



CANYONS OUTLINE PLAN AMENDMENT

PART B-TECHNICAL ELEMENTS REPORT



*Prepared by Schmidtke Management and Design Inc.
For MELCOR DEVELOPMENTS LTD.*

Date: July 16, 2026

File No: OLP00019

PLANNING REVIEW TEAM - OUTLINE PLAN TECHNICAL ELEMENTS APPROVAL**RE: The Canyons Outline Plan Amendment**

During the Regular Meeting of City Council held on Tuesday, July 14, 2026 in City Council Chambers item 4.4 (moved to item 8.1) *Recommendation of Community Issues Committee - The Canyons Outline Plan Part A - Land Use Concept Amendment* was approved by the following resolution:

BE IT RESOLVED THAT the Community Issues Committee recommend that City Council amend the Canyons Outline Plan by deleting section 4, 'Land Use' (pages 4-11 to 4-17) and replacing with Attachment 2, "Part A - Land Use Concept".

Following the approval of the Land Use Concept by City Council, Planning Review Team voted on **July 16, 2026** to accept the accompanying Technical Elements.

Members present at the meeting were:

Adam St Amant (Transportation)

Gareth Jones (Lethbridge Electric Utility)

Andrew Sommerville (Parks)

Janet Gutsell (Planning and Design)

Angie Olsen (Planning and Design)

Jason Price (Planning and Design)

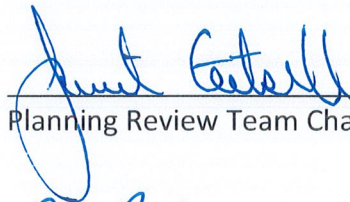
Byron Buzunis (Capital Planning and Engineering Services)

Kurt Fisher (Planning and Design)

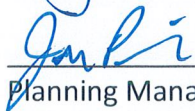
Muhammad Qasim (Transportation)

Chelsea King (Planning and Design)

Troy Hicks (Fire)

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Planning Review Team Chair- Janet Gutsell

A blue ink signature of Jason Price, written in a cursive style.

Planning Manager – Jason Price

A blue ink signature of Byron Buzunis, written in a cursive style.

Engineering Services Manager – Byron Buzunis. P. Eng.

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1.0 Introduction

The *Canyons Outline Plan Amendment, Technical Elements Report (2026)* has been prepared on behalf of Melcor Developments Ltd. to meet the technical design requirements as outlined by the City of Lethbridge. This document should be read in conjunction with the *Canyons Outline Plan Amendment, Part A-Land Use Concept (2026)*.

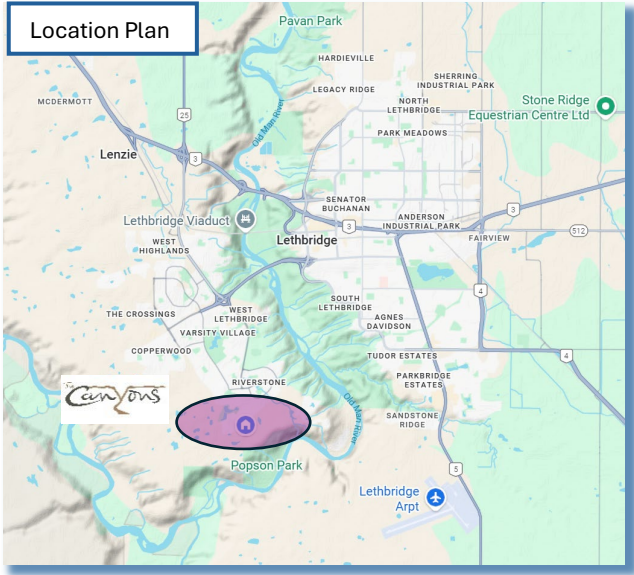
The Canyons Outline Plan was originally approved in 2009 and formally amended in 2017. The latest iteration of the plan was initiated due to a request by the City of Lethbridge and Lethbridge School Division to include an elementary school site.

The intent of The Canyons Outline Plan is to create an attractive, livable and diverse residential neighbourhood which complements and enhances the greater community. As such, the Canyons Outline Plan Technical Elements Report has been guided by the following key objectives:

- To provide a safe, efficient and convenient roadway systems that provide access to University Drive, Chinook Trail and adjacent neighbourhoods.
- To achieve orderly and economical servicing which responds to existing site conditions and logical development staging.
- To create a variety of pedestrian opportunities that enhance the walking experience
- To develop an integrated open space system with linkages to the Regional Trail System.
- To promote environmental stewardship and protect areas of historical significance.

1.1 Project Location

The Canyons community is in West Lethbridge at the south end of University Drive and is located between Sunridge, Riverstone and Paradise Canyon.



1.2 Land Use Concept

The Canyons Land Use Concept is presented below for background on the community planning context. The Gross Developable Area (GDA) of the plan is 129.3 Ha. The community will be comprised of residential, commercial, parks/recreation and institutional land uses. At ultimate buildout, it is estimated that the community will have 1,646 dwelling units housing a population of 4,656. Additional details can be found in Part A-Canyons Land Use Concept.



1.3 Technical Studies

Numerous technical studies have been completed since 2009 in support of the Canyons Outline Plan. Some of these technical studies reference *Riverbend* as the community's name which was changed to the Canyons circa 2009. As part of the 2026 Amendment, we have consolidated the relevant technical studies under separate cover, ***Canyons Outline Plan Amendment, Part C Appendices***.

The following is a list of the studies and other information that has been utilized in the preparation of the *Land Use Concept* and *Technical Elements Report*.

- Canyons Outline Plan Amendment, Associated Engineering (2017)
- Phase 1 Environmental Site Assessment, EBA Engineering Ltd. (June 2007)
- Geotechnical Evaluation (Riverbend), EBA Engineering Ltd. (September 2007)
- Historical Resources Impact Assessment, Arrow Archaeology Limited (August 2007)
- Riverbend Habitat Compensation Strategy, UMA Engineering Ltd. (June 2007)
- Wetland Classification, Delineation Assessment, EBA Engineering Ltd. (March 2011)
- Stormwater Pond Report, AECOM Canada Ltd. (2009)
- Overland Drainage Analysis, AECOM Canada Ltd. (2009)
- Traffic Impact Assessment, Stantec Consulting Ltd. (2026)
- Open House Summary: February 25, 2026

In addition to the above, conceptual servicing designs for the community have been prepared based on:

- City of Lethbridge Design Standards
- Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems (Alberta Government)

1.4 Adjacent Planning Areas

The *Canyons* is located west of the fully developed Paradise Canyon neighbourhood and south of Riverstone, Mountain Heights and Sunridge. The Canyons Outline Plan Area is included in the Mountain Heights/Riverstone/Riverbend Area Structure Plan amended in 2013.

1.5 Land Ownership

Undeveloped landownership within the Plan area is predominantly held between two parties, Melcor Developments Ltd, and Nick and Steve Denecky who have agricultural pursuits in the region. A further breakdown of this landownership can be found below in **Table 1**.

Table 1 – Canyons Land Ownership*			
ID	Legal Description	Landowner	Certificate of Title
A	BLK1, LOT 15 PLAN 111 3731	Melcor Developments LTD.	181 064 895 +2
B	NE 13-8-22-W4M	Melcor Developments LTD.	191 081 676 +29
C	N ½ OF NW 13-8-22-W4M	Melcor Developments LTD.	191 081 676 +28
D	BLK 1, LOT 1, PLAN 041 4514	Steve & Nick Denecky, Mary Westrup	091 032 214
E	S ½ OF NW 13-8-22-W4M	Melcor Developments LTD.	151 048 077
F	BLK 1, LOT 14, PLAN 0210062	Melcor Developments LTD.	161 011 219+37
G	SW 13-8-22-4	Melcor Developments LTD.	181 074 851
H	BLK 1, LOT 1, PLAN 2210128	Joan Olesky	221 272 176
I	NE 14-8-22-4	City of Lethbridge	181 052 918
J	BLK 100, LOT 1, PLAN 1211652	Melcor Developments Ltd.	121 244 360 +2
K	BLK1, LOT 15, PLAN 1211145	Melcor Developments Ltd.	131 059 107 +1
* Titles from existing phased development are excluded			

1.6 Planning Context

The Canyons Outline Plan has been prepared within the context of statutory plans and other policy documents of the City of Lethbridge. The following is a summary of relevant planning documents.

1.6.1 City of Lethbridge Municipal Development Plan, 2021

The City of Lethbridge Municipal Development Plan (MDP), Bylaw No. 6265 adopted on June 2021, identifies The Canyons Outline Plan area for predominantly residential development. The following MDP policies directly influence decisions concerning the form and function of the community plan.

Policy	Description	Canyons Context
32	PROMOTE residents' connection to the city's Indigenous and non-Indigenous art, culture, and heritage by encouraging the integration of public art, cultural programming, and heritage interpretation as place-making tools in public spaces and the city's urban fabric.	Refer to Section 2.4 Historical Resources and <i>Cairn Interpretive Site</i>

36	PROMOTE increasing awareness of the histories of the city we now know as Lethbridge and its Indigenous and non-Indigenous cultural, natural, and historic resources, by encouraging: • Collaborating with partners, including private landowners, neighbourhood associations, Elders and Knowledge Keepers, Indigenous Communities, underrepresented communities, and higher levels of government to preserve and share the individual stories that provide insights into the history of Lethbridge. • Documenting and preserving the heritage and history of Sikóóhкоток, the Traditional land known as Lethbridge.	Refer to Section 2.4 Historical Resources and <i>Cairn Blessing</i>
37	PROMOTE the preservation of Indigenous and non-Indigenous historic resources within and beyond the city, by encouraging: • The protection and restoration of significant cultural heritage sites, including ones with a connection to the land. • Collaboration with the Blackfoot Confederacy Nations, when discussing Blackfoot heritage in the city to protect sites and landscapes.	Refer to Section 2.4 Historical Resources
42	ENSURE opportunities for healthy living in the city, by providing: • Opportunities for people to connect with nature through equitable access to parks. • Opportunities for passive recreation such as, but not limited to, walking, biking, hiking, and gardening. • Opportunities for organised and unstructured recreation and sports. • Opportunities for arts and culture programs, performances and displays.	Refer to Section 2.2 Environmental Conditions and Section 3.0 Parks and Open Space
58	PROMOTE affordable housing by encouraging and facilitating the adequate supply of housing for all income groups.	The Canyons' plan provides a range of housing opportunities for a variety of incomes.
64	ENSURE new neighbourhoods make efficient use of land, by: • Disallowing amendments to Outline Plans which lower the net residential density across the Plan Area.	Refer to Canyons Land Use Concept (2026) 2017 OP = 21.0 Units/Ha 2026 OP = 23.4 Units/Ha
68	ENSURE a choice of housing is integrated throughout the city in future Area Structure Plans, Outline Plans and Area Redevelopment Plans, by: • Requiring future Area Structure Plans, Outline Plans, and Area Redevelopment Plans to include a variety of residential land use districts to ensure various housing types can occur, such as: secondary suites, duplexes, multi-family housing, market housing, single room occupancy, shared housing with supports, and shared ownership arrangements. • Requiring any proposed higher density residential developments to be located with good access to services (e.g. commercial uses, schools, parks) and	Refer to Part A-Canyons Land Use Concept (2026)

