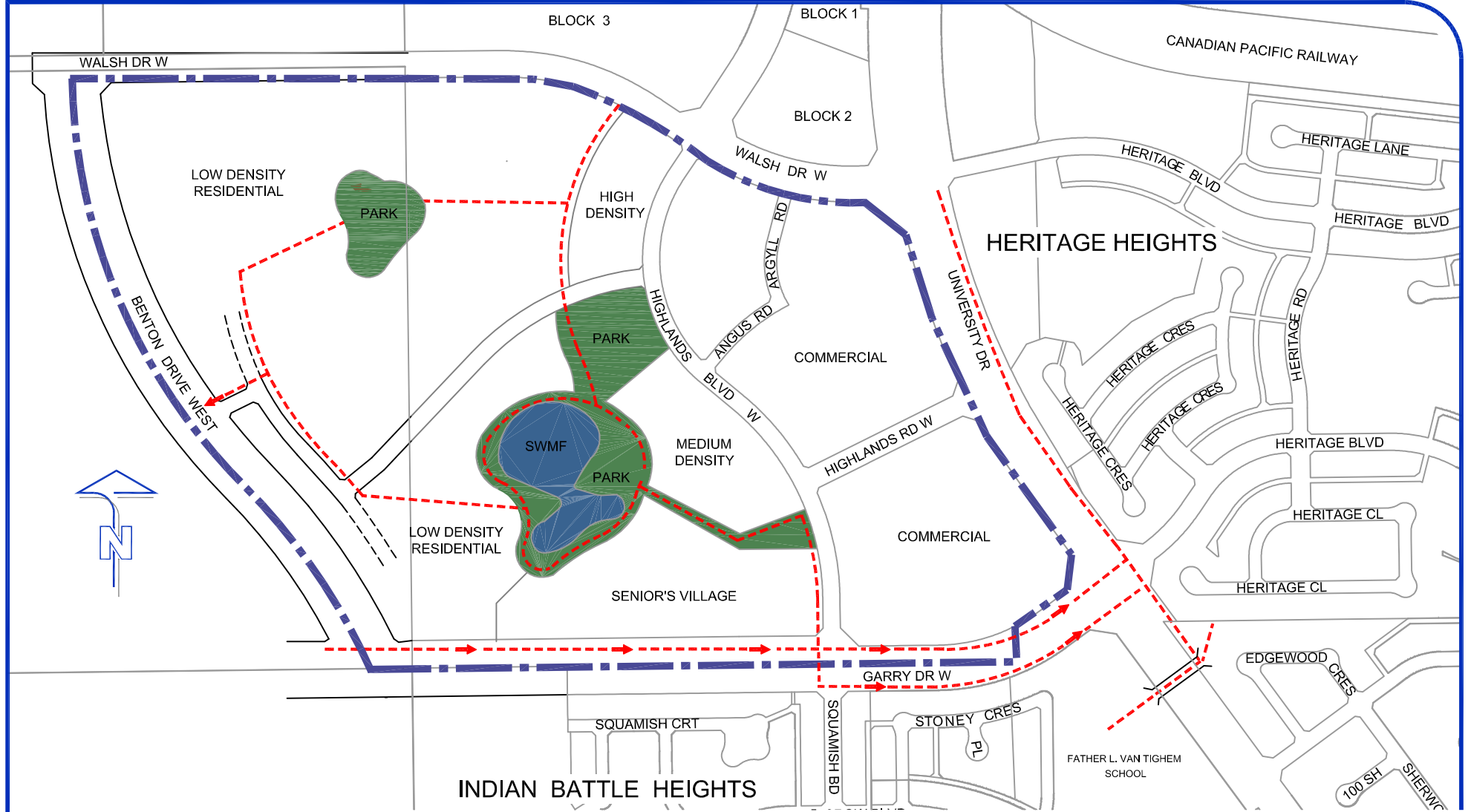
West Highlands can effectively be serviced with a large block park of approximately 3.75 ha and a smaller block park of approximately 1.85 ha. The general location of these parks is shown in **Figure 7**.

The larger park is centrally located to accommodate the Seniors Village and the medium density development, as well as a portion of the low density development. The smaller park would accommodate the needs for the high density uses as well as the balance of the low density development north of Tartan Boulevard West.

The larger park is also designed to serve as a storm water management facility. At this time it is anticipated that a lake encompassing about 1.75 ha will be developed on the larger block park. The total area of open space including neighbourhood parks and open space linkages should not exceed 10% of the gross site area or 7.88 ha.

