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# Fish Creek - Lacombe Station Area

## Community Planning and Design Workshop Summary

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# EXECUTIVE SUMMARY

In November 2010, Council directed Administration (E2010-26) to provide Transit Oriented Development policy guidance specific to the Fish Creek-Lacombe Station Area through the preparation of a Planning, Design, and Analysis Study.

From January to May of 2011, Land Use Planning and Policy worked closely with other City of Calgary business units, including Transportation Planning, Calgary Transit, Parks, Office of Land Servicing and Housing, Community and Neighbourhood Services, and Water Resources to analyse the existing infrastructure networks, opportunities for innovation, and changes in the demographic structure of Calgary.

Engagement with local area stakeholders, residents and major institutions helped identify issues and concerns and to understand community aspirations and potential enhancements for the Fish Creek-Lacombe Station Area.

This preliminary background information, along with Council approved mobility and land use planning policies, was provided to a group of community and stakeholder volunteers at a three day Community Planning and Design Workshop in June, 2011. At this highly interactive and design driven event, the volunteers directly influenced the land use pattern, built form design, transportation and transit improvements within the station area.

This document summarizes the results of the June workshop and provides a station area design concept through a series of land use, built form, open space, parks and mobility strategies. This station area design concept will be used by the City of Calgary to inform future planning decisions in the Fish Creek-Lacombe Station Area.







# 1.0 Pre-Workshop Analysis

*This summary report documents an analysis of the network impacts of Transit Oriented Development (TOD) focused on the Fish Creek-Lacombe LRT station and presents a preliminary land use concept developed with the community over a multi day community planning and design workshop process, held in June, 2011.*

*This summary is intended to provide high level direction that can inform development in the area surrounding the Fish Creek-Lacombe LRT station, however; this document is not endorsed by Council and has no legal status.*

*It does not replace the existing Midnapore Phase Two Area Structure Plan and does not supersede the City's Land Use Bylaw 1P2007.*

*The infrastructure and network analysis contained in this report provides a detailed understanding of the impacts of development within area and will be used in the evaluation of future applications.*

*Note that all maps in this document are conceptual and should not be used to calculate distances or areas.*

Historically, Calgary's growth has been based on a traditional concentric model, gradually expanding outward (page 2). This outward growth pertains mostly to the spread of residential communities, as much of employment has remained concentrated in the city's downtown core. Therefore, most people are moving into the core during the day for work and moving outward toward home in the evening rush. Relatively few commuters are moving against this flow, meaning that while roads and LRT trains are full when moving in one direction, they are relatively empty moving the other way.

Although substantial growth in downtown Calgary has led to a strong and successful city, not all future growth can be accommodated in the core. As Calgary grows, secondary hubs will need to be created in preferred locations where key infrastructure exists. When looking for places to grow within Calgary, underutilized areas immediately surrounding LRT stations present some of the best opportunities to create liveable communities, employment nodes and institutional hubs attached to transportation infrastructure.

Tying land use to existing infrastructure, particularly transit, is a key strategy when aiming to direct growth in a more sustainable way. Clustering development around LRT stations also implies a move toward a more polycentric pattern throughout the city.

New Council adopted policy to guide growth in the City of Calgary, the Municipal Development Plan (Plan It, or the MDP), aims to encourage more jobs and housing to locate in the existing developed areas. In the MDP, the area from Fish Creek-Lacombe to Somerset-Bridlewood is identified as a Major Activity Centre, anchored by the three LRT stations.



CENTRE CITY

## 1.1 Introduction

The following benefits, among the many others that come from clustering development around transit, help align growth within Calgary toward meeting Council's strategic objectives:

- 1. People living in communities near transit** will have convenient access, and will therefore be much more likely to use it. This will mean fewer people having to travel by car, less congestion on the streets and a reduced impact on the environment.
- 2. More diverse, higher density forms of development surrounding LRT stations** provides opportunities to increase housing choices to meet the demands of a changing population and the need for more affordable housing in Calgary.
- 3. Intense development around transit** will facilitate a critical mass of uses that will allow for more complete communities. Larger living and working populations will be able to sustain an array of retail and commercial uses, community services and facilities, and create truly vibrant neighbourhoods.
- 4. Institutional and employment hubs** will allow people to live closer to where they work and instigate more reverse-flow commuting. With employment located near transit, commuters will have the opportunity to move in both directions, taking better advantage of the existing transit infrastructure.
- 5. Accommodating significant growth within the city's existing footprint** reduces the rate in which the city grows outward. Thus, fewer roads, sewers, fire and police stations, schools, and other infrastructure will need to be built to service outlying areas.

## 1.2 Project Context

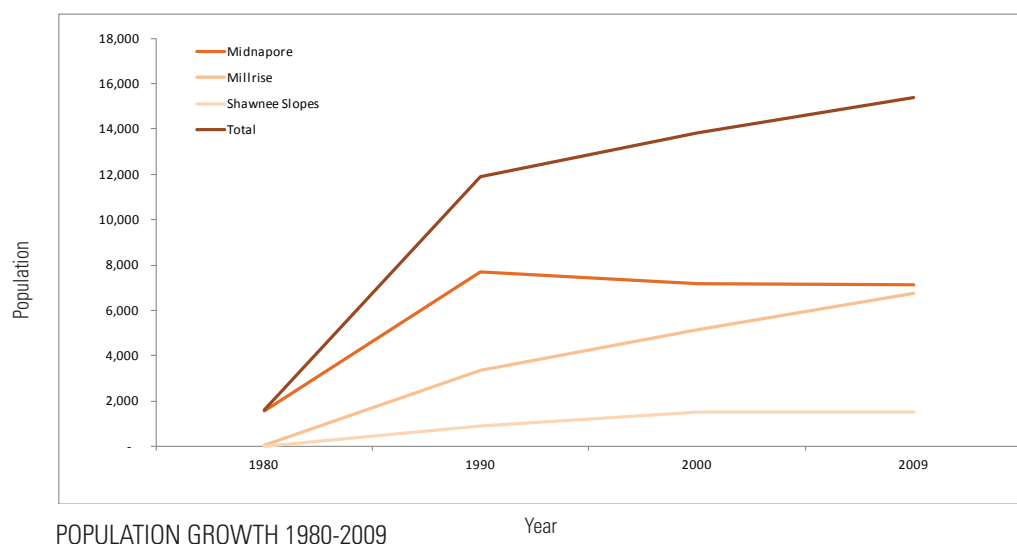
Calgary's South LRT corridor was the first line to open, in 1981, reaching as far as Anderson Station. In 2001, the line was extended south of Fish Creek Provincial Park. Fish Creek-Lacombe, like most stations on the South Line, was initially developed to serve primarily as a park-and-ride facility. The Station Area includes the aforementioned park-and-ride lots, a bus exchange facility, retail and office space oriented to Macleod Trail, St. Mary's University College, and parts of the established communities of Shawnee Slopes, Midnapore, and Millrise.

Sloping from west to east, the Station Area offers sunrise views across Fish Creek Provincial Park and contains a number of currently underutilized sites for potential development that can accommodate growth in employment and population while preserving the general character of the surrounding established communities.

### 1.2.1 South of Fish Creek | History

Much of the area south of Fish Creek Provincial Park, south to Highway 22X, was annexed to the City of Calgary in 1961, with the land south of 162 Avenue being added in 1979. The area surrounding the current Fish Creek-Lacombe LRT station was originally settled with farmsteads, the Lacombe Home and the townsite of Midnapore. More recently, the communities of Midnapore, Shawnee Slopes and Millrise began residential development in the 1970s and 1980s. Since the early 1980s the residential population south of Fish Creek has had considerable growth.

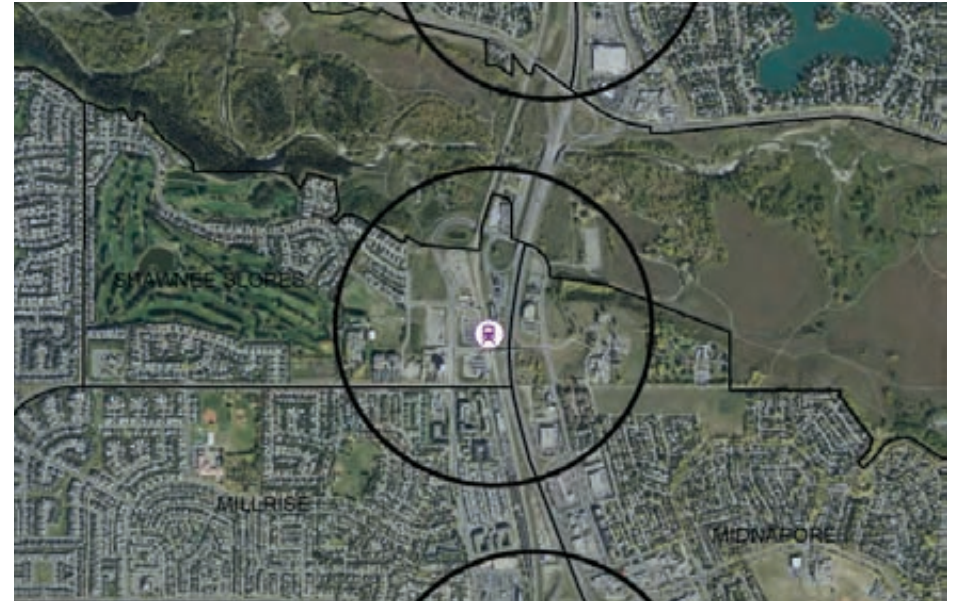
Aerial photos from 1950 and 2009, on the following pages, illustrate the extent of this growth, and show the historical influences on today's physical form: transportation infrastructure including range and township roads, Macleod Trail, and the Canadian Pacific Railway; and land use, including the Father Lacombe Centre, the Midnapore townsite, and agricultural activity.



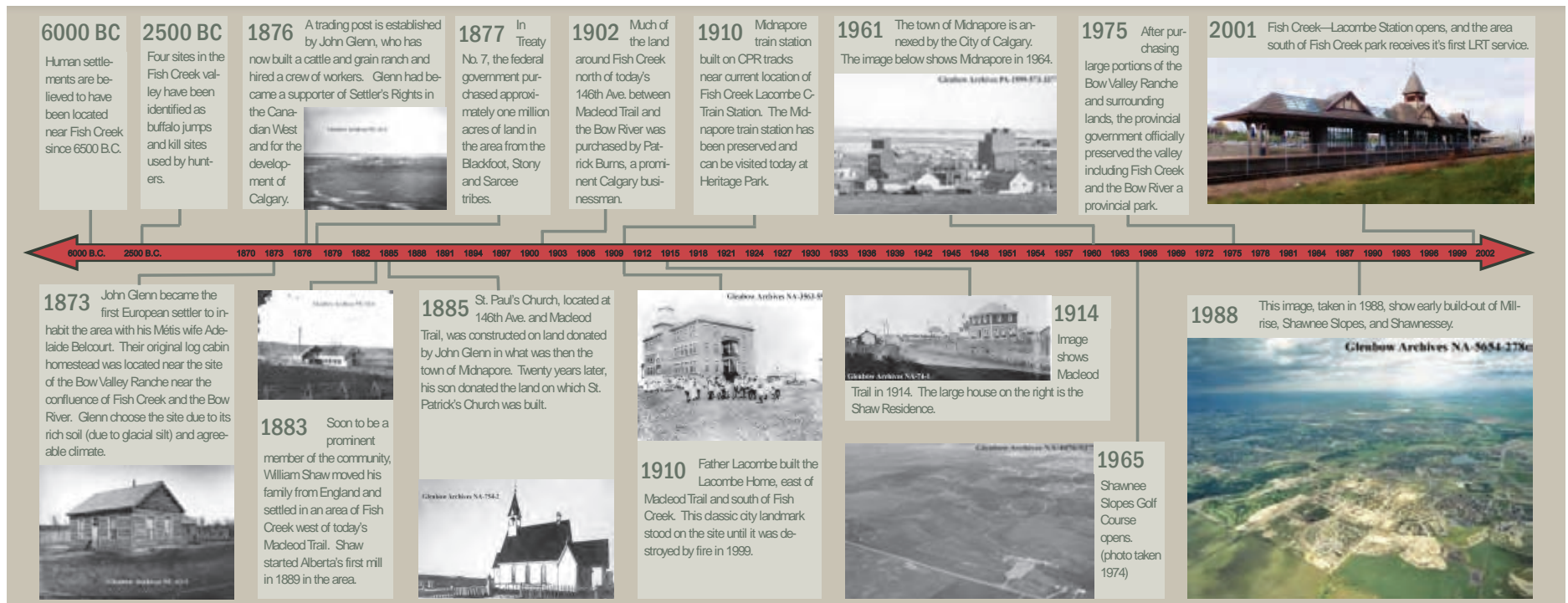




SOUTH OF FISH CREEK PROVINCIAL PARK | 1950



SOUTH OF FISH CREEK PROVINCIAL PARK | 2009



### 1.2.2 Fish Creek Provincial Park

Fish Creek Provincial Park is one of the largest natural parks in Canada located within an urban setting, it is over three times the size of Vancouver's Stanley Park. It encompasses 1,348 hectares and three of Alberta's natural regions, grasslands, parkland, and foothills forest. The Park stretches some 19 kilometres from the Tsuu T'ina Nation in the west to the Bow River in the east.

A rich diversity of habitats can be found in the Park, including: wetlands, grasslands, spruce forests and riparian woodlands of balsam poplar, aspen, and shrubs. The area is home to many species of birds and wild animals, a variety of aquatic life, and an abundance of wildflowers and plants. It has been an important site to humans for many centuries, with over 80 archaeological sites.

The Fish Creek Valley was first proposed as a provincial park in 1966. The dream became a reality in 1972 when the land was purchased and government funds were set aside for Park development. Today the Park attracts more than 3 million visitors annually, from naturalists to history buffs, nature photographers, hikers, walkers, runners, cyclists, and picnicking families.

TOD presents a unique opportunity to develop the Station Area into the city's principal gateway to the Park, allowing visitors to step off the LRT and into a stunning natural landscape. TOD can capitalize on this proximity to the Park, with respect to trail network connections, views, and amenity value for residents and workers.

### 1.2.3 St. Mary's University College

St. Mary's University College (SMUC) is a Catholic post-secondary, student-focused liberal arts and sciences teaching and research institution, celebrating its 25th anniversary in 2011. Since moving to the Bannister Road campus in 1999, enrolments have grown to approximately 700 full- and part-time students and SMUC is planning for 1,500 students by 2019. A campus master plan is currently under preparation to guide expansion of academic and support facilities.

