

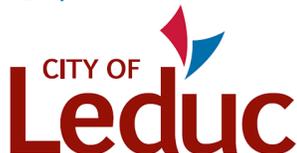
Crystal Creek Outline Plan

April 2020

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Table of Contents

- 1.0 Introduction..... 1
- 2.0 Development Context..... 3
- 3.0 Planning Process..... 8
- 4.0 Outline Plan Concept..... 9
- 5.0 Proposed Land Use..... 14
- 6.0 Land Use Statistics..... 17
- 7.0 Transportation..... 19
- 8.0 Servicing 21
- 9.0 Implementation..... 25

Maps

- 1.0 Location Plan..... 4
- 2.0 Features & Constraints..... 7
- 3.0 Outline Plan..... 10
- 4.0 Land Use Concept..... 15
- 5.0 Roadway Network..... 20
- 6.0 Sanitary Servicing Concept..... 22
- 7.0 Storm Servicing Concept..... 23
- 8.0 Water Servicing Concept..... 24
- 9.0 Subdivision Staging..... 26

1.0 Introduction

1.1 Vision

The Crystal Creek Outline Plan (CCOP) is a framework for a vibrant and complete neighbourhood which will provide amenities and opportunities for an enriched lifestyle. Through its policies and associated engineering designs and studies, the CCOP builds on the efforts of the West Area Structure Plan (WASP) by providing an outline for future land use planning that meets the needs of a growing city.

The name Crystal Creek was chosen as it evokes the topography and natural amenities of the plan area. The preservation of environmentally significant areas, including an existing unnamed creek, in the southwest corner of the plan was fundamental in the development of the overall neighbourhood concept. “Crystal Creek” provides a positive image in keeping with the area’s rich amenities and vibrant possibilities.

The CCOP provides details on amenities, services, and infrastructure that will support and enhance the quality of life for residents in this new neighbourhood and throughout the Leduc. It also provides staging information which sets out the logical sequence of development which will allow the plan area to evolve from an agricultural area into a complete urban community.

Please note, street names used in the CCOP have not been approved by the City’s Naming Committee at this time and are subject to change.

This Outline Plan incorporates community attributes that are valued and appreciated by the citizens of Leduc, including

- The multiway path system that provides a high level of connectivity and mobility options
- The small town feel achieved by providing a sense of place through design elements, meeting places and local amenities within reasonable walking distances
- A diversity in housing types, commercial and retail experiences
- A built environment that residents can navigate in a safe and efficient manner
- Regional connections which allow residents to enjoy Leduc’s unique proximity to the Edmonton International Airport and business opportunities in the greater Edmonton market, and
- Opportunities for residents to live, shop, work and play within their neighbourhood.

1.2 Guiding Principles

The Guiding Principles for the CCOP follow the *Neighbourhood Design Strategy and Guidelines* and reflect the direction and values of Leduc's residents. The guidelines are based on creating livable and vibrant neighbourhoods that provide a strong sense of place through quality public places, housing opportunity and choice, distinctive and attractive communities, walkable communities, and safe and integrated transportation networks. The CCOP design is based on the principles established in these guidelines including:

Quality Public Places

The CCOP provides key public spaces which will provide vibrant and accessible areas for public interaction as well as active and passive recreational activities. These include the Market Street Commercial / Mixed Use Area and adjacent uses, as well as the West Campus Lands which will accommodate a high school, recreational amenities and provision for future development of a second high school. Park spaces have been provided in the design to enhance the natural area in the southwest portion of the plan area and create an opportunity to experience and appreciate the adjacent environmentally sensitive lands.

Housing Opportunity & Choice

The CCOP provides the opportunity for a variety of housing types and architectural styles which will attract a diversity of people to the neighbourhood. The proposed land uses accommodate a wide range of choices from conventional single family detached dwellings in a traditional neighbourhood setting to higher density apartment units integrated within the Market Street Commercial / Mixed Use Area. Townhouse development has been proposed along Crystal Creek Boulevard and has been oriented toward the street to provide a higher level of activity and promote a safer and vibrant environment.

Distinctive & Attractive Communities

The concept plans prepared for the Market Street Commercial / Mixed Use Area and the West Campus Lands have been designed to create a unique neighbourhood identity and set a framework for development of the public realm. While the plans are strictly conceptual, the intent is to provide guidance for future development which will encourage a strong sense of civic pride and illustrate a vibrant and cohesive community.

Walkability

Each component of the CCOP has been designed to allow a high degree of walkability for local residents. Residents will be within a short walking distance of daily goods and services as well as recreational and educational services provided in the West Campus Lands. Higher density housing has been provided in a central location of the plan area (within the Market Street Commercial / Mixed Use Area) to provide easy access to goods and services as well as transit opportunities.

Safe & Integrated Transportation Network

The transportation network is consistent with the collector roads identified in the WASP and accommodates pedestrian, bicycle and public transit services as well as vehicular circulation. The road network provides convenient connections for all modes of transportation to and from the West Campus Lands and the Market Street Commercial / Mixed Use Area.

Mixed-Use Developments & Complete Communities

The CCOP has been designed to accommodate three distinct land use precincts as well as a mix of uses focused on the Market Street Commercial / Mixed Use Area. Guidelines for a Direct Control (DC) District has been developed to accommodate a mixture of uses that are integrated vertically as well as horizontally. This area also accommodates higher residential densities which will promote a village feel in a grid based design and will provide the focus for the community with attention to the public realm, and attractive, welcoming gathering spaces for local residents.

2.0 Development Context

2.1 Regional Context

The City of Leduc has experienced significant population growth, from 21,597 residents in 2009, to 33,032 residents in 2019 – a 52.94% increase.

In conjunction with strong population growth, the City of Leduc is benefiting from a healthy and robust local employment base. According to the 2014 municipal census, 66% of Leduc's workers are employed locally (41% within the City's boundaries), while an additional 25% work in the nearby Nisku Business Park, Edmonton International Airport (EIA), or Leduc County. All of these employment nodes are located within a few kilometers of the plan area.

Several catalysts have contributed to the strong growth context that the City has experienced, including the presence and close proximity of the:

- **Edmonton International Airport & Aerotropolis**, one of the fastest growing airports in North America, a major air transportation gateway to northern Alberta and northern Canada. The airport benefits from a large land supply which is able to accommodate growing demand for cargo, warehousing, retail, and air-related operations as well as commercial and non-aeronautical activities
- **Nisku Business Park & Leduc Business Park**, the second largest energy park in North America, recognized internationally as a place of innovation and cutting-edge technology in the oil and gas sector
- **Queen Elizabeth II Highway**, a preeminent north-south transportation corridor in western Canada, and part of the CANAMEX corridor (Canada, USA, Mexico), which accommodates billions of dollars of freight and millions of passengers each year, and
- **City of Edmonton & the Capital Region**, Edmonton is the capital of Alberta and a culture and education hub, at the centre of a region with a population of 1,328,300 in 2014.