3.3 Pathway Network

In keeping with one of the goals of the MDP, which is to have walking and cycling trails included within the right of way of arterial roads, it is proposed that a major regional trail be incorporated into the right-of-way along the south side of Garry Drive. This would connect to the trail system linking the schools and major open space in Indian Battle Heights, as well as to the trail underpass under University Drive and through Heritage Heights and Ridgewood Heights to the River Valley.



LEGEND

- AREA STRUCTURE PLAN BOUNDARY
- PEDESTRIAN/BICYCLE LINKAGE
- PARK
- STORM WATER MANAGEMENT FACILITY

**West Highlands
Area Structure Plan**

**Parks and Open
Space Concept**

Figure - 7

West Highlands Area Structure Plan City of Lethbridge

It is therefore essential that sufficient internal linkages (see **Figure 7**) be planned through West Highlands to connect with this proposed regional trail along Garry Drive. Since West Highlands will ultimately be part of a larger village extending to the west where school sites, major village open spaces and other village amenities will be located, it is essential that there be sufficient linkages planned to the west allowing for safe transportation of people and bicycles.

It is also recommended that in the design of Garry Drive, that provision be made to safely accommodate a trail crossing at the intersection with Squamish Drive.

3.4 Access to Schools

No school site is proposed within the West Highlands Area Structure Plan boundaries.

It is planned that students living in West Highlands would be accommodated within the existing schools of both the Public and Holy Spirit Catholic School systems. Provisions for the required school sites should be taken into account when the ASP for the balance of the village is being developed.

