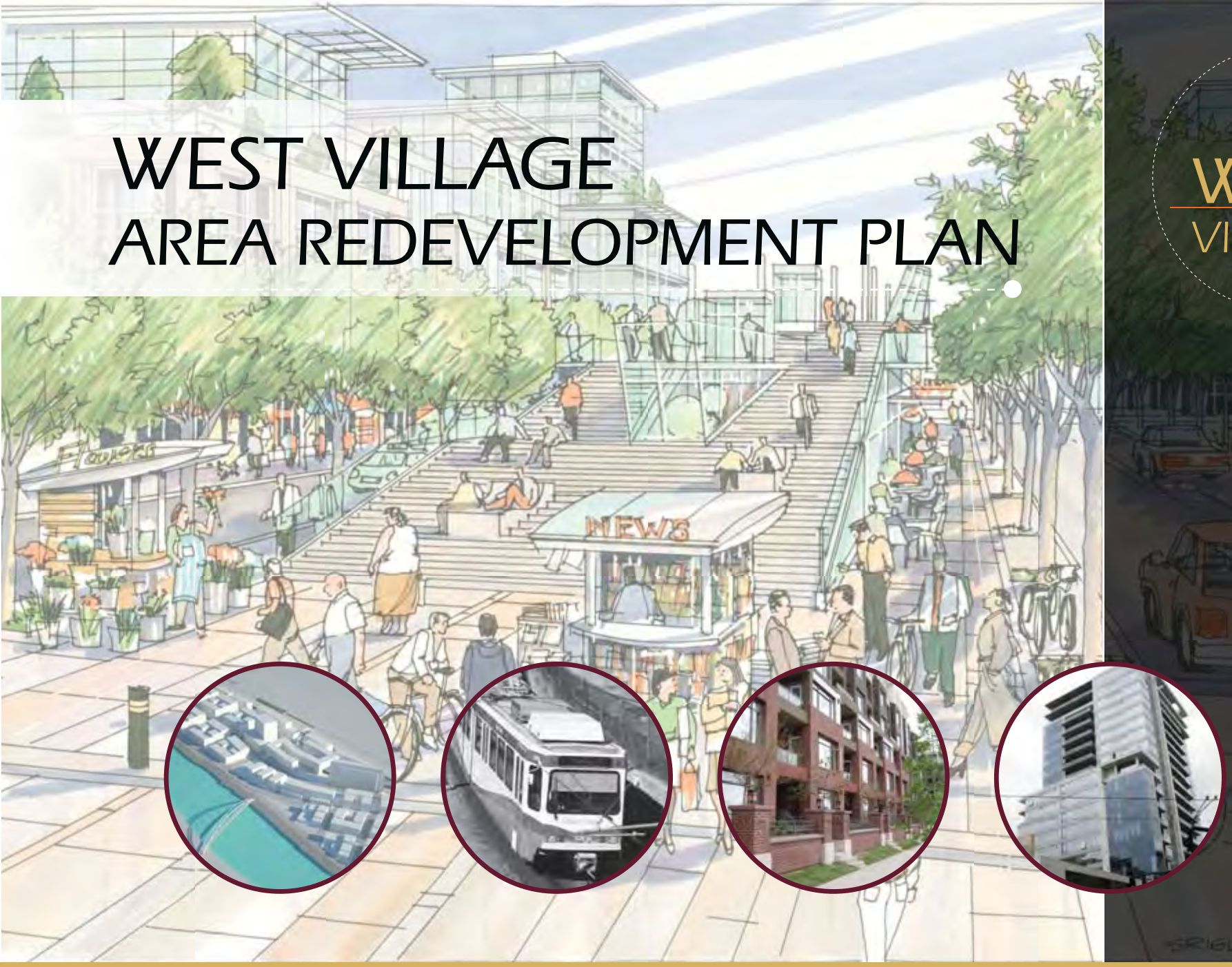
WEST VILLAGE
AREA REDEVELOPMENT PLAN

WEST
VILLAGE



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THE CITY OF
CALGARY
LAND USE PLANNING & POLICY

WEST VILLAGE

AREA REDEVELOPMENT PLAN

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INTRODUCTION




1 INTRODUCTION

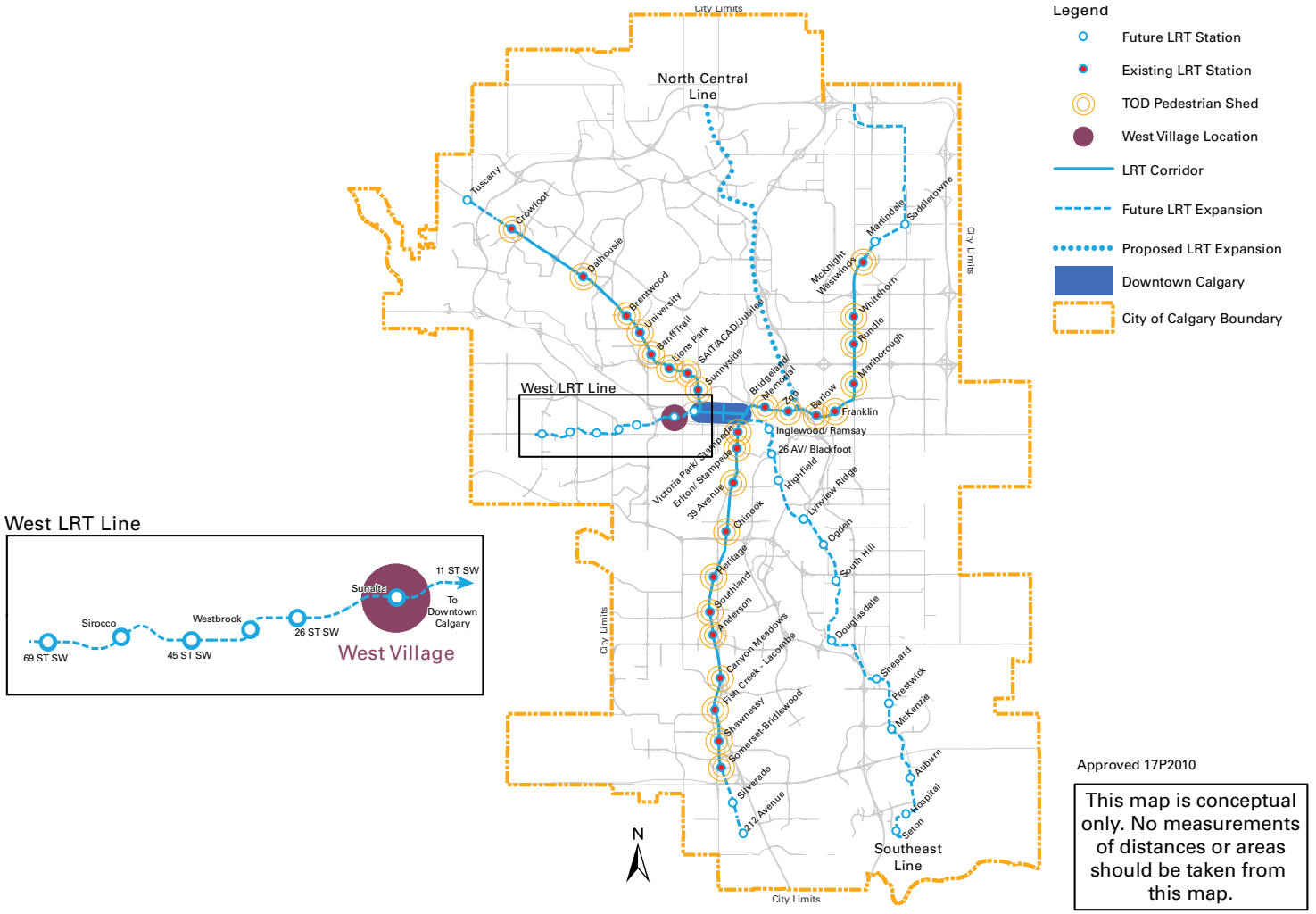
The West Village Area Redevelopment Plan (ARP or the Plan) provides the vision and guiding strategic policies through which this underutilized commercial area will be transformed. Through the Plan, this area will become an attractive, vibrant riverfront community in Calgary's inner city. West Village ARP implements The City's strategic vision to accommodate a portion of Calgary's growth within the existing municipal boundaries and to develop higher density activity nodes at rapid transit stations. The West Village Plan area extends northward from the new Sunalta Light Rail Transit (LRT) Station and so provides an ideal venue for the implementation of a mixed use, pedestrian and transit oriented, sustainable urban community on a former brownfield site.

1.1 PURPOSE AND SCOPE

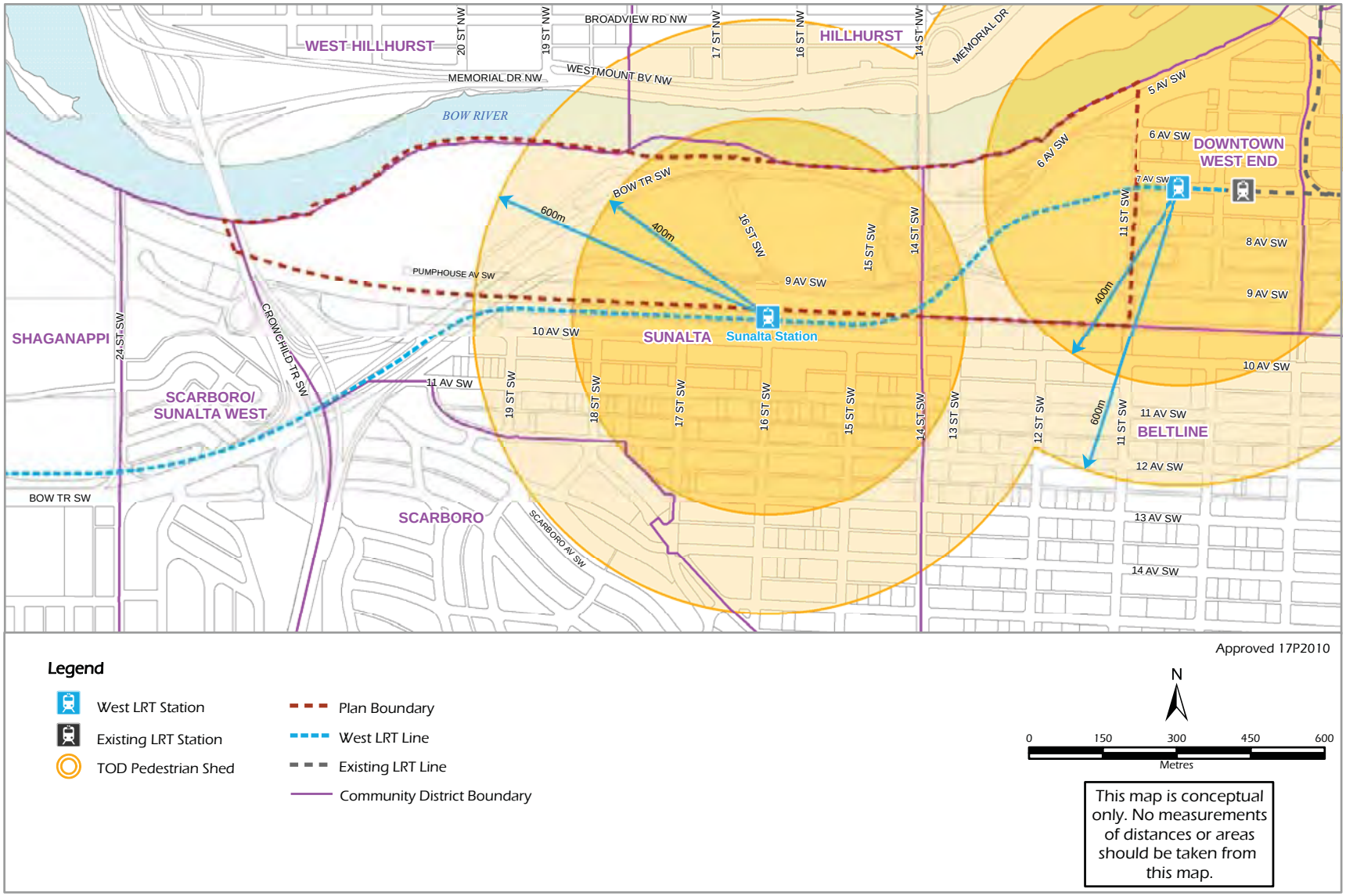
The purpose of this Plan is to provide a guiding policy framework for the long-term redevelopment of this key inner city site. The plan's primary purpose is to provide clear policy direction in key aspects such as the vision, scale, urban form and character of the area's redevelopment and the major infrastructure changes these aspects require. Based on this Plan's guidance, subsequent and more detailed analyses and design planning must still be undertaken to facilitate implementation.