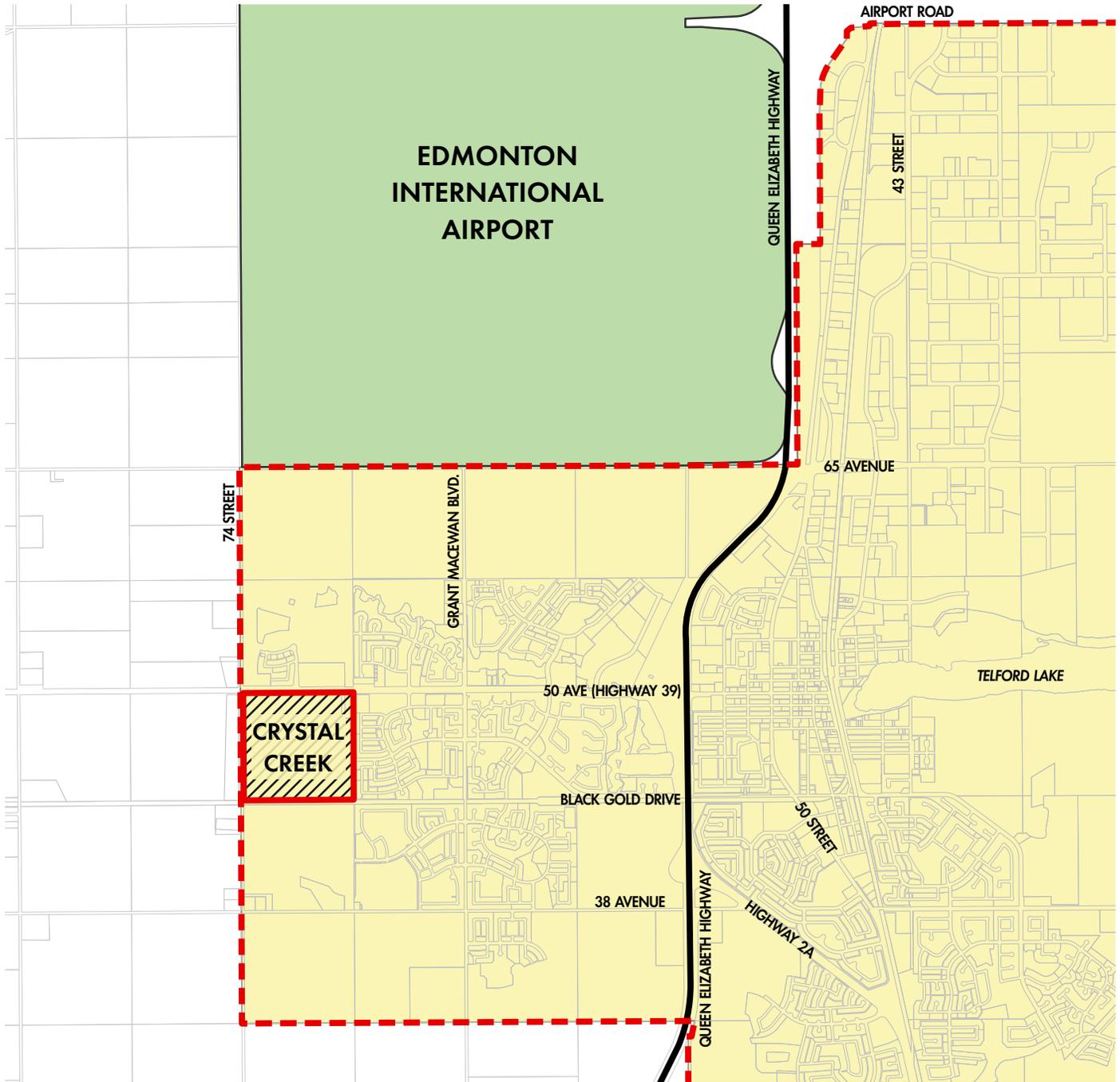
2.2 Plan Area Context

In 2013, the City of Leduc submitted an application for the City to annex additional lands to address and support future land supply and amenity needs. The application was supported by Leduc County and subsequently recommended for approval by the Alberta Municipal Government Board, followed by a formal annexation date of January 1st, 2014. The CCOP is located within the 2014 annexation area.

The CCOP is located on the west side of the City of Leduc (as shown in **Figure 1**), less than 2 kilometers away from the QEII Highway. Access to the plan area is provided from 50th Avenue (Highway 39) along the northern periphery, 74th Street (Range Road 254) along the western periphery, and an extension of Black Gold Drive into the plan area from the east.

The CCOP is a short distance west of the commercial and industrial nodes of Leduc Common and the Leduc Business Park, and south of the EIA and the future Aerotropolis area. These employment nodes provide future residents of the CCOP area with local employment opportunities. The CCOP area is not impacted by the Edmonton International Vicinity Protection Area Regulation (AVPA).

Figure One Location Plan



LEGEND

- OUTLINE PLAN BOUNDARY - GROSS AREA = 63.08 ha
- - - CITY OF LEDUC BOUNDARY



2.3 Planning Context

The CCOP is consistent with the direction of the West Area Structure Plan (WASP).

The WASP was adopted by Council in January 2015 and amended in May 2016 and is consistent with the policies and direction established in a number of statutory and non-statutory documents relevant to this area of the City.

Within the WASP, the CCOP area is presented as a combination of the following land uses:

- Institutional uses (primarily the fire hall site)
- Commercial uses (along the 50th Avenue corridor)
- West Campus site (future educational and recreational amenities), and
- Residential uses (integrated and complementary to commercial uses and the campus site).

The development strategies and principles established by each of these plans have been incorporated into the design of the CCOP:

- Capital Region Growth Plan (2009)
- City of Leduc / Leduc County Intermunicipal Development Plan (2011/2012)
- City of Leduc Municipal Development Plan (2015, as amended)
- Aerotropolis Integrated Land Use Compatibility Plan (2011)
- Transportation Master Plan (2018), Sanitary Servicing Study (2018) and Water Master Plan (2014)
- Parks, Open Spaces & Trails Master Plan (2012)
- Long Term Facilities Master Plan (2013)
- Land Use Bylaw (2013)

The WASP also presents a conceptual servicing strategy, which formed the basis for more detailed servicing information and mapping that supports the CCOP.

2.4 Legal Description & Ownership

The plan is legally defined as NW1/4, SEC. 28, TWP. 49, RGE. 25, West of the 4th Meridian. The first parcel out was Lot 1, Block 1, (Plan No. 1423035), an area of 1.12 hectares that accommodates the Fire Hall in the Northeast corner of the plan area.

The plan area is jointly owned by:

- The City of Leduc
- Ziad Properties Ltd.
- Yehia Properties Ltd.
- Adibe Properties Ltd., and
- Issam Moussa Properties Ltd.

2.5 Existing & Adjacent Land Uses

The plan area is zoned Urban Reserve (UR).

North – adjacent lands north of the plan area have been redistricted to accommodate residential and commercial development.

East – there are three zones present in the adjacent lands east of the plan area:

- Mixed-Use Neighbourhood (MUN)
- Mixed-Use Residential (MUR), and
- Residential Narrow Lot (RNL)

South – adjacent lands south of the plan area are zoned Urban Reserve (UR).

West – adjacent lands west of the plan area are within the neighbouring Leduc County and are currently being farmed.

2.6 Natural Features

As shown in **Figure 2**, lands within the plan area are relatively flat and suitable for most types of development using common standards and practices. An environmental site assessment was prepared by Schur-Tek Resources Ltd. (July 2012). A second assessment conducted by CT & Associates Engineering Inc. (June 2013), confirmed that the property has an extensive history of farming operations. Both studies concluded in their Phase I environmental site assessment that there are no concerns with previous and existing land uses. CT & Associates recommended that prior to further development, additional on-site testing in the vicinity of the pipeline (Alberta Products Pipeline Ltd. URW #4366) should be conducted to confirm initial findings.

The area's natural features are detailed in the Leduc WASP Biophysical Assessment, including a shallow ravine (1-2 meters) which contains a meandering creek in the southwest corner of the property. The creek is identified as Environmental Reserve (ER) as established by the *Municipal Government Act* (MGA). There are also two wetlands along the area's west boundary. Compensation has been provided to Ducks Unlimited to fill-in the wetlands.

2.7 Manmade Constraints

Road widening is required for 50th Avenue (Highway 39), and 74th Street (Range Road 254). The plan area can be accessed from these roads as well as Black Gold Drive from the adjacent West Haven neighbourhood.