SMUC has set out the following principles to ensure that growth reflects responsible stewardship of the unique campus:



Preserve and promote the historical, natural, spiritual, and academic character and identity of SMUC.



Cultivate community through hospitable spaces (physical, cultural, sacred) that promote use and pride of ownership of the campus by members of the university and the broader community.



Ensure that campus development maintains spiritual, historical, and environmental integrity and sustainability.



Recognize the importance of wellness and the development of the whole person by providing spaces for physical, spiritual, and cultural activities.



Create a sense of community where students feel engaged through physical spaces that enhance their corporeal, intellectual, spiritual, emotional, and social



well-being. Create indoor and outdoor gathering spaces that are conducive to cross-cultural experiences, while



respecting the natural environment. Respect and enhance pedestrian circulation by



regulating and simplifying car traffic flow and parking. Recognize the importance of clear and attractive signage for improved wayfinding, safety, and accessibility.



FISH CREEK PROVINCIAL PARK



ST. MARY'S UNIVERSITY COLLEGE



## 1.3 Policy Context

### 1.3.1 Municipal Development Plan

Continued growth throughout the city increases demands on a variety of municipal infrastructure. Over the next 50 to 60 years, Calgary is forecast to grow by another 1.3 million people. Where will everyone live and work? How will they get around? What will the environment be like? How can we manage the costs of growth?

Calgary's MDP seeks to direct future growth in a way that fosters more compact and efficient use of land, creates complete communities, allows for greater mobility choices, and enhances vitality and character in local neighbourhoods. As part of a land use framework that optimizes population and job growth within walking distance of the primary transit network, the MDP identifies several Major Activity Centres (MAC), located strategically across the city to provide major mixed-use destinations central to larger residential or business catchment areas.

MACs are located along one or more of the proposed Primary Transit Network routes, and contain one or more transit stations or stops. They build upon existing concentrations of jobs and/or population and have a sufficient land area to provide a high number of jobs and population to support the highest levels of transit service. MACs will have the highest density and building heights outside of Centre City, with the broadest range of land uses.

The area from Fish Creek-Lacombe to Somerset-Bridlewood is identified as a MAC. All policy, land use bylaws and subdivision approvals must comply with MDP policies.



#### Prosperous Economy

*"Build a globally competitive city that supports a vibrant, diverse and adaptable local economy, maintains a sustainable municipal financial system and does not compromise the quality of life for current and future Calgarians."*



#### Compact city

*"Direct future growth of the city in a way that fosters a more compact, efficient use of land, creates complete communities, allows for greater mobility choices and enhances vitality and character in local neighbourhoods."*



#### Great Communities

*"Create great communities by maintaining quality living and working environments, improving housing diversity and choice, enhancing community character and distinctiveness and providing vibrant public places."*



#### Good Urban Design

*"Make Calgary a liveable, attractive, memorable and functional city by recognizing its unique setting and dynamic urban character and creating a legacy of quality public and private developments for future generations."*



#### Connecting the City

*"Develop an integrated, multi-modal transportation system that supports land use, provides increased mobility choices for citizens, promotes vibrant, connected communities, protects the natural environment and supports a prosperous and competitive economy."*



#### Greening the City

*"Conserve, protect and restore the natural environment."*



#### Managing Growth and Change

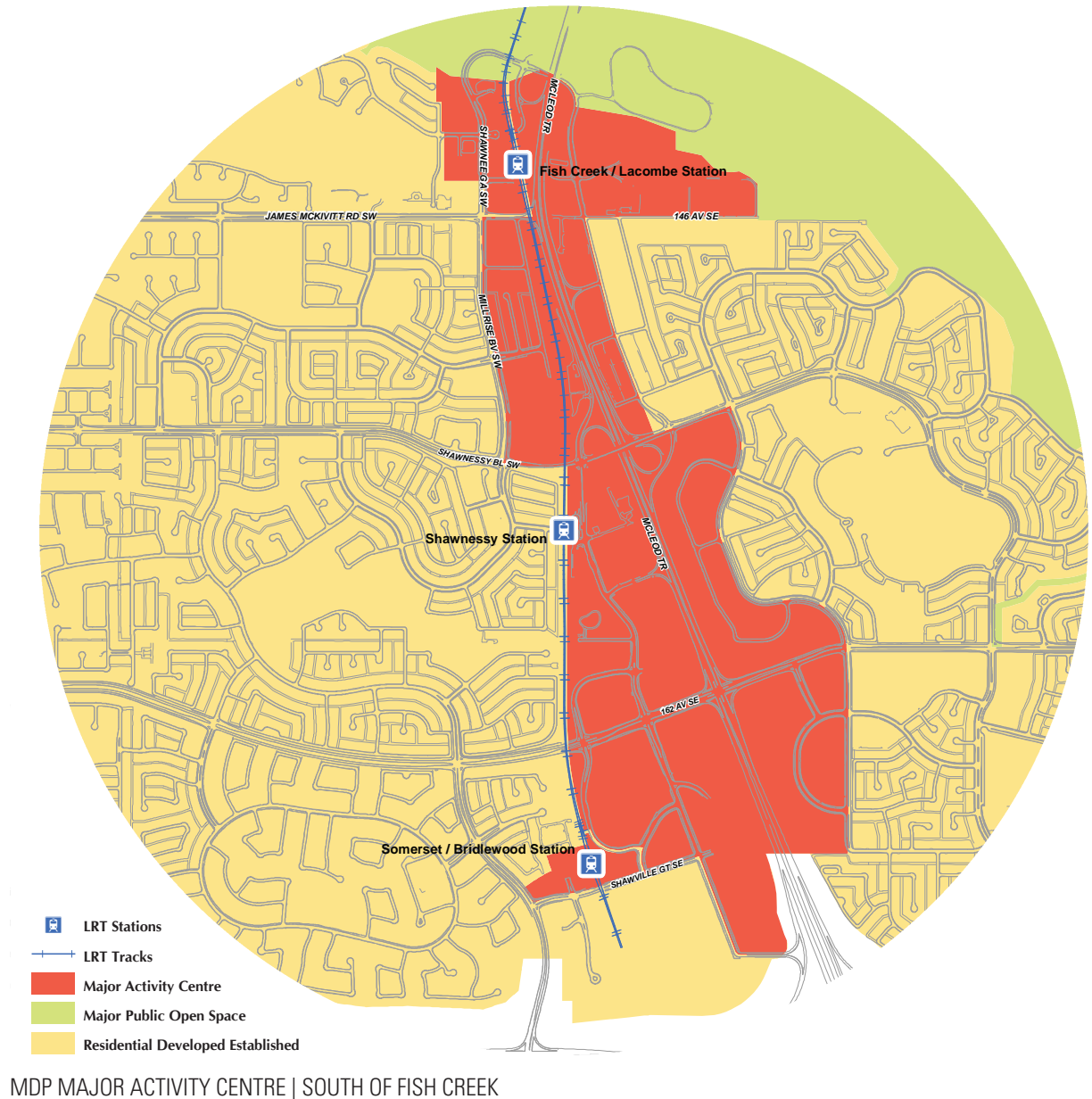
*"Provide leadership on growth and change within a strategic framework that achieves the best possible social, environmental and economic outcomes while operating within The City's financial capacity."*



### 1.3.2 MDP Policies for Major Activity Centres

Balancing the interrelated goals and objectives of the MDP is the key to sustainably managing the way the city grows over the next 60 years. In addition to these broader goals, the MDP outlines policies that are specific to MACs, including:

1. Local Area Plans for a MAC should provide a land use framework to achieve a minimum intensity threshold of 200 jobs and population per gross developable hectare.
2. MACs should be developed to function as an “urban centre” for a sub-region of the city and provide opportunities for people to work, live, shop, recreate, be entertained.
3. Each MAC should provide locations for high intensity jobs as part of institutional growth and/or mixed-use business centres.
4. Each MAC should contain a broad range of medium and high density housing opportunities and a mix of housing tenure and affordability levels to accommodate a diverse range and age of population.
5. Open spaces, such as plazas, that provide for a wide variety of activities within a medium to high density environment are encouraged. Large sports fields, if appropriate, should be located at the edges of the MAC.
6. Vehicle parking should be located, accessed, and designed so as to minimize impacts on transit and pedestrian areas within the MAC. Smaller surface parking lots may be accommodated at peripheral locations away from the transit facility and pedestrian precincts, or located at the rear of buildings. Vehicle parking should ultimately be structured or underground.





LRT AT FISH CREEK-LACOMBE STATION

### 1.3.3 Transit Oriented Development

Transit Orientated Development (TOD) is a strategy that promotes higher density, mixed use development within walking distance of a public transit station. TOD creates a compact, mixed-use community within walking distance of a transit stop, that mixes residential, retail, office, open space and public uses in a way that makes it convenient to travel on foot or by public transportation instead of by car.

The Transit Oriented Development Policy Guidelines were approved by City Council in December 2004 to provide land use and development polices and design guidelines for the development or redevelopment of properties within a Transit Station area. Within the document are six planning objectives that must be achieved in developments and plans in station areas:

1. Ensure transit-supportive land uses
2. Increase density
3. Create pedestrian-oriented design
4. Make each station area a “place”
5. Manage parking, bus and vehicular traffic
6. Plan in context with local communities

A standard starting point to land use and mobility planning within LRT station areas is to use a 600 metre radius, or roughly a ten minute walk, from the station platform. This radius is only an initial step, with refinement and realignment of the study boundary adjusted to accommodate logical extensions or contractions based on property lines, major roadways, environmental or topographic features. Any area outside a study area line should be well connected and integrated into the mobility and land use pattern within the station area.



## 1.4 Station Area Analysis

### 1.4.1 Overview

The Station Area includes a parcel area of 54 hectares, of which 44 are readily available for redevelopment. Fish Creek-Lacombe LRT station is surrounded by Fish Creek Provincial Park, St. Mary's University College, and the established communities of Midnapore, Millrise, and Shawnee Slopes.

1. To the North, a garden centre sits between the LRT alignment and Macleod Trail, beyond which lie the Shaw's Meadow and Glennfield day-use areas of Fish Creek Provincial Park, one of the largest urban parks in North America.
2. To the West, Shawnee Slopes rises gradually from the Station Area and combines both a mature residential community with a significant proposal for new development.
3. To the South, the Millrise residential community lies to the West of the LRT alignment, while the MDP designated Major Activity Centre extends to the east, between the LRT and Macleod Trail, home to a significant concentration of retail, office, and institutional employment and activity.
4. To the East, the established community of Midnapore includes low density housing and historic churches, cemeteries, and the former townsite (now a mixed employment area, part of the MAC).
5. The LRT station includes the two-level station house, bus exchange, and kiss-and-ride area, and is surrounded by City-owned lands used for park-and-ride to the West, and low-density, auto-oriented retail facilities on the East side of the LRT alignment.

### 1.4.2 Potential Development

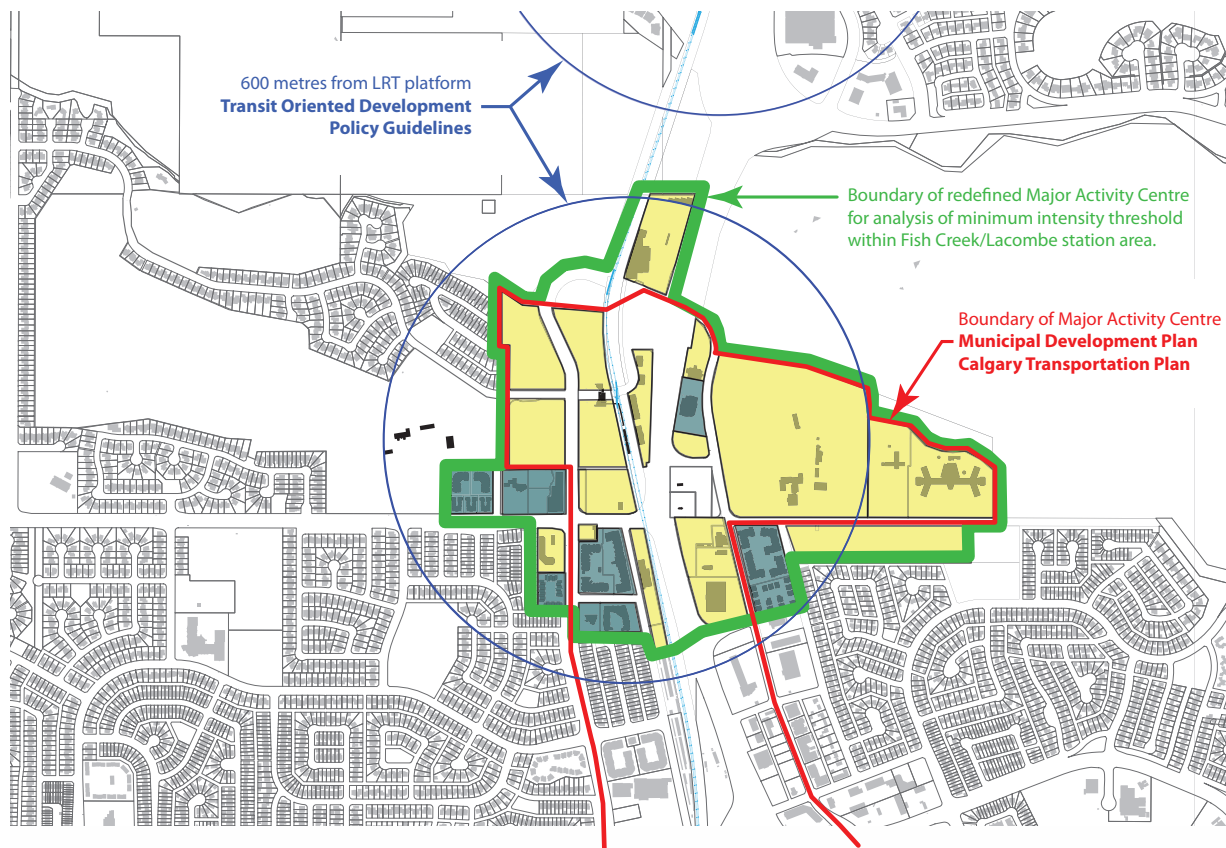
The MDP defined Major Activity Centre along the LRT and Macleod Trail corridor is planned to evolve into a high concentration of jobs and population, with a high quality environment that features amenities for a comfortable street environment and high level of transit access. The map on the following page indicates the boundary of the MDP designated Major Activity Centre and the 600 metres radius from the Fish Creek-Lacombe LRT station platform.

MDP polices requires local plans or land use studies to reach a certain level of intensity. Local Area Plans for a MAC should provide a land use framework to achieve a minimum intensity threshold of 200 jobs and population per gross developable hectare. Individual MAC densities and the approximate jobs and population distributions will be established through a Local Area Plan.