	transportation links (including but not limited to transit).	
73	PROMOTE an active and easily accessed community by including opportunities for unstructured recreation in park and open space design.	Refer to Section 3.0 Parks and Open Space
76	PROMOTE protection of natural habitat, increased biodiversity and opportunities for public enjoyment of nature, by facilitating and strengthening the restoration and enhancement of natural spaces in the city, particularly within and adjacent to the Oldman River Valley.	Refer to Section 2.2 Environmental Conditions
81	PROMOTE building understanding of Indigenous culture by including educational physical markers such as cairns, place names and other areas of significance in public places.	Refer to Section 2.4 Historical Resources
83	ENSURE opportunities for healthy living by incorporating a range of active and passive recreational opportunities into the open space system.	Refer to Section 3.0 Parks and Open Space
84	PROMOTE social interaction and cohesion by encouraging opportunities for community gathering in parks.	Refer to Section 3.0 Parks and Open Space
90	ENSURE commercial land use opportunities are available throughout the city for a wide range of commercial uses (including, but not limited to, agricultural-related enterprises of different types and scales, and accommodations for sport, business and leisure travellers) by: Creating flexible opportunities in suitable locations during the preparation of Area Structure Plans, Outline Plans, and Area Redevelopment Plans.	Refer to Canyons Land Use Concept (2026) Commercial Node ~4.0 Ha
100	PROMOTE walkable neighbourhoods by encouraging: - Growth areas to provide for a greater mix of land uses in Area Structure Plans and Outline Plans. - Commercial development around higher density residential areas	Refer to Canyons Land Use Concept (2026) and Section 3.0 Parks and Open Space . Medium Density residential areas are in proximity to major amenities of the neighbourhood (Commercial site, school and parks).
104	ENSURE reserve lands are effectively managed by requiring: The provision of Municipal Reserve (MR), School Reserve (SR), and Municipal and School Reserve (MSR) pursuant to the requirements of the City of Lethbridge as authorised by the Municipal Government Act and the joint use agreements between the City of Lethbridge and the School Boards.	Refer to Land Use Concept (2026), Section 3.0 Parks and Open Space and Elementary School Site.
105	ENSURE Lethbridge is expanding in a responsible manner by: Requiring the completion of Area Structure Plans and Outline Plans prior to the development of new areas.	Canyons Outline Plan Amendments and development have been completed to meet the growth needs of the community given available infrastructures.
106	PROMOTE orderly growth by:	Canyons Outline Plan Amendments have been completed to meet the growth

	- Encouraging an adequate supply of land that is planned and available for servicing to meet market demand. - Encouraging growth patterns that maximise the use of existing infrastructure and services in order to avoid or delay the construction of new infrastructure.	needs of the community given available infrastructures.
113	PROMOTE a sustainable development pattern which makes efficient use of land, minimises the need for motorised travel and facilitates social cohesion, by encouraging: - The design of the built environment to facilitate walkability and rollability by providing complete networks of accessible sidewalks and crossings throughout the city. - A diverse range of housing forms and price points to be incorporated in all new neighbourhoods. - Neighbourhood design and public spaces to mitigate the impact of climatic extremes (temperature, wind, drifting snow). - Throughout the city, architecture and streetscaping which contribute to a sense of place and civic pride.	<i>Refer to Part A-Land Use Concept (2026), Section 3.0 Parks and Open Space and Section 7.0 Transportation Network</i>
121	PROMOTE transportation that encourages physical activity and is more environmentally friendly, efficient and safe, by including multiple modes of transportation in future projects and plans.	Refer to <i>Section 3.0 Parks and Open Space</i> and <i>Section 7.0 Transportation Network</i>
134	ENSURE the improvement of pedestrian and cyclist access to destinations both within and outside of neighbourhoods, by incorporating appropriate infrastructure in planning for new and existing neighbourhoods.	Refer to <i>Section 3.0 Parks and Open Space</i> and <i>Section 7.0 Transportation Network</i>
138	ENSURE efficient service delivery by requiring the approximate location, size, and capacity of future infrastructure and infrastructure assets, including arterial roadways, electrical transmission lines and substations, major waterlines, sanitary sewers and shallow utilities, be identified during the drafting of new or amended Area Redevelopment Plans, Area Structure Plans and Outline Plans.	<i>Refer to Sections 4, 5, 6, 7 and 8 of this Report.</i>
140	PROMOTE efficient land use and efficient and coordinated service delivery by encouraging transportation and utility corridors as multi-use corridors to accommodate transportation, municipal utilities, electrical transmission lines, communications infrastructure, wildlife corridors, and/or active transportation infrastructure, where appropriate.	<i>Refer to Sections 4, 5, 6, 7 and 8 of this Report.</i>

1.6.2 South Saskatchewan Regional Plan

The South Saskatchewan Regional Plan (SSRP) is the primary tool for implementing the Provincial Land Use Framework Prepared by the Government of Alberta. The SSRP takes a holistic approach to the management of land and natural resources, establishing broad-based policies to guide responsible land management for 84,000 square kilometres of land

within southern Alberta over the next 50-year period. The intent of the SSRP is to ensure that the many competing interests for limited land and natural resources is balanced and that communities continue to work towards a common vision. The following key strategies are established within the SSRP which apply to this outline plan:

- Efficient Land Use
- Watershed Management
- Quality of Life
- Aboriginal Engagement
- Community Needs
- Tourism

1.6.3 The Urbanization of West Lethbridge, 1969

In 1969, the Oldman River Regional Planning Commission produced “The Urbanization of West Lethbridge” plan. The plan recommended that West Lethbridge be developed as a series of villages.

1.6.4 Mountain Heights/Riverstone/Riverbend ASP, 2013

The Mountain Heights/Riverstone/Riverbend ASP was adopted by Council in 1996 and subsequently updated in 1999 and amended in 2003 and 2013, as such the ASP conforms to the City of Lethbridge MDP and further describes:

- Sequencing of development
- Proposed land uses, including mostly low density residential with small medium density sites and perhaps higher density sites on the arterial roadways
- Population density
- The general location of major transportation and public utilities, and
- Any other planning matters that Council may consider necessary

The Canyons neighbourhood represents the bridging of the Mountain Heights/River Stone/River Bend Area Structure Plan to Paradise Canyon.

1.6.5 City of Lethbridge Land Use By-law

The City of Lethbridge Land Use By-law (LUB) No. 6300, originally adopted on July 13, 2020, defines land use districts for all lands within the city. The land within the proposed Outline

Plan is currently zoned in accordance with the original Outline Plan ranging from low density residential to medium density residential and includes a commercial district and school site. Future land use redesignations, as described in the LUB, will comply with the general land use descriptions in the Outline Plan.

1.7 Public Consultation

An open house for the Canyons Outline Plan Amendment was completed on February 25, 2026, in collaboration with the Lethbridge School Division. A total of 132 invitations were sent to existing Canyons' residents on February 11, 2026. There were 40+ people in attendance. Key presentation elements included: Proposed Land Uses; Community Concept; Elementary School Site Concept; Parks and Open Space; and School Building Architecture.

Key comments captured during the open house have been consolidated as follows from written and verbal commentary of attendees. Original comments and follow-up emails are included in **Part C-Appendices**.

Comment	Response
Concern: Roadway congestion will be a problem on Canyon Parkway W with School Site.	The proposed school site is bounded by a 4-lane super collector on the south and University Drive (ultimately 4-Lanes) on the west accommodating 15,000+ vehicles/ day. Based on our Traffic Impact Assessment, Canyons Parkway has the capacity to manage traffic volumes at full buildout. University Drive currently operates as an interim two-lane cross-section that will be expanded to 4-Lanes in the future.
Concern: Lack of Emergency Access and Egress in the event of Canyons Parkway Closure.	A secondary emergency access has been constructed from the roundabout at Canyon Estates Lane extending past the Denecky farmstead along the future Chinook Trail R/W to University Drive. Future emergency secondary accesses will be developed as community buildout extends north of Canyon Parkway and east of University Drive that will connect to Chinook Trail. The ultimate secondary access for the Canyons will be on the west end of the community.
Concern: Canal Extension through Linear Park appears to have been removed.	Presentation materials at the open house were unclear and have been revised. It is intended that the existing canal system entering the Canyons and then buried in a pipe system that extends to Canyon Parkway and then east to Paradise Canyon will be extended through the linear green strip where it will then enter a relocated pipe inlet structure. Make-up water to existing stormwater management ponds will be maintained.
Concern: Pathway gaps along Canyon Parkway parallel to existing AltaLink Overhead Line.	Currently, the AltaLink overhead lines are problematic for the construction of the pathway. However, once these power lines are relocated the filling of these pathway gaps can be completed.

Concern: Amount of Medium Density Units in the plan area causing traffic Issues.	Based on the new Traffic Impact Assessment all roadways have the capacity to manage estimated traffic volumes at full buildout.
Concern: Amount of Medium Density Units will affect current property values.	The massing of medium density sites is in similar locations to those shown in the 2017 Outline Plan. Medium Density Units are centrally located near University Drive, Commercial and School Site. The NE multi-family site was identified in the 2017 OP.
Concern: School should not be in the Canyons.	A school site was originally planned for the Canyons and removed in 2017. In 2025, the Province of Alberta and the Lethbridge School Division identified that a new public elementary school located in the southern portion of the west side is a high priority and is required within 4-5 years. The Canyons is the only planned community that can provide a serviced parcel allowing for development in the timeframe noted above.
Question: Has a Biophysical Impact Assessment been completed for the Plan Area?	Rattlesnake habitat and wetlands evaluations were completed during the original planning of the neighbourhood and are included in Part C-Appendices. The presence of <i>Species at Risk</i> will be evaluated prior to phased construction and development. Mitigation measures, if required, will be implemented at the time of development.
Question: What will the school zone speed limits be on Canyon Parkway in the future?	Speed zone reductions will be confirmed during detailed design following Outline Plan Amendment approval.
Question: How was the mailout notification area arrived at?	City of Lethbridge administration provided addresses of existing residents within the Canyons Outline Plan Boundary west of Paradise Canyon.
Suggestion: The school should be located west of University Drive.	A site west of the commercial development cannot be serviced without extensive offsite infrastructure investment (roads, water, sewer and stormwater management facilities). The centralized location of this community amenity is a better location for the school.
Suggestion: Consider adding space for a daycare.	The plan's <i>swing site</i> west of University Drive site identifies the potential for the site to be a daycare. In addition, the large commercial site could accommodate a daycare.
Support: Support received from attendees for the future elementary school and commercial site in the Canyons.	Written responses noted, and verbal support of school site and commercial area was received from attendees.

2.0 Site Conditions

The Canyons site conditions, at the time of this amendment, are identified on **Figure 1 Site Conditions**. The topography within the Plan area consists of gently rolling terrain with slopes ranging up to 4% in the western section, then smoothing towards the east and the edge of the table lands adjacent to the Oldman River coulees. Elevations range from a high point of approximately 936 m above sea level, in the westerly portion of the plan area, to a low point

of approximately 913 m in the northeast. The difference in elevation between the high and low areas is approximately 23 m. The plan area has no substantial treed areas, except for around the decommissioned irrigation dugout and farmstead.