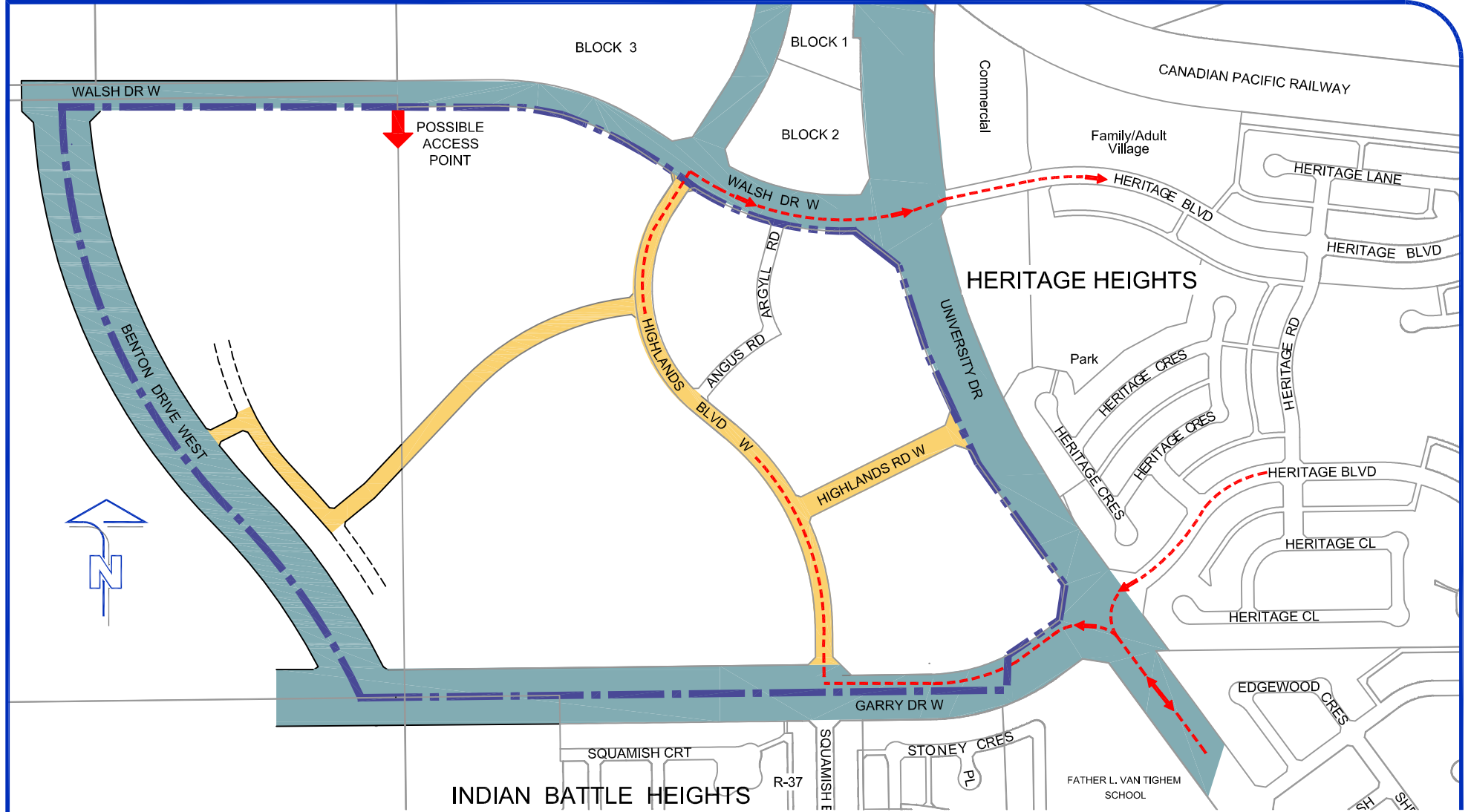
3.5 Transportation Network

University Drive and Walsh Drive, although not within the plan area, provide the north and east boundaries for the plan area. Provision has been made along the south boundary to provide the land necessary for Garry Drive, which is a future arterial that would connect University Drive with the future Chinook Trail. In addition, lands will be provided for the future extension of Benton Drive along the western boundary of the plan area.

The major collector roadways within the plan area are shown in **Figure 8** and are designed to provide access to the arterial roadways for the commercial and higher density traffic without interfering with development in the low density residential areas.

Stanley Associates Engineering Ltd. were commissioned to produce a report entitled "University Drive/Garry Drive Development Transportation Impact Assessment" dated January 16, 1995. This report provides a preliminary analysis of the transportation system requirements as a result of the anticipated traffic that will be generated by the proposed Commercial and Multi-family development adjacent to University Drive.

In addition, as part of the 2004 update to this West Highlands Area Structure Plan, a Traffic Impact Assessment (TIA) was completed to support the development of additional lands in the NW ¼ Sec. 34-8-22-4. The TIA supported the development of 2 additional access points to the West Highlands neighbourhood, one at Tartan Blvd. and Benton Drive, approximately 400 metres north of Garry Drive, and another at Aberdeen Gate and Walsh Drive, approximately 350 metres east of the intersection of Walsh Drive and Benton Drive.



LEGEND

- AREA STRUCTURE PLAN BOUNDARY
- PUBLIC TRANSIT ROUTE
- MAJOR ROADWAYS
- COLLECTOR ROADWAYS
- TRANSIT FLOW DIRECTION

**West Highlands
Area Structure Plan**

Transportation Concept

Figure - 8

**West Highlands Area Structure Plan
City of Lethbridge**

The collector road right-of-way standards and line assignments will be submitted for approval to the City of Lethbridge Subdivision Review Committee at the time of Outline Plan Approval. Local road locations and configurations will also be determined at that time with right-of-way standards and line assignments, to meet current City of Lethbridge standards.

3.6 Noise Levels and Buffer Requirements

The main source of noise in the plan area is the perimeter arterial road traffic which includes University Drive, Garry Drive, Walsh Drive, and Benton Drive. These roadways have sufficient right of way widths to provide for noise attenuation berming as required adjacent to residential areas. Noise attenuation berming is not necessary when the roadways are adjacent to commercial areas. It is recommended that berming and/or landscaping be provided as a visual barrier between the commercial site and the existing residences in Indian Battle Heights and Heritage Heights.

Detailed noise calculations and noise abatement measures are more appropriately addressed at the subdivision design stage. Noise abatement measures may include any one or a combination of the following: increased building setbacks; berming; and/or noise abatement fencing

4.0 SERVICING

4.1 Water Distribution System

A report was completed in September 1991 by Associated Engineering Alberta Ltd., entitled "West Lethbridge Water Distribution Improvements". This report indicated that a 300 mm diameter watermain grid is required throughout the plan area at a spacing of approximately 400 metres to 700 metres. This study did not indicate the realignment of University Drive and the proposed adjacent commercial/multi-family sites.

With the proposed collector roadway pattern it is possible to realign the grid connections onto the collector roadway with some adjustments. Subject to sizing details being checked during the Outline Plan stage, there is adequate provision in the proposed watermain grid system to supply the entire plan area. **Figure 9** shows the proposed modified grid pattern for the water distribution trunk mains.