West Village Site

Map 1.1: City of Calgary Light Rail Transit (LRT) System



Map 1.2: Plan Area Context



1.1.1 INTERPRETATION OF PLAN AREA BOUNDARIES

The boundaries separating different types of land uses in Map 5.1 and the boundaries separating different density ranges in Map 5.2 are intended to be conceptual only. The precise location of these boundaries, for the purpose of evaluating development proposals, will be determined by City Administration at the time of application.

1.1.2 INTERPRETATION OF SPECIFIC VERSUS GENERAL LANGUAGE

The Plan uses language that is both general and very specific in nature. Where general direction is given, flexibility should be used in the interpretation of the Plan. Where specific language is used, it is meant to give clear and unambiguous direction to both the Development Authority and the development industry.

1.1.3 NON-STATUTORY COMPONENTS OF THE PLAN

Section 6.0 Implementation and all Appendices attached to this Plan are considered to be supporting information and do not form part of the Area Redevelopment Plan.

1.1.4 LAND USE APPROVALS AND SUITABILITY OF SPECIFIC SITES

Area Redevelopment Plans are long-term planning documents by nature. As such, they promote a vision for a community and put in place policies and guidelines that work toward achieving that vision over time. Policies and guidelines in an ARP are not to be interpreted as an approval for a use on a specific site, as the policies do not address the specific situation or condition of each site within the Plan area. In that regard, no representation is made herein that any particular site is suitable for a particular purpose as site conditions or constraints, including environmental contamination, must be assessed on a case-by-case basis as part of an application for Land Use Amendment, Subdivision or Development Permit approval.

1.2 PLANNING HISTORY

The West Village area, west of 14th Street S.W., is contained within the boundary of the Sunalta Community Association. The area was previously included within the boundaries of the Sunalta Area Redevelopment Plan (ARP). The Sunalta ARP was approved by Council in 1983. In 2009, The City of Calgary made amendments to the Sunalta ARP to include the Sunalta LRT Station and implement Transit Oriented Development (TOD) policies in the area south of the LRT tracks. During this process, the area north of the LRT tracks, the West Village area, was identified as being appropriate for major redevelopment with an emphasis on mixed use and residential development, which could include a redistribution of existing open space. In 2009, the site was also the focus of a study on the feasibility of hosting Expo 2017 in Calgary. Although non-statutory, the feasibility study preceded this Area Redevelopment Plan.

1.3 CONTEXT

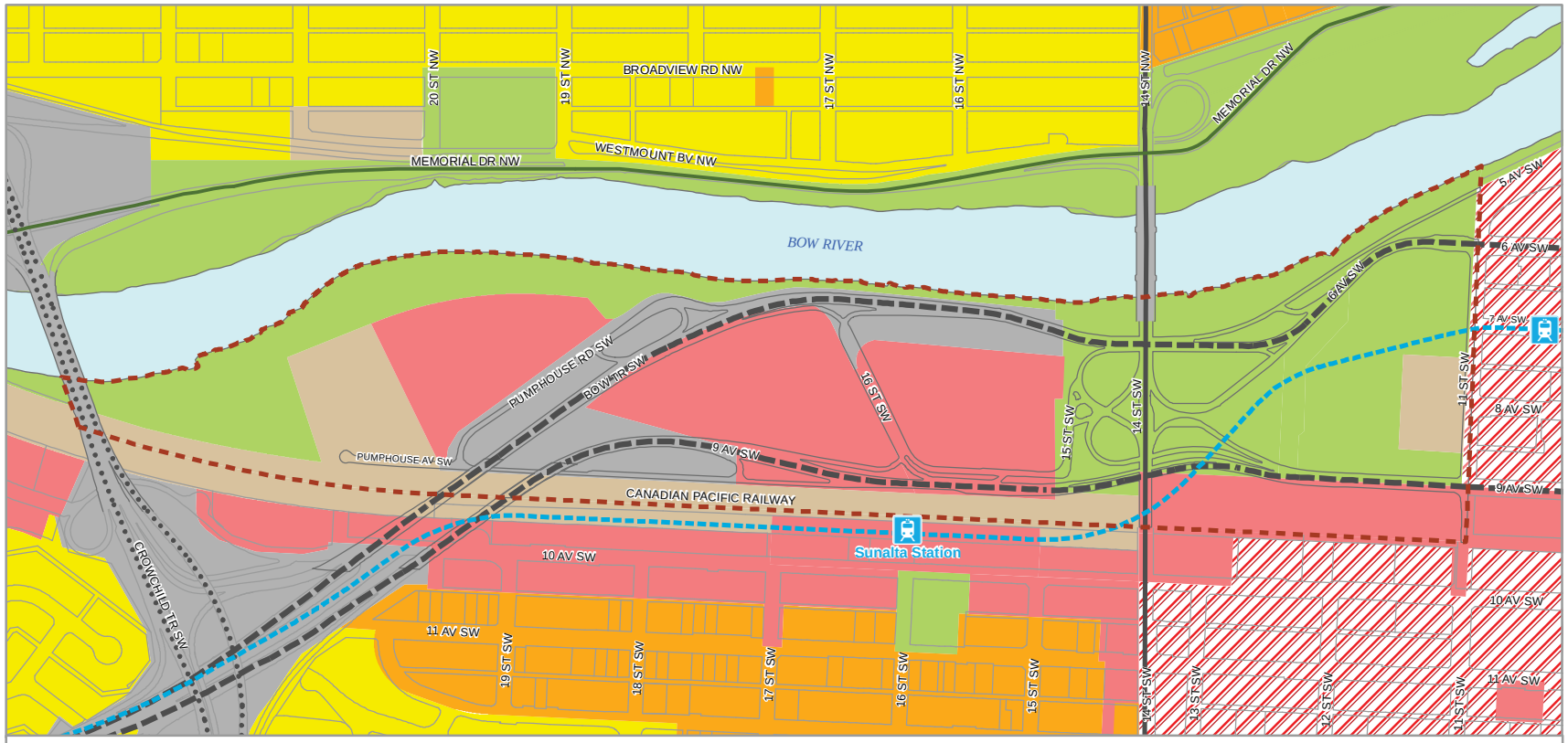
This Plan has its genesis in Council's decision to capitalize on the efforts undertaken by The City for the 2017 Expo bid feasibility study. These preliminary studies were to be used as the starting off point for the redevelopment planning of the site. A key aspect herein was the fact that The City was already in possession of a large portion of the site. This presented a unique opportunity to substantially reform the area in accordance with the new Municipal Development Plan policies that had been approved by Council in late 2009.

1.3.1 PLAN AREA LOCATION AND BOUNDARIES

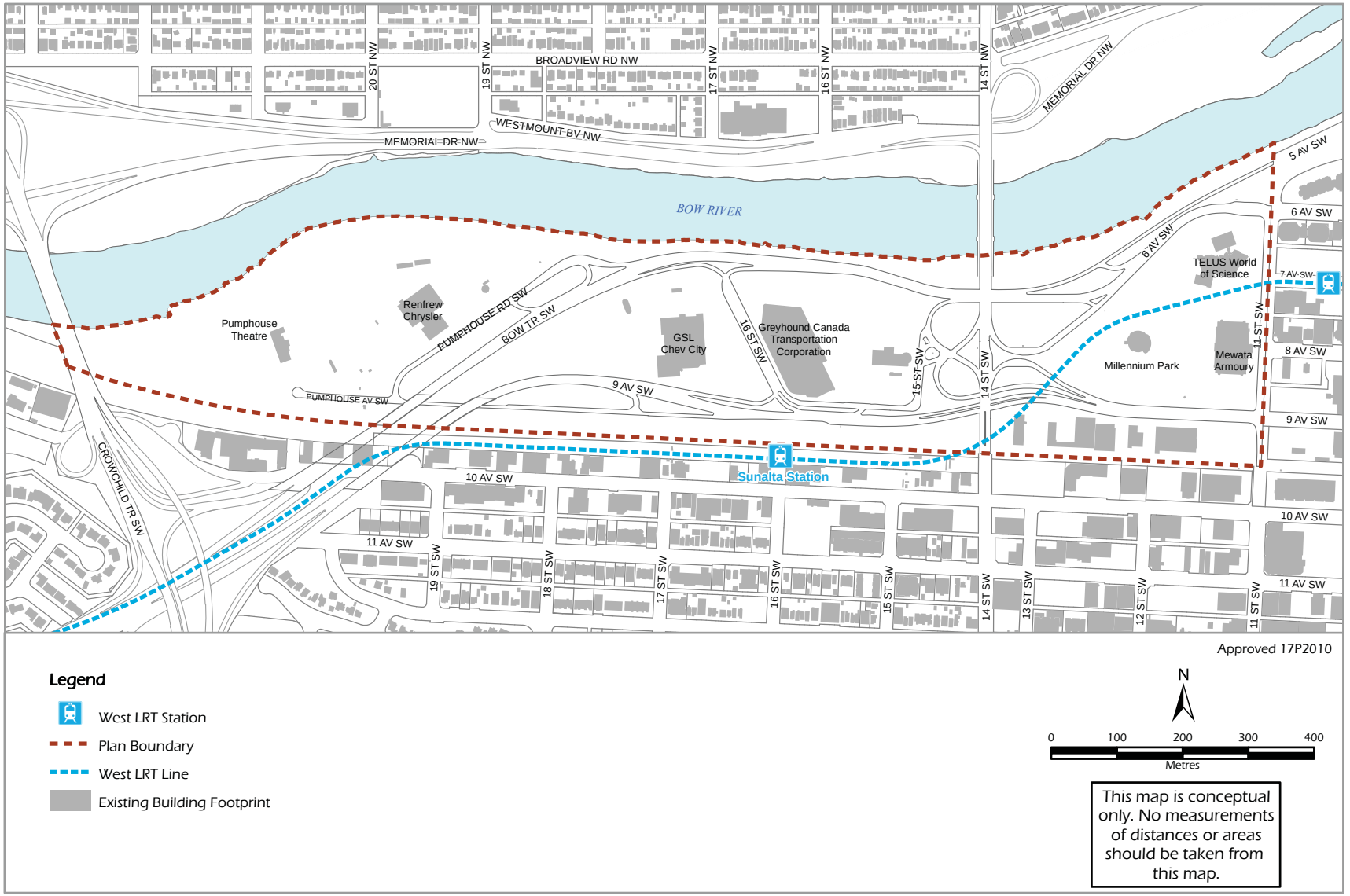
The West Village planning area lies to the immediate west of Calgary's downtown (Map 1.1) and extends along approximately two kilometres of the Bow River's riverfront (Map 1.2). The boundaries are defined by the Bow River to the north; the Canadian Pacific Railway (CPR) rail line to the south; Crowchild Trail to the west; and 11th Street S.W. to the east.