2.1 Existing Features

Within The Canyons Outline Plan area there is a farmstead that will be subdivided and incorporated into the neighbourhood once the property is vacated. This farmstead is on a septic field that will be remediated and connected to the City of Lethbridge sanitary sewer system with adjacent development. The remainder of the lands are currently used for agricultural purposes. Other site features include a(n):

- Canal (Lethbridge Northern Irrigation District) that enters the plan area from Riverstone and flows to a pipe system that routes irrigation water through Paradise Canyon and ultimately, the Oldman River.
- Overhead Power transmission lines which cut across the site diagonally and follows the southern boundary of the plan before diverting south.
- Telecommunications line in the SW area of the plan.
- Abandoned well site (Refer to Section 2.2 for more information).
- Rattlesnake hibernacula exist in the coulees along the plan's south boundary. (Refer to Section 2.2)

The Canyons plan area has been developed for the past 16 years and includes the completion of University Drive (Interim 2-Lane Cross-Section), Canyon Parkway West, and associated supporting utilities. Residential subdivision accounts for the completion of approximately 180 dwelling units which is approximately 11% of the plan's total projected dwelling units. Preliminary site grading to support future development has been completed in the areas north and east of Phase 3, and south of Phase 4.

2.2 Environmental Conditions

A Phase One Environmental Site Assessment (Phase I ESA) was completed by EBA Engineering Consultants Ltd. All findings of the Phase I ESA have been accounted for in the development of the land use concept, servicing and implementation strategy.

Well Site

The existing well site (License #0061612) located in NW13-8-22-W4 was drilled February 14, 1977 and abandoned February 18, 1977. The Province of Alberta issued a reclamation certificate for the well in September 1977. Development adjacent to the well will be in

accordance with *Directive 079: Surface Development in Proximity to Abandoned Wells*, issued by the Alberta Energy Regulator.

Rattle Snake Hibernaculum

Alberta Sustainable Resource Development (SRD) was consulted to guide a mitigation strategy for the hibernacula, and a *Habitat Compensation Strategy* was developed for the south boundary of the plan area. Final implementation strategy will be confirmed with the province and city prior to development in the area. The installation of barrier fencing, that prevents snakes from accessing private properties, adjacent to environmental reserve will be constructed as part of phase development.

Wetland Assessment

A wetland assessment for the Canyons was completed and compensation for wetland removal has been paid by Melcor Developments Ltd. Additional detail of this evaluation and compensation is included in **Part C-Appendices**.

Wildlife/Species at Risk

The plan area is home to wildlife and may include *Species at Risk*. Prior to any new construction activities, a wildlife survey shall be completed documenting any *Species at Risk* that are present within the proposed construction zone. A final memorandum/report will also provide recommendations and mitigation strategies if required.



FIGURE 1 | THE CANYONS OUTLINE PLAN AMENDMENT
SITE CONDITIONS

PREPARED FOR: MELCOR DEVELOPMENTS LTD.

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- LEGEND
- OUTLINE PLAN BOUNDARY
 - SANITARY SEWER
 - WATER
 - STORM SEWER
 - OVERHEAD POWER
 - TELECOMMUNICATIONS
 - PRIVATE/EMERGENCY ACCESS

- STOCK PILES
- LNID PIPE SYSTEM
- LNID CANAL



116549112
May 7, 2026

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2.3 Geotechnical Conditions

The subsurface soils within the plan area are generally characterized as being comprised of organic topsoil, glaciolacustrine clays, glacial clay till, and bedrock. A safe development setback has been established along the eastern and southern boundaries of the plan area given the potential for coulee slope failures and sloughing. A *Geotechnical Evaluation* was completed by EBA Engineering Consultants Ltd. The Evaluation contains findings and recommendations for the following areas:

- Subsurface Conditions
- Slope Stability Evaluation
- Recommended Development Guidelines
- Stormwater Pond Development
- Subdivision Development
- Design and Construction Guidelines

2.4 Historical Resources

An Historical Resources Impact Assessment (HRIA) was conducted by Arrow Archeology Ltd. to “locate and assess historical resources within and adjacent to the proposed subdivision and provide recommendations for avoidance, mitigation and preservation of any such resources”.

A single archeological site was recorded on the easternmost portion of The Canyons planning area. This site, DjPf-128, consists of four small cairns and a central surface stone feature of unknown function. As per recommendations within the HRIA report and from Alberta Tourism, Parks, Recreation and Culture, the site has been isolated from the surrounding development and is intended to be incorporated into an interpretive open space. Consultation with First Nations’ leaders, was completed by Melcor and the City of Lethbridge. A blessing of the site occurred on July 22, 2008.

Cairn Interpretive Site Concept



Cairn Blessing, July 2008



3.0 Parks and Open Space

The Parks and Open Space areas are a fundamental component of The Canyons and are identified on **Figure 2 Open Space and Trails**. Land allocations for the open space areas allow for the completion of functional parks that may contain community amenities such as playgrounds, gathering areas, community gardens, exercise equipment, pathways, and a variety of vegetation. Final amenities for future open spaces will be determined at the time of subdivision and based on community needs at the time of development. Existing open spaces in the eastern plan area will be complimented by a central park space around the future school and a pocket park in the western plan area. Pedestrian and cycling connectivity between the park spaces will be accomplished by a multi-modal pathway along Canyon Parkway and community sidewalks.

Municipal Reserve (MR) dedication has been defined by open space areas that provide amenity to the community and meet minimum size and dimension standards as defined by the City Parks Department (MR creditable lands). An MR land area designation of 10.6% of the Plan's GDA is projected upon full buildout. It is anticipated that park space sizing may be adjusted at the time of subdivision and development if adjustments do not reduce the MR land allocation to below 10% of the GDA.

Additional non-credit open spaces areas defined within the plan area are adjacent to University Drive Ponds, and other areas that have more of a utility function. These areas may include pathways and will be landscaped to integrate into adjacent park spaces and right of ways where applicable.



FIGURE 2 | THE CANYONS OUTLINE PLAN AMENDMENT
OPEN SPACE AND TRAILS

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3.1 Existing Park Spaces

The eastern plan area is home to the completed *Canyons Park* and *Canyon Meadows Park*. These park spaces include an integrated pathway network leading to other regional trails via Canyons Parkway's multi-modal path. Gazebos, playgrounds, stream feature, waterfall and a variety of vegetation are additional elements of these parks.

The main wet pond provides both utility (stormwater management) and beauty to the community. Unique to the stormwater facility is a water recirculation system that pumps water from the lower pond to the upper pond during spring, summer and fall thereby enhancing water quality and overall pond health. The LNID's canal and pipe system is located near the pond facility and provides the opportunity for the addition of raw water to the ponds to maintain pond water quality during dry seasons.

3.2 Future Park Spaces

A **Linear Park** will be added to the eastern plan area and provide pathway connectivity through an enhanced green space along the LNID canal. Interpretive signage (regarding irrigation, watershed management), and exercise equipment may also be considered in this area during detailed design. LNID's infrastructure is a combination of open channel and pipe conveyance systems. The canal system will be expanded through the linear green strip to form a stream feature that connects to LNID underground conveyance systems located in Canyon Parkway. Final Park concepts and designs will be completed at a later stage. There may be a potential to extend the canal south towards Canyon Parkway where it would enter the existing LNID pipe system. However, a detailed hydraulic analysis of the canal along with a review of the existing property grades along Canyon Meadows Road must be completed during master grading and servicing design for the area to confirm the feasibility of this approach.

A **School Site** has been added to the plan adjacent to University Drive, this parcel will be rezoned to a public land use district and then subdivided into 2 parcels - a parcel dedicated as SR for the future school, and the remainder dedicated as MR for community use. The space is anticipated to be home to numerous amenities and may include a playground, soccer pitch, kick-ball diamond, community garden, seating areas and pathways that will serve the school and broader community. The location of this site provides for multi-modal transportation opportunities given its proximity to arterial roads, transit and regional pathways in University Drive.

This centralized open space is further defined by wet ponds flanking University Drive that will provide utility and beauty to the community. The permanent water pools identified have been doubled in size from the previous outline plan to better align with current City

standards regarding pond sizing and water quality. Raw water for turf irrigation and pond make-up water will be provided by the Canyons Pump Station located at Canyons Wild Park, or via an alternative pump system from the LNID canal to the school site along Chinook Trail. Funding of this project is undetermined and will be confirmed through additional discussions with the city prior to design and construction.

A **Pocket Park** has been identified in the western plan area and will be home to a smaller playground, seating/gathering area and pathways.

4.0 Water Distribution System

There are two water mains that are currently providing water service to the Canyons. Main 1, located toward the east boundary of the site, is Ø300mm line in Canyon Meadows Road. Main 2, located in University Drive, is also a Ø300mm line. These two water main extensions into the Canyons are now looped by a Ø300mm line located in Canyon Parkway. Additional water looping has been accomplished through connections along the east boundary of the Plan from Paradise Canyon. *Refer to **Figure 3 Water Distribution System**.*

Water consumption rates for the community have been derived from the following design criteria provided by the City of Lethbridge (415L/person/day). Based on our projected population of 4,656 and 7.7Ha of Commercial/Institutional land, the following ultimate system demands are estimated below.

Average Day Demand (ADD)	2.10 ML/day
Maximum Day Demand (ADD x 2.2)	4.62 ML/day

The water distribution system completed to date has created a looped system that allows for multiple points of service, mitigating the impacts of system disruptions. Further, the remainder of the water servicing for the plan area will be constructed in accordance with Provincial and Municipal Design Standards, and system capacities for the conveyance and treatment of potable water for consumption and fire flows will be evaluated and confirmed during all development phases.



FIGURE 3 | THE CANYONS OUTLINE PLAN AMENDMENT
WATER DISTRIBUTION SYSTEM

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5.0 Sanitary Sewer System

The existing sanitary sewer conveyance system that services the Canyons and Paradise Canyon Communities consists of two main sanitary trunk lines:

- a) **Trunk A** is a Ø450mm sewer line that conveys flows north by gravity along Canyon Meadows Road W through Riverstone. Two lift stations (Upper Bench and Lower Bench) convey sewage to this trunkline. A peak flow rate from these lift stations was previously identified as 53 L/s (2017 Outline Plan).
- b) **Trunk B** is a Ø675 mm sewer line that conveys flows north along University Drive.

Existing and proposed sewers are identified on **Figure 4 Sanitary Sewer System**. Sanitary sewage flow estimates have been derived from the following design criteria provided by the City of Lethbridge in their Design Standards (2021) and are presented in **Table 2**.

Table 2: Sewage Flow Rates			
Land Use	Dry Weather Flows	Wet Weather Flows	Infiltration
Residential	400 L/person/day	500 L/person/day	150 L/person/day
Commercial	20 m ³ /hectare/day	7.5m ³ /Ha/day	2.25 m ³ /Ha/day
Institutional	20 m ³ /hectare/day	7.5m ³ /Ha/day	2.25 m ³ /Ha/day

5.1 Sewershed A

Sewershed A (Residential Land Use) is conveyed by gravity to the upper bench lift station located in Paradise Canyon to the east of the plan area. This sewer shed has an estimated population (existing/future) of 287 yielding a Peak Wet Weather Flow (PWWF) of 7.6 L/s.

5.2 Sewershed B

Sewershed B (Residential Land Use) is conveyed by gravity to Trunk Sewer A located in Canyon Meadows Road. This sewer shed has an estimated population (existing/future) of 1697 yielding a PWWF of 41.4 L/s excluding paradise canyon lift station discharges.

5.3 Sewershed C

Sewershed C is conveyed by gravity to Trunk Sewer B located in University Drive. This sewer shed has a(n):

- Estimated population (existing/future) of 2672
- Commercial Site of 4.0 Hectares
- Institutional Site of 3.7 Hectares

These combined land uses yield a Peak Wet Weather Flow a PWWF of 73.0 L/s. The extension of sewer service west of the plan area could be considered in the future subject to confirmation of downstream system capacities.

The capacity of downstream systems, for the conveyance and treatment of sewage, will need to be evaluated and confirmed during all development phases.

