WEST LETHBRIDGE PHASE II
AREA STRUCTURE PLAN

Prepared for the

City of Lethbridge

by

ARMIN A. PREIKSAITIS
& ASSOCIATES LTD.

in association with

Associated Engineering

GIBBS & BROWN
LANDSCAPE ARCHITECTS LTD.

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coriolis Consulting Corp.

March 2005

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Adopted by City of Lethbridge Bylaw No. 5321 May 16, 2005

Amended by:
- City of Lethbridge Bylaw No. 5818 - June 24, 2013
- City of Lethbridge Bylaw No. 6432 - March 12, 2024

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APPENDICES

1.0 INTRODUCTION

1.1 Purpose

Area structure plans help guide the growth and development of future undeveloped neighbourhoods by setting out the general location of major land uses (e.g. residential, commercial, schools, parks), major roadways, utility servicing, trail systems, and population density. The purpose of the West Lethbridge Phase II Area Structure Plan (ASP) "*is to develop planning, urban design and infrastructure solutions that will ensure the creation of a vibrant, livable and diverse activity centre in West Lethbridge. A vital component of the project is a strong community consultation program."* The scope of the ASP includes the Community Core of West Lethbridge, the two complementary villages to the north and south of Whoop-Up Drive, and design guidelines for the Community Core.

The ASP has been prepared in conformity with Section 633 of the *Municipal Government Act*.

1.2 Background

West Lethbridge has reached an important stage in its growth and development as its population reaches 24,000. In the past 30 years West Lethbridge has been the focus of much of the city's urban growth.

The Urbanization Plan prepared in 1969 had the foresight to envision a Community Core to serve West Lethbridge. The Community Core was initially envisioned as a civic centre with predominantly public institutional uses such as schools, a library and recreation and community facilities. As a result of stakeholder interviews and research on other community core areas in North America, the range of uses has been expanded to include significant private sector opportunities such as office and retail uses and higher density housing, particularly for seniors.

The recent impetus for accelerating the planning design and development of the Community Core is to accommodate the Public and Holy Spirit School Boards' desire to develop high school facilities around a combined school site concept. The City of Lethbridge has acquired land to accommodate the Community Core public uses in addition to residential and commercial uses. It is important that the Community Core serves as a focal point for the surrounding villages, providing easy access to a broad range of community services.

1.3 Plan Area

The ASP area is located in West Lethbridge as shown on *Map 1A – Plan Area*. The area is bounded by the future arterial roadway network. The eastern limits of the ASP area are defined by the future Métis Trail and existing villages of Indian Battle Heights, Varsity Village, and Mountain Heights. The western boundary is the future Chinook Trail. The north boundary is defined by the future westward extension of Garry Drive, while the southern limits are defined by the westward extension of Great Bear Boulevard.

West Lethbridge

Phase II Area Structure Plan

Legend

Amended Area Structure Plan Area

692 Hectares

1,710 Acres

City Boundary

NW 33-08-22-4 | NE 33-08-22-4 | NW 34-08-22-4

SW 33-08-22-4 | SE 33-08-22-4 SE | SW 34-08-22-4 | SE 33-08-22-4

NW 28-08-22-4 | NE 28-08-22-4 | NW 27-08-22-4 | NW 27-08-22-4 | NE 27-08-22-4

SW 28-08-22-4 | SE 28-08-22-4 | SW 27-08-22-4 | SE 27-08-22-4

NW 21-08-22-4 | NE 21-08-22-4 | NW 22-08-22-4 | NE 22-08-22-4

SW 21-08-22-4 | SE 21-08-22-4 | SW 22-08-22-4 | SE 22-08-22-4

NW 16-08-22-4 | NE 16-08-22-4 | NW 15-08-22-4 | NE 15-08-22-4

RIDGEWOOD HEIGHTS

INDIAN BATTLE HEIGHTS

VARSITY VILLAGE

MOUNTAIN HEIGHTS

Map 1A

Plan Area

Amended by Bylaw 5818 - June 24, 2013

0 250 500 750 1,000 Meters

The ASP area encompasses a total area of 698 ha (1,725 ac). Consistent with the City of Lethbridge's approach to community planning, the ASP area has been organized into two villages and a Community Core. North of the proposed extension of Whoop-Up Drive, it is proposed that the Community Core be approximately 108 ha (267 ac) in size, while the remaining area comprising the North Village will include approximately 225 ha (556 ac). The South Village is proposed to include approximately 365 ha (902 ac). It is anticipated that during the preparation of more detailed outline plans and in the course of developing marketing strategies for the ASP area that more unique names and themes will be chosen.

1.4 Land Ownership

There are seventeen (17) owners of land parcels within the ASP area, ranging in size from approximately 32 ha (80 ac) to 65 ha (160 ac). Current land ownership pattern is shown on *Map 11: Land Ownership* and summarized in tabular form in Appendix A.

1.5 Planning Process

This ASP was prepared in three phases over an eight-month period between July 2004 and February 2005. The following summarizes the project's background research and community consultation activities.

1.5.1 Background Research and Studies

During preparation of the ASP, a number of background studies were reviewed and research was conducted. These are summarized in technical reports contained in a separate Technical Appendix and include:

- Survey of Emerging Trends and Best Practices for development of Combined school sites and Community Cores, November 2004;
- Residential and Commercial Development Prospects for the West Lethbridge Community Core, Coriolis Consulting Corporation, November 2004;
- West Lethbridge Phase II Area Structure Plan, Transportation Analysis, Bunt & Associates Ltd., December 2004;
- Stormwater Management System Technical Report, Associated Engineering Alberta Ltd., December 2004;
- Sanitary Sewer Collection System Technical Report, Associated Engineering Alberta Ltd., December 2004; and
- Water Supply and Distribution System Technical Report, Associated Engineering Alberta Ltd., December 2004.

It should be noted that these technical papers are background information and do not form part of the ASP Bylaw to be adopted by Council.

1.5.2 Community Consultation

Community and stakeholder consultation was an essential part of the planning process. Media releases, posting of project information on the City of Lethbridge website, newspaper advertisements and direct mailings were used at key points in the planning process to build awareness and illicit community and stakeholder input into the formulation of the ASP. Specific consultation activities included the following.

Project Kick-Off Meeting

Project kick-off meetings were held with key City Departments and stakeholders, affected landowners, and the general public on July 28 and 29, 2004, at which point the scope, project schedule, and opportunities for community consultation were presented. People were advised that dates, times and venues for future workshops and open houses would be advertised and posted on the City's website.

Stakeholder Meetings and Interviews

Throughout the summer of 2004, a series of meetings and interviews were conducted with various stakeholders, including the school districts, library staff, and representatives from various organizations and agencies (e.g. seniors, youth, arts, culture, etc.). The purpose was to become aware of the needs and aspirations of the various stakeholders, so that they could be taken into consideration during the planning process. A summary report was prepared summarizing the outcomes of these meetings and interviews.

Vision Building Workshops

Four Vision Building Workshops were held on October 13 and 14, 2004, at the Lethbridge Public Library and G.S. Lakie Middle School with the City of Lethbridge staff, affected landowners, potential user groups / stakeholders and the general public. The purpose of the workshops was to have residents, landowners and other stakeholders provide input to draft planning principles and conceptual land use alternatives for the Community Core, and to provide comments on a preliminary transportation network, location of stormwater management facilities, open spaces and pedestrian linkages for both the North and South Villages. A total of 61 people participated in the Workshops. A West Lethbridge Phase II ASP Vision Building Summary Report was prepared to document the outcomes of the Workshops.

Open Houses

Two Open Houses were held on December 7 and 8, 2004 at G.S. Lakie Middle School to present the draft ASP to the public for review and comment. Approximately 120 people attended. Participants provided written comments on an exit survey. Comments were documented in a summary report, which is included in a separate

technical appendix.

1.6 Plan Organization

The West Lethbridge Phase II ASP has been organized into the following seven sections.

1.0 INTRODUCTION:	Includes the purpose and background, description of the ASP area and planning and community consultation process.
2.0 EXISTING CONDITIONS & DEVELOPMENT CONSIDERATIONS:	Provides an analysis of the physical environment, existing land uses, and development constraints and considerations. A brief overview of relevant statutory plans and existing zoning is also provided.
3.0 LAND USE CONCEPT:	Outlines the planning principles and objectives that shaped the Plan. A general land use concept is described in map and text form.
4.0 TRANSPORTATION:	Provides an overview of the external and internal roadway system as well as planning considerations for transit.
5.0 COMMUNITY CORE:	Describes a preliminary development program for the Community Core and design guidelines for more detailed planning and development.
6.0 UTILITY SERVICING:	Provides an overview of the analysis and concepts for stormwater management, sanitary sewer collection, water supply, and shallow utilities within the ASP area.
7.0 IMPLEMENTATION:	Provides a general direction for future infrastructure extension and presents further requirements for outline plans, rezoning and subdivision.

2.0 EXISTING CONDITIONS & DEVELOPMENT CONSIDERATIONS

2.1 Existing Conditions

2.1.1 Physical Environment

The ASP area is well suited for urban development in terms of geology, soils, topography and overall drainage conditions. The sands of the Buffalo Lake till in west Lethbridge are high, which may affect deep foundations (such as those for underground parking structures of two-levels or more), but with respect to the level of urban development anticipated for the ASP area (e.g. with piles and/or shallow foundations) no geotechnical issues are anticipated for the ASP area.

The ASP area is generally an undulating plain with elevation that ranges from 930m to 945m. Map 2 shows existing drainage patterns and existing prominent views in the ASP area.

2.1.2 Land Uses

The majority of land in the ASP area is currently cultivated for agricultural purposes. Farmsteads are located in on the following lands: SW ¼ Section 34-8-22-4, SE ¼ Section 33-8-22-4, NE ¼ 28-8-22-4 and SW ¼ Section 23-8-22-4. Several sweet gas wells and gas lines are also found within the ASP area.

To the north, south and west of the ASP area, non-urbanized agricultural lands constitute the main surrounding land use. Three villages – Indian Battle Heights, Varsity Village and Mountain Heights – form the eastern boundary of the ASP area. These neighborhoods offer a wide range of housing types and densities, with Varsity Village offering higher density housing units due to its proximity to the University of Lethbridge, a prominent surrounding land use.

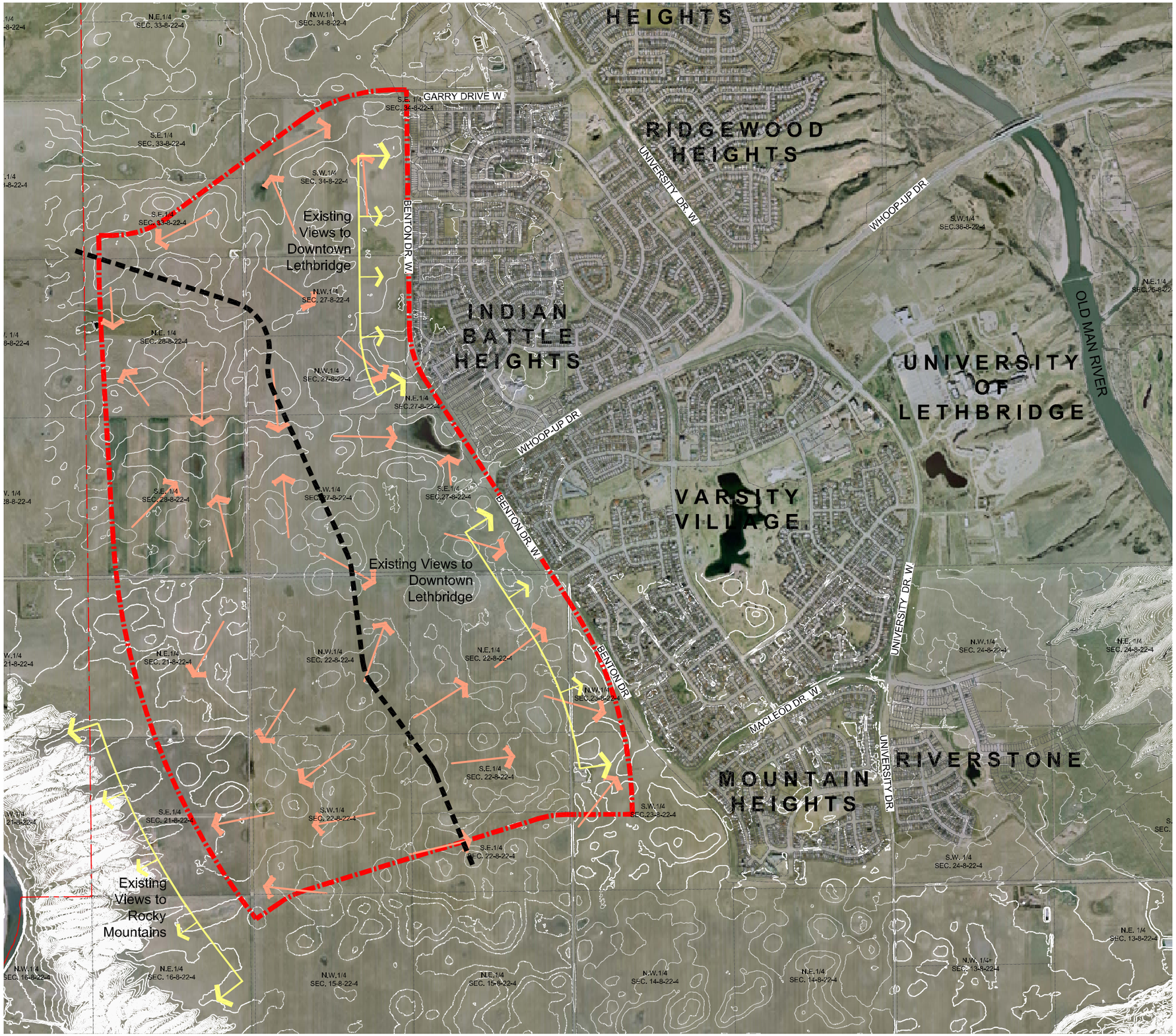
There are also a number of neighborhood parks and schools in these adjacent residential neighborhoods, such as the Nicholas Sheran Park located in Varsity Village. The Coal Banks Regional Trail runs through Indian Battle Heights and Varsity Village.

2.1.3 Historical and Archaeological Resources

The Cultural Facilities and Historical Resources Division (CFHRD) of Alberta Community Development determined that a Historical Resources Impact Assessment was not required and *Historical Resources Act* clearance has been given for the West Lethbridge Phase II ASP.

West Lethbridge

Phase II Area Structure Plan



Legend

- Contour Line (2.5m interval)
- Existing Views
- Direction of Drainage
- Existing Ridge
- Area Structure Plan Boundary
- City of Lethbridge Boundary

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N

0 100 200 500 m

Map 2
Topography and Views

key map
1 : 40 000 000

2.1.4 Existing Development Constraints

There are a number of existing development constraints that need to be considered in the planning and development of the ASP area, shown on *Map 3 – Existing Development Constraints*.

Electrical Sub-Station and Transmission Lines

The existing Electrical Sub-Station #674S is located in the southeast corner of the ASP area as shown on Map 3. There is an overhead 138,000-volt electrical transmission main line extending south of this Sub-Station and 13,000-volt overhead main distribution lines extending south, north and east.

The existing 138,000-volt transmission line is part of a ring feeder system that connects to other Sub-Stations and requires a permanent utility corridor on this alignment. This utility corridor could be combined with a trail linkage subject to detailed design considerations. The 13,000-volt overhead lines can be absorbed into the urban distribution system and located underground as development occurs.

The Electrical Sub-Station site footprint may be expanded (possibly doubled) in the future to accommodate an additional transmission feed. The arterial roadway corridors of Macleod Drive (from the Sub-Station to the west) and Chinook Trail (from Macleod drive north) may potentially become a major power transmission corridor (steel towers etc) if the Sub-Station is upgraded to 240 KV.