The West Village name is to be understood as a

Map 1.3: Existing Land Use Pattern



Map 1.4: Existing Building Form



working title until a study can determine the most appropriate title for this key urban area.

1.3.2 LAND USE

Two major roadways, Bow Trail and 9th Avenue S.W., presently occupy much of the Plan area. Both are main arteries and high-volume commuter corridors to Calgary's Downtown and the Southwest. As a result, the urban form and land use pattern in the Plan area consists of solitary buildings and incohesive development (Map 1.3 and 1.4).

The Plan area not currently dedicated to road right-of-way is predominantly occupied by various auto dealerships with large, open lots. The Greyhound bus terminal is located in the centre of the site. The planning area also accommodates a City of Calgary Roads depot. The depot serves as a snow dump for the Centre City commercial areas and southwest inner city residential areas. A ground water monitoring/ treatment station is located in the western portion of the area and various monitoring wells are dispersed around the site.

The Pumphouse Theatre is located at the western end of the Plan area; whereas the area east of 14th Street S.W. is occupied by Shaw Millennium Park, Telus World of Science in Centennial Planetarium and Mewata Armoury. The latter is a federal facility. Telus World of Science will relocate to a site outside of the Plan area in 2012, making the Planetarium available for reuse. The southern edge of the site is occupied by Canadian Pacific Railway and various individual commercial uses. The western end of the Plan area contains a public park.

1.3.3 ENVIRONMENTAL CONTAMINATION AND REMEDIATION

Much of the lands that comprise the West Village area have been in use for commercial/industrial activities since the beginning of the 20th century. Some activities have resulted in environmental impacts to the area soils and groundwater.

It is anticipated that much of the West Village area soil and/or groundwater will be found to be contaminated at levels above Alberta Environment Tier 1 or Tier 2 guidelines. For these areas, some combination of remediation and/or risk management measures will be required. Environmental investigation information should be submitted in accordance with environmental review policies.

An overview of the preliminary environmental assessment is provided in the Appendix.

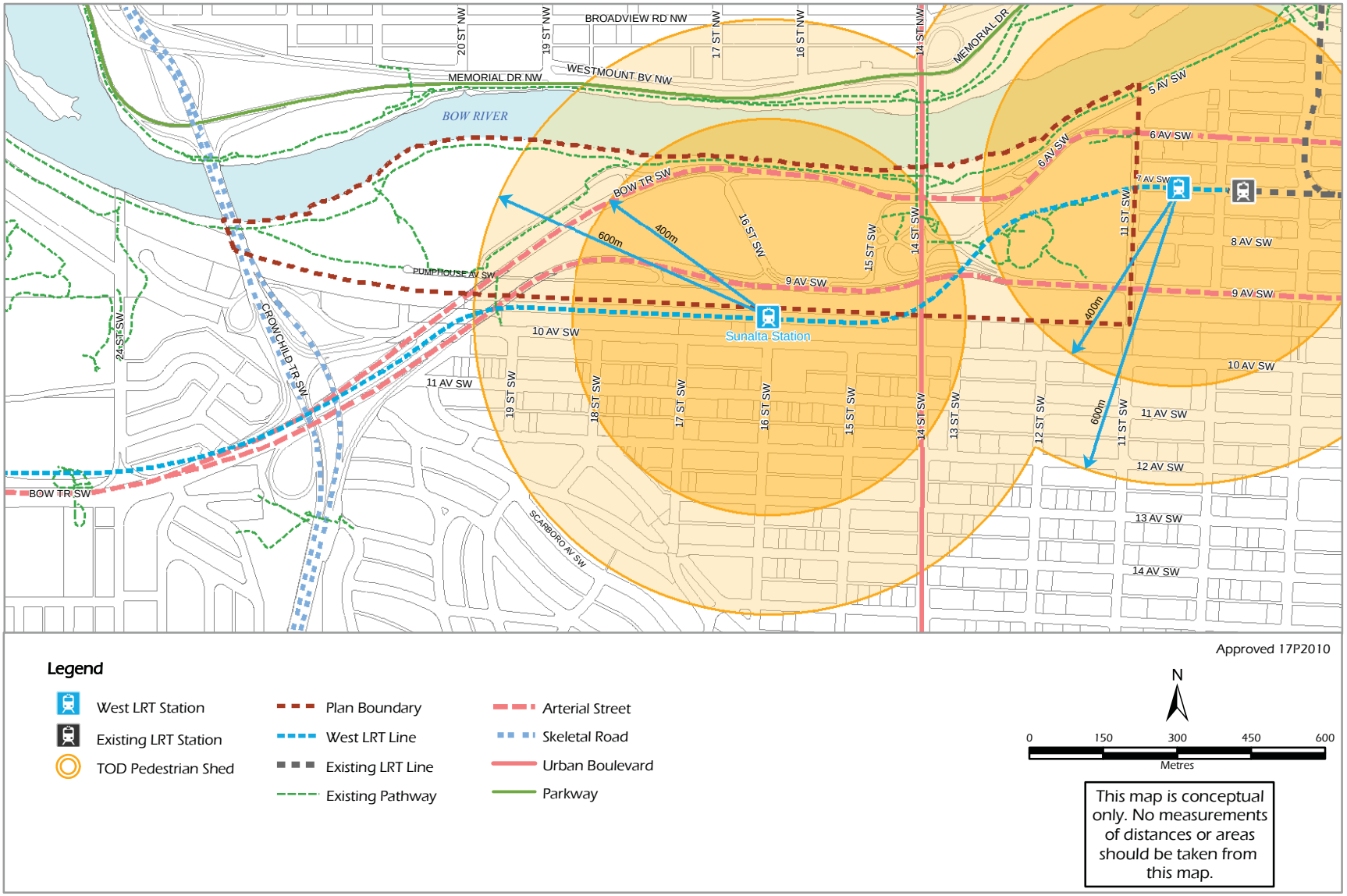
1.3.4 TRANSPORTATION

To the west of 14th Street S.W. West Village can primarily be described as having significant transportation infrastructure. Bow Trail and 9th Avenue S.W. traverse the site from east to west (Map 1.5). Developed at a time when the roadway was classified as an expressway, these arteries have resulted in disconnected property

Greyhound Bus Terminal

9th Avenue S.W. and auto dealerships

Map 1.5: Existing Transportation and Circulation



9th Avenue S.W. looking east

Bow Trail looking west

islands that are mostly difficult to access for pedestrians. By affording priority to safe and fast vehicular flow, the area has become a major barrier between the communities to the south and the Bow River.

Sign at Greyhound Bus Terminal

Currently it is difficult for pedestrians and cyclists to traverse the area from east to west. The only viable route is via the Bow River pathway. Along much of its course, however, cyclists and pedestrians must travel along a narrow strip of land wedged between Bow Trail and the river's edge.

The main CPR line, which forms the southern boundary of the plan area, provides a further barrier between the communities to the south and the riverfront. Access points across the railway line are limited to one at grade crossing at 11th Street S.W., a grade separated crossing at 14th Street S.W. and an at grade footpath under the Crowchild Trail bridges. Pedestrian movements from Sunalta to the Bow River are severely impeded.

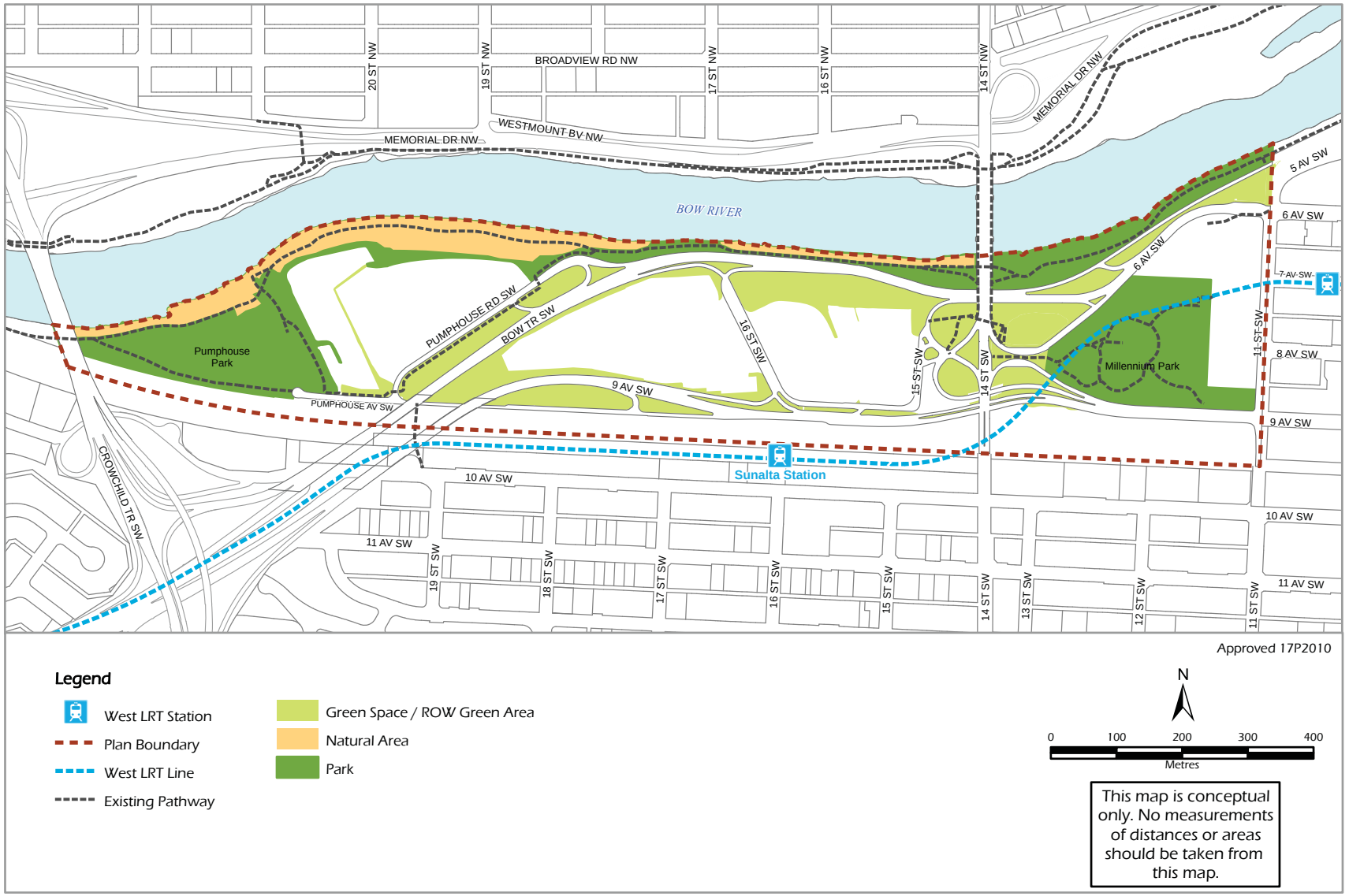
The new West LRT line will flank the CPR tracks on an elevated alignment. Beginning in late 2012 a new Sunalta LRT Station at 16th Street S.W. and 10th Avenue S.W. will serve both the established Sunalta community to the south and the West Village portion of Sunalta to the north. Much of the plan area is within a 400 metres to 600 metres (5-7.5 minute walking) radius of the station.