A key policy direction for any MAC is that the area provides a mixture of uses, with a focus on a high of concentration of jobs and residential population. The actual division between jobs and residential density can be difficult to determine since development proposals will respond to market demands over the next 60 years. As well, the minimum thresholds targets are averaged across the full geographic area of a MAC, with density higher in some areas, and lower in others.

The Fish Creek – Lacombe Station Area will likely develop into a primarily residential part of the greater MAC complex, but certain areas of the station area are more desirable for commercial uses because of their proximity to Macleod Trail and the rail corridors. The land use direction for development will be flexible enough to allow the full range of land use types to occur, but maintaining a target of 200 jobs or population per hectare.





## Fish Creek - Lacombe Station Area

<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> sites P1 - P12	20.03 ha.
<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> sites I1 - I3	23.94 ha.
	<hr/> 43.97 ha
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> sites E1 - E7	9.9273 ha.
	<hr/> 53.89 ha
	(parcel area used for gross developable area)

MDP & CTP provide policy to achieve a minimum intensity threshold of 200 jobs and population per gross developable hectare.

Sites E1-E7 provide approximately 1050 jobs and 1800 population.  
Sites P1-P12 & I1-I3 will receive new jobs and housing growth within 42.97 ha.

Minimum target 200 jobs & population / hectare (100 each) for redefined MAC area (53.89 ha) =  $53.89 \times 200 = 10,779.5$  (rounded to 10,800)

New jobs required to reach target  $5400 - 1050 = 4350$  jobs  
New population required to reach target  $5400 - 1800 = 3600$  persons

$3600 / 1.8 \text{ occ.rate} = 2000 \text{ dwelling units}$  (approx. 200,000 sq.m)  
 $4350 \times 30 \text{ sq.m} = 130,500 \text{ sq. m}$  commercial, institutional floor space

Target jobs & population per hectare within Major Activity Centre area (circa 2070)

Not knowing the eventual jobs/housing split within the Fish Creek – Lacombe Station Area, a hypothetical balanced ratio of equal jobs and housing was projected for the year 2070 to provide an understanding of one potential development scenario. The MAC area was better defined to capture existing significant residential areas, and exclude areas that cannot be developed (cemetery sites, stormwater ponds, transportation corridors), see green line on the map at left. This refined sub area of the MAC has a Gross Developable Area (parcels developed to highest use, or potential redevelopment sites) of 53.89 hectares.

Currently, the Fish Creek-Lacombe Station Area portion of the larger MAC provides 1,000 dwelling units and 1,050 jobs within the existing developed sites (blue sites on map) within a land area of 9.9 hectares. Current job/population density 52.89 per hectare, over the full MAC area of 53.89 ha.

Using the hypothetical balanced scenario, land use direction should provide for an additional 2,000 dwelling units and 4,350 jobs within the 43.99 hectares of land available for development. This one potential outcome of development relates to the year 2070, but the City of Calgary uses a shorter time horizon with a corporate standard of population and employment growth projections to understand impacts and plan expansion of municipal services.

This consistent corporate model is used by Transportation Planning, Water Resources, Emergency Medical Services and Calgary Transit for planning future service needs. This model was updated in 2009 to incorporate targets of intensity within the updated MDP and CTP and has a maximum time projection to the year 2039.

## 1.5 Infrastructure Impact Assessment

In order to understand the impacts of the Fish Creek-Lacombe section of the Major Activity Centre, along with current applications within community of Shawnee Slopes, projections for short term (year 2019) and medium term (year 2039) have been performed. This analysis was performed for mobility networks and water infrastructure.

This growth to 2019 and 2039 includes all projected job and housing growth in the Calgary region and the potential additional increase in population generated by a proposed application to rezone the Shaw-Nee Slopes Golf Course (LOC 2010-0005) to 1,400 residential units and commercial development. This infrastructure evaluation was completed prior to the Community Planning and Design Workshop, but time did not permit detailed presentation. This document provides a summary of the mobility and water systems assessments.

### 1.5.1 Mobility

#### 1.5.1.1 Regional Transportation Model

To evaluate the impacts on the various mobility networks to the years 2019 and 2039, the Regional Transportation Model (RTM) was used to provide background traffic volumes and network improvements for motor vehicle, transit, walking and cycling modes.

The RTM is a computer simulation of travel behaviour in the city and surrounding region. It is a regional model with a Calgary focus and is capable of delivering detailed analysis for Calgary along with information about major regional corridors.

The RTM is a state-of-the-practice trip-based travel demand model that is well regarded across North America. It is a 24 hour weekday model that simulates all modes of travel including auto, transit, walking and cycling. The 24 hour model day is divided into five time periods that represent the AM and PM peak periods along with the rest of the day.

The model represents both personal and commercial vehicle travel and covers a geographic area that extends north of Crossfield, west of Bragg Creek, south of Cayley (south of High River) and east of Standard (east of Strathmore). Additional information on the RTM is provided in Appendix A.

The capacity of the regional mobility networks are planned to increase over time; specific road,

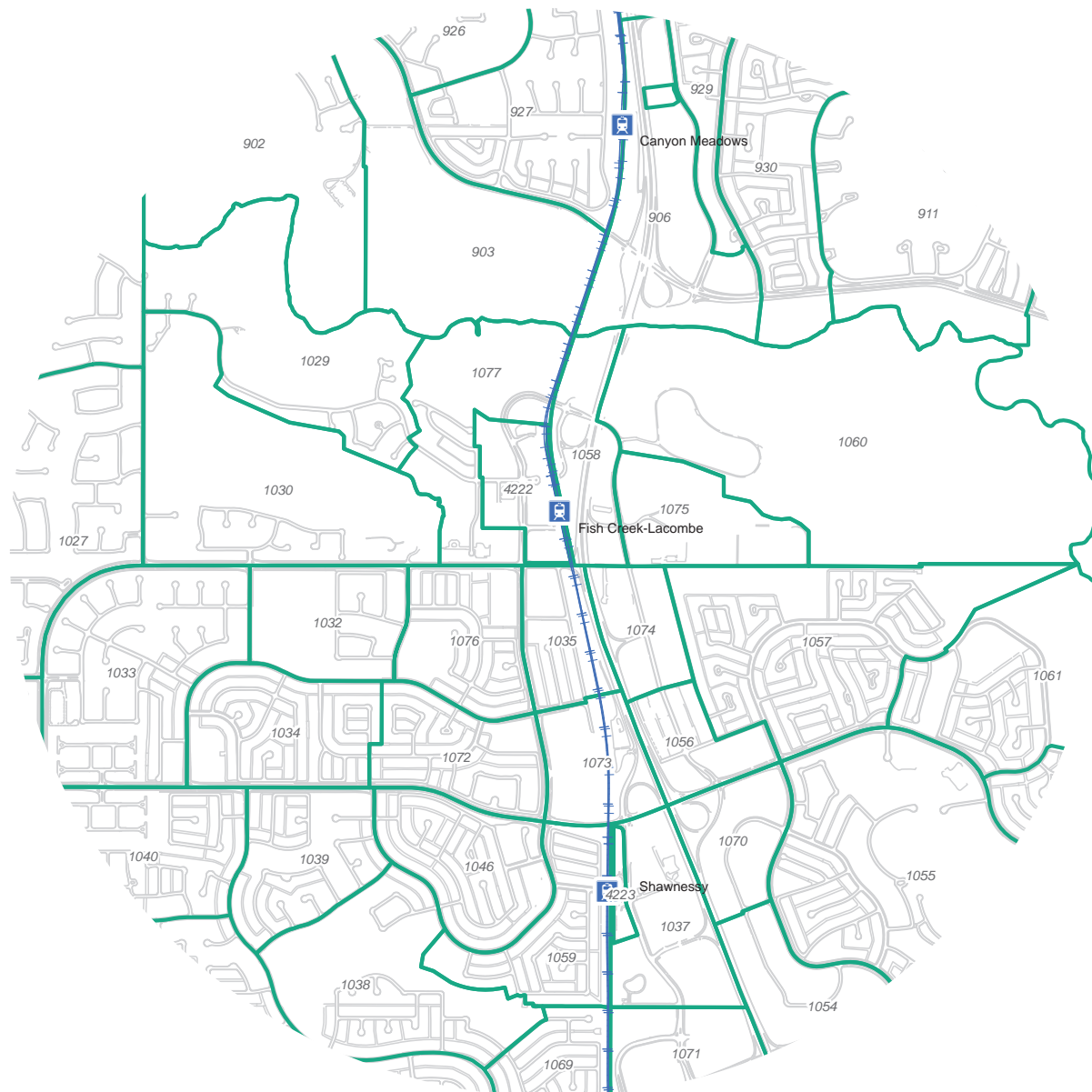
transit and other infrastructure improvements are included in the generation of projected impacts on the networks. The assumed improvements to the regional mobility networks are summarized on page 14.

The RTM subdivides the Calgary region into Transportation Zones (TZ). Based on projected changes in residential populations, jobs, and other sources of activity (e.g. institutional uses), each TZ generates trips for multiple modes (car, transit, bicycle, etc.). Understanding the current and future capacity of mobility networks identifies where future improvements are required.

The background data from the RTM used in the local analysis for the Fish Creek Station Area included seven TZ's, with the influence of the SMUC students reflected as jobs.

RTM Traffic Zone Residential Population and Employment: 2009, 2019, 2039 (Does not include jobs/pop. from LOC 2010-0005)						
	2009		2019		2039	
TZ	Res. Pop.	Jobs	Res. Pop.	Jobs	Res. Pop.	Jobs
1029	540	84	536	89	581	91
1030	600	137	900	149	1,500	176
1035	600	80	600	80	700	95
1058	0	317	0	316	600	666
1074	509	347	514	360	933	749
1075	100	287	100	287	150	400
1077	332	16	330	21	1,660	480





RTM TRANSPORTATION ZONE SYSTEM

### 1.5.1.2 Local Transportation Impact Analysis

In addition to background growth, increased jobs and residential population within the Fish Creek-Lacombe Station Area portion of the larger MAC is included in the current RTM. Any development proposal not included in the RTM requires a more detailed local transportation impact analysis.

The current application to rezone the Shaw-Nee Slopes Golf Course (LOC 2010-0005) to 1,400 residential units and commercial development has provided a local impact analysis. This study is provided to the City of Calgary with Transportation Planning confirming the data, approach and method in this analysis.

Local analysis uses forecasts from the RTM to perform a detailed study of impacts on the local mobility networks. Background trips from the TZ's are loaded onto all networks, along with new trips generated by the development proposal. This local analysis is used to study local intersection performance and determine the required improvements throughout each TZ.

A local road network and intersection performance evaluation was completed, with a focus on peak hour performance (AM and PM peak hours). This review was for the years 2019 and 2039 combining daily traffic volumes from three growth components:

1. Regional background growth throughout Calgary and the metropolitan area (RTM data);
2. Station Area development towards MDP population and employment targets (RTM data); and
3. Proposed Shaw-Nee Slopes golf course redevelopment (additional data based on proposed population/jobs growth).

### 1.5.1.3 Network Assumptions

The city-wide network improvements (based on the Calgary Transportation Plan) assumed in the RTM have an important impact on the ability of the transit system and the road network to manage increased volumes as a result of redevelopment and background growth.

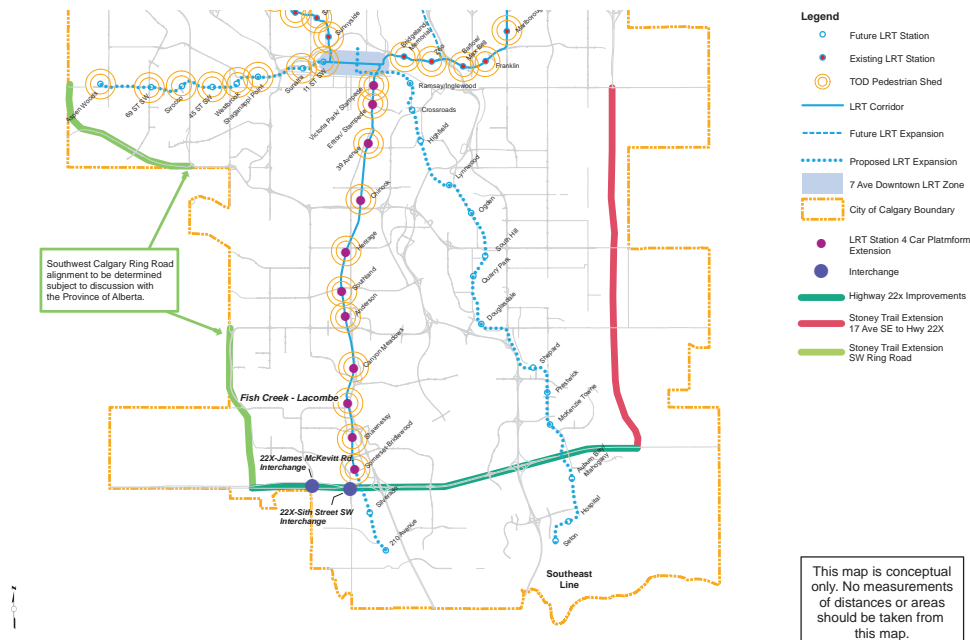
In addition to the current network, including transit service, the RTM assumes that by 2019 the following transportation improvements will be in place:

1. South LRT capacity increase by 33% (4 cars);
2. Stoney Trail extension south of Trans Canada Highway to complete the western section of the Calgary Ring Road to a minimum six lane, 100km/h standard;
3. East Freeway/Stoney Trail extension south of 17th Avenue SE to Highway 22X; and
4. Highway 22X improvements including realignment, widening to six lanes, and interchanges at 22X and Sheriff King Road/6 Street SW, and at 22X and James McKeivitt Road.