A pipeline carrying jet fuel owned by Alberta Products Pipeline Ltd. (URW #4366) runs north to south, on the east side of the property. No development has been shown within the right-of-way or within a 7.5m setback from the edge of the right-of-way and crossing locations have been minimized.

A Class 2 Canadian Pacific Railway (CPR) branch line runs east to west, adjacent to the southern boundary of the property. CPR guidelines recommend a minimum setback for all buildings of 10 meters from the railroad right of way. The Guidelines for New Development in Proximity to Railway Operations recommends a 15 meter building setback for residential development (Federation of Canadian Municipalities and the Railway Association of Canada, May 2013). The CCOP land use concept adopts a 15 meter minimum setback for any residential buildings and berming will be included along the south boundary of the plan to mitigate the negative impact of the rail line.

Figure Two Features & Constraints



LEGEND

--- OUTLINE PLAN BOUNDARY - GROSS AREA = 63.08 ha



3.0 Planning Process

Crystal Creek's design is based on feedback from an extensive public engagement process during the development of the WASP as well as subsequent stakeholder workshops with targeted participants during the preparation of the CCOP.

The CCOP has been developed jointly by the owners with the collaboration of many stakeholder groups including

- Black Gold Regional Schools (BGRS)
- Saint Thomas Aquinas Roman Catholic Schools (STAR)
- Adjacent landowners and residents from the West Haven neighbourhood
- Landowners from adjacent quarter sections
- Canadian Pacific Railway
- Edmonton International Airport, and
- Members of the public participating in stakeholder events associated with the development of the WASP.

The CCOP stakeholder engagement process included

- Two private preliminary workshops that occurred between the City of Leduc and the School Boards
- An Open House on March 5, 2014 related to the development of the fire hall
- A Design Workshop on June 25, 2015 between project consultants and stakeholders to discuss development possibilities in the plan area, and
- An Open House was held on June 28, 2016 during circulation to share the draft plan with the broader community.

This plan reflects the values expressed by stakeholders and residents and organizes the desired components in a manner that promotes a sense of place and community vitality.

As the CCOP is not a statutory plan recognized under the MGA, there is no requirement for a Public Hearing. However, in accordance with the City of Leduc's practices, a non-statutory hearing will be held to provide an additional opportunity for stakeholders to be engaged in the CCOP.

Approval of the CCOP will enable landowners to proceed with the redistricting and subdivision of lands in response to market demand.

4.0 Outline Plan Concept

The CCOP envisions a compact community where people will not only live, but thrive. With its opportunities to live, work, learn and play in a compact and connected setting, residents will be provided with a wide variety of choices that support and enhance their quality of life.

There are three primary areas within the CCOP:

- The Residential Neighbourhood
- The West Campus Lands, and
- The Market Street Commercial / Mixed Use Area.

The outline plan concept shown in **Figure 3** illustrates the development opportunities within the plan area.

4.1 Residential Neighbourhood

The primary residential component of the CCOP will be accommodated in the southwest portion of the plan area. Residential design focuses on the provision of the stormwater facility and associated open space opportunities. Development has been appropriately set back from the environmentally sensitive areas in the southwest corner of the plan which acts as a natural buffer from the adjacent rail line.

The residential design provides the framework to achieve the following objectives:

- Housing diversity with a range of housing types including entry level, move-up and executive single family housing, as well as semi-detached and townhouses and options for front or rear drive garages
- Transition between high, medium and low density housing
- A variety of building designs to avoid a homogenous suburban landscape, while enabling an overall thematic experience in the area
- Appropriate massing and height to ensure an aesthetically pleasing and coordinated transition between built forms
- Views and vistas from private dwellings and the street to prominent site features
- A diversity of highly visible local park and gathering spaces for residents, and
- Noise mitigation measures in the form of setbacks and berming to mitigate the presence of major roads and the rail line.

Figure Three Outline Plan



LEGEND

- | | | | |
|--|-----------------------|--|---|
| | OUTLINE PLAN BOUNDARY | | RESIDENTIAL NEIGHBOURHOOD |
| | STORM SEWER | | WEST CAMPUS LANDS |
| | SANITARY SEWER | | PARK |
| | WATER LINES | | ENVIRONMENTAL RESERVE |
| | HYDRANTS | | URBAN SERVICES |
| | SIDEWALKS | | MARKET STREET COMMERCIAL / MIXED-USE AREA |
| | MULTIWAY | | SPECIAL STUDY AREA |



4.2 West Campus Lands

The West Campus Lands provide a variety of amenities for the community. Home to up to two high schools, associated playing fields and recreational amenities, the Campus will constitute a social, cultural, and recreational hub that will contribute to the economic and social wellbeing of the neighbourhood and the City of Leduc as a whole.

Given the limited area available for the West Campus, decisions around future land uses need to balance the overall needs of the community. It is anticipated that the proposed West Campus Lands will be sufficient by using innovative site layouts and architectural designs to maximize the utility of the available space.

Educational Uses

It is anticipated that the campus will accommodate a high school as part of the early stages of development. Development will include the associated playfields and parking and potentially, a transit node to serve the high school and the adjacent commercial and mixed use area. A second high school can be accommodated as part of future development. Locating these two institutions on the campus together could create synergies, enabling both schools to share the burdens and the benefits of needed amenities. As schools are separate local authorities, it is not possible to accurately predict if and when additional high schools may be constructed in the City of Leduc, but it is prudent to plan their location in advance.

Special Study Area

Residual lands within the City's portion of the Outline Plan will be considered a Special Study Area. These lands will be part of future considerations to respond to City needs and market demand. Specific uses will be determined through an amendment to this Outline Plan.

The West Campus Lands have been designed to achieve the following objectives:

- Provide a high quality environment for all stakeholders
- Maximize the amount of green space by exploring a multi-story strategy for the recreation centre and the high schools
- Minimize the area dedicated to public parking by combining and coordinating the parking requirements for the different land uses and allowing the flexibility to provide structured parking at a future date
- Create amenities that will meet the recreational needs of students, residents, workers, and other stakeholders, and
- Provide easy access for pedestrians, cyclists, transit users and motorized vehicles.



View of the West Campus from Crystal Creek Boulevard

4.3 Market Street Commercial / Mixed Use Area

With a projected growth of an additional 30,000 residents for the City of Leduc in the next thirty years, and several thousands in Leduc County, additional commercial development is required. The CCOP has been designed to help meet current and future demand for local and regional services and amenities. It is anticipated that there will be a comprehensively designed Direct Control (DC) site to materialize the vision. The following components will be included in the Market Street Commercial / Mixed Use Area:

Commercial

With an anticipated neighbourhood population of over 1,200 people, in addition to the future potential student population, users of the campus amenities, and residents in adjoining neighbourhoods, there will be local and regional commercial demand. Using a compact design with multiple access points, the Market Street Commercial / Mixed Use Area will be designed to meet this demand. Amenities will include local and regional retail opportunities as well as consumer banking and personal services. Larger format destination retail development which will be primarily automobile oriented may be accommodated within a portion of the comprehensive design of the Commercial Area.

Market Street Mixed Use

The design of the Market Street will focus on a unique precinct adjacent to the West Campus site which will provide the opportunity for a variety of commercial enterprises at the neighbourhood level with strong orientation to the street and pedestrian activity. This area has the potential to become an iconic destination for the west side of Leduc, an area that resonates with the small town feel that is achieved by providing a sense of place through key design elements and the provision of meeting places and local amenities within reasonable walking distances.

Higher Density Residential

A key component to the Market Street Commercial / Mixed Use Area will be the introduction of medium and high density residential development. It is anticipated that approximately 1.3 hectares (54 upha) of medium density development, or 70 units, and 1.0 hectare of high density development (200 upha) will be incorporated into the Market Street Mixed Use Area. This will accommodate approximately 270 units in close proximity to the vibrant neighbourhood core.