1.3.5 OPEN SPACE AND SITE ECOLOGY

The West Village site is situated within the Foothills Fescue Grassland Natural Subregion on the historic floodplain of the Bow River. Riparian areas within this zone store and filter snowmelt and spring rains, offsetting flood risks and contribute to year-round flows. Many species rely heavily on riparian areas for habitat for much of their life cycle. The Grassland Region generally receives a low amount of precipitation, making water conservation a priority; regionally within the ecozone and locally in West Village.

The West Village riparian area has been heavily modified by previous urban development. As a result, much of the area's ecological function has been lost. Currently, the West Village site contains a post-development remnant riparian forest which has been partially re-established through natural riverine processes (Map 1.6). This forest contributes significantly to the area's biodiversity and ecological function, disproportionately accounting for the greatest amount of species diversity with the West Village site. This biodiversity is created and supported naturally through the land's close association with the river and demonstrates the potential for higher

Map 1.6: Existing Open Space



Bow Trail looking at the Bow River

Bow River Pathway and Riparian Forest

concentrations of diversity further east along the shore of the Bow River.

The floodway has been identified along some sections of the Bow River, primarily in the western Plan area. No Flood Fringe or Overland Flow Areas have been identified on the site.

Much of the land contained in the road right-of-way areas consists of open spaces. Although nominally green, these areas are primarily designed to afford sightlines to drivers and to facilitate optimal vehicle movements and are not usable as recreational areas.

Shaw Millennium Park, located between 14th Street S.W. and 11th Street S.W., represents the Plan area's most significant active recreational open space. This park, which includes a skateboard facility, is a well-used active recreation venue.

The Bow River Regional Pathway extends along the entire east-west length of the Plan area. Its character and quality as an open space varies throughout the site depending on the proximity to Bow Trail. In the east the pathway park consists of landscaped park space. In the central part of the site, the pathway is constricted to a narrow strip alongside the river. In the west the pathway traverses the natural riparian forest area before entering the Pumphouse Park.

Pumphouse Park, located in the western Plan area between Pumphouse Theatre and Crowchild Trail, is the area's largest manicured open space. Consisting of meadows bordered by trees, this park can be used casually or for programmed activities.

1.3.6 WATER INFRASTRUCTURE

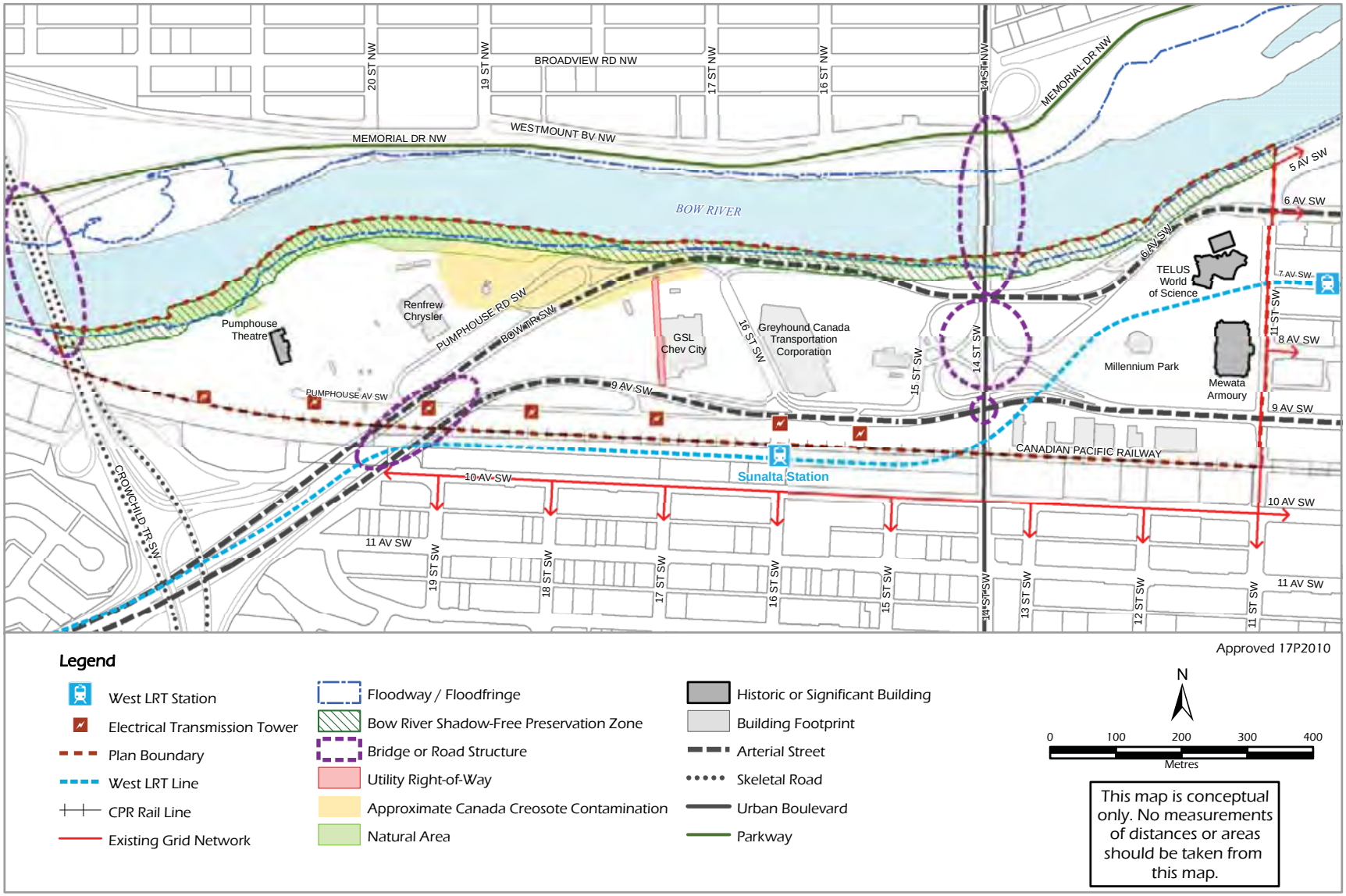
The West Village area is within the Glenmore Pressure Zone. There are several feeder mains surrounding the site. They are located along the west edge of the Pumphouse Theatre parking lot, along 9th Avenue S.W. and 10th Avenue S.W., 14th Street S.W. and 11th Street S.W.

There are a limited number of distribution mains within the Plan area. Distribution mains will have to be extended to service the Plan area.

There are nine stormwater outfalls within the Plan area. The catchment area for these outfalls generally includes lands from between 36th Street S.W. and 11th Street S.W. and north of Richmond Road and 25th Avenue S.W. (795 ha/1964 Acres).

The Plan area is serviced by a sanitary trunk along 9th Avenue S.W. which then splits at 15th Street S.W. and continues east along 9th Avenue S.W. via a collection main and via a trunk along 10th Avenue S.W. There are a limited number of collection mains within the Plan area. Significant upgrades will be required for both the collection and trunk systems in order to accommodate growth.

Map 1.7: Opportunities and Constraints



1.3.7 HERITAGE

Since Calgary's inception, this area has been predominantly used for industrial and large scale storage operations. These functions were important to the development of Calgary, but there is very little physical evidence of that history.

There are currently three historic resources in the West Village listed on the City's "Inventory of Evaluated Historic Resources" and merit legal protection.

1. Calgary Centennial Planetarium (Telus World of Science) – 701 11th Street S.W.

   The Planetarium was constructed in 1967 as The City's official Canadian centenary project. It was designed by the prominent local architectural firm of McMillan Long & Associates. In addition, it is significant for its unique design and prominent landmark status. The Planetarium will be vacated in 2012 as the new science centre is completed.

2. Bow River Pumphouse No. 2 (Pumphouse Theatre) - 2140 Pumphouse Avenue S.W.

   This pumphouse was built in 1913 was an integral component of Calgary's water supply and distribution system for over 50 years. It is significant for its industrial, vernacular design and as a rare example of Calgary's early water-related infrastructure. It is owned by the City and is legally protected as a Municipal Historic Resource (1997).

3. Mewata Armoury – 801 11th Street S.W.

   The Mewata Armoury is one of two armouries constructed in Alberta during the First World War. It is historically significant for its architectural value and for it association with Canada's military and war efforts. It continues to be used by the Canadian Military. It is a designated Provincial Historic Resource (1980) and a designated National Historic Site (1989).

1.3.8 REDEVELOPMENT OPPORTUNITIES AND CONSTRAINTS

The City of Calgary is in the unique situation of being the largest single land owner within the Plan area.

Due to their insular nature and mono-functional design character, the existing buildings and structures on the site are not suited for integration into a mixed use, pedestrian-friendly urban area. Redevelopment of the plan area, and in particular the realignment of Bow Trail, will entail a complete transformation of the existing situation to the west of 14th Street S.W. In the long term, introducing a new subdivision pattern, replacing the few existing buildings and reforming the site's topography present a unique development opportunity for the city.

There are some infrastructure elements, facilities and existing features, however, which must be maintained throughout the redevelopment process and act as either constraints or opportunities in the design process (Map 1.7). These are:

Centennial Planetarium

Pumphouse No. 2

Mewata Armoury

14th Street S.W. bridge and junction

- The existing grades and bridges to Crowchild Trail S.W.: these structures and the respective road design standards determine the realignment options of Bow Trail in the western Plan area. Intersections with Bow Trail can only occur to the east if the bridges are rebuilt. Bow Trail will continue to be a major access to and from the downtown to the west of Calgary.

- 14th Street S.W.: this Plan works on the assumption that the Bow River bridge and the Bow Trail roadway beneath it will not be moved or altered. It is furthermore assumed that in all redesigns, the basic functionality of the crucial network junction between 14th Street and Bow Trail must remain intact. The existing 9th Avenue S.W. bridge limits redesign options of the 14th Street S.W./Bow Trail junction. It may have to be replaced by a new structure. The location of the new bridge and its dimensions will, however, be determined by the design grade of 14th Street S.W.