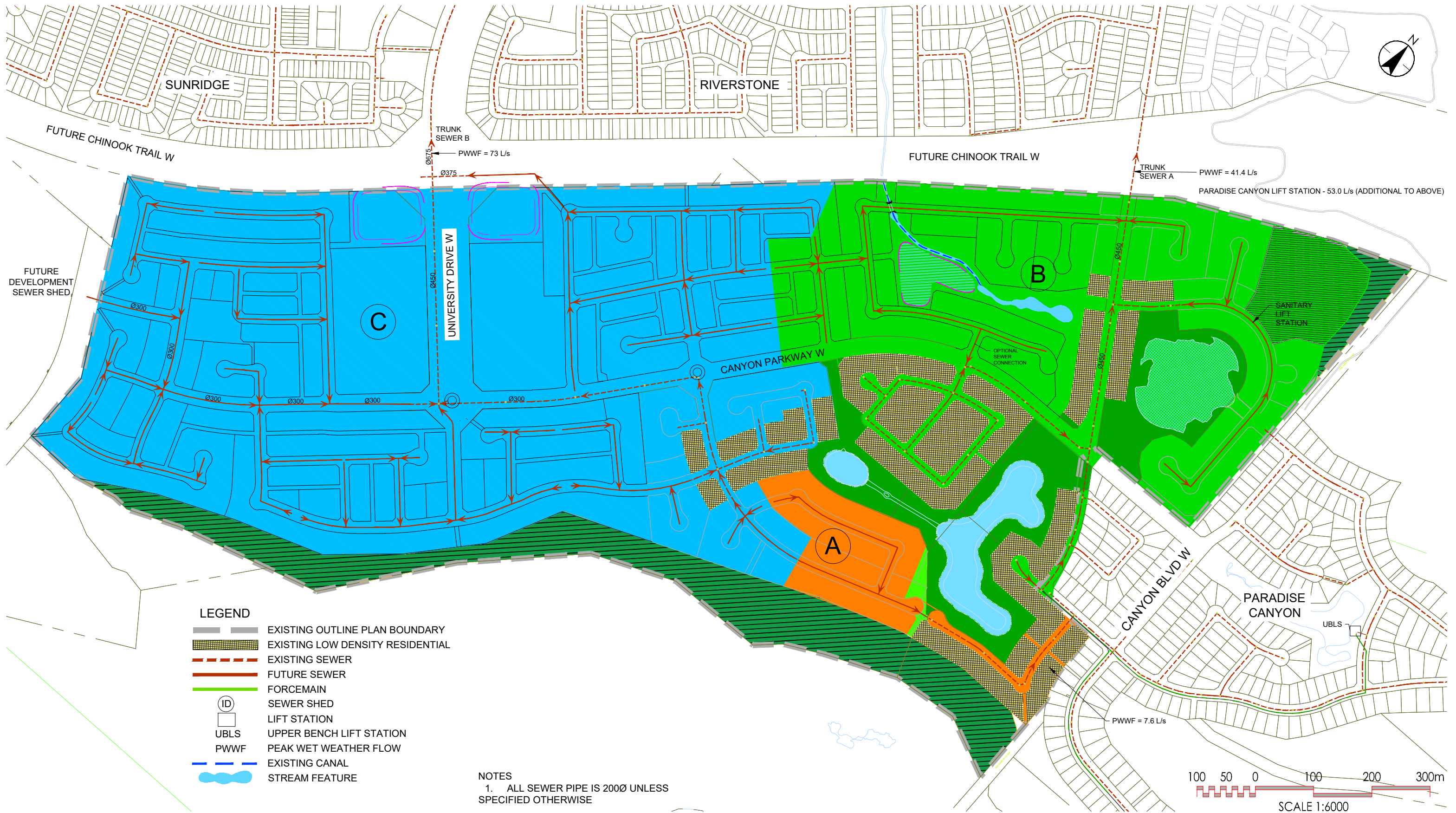


FIGURE 4 | THE CANYONS OUTLINE PLAN AMENDMENT
SANITARY SEWER SYSTEM

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6.0 Stormwater Management Systems

Stormwater run-off from the Canyons Plan area is planned to be developed as a dual drainage system with a:

- Minor storm sewer system designed to accommodate the 1:5-year rainfall event.
- Major storm system designed to accommodate surface run-off from the 1:100-year rainfall event.

As of 2026, construction of sewers and ponds has been completed for portions of the plan area and will be further described below. Future development areas will be evaluated through a conceptual drainage boundary overview, minor system analysis and major system analysis. Refer to **Figure 5 Stormwater Boundary Overview**.

AECOM's previously completed stormwater studies (*Stormwater Pond Report 2009 and Overland Drainage Analysis 2009*) have been utilized to develop preliminary design criteria for system evaluation and to develop appropriate land allocations for ponds. The detailed stormwater analysis prepared by AECOM presents modelling results for an urban environment and is summarized below in **Table 3**.

Catchment and Pond ID	Catchment Area (ha)	Active Storage (m ³)	Active Storage(m ³) / Hectare	Catchment Impervious Area (%)	1:100 Year Discharge Rate (L/s)
A	16.14	5410	335	52	550
B	29.69	18976	639	52	650
C/D	33.40	33489	1003	39/51	200
E/F	32.60	30832	946	61	450
G	11.11	Offsite	N/A	N/A	N/A

Based on the information above, the following preliminary design criteria has been derived (**Table 4**) for space planning purposes of future ponds (A, E & F). Ponds B, C and D are constructed and operational and are excluded from this space planning design criteria.

Catchment and Pond	Minor System Design*	Major System Design*	Active Storage Volume/ Hectare of Contributing Area
A	90 L/s/Ha	200 L/s/Ha	700m ^{3**}
E/F	90 L/s/Ha	200 L/s/Ha	950m ^{3**}
G	90L/s/Ha	200L/s/Ha	1 000m ^{3*}

* City of Lethbridge Design Standards 2021: *Simplified Approach*

**Derived from AECOM Reports 2009

It is recommended that the stormwater management system concepts presented herein are further developed through the completion of a *Preliminary Master Grading and Servicing Design* including stormwater modeling following Outline Plan Approval as this exercise will offer further opportunity to refine and optimize infrastructure designs and land allocations for overland flow routes and ponds.

6.1 Drainage Boundary Overview

The Canyons is characterized by 10 drainage zones described in general below. Zone boundaries have been influenced by natural topography, previous stormwater management studies, as-built drawings, and a preliminary grading concept. Refer to **Figure 5 Stormwater Boundary Overview**. The drainage zones presented have been modified due to changes in the land use concept, and to facilitate urban growth around the school site. **Table 5** below quantifies the net changes to drainage areas and receiving pond facilities.

Table 5: Catchment Area Revisions			
Catchment	2017 (Ha)	2025 (Ha)	Change (Ha)
A	15.2	11.3	-3.9
B	29.1	25.2	-3.9
C	16.8	18.1	1.3
D	19.7	17.8	-1.9
E/F	32.4	42.1	9.7
G	10.7	9.9	-0.8
H	0.6	0.7	0.1
I	1.3	1.4	0.1
J	1.1	0.9	-0.2
K	1.9	1.9	0.0
Totals	128.8	129.3	

6.1.1 Zones A and B

These drainage zones are characterized by two interconnected dry ponds managing a total drainage area of 36.5 Ha. Pond B is constructed and discharges drainage east through Paradise Canyon, and Pond A will be constructed when development proceeds in this area. A storm pipe has been installed from Canyons Phase 3 that will, when extended, serve as Pond A's outlet. The reduction in overall drainage catchment from the previous OP is a result of boundary redistribution with Zone F.

Alternative Stormwater and Drainage Strategy

In 2017, an alternative stormwater management strategy was proposed whereby drainage from Zone A's drypond and portion of Zone B is directly connected to a stream feature

created by the expansion of the LNID conveyance system. This scenario could be reviewed with the City and LNID during future master servicing and grading designs. Given topography and the requirement of adjacent home footing clearances from high water levels, it is anticipated that either significant imported fill, or a pump station system will be required for this alternative to function. Critical to the implementation of this alternative strategy will be hydraulic modelling of upstream and downstream drainage systems and the interaction of constant flows (LNID) with intermittent urban run-off during rainfall events.

6.1.2 Zones C and D

These drainage zones are characterized by an upper forebay and lower wet pond connected via a stream feature managing a total drainage area of 35.9 Ha. Both ponds are constructed and discharge drainage east through Paradise Canyon. The reduction in overall drainage catchment from the previous OP is a result of boundary redistribution with Zone F.

6.1.3 Zones E and F

These drainage zones are characterized by two interconnected wet ponds managing a total drainage area of 42.1 Ha. Ponds E and F, flanking University Drive, are developed to an interim stage as dry ponds that will be expanded or reconstructed at the time of phased development. Restricted flow from these ponds flows north in trunk line installed in the University Drive R/W. The increase in overall drainage catchment from the previous OP is a result of boundary redistribution with Zones A, D, E and G.

6.1.4 Zone G

This drainage zone of 9.9 Ha is not serviceable (in a practical manner) by existing outfalls due to topography. As such, it is proposed that this zones major and minor systems will be connected to a future pond and outfall west of the plan area. The reduction in overall drainage catchment from the previous OP is a result of boundary redistribution with Zone E.

6.1.5 Zones H, I, J and K

These drainage zones along the perimeter of the plan have been defined based on natural topography (Zone H and K), or as-built residential conditions (Zones I and J) and are not managed by stormwater facilities within the plan area. Future designs must consider the

evaluation of erosion and the potential to reduce the catchment area for Zone's H and K as they will discharge drainage to natural areas.

Zone H (0.7 Ha) will drain naturally to the Oldman River and future Chinook Trail. During preliminary and detailed design of these residential properties, the direction of roof drainage to the fronting roadway should be considered along with erosion control measures to prevent scouring along the coulee edge due to sheet flows from back yards.

Zones I and J (2.3 Ha) are managed by previously completed stormwater management systems in Paradise Canyon.

Zone K (1.9 Ha) along the south boundary of the plan is based on site topography and identifies that rear yards of these properties will drain by sheet flow to the coulee in the future.