4.2 Sanitary Sewer System

The existing 600 mm diameter trunk sanitary sewer main on Walsh Drive is designed to accommodate the sewage flows from the current plan area and an upstream area extending to the proposed Chinook Trail corridor. The entire plan area will be serviced by a gravity flow piped system connecting to this trunk sewer.

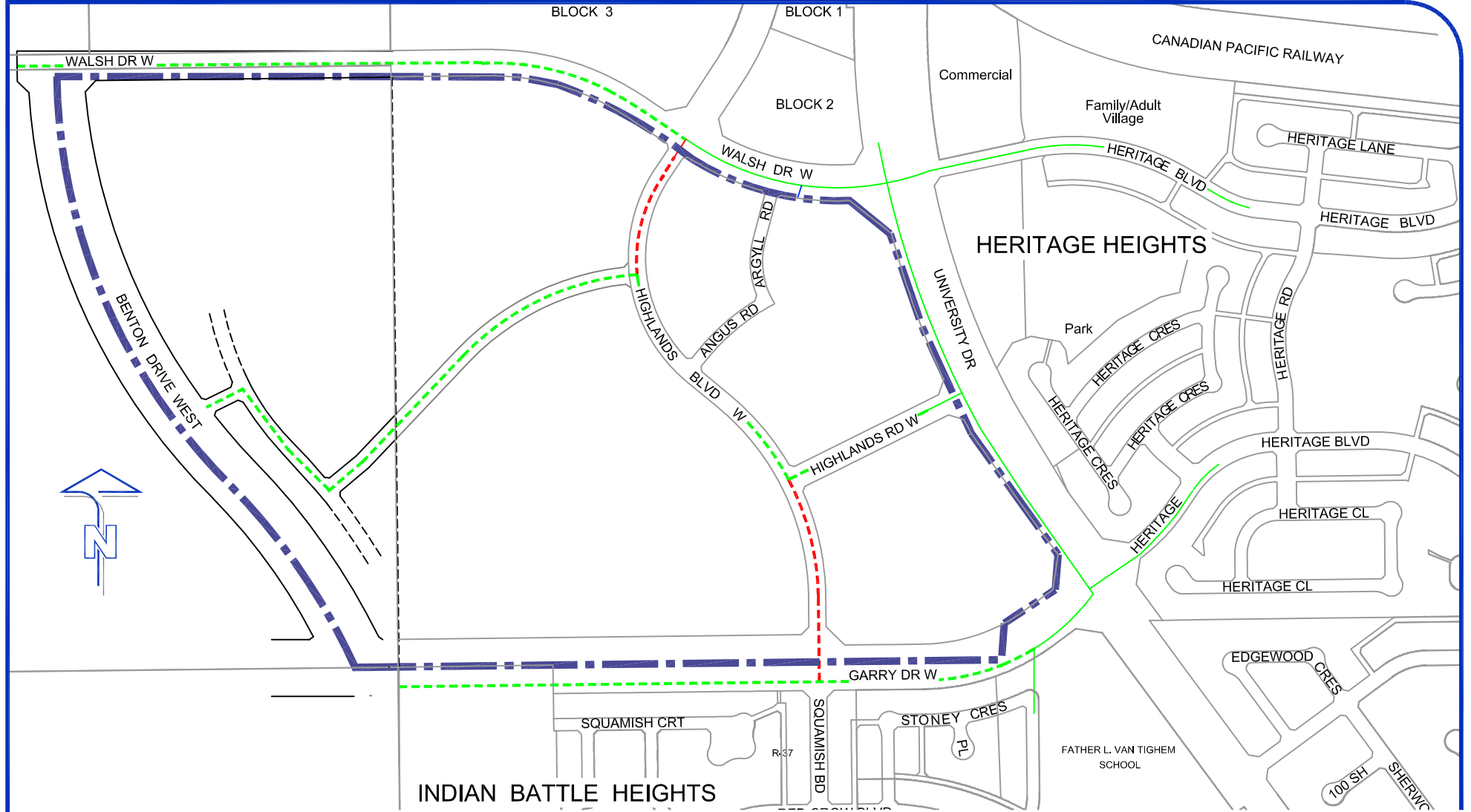
The proposed collector roadway alignments provide a corridor for the extension of the sanitary sewer trunk (see **Figure 10**). This trunk must be designed to accommodate an upstream flow of 0.213 cubic meters per second from future developments to the west. The City engineering department has indicated that a maximum invert elevation of 922.340 metres is necessary to service this future development to the west.