- The new West LRT line: the line bisects the plan area to the east of 14th Street S.W. on an elevated alignment. North to south connectivity and roadways in this area will be determined by the LRT's structure.

- The new Sunalta LRT Station: the location of this station has been finalized and construction has commenced.

- Heritage resources: structures and buildings in the Plan area that are of heritage value should be maintained and integrated into the redevelopment concept.

- Environmental contamination: as the site has a history of industrial and commercial usage, varying degrees of contamination are to be expected. Redevelopment must take site remediation and/or risk management into consideration.

- Shadow protection guidelines: The City implements setbacks to protect the riverfront areas from overshadowing by adjacent structures.

- Environmental aspects: the preservation and/or restoration of environmental features, in particular along the Bow River, may constrain development opportunities.

1.4 POLICY CONTEXT

1.4.1 MUNICIPAL DEVELOPMENT PLAN AND CALGARY TRANSPORTATION PLAN

The Calgary Municipal Development Plan (MDP) and Calgary Transportation Plan (CTP) were approved by City Council on Sept. 28, 2009. Together, these documents provide a long-term strategy for a more sustainable city through the integration of land use and mobility policies. These plans describe the vision for a long-term pattern of growth and development in Calgary over the next 60 years and provide policies

that integrate social, economic and environmental objectives for the next 30 years. The MDP policies inform Local Area Plans, including ARPs, by providing a city-wide level of direction on land use, urban form and transportation that is interpreted and applied within a local planning context.

The West Village ARP seeks to implement numerous city-wide policies of the MDP. For example, the Plan will help to achieve the following goals and objectives:

- 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.
- Establish a land use framework that optimizes population and job growth within walking distance of transit.
- Foster distinct, complete communities with a strong sense of place.
- Create quality public parks, open spaces and other community amenities.
- Promote site and building design that contributes to high quality living environments and attractive walkable, diverse neighbourhoods and communities.
- Enhance the public realm and promote pedestrian use through the coherent and collaborative

Existing situation along the Bow River

design of streets, building interfaces and public spaces.

- Maintain automobile, commercial goods and emergency vehicle mobility in Calgary while placing increased emphasis on sustainable modes of transportation (walking, cycling and transit);.
- Maintain biodiversity and landscape diversity, integrating and connecting ecological networks through the city.

The MDP identifies a number of typologies and typology-based policies for distinct geographic areas of the city that share common attributes such as land use patterns, road layouts and ages of buildings. Three typologies are found within the Plan area: Centre City, Inner City and Neighbourhood Corridor.

1.4.2 BROWNFIELD REDEVELOPMENT STRATEGY

Immediate additional costs are generally associated with the redevelopment of a brownfield site in comparison to a greenfield development. The expansion of the municipal built-up area is, however, costly in terms of irreplaceable natural environment, provision of municipal infrastructure, climatic impacts and time and energy required for commuting. Redeveloping derelict or underutilized land areas within the existing urban area helps reduce the amount of greenfield land required to accommodate future growth, it utilizes installed infrastructure as opposed to requiring new systems and it reinvigorates established communities.

The redevelopment of West Village is supportive of the goals of The City of Calgary Brownfield Strategy. Redevelopment of this site represents a great opportunity to increase community awareness of the economic, environmental and social benefits of brownfield redevelopment, change public perception of brownfield redevelopments and promote remediation/risk management of contaminated sites to facilitate higher and more productive uses. Due to its historical land uses, West Village represents a challenging brownfield redevelopment. These challenges, although complex, provide an opportunity to develop innovative approaches to site development and long-term management.

1.4.3 OTHER CITY-WIDE POLICIES

A number of other city-wide policies were reviewed and considered during the preparation of the Plan, including:

- Transit Oriented Development (TOD) Guidelines (2004).
- Triple Bottom Line Policy.
- Calgary Heritage Strategy (2008).
- Public Art Policy (2004; updated 2009).
- Calgary Environmental Reserve Setback Guidelines.

WEST VILLAGE

VISION




2 VISION

West Village will be the transformation of an underutilized riverfront into a unique residential and recreational district that will be a beacon of forward-thinking, resilient, inner city growth in Calgary, Canada and abroad.

Its development will be founded on restoration, connectivity and creativity, expressed through excellence in urban design and environmental performance. It will embody and exemplify world-class sustainable development and one-planet living through the achievement of a vibrant, diverse, inclusive and culturally enriched urban quarter that focuses on pedestrian activity and the human scale in an ecologically rich environment.

In West Village the City will capitalize on the distinct riverfront setting, central location, multiple mobility options and natural and cultural amenities to achieve a multifaceted district that addresses both Calgarians and the global investment community and connects people to places, nature, the city and each other.

West Village's redevelopment vision will be guided and governed by the following seven clearly defined objectives. These objectives in turn will inform the guiding principles for the area's subsequent planning and development.

1. Human Scale

Buildings, street cross-sections and public spaces in West Village will be dimensioned and situated such that they create a pleasant sense of enclosure and space. Open spaces, recreation areas, public facilities and services will be located such that they are easily within walking distance. This human scale will create an inviting public realm and an appealing urban environment for work and play.

2. Distinct Identity

The redevelopment of West Village will create a district that has a distinct identity and promotes a clear sense of place in its residents, employees and visitors. West Village's identity and character will be such that it is a place that people desire to live and work in; a place where people come to spend leisure time and which becomes locally, nationally and internationally renowned. The well considered location and scale of public plazas, art and key landmark buildings will promote place-making and establish West Village's identity in people's mental map of the city.

3. Connectivity

Local and city-wide connectivity will be inherent in the design of the area. Bow Trail as well as the main east/west streets through West Village will continue to be a primary access to and from Downtown. West Village will capitalize on Calgary's West LRT and Sunalta LRT Station as a transit oriented, pedestrian scale, mixed use urban district that offers multiple

Human Scale

Identity and Connectivity

mobility options. Its residents, employees and visitors will always be within a five to ten minute walk from the station; the regional cycle path will be equally easily accessible. City-wide connectivity will also be provided by attractive transit, bicycle and road infrastructure.

4. Attraction

Through its connected, diverse and attractive residential and urban environment, West Village will complement the lifestyle opportunities Calgary offers, making the city even more attractive to skilled professionals from Canada and abroad. The distinct quality of the waterfront setting, a strong sense of place, and multiple mobility options will attract current city residents to this inner city location. It will also attract domestic and international investment interest, enhancing Calgary's global competitiveness.

5. Community

The human scale of development, the quality and variety of public open spaces and parks and the architectural quality of residential areas can foster a sense of ownership, and thus of community, in the area's residents. Attractive transit, bicycle and road connections and a various housing choices will cater to a diverse population, from families to singles, seniors to students. Public amenity spaces, parks, retail uses, public art and programmable spaces will provide venues for interaction, activity and community engagement. Universal accessibility will be a key design principle in all public spaces and buildings.

6. Environment

West Village will be a forward-looking district on a former brownfield site. All public and private projects within the district will employ cutting-edge practices in the fields of energy, water, green infrastructure, materials, biodiversity preservation and enhancement and urban and architectural design. This will minimize their environmental impact and maximize their value to those living and working there. This sustainable urban environment will be a beacon for other developments and will position The City as a leader in sustainable development in Canada and abroad.

7. Implementation

West Village will provide The City with a diversified and flexible portfolio of residential, commercial, institutional and recreational uses which will allow it to pursue its strategic targets within the development area. While the Plan will establish the guiding framework for the realization of these components towards the development of a complete community, it will also incorporate sufficient flexibility for the elements of precinct design and character to evolve according to market requirements. The use of identifiable precinct and design themes will enhance the riverfront location and set West Village distinctly apart from other developments in the city.

Attraction and Community

Environmentally friendly design

WEST
VILLAGE

REDEVELOPMENT PRINCIPLES




3 REDEVELOPMENT PRINCIPLES

This section outlines the redevelopment principles for West Village. These principles describe the elements that will define West Village and enable the vision for the area to be achieved. They should be used to guide design at both the conceptual and detailed planning stages.

1. Human Scale

West Village should be human in scale. Its building masses and heights, street cross-sections, intersection spacing and the location of its amenities and public features should be designed to create a comfortable and inviting environment for pedestrian activity. Public spaces should be dimensioned and situated such that they generate a pleasant sense of enclosure and of place. Well designed streetwalls with continuous building facades, 100 per cent street-oriented design, active interface zones, architectural details and streetscape features would further enhance the sense of enclosure and place. TOD principles should be applied throughout West Village.

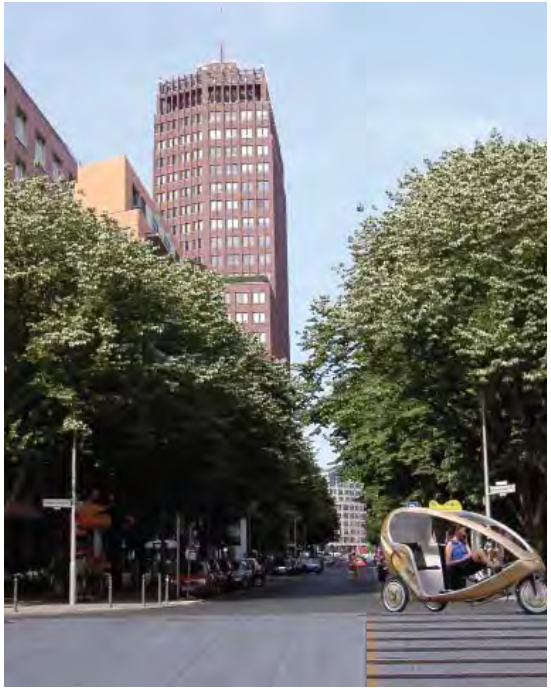
Human Scale

2. Identity and Place-making

West Village should be an exemplar of riverfront development that is inspired by, and respects, the ecological and historical value of this site while maximizing the opportunity for a distinct and vibrant activity hub overlooking the river and adjoining landscape. It will be developed in a manner that expresses a strong, individual identity encompassing visual interest and creativity.

West Village should have a distinct identity as a riverfront district that is modern, green and urban and which offers the highest quality of life. High quality architecture and public realm design elements, including public art, should merge to create appealing and memorable spaces. Its public plazas and parks should be situated to highlight and support key elements, such as the riverfront, the Pumphouse Theatre or the gateway to the LRT. The location on the south bank of the Bow River is one of the defining elements of West Village. The street network and building pattern should be oriented towards the riverfront, allowing maximum access and creating a lively riverfront promenade.

Consistent mid-rise building heights throughout the district would generate an identity as a homogeneous urban quarter. In strategic locations individual buildings should rise above the regular urban blocks to create visual landmarks that highlight the public realm and reinforce people's mental map of West Village. Gateways into the district should be marked by distinct public spaces, such as at the LRT station, the waterfront and at the interfaces with 14th Street



Identity and Place-making

Redevelopment Principles

Connectivity

Mixed Use

Public Realm

S.W. and Crowchild Trail S.W.