The Market Street Commercial / Mixed Use Area has been designed to achieve:

- A layout that meets local and regional needs by providing a walkable, street-oriented development supported by key anchor establishments and a higher density residential development
- A vibrant streetscape and unique retail opportunities that makes this area a premiere destination for commercial, social, and cultural purposes
- A strong connection to the residential development and the West Campus Lands by utilizing the frontage on the collector and activating Crystal Creek Boulevard, and
- A higher density and diversity of residential development to accommodate residents in close proximity to the local amenities.



View of Market Street

5.0 Proposed Land Use

5.1 Residential Neighbourhood

Within the residential neighbourhood, the following land uses are proposed as illustrated in the Land Use Concept (Figure 4):

Low Density Residential

Lots backing on the townhouse development and interior lots within the neighbourhood have been provided with rear lanes and are anticipated to accommodate narrow lot single and semi-detached dwellings.

Lots backing on 74th Street (Range Road 254) will have additional depth for berming and are anticipated to accommodate single or semi-detached homes from front attached garages. Likewise, lots backing on the amenity areas such as the storm pond, the environmental reserve and the West Campus Lands are anticipated to accommodate single family homes with front attached garages.

Townhouses are proposed to face Crystal Creek Boulevard to activate the street. This will provide a transition from the higher density residential and commercial development on the north side of the street and will require vehicular access to be provided through garages off a rear lane.

Park

A number of Municipal Reserve areas have been provided within the residential area. Park spaces have been provided around the storm pond to provide for the 15% of the perimeter that is required to have public access. Portions of this space will provide opportunities for local play equipment and neighbourhood entry features.

A portion of the Campus lands has also been provided as part of the Moussa reserve contribution. Approximately 0.6 hectares have been provided for the campus area at the entrance to the residential neighbourhood as well as additional park space which provides critical connections to the campus and a buffer to the Environmental Reserve area.

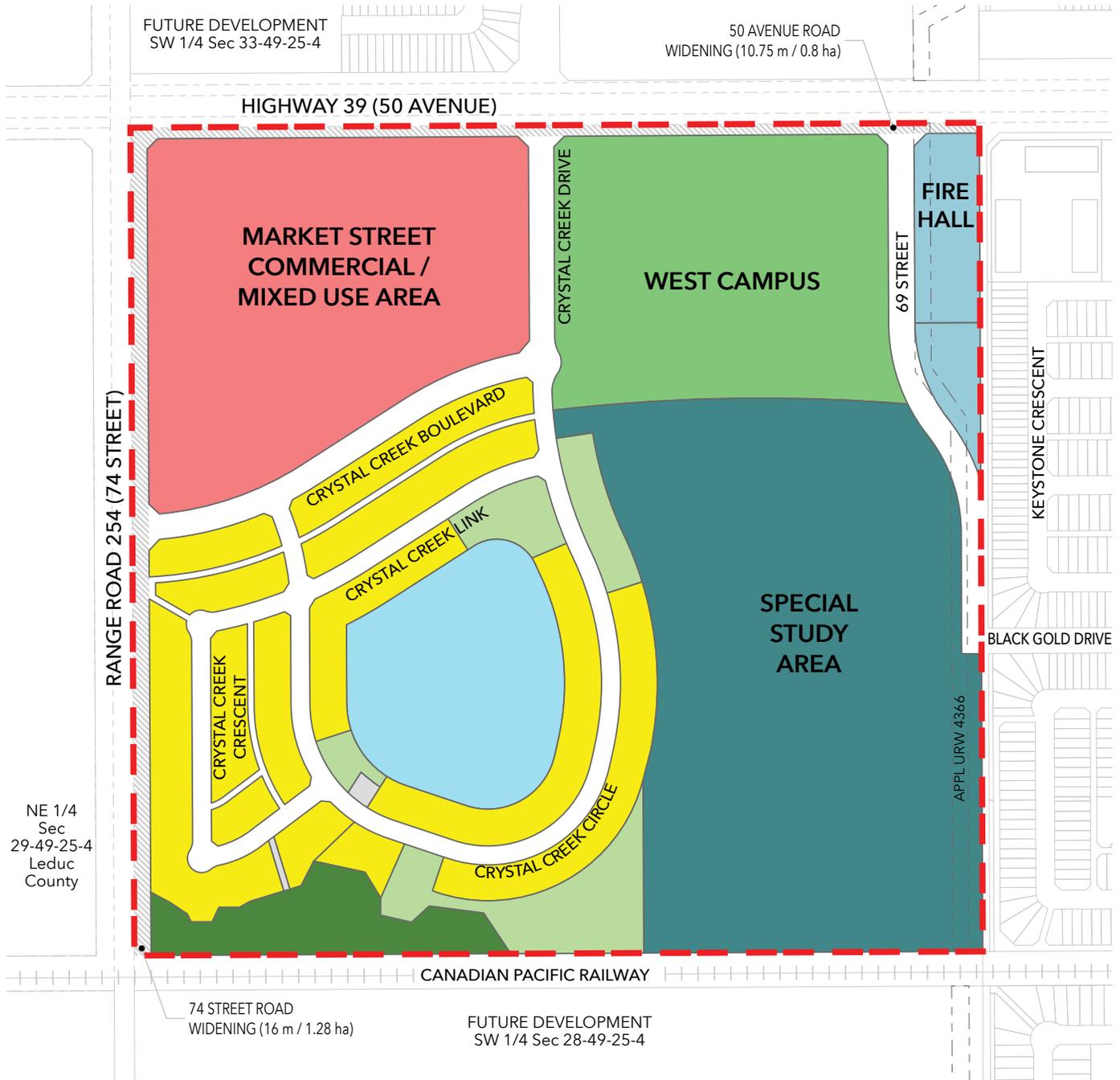
5.2 West Campus Lands

Within the west campus lands, the following land uses are proposed as illustrated in the Land Use Concept (Figure 4):

School with Public Park

There are two primary uses within the west campus lands: educational and recreational.

Figure Four Land Use Concept



LEGEND

- OUTLINE PLAN BOUNDARY
- MIXED-USES
- URBAN SERVICES
- LOW DENSITY RESIDENTIAL (SINGLE DETACHED, DUPLEX, TOWNHOUSE)
- SCHOOL WITH PUBLIC PARK
- PARK
- ENVIRONMENTAL RESERVE
- STORM WATER MANAGEMENT
- PUBLIC UTILITY LOT
- SPECIAL STUDY AREA



5.3 Market Street Commercial / Mixed Use Area

Within the Market Street Commercial / Mixed Use Area, a Direct Control (DC) land use is proposed to be provided in alignment with an amendment to the Land Use Bylaw, as shown on the Land Use Concept (Figure 4).

Direct Control (DC)

The intent of a DC District is to provide local and regional goods and services in a vibrant and attractive centre serving the local community and supporting neighbourhood development, in alignment with the following guidelines:

1. Development of the site should generally follow the Land Use Concept (Figure 4) to the satisfaction of the Development Authority.
2. Each parcel shall provide a public amenity space.
3. The Market Street Mixed Use Area shall provide up to 70 low/medium density residential units to be identified at the development permit stage.
4. The Market Street Mixed Use Area shall provide up to 200 high density residential units to be identified at the development permit stage.
5. Variances in density and site design may be allowed at the discretion of the Development Authority provided that servicing and transportation capacities are not exceeded, the intent of the WASP is not compromised, and public engagement is supportive of the proposed changes.
6. To the extent reasonably feasible, building design shall contribute to the uniqueness of the district with predominant materials, elements, features and activity areas tailored specifically to the site.
7. A comprehensive development plan shall be provided for an entire site prior to commencement of development on any portion of the site.