Natural Gas Wells and Pipelines

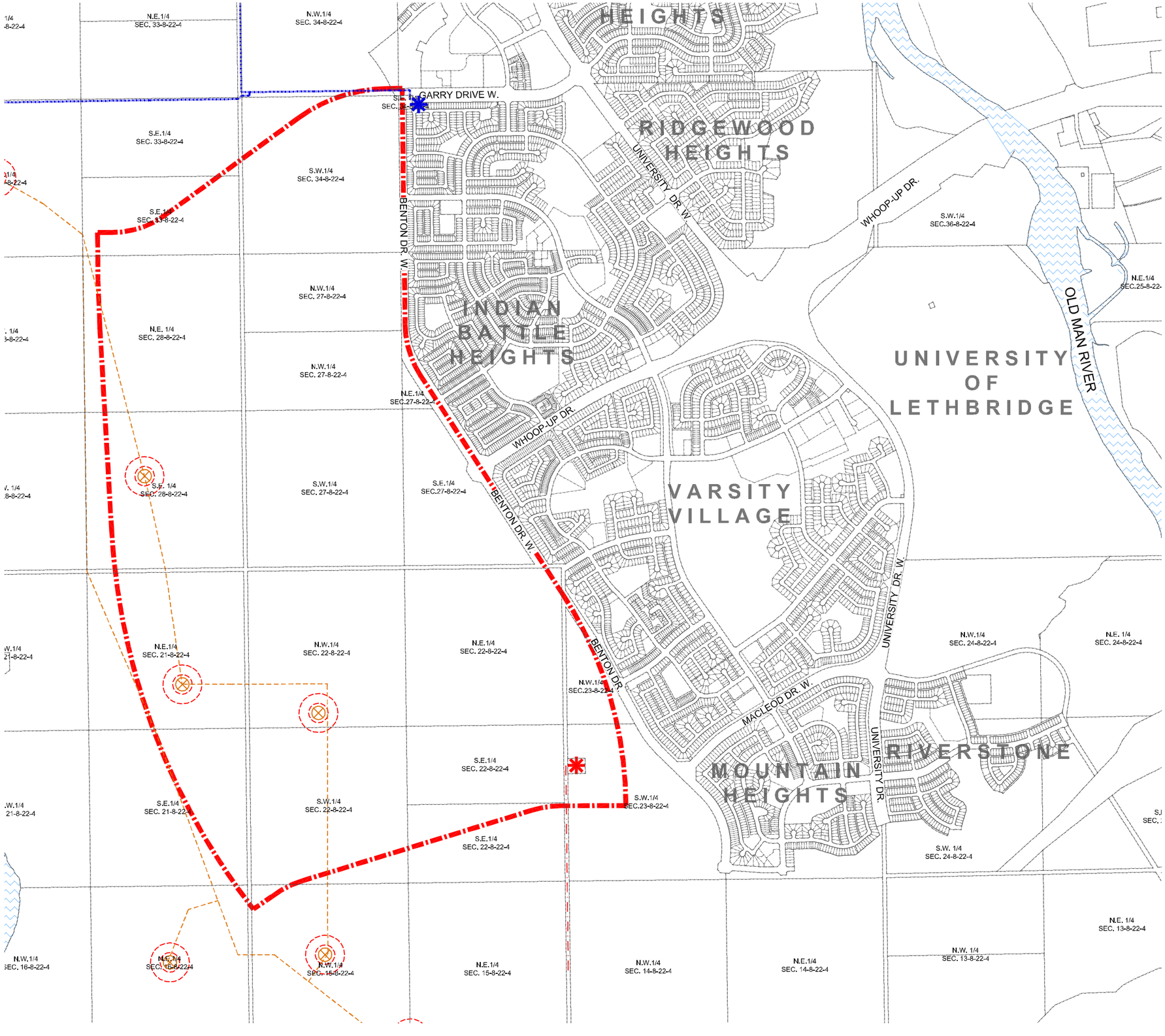
Bonavista Petroleum has three existing sweet gas wells that are connected with a pipeline in the west portion of the ASP area. The existing gas wells are shown in Map 3. These wells were commissioned in 1995-1996 and are expected to be producing wells for 10 more years. A typical setback of 100 m from the lease boundary is required for sweet gas wells. To reduce this setback requirement to 50 m requires an application to the Alberta Energy and Utilities Board. Map 3 schematically shows a 50 m open space and 100 m setback zone of influence for these existing gas wells.

There is an existing Bonavista Petroleum high-pressure gas pipeline that collects gas from the three wells. This pipeline results in setback limitations for any proposed development until such time as the pipeline is abandoned or relocated.

Once a high pressure gas line is decommissioned, the Alberta Energy and Utilities Board recommends permanent structures such as residential development be setback at least five meters from the abandoned wells and underground utilities be setback at least three meters. A work space of at least 10 m by 15 m around the well is also recommended along with an access route not less than 8 m wide.

West Lethbridge

Phase II Area Structure Plan



Legend

- Electrical Sub-Station
- Overhead Transmission Line
- Sweet Gas Well
- High Pressure Pipeline
- 100m Pipeline Setback (AEUB)
- Potential 50m Pipeline Setback (AEUB)
- ATCO Regulating Station
- ATCO High Pressure Transmission Line
- Area Structure Plan Boundary

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N

0 100 200 500 m

Map 3
Existing Development Constraints

key map
1 : 40 000 000

ATCO Pipelines has an existing high-pressure transmission line on the northern border of the ASP area, adjacent to the north side of Garry Drive. This transmission line feeds a regulating station at the intersection of Garry Drive and the Benton Drive right-of-way.

2.2 Planning Context

This ASP has been prepared having regard to the policy context and planning system employed by the City of Lethbridge. The following is a brief description of relevant parts of existing Municipal Development Plan and Land Use Bylaw.

2.2.1 City of Lethbridge Municipal Development Plan

The City of Lethbridge Municipal Development Plan (MDP) notes that West Lethbridge has over the last 20 years been one of the major residential growth areas in the City. This pattern of growth is expected to continue into the future with West Lethbridge eventually having the potential to accommodate 80-90,000 people.

To encourage efficient growth, the MDP notes the need to ensure that future residential growth is concentrated rather than scattered in numerous neighbourhoods. This will ensure that City infrastructure is developed in an efficient manner. The MDP advocates having 'balanced' neighbourhoods with a mix of housing types and densities. It also promotes the use of residential and building design that maximizes solar access and reduces wind impacts. This may be accomplished during the outline plan stage. In addition, new residential areas should be designed to allow for arterial road right-of-ways that include multi-functional open space corridors landscaped with drought tolerant grasses, shrubs and trees. These corridors could be used to connect the villages with one another by providing pedestrian and cycling trails.

2.2.2 Urbanization of West Lethbridge, 1969

The "Urbanization of West Lethbridge" report that was produced by the Oldman River Regional Planning Commission in 1969 recommended the development of West Lethbridge as a series of villages. The guidelines put forth in this report regarding the Village Concept were that each village would be comprised of two neighbourhoods with the total area of the village being approximately one square mile in size.

A village would contain a variety of housing types, schools, open spaces and services such as commercial centers and health clinics. These commercial centres would be located at the intersection of an arterial and collector roadway. In addition, each village may also contain local commercial facilities designed to service each neighbourhood. An open space system would be developed for each village allowing for safe and convenient pedestrian / cycling commutes within the village to commercial centers, services, recreational facilities and other amenities, as well as to other parts of the City via interconnected trail and parks systems. This village open space system

may consist of sidewalks, boulevards, or separately dedicated open space and trail system.

The 1969 Urbanization Plan also contained the framework for a centrally located community core to provide multi-village services to the West Lethbridge service area.

2.2.3 City of Lethbridge Land Use Bylaw

The Land Use Bylaw (LUB) shows that the majority of the lands within the ASP area are designated Urban Reserve. The purpose of designating land Urban Reserve is to *"control subdivision and development until the required municipal services are available, areas structure or area redevelopment plans are approved, and more appropriate alternative districts are applied".*

3.0 LAND USE CONCEPT

The West Lethbridge Phase II ASP provides a unique opportunity to plan two new villages focussed on an integrated mixed use Community Core that will be a focal point and service centre for West Lethbridge. The Land Use Concept illustrated on Map 4 reflects the following nine planning principles and supporting development objectives.

3.1 Planning Principles and Objectives

Principle #1: Provide a framework that will facilitate financial viability of future development through the orderly and economic extension of services and strategic allocation of land uses.

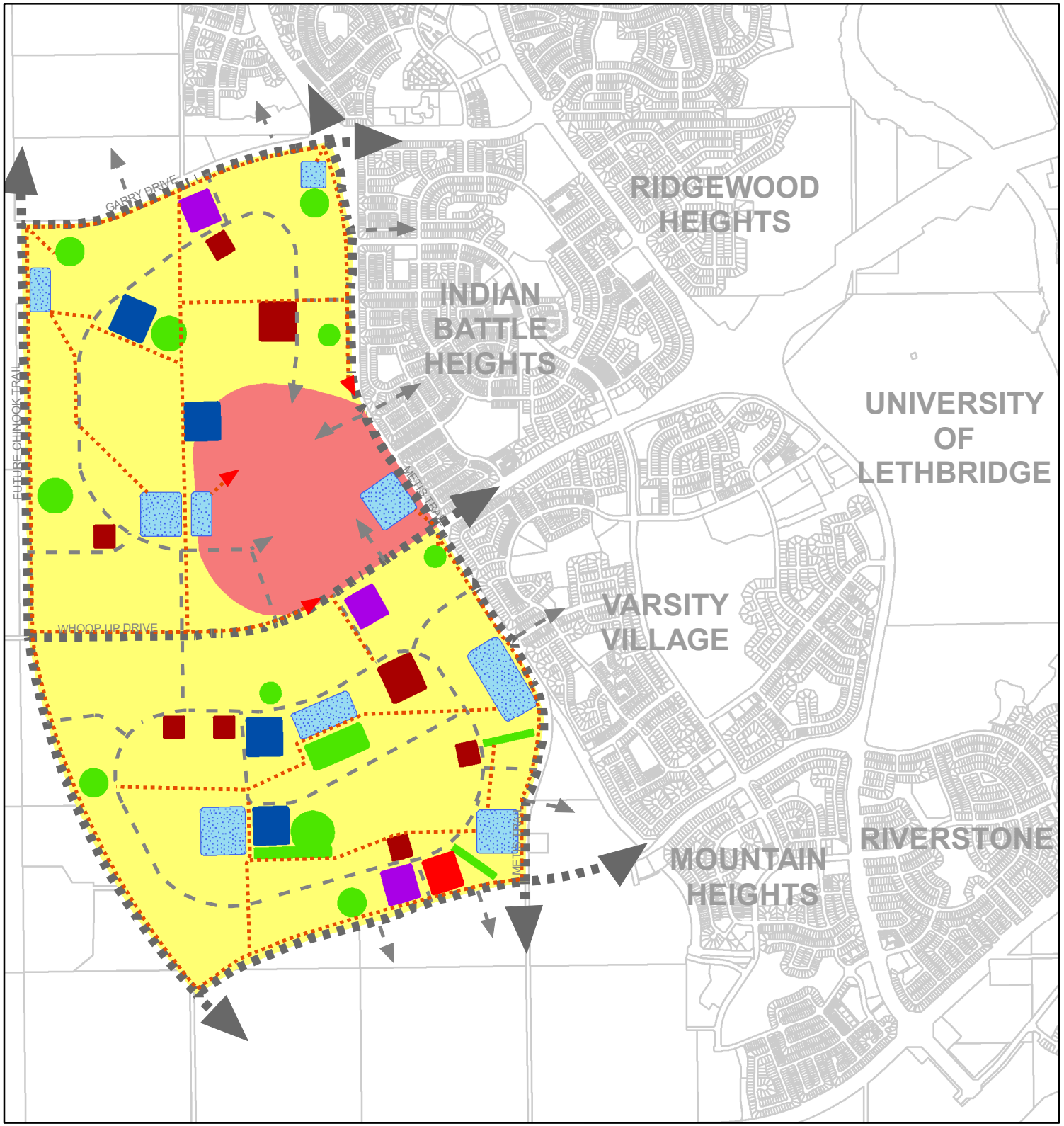
Objectives:

- Provide for the orderly, economic, and beneficial extension of roadways and municipal services.
- Provide for construction of low-density residential development in the initial phases.
- Locate commercial land uses in a manner that provides for maximum visibility and easy access from the arterial roadways.

Principle #2: Promote walkability by creating functional, safe and attractive pedestrian environments.

Objectives:

- Provide functional and attractive pedestrian linkages to encourage connectivity with adjacent neighbourhoods and citywide trail system.
- Design for universal accessibility (i.e. barrier-free access).
- Enhance the pedestrian experience by encouraging active residential and commercial streetscapes.
- Design pedestrian crossings at roadways to be safe and clearly defined to avoid pedestrian / vehicular conflicts.
- Consider the prevailing westerly wind when designing streets, park spaces, and pedestrian linkages.



West Lethbridge Phase II Area Structure Plan

Legend

- Community Core
- Low Density Residential
- Multi-Unit Residential
- Commercial
- Religious Assembly / Instituional
- School Site
- Neighbourhood Parks
- Stormwater Management Facility
- Potential Pathways
- Future_Arterial
- Future Collector

Map 4

Land Use Concept

CITY OF Lethbridge

December 1, 2023

0 230 460 920

Meters

Principle #3: Foster integrated neighbourhoods that encourage a wider range of housing choice for different age and income groups.

Objectives:

- Create neighbourhoods that incorporate different residential dwelling types and densities.
- Promote sustainable building practices to encourage environmentally friendly development.
- Provide for a range of seniors accommodation and support services consistent with the concept of "aging in place".
- Encourage innovative housing forms that foster affordability and liveability.

Principle #4: Provide a logical, safe, and efficient hierarchy of transportation systems within the ASP area to address the public transit, private automobile, and truck movement, pedestrian and bicycle transportation needs of residents and businesses.

Objectives:

- Consider efficiency and safety in the design of internal and external roadway system.
- Employ the *LA Transit Planning and Building Transit Friendly Residential Subdivisions* planning guidelines.
- Implement shared parking strategies to reduce the amount of land that needs to be dedicated for parking.
- Provide alternatives to private automobile uses such as transit, bicycling or walking.

Principle #5: Create a sense of place that adds visual interest and fosters social interaction, where people want to spend time.

Objectives:

- Locate prominent civic buildings (library, schools, and churches) on prominent sites.
- Provide opportunities for focal points, green spaces, and gateways.
- At the outline plan stage, identify theming opportunities that can be incorporated into architecture, landscaping and street furniture.

Principle #6: Design attractive and functional open spaces.

Objectives:

- Strategically locate playfields associated with schools so they are easily accessible for community use.
- Disperse smaller neighbourhood parks throughout the ASP area.
- Incorporate the stormwater management facilities to create a network of interconnected greenways that can be used as pathways and passive recreation.
- Consider and mitigate climatic conditions (wind, sun, rain, etc.) when siting and designing open spaces and parks.

Principle #7: Foster the safety and comfort of residents to enhance liveability.

Objectives:

- Incorporate Crime Prevention through Environmental Design Principles (C.P.T.E.D.) at the subdivision and site planning stages of the planning process.
- Ensure streets, public spaces and parking areas are well lit.
- Encourage the development of pedestrian areas and public spaces that are designed for day-long and year-round use.

Principle #8: Accommodate needed community services and recreational opportunities.

Objectives:

- Allocate land to meet the needs of a wide range of population groups.
- Provide land for indoor and outdoor leisure services.
- Provide gathering spaces and social areas for special events and programming.
- Dedicate sufficient space to schools and playgrounds in suitable locations.
- Ensure sufficient land and space is allocated for seniors, youth oriented facilities, childcare and other social services.

Principle #9: Encourage mixed use development within the Community Core to create opportunities to live, work, shop, play, and learn.

Objectives:

- Explore the potential to provide mixed uses within the Community Core that are integrated vertically (e.g. retail uses on the ground floor and residential uses on upper floors) and horizontally (i.e. compatible land uses adjacent to each other).