4.3 Stormwater Management







The West Highlands Storm Water Management Plan (Stantec Consulting Ltd., 2003) identifies that the West Highlands drainage basin must provide stormwater storage in order to limit flow to the trunk sewer on Walsh Drive. This storage is proposed to be accommodated by a combination of trapped lows in the street grading network, trapped lows in the commercial parking areas, and by a stormwater management pond located within the open space park developments.

The proposed storm sewer trunk will tie into an existing 1800 mm storm sewer on Walsh Drive (see **Figure 11**), which connects to the existing Heritage Heights outfall line leading to the Oldman River. The storm sewer trunk will be extended south and westerly to the west boundary of the plan area.

In order to accommodate drainage from future developments west of the West Highlands plan area, the storm trunk must be designed to accommodate a design flow of 5.346 cubic metres per second, and be installed at a maximum elevation of 919.00 metres at the west boundary.



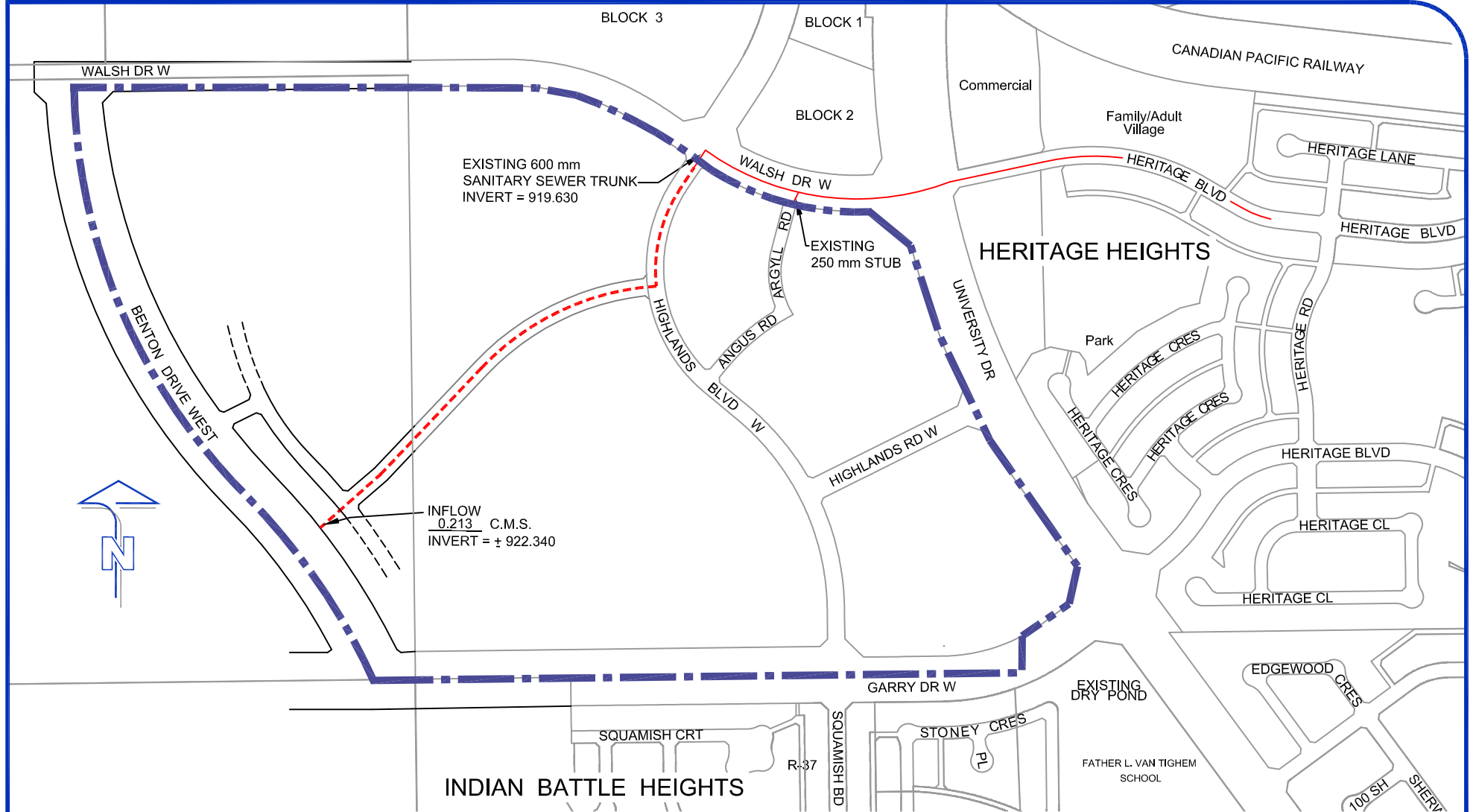
LEGEND

	AREA STRUCTURE PLAN BOUNDARY		EXISTING 300mm WATER MAIN
	EXISTING 200mm WATER MAIN		EXISTING 250mm WATER MAIN
	PROPOSED 300 mm WATER MAIN		PROPOSED 250mm WATER MAIN