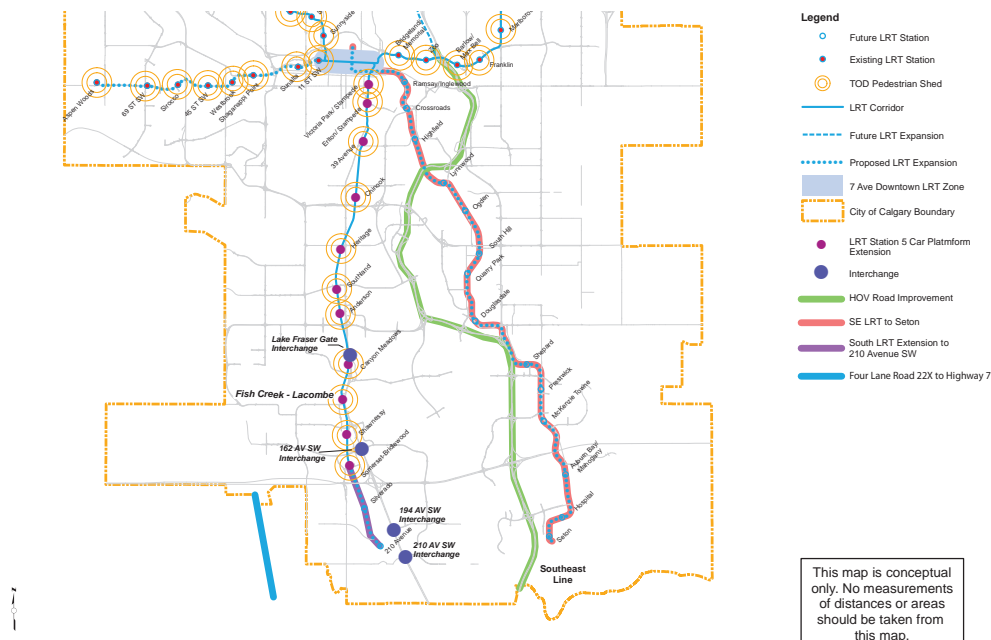
By 2039, the model assumes that the following transportation improvements will be in place:

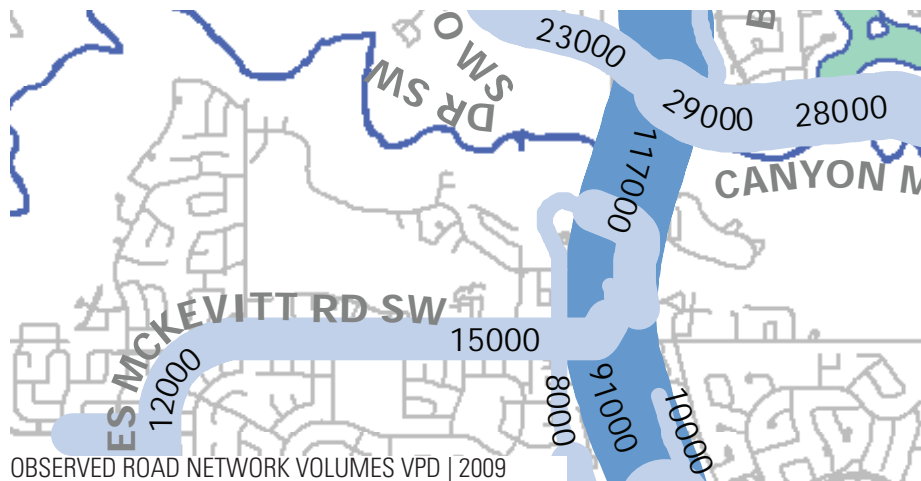
1. South LRT capacity increase by 25% (5 cars)
2. SE LRT to Seton;
3. South LRT extension to Silverado;
4. Macleod Trail improvements including high occupancy vehicle lanes, and interchanges at Lake Fraser Gate, at 162 Avenue, at 194 Avenue, and at 212 Avenue; and
5. New four lane road, Highway 22X to Highway 7.

2019 Transportation Improvements



2039 Transportation Improvements





#### 1.5.1.4 Network Performance

A review of existing (2009) traffic conditions shows that all study area roadways operate with volumes, in terms of vehicles per day (VPD), that are within their Environmental Capacities (ECs). The existing access points to Macleod Trail (northbound) experience some delay during the morning peak hours due to the short distances between access points and the weaving section south of Canyon Meadows Drive.

It should be noted that the ramp from Macleod Trail (southbound) to James McKeivitt Road (westbound) includes a level rail crossing that is occasionally closed for passage of LRT or heavy rail vehicles. This causes a delay in turning movements with some drivers detouring to Shawnessy Boulevard.

Due to city-wide network improvements, results show that very little traffic growth is anticipated throughout the study area over the next 10 years, despite the projected local increases in population and employment. The analysis indicates that to 2039, all study area roadways are forecast to continue operating within their ECs. The summary table on page 18 relates population and employment growth to traffic volumes on select study area roads.

Reviewing data on trips using 37 Street through Fish Creek Park and forecasted traffic volumes showed that the presence of the Ring Road (Stoney Trail extension south to 22X) did not noticeably impact the traffic volumes in the immediate vicinity of the study area. When comparing the existing (2009), forecasted (2019 and 2039) traffic volumes, there is very little change in the volumes and directional splits for traffic inbound and outbound from the communities adjacent to James McKeivitt Blvd east of Evergreen Street.

### 1.5.1.5 Intersection Performance

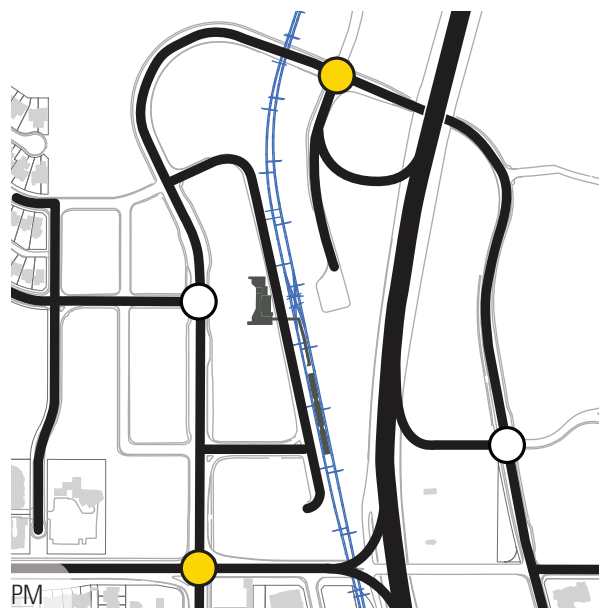
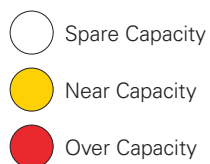
Analysis of study area intersections using 2009 peak hour intersection counts shows that all signalized and stop controlled intersections and their individual turning movements operate well within acceptable City of Calgary standards.

With respect to forecast intersection performance, analysis of the 2019 and 2039 post-development volumes indicates that the intersections of James McKeivitt Road at Shawnee Gate and Shawnee Gate/Bannister Road at Shawnee Drive will operate with spare or near capacity during peak periods.

All of the studied intersections continue to have adequate capacity to accommodate the anticipated traffic volumes. Minor improvements to the Shawnee Drive at Shawnee Gate intersection will accommodate anticipated traffic volumes in the long term horizon. The map on this page illustrates the long term peak hour intersection performance.

This review suggests that traffic generated by the development at both the Station Area TOD and the proposed Shaw-Nee Slopes Golf Course redevelopment (LOC 2010-0005) can be accommodated by the surrounding road network as planned for 2039.

This analysis assumes intersection improvements including upgraded turning lanes, outlined in Appendix B.



FORECAST INTERSECTION LEVEL OF SERVICE | 2019



FORECAST INTERSECTION LEVEL OF SERVICE | 2039



### 1.5.1.6 Quality of Service

As directed by Council, and consistent with the recent Calgary Transportation Plan, Transportation Planning completed an analysis that:

1. Identifies the demands of the TOD project on the transportation network (emphasis on pedestrians and cyclists) within the plan area;
2. Develops a plan for short, medium and long-term improvements to the transportation network to accommodate the demand for all modes of travel; and
3. Addresses existing and future community traffic concerns.

With a shift in emphasis from the motor vehicle to active modes of transportation and transit, the City's new overall 'Quality of Service' measure considers average delay, frequency of service, facilities and the built environment. Implementation of the improvements identified in Section 3.4 of this report is expected to gradually improve the walking, cycling and transit Quality of Service.

While some improvements have also been identified to address the automobile, long term Quality of Service for the automobile will likely be no greater than today. The Quality of Service Table summarizes the mobility assessment for the various modes over time.

Although many public concerns tend to be related to the auto impact of redevelopment, improvements to the walking, cycling and transit modes, along with improved design of the station area, will lead to an overall high mobility quality of service in the Fish Creek-Lacombe station area. As redevelopment occurs in Fish Creek-Lacombe, There will be a number of benefits to the community:

1. Significant improvements addressing existing community traffic and mobility issues will be constructed over time;
2. Mobility choices and the quality of the urban form will improve;
3. The quality and connectivity of walking, cycling and transit will improve; and
4. Several medium and long term improvements have been identified for implementation as redevelopment occurs (see Section 3.4).



QUALITY OF SERVICE SUMMARY					
	Walking	Cycling	Transit	Vehicle	Overall
<b>2009</b>	low	low	medium	medium	low
<b>2019</b>	medium	medium	high	medium	medium
<b>2039</b>	high	high	high	medium	high



## Fish Creek – Lacombe Station Area | Community Planning and Design Workshop

Summary of Jobs/Housing projections and primary mobility impacts

		YEAR	LAND USE INTENSITY			MOBILITY INFRASTRUCTURE							
						Automotive Network *							Transit
			Jobs	Dwelling Units	Resident Population	Macleod Trail	James McKeivitt Road	Shawnee Gate	Bannister Road	Millrise Blvd	Shawnee Drive	146 Av / Providence Blvd	
						Skeletal Road	Divided Arterial	Neighbourhood Blvd. / Parkway	Parkway / Local Arterial	Local Arterial	Primary Collector	Collector Street	
							EC: 30,000	EC: 25,000	EC: 25,000	EC: 15,000	EC: 12,500	EC: 5,500	
						VPD	VPD (%EC)	VPD (%EC)	VPD (%EC)	VPD (%EC)	VPD (%EC)	VPD (%EC)	
Current		<b>2009</b>	1,050	1,000	1,800	117,000	15,000 (50)	9,700 (32)	11,000 (44)	8,000 (53)	4,400 (35)	1,000 (18)	3 car LRT
FCL station area	10 year forecast	<b>2019</b>	1,070	1,000	1,550	120,000	20,800 (69)	11,200 (45)	12,500 (50)	12,000 (80)	5,600 (56)	2,000 (36)	4 car LRT
Shawnee Park **	10 year forecast	<b>2019</b>	-	570	1,025								
FCL station area	30 year forecast	<b>2039</b>	2,400	2,250	4,050	140,000	22,000 (73)	15,000 (60)	15,000 (60)	13,200 (88)	7,800 (62)	3,800 (69)	5 car LRT
Shawnee Park **	30 year forecast	<b>2039</b>	150	1,410	2,550								SE LRT to Seton S LRT to 210 Av

\*Network improvements included in this analysis are identified on page 12.

\*\* Shawnee Park: Proposed Shaw-Nee Slopes Golf Course Land Use Application

#### 1.5.1.7 Active Modes

The existing pathway system extends well beyond the 600m/ten minute walk radius from the LRT station, especially into Fish Creek Provincial Park to the north. This network, however, is not well connected to the LRT station itself.

Access to the Park from the LRT station itself is indirect, and is oriented more towards the Shawnee Slopes neighbourhood and to parking areas accessed from Bannister Road. Limited bicycle parking is available at the LRT station.

For pedestrians and cyclists, crossing Macleod Trail can be a challenging experience, possible only by means of a narrow sidewalk along the north side of Bannister Road, or a pedestrian bridge to the south of the LRT station, in line with 145 Avenue SE.

The Station Area does have sidewalks on most roadways. These facilities are not designed to support high volumes of pedestrian traffic, or to provide a high quality setting for other urban activities.



#### 1.5.1.8 Transit

The South LRT line runs north-south through the area, offering high-speed, high-capacity travel to destinations throughout the city, including the Centre City and the University of Calgary. The expansion of the LRT fleet and platforms to enable four-car train operation is scheduled to be completed by 2014 and will increase existing peak LRT capacity by 33%. Over the long-term, extension of the Primary Transit Network to Seton (in southeast Calgary) will further increase capacity.

There are four bus routes that currently serve the area - #11, #12, #15 and #52. The frequencies of these four bus routes are approximately every 20 minutes during the AM and PM peak periods, and every 30 to 45 minutes during the off-peak periods (midday and evenings). It is anticipated that with increased demand for transit these frequencies are likely to increase on all routes especially in the two peak hour periods.

There are currently 1,350 park-and-ride spaces at Fish Creek-Lacombe. Calgary Transit guidelines call for approximately 350 park-and-ride spaces, though ultimate customer demand for parking has yet to be determined. In 2007, Calgary Transit surveys revealed that approximately 8% of vehicles at Fish Creek-Lacombe were from outside the City of Calgary.



#### 1.5.1.9 Overall Assessment

Traffic generated by redevelopment of the Fish Creek-Lacombe station area to its 30-year forecast levels for population and employment (job/population density 120 per hectare) as well as that generated by the full build out of the proposed Shaw-Nee Slopes Golf Course redevelopment can be supported by the surrounding road network with select improvements to the mobility networks.

Transportation improvements addressing active modes, transit, and vehicle circulation (both on the local street grid and Macleod Trail) are addressed as part of the Design Concept in Section 3.4.



### 1.5.2 Water Resources

The water and sanitary sewer systems were examined to identify the impacts of the projected growth in the Fish Creek-Lacombe station area of the MAC and the impacts of an application to rezone the Shaw-Nee Slopes Golf Course (LOC 2010-0005).

Assumptions for growth were modelled with the same projections for jobs and population growth to the years 2019 and 2039 (see 'Land Use Intensity' numbers in Section 1.5.1.5).

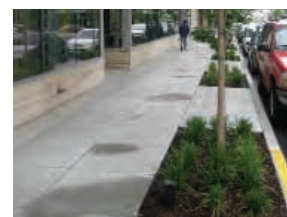
A preliminary analysis of the water supply system indicates that the projected growth can be accommodated with the existing off-site infrastructure. Improvements to the local distribution system will be required.

A preliminary sanitary system analysis indicates that projected growth will not trigger trunk upgrades. Improvements to the local collection system will be dependent on the amount and timing of development.

Specific refinements and improvements to the water and sanitary systems will be determined at time of application for development permits and land use applications.

A Staged Master Drainage Plan (SMDP) will need to be prepared at the land use redesignation and development permit stage to address stormwater management. The SMDP will have to adhere to Fish Creek Drainage Study (AGRA Earth and Environmental, July 2000).

Strategies to reduce runoff volumes should be implemented and employ Low Impact Development (LID) stormwater management, including stormwater source control practices such as; bioswales, bioretention, green roofs, living walls, permeable pavement or concrete, absorbent landscaping, preserving open space, rainwater harvesting, stormwater reuse and could be incorporated into streetscape design elements such as landscaped medians, sidewalk planters and pervious paving. Source control measures should enhance water quality objectives to protect habitat and decrease erosion of Fish Creek.