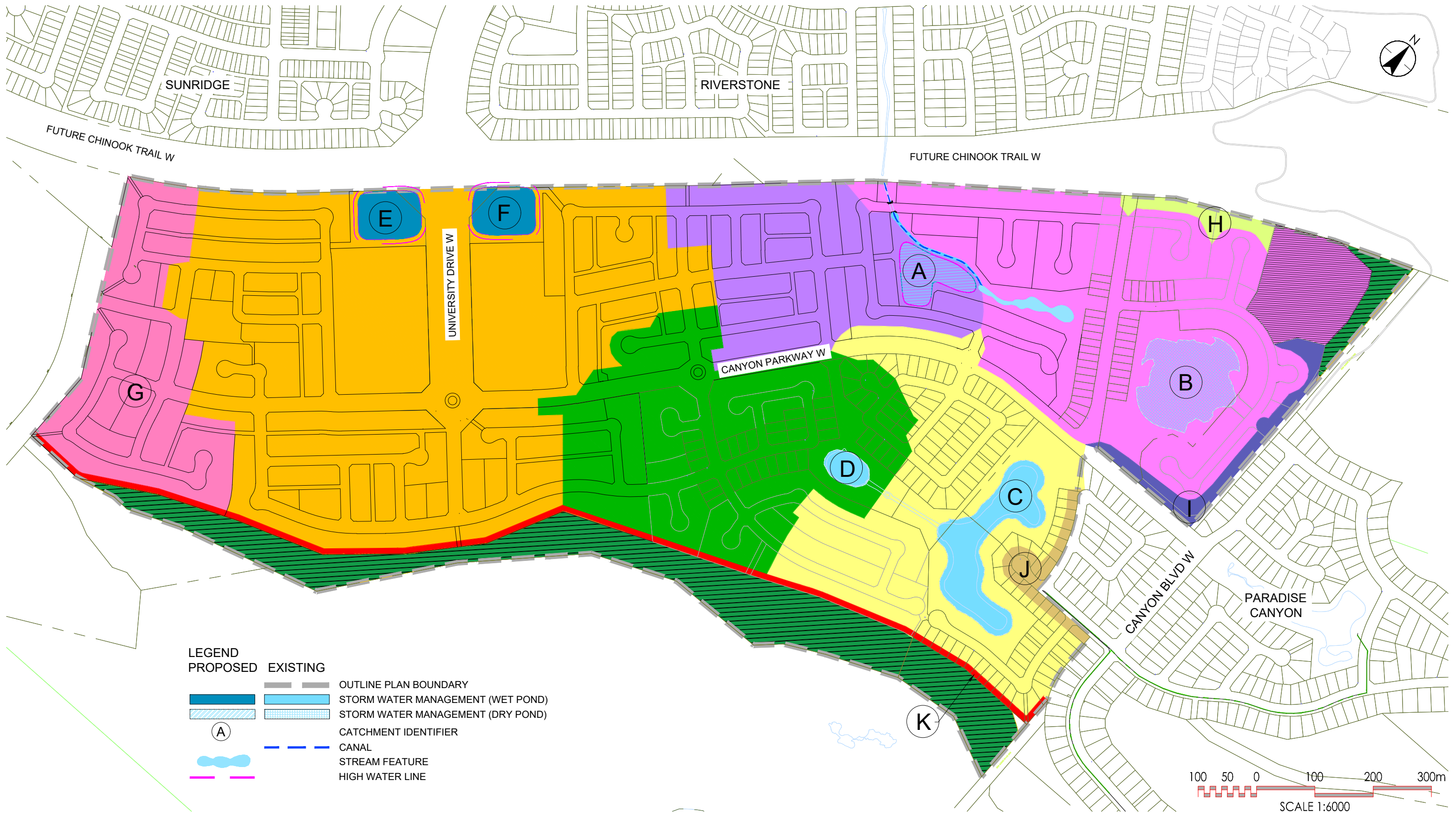


FIGURE 5 | THE CANYONS OUTLINE PLAN AMENDMENT
STORMWATER BOUNDARY OVERVIEW

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6.2 Minor Storm System

Minor storm sewer systems will be designed to convey Lethbridge's 1:5-year rainfall event and are identified on **Figure 6 Minor Storm System**. Storm sewer pipes identified in the tables below have been sized based on criteria identified previously, and by utilizing a pipe grade of 0.3% and a Mannings' roughness co-efficient of 0.013. As-built pipe capacities are taken from phase record drawings. Sub-catchment areas have been delineated at a preliminary level based on topography and shall be confirmed/modified during master grading and servicing designs.

6.2.1 Zones A and B

Minor storm sewer systems are proposed upstream of Ponds A and B with a pond interconnection that conveys attenuated flow from Pond A to Pond B where all drainage is discharged to a receiving pipe that drains into Paradise Canyon. **Table 6** identifies future system sizing for *Catchment A* and **Table 7** identifies future/existing system sizing for *Catchment B*.

Unique to Catchment B is the need for a pump station to service the NE Medium Density Site. Stormwater will be discharged via a force main to the adjacent gravity sewer system.

TABLE 6: ZONE A						
AREA	FROM NODE	TO NODE	AREA (ha)	Flow Rate (L/s)	Pipe Size (m)	Pipe Capacity (L/s)
A3	A3	A4	2.3	207	0.525	236
A5	A5	A4	0.9	81	0.375	96
A3, A4, A5	A4	A1	7.0	630	0.900	992
A2	A2	A1	0.8	72	0.375	96
A1-A5	A1	Pond A	7.8	702	0.900	992

TABLE 7: ZONE B						
AREA	FROM NODE	TO NODE	AREA (ha)	Flow Rate (L/s)	Pipe Size (m)	Pipe Capacity (L/s)
B2	B2	B1	3.3	297	0.600	336
B1,B2	B1	Pond B	5.5	495	0.675	460
B3	B3	B4	1.2	108	0.450	156
B3, B4	B4	EXST	1.6	144	0.600	472
B7	B7	B6	2.8	252	0.600	336
B6	B6	B5	4.9	441	0.750	610
B5, B6, B7	B5	B10	6.0	540	0.900	941
Pond A	Pond A	B8	N/A	550	0.750	610
B9	B9	B8	1.7	153	0.450	156
PA, B8, B9	B8	B10	4.7	973	0.900	1792
PA, B5-B10	B10	Pond B	10.7	1513	1.050	3842
Phase 3: As-Built Pipe Size						
As-built Pipe Capacities						
Pond A 1:100 Year Release Rate (550L/s) Assumed for Pipe Sizing						

6.2.2 Zones C and D

Minor storm sewer systems are proposed upstream of Ponds C and D with a stream feature as a pond interconnection that conveys flow from Pond D to Pond C where all drainage is discharged to a receiving pipe that drains into Paradise Canyon. Zone C is almost fully developed except for a small drainage area along its south boundary. For areas that have no interaction with future development, no pipe sizing evaluation was completed. **Table 8** identifies future system sizing for *Catchment C* and **Table 9** identifies future/existing system sizing for *Catchment D*.

TABLE 8: ZONE C						
	FROM NODE	TO NODE	AREA (ha)	Flow Rate (L/s)	Pipe Size (m)	Pipe Capacity (L/s)
C1	C1	EXST	3.4	306	0.450	311
Pond Inlet As-Built Grade 1.19%						

TABLE 9: ZONE D						
AREA	FROM NODE	TO NODE	AREA (ha)	Flow Rate (L/s)	Pipe Size (m)	Pipe Capacity (L/s)
D1	D1	Pond D	1.6	144	0.525	750
D6	D6	EXST	3.0	270	0.525	215
D5	D5	D4	2.0	180	0.600	434
D3-D6	D4	D3	9.5	855	0.900	789
D2-D6	D2	Pond D	11.6	1044	0.750	2812
Phase 4: As-Built Pipe Size						
As-built Pipe Capacities						

6.2.3 Zones E and F

Minor storm sewer systems are proposed upstream of Ponds E and F with a pond interconnection that balances storage volumes between the two stormwater storage facilities. Restricted outflow from this pond system flows north along University Drive. The University Drive storm sewer is existing and is currently operating with interim pond development in the road right of way. Modifications and pipe extensions will be completed during wet pond construction and the removal/expansion of interim storage facilities. **Table 10** identifies existing and future system sizing for *Catchment E and F*.

TABLE 10: ZONE E and ZONE F						
AREA	FROM NODE	TO NODE	AREA (ha)	Flow Rate (L/s)	Pipe Size (m)	Pipe Capacity (L/s)
E3	E3	E2	3.5	315	0.600	336
E2,E3	E2	E1	5.7	513	0.750	610
E1,E2,E3	E1	Pond E	9.7	873	0.900	992
F3	F3	F2	2.2	198	0.525	236
F2,F3	F2	F1	4.7	423	0.675	460
F1,F2,F3	F1	Pond F	7.4	666	0.900	992
F12	F11	F10	2.8	252	0.525	236
F10,F11	F10	F5	6.6	594	0.900	1187
F9	F9	F5	1.5	135	0.450	156
F8	F8	F7	2.3	207	0.525	236
F7,F8	F7	F5	4.5	405	0.675	460
F6	F6	F5	1.2	108	0.450	156
F5-F12	F5	F4	16.8	1512	1.050	2080
F4-F12	F4	Pond F	20.6	1854	1.200	2466
As-built Pipe Capacities						
As-Built Pipe Size						

6.2.4 Zone G

Evaluation of Zone G is limited to providing estimated flows and pipe sizing that will exit the Canyons and flow west to a future pipe system, storm water management facility and outfall.

Table 11 identifies future offsite pipe sizing for *Catchment G*.

TABLE 11: ZONE G						
	FROM NODE	TO NODE	AREA (ha)	Flow Rate (L/s)	Pipe Size (m)	Pipe Capacity (L/s)
G1	G1	Future	3.1	279	0.600	336
G2	G2	Future	6.8	612	0.900	992

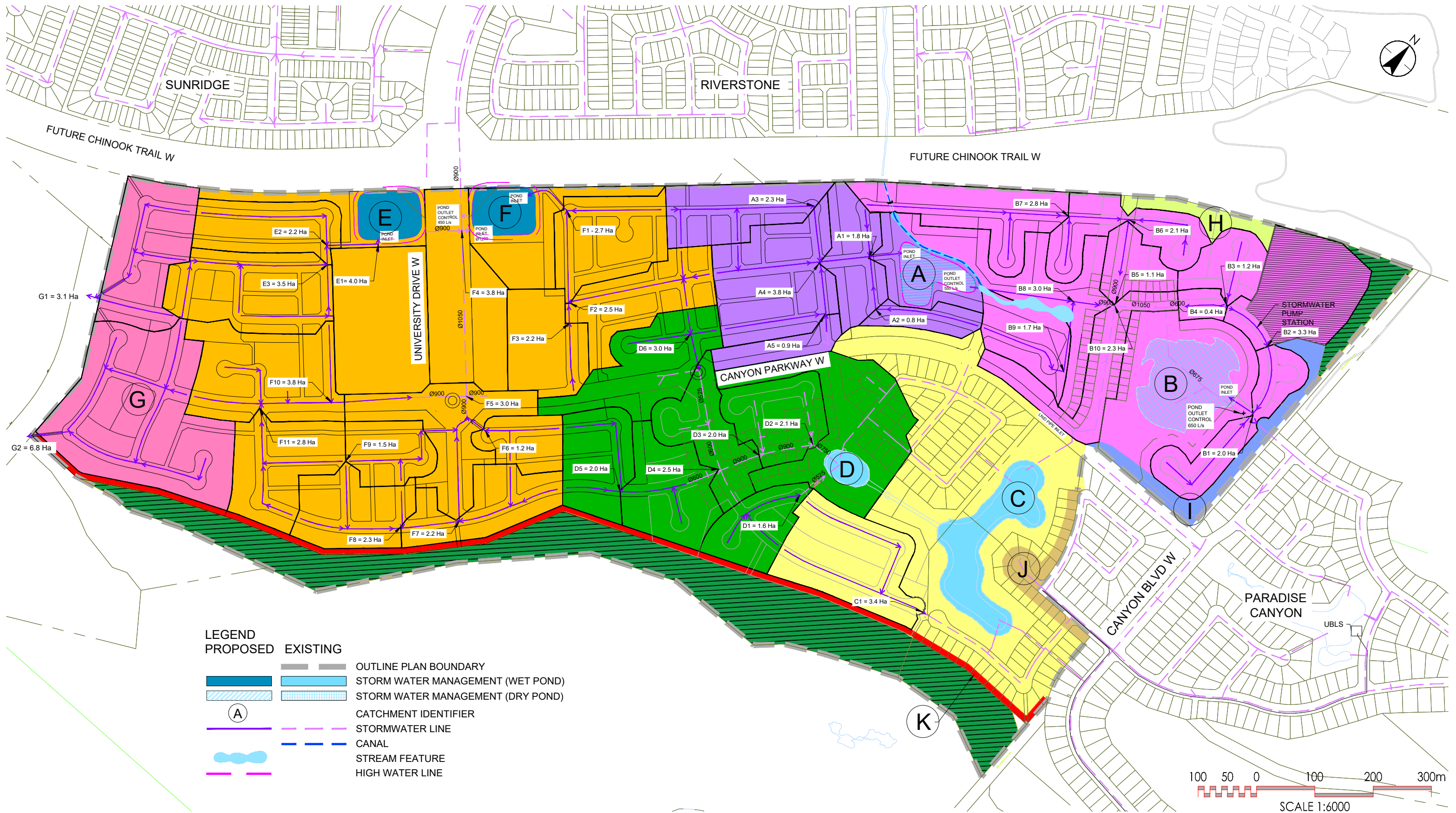


FIGURE 6 | THE CANYONS OUTLINE PLAN AMENDMENT
 MINOR STORM SYSTEM

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6.3 Major Storm System

Major stormwater management systems will be designed to convey Lethbridge's 1:100-year rainfall event. Major systems are comprised of storage nodes (trapped lows and ponds) and overland flow routes (Roads, Lanes and Swales). **Figure 7 Major Storm System** identifies the overall surface drainage concept for the Canyons including surface flow direction, emergency overland flow direction, and catchment areas. Cross-sections of Ponds A-B and Ponds E-F are provided for preliminary information and are subject to change at the next stages of design development. **Table 12** provides a summary of the major system ponds including proposed and as-built conditions, and **Table 13** provides a summary of major overland flows at key nodes in the system.