West Village's distinct identity should be further expressed in the quality of its buildings in terms of architectural and environmentally sustainable design. West Village should be a showcase for the most advanced building practices and public amenity and landscape design features.

3. Connectivity Local and City-wide

Local neighbourhoods should have a focus on pedestrians with streets, sidewalks and land uses designed to support walking as the preferred travel mode. The dimensions and arrangement of the urban block pattern should be inherently walkable, providing for numerous connection options throughout the district. Pedestrian links should extend through West Village from east to west and north to south. They should take the form of dedicated pedestrian and cycle paths, such as the Bow River Pathway, but should also be integral elements of the streetscape.

Public open spaces in strategic locations will encourage leisure activity and movement and will be venues where residents and visitors connect to each other.

City-wide, Sunalta LRT Station will be the connective heart of TOD where all modes of travel (transit, walking, cycling and driving) are comfortably accommodated. It will connect the residents, visitors and employees of West Village with the surrounding city. A landscaped, primarily pedestrian boulevard and street should extend from Sunalta LRT Station to the Bow River to form the central pedestrian and cycle spine of the core urban area. It should combine street-level activity with dramatic place-making design and be a venue for local leisure activity and movement.

An inviting pedestrian overpass should link the station to a broad staircase which opens onto the boulevard. These stairs should form the northern entrance to the station and a very distinct entrance to West Village. They should be both a visual landmark and meeting place for the community.

4. Mixed Use

West Village should be comprised of a mix of complementary land uses, including residential, retail and office that provide vitality and support walking. Close proximity of all uses to the station would make walking, cycling and transit convenient travel modes for living, working and shopping.

Complete Streets

Diversity

Community

5. Public Realm

The public realm is the underlying foundation of any urban environment. It is the framework that supports and connects development parcels. It is the stage to the backdrop formed by the buildings of the city. As such West Village should employ public plazas, tree-lined streets and recreation spaces as fundamental elements towards creating an urban environment that is pleasurable to experience.

6. Complete Streets

New streets should be well designed multi-functional spaces, comfortable for pedestrians and functional for all travel modes. Active streets should be supported with design elements coordinated to provide visual interest, pedestrian amenity and a well defined sense of place. The concept of 'complete streets' emphasizes pedestrian and cycling activity while allowing vehicle movement.

7. Diversity

West Village should be home to a broad range of Calgarians of all ages, income levels and types of households and lifestyles. West Village should provide a flexible urban form and barrier-free physical accessibility as these are key elements of integration. The area's development should offer residents and visitors variety in terms of homes, work, facilities and amenities. Such variety supports a critical mass required to sustain local services and business and establish a vibrant neighbourhood.

8. Community Well-being

West Village should build community participation, social relationships and neighbourliness through the provision of qualitative, attractive indoor and outdoor recreational, arts and culture, social and community services, health and educational facilities that meet the needs of the complete community and its visitors. Residents and workers should have a sense of ownership and an effective voice in managing change in their future.

9. Safety

The design of buildings, sidewalks and public spaces should provide a broad spectrum of emergency protection and response and should provide a sense of security by allowing for natural surveillance,

Redevelopment Principles

Water

Biodiversity

Longevity

establishing boundaries between public and private spaces, activating sidewalks and waiting areas and ensuring 'eyes on the street'.

10. Energy

West Village should take a 'total approach to energy'; recognizing and tackling each sector of the carbon footprint and prioritizing on the basis of the energy hierarchy: minimize demand, supply from local sources and maximize the use of renewables.

11. Water

West Village should be designed to minimize demand, supply from local sources, reuse and recycle water.

12. Waste

West Village should embrace the concept of Zero Waste; breaking the cycle of primary resource depletion and waste through a focus on reduction, reuse and recycling in its design, construction, operation and renovation.

13. Materials

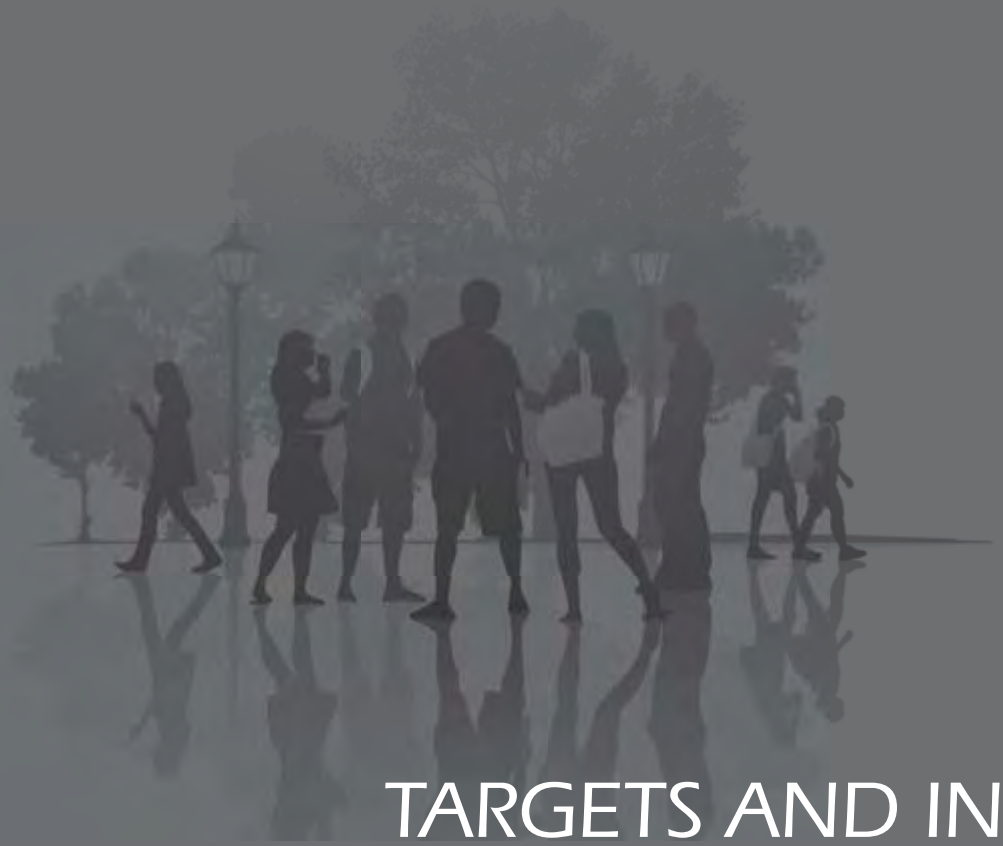
West Village should promote a healthy human and natural environment through the use of natural, healthy and local materials in its entire life cycle.

14. Biodiversity

West Village should be a global leader in Urban Ecology; accomplishing a true balance between preservation and the built form. Restoring and maintaining biodiversity and achieving a balanced environmental footprint should be a focus within buildings as well as in West Village's open spaces. Urban Ecology should be used to provide a positive interface between buildings and open spaces and should encourage pedestrian flow to the riverfront.

15. Longevity

West Village should be designed to be flexible and adaptable to change in response to the changing needs and expanding spatial requirements of its inhabitants and users.



WEST
VILLAGE

TARGETS AND INDICATORS

4 TARGETS AND INDICATORS

This section outlines general indicators and targets for West Village. The indicators will be used as a tool for evaluating progress and success in design and implementation of the Plan.

The targets identify a desired level of performance for an indicator. They have been developed in order to ensure the vision for West Village is realized while allowing flexibility in the strategies and design. Each subsection of the Plan outlines suggested strategies in order to achieve these targets.

Table 4.1 below outlines the West Village indicators, and targets. These targets should be re-addressed and amended as required at regular intervals from adoption of this Area Redevelopment Plan. Should legislation or adopted policy include targets that exceed those outlined below in the interim, then they should supersede the targets outlined within this ARP.

A possible method towards ensuring the vision for West Village is fulfilled by individual developments is to include specific targets in an assessment process as part of the land sale agreements between The City and developers. The following indicators and targets and the policies and strategies presented in the Plan should inform the more specific targets employed in the environmental/sustainability criteria used to assess development proposals in West Village, as outlined exemplarily in the Appendix.

Policies

1. The City should develop a monitoring and reporting plan that will include a specific set of indicators and targets for the redevelopment of West Village that correspond to the vision, objectives and principles of this Plan. The indicators and targets should be employed in the environmental/sustainability criteria used to assess development proposals in West Village.

2. The City should re-evaluate these general, and the more specific indicators and targets to ascertain if they have been surpassed by new legislation at regular intervals, e.g. 5 years. If this is the case, appropriate amendments should be made to surpass or, at minimum meet, the new legislation.

Targets and Indicators

Table 4.1: Targets and Indicators

No.	Indicator	Target	Relevant Principles
1	Land Use Diversity Index	The land use diversity index should be 0.7 or higher.	4: Mixed Use 7: Diversity
2	Ground-oriented housing	The percentage of ground-oriented residential units in the Plan area should be 15 per cent or higher.	7: Diversity
3	Accessibility to primary public transit network	At minimum 60 per cent of the residential uses should be located within 400m of the Primary Transit Network At minimum 80 per cent of the commercial/office uses should be located within 400m of the Primary Transit Network	3: Connectivity
4	Accessibility to community facilities	100 per cent of the residential uses should be located within 400m of the Primary Cycling Network 100 per cent of the commercial/office uses should be located within 400m of the Primary Cycling Network	3: Connectivity 6: Complete streets
5	Access to community facilities	The percentage of land allocated for residential uses in the Plan area that are located within 400m walking radius of a community facility should be 100 per cent.	8: Community well-being
6	Open Space proximity	The percentage of land allocated for residential uses in the Plan area that are located within 400m walking radius of a public open space should be 100 per cent.	5: Public Realm
		The percentage of land allocated for commercial/office uses in the Plan area that are located within 400m walking radius of a public open space should be 100 per cent.	
7	Public gathering spaces	The percentage of Plan area dedicated to parks and open spaces should be 30 per cent or higher.	5: Public Realm 14: Biodiversity
8	External community connectivity	The number of access points per square kilometre should be 2.7 or higher.	3: Connectivity
9	Local transportation connectivity	Local transportation connectivity: The street connectivity index should be 1.7 or higher. The active modes connectivity index should be 1.7 or higher.	1: Human Scale 3: Connectivity
10	Water	The percentage of wastewater treatment to tertiary levels should be 100 per cent.	11: Water 10: Energy
		The percentage of surface water run-off filtered or treated on site should be 100 per cent.	
		Imperviousness of site coverage: the percentage of development area allocated to roads and parking facilities should not exceed 20 per cent.	
11	Intensity of green infrastructure	The percentage of development area allocated to green infrastructure (including green roofs, green streets, open space and pervious parking surfaces) should be 40 per cent or higher.	6: Complete Streets
12	Energy	The percentage of parcels with densities sufficient to support district energy should be 100 percent.	10: Energy
13	Solar orientation	The percentage of land allocated for buildings that have an orientation to the south or are unobstructed to the sun should be 50 per cent or higher.	10: Energy 8. Community well-being
14	Continuous street wall	Continuous building façade throughout the area should be 80% or greater.	1: Human Scale 5: Public Realm

WEST VILLAGE

PLAN CONCEPT




5 PLAN CONCEPT

5.1 LAND USE AND DENSITY

Related Principles

Principle 1: Human Scale

Principle 2: Identity & Place-making

Principle 4: Mixed Use

Principle 7: Diversity

To achieve the overall Plan vision, this section addresses the mix, location and intensity of land uses, their relationships to the public realm, and the amenities required to ensure development is consistent with the Plan objectives.