## 2.0 Workshop Vision

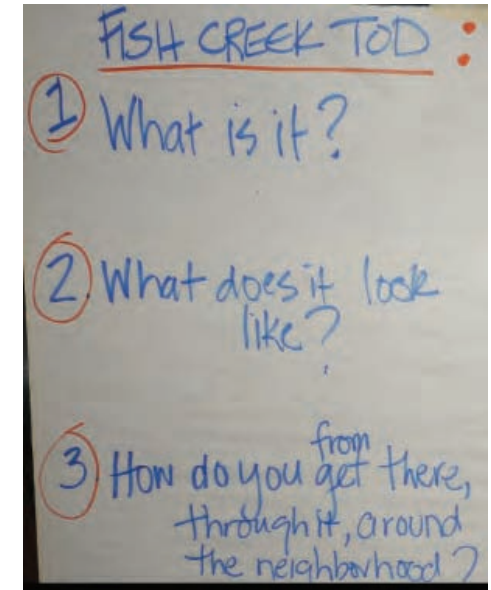
### 2.1 Process

#### 2.1.1 Overview

Planning for the transformation of the Fish Creek-Lacombe Station Area into a transit oriented Major Activity Centre involves the introduction of a critical mass of people and urban activity into an area which has, up to the present, been characterized by parking lots, empty fields, and low-intensity commercial activities.

To be successful, transit oriented development requires attention to 'the four Ds': distance, density, diversity, and design. The vision for the Fish Creek-Lacombe Station Area focuses development in close proximity (600m) from the station to transit; provides for a high density of population and jobs; anticipates a mix of dwelling types and commercial space; and calls for excellence in urban design.

This document is the product of a consultation process that involved online outreach, dialogue with affected Community Associations, and an intensive, three-day, Community Planning and Design Workshop intended to engage the public and to analyze and define concepts for the land use pattern, built form, transportation and transit enhancements.



COMMUNITY PLANNING AND DESIGN WORKSHOP | JUNE 2011



### 2.1.2 Pre-Workshop Outreach

From January to May of 2011, Land Use Planning and Policy worked closely with other City of Calgary business units, including Transportation Planning, Calgary Transit, Parks, Office of Land Servicing and Housing, Community and Neighbourhood Services, and Water Resources to analyse the existing infrastructure networks, opportunities for innovation, and changes in the demographic structure of Calgary.

The technical analysis focused on the ability of the existing roads, transit, water supply, stormwater and wastewater systems to handle the potential increase in jobs and resident population within the immediate station area, while understanding the regional impacts of citywide growth.

Residents' concerns and aspirations for the evolution of the station area was identified by dialogue with community leaders at several meetings of the Ward 13 Land Use and Mobility Advisory Council (a working group of community association executives from various Ward 13 associations). Meetings included representatives from the Community Associations for Shawnee-Evergreen, Millrise, Canyon Meadows and Midnapore.

The workshop event was advertised extensively with many opportunities for the general public to drop in with evening sessions.

A comprehensive workshop handbook was created to provide a reference guide to the technical analysis and a colour hard copy was provided to workshop volunteers.



### 2.1.3 Workshop Vision and Concepts

The Community Planning and Design Workshop was held from June 21 to 23, 2011.

The process focused on the immediate station area and did not examine design concepts for the Shaw-Neé Slopes Golf Course, although the redevelopment proposal for that site was acknowledged as part of the context.

The first day included an extensive review of the local area with a morning walk and an afternoon of background presentations.

The second day identified a variety of potential scenarios for developing the station area surrounding the Fish Creek – Lacombe LRT platform. 17 major directions, ideas and themes were identified by the workshop. Three separate sub groups were formed to explore these themes and conceptualize a new plan for the station area. These concepts were open for public comments and review the second evening.

The input from the evening public review, along with first three concepts developed, were the starting point to examine a complete vision for the station area on the third day of the workshop. The refinement of the concepts was rooted in the completed vision statement and 17 major ideas. These ideas are embodied in the 6 guiding principles on page 27.

The refined pattern was detailed with hand drawn maps and re-arrangement of the area model. The complete land use concept is shown on page 26.



Fish Creek-Lacombe will be a model sustainable neighbourhood oriented to walking, cycling, and transit, with a complete mix of land uses at transit-supportive densities catering to the needs of all members of the community, while serving as a high visibility gateway to the recreational opportunities of Fish Creek Park for all Calgarians.



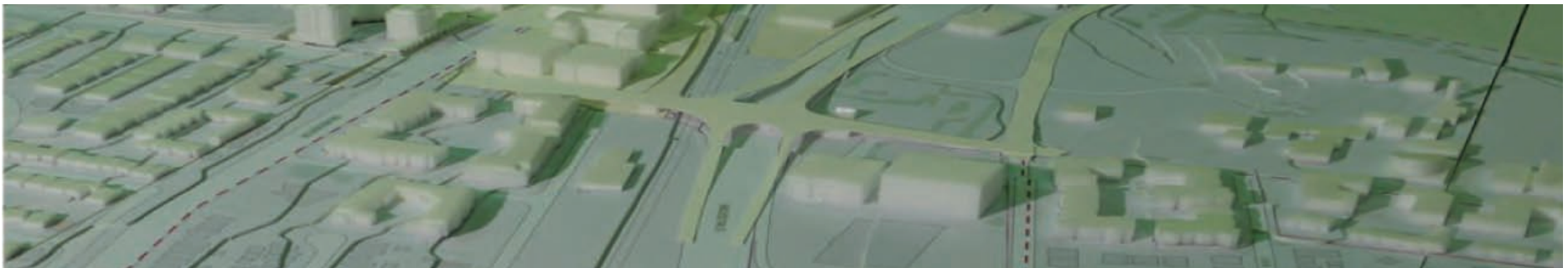
### 2.1.3 Workshop Design Interventions

During the finalization of the complete station area concept, 38 specific implementations ideas were identified by the workshop volunteers, these are listed below. The realization of the vision statement, the actualization of the 17 themes, the six guiding principles, and the 38 action items requires implementation that is interdependent and interrelated.

One major city building idea promoted by the workshop participants was a new interchange linking James McKeivitt Road and 146 Avenue SW to Macleod Trail.

This intersection is not required to meet automotive regional network function, as shown in the transportation analysis, but would create a more pleasant pedestrian environment along the primary station area street (Shawnee Gate) and reduce automotive traffic in the heart of emerging transit and pedestrian focused community. A direct linkage could be created with this intersection for improved pedestrian and bicycle connectivity East/West and would likely improve motorist safety along Macleod Trail with improved merge conditions and safer crossing of the rail corridor.

1. Transit plaza/gathering place
2. Skating at the station
3. Relocate bus access
4. Fish Creek interpretive centre
5. Greenway to the park
6. Ridge vista park
7. Cleaning water to the river
8. Mobility lane
9. Transit lobbies
10. Shawnee Gate complete street
11. Live/work avenue
12. East/west LRT platform access
13. Bike share at the station
14. Celebrating history: Buffalo run; pioneer families/homestead; Lacombe legacy; natural heritage; churches/cemeteries
15. Walking routes to the neighbourhood/LRT
16. James McKeivitt mobility connection
17. Macleod urban interchange
18. Taming Bannister Road
19. Working in the station area
20. Living in the station area
21. Learning in the station area
22. Top of ridge trail
23. St Mary's great lawn
24. St Mary's new building program
25. Lacombe House expansion
26. St Mary's student housing
27. Two churches: cultural heritage gateway to SMUC
28. Improved access to Glennfield gateway
29. Accessing Fish Creek:
  - a. Shawnee neighbourhood
  - b. Shawnee Gate aperture
  - c. Cantilevering across Bannister Road
  - d. Nursery site link
  - e. Glennfield gateway
30. Arts and recreation at the station
31. Shawnee Drive promenade
32. Reurbanization over time (nursery, school board site, SE Macleod/Bannister blocks)
33. District energy at LRT
34. Greening the roofs
35. Greening the streets
36. Discovery Walks: learning, environment, history, mobility
37. 146 Avenue / James McKeivitt Road bikeway
38. 5 Street bikeway







COMMUNITY PLANNING AND DESIGN WORKSHOP | OVERALL CONCEPT

## 2.2 Guiding Principles



01

### Demonstrate Innovation and Excellence in Environmental Performance

Fish Creek-Lacombe Station will be a LEED-ND model sustainable community that embodies leading edge techniques in sustainable development. The Station Area will incorporate site design and architecture that allows for on-site stormwater management, urban agriculture, green roofs, renewable and district energy systems and communicate these features to the public.



04

### Create a Complete, Transit-Oriented Community

The Station Area will be home to a variety of land uses at MDP minimum densities, including space for living, working, learning, and recreating. Residents, workers, and students will find their daily needs met by the neighbourhood's shops, services, and amenities. Pedestrian-oriented retail and services close to home and close to the station will support a transit-centred lifestyle, while visitors will find a unique destination steps from the LRT.



02

### Prioritize Low-Impact Modes of Transport

Transit-oriented development will transform the station into a multi-modal mobility hub that links the LRT with walking, cycling, and buses. The Station Area will be organized around a network of well-designed, pedestrian- and cyclist-friendly complete streets and public spaces and offer improved connections to surrounding communities, St. Mary's University College, and Fish Creek Provincial Park.



05

### Serve as a Gateway to Fish Creek Park

Fish Creek-Lacombe will become the city's premier gateway to Fish Creek Provincial Park, with sightlines and view corridors connecting the Station Square to the park and improved links via trails and sidewalks. Wayfinding, interpretive signage, and public art will all serve to reinforce this link and to communicate the history of the area in terms of landscape and culture. Recreation and interpretive activities will play an important role throughout the station area.



03

### Make Great Public Spaces

Working with the station area's topography, a reorganization of the LRT-bus connection will open up new possibilities for an animated and vibrant Station Square, linked to surrounding communities and Fish Creek Park through a well-designed streetscape. All buildings will have an active street level, with townhomes, retail, office, or live-work spaces animating the sidewalk, and high quality, landmark architecture employed on taller buildings along the LRT and Macleod Trail.



06

### Benefit Surrounding Communities

Reurbanization and development of the Station Area will provide new amenities and services for residents of nearby established communities. The LRT station will become a mobility hub for more than the immediately surrounding blocks by improving access to transit, amenities, and services, and improving walking and cycling links to Fish Creek Provincial Park and St. Mary's University College.



# 3.0 Workshop Concept

## 3.1 Land Use

### 3.1.1 Land Use Overview

With workshop participants informed by MDP policies, urban design principles, and existing area conditions, the land use pattern was defined. Mixed use, both vertical and horizontal, is the preferred approach.

Encouraged uses include:

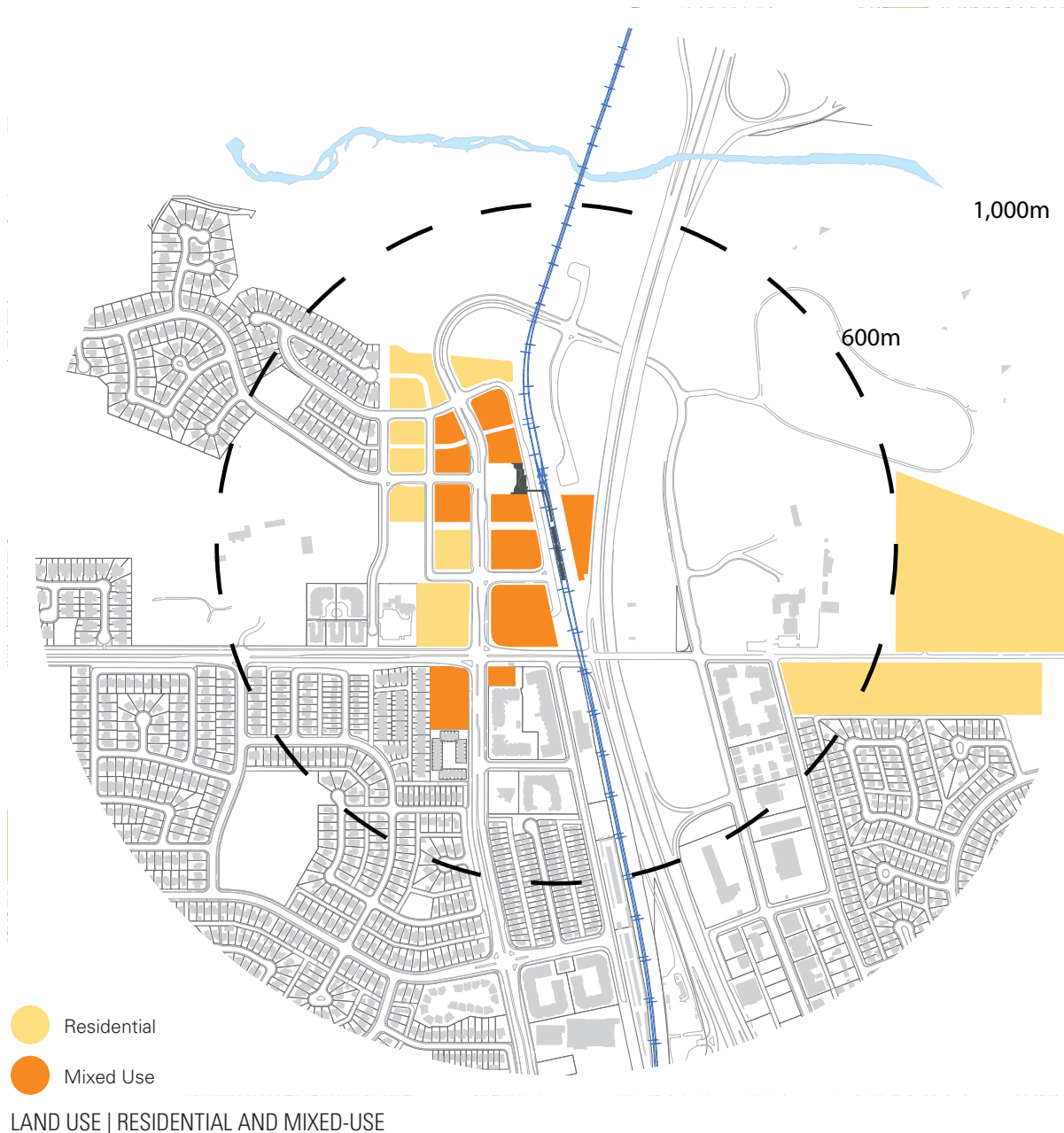
1. Employment uses such as offices or hotels;
2. Street-oriented retail and restaurant uses integrated into mixed use buildings with active pedestrian edges;
3. Residential uses including ground-oriented townhomes, mid-rise apartments, and high-rise towers;
4. Affordable housing for families and older adults including non-market rental, entry-level rental, co-op, and attainable housing; and
5. Institutional uses including housing for older adults or students, health care, community facilities, and educational institutions.