Table 12: Major Storm System Pond Summary						
Drainage Boundary	Pond Type	Catchment Area (Ha)	Active Storage Volume (m ³)	High Water Level Elev (m)	Permanent Water Level Elev (m)	Normal Water Level Area (Ha)
Zone A	Dry	11.3	7,910	924.5	N/A	N/A
Zone B	Dry	25.2	19,570	919.4	N/A	N/A
Zone C	Wet	18.1	36,968	921.6	919.6	1.5
Zone D	Forebay	17.8	1,625	924.5	924.0	0.3
Zone E/F	Wet	42.1	39,995	929.0	927.0	1.8
Zone G	Future	9.9	9,900	N/A	N/A	N/A
As-built Information						

Table 13: Major Overland Flows		
Drainage Boundary	Catchment Area (Ha)	1:100 Year Overland Flow (m ³ /s)
A1	11.6	2.3
B1	2.8	0.6
B2	14.2	2.8
B3	4.8	1.0
C1	3.4	0.7
D1	1.6	0.3
D2	9.5	1.9
F1	7.5	1.5
F2	6.6	1.3
E1	4.0	0.8
E2	5.7	1.1
E3	6.6	1.3
E4	13.9	2.8
G1	3.1	0.6
G2	6.8	1.4

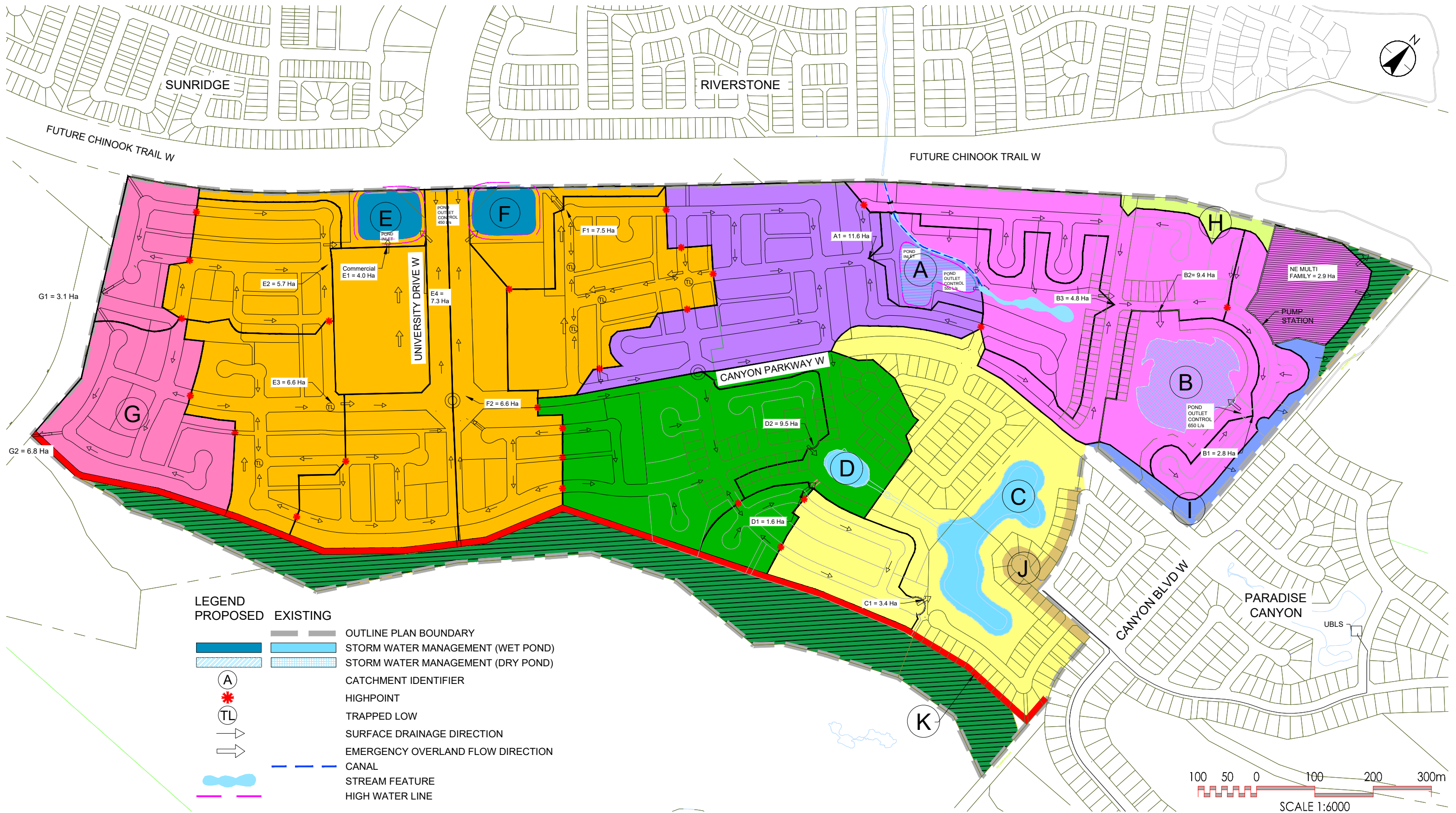


FIGURE 7 | THE CANYONS OUTLINE PLAN AMENDMENT
MAJOR STORM SYSTEM

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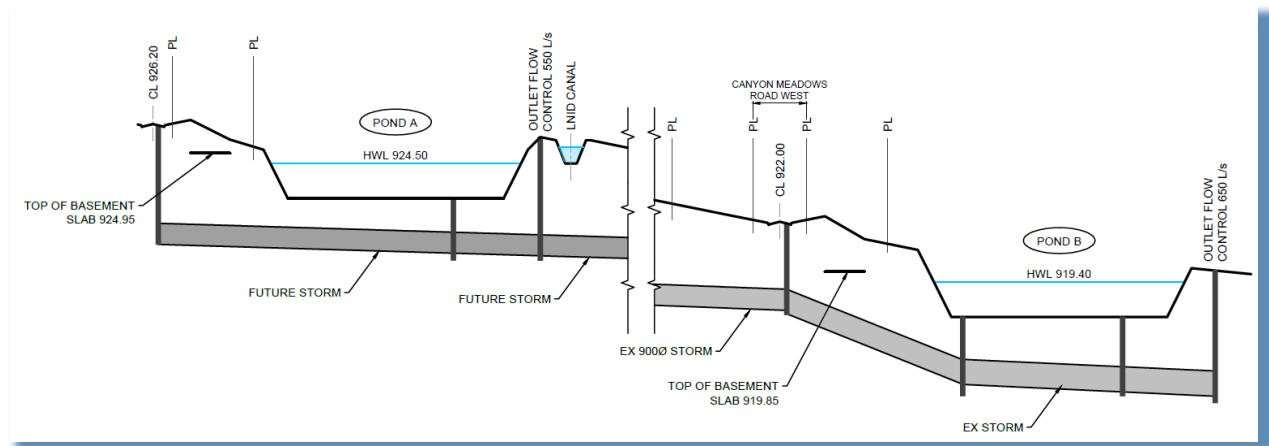
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6.3.1 Zones A and B

Zones A and B encompass an area of 36.5 Ha which is 7.8 Ha less than the 2017 OP. Stormwater run-off is attenuated in two pond facilities (*Pond A* future and *Pond B* existing) that will be interconnected as identified below, and as was outlined in the original AECOM stormwater management design reports.

Pond A/B Cross-Section



Given the change in catchment areas to the ponds, and the fact that the NE Multi-family site will be required to provide stormwater storage, existing Pond B is likely oversized. While Pond B has been developed, a site review identifies that the eastern half of this pond is partially constructed and will require additional grading and landscaping. Future master servicing designs of Pond A and its control structure should consider the optimization of both pond footprints given the allowable release rates and the change in contributing catchment areas. This exercise may yield additional developable land and a reduction in public utility area.

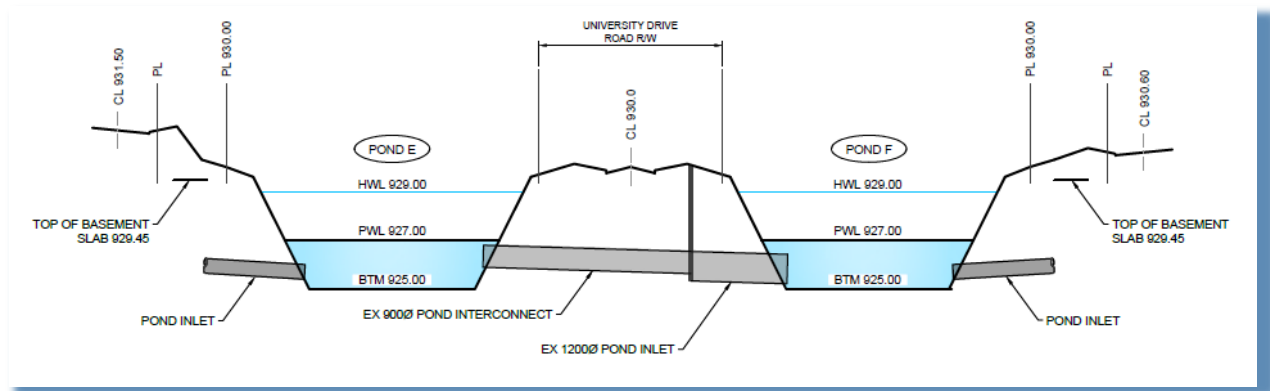
6.3.2 Zones C and D

Zones C and D encompass an area of 35.9 Ha, and stormwater run-off is attenuated in one pond facility (*Pond C*) and a treatment forebay (*Pond D*) that are interconnected by a stream feature. The ponds are fully developed and operational, and the overall catchment to these facilities has been reduced by 0.6 Ha.