5.4 Urban Services

Urban Services (US) will be provided for the following sites shown on the Land Use Concept (Figure 4):

Westside Fire Hall Site

The newly constructed Westside Fire Hall is the City's second, and is located in the northeast corner of the plan area (see Figure 2). The added capacity facilitates better response times and accommodates future growth. The fire hall's location, orientation, and access were selected through a highly technical process in order to maximize efficiency and effectiveness, and reduce operational constraints, with easy access to 50th Avenue (Highway 39) and Crystal Creek Boulevard. Lands which are not required for operational requirements for the Fire Hall may be developed for civic services or amenities.

Future Transit Hub Site

A future transit hub site, has been considered in this area. There is sufficient area within the West Campus lands or alternatively in the public lands adjacent to the Westside Fire Hall to accommodate a facility that will function as a gathering place and transit hub for future residents.

Storm Water Facility Site

A storm water pond forms the primary focus for the low density residential development and will service the entire Outline Plan area.

5.5 Environmental Reserve

The Environmental Reserve parcel provided in the Land Use Concept (Figure 4), provides a buffer between the creek area and the surrounding development and ensures the preservation of the neighbourhood's natural assets. The top of bank was determined during an infield assessment with the City of Leduc, a geotechnical representative from Thurber and a legal survey representative from Hagen surveys. The top of bank line was set considering geotechnical stability, vegetation and topography features. No information was available at the time for the 1:100 year creek elevation so it was not considered in setting top of bank survey. In the future, it is recommended that the top of bank be adjusted if required to ensure the 1:100 year creek elevation is lower than the top of bank once additional creek information is available.

6.0 Land Use Statistics

The statistics below are aligned with the proposed land uses shown in [Figure 4](#).

6.1 General Statistics

Land Use	Area (ha)	% of Developable Area
Gross Area	63.08 ha	---
Environmental Reserve Dedication	1.70 ha	---
Gross Developable Area	61.38 ha	100.0%
Required Municipal Reserve Dedication @ 10%	6.138 ha	10.0%
Park	(2.76 ha)	4.5%
School with Public Park	(7.80 ha)	12.7%
Mixed Use (DC Area)	10.31 ha	16.8%
Commercial	(8.01 ha)	
Medium Density Residential	*(1.30 ha)	
High Density Residential	*(1.00 ha)	
Urban Services	5.70 ha	9.3%
Westside Fire Hall Site	(1.10 ha)	
Future Urban Services	(0.50 ha)	
Storm Water Facility Site	(4.10 ha)	
Special Study Area	16.20 ha	26.4%
Roadways	8.61 ha	14.0%
Collector Roads	(2.83 ha)	
Arterial Roads	(2.10 ha)	
Local Roads & Lanes	(3.68 ha)	
Pipeline Right-of-Way (APPL)	**1.15 ha	1.8%
TOTAL NON-RESIDENTIAL AREA	49.08 ha	80%
NET RESIDENTIAL AREA	*12.3 ha	20%

* Includes 1.3 ha Medium Density Residential & 1.0 ha High Density Residential from Mixed Use DC Area

** The APPL right-of-way is 1.15 hectares in size. Portions of the pipeline right-of-way fall within the Westside Fire Hall Site, the Future Transit Hub Site, School with Public Park lands and internal roadways.

6.2 Residential Density

The medium and high density residential component of the Market Street Commercial / Mixed Use Area is anticipated to accommodate 270 units. The additional 200 units will be provided in the primary residential area south of Crystal Creek Boulevard in a variety of single, semi-detached and townhouse housing forms. This exceeds the Capital Region Board (now known as the Edmonton Metropolitan Region Board) density target of 25-30 dwelling units per net residential hectare at the time of the approval of the original Crystal Creek Outline Plan in September 2016.

CCOP densities align with the total net residential densities of the WASP, and ultimately the CRB Growth Plan. The higher densities within this outline plan are offset by lower densities elsewhere in the WASP lands. The residential land uses, dwelling counts, and population estimates are as follows:

Land Use	Area (ha)	Units Per Net Residential Hectare	Units	% Total Units	People per Unit	Population Estimate
Low Density (Single Detached, Duplex, Townhouse)	10.0	20.00	200	42.5%	2.6	520
Medium Density (To Be Determined)	1.3	54.00	70	15%	2.0	140
High Density (To Be Determined)	1.0	200.00	200	42.5%	2.0	400
TOTAL	12.3	38.20 (average)	470	100%	2.3	1060

Neighbourhood Density

- Population Per Net Residential Hectare (p/net ha): 86.0
- Dwelling Units Per Net Residential Hectare (du/net ha): 38.2
- Capital Region Board Density Target (du/net ha): 25.0 - 30.0



View Along Crystal Creek Boulevard

7.0 Transportation

7.1 Connectivity

Convenient access to the Market Street Commercial / Mixed Use Area and the West Campus Lands will be critical to the success of the plan. The road network (as shown in **Figure 5**) has been designed to provide well connected routes throughout the plan area, accommodating vehicular traffic as well as pedestrians, cyclists and public transit. At the time of development, further analysis should be provided to examine the functional design of 50th Avenue (Highway 39) and the opportunities to provide enhanced access to the Market Street Commercial / Mixed Use Area. This should include the geometric design of adjacent intersections, the need for tapers and turn bay storage lengths, and an analysis with and without additional left turn movements. The CCOP provides for 10.75 metres of road widening (a total of 0.8 hectares) to accommodate the future design of 50th Avenue.

A noise study will be required with the first stage of residential subdivision along 74th Street to ensure that adequate noise attenuation is provided. The CCOP provides for 16.00 metres of road widening (a total of 1.28 hectares) to accommodate the future design of 74th Street.

7.2 Public Transit

Benefiting from Green Trip funding, the City has implemented four transit routes. The campus, as well as the higher density areas along the collectors, will be serviced by transit in the future.

A transit hub is proposed on the City lands directly south of the Westside Fire Hall to provide service to residents throughout the City and support the users of the recreation centre and high schools. The hub will be located in a park-like setting with safe and attractive gathering spaces and convenient access to the Recreation Centre and High Schools. Shared parking may be considered between sites in the future.

While transit is currently anticipated only along Crystal Creek Boulevard and 50th Avenue (Highway 39), the roads adjacent to the Market Street Commercial / Mixed Use Area have been sized to accommodate bus traffic to allow for future expansion of routes and transit stops which would extend service to local services and amenities and high density housing as needed.