- Strategically locate land uses to create synergies amongst land uses (e.g. locating higher density residential uses close to shopping and services).

- Avoid land use conflicts.

- Accommodate flexibility to meet changing market conditions while considering community values.

- Incorporate a focal point into the Community Core, to allow for a variety of unstructured and programmed activities for a diverse range of user groups, such as a village square.

- Promote compact development within the Community Core by having land uses such as high-density residential, commercial, service and community services located within a 400-m radius or 5-minute walking distance.

- Create a framework that makes it attractive for seniors housing to be located in close proximity to community amenities and services.

- Devise and implement design guidelines to promote high quality public and private development.

- Create a safe and comfortable pedestrian environment by encouraging active commercial and residential street frontages and attractive streetscaping.

3.2 General Land Use Concept

The land use concept, depicted on Map 4, is conceptual in nature and is intended to show the general relationship amongst land uses. More precise sizes and location of individual land uses will be defined during the outline plan stage.

Land uses are organized geographically into a mixed use Community Core comprising 108 ha (267 ac) that could accommodate an estimated population of approximately 2,641 people. The proposed North Village, encompasses approximately 225 ha (556 ac) and, based upon the preliminary land use concept, could accommodate an estimated population of approximately 9,822 people. The South Village includes 365 ha (902 ac) and could accommodate

approximately an estimated additional population of 15,053 people. Refer to the Land Use Statistics in Appendix B.

3.3 Community Core

The Community Core provides a focal point and a range of commercial and community services for the surrounding villages in West Lethbridge by providing opportunities to live, work, play, shop, and learn. It provides a board range of land uses that are described in more detail in Section 5.0, including education facilities, retail and office space, recreation facilities, a library, seniors' housing, multi-unit housing and other community services. It is meant to serve as an attractive gathering place for local residents, with excellent connectivity to surrounding residential neighbourhoods (i.e. by car, public transit or pedestrian and bicycle pathways).

3.4 Commercial Land Use

It is proposed that the majority of commercial opportunities be concentrated in the Community Core. These will take the form of a district level shopping centre located on the northwest corner of Whoop-Up Drive and Benton Drive.

A potential commercial "high street" has also been introduced within the Community Core. The high street has the potential to provide pedestrian-oriented retail, institutional, and service uses on the ground floor and professional office or residential uses on upper floors. Given the smaller market in Lethbridge, it is recommended that ground floor residential also be encouraged to provide for active street frontages.

Other convenience commercial opportunities are better located along arterial roadways at major entry points to the villages.

3.5 Sites for Religious Assembly / Institutional Uses

Four potential high-profile locations ranging in size from 0.8 – 3.25 ha (1 – 8 ac) have been proposed for religious assembly / institutional uses. The sites chosen have good access at entry points to the villages. Institutional uses could include government buildings, recreation facilities, schools and public utilities.

3.6 Residential Land Use

Within each village, a range of housing choice should be provided in terms of housing form size, tenure, and cost. Given the availability of commercial and community uses and amenities within the Community Core, higher density housing forms such as apartments and townhousing are being proposed to be located there.

Map 4 – Land Use Concept conceptually shows potential areas suited for low density and multi-unit residential development.

Low density residential uses are defined as single family detached and semi-detached (i.e. duplex) housing forms. This is the housing form for which there is the greatest demand and therefore makes up the predominant land use within the North and South Villages.

Multi-unit residential development includes both medium-density housing forms such as townhousing, as well as higher density apartment-style housing. Potential locations for multi-unit housing are shown on Map 4. These locations were selected based upon accessibility, and proximity to transit, parks, open spaces, and other amenities.

The number, location, form and size of multi-unit sites are conceptual and will be confirmed at the outline plan stage.

3.7 Open Space System

The open space system for the ASP area is depicted on Map 5. Since the large combined high school site in the Community Core is in close proximity to the North Village and the Nicholas Sheran Park in Varsity Village is in close proximity to the South Village, no district park is planned for the ASP area. The open space system will be comprised of neighbourhood parks, stormwater management facilities, and a pathway network.

The following principles build on the planning goals contained in the City of Lethbridge MDP (Chapter 6) and assume that the City of Lethbridge Design Standards (Section 3 – Storm Water Management and Section 7: Parks and Open Space) will be implemented in the development of an open space system for the ASP area.

Neighbourhood Parks

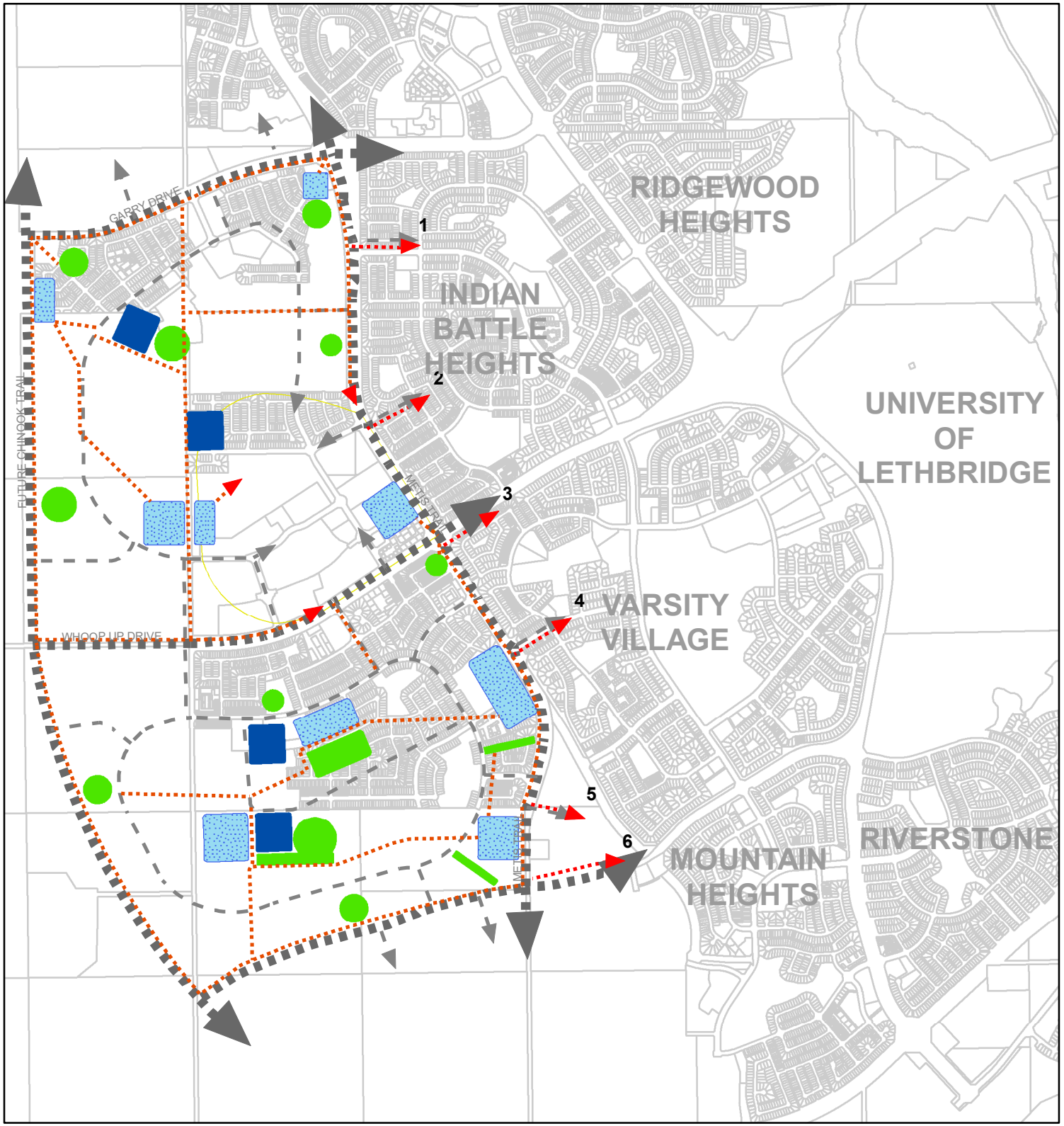
Neighbourhood parks intended to serve the recreational needs of a neighbourhood can range in size from 0.6 to 2.8 ha. Map 5 illustrates the general size and location of neighbourhood parks for individual development cells. The exact number and location will be finalized in the outline plan stage. Generally speaking, these should be located within a three to five minute walking distance of homes.

The following principles should be considered in the development of neighbourhood parks:

- Neighbourhood parks will provide amenity value for residential neighbourhoods by providing a combination of playground opportunities and informal play areas, as well as passive use and seating areas.

- Neighbourhood parks should be linked to the overall open space system via pedestrian linkages or pathways.

- Neighbourhood parks should be designed to enhance security and safety.



West Lethbridge Phase II Area Structure Plan

Legend

- Neighbourhood Parks
- Potential Pathways
- Stormwater Management Facility
- School Site
- Future_Arterial
- Future Collector
- Community Core Boundary

Pathway Connections:

1. to Willowbrook
2. to Indian Battle Heights
3. to Coal Banks Trail
4. to Nicolas Sheran Recreational Area (and Coal Banks Trail)
5. to Nicolas Sheran
6. to University of Lethbridge (and Coal Banks Trail)

Map 5

Open Space System

CITY OF Lethbridge

December 1, 2023

0 230 460 920

Meters

- Neighbourhood parks should be designed with access from public streets and to ensure universal accessibility when designing entries, walkways, and other park amenities.

- Larger neighbourhood parks should be strategically located adjacent to schools and/or stormwater management facilities to maximize the added benefits offered by these complementary open spaces.

- Larger neighbourhood parks should include athletic fields, ideally in conjunction with a school site.

- Smaller neighbourhood parks (e.g. tot lots) should be designed at a shallow depth to facilitate easy surveillance from adjacent residences.

Stormwater Management Facilities

Stormwater management facilities combine utility, aesthetic, and recreational value as linear greenways within the overall open space system. The stormwater management facilities in the ASP area will be a combination of wet ponds, dry ponds, and linear greenway connections.

The following principles should be considered when developing stormwater management facilities as part of the overall open space system:

- Naturally occurring plant species should be encouraged in the design of wet ponds and shorelands.

- Suitable areas of stormwater management facilities, especially dry ponds, should be designed to accommodate active recreational use where possible.

- Wet stormwater management facilities need to be supplemented with irrigation water to enhance their recreation potential.

Pathway Network

The general network of primary and secondary pathways for the ASP area is depicted on Map 5. The pathway network is intended to link local amenities together.

The following principles should be considered in the development of the pathway network:

- Pathways should be located along the perimeter of the ASP area and along Whoop-Up Drive. These will create a pair of outer loops for the North Village and Community Core and the South Village portions of the ASP area.

- The outer loops should be linked across Benton Drive to provide access and connections to regional trails, district and regional parks, the Oldman River Valley, and the University of Lethbridge. Whenever possible, these linkages should be provided at

"t"-intersections along Benton Drive and at the intersection of Whoop-Up Drive and Benton Drive.

- Internal pathways within the villages should provide an inner loop and connections between neighbourhood parks, schools, stormwater management facilities and other local amenities.

- Internal pathways should provide convenient connections to the outer loops, commercial areas and the Community Core.

- Pathways should be incorporated along stormwater management facilities and linear connections and utility right-of-ways as much as possible.

- Pathway crossings of roadways should be located at intersections.

- Pathways within the Community Core will be addressed at the outline plan stage.

3.8 School Sites

Approximately 22.5 ha (55.6 ac) have been allocated for a combined high school site, which would integrate the two high schools and a branch library in a shared facility. A more detailed description is provided in Section 5.2. Three other elementary school sites of approximately 4 ha (10 ac) each have been conceptually shown on *Map 4 – Land Use Concept*.

Two elementary school sites have been centrally located in the North Village, near proposed park sites and easily accessible from the collector roadway and pathway system. Another two elementary school sites have been shown centrally located in the South Village. Both are strategically located on parks and open space associated with stormwater management facilities. A minor collector roadway has been provided to provide easy access for busses and drop-offs.

Based upon anticipated population levels at build-out, projected student generation by type of school is provided in Appendix C. It is expected that the plan area will eventually generate sufficient students to warrant a public middle school. At this time it is anticipated that G.S. Lakie and a future middle school in Watermark will serve the plan area.

3.9 Policing and Emergency Services

An existing fire hall with emergency medical services (EMS) is located at Whoop-Up Drive and Jerry Potts Blvd. W., which will serve the ASP area. During the preparation of the ASP, the Lethbridge Police Service was contacted, and they indicated no immediate plans to locate a police substation in the Community Core. Such a substation could easily be incorporated as a "storefront operation" at a later date.

4.0 TRANSPORTATION

4.1 Major External Roadways

As shown on *Map 6 – Transportation*, the ASP area is serviced by a proposed arterial roadways network that includes future westerly extensions of Whoop-Up Drive, Garry Drive, and Macleod Drive. Also included in the arterial network are the north-south extensions of Benton Drive and Chinook Trail. It is proposed that these roadways would ultimately be developed at a divided arterial standard with 75 m right-of-ways. Functional planning studies will be conducted to confirm right-of-way requirements, access management standards, roadway cross-sections, and other functional considerations.

Various access points from the arterial roadway system to the collector system via super collectors have been identified on Map 6. Consideration has been given to adequate spacing distances between access points to ensure safe access / egress.

4.2 Internal Roadway System – Collector and Local Roadways

Integrating with the arterial roadway system, collector roadways are proposed consisting of internal loop roads / grid networks to provide efficient and effective access to all parts of the North and South Villages and Community Core. The collector roadway system is also an essential part of providing an effective and efficient transit system. A Transportation Analysis has been conducted to confirm that the road widths and roadway classifications are sufficient to accommodate the expected peak period and daily traffic flows.

As part of the collector network, two optional links have been shown north and south of Whoop-Up Drive to connect to Chinook Trail if future traffic volumes warrant it. Local roadways would be developed to provide access to various development cells from the collector roadway system. The collector roadway system is shown conceptually on Map 6 and will be defined in more detail at the outline plan stage.