6.3.3 Zones E and F

Zones E and F encompass an area of 42.1Ha which is 9.7 Ha *more* than the 2017 OP. Stormwater run-off is attenuated in two future pond facilities that will be interconnected as identified below. Interim stormwater management ponds accommodating University Drive drainage will be removed or expanded as required. Overland flow routes have been altered from the 2017 OP to allow for multiple overflow points into Pond E. Both ponds have accounted for the storage and attenuation of 1:100-year run-off from the school and commercial sites. It is anticipated that both sites will still have opportunity to attenuate overland flow in surface parking areas. As such, master servicing and grading designs of these areas may yield additional opportunities for efficient land use as these private sites should not be required to fully store the 1:100-year rainfall event.

Pond E/F Cross-Section



6.3.4 Zone G

An offsite stormwater management facility will be required to service Zone G along with surface conveyance systems accommodating estimated flows as provided in **Table 13**.

7.0 Transportation Network

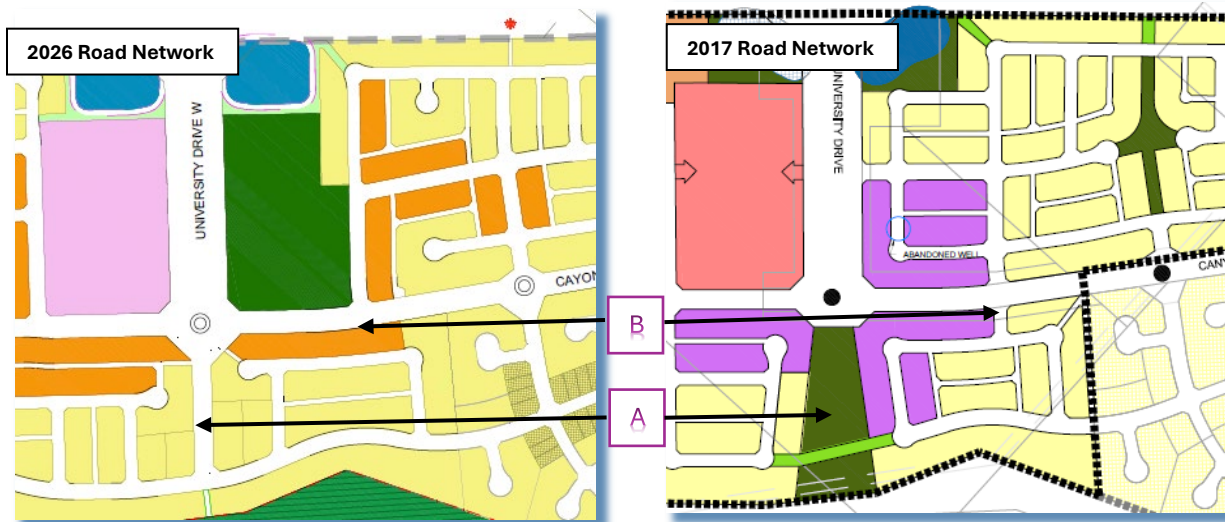
The Canyons transportation system is identified on **Figure 8 Transportation Network** which outlines road right of way widths, intersection spacing, driveway limitations and estimated annual average daily traffic volumes (AADT). A detailed analysis of the roadways and intersections is provided under separate cover in the *Canyons Traffic Impact Assessment, Stantec 2026* and is included in **Part C-Appendices**.

Also identified on Figure 8 are *Accessibility Review Areas*. While the transportation system must always be designed from the perspective of safety and accessibility, there are specific intersections that may require additional attention and enhancements given roadway classification and the interaction of multi-modal traffic. These enhancements may take the form of curb extensions, additional wheelchair ramps, tactile warning strips, raised crosswalks, rectangular rapid flashing beacons (RRFB's), etc. It is recommended that future designers coordinate with the City of Lethbridge Transportation Department during the preparation of preliminary engineering designs for the areas identified to confirm current municipal standards regarding accessibility and pedestrian accommodation.

The transportation network includes a mixture of laned and lane less areas. Lanes are utilized to facilitate rear access and provide opportunity for rear detached garages. It is anticipated that front attached garages will be the predominantly built form regardless of whether the dwelling is serviced by a lane. Secondary suites may be permitted in residential areas provided they are in areas with lane access, preferably on corner parcels and not on cul-de-sac bulbs or roundabouts to mitigate against parking issues along public roads. The location of secondary suites on estate style lots backing onto coulees will require further evaluation at the time of development to confirm that parking requirements can be met.

7.1 Road Network Overview

As identified previously, the Canyons Outline Plan Amendment has been completed to accommodate a new school site. As such, the site location has necessitated some changes to the overall road network that was previously established in 2017. A side-by-side comparison of the 2026 and 2017 network along with a commentary is provided below.



A The addition of a southerly road extension from the University Drive roundabout (previously a park space), will provide residents (in the southern area of the plan) the ability to bypass Canyon Parkway to access University Drive. Previously, all traffic from this southern area had to utilize Canyon Parkway.

B The removal of a southerly road extension (at the school site intersection) will also mitigate against Canyon Parkway congestion and allow this intersection to operate more efficiently during peak travel times.

7.2 Intersection and Roadway Modifications Overview

The Traffic Impact Assessment (TIA), completed by Stantec Consulting Ltd., provides a detailed assessment of existing and future intersections within, and external to the plan area. In addition, the projected ongoing build-out of the Canyons has been evaluated with regard to University Drive twinning.

7.2.1 Intersections

The TIA identifies that all existing intersections east of University Drive will operate effectively given current lane configuration and traffic controls at Full Buildout. The future new minor collector along the east side of the school site will require some design modifications to operate effectively as a stop control through the completion of a dedicated left hand turn for southbound traffic accessing Canyon Parkway eastbound in the AM Peak. It is noted that

east-west travel is not adversely affected by the school site in its proposed location. The installation of RRFB's across Canyon Parkway at this location should be strongly considered during detailed design for pedestrian safety. In addition, the ongoing monitoring of this intersection during development should be undertaken, and construction of future intersection improvements and landscaping should provide for the ability to convert the stop control to signalization if required.

The Sunridge/Riverstone Roundabout was evaluated using background traffic counts completed in April 2026. This data along with the overlay of future traffic generation from the Canyons identifies that the roundabout is anticipated to accommodate current conditions as well as full buildout of the Canyons Planning Area.

7.2.2 University Drive

The TIA has reviewed three different development scenarios to determine potential timelines for University Drive Twinning. It should be noted that the completion of the school alone will not trigger twinning of this arterial road, and that additional dwelling units and commercial development will need to be occupied to initiate this project. Historically, the Canyons development rate (residential occupancy) is 10 units per year. While there may be an increase in development within the Canyons due to the school, the most aggressive development scenario identifies that planning and design should be initiated circa 2040. A reassessment of this timeline should occur periodically during phased construction as development rates may change over time.

7.3 Transit

Transit Routes will be placed on collector roads within the Canyons community and City Transit has identified the need for a bus stop and layby on north bound University Drive in proximity to its intersection with Canyon Parkway. Transit routes may be placed on local roads temporarily or permanently to meet transit needs at the discretion of the Transit Manager. Roadways will be designed to meet current City of Lethbridge Design Standards to ensure adequate serviceability for transit vehicles. Transit standards may change between the Outline Plan approval and the implementation of a transit route in a new neighbourhood. Transit service standards will correspond to the Transit Master Plan.

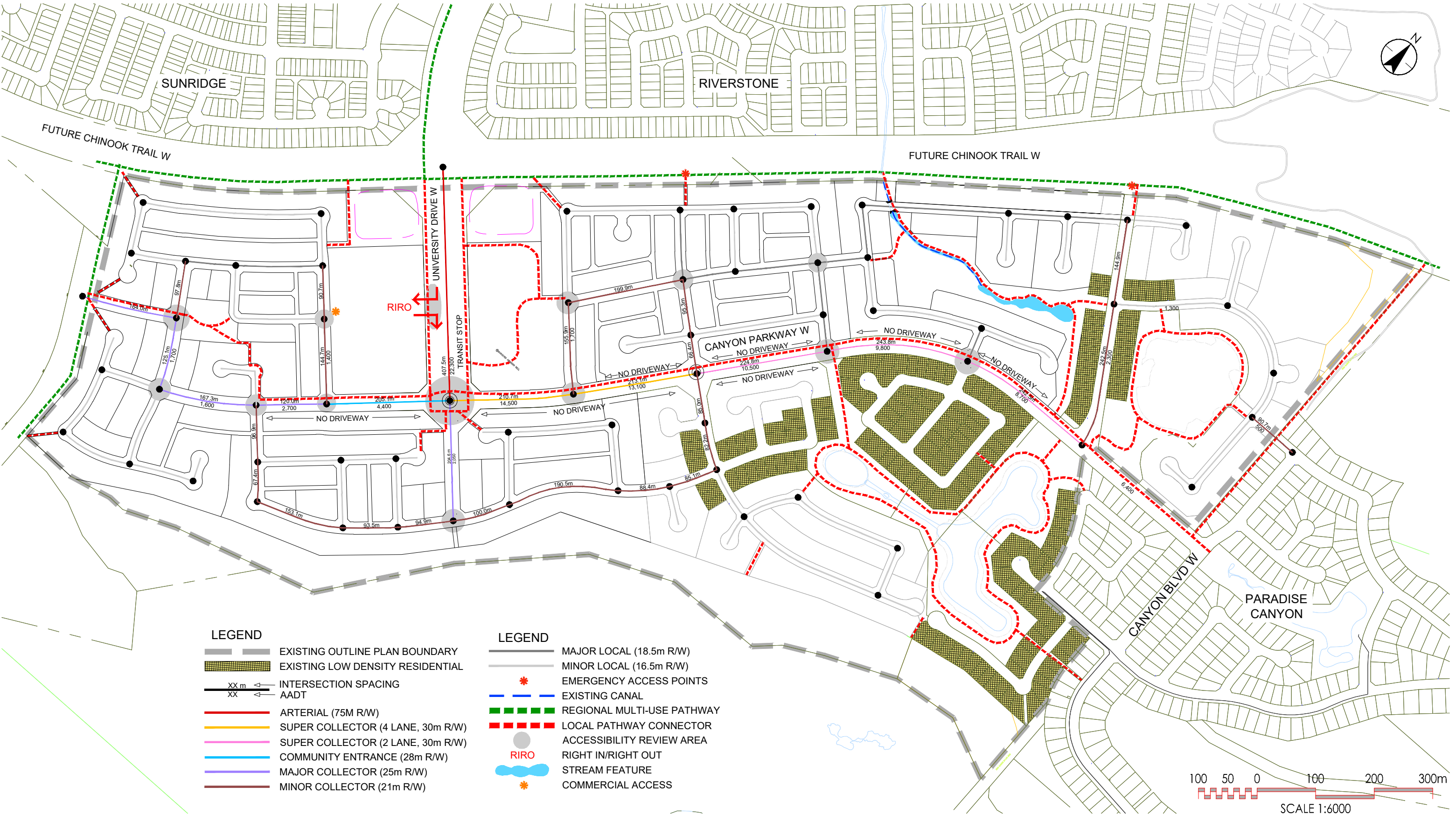


FIGURE 8 | THE CANYONS OUTLINE PLAN AMENDMENT
TRANSPORTATION NETWORK

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8.0 Staging and Implementation

The Canyons Outline Plan Land Use Concept and Technical Elements are intended to provide guidance for future development within the plan area as it relates to land use, transportation, utilities and open spaces. The outline plan is conceptual in nature and is intended to provide flexibility for minor adjustments during phased development. It is anticipated that larger changes to the plan may require a formal amendment subject to the discretion of City of Lethbridge Administration. Currently, City Council is the approving body for Land Use with City Administration approving technical elements in support of the community vision.