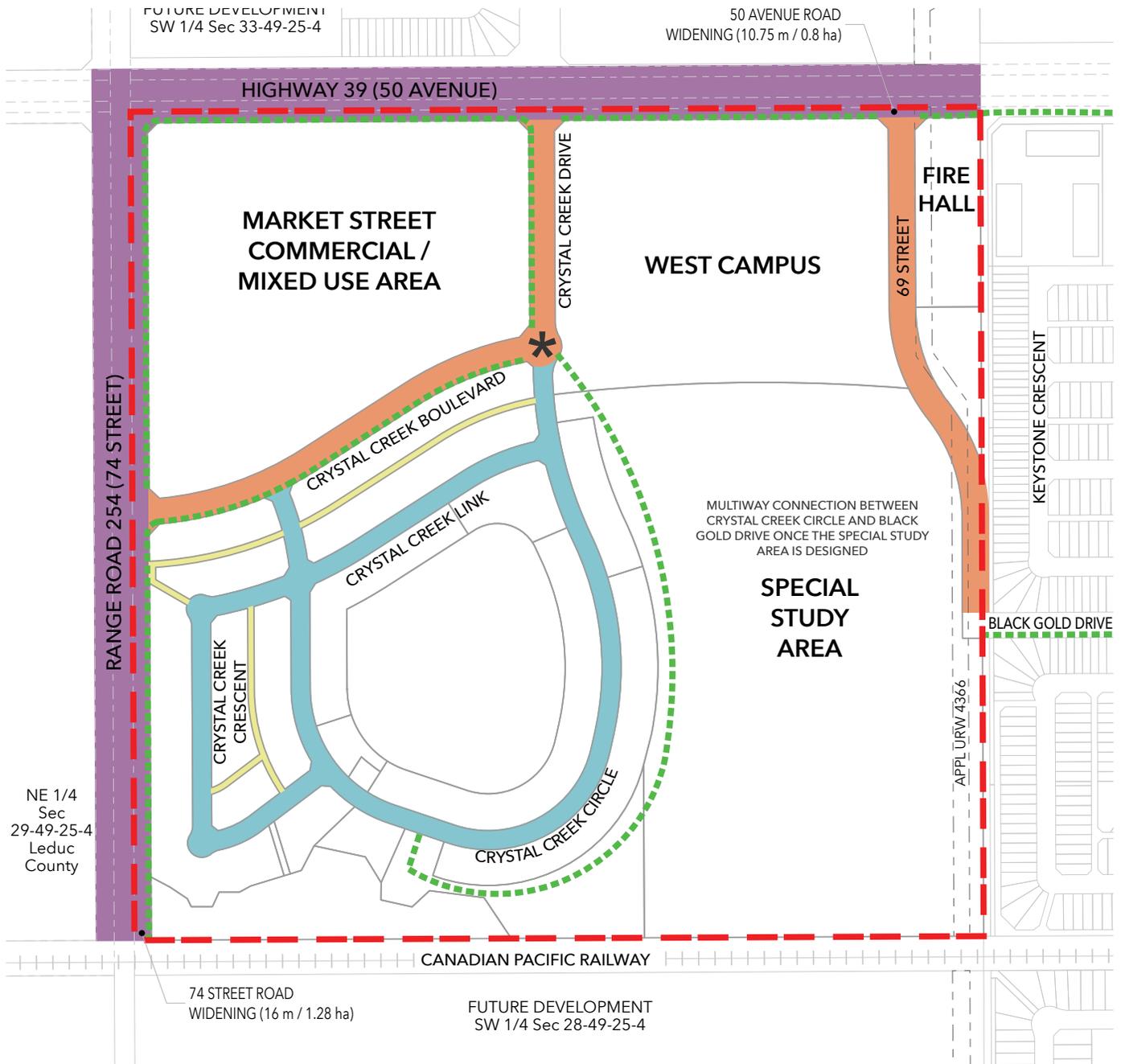
7.3 Walkability

The Land Use Concept provides a roadway system that allows for diversity in transportation options and provides interesting and multiple routes options for pedestrians and cyclists. The routes connect the residential, commercial, recreational, and educational land uses in the area and provide connections beyond the plan area. The convenient connections throughout the plan promote pedestrian activity and provide an alternative to the automobile.

Crystal Creek Boulevard has been designed to require street-orientated residential development with rear vehicular access. This, along with areas for on-street parking and the continuation of the multiway path system, creates a pedestrian and cyclist friendly environment.

Likewise, the Market Street Commercial / Mixed Use Area has been designed as a pedestrian precinct with limited traffic and urban design elements that encourage walking and gathering. This includes raised crossings at all intersections, including the driveway accesses to the commercial lands, at the discretion of Leduc's Public Works and Engineering Department.

Figure Five Transportation Network



LEGEND

- OUTLINE PLAN BOUNDARY
- MAJOR COLLECTOR
- FUTURE 4 LANE DIVIDED RESIDENTIAL ARTERIAL 52.0m R/W

- LOCAL ROADWAY
- RESIDENTIAL LANEWAY
- MULTIWAY
- * TRAFFIC CIRCLE



8.0 Servicing

Prior to any construction, a Neighbourhood Design Brief must be provided which identifies specific servicing design detail. The Neighbourhood Design Brief will identify items such as high water levels, top of bank, capacity design tables, and overall functionality of servicing concepts for the outline plan area. Until such time as this Neighbourhood Design Brief is reviewed by the City of Leduc's Engineering department, all servicing concepts outlined in this plan are subject to change.

8.1 Wastewater Collection System (Sanitary)

As shown in [Figure 6](#), Crystal Creek Outline Plan area will be serviced via a sanitary system that conveys flows to the proposed West Area Structure Plan (WASP) sanitary trunk. The WASP is proposed to traverse Crystal Creek lands allowing the proposed commercial sites and residential lands serviced from the trunk.

The WASP trunk conveys flows to a proposed sanitary pump station located one quarter section north of Crystal Creek. The proposed sanitary pump station will utilize a force main to discharge flows to an existing sanitary trunk north of the Bridgeport Neighbourhood.

8.2 Stormwater Management

The minor pipe system and pipe sizing for the storm servicing concept is shown on [Figure 7](#). The Plan area will surface drain to catch basins which discharge into an underground storm pipe system that will convey flows into the proposed stormwater management facilities (SWMF). The roadways and site grading will be sloped towards the proposed SWMF to convey major storm flows for larger storm events.

The SWMF will retain development stormwater and release via storm lift station at a maximum predevelopment flow rate of 3.0 L/s/ha, as per Whitemud/Blackmud Creek Surface Water Management Study, through an outfall pipe to the south unnamed creek located within the quarter section.

A Water Act approval may be required for the stormwater management facility which may require additional information for downstream conveyance and impact aspects of the servicing strategy. As a Water Act approval expires one (1) year from the date of issuance, if required, it is normally obtained during the Neighbourhood Design Brief stage or just prior to construction.