The Plan Concept makes maximum use of the unique development opportunities offered by the riverfront setting, new LRT station with its TOD potential and the site's location adjoining established urban communities. It also responds to constraints inherent in the area as a result of higher-order transportation infrastructure.

The land use strategy for this Plan is based on the following premises:

- **Residential:** West Village is envisioned as a mixed use development in which residential use is a core component. Nonetheless, the residential focus should be stronger in some areas of the Plan, such as in the Pumphouse Precinct or on riverfront parcels. In these areas residential uses are expected to make up the greater percentage of the development. In areas such as the 14th Street S.W. roundabout or flanking 9th Avenue S.W., the percentage of residential development is expected to be significantly lower.

  Residential typologies envisioned for the Plan area include multi-unit development in a low/mid-rise form, including ground-oriented townhouses and apartments, with specific locations featuring landmark buildings. The Plan encourages the development of a diverse range of residential unit types and sizes to accommodate a broad demographic group, ranging from old to young and singles to families. Care should be given to providing various ground-oriented residential units in different areas to attract families with children to the area. Affordable housing units should be fully integrated into West Village, with a particular focus being on locations near the primary transit networks. Live/work units will be encouraged throughout much of the area.

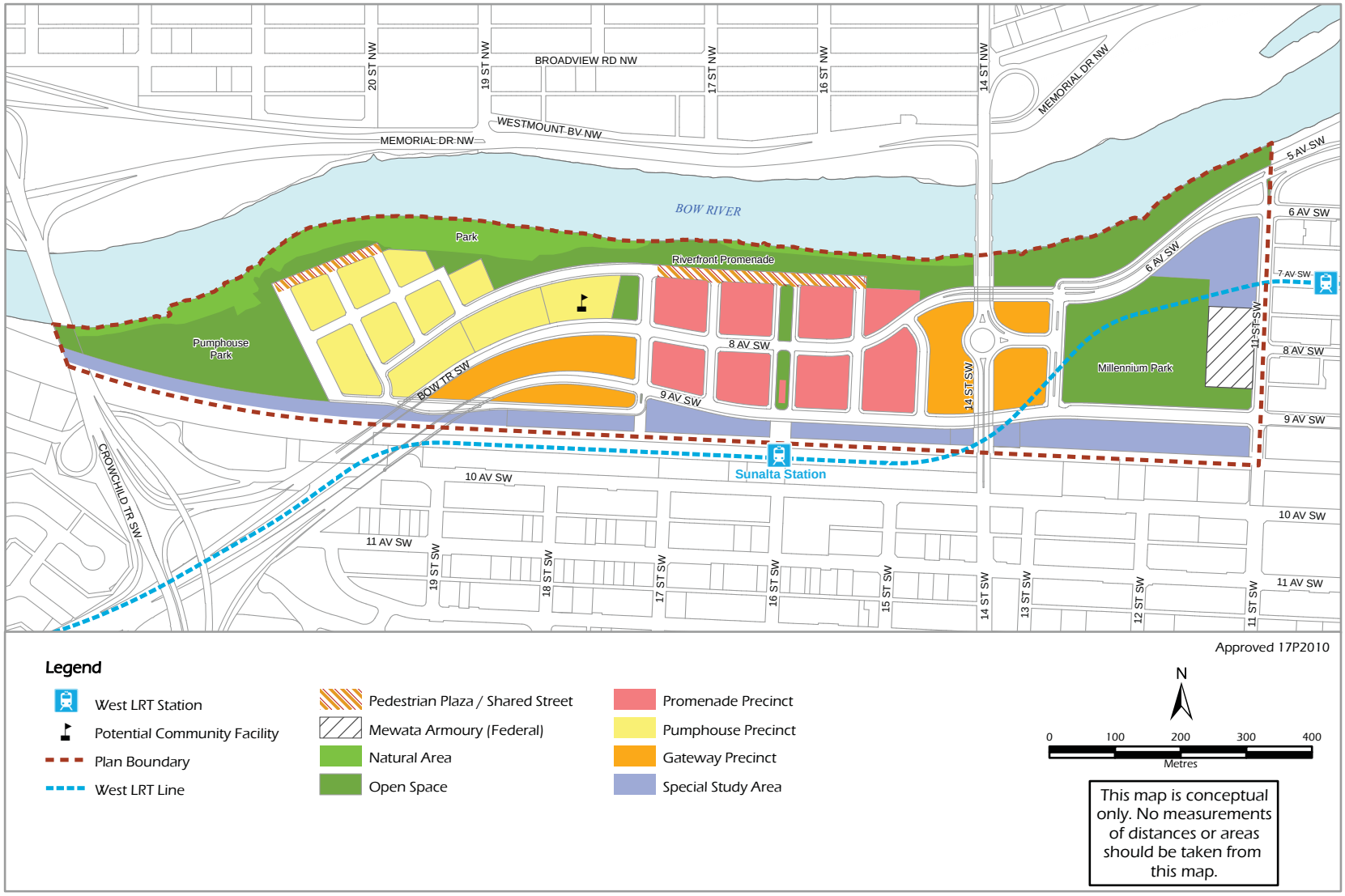
- **Commercial:** Although West Village is envisioned as a mixed use development, certain areas will have a stronger commercial focus that better responds to their location alongside major roads or vicinity to the LRT station. For example, a higher commercial element is expected to develop along 8th Avenue S.W. (former Bow Trail) and 9th Avenue S.W. Commercial uses at these locations can benefit from, and generate activity along these main corridors and serve a larger market than the West Village area. Furthermore, they are less susceptible to traffic noise and can

Mixed use buildings

Multi-unit residential

Plan Concept

Map 5.1: Proposed Precincts



serve as a buffer to residential uses. Along these two corridors, commercial uses could utilize entire buildings.

The core local retail commercial area of West Village is envisioned to develop along the main pedestrian boulevard that leads from the LRT station north to the riverfront. This street with its broad landscaped pedestrian median, 'Grand Staircase' and wide sidewalk zones should serve as the high street for West Village.

The Plan has been developed with a view toward creating a lively, attractive riverfront destination that is populated throughout the day and into the evening. Therefore, retail commercial uses are also envisioned on the ground floors of the Promenade, a linear plaza and shared street that faces the Bow River.

- **Institutional:** The West Village area may be appropriate as a significant location for institutional development. This development could include educational or community and recreational facilities. Potential locations include the areas between the 8th Avenue S.W. and 9th Avenue S.W. ramps and adjacent to 14th Street S.W. These locations benefit from high exposure to major transportation routes, are within walking distance to the LRT station and are not prime locations for residential development. These uses should be well located to serve the local population that is separated from the community to the south by the CPR line.

- **Open space:** Public plazas and various amenity features – from retail high streets to cultural facilities – should be situated throughout the Plan area, although their scales should vary according to individual context. For example, public open spaces near the Pumphouse Theatre should correspond to the character of a residential neighbourhood, whereas the main pedestrian Boulevard and lively urban riverfront Promenade should be more distinctly metropolitan. Together the combination of these components creates a distinct and appealing urban environment.

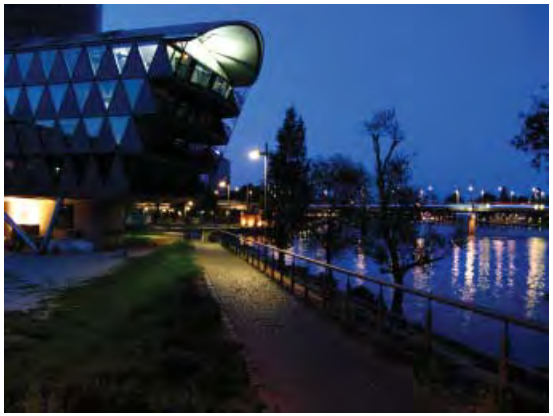
- **Special Areas:** Two special study areas are proposed within the Plan area, the Centennial Planetarium and the CPR Corridor.

Based on these aspects, the Plan sets the land use pattern and specific land use objectives for the area. The Plan area is divided into three land use precincts which set out clearly defined land use objectives: Pumphouse Precinct; Promenade Precinct and the Gateway Precinct.

Although these land use precincts are designed to have a distinct character, they should each share common elements that together with the open space system would define and characterize West Village. For example, each precinct should share the characteristics of mixed use development that supports transit ridership, pedestrian activity and diversity in the population and users of the area.

The density of each precinct has been designed

Mixed-use buildings



Institutional, landmark architecture

such that a human scale built form is achieved and yet sufficient development opportunity is provided to achieve a viable urban environment. In general, building heights range between 4 and 14 storeys.

Individual locations have been identified where higher buildings can be implemented as visual landmarks and gateways to the area.

The following policies and guidelines are not to be interpreted as an approval for a use on a specific site, as the policies do not address the specific situation or condition of each site within the Plan area. In that regard, no representation is made herein that any particular site is suitable for a particular purpose as site conditions or constraints, including environmental contamination, must be assessed on a case-by-case basis as part of an application for Land Use Amendment, Subdivision or Development Permit approval

5.1.1 GENERAL POLICIES

1. Land use redesignations should be consistent with the general land use classifications identified on Map 5.1: Proposed Precincts.

2. Uses appropriate in the Plan area include, but are not limited to:

    - Care and health facilities
    - Childcare facilities
    - Cultural and leisure facilities
    - Eating and drinking establishments
    - Financial institutions
    - Hotels
    - Live/work units
    - Light Industrial
    - Markets
    - Multi-residential dwelling units
    - Offices
    - Parking facilities
    - Parks, pathways and open space
    - Personal service establishments
    - Retail stores
    - Special care facilities
    - Supermarkets
    - Teaching and learning facilities, and
    - Utilities

3. Unless otherwise specified, new automobile service centres, drive through businesses and service stations should not be allowed within the Plan area.

4. New stand-alone retail commercial developments should be discouraged.

5. The provision of a broad range of housing types is encouraged for different types of households, income levels, age groups and lifestyles. Provision of larger unit sizes and ground-oriented units appropriate for families with children is particularly encouraged.

6. A mix of uses – organized vertically or within blocks – is encouraged for all development projects. Encouraged uses include:

    - Residential uses including low-rise townhouses, mid-rise apartments and high-rise towers.
    - Employment uses such as offices and research facilities.
    - Street-oriented retail commercial uses.
    - Services including hotels, day cares and clinics.
    - Entertainment uses including recreation and cultural facilities, theatres and eating and drinking establishments.
    - Live/work spaces.

7. Stand-alone parking lots and parking structures should not be allowed throughout the Plan area.

8. All new development should conform to the built form, urban design and sustainability policies of this Plan to ensure a lasting, pedestrian-friendly

environment is created.