4.3 Transportation Analysis

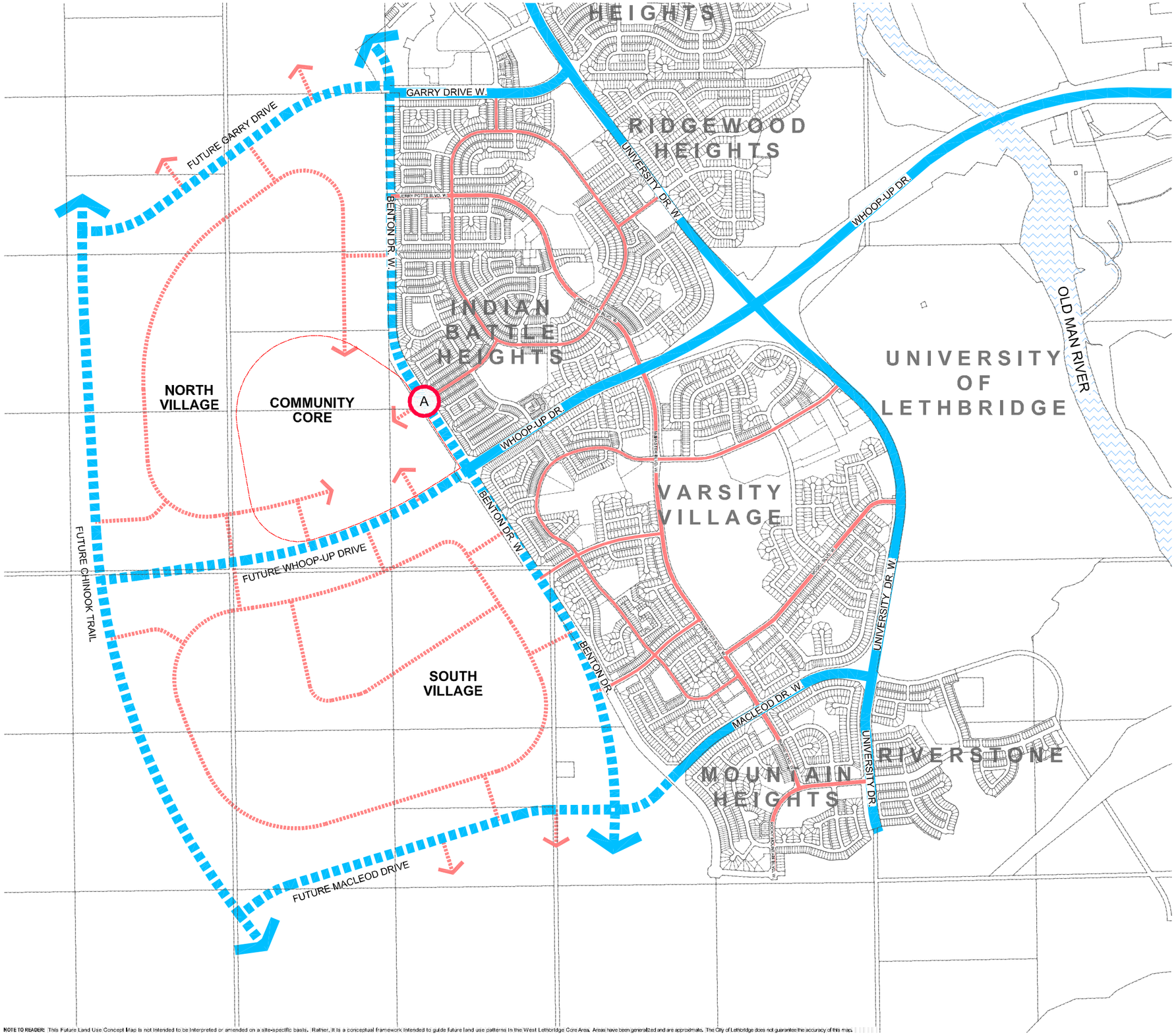
As part of the overall planning process for the proposed West Lethbridge Phase II Area Structure Plan (ASP), a transportation analysis was completed to assess the adequacy of the internal roadway network and adjacent intersections with arterial roadways.

It is noted that the scope of the transportation analysis was limited to consideration of intersections located internal to the ASP and the adjacent future roadways of Benton Drive, Whoop-up Drive, Garry Drive, and MacLeod Drive. Operations east of the future Benton Drive road, associated with Chinook Trail, and the future bridge crossing were outside the scope of this study.

The analysis was based on an iterative process utilizing road network, population and land use assumptions developed by the study team, including the City of Lethbridge. It is noted that no

West Lethbridge

Phase II Area Structure Plan



Legend

- Existing Arterial
- Future Arterial
- Existing Collector
- Future Collector
- Community Core Boundary

A — The ultimate configuration of access and egress requirements at the proposed intersection of Blackfoot Blvd. W. and Benton Drive will be determined at the Outline Plan stage.

NOTE TO READER: This Future Land Use Concept Map is not intended to be interpreted or amended on a site-specific basis. Rather, it is a conceptual framework intended to guide future land use patterns in the West Lethbridge Core Area. Areas have been generalized and are approximate. The City of Lethbridge does not guarantee the accuracy of this map.

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Map 6
Transcription

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traffic forecast information was available from the City at the time of this study. The fundamental conclusions are as follows:

Overall Conclusions

- **Internal ASP Road Network:** The results of the internal road review confirmed that the proposed internal road network for the ASP (i.e., roads situated in the North and South villages) would satisfy the standards outlined in the City of Lethbridge Transportation Master Plan. Bunt & Associates concludes the proposed internal road network to be adequately sized and conducive to traffic circulation.

- **Benton Drive:** The majority of the intersections along Benton Drive are expected to operate at capacity if Benton is constructed as a 2-lane roadway. Additional widening (including left-turn lanes) and traffic signals at key locations will be required in this corridor. It is recommended that the City undertake a corridor study to verify the appropriate intersection treatments and corresponding lane arrangements. The suggested long-term improvements are summarized in following tables.

- **Whoop-up Drive:** In order for this corridor to operate at a reasonable level of service, additional improvements (i.e., widening of Whoop-up Drive, provisions for left turn and right-turn lanes at the critical intersections, installation of traffic signals) will be required. The undertaking of a detailed corridor analysis for Whoop-up is also recommended given the attractiveness of this roadway for West Lethbridge traffic destined for areas east of the river valley. The suggested improvements are summarized in the following tables.

- **Whoop-up Drive/Benton Drive Intersection:** In terms of traffic congestion, this intersection was identified to be the primary constraint for the area road network. This intersection is expected to operate at capacity during the critical PM Peak Hour, even with a six lane cross section on both Whoop-up and Benton, and with dual left turn lanes on all approaches. In light of these constraints, it is recommended that the City of Lethbridge make provisions for the following:

    - Undertake a functional planning study to assess the need for and feasibility of accommodating a major intersection with potential grade separation of high volume movements at the Whoop-up Drive/Benton Drive intersection. Options may include a major intersection with movements removed or community planning strategies which reduce traffic at this location. It is noted that this issue could have a significant impact on land use, layout and intersection location on Whoop-up Drive west of Benton Drive, and on Benton Drive north and south of Whoop-up Drive.

- In order to accommodate the expected build out traffic volumes, both Benton and Whoop-up will need to be constructed as four or six lane roadways in the study area. Two lane cross sections will not be sufficient. The City's desired intersection configuration for these corridors called for T intersections and the analysis confirmed the workability of that configuration in general terms. However, it should be noted that

the analysis was "high level" and based on broad assumptions without the benefit of forecast data or distribution information. As such, there is inherent variability in the results and it is again recommended that the City undertake corridor studies for both Benton and Whoop-up Drive.

4.4 Transit

Consistent with the City of Lethbridge's subdivision design standards, buses will be routed via the arterial and collector roadway system to provide convenient service between neighbourhoods, the Community Core, and other parts of the city. The design of subdivisions will follow the *"Planning and Building Transit Friendly Residential Subdivisions Guidelines"* to ensure walking distances from transit stops are within 400 m or 5 minutes for residents.

In addition, enhanced transit would be required to serve the Community Core, given that an anticipated large student and seniors' population in the Community Core and a high transit ridership is expected.

5.0 COMMUNITY CORE

For the purposes of the area structure plan, the Community Core is indicated on the land use maps as a single entity. The Community Core will actually consist of a number of land uses which will require careful planning to ensure appropriate relationships. It was deemed premature to specifically identify the exact location of each land use in the Community Core in the area structure plan. This task is best completed at the Outline Plan stage when more detailed planning is conducted and potential user groups have better refined their needs.

However, some preliminary planning for land uses within the Community Core was conducted as part of the area structure plan process to identify general location and size parameters. Considerable public consultation also occurred in order to develop design guidelines that met the vision of potential stakeholders of the Core. Appendix D provides a summary of several alternative Community Core designs that were evaluated by the public, potential users and technical staff. Alternative 5 in Appendix D was prepared in response in comments received on Alternatives 1 through 4. Alternative 5 best represents application of the design principles developed for the Community Core and reflects feedback from the public and potential users. During the Outline Planning process, Appendix D should be used for design context purposes.

5.1 What is the Community Core?

The Community Core is a pedestrian-oriented, mixed-use centre where residents can live, work, shop, play, and learn. It also provides a focal point for surrounding villages and a range of public and civic facilities such as schools, libraries and recreational centres, offering private commercial/retail businesses, offices, multi-unit housing, senior's housing and health clinics all integrated into a common destination. The range of community services provided in the Community Core helps to create a sense of community and focus for all of West Lethbridge. Further, a village square, high quality pedestrian street environment and good transit access provides a unifying framework that makes the Community Core a gathering point and provides linkages to surrounding villages and the remainder of West Lethbridge.

5.2 Components of the Community Core

The following is a brief description of a preliminary description of potential land uses within the Community Core.

Combined high school site and Library

A site of approximately 23 ha (56 ac) has been identified as part of the Community Core to accommodate new high schools for both school divisions, integrated in a single structure with a new 1,440 m^2 (15,500 ft^2) branch library. The Public School Division envisions that the new high school will be initially designed to accommodate 900 students, with the ability to expand to 1,100 students by 2009. The Holy Spirit Roman Catholic High School will initially accommodate 450 students, with the ability to expand to accommodate 600 students. The

combined school site would also provide for playfields that would be made available for community use. It is assumed the site will be large enough to accommodate future expansion of the two high school buildings and library if required. A final site size will be determined at the outline plan stage.

Recreational Facility/Community Centre

A combined recreation facility and community centre is planned for a site of approximately 1.2 ha (3 ac). Discussions with a number of community stakeholders, such as the YMCA, saw the possibility of providing programming for seniors, youth and child care services in the facility.

Seniors Housing

From discussions with the Green Acres Foundation, Chinook Health Region, Nord Bridge Senior Citizens Association and Lethbridge Senior Citizens Organization, it was determined that the Community Core was well suited for seniors housing and support services. A 4.0 ha (10.0 ac) site has been allocated for seniors housing in the Community Core. The seniors' housing site is located within walking distance (150 m or 500 ft.) of shopping and services and transit, and not too close to the high schools. Opportunities exist for an 'aging in place' complex which provides a range of housing options from cottages and apartments for independent living to assisted care facilities.

District Commercial

A 3.25 to 4.85 ha (8 to 12 ac) district commercial shopping centre is proposed at the northwest intersection of Whoop-Up and Benton Drive. The site has good visibility and access from the arterial roadway system. It is expected to be anchored by a grocery store.

Flex-Site for Potential Commercial/Entertainment/Residential Uses

To allow for possible future expansion, a flex-site could be identified at the outline plan stage for potential additional commercial, entertainment or recreational uses. Should the market demand not be there, the site can always be used for multi-unit residential development.

Recreation/Community Services

In addition, another 12.1 ha (30.0 ac) have been identified as part of Alternative 5 (refer to Appendix D) to accommodate a major regional recreation facility/community facility. It is envisioned this could include a recreation multiplex with a swimming pool, ice arenas, gymnasiums, fitness centre, multi-purpose meeting rooms and community services. The site could also accommodate more playfields and parking.

Medical Clinic

A 0.4 ha (1.0 ac) site has been allocated for a medical clinic.

Village Square

As a focal point and place for community celebrations and events, a 3.0 ha (7.4 ac) area has been allocated to accommodate a village square. This village square is planned as the key open space feature for the Community Core. It is intended to be the 'heart' of the Community Core and significantly contribute to a sense of place. It is intended to be an integral component of the overall open space system and well connected to both the primary and secondary pathway networks. It should act as a community landmark, bring a central focus to the Community Core, and create settings for casual social interaction, informal recreation, and special events.

Residential

The Community Core would also accommodate higher density, low rise and mid-rise apartments, medium density (rowhousing and stacked townhousing) and low density single family attached and detached housing forms.

5.3 Design Guidelines

Five future land use alternatives have been developed for the Community Core. The positives and negatives of each of the alternatives are discussed in Appendix D. The following are some general design guidelines that should be considered for more detailed planning at the outline plan stage to encourage a Community Core that contains exemplary public and private development.

Mixed Use

A mixed-use Community Core provides opportunities to live, work, shop, learn and play. The following should be considered:

- A diversity of uses should be encouraged to support activity to create a safe and lively Community Core.
- A mix of land uses should be integrated both horizontally (i.e. locating compatible uses beside one another, for example a library and high schools) and vertically within the same building.
- Compact development should be promoted so that services and amenities are within an approximate radius of 400 meters, or within a 5-minute walk radius.
- The mix of land uses should function in a mutually supportive fashion to minimize land use conflicts while maximizing synergies.

A 'high street' provides opportunities to vertically integrate uses by placing retail uses at grade with office and residential uses on the upper floors. Source: Bohl, 2002.

- Housing forms that facilitate work/live opportunities should be encouraged.

Walkability

In order to develop an attractive and safe pedestrian environment, the following should be considered:

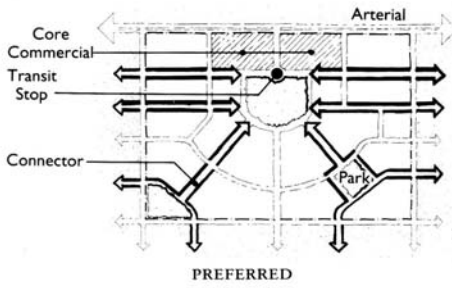
- Linkages with surrounding neighbourhoods, including walkways, trails and roadways should be created to ensure connectivity and ease of pedestrian movement.
- Street-oriented retail should be provided along the high street of shopping centres to create a visually stimulating pedestrian experience and promote walking instead of driving.
- Street crossings should be clearly marked so they are convenient and safe for pedestrians and visible to motorists.
- The public realm should be designed as barrier-free space intended for universal access.
- Landscaping, street furniture (e.g. lighting, canopies and awning, etc.) and conveniently located seating areas should be included in the streetscape design.

A safe and attractive streetscape showing the provision of street-oriented retail, street trees and ample sidewalk space.

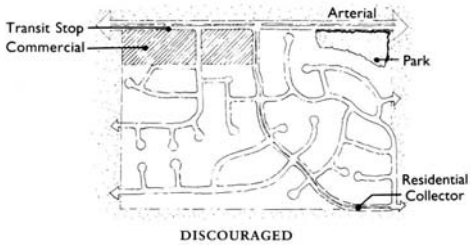
Street and Block Patterns

To provide an attractive street network for pedestrian and vehicular circulations, the following should be considered:

- The street pattern should be designed as a grid or modified grid in order to achieve efficient connections and direct paths for pedestrians and bicyclists.
- The street system should be designed to maintain convenient vehicle circulation without compromising the safety and attractiveness of the pedestrian environment.
- The street system should provide multiple, parallel, and inter-connected routes between commercial and residential areas.
- The street system should be simple, memorable, accentuate landmarks, and encourage pedestrian activity.



A simple, grid-based street system with landmarks is memorable, easy to navigate, and encourage pedestrian activity.
Source: Calthorpe 1993.

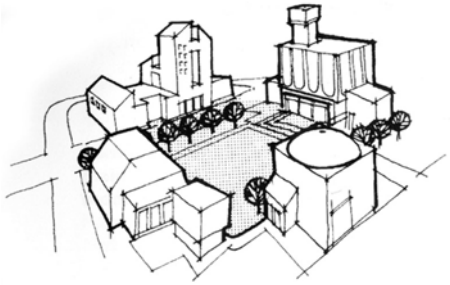


A circuitous, complex street pattern with cul-de-sacs discourages pedestrian activity.
Source: Calthorpe 1993

Built Form

To create a high quality, attractive built environment the following should be considered:

- Building height and massing should transition from a taller, dense mixed-use Community Core to high-density residential housing to medium density residential housing and finally, to surrounding lower density villages.
- Where possible, the built form should preserve views, create attractive rooflines and minimize shadowing.
- The height and massing buildings should define and enclose public streets and spaces.
- Landmarks, theming, wayfinding and public art should be provided.



Building height and massing showing suitable transition and enclosure of a public square. Source: Bohl, 2002.

Active Streetfronts

Commercial and residential streetfronts should be designed to create street-level pedestrian activity. The following should be considered:

- Where possible, commercial buildings should be encouraged to build to the property line and residential uses should have reduced front yards and defined street edge.
- Primary entrances of buildings and individual ground-floor residential entrances should be oriented to the street.
- Housing should address the street and sidewalk with entries, balconies, porches, architectural features, and activities, which help create safe, pleasant walking environments.
- Blank walls should be avoided, corner buildings should face both streets.
- Street trees should be planted, and lighting and other street furniture should be at a human scale to enhance the character of the pedestrian realm.

Whyte Avenue in Edmonton, AB. - active streetfronts contribute to an animated sidewalk and street trees create a spatial sense of enclosure. Source: Cooper, Carry & Associates, 2002.