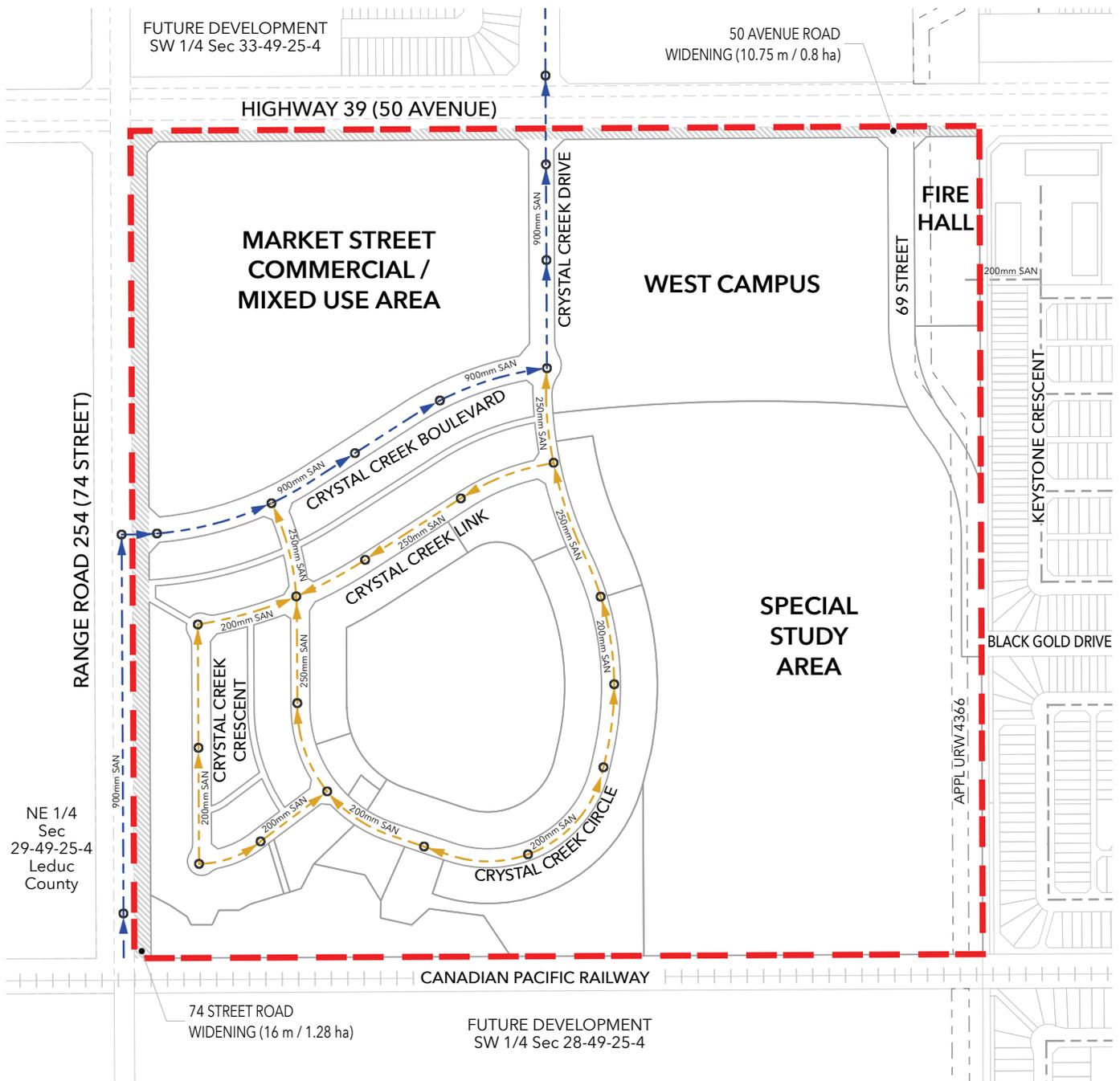
8.3 Water Servicing

As shown in [Figure 8](#), two 350mm water mains connections will be utilized to service Crystal Creek. One existing water main connection located on Black Gold Drive will be extended into the development. The second connection will be extended south to Crystal Creek from the development north of 50th Avenue (Highway 39). Within the plan area, distribution mains will be looped and sized to satisfy domestic water demands and provide adequate fire flow protection.

8.4 Shallow Utilities

Gas, power, telephone and cable TV will be provided to the site by the extension of existing adjacent infrastructure.