**West Highlands
Area Structure Plan**

Water Mains

Figure - 9



LEGEND



AREA STRUCTURE PLAN BOUNDARY



EXISTING 600mm SANITARY SEWER TRUNK

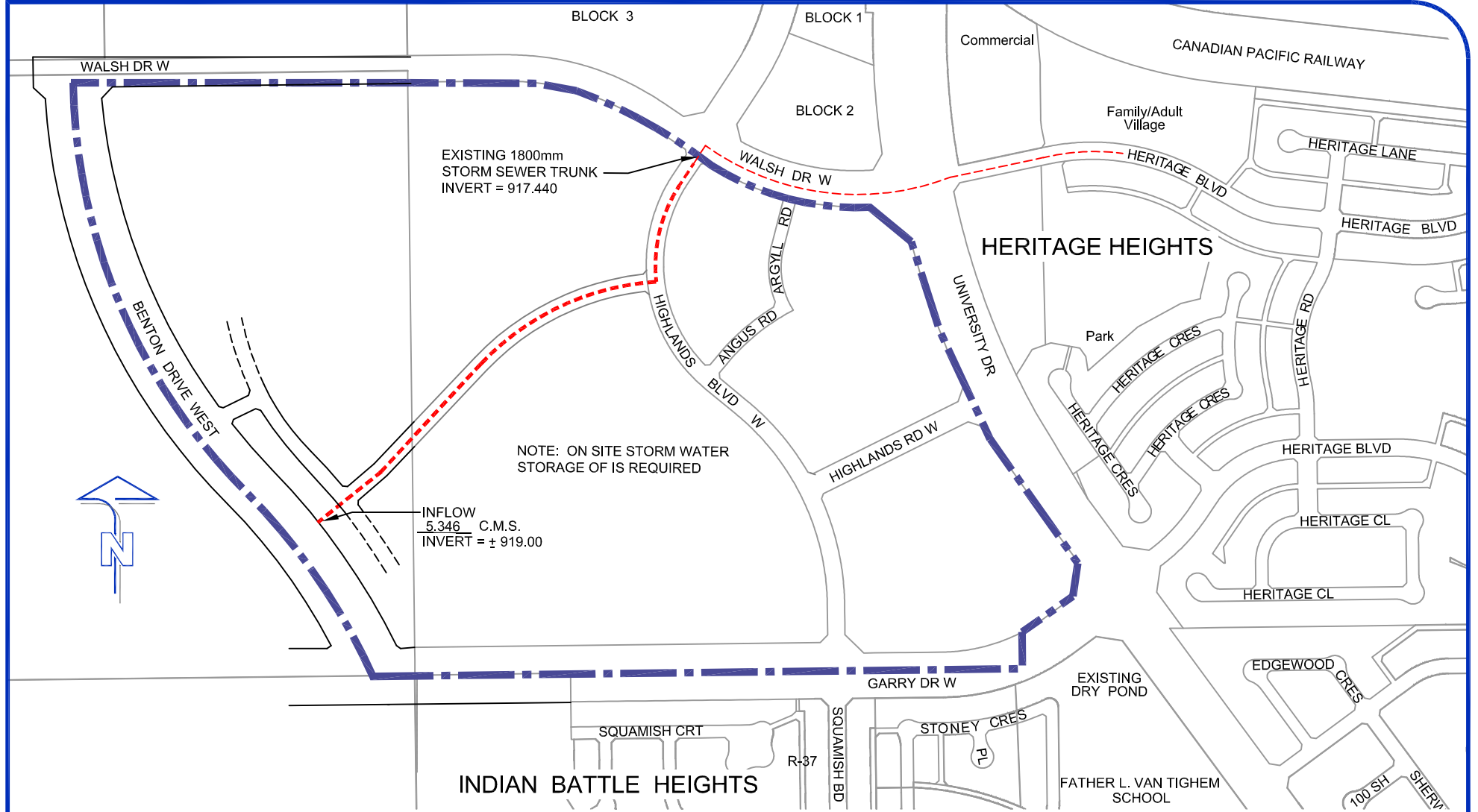


PROPOSED 600mm SANITARY SEWER TRUNK

West Highlands Area Structure Plan

Sanitary Sewer Trunk

Figure - 10



LEGEND

-  AREA STRUCTURE PLAN BOUNDARY
-  EXISTING 1800mm STORM SEWER TRUNK
-  PROPOSED 1800 mm STORM SEWER TRUNK

**West Highlands
Area Structure Plan**

Storm Sewer Trunk

Figure - 11

West Highlands Area Structure Plan City of Lethbridge

Within the ASP drainage basin a storm drainage system incorporating storage facilities consisting of one wet pond is required.

A wet pond storm water facility that permanently retains water and provides temporary storage detention above its normal water level is proposed in the southwest open space area. The proposed wet pond lake is adjacent to the existing irrigation canal corridor which can readily provide a supply of untreated water for irrigation of the adjacent open space park areas. This will avoid the use of treated (potable) water for irrigation. The wet pond lake provides an opportunity for enhancing aesthetics and providing a joint use open space park amenity in conjunction with stormwater management.