Parking Requirements and Configuration for Commercial and Multi-Unit Residential

The following should be considered when developing parking facilities for commercial and multi-unit residential uses:

- Several small parking lots spread throughout are preferred, rather than one single large parking lot.
- Opportunities for shared parking facilities should be encouraged to minimize the amount of land devoted to parking.
- Surface parking lots should be landscaped and parking entrances and loading should be screened to maintain an attractive pedestrian-oriented environment.
- The parking layout of arterial commercial centres should be designed to provide safe, convenient and attractive pedestrian access.
- Parking and loading access should be oriented to the rear or side of buildings and utilize lanes for access.
- The development of structured parking should be hidden from the street, preferably placed in the interior of blocks.
- Clear signage for parking should be provided.

Southlake Town Centre, Texas - parking lots are screened by buildings, preserving street frontages for street-oriented retail. Source: Bohl, 2002.

Transit

Adhering to the following design guidelines supports transit-oriented development.

- Transit facilities should be placed at the heart of the Community Core and, if possible, adjacent to the village square.
- The transit facilities should contribute to a strong sense of place.
- Higher density residential development should be promoted in proximity to transit facilities.
- Pedestrian connections between all parts of the Community Core and adjacent villages should be clearly defined to provide safe and attractive access to transit facilities.

Transit should be centred at the heart of the Community Core.

Residential Areas

The Community Core will create a vibrant residential community by:

- A variety of housing forms (e.g. apartments, townhouses, duplexes, and single-family units) and types of tenure

should be made available to accommodate a broad range of income and age groups.

- Townhouses and apartments should be located at the sidewalk with parking behind and interior to the block.
- Single-family houses should be set close to the street.
- Residential blocks should provide alleys for utilities and garage access.
- Street trees and plantings should be provided where possible on residential streets.
- Sidewalks should be provided on both sides of all streets, preferably separated from the roadway by a boulevard/street trees.
- Front porches should be encouraged to create an active street environment.

Parks and Open Space

A system of parks and public spaces should be integrated into the Community Core. The following should be considered in the provision of parks and open space:

- A village square should act as a focal point within the Community Core and should be lined with retail shops, restaurants, and cafés to create a lively, pedestrian-friendly atmosphere;
- A village square should be defined by the mass and height of surrounding buildings to provide a strong street wall.
- Parks should be linked to an overall open space system via pedestrian linkages or pathways.
- Parks will provide amenity value for residents by providing a combination of playground opportunities, informal play areas, as well as passive use and seating areas.
- Parks should be designed with access and visibility from public streets and to ensure universal accessibility.

Princeton Forrestal Village – a well-defined public square. Source: Bohl, 2002.

Place-Making

To create a sense of place, foster informal social gathering spaces, add visual interest and develop a legible wayfinding system, the following should be considered:

- Civic building, places of worship and/or other buildings on prominent sites should be designed to be architecturally distinctive.
- The street network layout should be designed to maximize focal point opportunities.
- Views and vistas should be aligned with key buildings and should terminate with key landmarks.
- Prominent pedestrian nodes and transport interchanges should be emphasized (e.g. by marking their location with a prominent landmark and / or gateway).
- Architectural differentiation of buildings and rooflines should be encouraged to create visual interest and assist wayfinding.

Edmonton's Multi-Use Trail - an example of a gateway to define and introduce a public space. Source: GBLA, 2004.

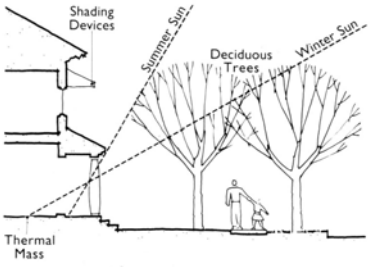
Crime Prevention Through Environmental Design

Crime Prevention Through Environmental Design (CPTED) aims to enhance safety and security by managing the built environment. Developers should work with local agencies to advocate that CPTED principles are incorporated into subdivision design. CPTED principles include the following:

- Methods to achieve natural surveillance should be implemented by providing clear sight lines from within buildings (e.g. installing street-oriented windows, lighting and removing obstructions, as well as focusing the flow of street activity in or near potential crime areas).
- The creation of areas hidden from view and isolated spaces should be avoided.
- Spaces should be designed such that people naturally take ownership, which discourages potential offenders because of users' familiarity with each other and the surroundings.
- Spaces should be designed using high quality durable materials to facilitate easy maintenance over time, as well-maintained, attractive spaces are less likely to be misused.

Active streetfronts put "eyes on the street" and manicured street plantings do not create hiding spaces - the public realm becomes a defensible space.

- Properly located entrances, exists, fencing, landscaping and lighting should be designed to subtly direct pedestrian and vehicular traffic in ways that decrease illicit activities without hindering user mobility.
- Public spaces should be designed to promote year-round and day-long usage.



Deciduous trees can be used to shade interior spaces in the summer and allow direct sunlight in the winter.

Climatic Considerations

To minimize adverse local climatic conditions, the following should be considered:

- Drought resistant landscaping and nature should be encouraged.
- Compact development to minimize the impact of prevailing west winds should be encouraged.

6.0 UTILITY SERVICING

6.1 Stormwater Management System

6.1.1 General Catchment Areas

Map 7 shows the approximate boundary of the West Lethbridge Phase II ASP and the stormwater catchment boundaries within the ASP area. The existing terrain within the ASP area is hummocky. There are many local high points and low points ranging from elevations of 942 m to 930 m. The topography of this area, as well as the location of proposed roads, was used to determine the stormwater catchment boundaries. The western boundary of the stormwater catchments corresponds to the proposed Chinook Trail corridor alignment. The stormwater management system for the ASP area will be independent of the existing communities located to the east of Benton Avenue.

Table 1: Stormwater Catchment Areas and Land Use

Catchment	Land Use	Catchment Area (ha)
1	Residential/ Institutional	63
2	Residential	59
3	Residential/ Institutional	90
4	Residential/ Institutional	43
5	Residential/ Institutional/Commercial	100
6	Residential/ Institutional	46
7	Residential/ Institutional	178
8	Residential/ Institutional	80
9	Residential	110

A more comprehensive Stormwater Management System Technical Report is provided as part of the separate Technical Appendix.

6.1.2 Predevelopment and Post Development Runoff

The Stormwater Management Plan (SWMP) for the West Lethbridge Area was developed in 1988 by MPE Engineering Ltd. & JN Mackenzie Engineering Ltd. This report states that stormwater runoff from the ASP area will be conveyed east to the Oldman River via existing storm sewers. In 2000, Stantec completed the City of Lethbridge Underground Infrastructure Master Plan (UIMP) Study. This report identified that the storm sewer trunk located at the proposed intersection of Whoop-Up

Drive and Benton Drive is at sufficient depth to service the ASP area. However, this sewer has capacity restrictions. Given these restrictions the UIMP states that any development connecting to existing infrastructure must be serviced by a 'zero discharge' storm sewer system.

The 'zero discharge' system will incorporate a series of stormwater retention facilities, sized to contain the 1:100 year storage volume, combined with off-peak pumping facilities that will prevent surcharging the existing system. The stormwater management facilities will address stormwater quality, in accordance with Alberta Environment regulations. Wet ponds and wetlands will provide stormwater quality at the downstream end of each catchment, while dry ponds will be sufficient in the upper reaches of the catchments to provide storage and attenuation.

6.1.3 Stormwater Storage Ponds

Locations of the proposed stormwater management facilities are shown in Map 7. The size, location, and number of proposed stormwater facilities may change during the outline plan stage. All facilities were located in areas of lower elevation, based on the available existing contours information. The proposed stormwater management system should involve a detailed stormwater modeling analysis and this analysis should consider rainwater stored for irrigation purposes.

The catchment area for Facility 1 (63 ha) is located in the northeast corner of the ASP area, bordered by the future extension of Benton Drive and Garry Drive. This catchment is primarily comprised of low-density residential development. The facility will need to be designed to provide water quality treatment to the collected stormwater. Once the downstream system has available capacity this facility will drain into an existing 1800 mm storm sewer located along Tartan Blvd.

Catchment area 2 (59 ha), located south of the proposed Garry Drive extension and east of the future Chinook Trail, is an entirely residential development. This area will drain to Facility 2 located adjacent to Chinook Trail. This facility is not required to provide water quality treatment, since it will drain via a stormwater management flow connection to Facility 3.

Facility 3 will accept drainage from the 90 ha of Catchment 3. This facility lays adjacent to Facility 4 and drains to it via a stormwater management flow connection. Facility 4 provides storage for Catchment 4 (43 ha), which has both residential and institutional land use. Facilities 3 and 4 can be either wet or dry facilities. They are not required to provide water quality treatment, since they will drain east to Facility 5 prior to discharging to the existing storm sewer system.

Facility 5 will accept drainage from Catchment 5 (100 ha), as well as from Facilities 2, 3 and 4 (controlled discharge). Catchment 5 encompasses the Community Core, as well as a smaller residential development immediately north of the Community Core. Facility 5 will discharge to the existing 1200 mm storm sewer trunk located in Whoop-

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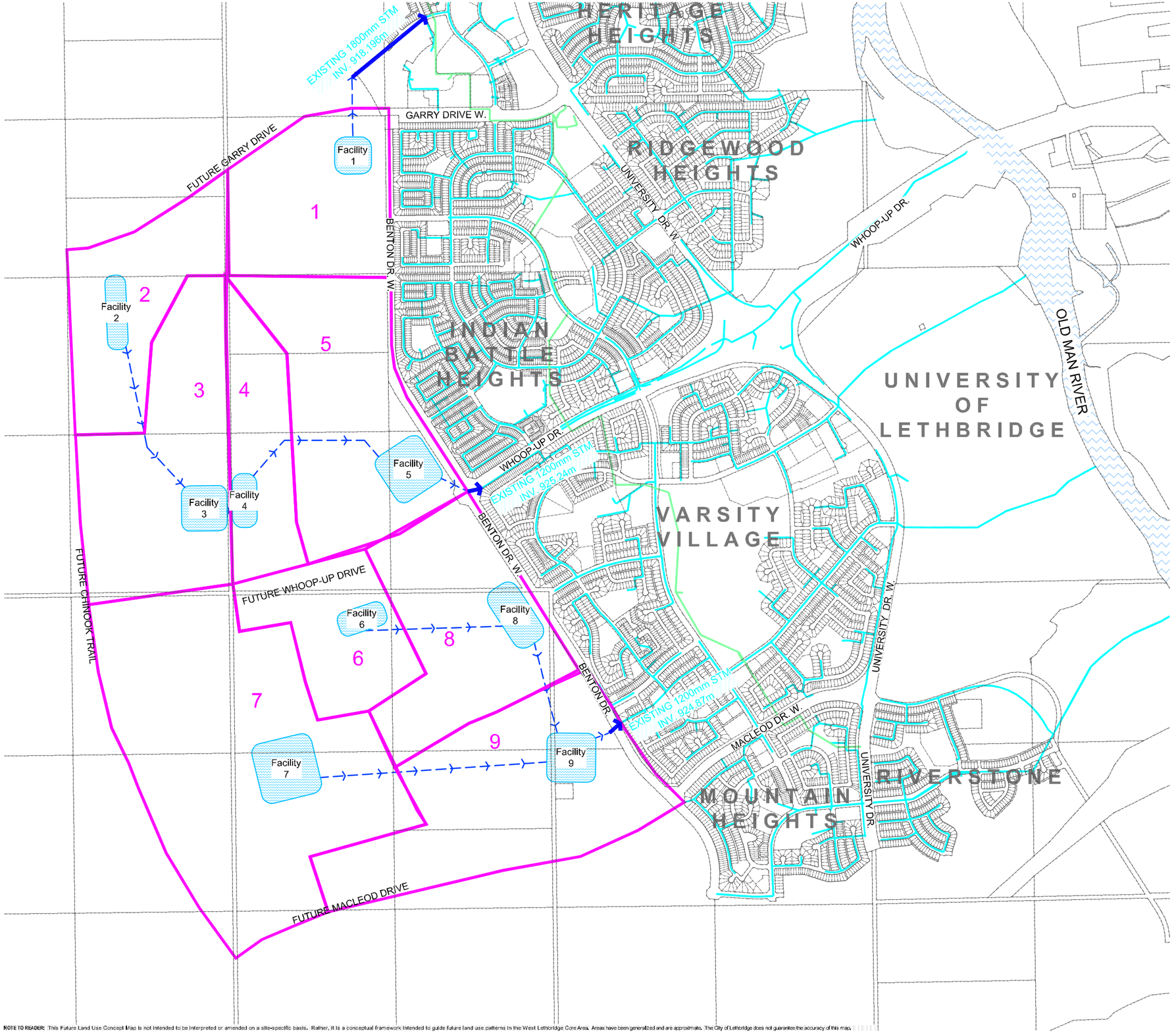

Legend

- 1 — Catchment Number
- Catchment Area Boundary
- Existing Stormwater Trunk Sewer
- Existing Irrigation Water System
- Stormwater Management Facility
- Stormwater Management Flow Connection
- Future Arterial
- Future Major Collector

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Map 7
Stormwater Management

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Up Drive, when the sewer has available capacity. Since this facility is required to provide water quality treatment it will need to be designed as either a wetland or wet pond facility.

Catchment 6 (46 ha) is located south of the proposed Whoop-Up Drive extension. This catchment will drain towards Facility 6, which can be designed as either a wet or dry facility. This facility will discharge via a stormwater management flow connection to Facility 8.

Catchment 7 (178 ha) is located in the southwest corner of the ASP area. This catchment will drain towards the east to Facility 7. This facility may not be required to provide water quality treatment, since it will discharge via a flow connection to Facility 9.

Catchment 8 (80 ha), located south of Whoop-Up Drive and west of Benton Drive, consists primarily of residential development. The drainage from Catchment 8 will flow east towards Facility 8, located adjacent to the future extension of Benton Drive. This facility will discharge via a stormwater management flow connection to Facility 9.

The catchment area for Facility 9 (110 ha) is located in the southeast corner of the ASP area, bordered by the future extension of Benton Drive and Macleod Drive and partially extending beyond these roadways. This catchment is primarily comprised of low-density residential development. The facility will need to be designed to provide water quality treatment for the Catchment 9 drainage, as well as to the controlled discharge from Facilities 6, 7 and 8. Once the downstream system has available capacity this facility will drain into an existing 1200 mm storm sewer trunk located in Benton Drive at Simon Fraser Blvd. It should be noted that ponds could be located on the east side of Benton Drive.

The catchment areas have included the adjacent arterial roadway right-of-ways. In terms of stormwater management phasing, Facilities #1, 5 and/or 9 should be constructed prior to any development in the ASP area. Facility #1 and 5 will provide water quality treatment to the area north of Whoop-Up Drive, while Facility 9 provides water quality treatment to the area south of the future Whoop-Up Drive. All developed area runoff will be routed through these facilities and eventually discharged to the existing system. Temporary stormwater management facilities may be provided to support logical development and phasing.

6.1.4 Proposed Connection to Downstream Systems

For the ASP area, there will be three connections to the existing downstream minor storm system. The discharge of stormwater to this system will be controlled to release at off-peak times. The 1:100 year major drainage systems will not release to the existing downstream major system.

6.1.5 Downstream Impacts

Releasing stormwater to the downstream minor systems at off-peak times will prevent surcharging the existing system. During periods of stormwater release the rate of release will be controlled to not exceed the available capacity of the system.

Routing all of the ASP area stormwater runoff through either wet pond or wetland facilities will improve the quality of the runoff released off site.

To improve water quality, discussions have been held with the Lethbridge Northern Irrigation District regarding the potential of supplementary wet stormwater ponds with irrigation water consistent with current best practices for wet facilities.

6.1.6 Description of Major System Flow Routes

Major drainage systems will extend from the boundaries of each catchment inward to the local stormwater management facility. Each facility will have a controlled outlet that will release flow when the downstream system or facility has available capacity. Where possible the stormwater management facilities will be connected via a major system overland flow route (i.e. green space). These major systems will also function as emergency overland flow routes for upstream facilities. Each facility will have additional freeboard that can function as emergency storage. All major system 1:100 year flow will remain within the boundaries of the ASP area.