Discouraged uses include:

1. Auto-oriented uses such as: stand-alone gas stations; auto parts, repair or service; car washes; drive throughs; car dealerships;
2. Low-intensity industrial uses such as bottle depots; warehouses; storage facilities; and
3. Large-format retail above 2,500m<sup>2</sup> or with a street frontage in excess of 20m.







### 3.1.2 Residential Uses

Residential uses should include a mix of different dwelling types, ranging from ground-oriented and stacked townhomes to apartments. Residential uses should:

1. Locate primarily to west of LRT and south of SMUC (between 146 Avenue / Providence Boulevard and established Midnapore);
2. Mix of unit types including towers and ground-oriented townhomes;
3. Target affordability and ensure that a portion of units are suitable for families and for older adults, particularly in close proximity to the LRT station and the Father Lacombe Care Centre; and
4. Consider integrating student housing for SMUC into the mix of residential units.

### 3.1.3 Local Commercial Uses

Retail and restaurants should be street-oriented (parking on-street, underground, structured or at rear). Retail and restaurant uses are encouraged to be recreation oriented and to leverage their proximity to Fish Creek Park. These uses should be focused on the following spaces:

1. The Station Square;
2. Shawnee Gate (from James McKeivitt Drive to just past the north entry to the LRT-level service road);
3. Shawnee Drive (from Shawnee Gate halfway to 6 Street);
4. To the immediate east of the LRT station; and
5. Along the northern edge of the station area, adjacent to Fish Creek Provincial Park.

### 3.1.4 Employment and Institutional Uses

Employment uses should be in close proximity to the LRT station and provide for a flexible range of different employment activities including offices and hotels. Employment uses should:

1. Locate primarily on lands between the LRT and Macleod Trail and on east side of Macleod Trail to the west of St. Mary's University College;
2. Encourage one or two floors of office space above retail in areas with active pedestrian edges, with opportunity for residential above; and
3. Occupy mid- or high-rise tower with podium base and provide for more employee-intensive use of space.

Transit oriented development at Fish Creek-Lacombe should include a variety of community and institutional facilities. Community and institutional uses should:

1. Be integrated with mixed use development at the Station Square and immediately east of the LRT station;
2. Provide for indoor and outdoor cultural creation and performance space;
3. Support recreational and interpretive facilities at the Station Square or at ground level along the northern edge of the station area, adjacent to Fish Creek Provincial Park; and
4. Encourage and support the continued growth of St. Mary's University College in a form that integrates with Midnapore, Fish Creek Provincial Park, and redevelopment along Bannister Road.





### 3.2 Built Form and Height

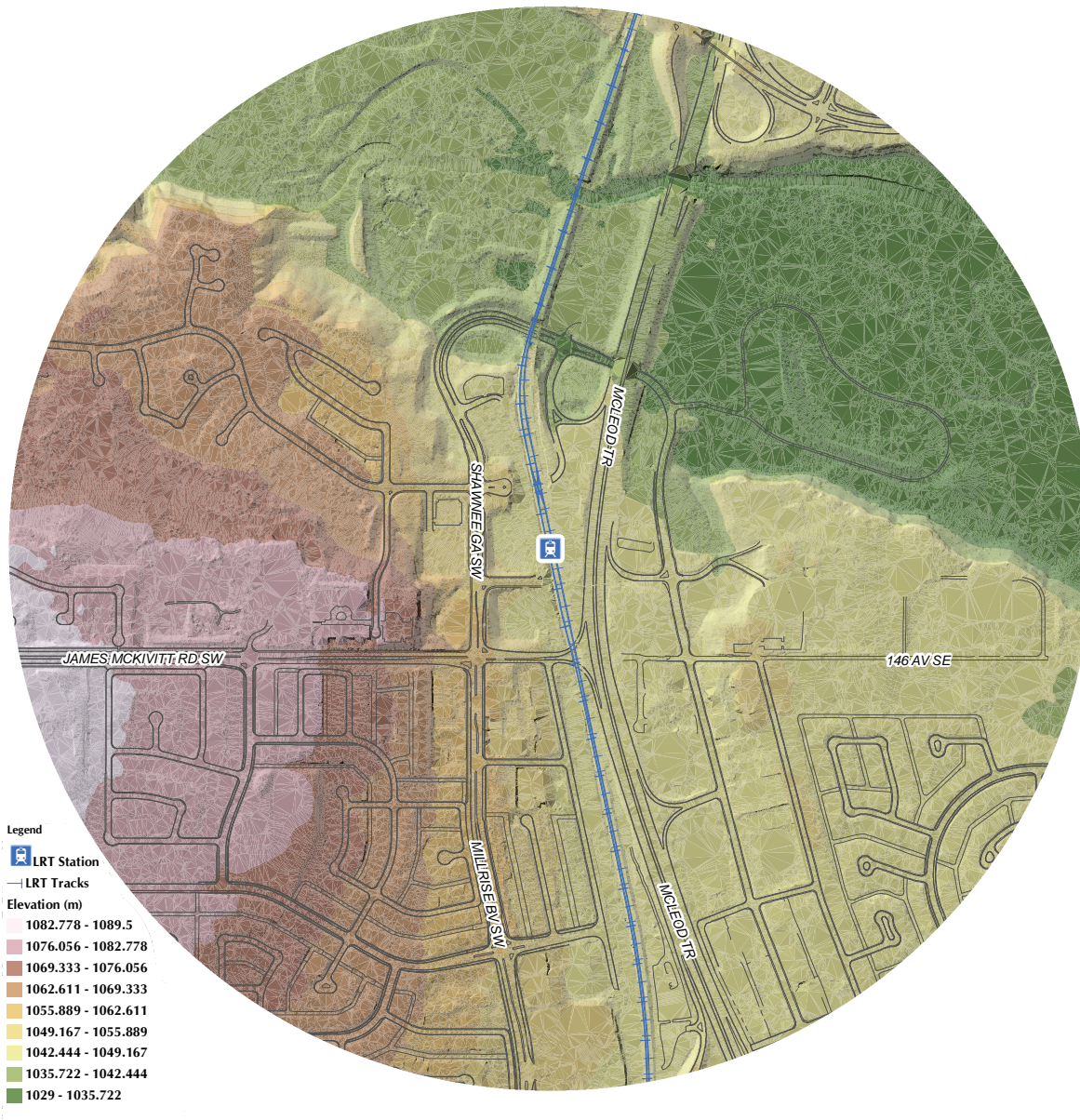
Workshop participants concluded that building height should follow the existing topography within the Station Area and be anchored by the LRT station. The LRT station is near the lowest point with the land raising quickly to the West and less so to the East.

The major transportation corridors of the LRT, heavy rail and Macleod Trail are nestled in the low valley running North/South, with lower density residential neighbourhoods along the higher escapement edges.

Building heights should respect the sloping topography, with lowest building heights on the highest points and the tallest buildings along the transportation corridor.

The community's suggestions for building form and height include the following:

1. Across the Station Area, building height should not exceed the height of four storeys from street level at Sixth Street immediately north of James McKevitt Road, or an approximate elevation of 1,090m above sea level.
2. Building heights should be in the range of 14-16m (lightest shade on the map on page 27) to 40-55m (darkest shade on the map).
3. The tallest buildings should be located close to the LRT station, with buildings gradually becoming lower with distance from the LRT station and as the ground elevation rises.
4. Taller buildings should step down to meet lower buildings, ensuring that shadowing impacts are minimized, and creating appropriate interface conditions with adjacent lower density forms.



TOPOGRAPHY



Community suggestions for building form and height (continued):

1. Residential building forms should transition from ground-oriented townhomes on the western edge of the site, adjacent to Shawnee Slopes, to apartment towers on townhouse and/or commercial podiums towards the LRT station.
2. Any portion of a building over 16m in height should be separated from any other portion of a building over 16m in height by at least 24m.

To support pedestrian priority design:

3. Larger blocks, especially running north-south, should be broken up by streets or public spaces to allow easier pedestrian and cyclist access to LRT station.
4. The ground floor of any building should feature commercial-retail units no more than 18m in width with frequent street entrances.
5. Development should be built close to the street, with a minimum setback of 1m for residential uses and a maximum setback of 3m for all uses.

To promote sustainable community design:

6. Buildings are encouraged to incorporate sustainable features such as stormwater capture and storage, usable green roofs, geothermal and solar arrays for water heating and electricity generation.
7. Buildings should make provision for connection to a hydronic network for a district energy system, to the satisfaction of the City.



#### BUILDING HEIGHT

<sup>1</sup> With the exception of the Highbury Residential Tower (DP 2006-1891) with three towers approved up to 45m or 1109.3m geodetic elevation.

<sup>2</sup> Floodplain and floodway not determined, subject to review at application.



### 3.3 Public Realm

To support easy, safe, and enjoyable pedestrian access to the LRT platform, and throughout the community, the workshop participants supported a hierarchy of pedestrian networks, with a high level of design quality.

#### 3.3.1 Active Pedestrian Edges

Active pedestrian edges are indicated as red lines on the figure at right. Building facades on these edges should contribute to animating the sidewalk and creating a vibrant pedestrian realm.

1. Land uses should be active and ground-oriented, including retail and restaurants.
2. Primary building entrances and individual tenant entrances should be clearly identifiable and accessible to the street edge and sidewalk.
3. Development should be designed to provide outdoor areas for seating or retail display.
4. All frontages should maintain a minimum 70 percent transparency at a height of one meter, providing views not merely of display windows, but of actual building interiors.
5. Development should incorporate an awning, canopy, or other architectural feature providing shelter for pedestrians from rain and snow.
6. Parking access, servicing and loading functions should not be located along active pedestrian edges.
7. Large lobby frontages or other inactive frontages are strongly discouraged.
8. Development should be set back no more than 3m from the property line.
9. On-street parking is encouraged to allow for access to sidewalk-oriented businesses and to buffer pedestrians from moving traffic.



### 3.3.2 Secondary Pedestrian Edges

All other block edges (outlined in black on the previous map) are designated as secondary pedestrian edges. Building facades on these edges should create a pleasant and safe sidewalk environment and can be occupied by less active ground-level uses, such as residential dwellings or offices.

1. Land uses can include a variety of forms, including ground-oriented dwelling units such as townhomes, or office space.
2. All residential development should meet the street with ground-oriented townhome forms with individual entries and private outdoor spaces set back no less than 1m and no more than 3m.
3. Large lobby frontages or other inactive frontages are strongly discouraged.
4. Office development should maintain a minimum 50 percent transparency at a height of one meter, providing views not merely of display windows, but of actual building interiors.
5. Office development should incorporate an awning, canopy, or other architectural feature providing shelter for pedestrians from rain and snow.
6. Limited access to internal parking, servicing and loading areas is permitted on secondary pedestrian edges provided that this extends no more than 20m in frontage width.

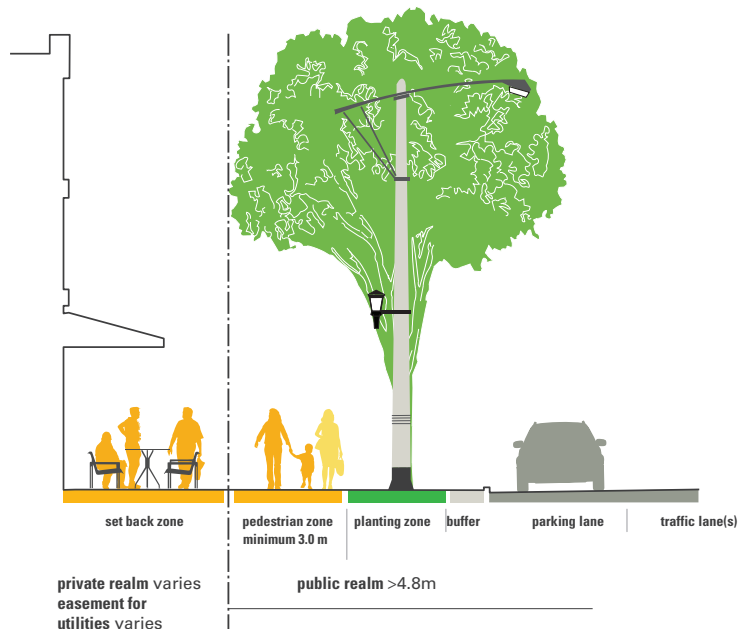




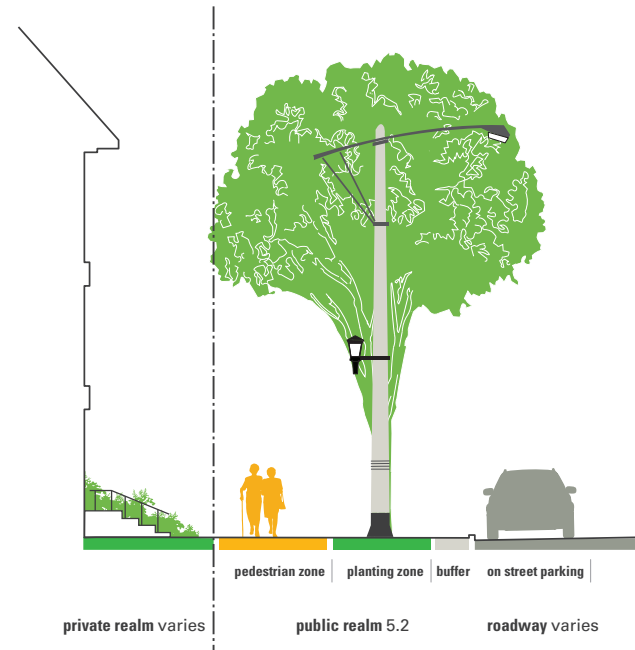
### 3.3.3 Street and Infrastructure Design

Extending from the Station Square, the street network represents the principal public space at Fish Creek-Lacombe. High quality, pedestrian-oriented street design is essential to ensuring that this network becomes a safe, convenient, and attractive environment for residents, workers, visitors, and transit riders.

1. Existing street designs should be retrofitted to meet the complete street typology standards currently under development by the City.
2. Traffic should be slowed down at intersections by narrowing roadway widths, bumping out corners, and using crosswalks with distinctive pavement treatment and highly visible markings.
3. Street trees should be provided at an interval of twelve meters, and should be installed in a tree vault designed to accommodate the root and branching space for a 25 year old tree.
4. Street furniture, lighting, signage and landscaping should be oriented towards the needs of pedestrians and cyclists.
5. All curbs at crosswalks and intersections should accommodate wheelchair ramps to ensure universal accessibility.
6. Stormwater management techniques should be incorporated into streetscape design elements, such as landscaped medians, sidewalk planters and pervious paving
7. Access to parking, loading, and servicing areas should be located behind buildings or in laneways, not between buildings and streets, in order to minimize any impact on pedestrian movement.