The commercial parking areas in the first two phases of the planned development will be designed with trap lows to temporarily store the runoff, thus reducing flow rates into the trunk sewer to within acceptable limits. Construction of the wet pond storage facility will be required during the construction of Phase 3

4.4 Irrigation Canal

Prior to initiation of development of the lands within the plan area, there was an existing irrigation supply canal running north-south through the center of NE ¼ Sec. 34-8-22-4. This open ditch connected to an underground pipe system commencing at the Father L. Van Tighem school site, southward to Nicholas Sheran Lake, to the University of Lethbridge and to farms south of the University.

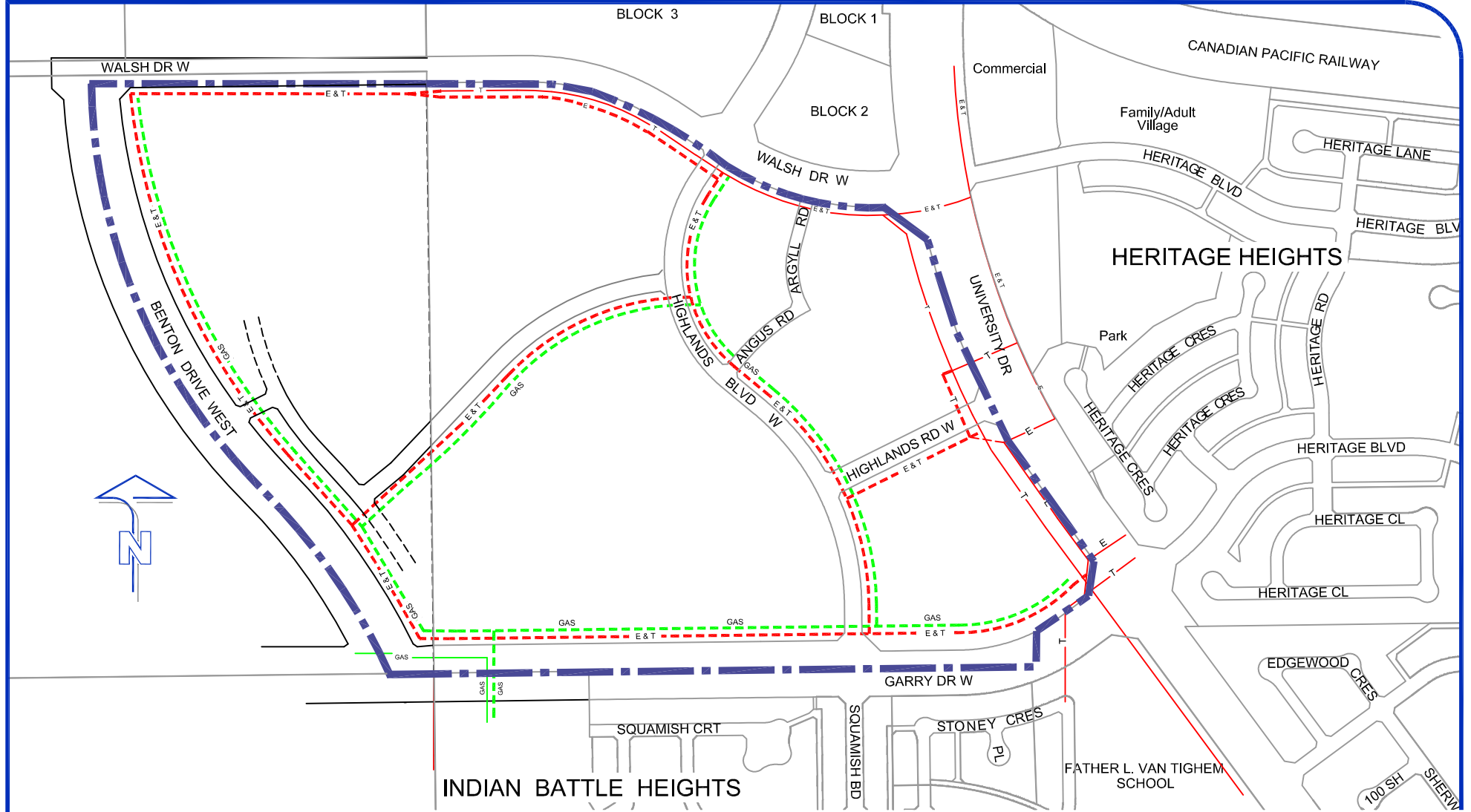
It is necessary to maintain irrigation water supply flows through the plan area. This has been accommodated by means of an underground pipe installation. A turn-out structure will be required in order to supply irrigation water to the proposed wet pond lake. Former canal lands have been reclaimed for use as developable land.