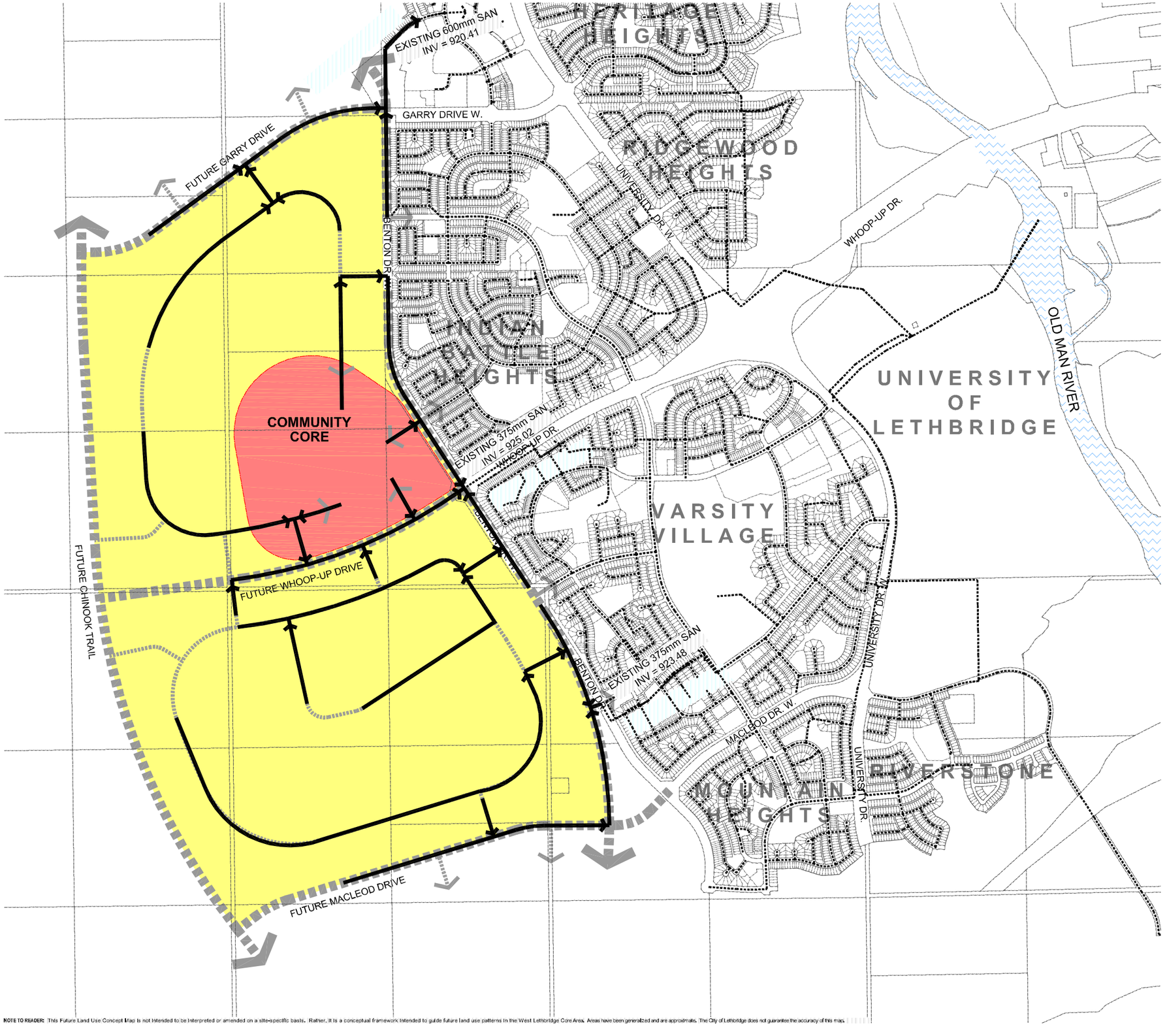
6.2 Sanitary Sewer Collection System

The ASP area will be serviced by a gravity flow sanitary sewer system that will feed into three existing sanitary connections along the future Benton Drive (see Map 8). Each of these sewers drains toward the east, crossing the Oldman River Valley via the West Lethbridge sanitary sewer siphon. The Underground Infrastructure Master Plan (UIMP), completed by Stantec in 2000, noted that the ultimate development in West Lethbridge would require the expansion of the siphon system to the Wastewater Treatment Plant. Sections of the existing sanitary system in Lethbridge are faced with challenges in accommodating high flows during wet weather conditions. Upgrades will need to be made to sections of the existing system to accommodate the additional flow produced by the proposed development within the ASP area.

Using the sewage generation rates given in the City of Lethbridge Design Standards (2004) the ASP area is expected to produce a peak sanitary flow of 488 L/s. This flow is based on an estimated population of 21,758 people and a total gross area of 698 ha. The following table gives a proposed area/population breakdown contributing to each connection point. The sanitary service catchment areas can be adjusted at the outline plan stage to accommodate existing capacity limitations of each sanitary tie-in.

West Lethbridge

Phase II Area Structure Plan



Legend

- Proposed Sanitary Trunk Sewer
- Existing Sanitary Sewer
- Future Arterial
- Future Collector
- Community Core

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Map 8
Sanitary Servicing Concept

key map
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NOTE TO READER: This Future Land Use Concept Map is not intended to be interpreted or amended on a site-specific basis. Rather, it is a conceptual framework intended to guide future land use patterns in the West Lethbridge Core Area. Areas have been generalized and are approximate. The City of Lethbridge does not guarantee the accuracy of this map.

Table 2: Area/Population Contributing to Each Connection Location

Connection Location	Area (ha)	Population	Estimate Peak Flow (L/s)
North Connection – Tartan Blvd	111	3521	74
Central Connection – Whoop-Up Drive	391	11954	279
South Connection – Simon Fraser Blvd	196	6612	131

Map 8 shows the approximate boundary of the ASP area, the alignments of the existing sanitary trunk sewers within West Lethbridge and the proposed alignments of sanitary trunk sewers within the ASP area.

An analysis of the downstream capacity is required to identify when improvements need to be made to the existing system in order to service the ultimate ASP lands. A new trunk sewer may be required along the future extension of Whoop-Up Drive to service the development of the Community Core.

A more comprehensive Sanitary Sewer Collection System Technical Report is provided as part of a separate Technical Appendix. It should be noted that future upgrades will be required to accommodate development west of Chinook Trail.

6.3 Water Supply and Distribution

The City of Lethbridge water distribution system is divided into two pressure zones. West Lethbridge is one pressure zone. One set of high-lift pumps at the Water Treatment Plant deliver water through a dedicated fill line to the West Lethbridge Reservoir, which then pumps water into West Lethbridge. The existing West Lethbridge Reservoir provides a total storage capacity of 21,550 m^3.

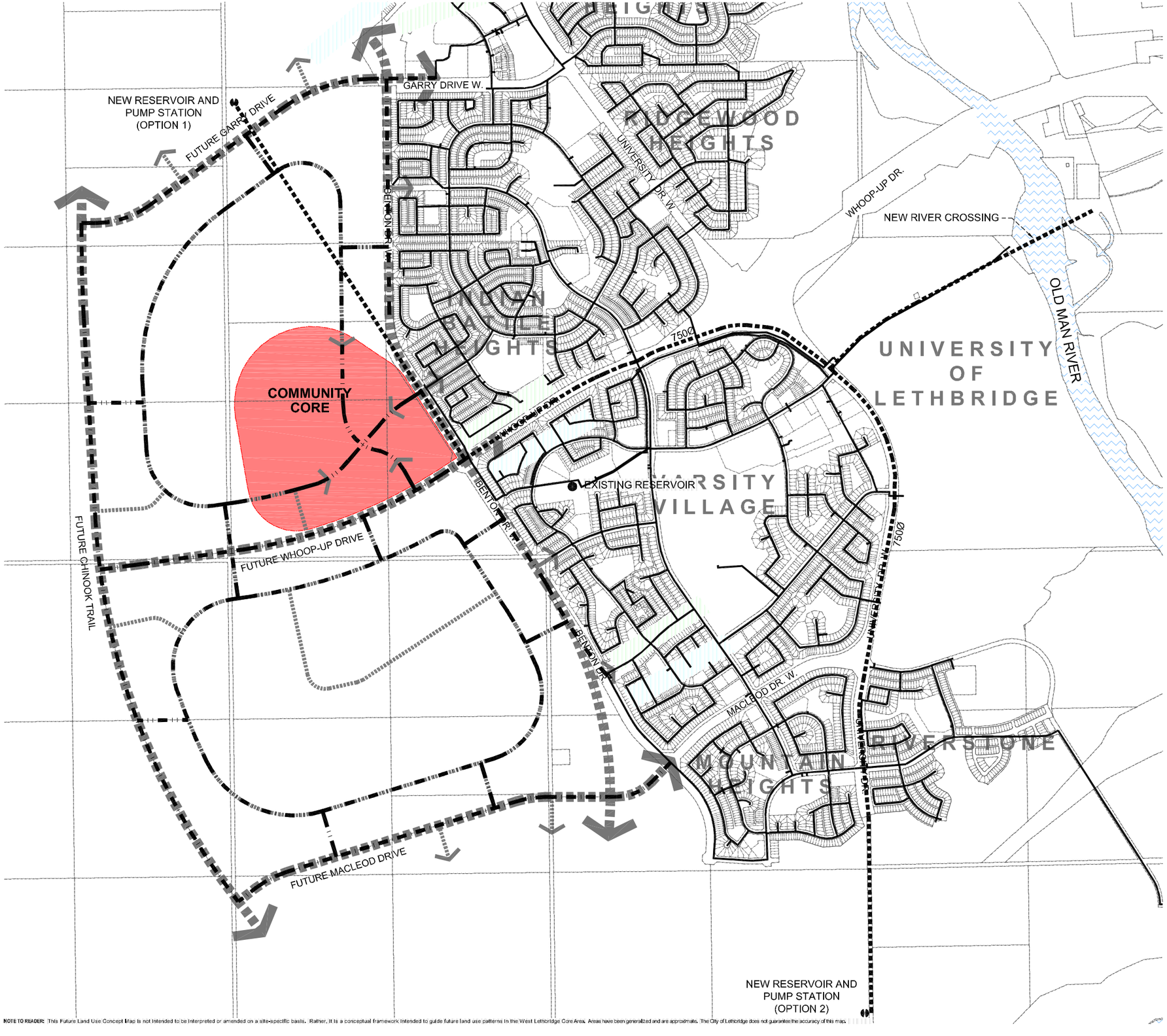
The City of Lethbridge UIMP Study, completed in 2000 by Stantec, noted that a single pipe provides water to West Lethbridge. An additional river crossing was recommended to provide additional reliability and security of delivery. The UIMP also states that the City is currently at or approaching emergency storage requirements and additional storage is required in the water system. In West Lethbridge, a new reservoir is needed to improve the operation of the existing system and to provide for new development. Two possible locations for a new reservoir have been identified (see Map 9). A new 750 mm dedicated fill line will be required to connect the new reservoir to the existing distribution system. Further analysis will determine when the new reservoir and supply line will be required.

The UIMP also noted that the existing water distribution system in West Lethbridge is unable to provide required fire flows and peak hour demands to several areas. This problem is largely due to incomplete looping and unfinished future development. Upgrades to the system are currently underway to remedy this situation.

Using the water use rates given in the City of Lethbridge Design Standards (2004) the ASP area will have the following expected demands:

West Lethbridge

Phase II Area Structure Plan



NOTE TO READER: This Future Land Use Concept Map is not intended to be interpreted or amended on a site-specific basis. Rather, it is a conceptual framework intended to guide future land use patterns in the West Lethbridge Core Area. Areas have been generalized and are approximate. The City of Lethbridge does not guarantee the accuracy of this map.

Legend

- Proposed Dedicated Fill Line and River Crossing
- Proposed 500mm or 600mm Watermains
- Proposed 400mm Watermains
- Existing Watermains
- Future Arterial
- Future Collector
- Community Core

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Map 9
Water Servicing Concept

key map
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Average Day Demand = 15 MLD

Maximum Day Demand = 34 MLD

Peak Hour Demand = 53 ML/h

These flows are based on an estimated population of 21,758 people and average day demand of 700 gross Lpcd. A fire flow of 75 L/s under maximum day demand conditions is regarded as acceptable fire flow criteria in residential areas with minimum allowable residual pressures of 150 kPa. The required fire flows for the commercial areas will be calculated using the Fire Underwriters Society equations and the specific building information.

The alignments of the existing and proposed larger diameter water mains within ASP area are shown on Figure 10. The proposed sizing is based on the recommendations made in the West Lethbridge Water Distribution Improvements (1991) report. The final sizing and detailed alignment of the water distribution system will be analyzed in the future studies.

6.4 Shallow Utilities

6.4.1 Natural Gas

ATCO Gas provides distribution servicing throughout the City of Lethbridge. There are existing small-diameter (48mm size and smaller) gas distribution lines throughout the ASP area that currently provide servicing to existing farmsteads. These lines can readily be relocated/abandoned as development phasing occurs.

6.4.2 Electrical Servicing

The City of Lethbridge infrastructure services electrical department provides electrical servicing to west Lethbridge. The existing overhead 13,000-volt lines are part of the distribution network. As urban development occurs, these overhead lines will be absorbed into the urban distribution system and located underground. Detailed servicing including options of either 3-party or 4-party trench installations, to be resolved at the outline plan stage.

6.4.3 Communications – Telephone and Cable TV

The Telephone (Telus Communications Inc.) and Cable TV (Shaw Cable) servicing for the ASP area will be serviced by extensions to the existing system. Detailed servicing including options of either 3-party or 4-party trench installations, to be resolved at the outline plan stage.

7.0 IMPLEMENTATION

7.1 Direction of Infrastructure Extensions

The staging of development within the ASP area should proceed in a logical manner based upon the economic and orderly extension of roadways and utility servicing. The Community Core on the north side of the Whoop-Up Drive extension is anticipated to be the first phase of ASP development. The general direction of development staging will be from east to west, reflecting a logical extension of trunk sewers and roadways. The general direction of infrastructure extension is shown on *Map 10 – Direction of Infrastructure Extensions*.

This map indicates a staging sequence solely based upon engineering principles. Market pressure, land developer aspirations, financing capacity of the offsite levy account and municipal growth policies also need to be considered for development staging. There are three potential points to begin development west of Benton Drive, namely: Garry Drive, Whoop Up Drive and MacLeod Drive. The timing and location of initial development stages west of Benton Drive will be determined by City Council through the Municipal Development Plan.

7.2 Outline Plans

Consistent with the City of Lethbridge's practice, outline plans will need to be prepared and approved for various stages of development. Outline plans will provide more specifics with regard to land use, individual phases within stages, the local roadway network and the provision of municipal infrastructure as described in the City of Lethbridge Design Standards.