INDICATIVE SECTION | ACTIVE PEDESTRIAN EDGE WITH COMMERCIAL FRONTAGE



INDICATIVE SECTION | ACTIVE PEDESTRIAN EDGE WITH RESIDENTIAL FRONTAGE

### 3.3.4 Public Spaces and Parks

Consistent with MDP policies regarding open space in MAC's, the focus will be on an urban environment with high quality public spaces providing a variety of activities.

To support improved pedestrian access and provide a central urban amenity, workshop participants sought to develop a high quality public square adjacent to the LRT station by transforming the current bus loop into a 'Station Square'. The Station Square should:

1. Include a major landscape feature, such as a fountain, pool, or outdoor skating rink;
2. Prominently display public art on a rotating and/or permanent basis;
3. Be designed and equipped to support a variety of programming; and
4. Be complemented by a smaller public space to the east, serving to link the LRT station with employment uses and SMUC.

West to east mid-block passages should be created to break-up the larger blocks and allow for easier access to the LRT station. These mid-block passages should:

1. Take advantage of the topography in order to integrate seating and activity areas into the landscape, while remaining fully accessible;
2. Offer access to ground-oriented residential dwellings and office space; and
3. Incorporate permeable surfaces and visible, engaging stormwater management features.

Links to the natural environment should be provided by:

1. Maintaining the 6 Street Aspen Grove in a natural state; and
2. Applying a parkway design to Shawnee Gate and Bannister Road that integrates natural features and a continuous tree canopy.



### 3.3.5 Heritage and Sense of Place

The Station Area includes several assets that Fish Creek-Lacombe can build on in order to create a unique sense of place. Heritage elements should be integrated into the overall plan for transit oriented development.

Recommendations relating to heritage and sense of place include:

1. Enhancing and re-orienting the church grounds and cemeteries on the east side of Macleod Trail to better integrate with the St. Mary's University College campus, Bannister Road and the landing of the existing pedestrian crossing of Macleod Trail as well as any future crossing at James McKevitt Road/146th Avenue;
2. Wayfinding signage should be provided to improve access from the LRT station to Fish Creek Provincial Park (to the west and east of Macleod Trail), St. Mary's University College, and surrounding established communities via sidewalks and multi-use pathways;
3. Interpretive signage and art should be prominently displayed along key walking and cycling routes from the LRT station to Fish Creek Provincial Park that integrate ecological, historical, and recreational content; and
4. Commercial signage should be oriented towards pedestrians in the public realm and should not include large automobile-oriented advertising.

### 3.3.6 Fish Creek Provincial Park

Station Area redevelopment should incorporate the following features to improve links with Fish Creek Provincial Park:

1. Protect a visual connection to the park from the Station Square (Shawnee Gate at Shawnee Drive);
2. Ensure active residential frontages facing the ridge adjacent to Shawnee Rise and the stormwater pond at the north end of Shawnee Gate;
3. Ensure active commercial frontages along the northern edge of the station area, adjacent to Fish Creek; and
4. Improve the access to the Glennfield Day Use area in Fish Creek Park through better signage and landscaping and improved facilities for walking and cycling.



### 3.3.7 St. Mary's University College

Station Area redevelopment should incorporate the following features to improve links with St. Mary's University College:

1. Ensure that the campus provides public space that links the established community of Midnapore with Fish Creek Provincial Park;
2. Provide a visual connection from the heart of the campus to the LRT station;
3. Establish, through landscape design, a gateway at Bannister Road that creates a sense of arrival for all modes of travel; and
4. Allow public access to the ridge bordering Fish Creek Provincial Park and incorporate this space into the overall campus master plan.





## 3.4 Mobility

### 3.4.1 Street Network

One of the core principles of transit-oriented development is the creation of a more urban style connected street grid focused on the transit station that offers more direct routes for walking and cycling.

Typically the best mobility network for a higher-density, mixed use transit-oriented community is a grid pattern of streets with small block sizes.

The following recommendations involve changes and extensions to complete the street network:

1. Connect Shawnee Rise with Shawnee Gate by extending the LRT-level service road;
2. Create an additional local residential street running south from Shawnee Drive to the south end of the existing Park-and-Ride lot; this street should connect to the LRT-level service road and could be designed as a 'shared space' that blends pedestrian and vehicle areas;
3. Convert the portion of Shawnee Drive located between the LRT and Macleod Trail into a low-volume service road for access to adjacent employment uses and the LRT station; consider designing this street as a 'shared space' that blends pedestrian and vehicle areas; and
4. Retain and extend the LRT-level service road and use this for LRT passenger drop-off/pick-up, bus transfer, and access to the lower level of properties fronting onto the Station Square.

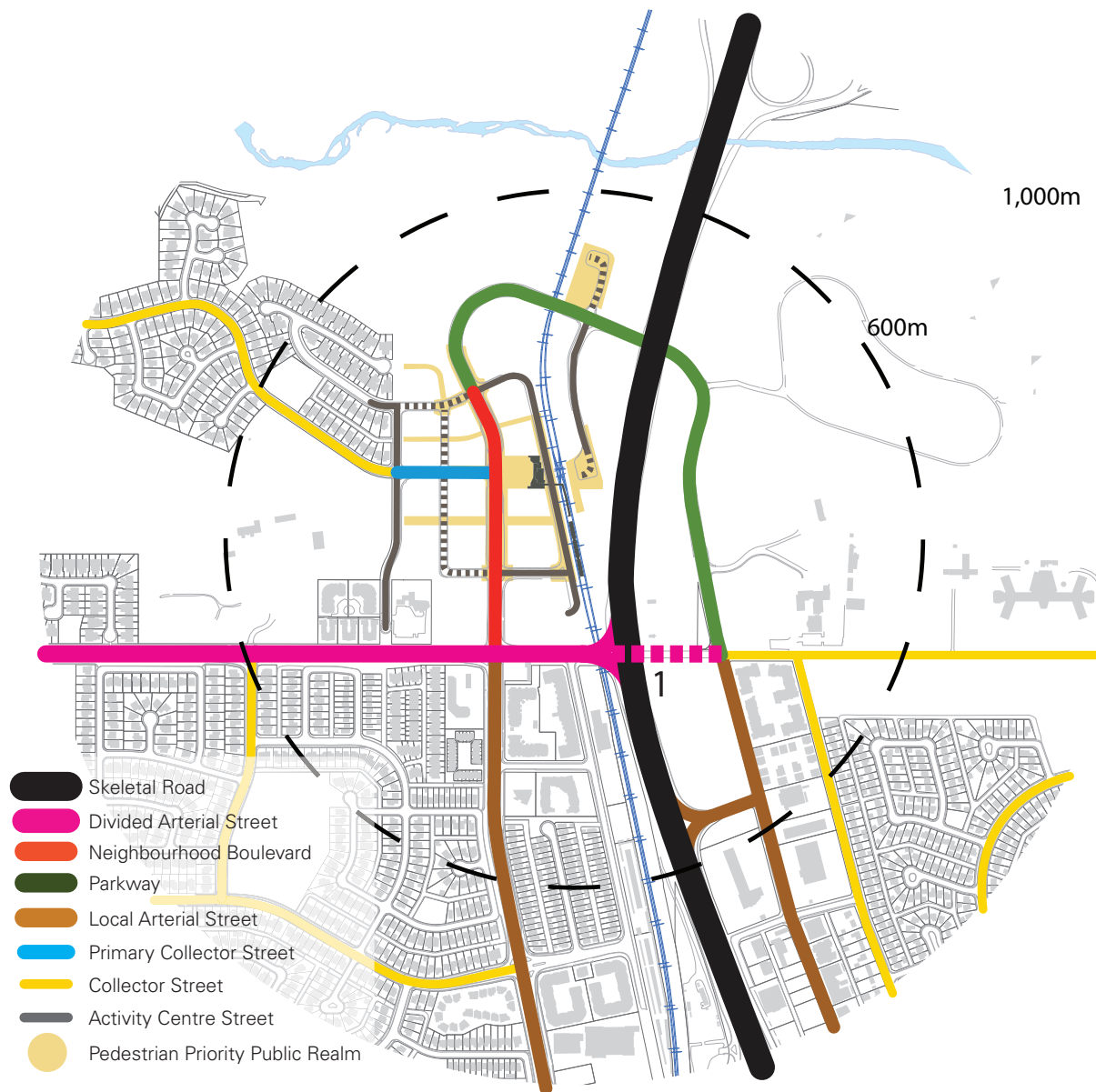
Network wide improvements include:

1. An additional northbound core lane on Macleod Trail from James McKeivitt Road to Lake Fraser Gate
2. Signalization of all intersections on James McKeivitt Road, east of Evergreen Street.



STREET NETWORK | EXISTING AND PROPOSED

<sup>1</sup> Configuration of James McKeivitt Road / Macleod Trail connection to be determined



### 3.4.2 Street Classifications

#### SKELETAL ROAD | Macleod Trail

These roads promote the free flow movement of vehicular traffic over long distances and carry upwards of 45,000 vehicles per day (VPD). They operate at high speeds with limited direct access.

#### DIVIDED ARTERIAL STREET | James McKeivitt Road

These streets connect multiple communities and major destinations and carry up to 30,000 VPD as well as much of the Primary Transit Network. Green infrastructure strategies may include swales, rain gardens, filter strips, and native vegetation.

#### NEIGHBOURHOOD BOULEVARD | Shawnee Gate

These streets are liveable, well-designed destinations for the local communities surrounding them while providing a high level of connectivity. Walking and cycling are prioritized.

#### PARKWAY | Bannister Road

These roads are often adjacent to natural parks, waterways, or special public institutions. Natural vegetation and new forms of storm water management are integrated with the street, while walking and cycling are given highest priority.

#### LOCAL ARTERIAL STREET | Millrise Boulevard

These streets provide connections between communities and destinations where traffic volumes are less than 15,000 VPD, providing more local access than Divided Arterials.

#### PRIMARY COLLECTOR STREET | Shawnee Drive

These streets generally serve transit and up to 12,500 VPD. They can be divided or undivided, include parking, and have 2 or 4 travel lanes. Direct access from adjacent properties is usually limited.

#### COLLECTOR STREET | Multiple

These streets collect and distribute traffic from arterial streets to lower standard streets, serving up to 5,500 VPD. Transit and direct access to adjacent properties are permitted.

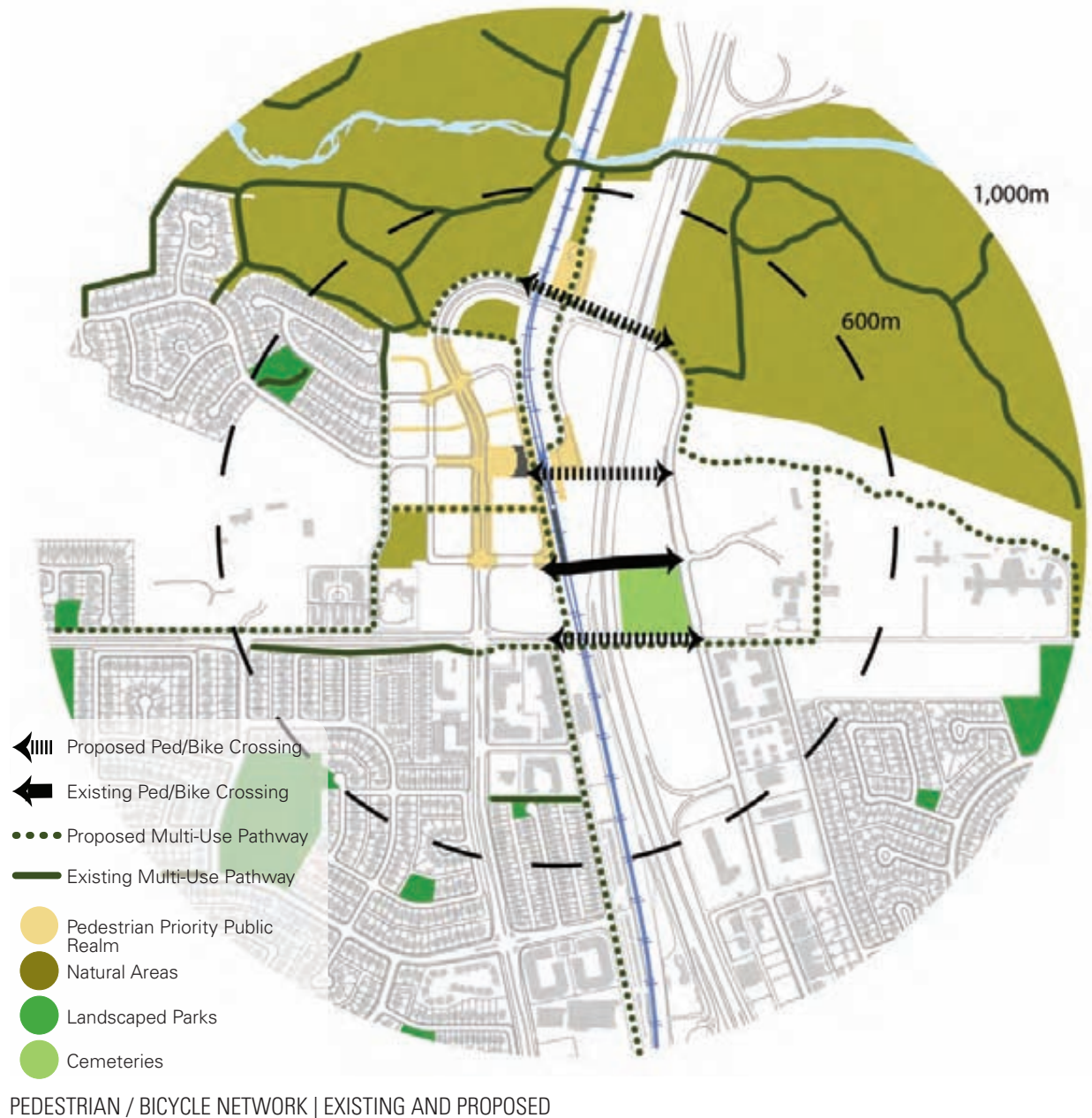
#### ACTIVITY CENTRE STREET | All other roadways

This new street classification supports major activity centres, commercial, and residential land uses. They typically have parking on both sides with two low speed travel lanes, with walking and cycling prioritized.