4.5 Shallow Utilities











The various utility companies responsible for electrical, telephone and gas distribution have indicated that the West Highlands would be serviced, without any problems, by extending lines from the existing distribution system in surrounding developments (see **Figure 12**).

Canadian Western Natural Gas Company Limited operates the Willowbrook Gate Station located in the northwest corner of the SE ¼, Section 34 (south side of proposed Garry Drive). The high pressure gas main that feeds gas to this gate station is located in an 18 metre wide utility right-of-way adjacent to the southwest corner of the plan area. This right-of way will be incorporated into the Garry Drive road right-of-way.

Buildings developed in the vicinity of this high pressure gas main corridor will be required to be set back at least 15 metres from the pipeline itself. The proposed residential area in the vicinity of this existing pipeline will not require any greater setback dimensions than is normally provided.



LEGEND

	AREA STRUCTURE PLAN BOUNDARY	<u>EXISTING</u>		<u>PROPOSED</u>	
	ELECTRICAL		ELECTRICAL		ELECTRICAL
	GAS		GAS		GAS
	TELEPHONE		TELEPHONE		TELEPHONE

**West Highlands
Area Structure Plan**

Shallow Utilities

Figure - 12

**West Highlands Area Structure Plan
City of Lethbridge**

The electrical and Telephone utilities do not require any special provisions other than standard 3.5 metre wide easements adjacent to the proposed collector roadways. Servicing capacity is readily available.

4.6 Public Transit

The proposed north-south major collector roadway adjacent to the west side of the commercial area provides an ideal bus route since the medium and high density and commercial uses are adjacent to this roadway (see Figure 8). Provision for bus stops should be made along this corridor.

4.7 Protective Services

Fire service and ambulance service can be provided to this site through the existing fire and ambulance facilities on the intersection of Whoop Up Drive and Jerry Potts Blvd. Police protection will be provided from the central, downtown facility.

5.0 STAGING OF DEVELOPMENT

5.1 Phasing

Significant portions of the NE ¼ Sec. 34-8-22-4 have either been, or are currently being, developed, including portions of the commercial area, medium and high density residential areas, and the Senior's Village development. Initial stages of low density residential development are also currently underway.

It is anticipated that development will continue to move west, based on market demand and a logical extension of municipal services.

5.2 Interface Treatments

In order to ensure the development of a complete and cohesive neighbourhood, it is important that elements such as lot size, aesthetic treatment, and housing style are compatible and consistent. If an individual developer wishes to make change to the style or type of housing and/or a significant change in lot sizes, it is important that an appropriate transition take place in order not to create distinct pockets of particular development styles.