At the time of plan adoption (2026), the following information is provided for information on future staging and implementation within the Canyons community.

8.1 Staging

Through 2025, the Canyons has developed to about 10% of total anticipated dwelling units, and significant investment has been made in the extension of roads and utilities into the community along University Drive and Canyon Parkway. As a result, community expansion can now occur in multiple zones. However, Melcor's vision is for contiguous development expansion extending from Phases 1-4 (east to west growth) which is the most efficient use of infrastructure investments completed to date (utilities, roads and stormwater management facilities). Four development zones have been identified. Refer to **Figure 9 Development Staging**.

Zone 1

Zone 1 is where construction of initial phases occurred in the Canyons including major infrastructure expansions supporting Paradise Canyon and the Canyons. Included in Zone 1 is the Canyons Wild Park, Phases 1, 2 and 4A.

Zone 1A

Preliminary grading, SWMF's (Ponds C and D), roads and utilities have been established in Zone 1A allowing for the completion of phased development in this zone with no offsite support infrastructure required. Zone 1A utility, pond and roadway construction has accounted for future development into Zone 1B.

Zone 1B

It is recommended that development expansion from Zone 1A into Zone 1B be completed following the relocation of overhead power transmission line (Refer to Section 8.2.4). Stormwater drainage from this development area is accounted for in Wet Ponds C and D.

Zone 2

Zone 2 is identified as another development area that has infrastructure that supports development expansion in the near term. Included in Zone 2 is Canyon Meadows Road, Canyon Meadows Park and Phase 3.

2A

Within Zone 2A, preliminary site grading, Drypond B, roads and utilities have been completed in the Canyon Meadows area and have accounted for development elsewhere within Zone 2A. Logical extension of roads and utilities can continue in this phase and will include final construction of the easterly side of the Dry Pond B and open space.

2B

Expansion into Zone 2B will require local extension of utilities and roads from 2A. For the NE Multi-family site, imported fill will be required for development and it is anticipated that pump station facilities will be required for sanitary sewage and stormwater for this node of development.

2C

Development in Zone 2C will require the completion of site grading, Drypond A construction and extension of utilities and roads from Zone 2B and Canyon Parkway. In addition, the relocation of overhead power and LNID pipe infrastructure will be required. It is envisioned that the existing LNID canal will be improved and extended to a relocated inlet structure as identified on Figure 9. There may be a potential to extend the canal south towards Canyon Parkway where it would enter the existing LNID pipe system. However, a detailed hydraulic analysis of the canal along with a review of the existing property grades along Canyon Meadows Road must be completed during master grading and servicing design for the area to confirm the feasibility of this approach.

2D

Development in Zone 2D will require site grading and the extension of roads and utilities from 2C as well as relocation of the overhead power transmission line. Additional work will be required for the removal of the original farmstead and the reclamation of the site for urban development.

Zone 3

Zone 3 is identified as another development area that has been established for near term development given support infrastructures present in University Drive and Canyon Parkway. Expansion of University Drive to its ultimate cross-section, and the addition of a roundabout will be subject to approval by the City of Lethbridge as an Offsite Levy funded project.

Zone 3A

This zone of development east of University Drive will require the completion of site grading and utility extensions from University Drive and Canyon Parkway. An interim SWMF is located on the eastern boundary of University Drive that will be replaced by the construction of Wet Pond F. The existing abandoned gas well located on the future school site will require the location of the well and relevant testing as identified by the Alberta Energy Regulator under Directive 079 prior to subdivision.

Zone 3B

Development into Zone 3B will require site grading and the extension of utilities from University Drive. Water looping to Zone 1 will be required during phased development in this zone. It is recommended that the University Drive/Canyon Parkway Roundabout be completed in advance of development in Zone 3B. It is anticipated that stormwater drainage can be managed by Wet Pond F and the interim facility constructed at the site of Wet Pond E. An overhead power transmission line affects the south and east boundaries of this zone limiting the scope of ultimate development until the line is relocated.

Zone 3C

Development in Zone 3C will require site grading and utility extensions from University Drive, Canyon Parkway and Zone 3B. An interim SWMF is located on the western boundary of University Drive that will be replaced by the construction of Wet Pond E. Important to this zone of development will be the provision of a water loop to

Zone 3B or potentially a new connection to the watermain located in University Drive/Chinook Trail.

Zone 4

Development in Zone 4 will include the last phases of residential development in the Canyons. Utility and road extensions from Zone 3 will be extended into Zone 4. Stormwater management servicing will require the completion of an offsite stormwater management facility, a connection to offsite conveyance systems, and establishment of a new outfall to the Oldman River.

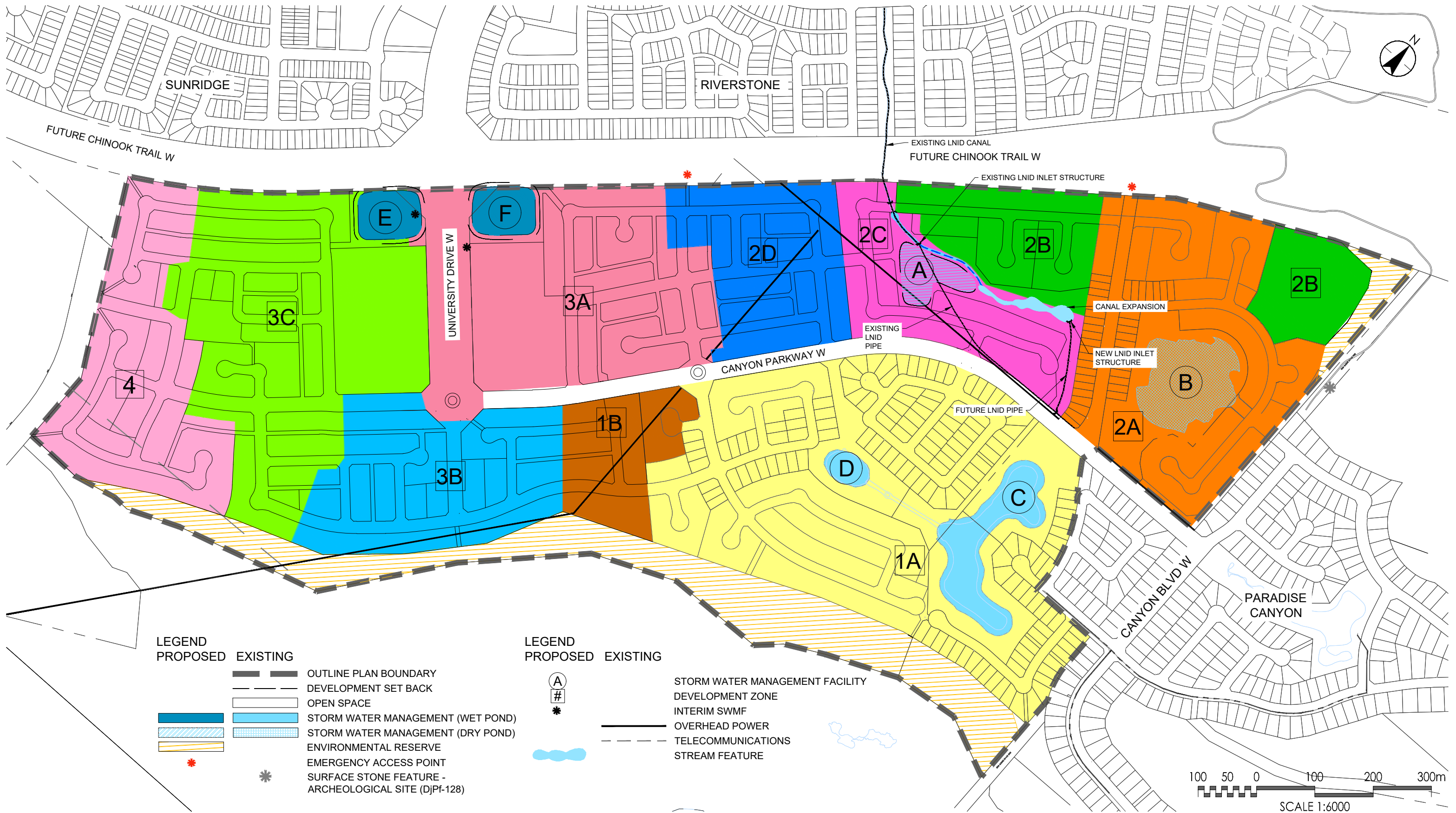


FIGURE 9 | THE CANYONS OUTLINE PLAN AMENDMENT
DEVELOPMENT STAGING

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8.2 Implementation

Future implementation of the adopted Outline Plan will occur on a phase-by-phase basis and include rezoning, subdivision and permitting. The size of phased development will be specific to market conditions. Application for appropriate redistricting shall be consistent with the land use descriptions provided within this document and the City of Lethbridge Land Use Bylaw.

It is recommended that preliminary Master Grading, Servicing and Stormwater Management Designs be completed prior to phased development and submitted to the approving authority for review and approval prior to subdivision and detailed design.

8.2.1 Detailed Design and Construction

All future development shall comply with Federal/Provincial Regulations and City of Lethbridge Design Standards. Prior to construction, site development areas will be assessed for potential wildlife impacts and appropriate mitigation strategies will be implemented.

8.2.2 Fire Protection

The provision of adequate fire protection is important to the safety and security of all City neighbourhoods and residents. As such, the Canyons shall be designed to meet all the required standards and guidelines for community development including, but not limited to, water system redundancy (looping), adequate travel paths for emergency vehicles, emergency secondary access and egress points.

8.2.3 Architectural Controls

The Canyons will utilize architectural controls to provide a unified neighbourhood theme, ensuring a high-quality residential subdivision. As such, the developer will establish and enforce architectural controls on residential development that will be registered on title after subdivision and registration of titled lots.

8.2.4 Overhead Power Transmission

The overhead transmission line located within the plan area is owned and operated by AltaLink. Initial discussions between the City of Lethbridge, Melcor and AltaLink have identified that the line will be relocated outside of the plan area along the future Chinook Trail R/W. The Alberta Utilities Commission (AUC) requires that public consultation is required prior to any relocation. This consultation can only occur when AltaLink is provided a new continuous line assignment for their infrastructure. Following consultation, it is anticipated that confirmation of line assignment and dedication of Right-of Way's will be

required to facilitate the transmission line relocation. Completion of relocation from this point, is anticipated at 18 to 20 months.

8.2.5 Community Mailboxes

The final location of community mailboxes will be determined in consultation with Canada Post. Mailboxes will typically be placed behind the sidewalk along the side yards of corner lots or adjacent to open space entrance. Transit bus stop locations should not be combined with community mailbox sites.

8.2.6 Shallow Utilities

Current shallow utility providers for the plan area include City of Lethbridge Electric Department, Rogers, Telus and ATCO Gas. These parties will need to be engaged early in preliminary engineering designs to ensure that their respective infrastructures have capacity for phased development. Subdivision servicing in Lethbridge uses a 4-Party trench system with installations coordinated by the City of Lethbridge Electrical Department.

Document Sign-Off

This document was prepared by Schmidtke Management and Design Inc. (SMDI) for Melcor Developments Ltd. and the City of Lethbridge. The material in it reflects SMDI's professional judgment and the opinions in the document are based on conditions and information existing at the time the document was published. Any use, which a third party makes of this document, is the responsibility of such third party. Such third party agrees that SMDI shall not be responsible for costs or damages of any kind because of decisions made or actions taken based on this document.