WEST LETHBRIDGE

PHASE II AREA STRUCTURE PLAN

Legend

- Future Development Block
- Direction of Infrastructure Extension
- Future Arterial
- City of Lethbridge Boundary

FUTURE GARRY DRIVE
GARRY DRIVE W.
BENTON DR. W.
UNIVERSITY DR. W.
WHOOP-UP DR.
OLD MAN RIVER
FUTURE CHINOOK TRAIL
FUTURE WHOOP-UP DRIVE
FUTURE MACLEOD DRIVE
MACLEOD DR. W
UNIVERSITY DR.
RIDGEWOOD HEIGHTS
VARSITY VILLAGE
UNIVERSITY OF LETHBRIDGE
MOUNTAIN VIEW TERRACE HEIGHTS

N.E.1/4 SEC. 33-8-22-4
N.W.1/4 SEC. 34-8-22-4
S.E.1/4 SEC. 33-8-22-4
S.W.1/4 SEC. 34-8-22-4
S.E.1/4 SEC. 33-8-22-4
N.W.1/4 SEC. 27-8-22-4
N.E.1/4 SEC. 28-8-22-4
N.W.1/4 SEC. 27-8-22-4
N.E.1/4 SEC.27-8-22-4
S.E. 1/4 SEC. 28-8-22-4
S.W.1/4 SEC. 27-8-22-4
S.E.1/4 SEC.27-8-22-4
N.E.1/4 SEC. 21-8-22-4
N.W.1/4 SEC. 22-8-22-4
N.E.1/4 SEC. 22-8-22-4
N.W.1/4 SEC.23-8-22-4
S.E.1/4 SEC. 22-8-22-4
S.E.1/4 SEC. 21-8-22-4
S.W.1/4 SEC. 22-8-22-4
S.W.1/4 SEC.23-8-22-4
S.E.1/4 SEC. 22-8-22-4
S.W.1/4 SEC.36-8-22-4
N.E.1/4 SEC.25-8-22
N.W.1/4 SEC. 24-8-22-4
N.E. 1/4 SEC. 24-8-22-4
S.W. 1/4 SEC. 24-8-22-4
N.E. 1/4 SEC. 13-8-22-4
N.W. 1/4 SEC. 13-8-22-4
N.W.1/4 SEC. 16-8-22-4
N.E.1/4 SEC. 16-8-22-4
N.W.1/4 SEC. 15-8-22-4
N.E.1/4 SEC. 15-8-22-4
N.W.1/4 SEC. 14-8-22-4
N.E.1/4 SEC. 14-8-22-4

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Map 10
Direction of Infrastructure Extensions

key map
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APPENDIX A

Land Ownership

Land Ownership by Title				
	Legal Description	Owner	Area with the ASP (ha)	% of Total
1.	NW Section 34-8-22-W4M	College Farms	0.7	0.1
2.	SE Section 34-8-22-W4M	Randall & Debbie Olafson	0.4	0.0
3.	SE Section 34-8-22-W4M	Gemini Property & Land Developments Ltd.	17.5	2.6
4.	SW Section 34-8-22-W4M	Marvis Marion McKay Marion June Moore Sharon McKay Marshall and Kenneth Donald McKay	57.6	8.5
5.	NE Section 28-8-22-W4M	Jean Lapointe Addie May Perdue	57.7	8.6
6.	NW Section 27-8-22-W4M	Allan and Judith Willms Linda Willms Melissa Friesen Sharlene Chrisite	32.4	4.8
7.	NW Section 27-8-22-W4M	The City of Lethbridge	32.4	4.8
8.	NE Section 27-8-22-W4M	838 Land Developments Ltd.	1.9	0.3
9.	SE Section 28-8-22-W4M	Alfred Hubbard	55.0	8.1
10.	SW Section 27-8-22-W4M	The City of Lethbridge	64.7	9.6
11.	SE Section 27-8-22-W4M	Walter & Clara Willms	32.9	4.9
12.	NE Section 21-8-22-W4M	College Farms	46.9	7.0
13.	NW Section 22-8-22-W4M	Jenny Ann & Gay Skinner Sharon Hubbard	64.7	9.6
14.	NE Section 22-8-22-W4M	Serdna Farms Ltd.	64.2	9.5
15.	NW Section 23-8-22-W4M	The City of Lethbridge	9.3	1.4
16.	SE Section 21-8-22-W4M	Norman and Virginia Sprinkle	23.3	3.4
17.	SW Section 22-8-22-W4M	Denecky Brothers Grains Ltd.	59.4	8.8
18.	SE Section 22-8-22-W4M	Serdna Farms Ltd.	8.6	1.3
19.	SE Section 22-8-22-W4M	College Farms Ltd.	32.4	4.8
20.	SW Section 23-8-22-W4M	The City of Lethbridge	11.1	1.6
21.	NE Section 16-8-22-W4M	Philip Alan Hubbard	0.3	0.0
22.	NW Section 15-8-22-W4M	Jenny Ann & Beverly Gay Skinner Sharon Hubbard	1.3	0.2
Total			674.7	99.9

Note: Land Ownership subject to change

West Lethbridge

Phase II Area Structure Plan

Legend

- Area Structure Plan Boundary
- City of Lethbridge Boundary

GARRY DRIVE W.
BENTON DR. W.
UNIVERSITY DR. W.
WHOOP-UP DR.
MACLEOD DR. W
OLD MAN RIVER
HEIGHTS
RIDGEMOOD HEIGHTS
UNIVERSITY OF LETHBRIDGE
VARSITY VILLAGE
MOUNTAIN VIEW HEIGHTS

2. S.E.1/4 SEC. 33-8-22-4 Randall and Debbie Olafson 0.4ha (1.0ac)

3. S.E.1/4 SEC. 33-8-22-4 Gemini Property & Land Developments Ltd. 17.5ha (43.2ac)

4. S.W.1/4 SEC. 34-8-22-4 Mavis Marion McKay, Marion June Moore, Sharon McKeay Marshall, Kenneth Donald McKay 57.6ha (142.3ac)

5. N.E. 1/4 SEC. 28-8-22-4 Jean Lapointe, Addie May Perdue 57.7ha (142.6ac)

6. N.W.1/4 SEC. 27-8-22-4 Allan and Judity Willms, Linda H. Willms, Melissa Friesen, Sharlene Christie 32.4ha (80.1ac)

7. N.W.1/4 SEC. 27-8-22-4 The City of Lethbridge 32.4ha (80.1ac)

8. N.E.1/4 SEC.27-8-22-4 838 Land Developments Ltd. 1.9ha (4.7ac)

9. S.E. 1/4 SEC. 28-8-22-4 Alfred A. Hubbard 55.0ha (135.9ac)

10. S.W.1/4 SEC. 27-8-22-4 The City of Lethbridge 64.7ha (159.9ac)

11. S.E.1/4 SEC.27-8-22-4 Walter J. and Clara B. Willms 32.9ha (81.3ac)

12. N.E.1/4 SEC. 21-8-22-4 College Farms Ltd. 46.9ha (115.9ac)

13. N.W.1/4 SEC. 22-8-22-4 Jenny Ann and Beverly Gay Skinner, Sharon Hubbard 64.7ha (159.9ac)

14. N.E.1/4 SEC. 22-8-22-4 Serndа Farms Ltd. 64.2ha (158.6ac)

15. N.W.1/4 SEC.23-8-22-4 The City of Lethbridge 9.3ha (23.0ac)

16. S.E.1/4 SEC. 21-8-22-4 Norman V. and Virginia E. Sprinkle 23.3ha (57.6ac)

17. S.W.1/4 SEC. 22-8-22-4 Denecky Brothers Grains Ltd. 59.4ha (146.8ac)

18. S.E.1/4 SEC. 22-8-22-4 Serdna Farms Ltd. 8.6ha (21.3ac)

19. S.E.1/4 SEC. 22-8-22-4 College Farms Ltd. 32.4ha (80.1ac)

20. S.W.1/4 SEC.23-8-22-4 The City of Lethbridge 11.1ha (27.4ac)

N.E.1/4 SEC. 33-8-22-4
S.E.1/4 SEC. 28-8-22-4
S.W.1/4 SEC.36-8-22-4
N.E.1/4 SEC.25-8-22-4
N.W.1/4 SEC. 24-8-22-4
N.E. 1/4 SEC. 24-8-22-4
S.W. 1/4 SEC. 24-8-22-4
N.E. 1/4 SEC. 13-8-22-4
N.W. 1/4 SEC. 13-8-22-4
N.W.1/4 SEC. 16-8-22-4
N.E.1/4 SEC. 15-8-22-4
N.W.1/4 SEC. 14-8-22-4
N.E.1/4 SEC. 14-8-22-4

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Map 11
Land Ownership

ALBERTA
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APPENDIX B

Land Use and Population Statistics

LAND USE AND POPULATION STATISTICS
WEST LETHBRIDGE PHASE II AREA STRUCTURE PLAN
DEVELOPMENT CONCEPT

December 1 2023

			North Village (ha)		South Village (ha)		Community Core (ha)	TOTAL	% of GDA
GROSS AREA			**225.3**		**365**		**107.7**	**698.0**	
Arterial Roadways			20.1		28.6		7.8	**56.5**	
GROSS DEVELOPABLE AREA			**205.2**		**336.4**		**99.9**	**641.5**	100.00%
Non-Residential Uses									
Circulation (22% GDA)			45.7		73.9		22.0	**141.1**	22.00%
Stormwater Management Facilities			12.7		24.1		9.6	**46.4**	7.23%
Park/School/Open Space									
Neighbourhood Parks	14.8		26.5		1.2				
School	8.0		8.0		22.5				
			22.8		34.5		23.7	**81.0**	12.63%
Recreation/Community Services			0.0		0.0		12.1		
Commercial			0.0		2.0		6.1	**8.1**	1.26%
Religious Assembly			2		6.4		2.0	**10.4**	1.62%
			83.2		**140.9**		**75.5**	**287.0**	**44.74%**
Residential Uses									
Low Density Residential			114.0		184.1		14.0	**324.7**	
Multi-Unit Residential			8.0		11.4		10.4	**29.8**	
			122.0		**195.5**		**24.4**	**354.5**	**55.26%**

RESIDENTIAL LAND USE ANALYSIS

NORTH VILLAGE

	Area (ha)	Density (units/ ha)	Units	Persons/ Unit	Population
Low Density Residential	114.0	27.2	3101	**2.8**	8682
Multi-Unit Residential	8.0	75	600	**1.9**	1140
TOTAL	**122.0**		**3701**		**9822**

SOUTH VILLAGE

	Area (ha)	Density (units/ ha)	Units	Persons/Unit	Population
Low Density Residential	184.1	26.0	4796	**2.8**	13429
Multi-Unit Residential	11.4	75	855	**1.9**	1625
TOTAL	**195.5**		**5651**		**15053**

COMMUNITY CORE

	Area (ha)	Density (units/ ha)	Units	Persons/Unit	Population
Low Density Residential	14.0	29.5	414	**2.8**	1159
Multi-Unit Residential	10.4	75	780	**1.9**	1482
TOTAL	**24.4**		**1194**		**2641**

TOTAL POPULATION (AREA STRUCTURE PLAN) **27517**

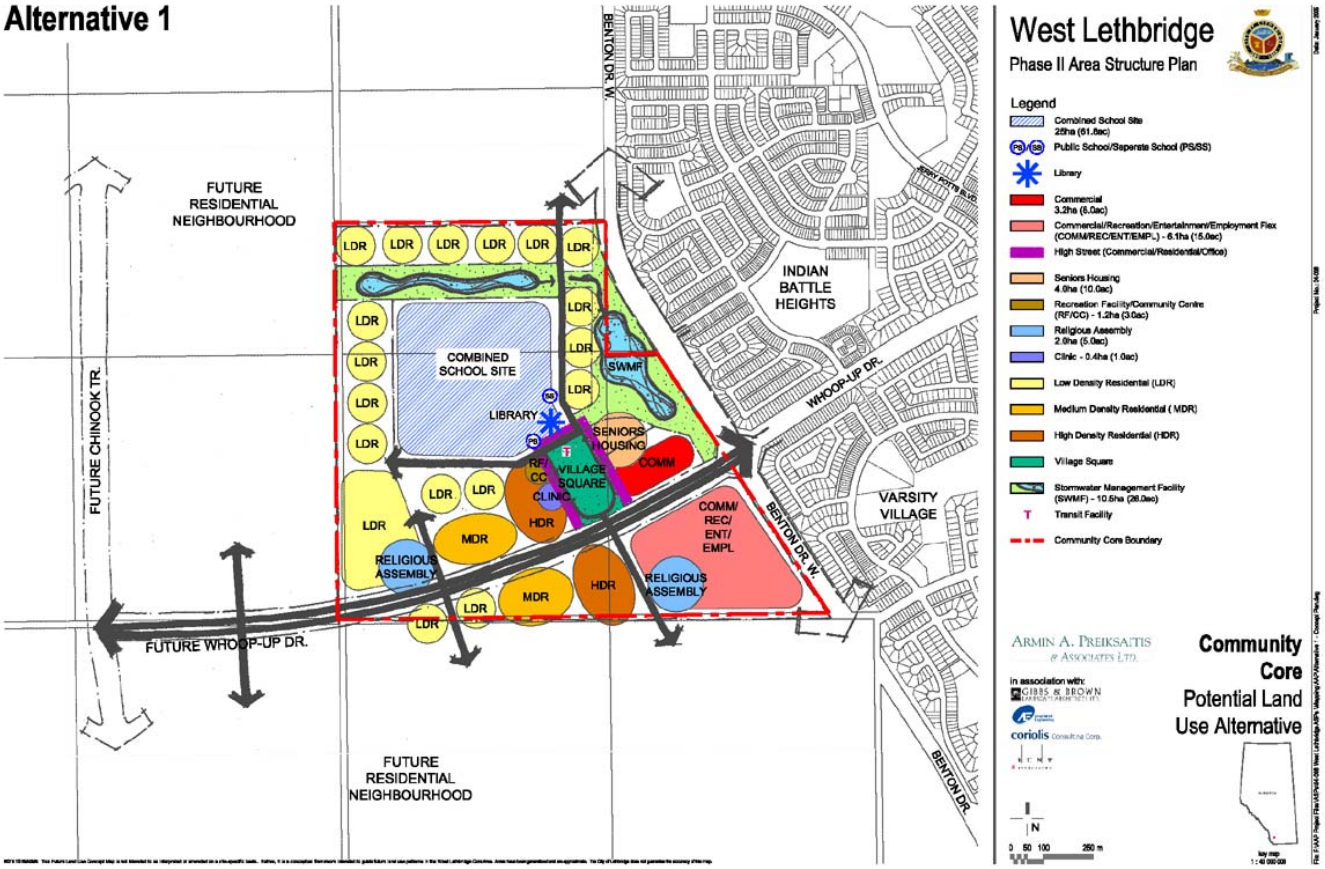
APPENDIX C

Student Generation

School Generation					December 1, 2023
	Estimated No. Students Per Dwelling Unit				
		Community Core	North Village	South Village	**Total Students by Grade and Type**
Dwelling Units		1,194	3,701	5,651	***10,546***
Public Elementary (ECS to 5)	0.170	203	629	961	***1,793***
Public Middle (6 to 8)	0.085	101	315	480	***896***
Public Senior High (9 to 12)	0.113	135	418	639	***1,192***
Holy Spirit Elementary (K to 9)	0.125	149	463	706	***1,318***
Holy Spirit Senior High (10 to 12)	0.040	48	148	226	***422***
Total Students per Area		***636***	***1,973***	***3,012***	***5,621***