Figure Six Sanitary Servicing Concept

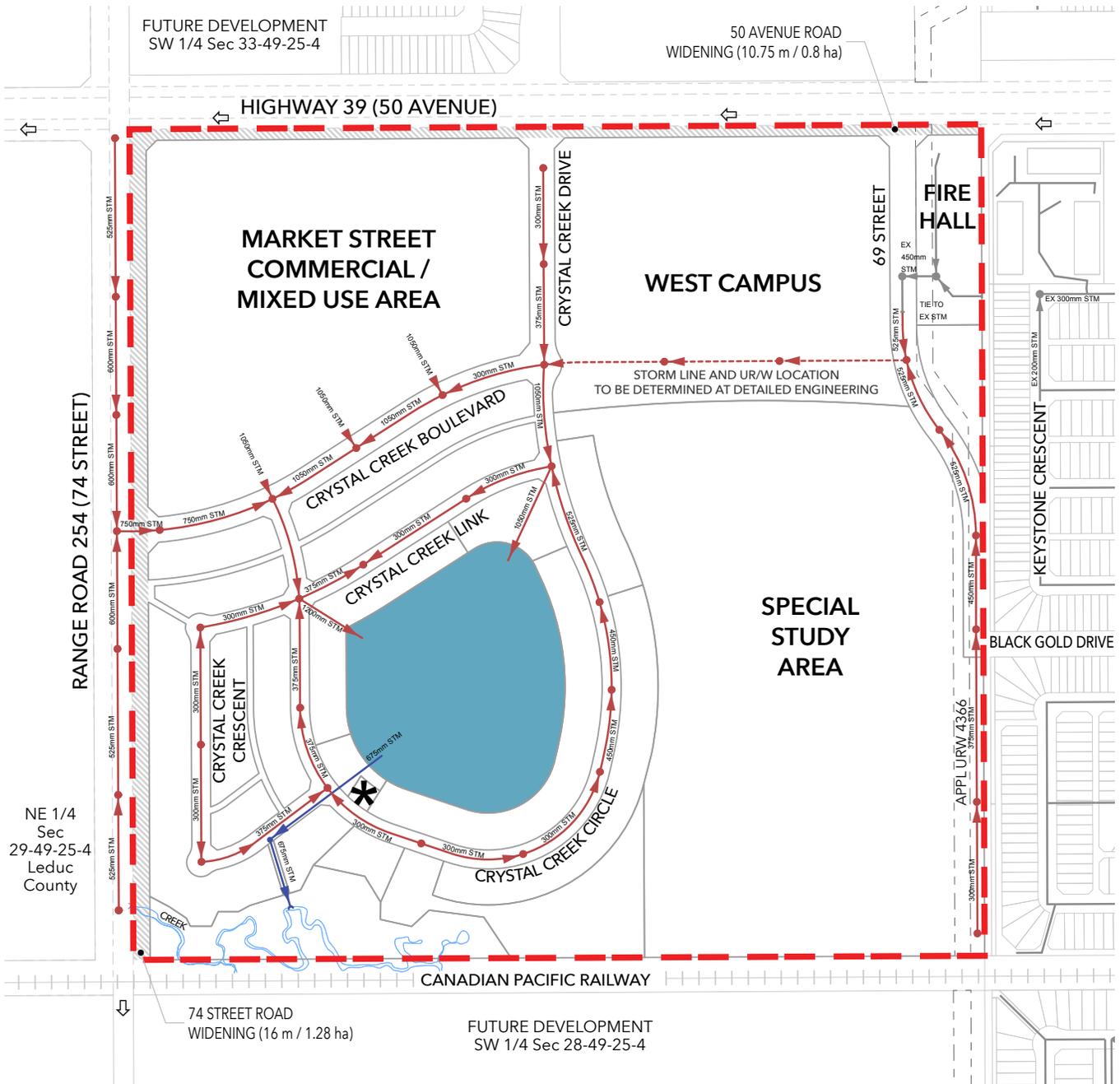


LEGEND

- OUTLINE PLAN BOUNDARY
- ○ PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- ○ PROPOSED SANITARY TRUNK



Figure Seven Storm Servicing Concept

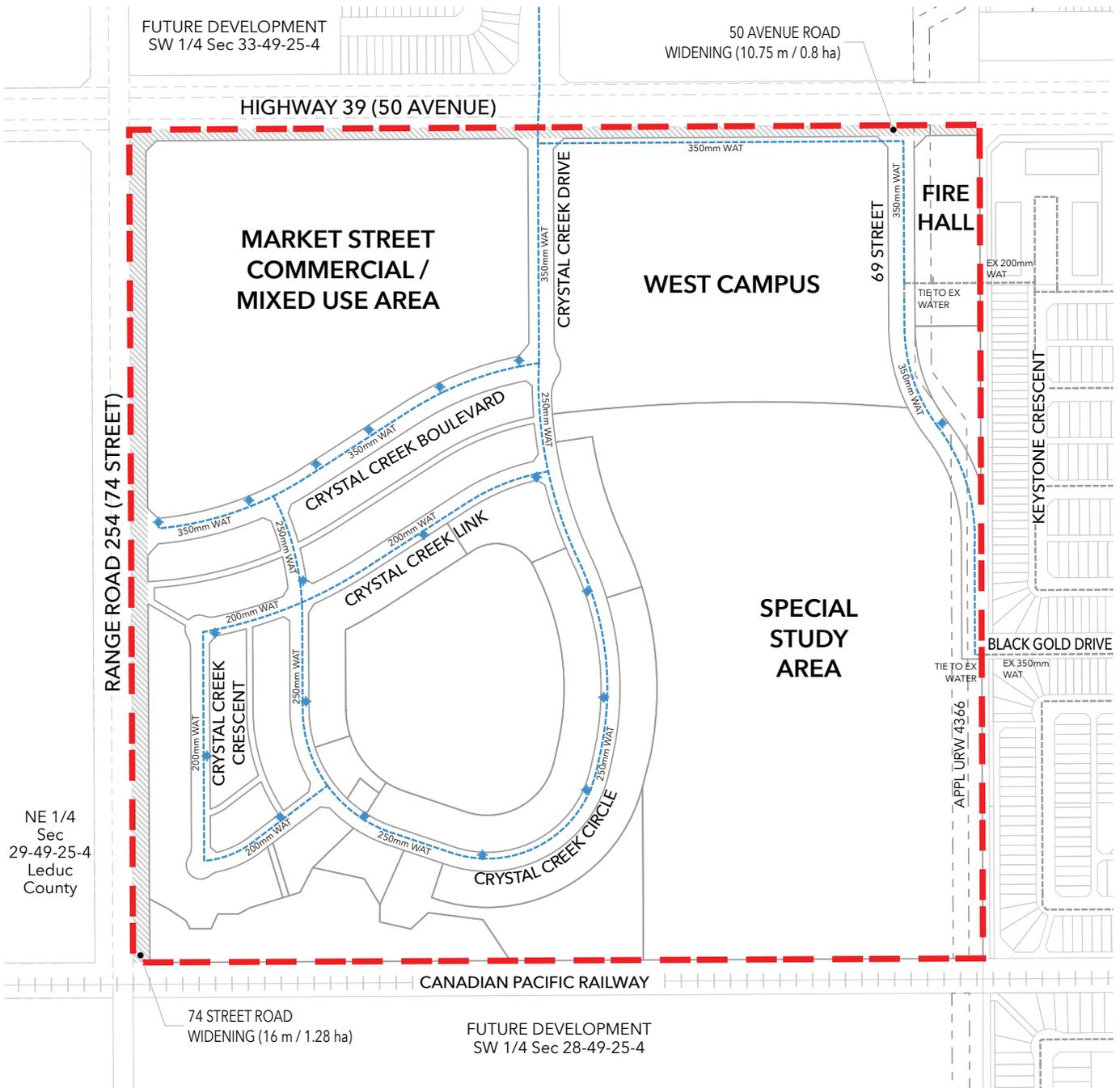


LEGEND

- OUTLINE PLAN BOUNDARY
- PROPOSED STORM SEWER
- SWMF OUTLET PIPE
- ↵ MAJOR FLOW DIRECTION
- ★ PROPOSED STORM LIFT STATION



Figure Eight Water Servicing Concept



LEGEND

- - - OUTLINE PLAN BOUNDARY
- - - PROPOSED WATER MAIN
- - - EXISTING WATER MAIN
- ◆ PROPOSED HYDRANT



9.0 Implementation

9.1 Initial Subdivision

It is anticipated that prior to further development within the plan area the lands will be subdivided to separate ownership between the City and the Moussa Group.

9.2 Development Staging

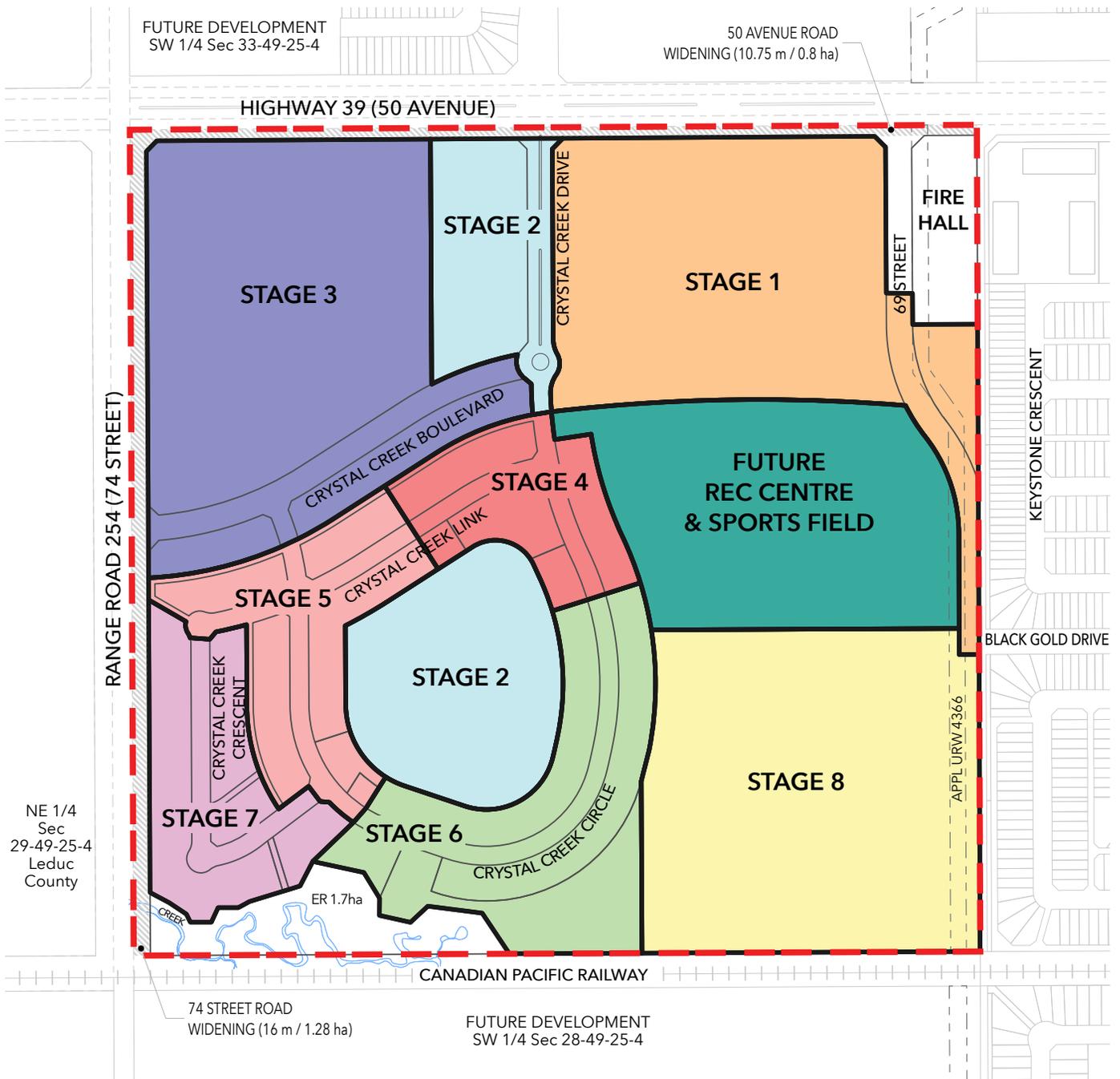
Development should occur generally as shown on [Figure 9](#). Alternate sequencing of development may be considered without amending the CCOP if appropriate servicing infrastructure is available and market conditions warrant.

9.3 Next Steps

Approval of the proposed Crystal Creek Outline Plan is only the next stage in the planning process which provides the framework for future development of the plan area. This ongoing process will include formal plans of subdivision, amendments to the Land Use Bylaw, and the development of urban design guidelines and architectural controls as well as detailed designs of the West Campus Lands Market Street Commercial / Mixed Use Area. There will be future opportunities for public engagement as the planning process continues to evolve.

The first phase of development will accommodate a high school and associated uses.

Figure 9 Subdivision Staging



LEGEND

 OUTLINE PLAN BOUNDARY

NOTE:

PHASING WILL BE SUBJECT TO MARKET CONDITIONS, SERVICING EXPANSION AND DETAILED DESIGN