### 3.4.3 Walking and Cycling

Prioritizing walking, cycling, and transit is a central component of the Calgary Transportation Plan, and a key element in successful transit-oriented development. The following improvements are recommended to create a safe, convenient, and attractive environment for walking and cycling as a means of accessing the transit and for moving throughout the Station Area:

1. Extend the station overpass to east side of LRT alignment to provide access to lands between LRT and Macleod Trail and allow grade access from the LRT platform to both sides of the LRT.
2. Upgrade the Shawnee Gate/Bannister Road underpasses to include a full sidewalk on the south side and a multi-use pathway to the north.
3. Upgrade Bannister Road to include street trees, full sidewalks and a crosswalk at the Glennfield access to Fish Creek Provincial Park.
4. Provide sidewalk and/or multi-use pathway access from Shawnee Gate/Bannister Road through to Fish Creek Provincial Park, between the LRT and Macleod Trail.
5. Connect the LRT station with the existing multi-use pathway network via a new crosswalk at the start of the curve in Shawnee Gate.
6. Extend the multi-use pathway network from the LRT to the west (to James McKeivitt Road at Millrise Hill) and south (with a protected right-of-way across James McKeivitt Road to 5 Street).
7. Safe, convenient, and secure bicycle parking facilities should be provided for station area employees as well as transit riders arriving by bicycle in close proximity to the LRT station.



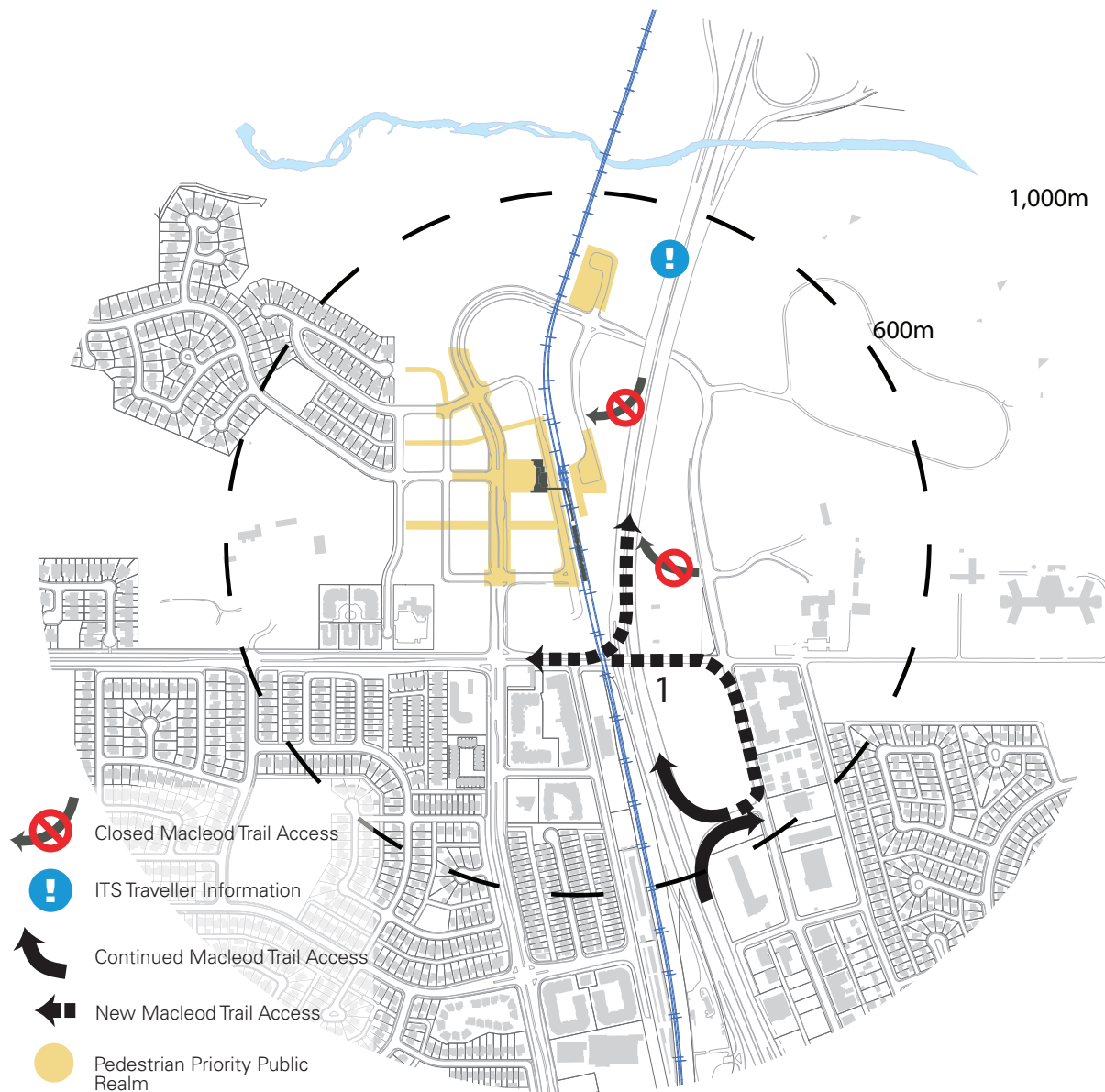


### 3.4.4 Macleod Trail Access

Macleod Trail offers Fish Creek-Lacombe high visibility to the regional road network and carries significant traffic volumes. Transportation analysis indicates that the modelled automotive volumes generated by redevelopment can be handled by the road network as planned for 2039.

The City's MDP and TOD Policy Guidelines, as well as public input from the Community Planning and Design Workshop, support opportunities to reduce vehicle traffic within the Station Area, thus creating a safer and more pedestrian-focused environment. The following improvements simplify Macleod Trail access:

1. Remove the Bannister Road exit and the Bannister Road/145 Avenue entrance, reducing weaving sections on Macleod Trail and opening land for redevelopment;
2. Maintain access to and from Bannister Road from Macleod Trail (northbound) via 149 Avenue;
3. In the short term, add dedicated intelligent transportation system (ITS) signage to highlight the status of the level crossing on the Macleod Trail (SB) to James McKeivitt Road (WB) exit to reduce danger from queuing;
4. In the longer term, provide grade separation across the LRT/CPR right-of-way and Macleod Trail for the following movements: James McKeivitt Road (EB) to Macleod Trail (NB and SB) and Macleod Trail (SB) to James McKeivitt Road (WB) in order to reduce traffic on Shawnee Gate;
5. Extend the fourth northbound lane on Macleod Trail through Lake Fraser Gate; and
6. Ensure that any grade separated vehicle crossing of the LRT/CPR right-of-way and Macleod Trail also provides safe, convenient, and attractive facilities for all users.



#### MACLEOD TRAIL ACCESS

<sup>1</sup> Configuration of James McKeivitt Road / Macleod Trail connection to be determined

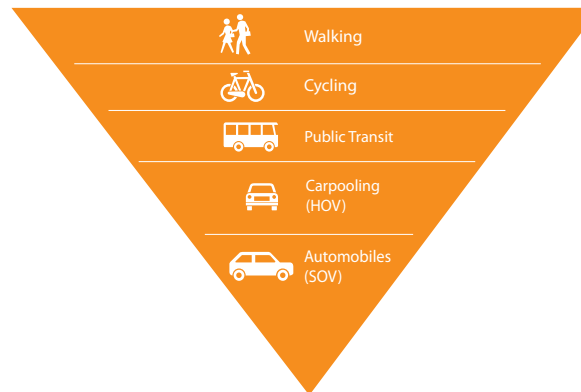
### 3.4.5 Parking and Demand Management

Calgary Transit currently provides 1,350 park-and-ride spaces operated at Fish Creek-Lacombe. As these surface parking facilities transition to higher density, mixed use, development, parking will be required for these uses. The following recommendations address new parking:

1. Parking (including park-and-ride spaces) should be underground or structured; a maximum of 10% of the required parking for commercial uses (retail, restaurant, office) may be provided as landscaped surface parking located to the rear of a building (not between a building and a street).
2. Required off-street parking may not be located between a line extending from the front façade of any structure to the side property lines and any public street fronting that lot.
3. Where parking is located in an above grade structure, grade-level frontages should be pedestrian-oriented (active or secondary).
4. On-street parking is encouraged in order to support sidewalk-oriented businesses and buffer pedestrians from moving traffic; on-street parking should be managed by the City to minimize use as park-and-ride.
5. Access to parking, loading, and servicing areas should be located behind buildings or in laneways, not between buildings and streets, in order to minimize any impact on pedestrians; consider how each site's topography can be used to hide these areas and their access points.

Parking requirements should be determined by consultation of Land Use Bylaw 1P2007 and are subject to the following modifications:

1. Parking reductions for affordable housing initiatives should be encouraged.
2. Parking relaxations for small scale, ground floor commercial uses should be encouraged for mixed use buildings.
3. Shared parking facilities are strongly encouraged to reduce the total number of spaces required, reduce development costs, and to reduce the amount of space required to facilitate parking.



DEGREE OF SUSTAINABILITY OF TRAVEL MODES | CALGARY TRANSPORTATION PLAN



# 4.0 Implementation

## 4.1 Status

This design summary is intended to act as a non-statutory local area plan to guide the review of development proposals within the station area. The infrastructure impact assessment (mobility and water networks) determined the required improvements to facilitate TOD within the Fish Creek-Lacombe Station Area over the next 30 years, and the network impacts of an application to rezone the Shaw-Nee Slopes Golf Course. The design summary provides the City of Calgary staff and City Council the required information to evaluate any development proposals within local area.

Planning applications should also be assessed by means of the City's Transit Oriented Development Guidelines, the Municipal Development Plan, the Calgary Transportation Plan, the Revised Midnapore Phase Two Area Structure Plan, and the City's Land Use Bylaw 1P2007.

The demand for infrastructure improvements will be driven by individual development proposals. The level of required improvements will be dependent on the location, intensity and timing of the specific proposal. Since an application for development is based on the market conditions over a long period of time, a comprehensive phasing of infrastructure improvements is not currently feasible.

Planning applications shall be required to include a Transportation Impact Assessment containing sufficient information to enable the Approving Authority to assess the likely impact on the mobility

network, including connectivity for pedestrians and cyclists, the impact on transit operations, and the performance of specific intersections.

Development applications which are likely to generate vehicle movements which cannot be satisfactorily accommodated by the road network, should not be approved.

## 4.2 Investments

Creating a high quality transit-oriented development that meets the community's vision for the Station Area will require appropriate investment on both individual sites as well as the public realm. Financing the public realm requires a partnership between the City of Calgary and private interests.

### 4.2.1 Publicly Funded Improvements

The following improvements contribute to the City's overall objectives with respect to sustainability and mobility and should be pursued through capital budget allocations:

1. Grade separation of James McKeivitt Road across the LRT and CPR right-of-way;
2. Removal of Bannister Road/145th Avenue entrance ramp and Shawnee Drive exit ramp; and
3. Overpass from Station Square to the east side of LRT and CPR right-of-way, with potential extension to the east side of Macleod Trail.

Multi-use pathway network improvements including:

1. Connection to Fish Creek Provincial Park (consider exploring opportunities for joint funding with the Province of Alberta).
2. Top of ridge connection from 6 Street along James McKeivitt Road to Millrise Hill; and
3. Connection from LRT-level service road to Fifth Street SW, to be extended south of James McKeivitt Road as other improvements allow.

### 4.2.1 Development Funded Improvements

The following improvements may be partially funded by adjacent development:

1. Station Square public realm improvement and expansion and bus loop replacement;
2. Non-Skeletal Road network and right-of-way improvements identified by Transportation Impact Assessments;
3. New public spaces including the 6 Street Aspen Grove, the mid-block passages, and new streets;
4. Streetscape enhancements including: sidewalks, street trees, landscaping, street lighting and furniture, wayfinding and interpretive signage, and public art; and
5. Local water distribution and collection system upgrades as required and Low Impact Development stormwater management.





# Appendix A - Transportation Planning Links

The City of Calgary, Transportation Planning provides information, develops plans and policies, and recommends actions to best serve the city's current and future transportation needs. These plans and processes are guided by the 2009 Calgary Transportation Plan (CTP) which focuses on more sustainable modes of transportation and promotes more compact, fiscally-responsible urban growth.

Additional information, including detailed data sources, background discussion and method of analysis is available at:

<http://www.calgary.ca/transportation/tp/pages/transportation-planning.aspx>

<http://www.calgary.ca/transportation/tp/pages/planning/forecasting/forecasting-faqs.aspx>

<http://www.calgary.ca/transportation/tp/pages/planning/forecasting/forecasting-toolbox.aspx>

# Appendix B - Intersection Improvements

The following intersection improvements were assumed as part of the intersection performance analysis contained on Page 16 of this document.

## **Shawnee Gate and James McKevitt Road SW**

Westbound to Northbound dual left-turn bays should be provided on James McKevitt Road at the intersection with Shawnee Gate SW.

The intersection should be built or upgraded to accommodate:

1. Eastbound Dual left-turn lane: 150m each
2. Westbound left-turn lane: 90m
3. Westbound right-turn lane: 50m
4. Southbound left-turn lane: 70m
5. Southbound right-turn lane: 50m
6. Northbound left-turn lane: 100m

## **Bannister Road and 145 Avenue (access ramp to NB Macleod Trail SW):**

The interim solution is to restrict northbound left turns in the AM Peak Hour at this intersection.

The right-turn lane from Bannister Road to the 145 Avenue ramp should be adjusted. When larger corner radii are used at the right turn, vehicles can turn at higher speeds (thereby minimizing the speed differential between turning and through vehicles) and can more efficiently merge with the cross-street traffic.

## **Bannister Road and 149 Avenue (ramp to NB Macleod Trail SW):**

A signal should be provided at the intersection of Bannister Road and 149 Avenue SE to handle the re-routed left-turning traffic from northbound Bannister Road to 145 Avenue.

## **Macleod Trail S between Fish Creek Park and Lake Fraser Gate:**

Construction of an additional northbound lane on Macleod Trail under the Canyon Meadows interchange, between Fish Creek Park and Lake Fraser Gate is recommended.

## **Shawnee Gate/Bannister Road and Greengate Garden Centre Access:**

The addition of a split phase to the existing signal at the intersection of Shawnee Gate/Bannister Road and Greengate Garden Centre Access is recommended.

## **Shawnee Drive between 6th Street and Shawnee Gate SW:**

The widening of Shawnee Drive between 6 Street and Shawnee Gate SW to accommodate an additional eastbound lane and a dual left-turn bay on Shawnee Drive is recommended.

## **Shawnee Gate and Shawnee Drive SW:**

The intersection should be built or upgraded to accommodate an eastbound to northbound dual left-turn lanes (90m each).