APPENDIX D

Evaluation of Potential Land Use Alternatives for the Community Core

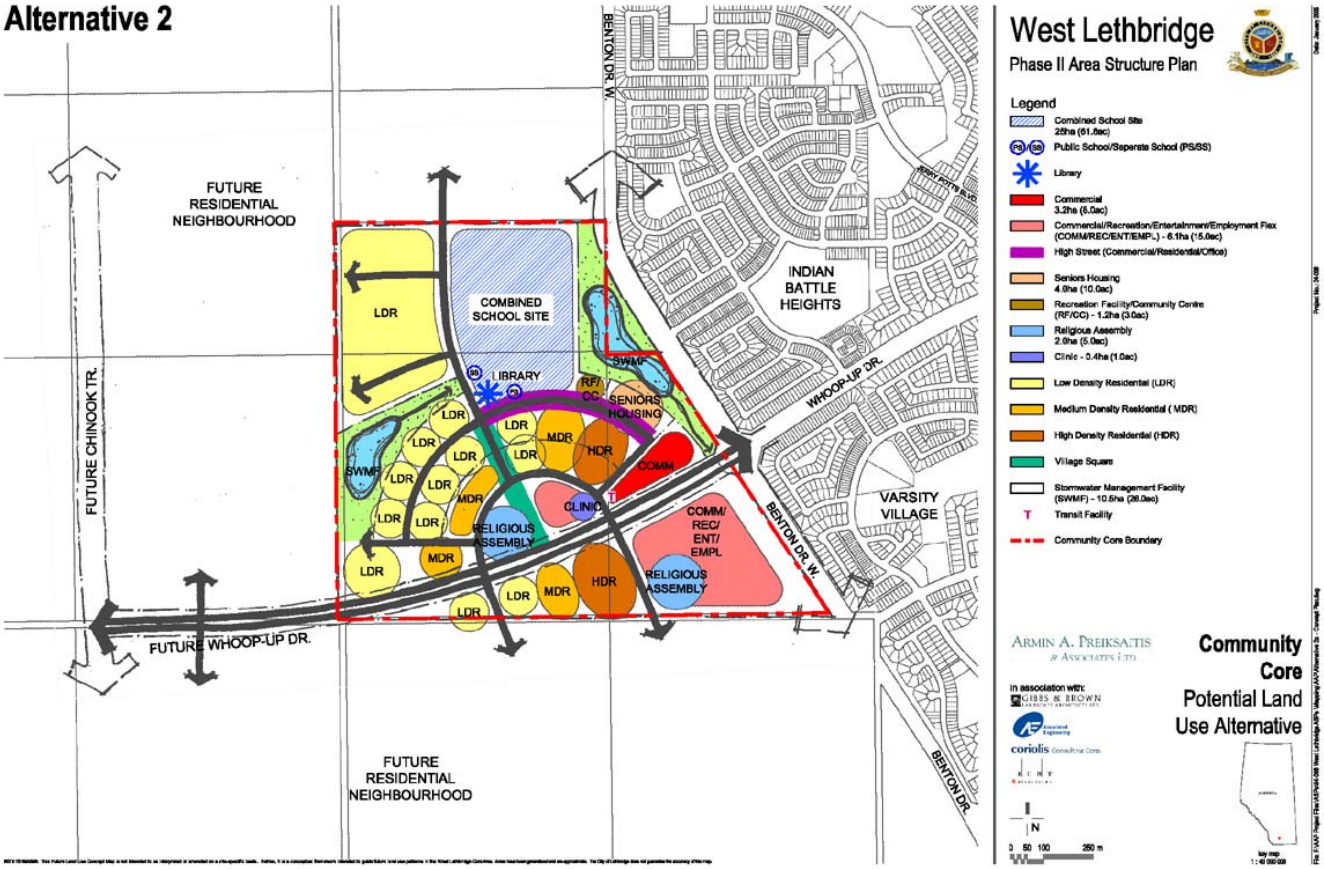


Positives

- Clustering of medium and higher density residential uses near commercial node helps to support Community Core.
- Grid system roadway network allows efficient vehicular and pedestrian circulation
- Provision of a village square as central focal point.
- Transit facility located within walking distance of seniors housing, combined school site and commercial areas.
- Compact mixed uses creates walkable Community Core.

Negatives

- Commercial sites separated by Whoop-Up Drive decreases ability to create a pedestrian oriented commercial node.
- Linear open space along Benton Drive may lead to defensible space concerns and discourage use by seniors.

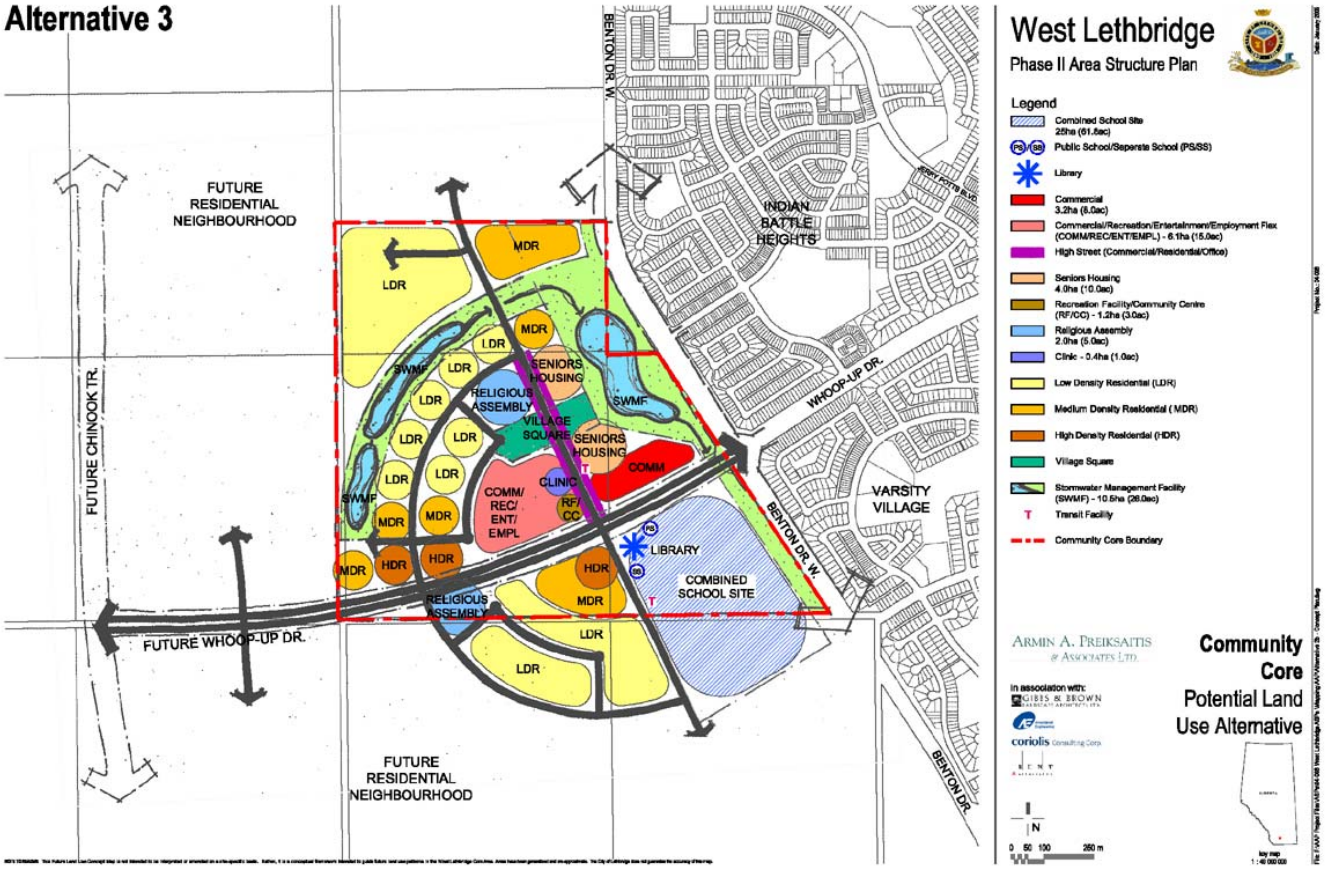


Positives

- Radial street pattern promotes walkability.
- Majority of land uses located north of Whoop-Up Drive.
- Whoop-Up Drive to be extended only 400m for first phase of development to take place.
- Commercial site located adjacent to intersection of Whoop-Up and Benton Drive.

Negatives

- Commercial space split north and south of Whoop-Up Drive.
- High density residential uses do not have strong relationship with commercial space.
- Another access point from Benton Drive needed.
- Main north-south collector roadway may cause traffic problems for adjacent residential areas due to combined school site.
- Village square not effective open space as road bisects it.

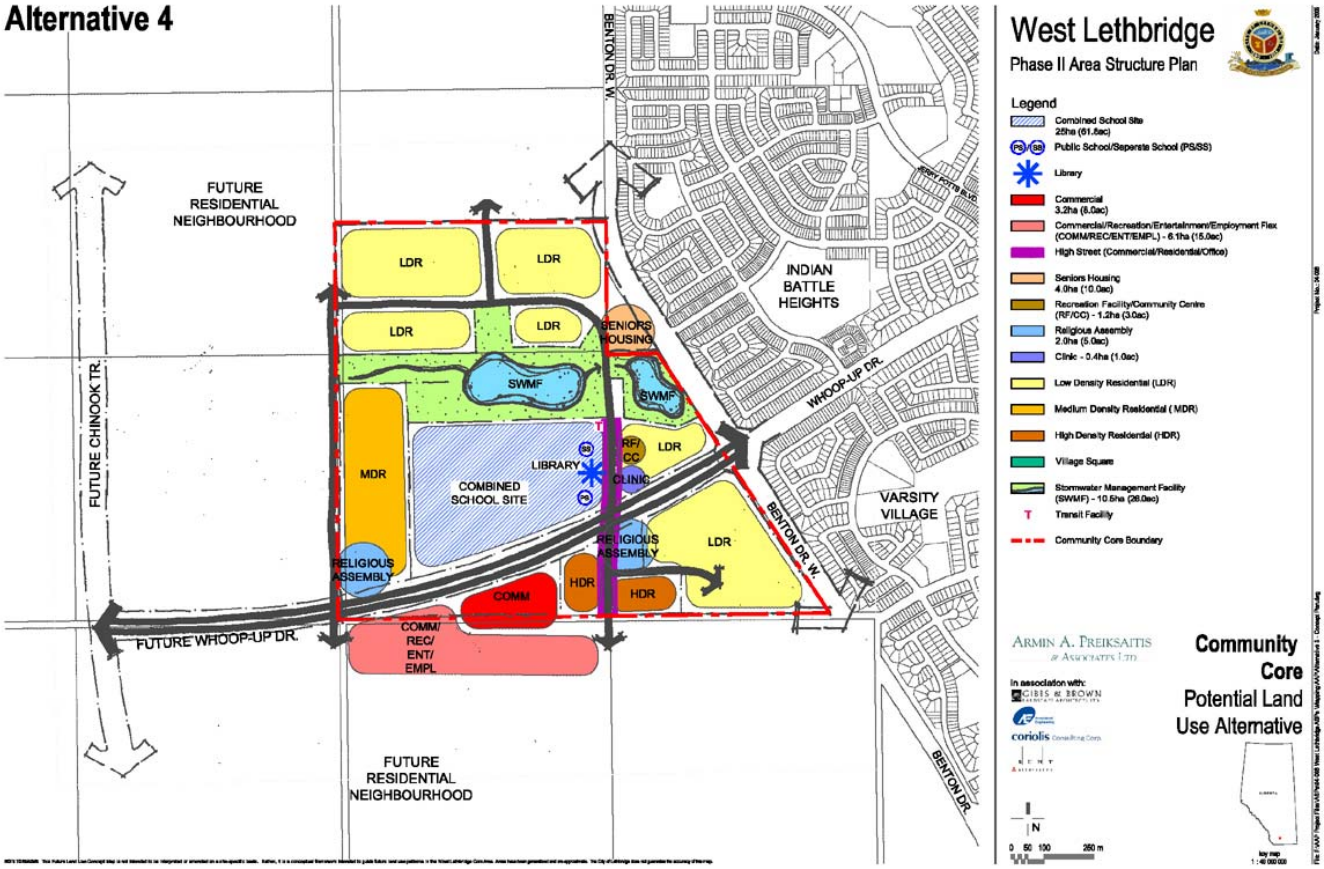


Positives

- Alternative promotes walkability.
- Compact mixed uses support Community Core.
- Inter-connected parks through the Community Core.
- Location of commercial site adjacent to intersection of Whoop-Up and Benton Drive.
- Location of two transit facilities viewed positively.

Negatives

- Combined school site should be located north of Whoop-Up Drive to improve pedestrian and traffic movement.
- Library better located north of Whoop-Up Drive.
- Road should not bisect village square.
- High Street as north-south collector could cause traffic problem.
- Residential development located too far west to allow effective phasing in Community Core.

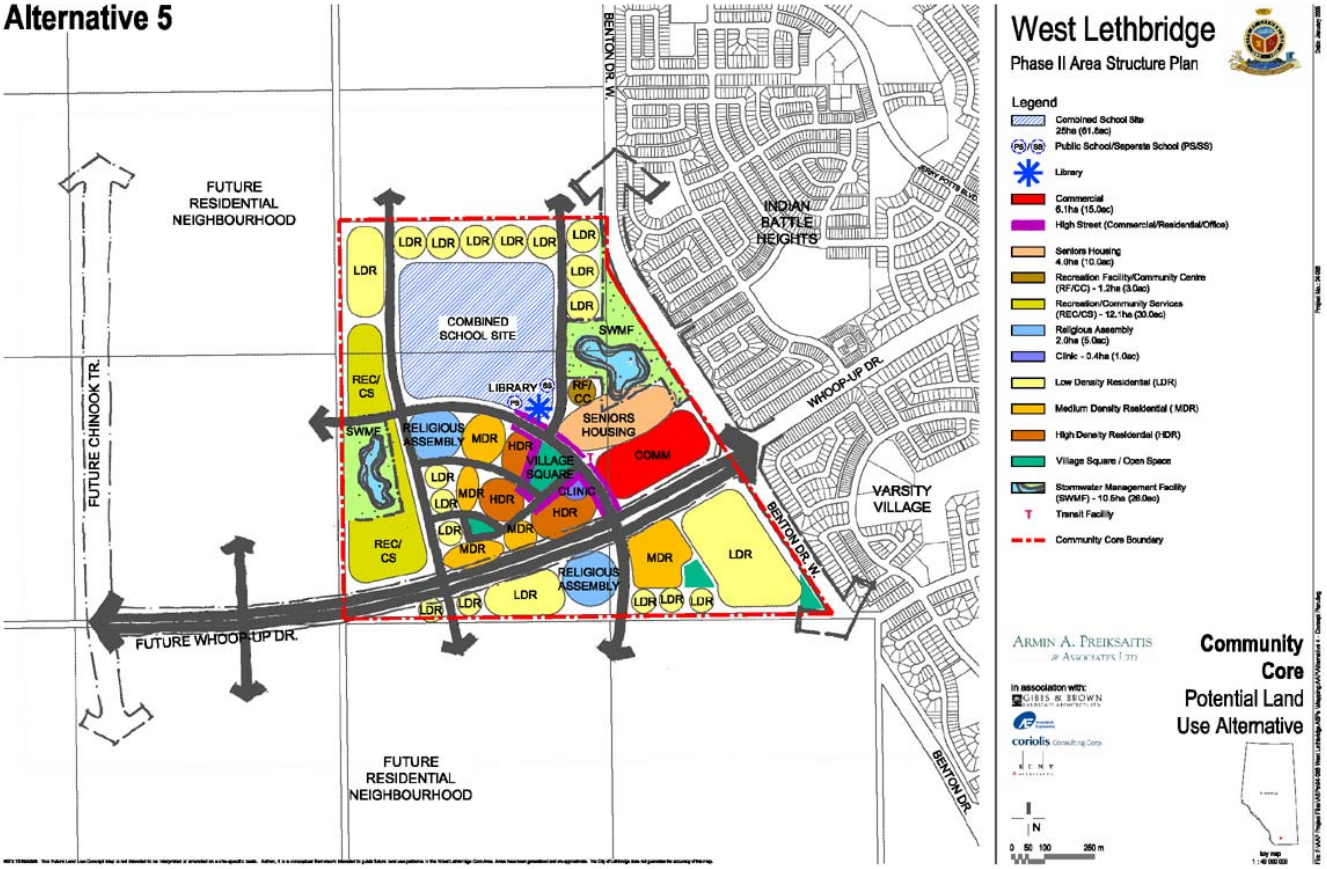


Positives

- Location of low-density residential housing adjacent to Benton Drive can accelerate ability to develop single family lots in short term.

Negatives

- Commercial space not near major intersection and isolated from other uses.
- Medium and higher density residential uses not well oriented in relation to commercial space.
- Seniors housing too isolated from commercial uses and other amenities
- Combined school site not located in heart of Community Core



Positives

- Compact and mixed use creates walkable Community Core.
- Transit facilities located within walking distance of seniors housing, combined school site and commercial areas.
- Provision of a village square as a focal point.
- Clustering of medium and higher density residential uses near commercial node helps to support Community Core.
- Commercial site located adjacent to intersection of Whoop-Up and Benton Drive.

Negatives

- Easier to create pedestrian character shopping streets on grid street pattern as sense of a 'core' can be distorted on curved roads.