9. Affordable housing should be incorporated into the redevelopment of the Plan area. The following recommendations should be followed:

   - Affordable housing should be visually indistinguishable from market housing.
   - Affordable housing units of different sizes and types should be integrated into market residential developments.
   - An adequate supply of rental accommodation that is affordable to low and moderate-income households should be provided.
   - Partnerships should be formed with developers, other orders of government and non-governmental agencies to pursue measures to ensure construction of affordable housing in multi-unit development projects.

10. Interim land uses should be allowed if they are suitable to the area and would not impede redevelopment measures.

5.1.2 PUMPHOUSE PRECINCT

The Pumphouse Precinct is located in the western Plan area, adjacent to the Pumphouse Theatre. The precinct cannot be directly accessed from 8th Avenue S.W. due to the grades of Bow Trail and is thus physically slightly removed from the core urban area. Its focal activity points are the Pumphouse Theatre and the Bow River.

This is a primarily residential district comprising medium density, multi-residential development. Buildings should be mid-rise and oriented toward the street. Densities in this precinct should range from 4.0 to 5.0 Floor Area Ratio (FAR). Building heights range from 4 to 10 storeys with approximately 14 storey buildings permitted in locations signifying entranceways to important destinations. Buildings should enclose the block in order to provide continuous streetwalls for the public realm. Although retail, local commercial and entertainment uses are permitted on the ground floor, care should be given to maintain the primarily residential character of the precinct. Stand-alone retail buildings should not be permitted.

Policies

1. New development within this precinct should be medium density, multi-residential development and include townhouses, apartments, and live/work units.

2. Small to medium scale retail commercial uses may be located on the ground floor. Such uses should be located in proximity to Pumphouse Theatre or the riverfront.

3. Cultural, arts and entertainment uses, including recreation and theatres, and eating and drinking establishments are encouraged within the Pumphouse Precinct. These uses should be located close to the Pumphouse Theatre and only within the first and second storeys of development.

5.1.3 PROMENADE PRECINCT

Located in the centre of the Plan area between 9th Avenue S.W. and the Bow River, the Promenade Precinct is the core urban area of West Village. This precinct should primarily be comprised of medium density, multi-unit residential and mixed-use buildings. 8th Avenue S.W. traverses the precinct and should be used to further define the makeup of the area.

The blocks between the Bow River and 8th Avenue S.W. should be predominantly residential, with commercial and retail uses envisioned on the ground floors. The blocks between 8th and 9th Avenues S.W. may contain a higher non-residential component due to their vicinity to the LRT station as well as their location between two major arterials. It is envisioned that office uses may flank 9th Avenue S.W. as opposed to primarily residential structures. Densities in this district should range from 3.0 to 8.0 FAR.

There are two character areas within the Promenade Precinct:

- **The Boulevard:** The primary retail commercial orientation of the Promenade Precinct should extend along the north/south boulevard that extends north from the new LRT station to the Bow River. The Boulevard should function as a pedestrian mall and shopping street. This would

Boulevard

create the opportunity to establish this section of the street as a pedestrian-friendly, street-oriented retail area. Here small retailers, restaurants and personal services are expected to serve the local community and create an active streetscape. Retail commercial uses would be limited to the first two floors of the buildings.

- **The Promenade:** A linear plaza and shared street are envisioned along the riverfront where uses would focus on recreation and leisure, with café's, restaurants, and small scale retail concentrated at the corners of the blocks. Residential units would also be located on the ground and upper floors to capitalize on the riverfront setting and ensure activity at all times of day.

Policies

1. New development in this precinct should incorporate a mix of land uses either vertically or within blocks. The mix of uses should include ground floor retail commercial or residential development and a minimum of one of the following uses: office commercial and/or multi-residential located above ground floor.

2. Small scale retail commercial development is encouraged on the ground floor throughout the precinct especially fronting onto the Boulevard. Large scale retail/commercial establishments (e.g. larger than 1,900 square metres) should be discouraged except for uses such as supermarkets, pharmacies and other similar uses which provide various daily goods and services for residents. Appropriate measures should be employed to maintain an active street interface, e.g. liner shops.

3. Commercial uses that do not generate significant pedestrian activity, such as financial institutions, may also locate on the ground floor provided store frontages do not exceed 12 metres. The remainder of the commercial area should locate on the second floor, basement or wrapped behind adjacent retail units. Lobbies for residential developments may also locate on the ground floor provided the street frontage does not exceed 12 metres.

4. Developments consisting only of office use should not be allowed in this precinct; a mix with active retail commercial uses on the ground floors should be encouraged.

5. A mix of small scale retail commercial development and residential uses are encouraged along the ground floors of block frontages facing the Bow River. Ground floor units should be flexibly designed to be able to accommodate both commercial and residential uses.

5.1.4 GATEWAY PRECINCT

This precinct is located adjacent to major transportation infrastructure and is well situated to accommodate higher densities and a wide range of uses in signature buildings. This will be a unique precinct in that institutional development, including educational and community facilities, and office uses should be combined with at least one other use such as hotel or residential and incorporated into an urban format building.

Due to the challenges in terms of accessibility and residential quality, it is expected that the parcels immediately flanking the new 14th Street S.W. junction with 8th Avenue S.W. and between the 8th Avenue S.W. and 9th Avenue S.W. on-ramps to Crowchild Trail will most likely be developed as offices or institutional uses. Residential buildings would be supported, but the location quality would seem to lend itself more to office use.

Policies

1. New development should incorporate a mix of land uses either vertically or within blocks. The mix of uses should include commercial/ institutional development and a minimum of one of the following uses: office commercial and/or multi residential/hotel. Residential uses should be located above the ground floor development.

2. Permit a variety of commercial uses within this precinct.

3. A diverse range of commercial establishment sizes are encouraged provided they are well integrated within the larger building, maintain a pedestrian-orientation and contribute to active street frontages.

4. Small scale retail commercial establishments are encouraged to be located in this precinct especially fronting onto local streets.

5. Teaching and learning facilities are encouraged to locate in this precinct.

5.1.5 SPECIAL STUDY AREAS

Two distinct areas have been proposed as special study areas within the Plan. The potential future use of these sites should be determined in separate planning studies.

- Centennial Planetarium: Telus World of Science is vacating the planetarium and relocating to a new site. Further study is required to determine redevelopment potential in the long-term. Potential reuse of the planetarium should establish it as a City facility for institutional use with supportive facilities. Reuse proposals should also give due consideration to the site's landmark potential as a link between West Village and the Centre City.

- CPR Corridor: the area flanking the CPR line presents unique development challenges and opportunities in terms of the proximity to the Sunalta LRT station, potential land uses, building forms, public spaces and crossings. Future use of these sites may include retail commercial, office commercial and light industrial/transportation uses. The redevelopment of these areas should be the subject of a dedicated study.

5.1.6 DENSITY

A range of densities have been established in the Plan area, including a minimum and a maximum density. These densities refer to minimum and maximum Floor Area Ratios (FAR) for each area.

FAR indicates the quotient of gross floor area of a building divided by the gross site area. It is used to control the size of a building in relation to the size of the parcel of land it occupies, thereby determining the built mass (density) of a parcel or area.

A minimum FAR has been set in order to ensure that new development will contribute sufficient activity to the area and to ensure that the building mass will be large enough to contribute to an appropriate streetwall. Maximum FARs have been set to ensure the scale of the development conforms to the vision for the Plan area.

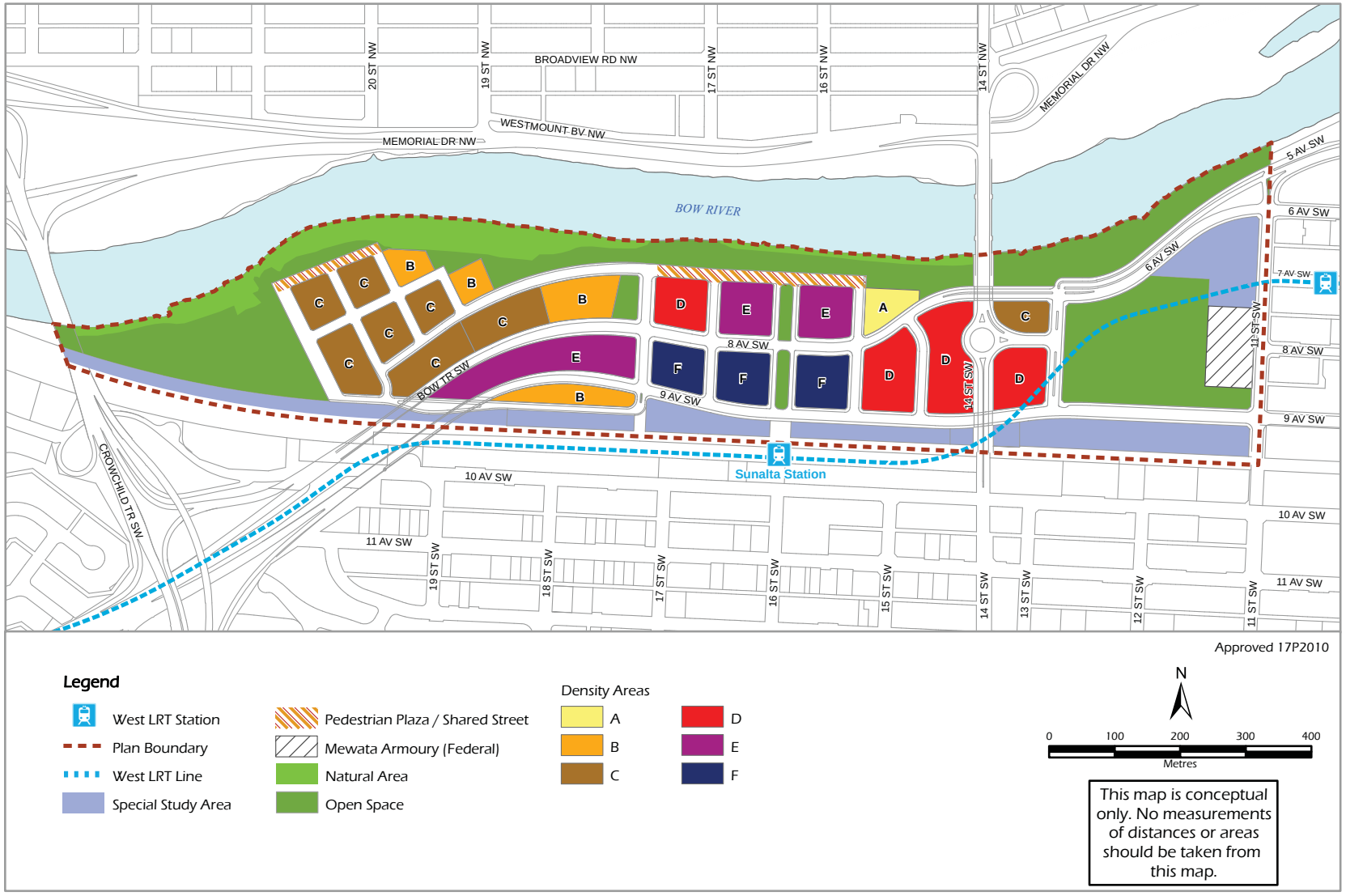
Policies

1. The minimum required and maximum allowable densities for each site should be in accordance with Table 5.1: Minimum and Maximum Densities and Map 5.2: Proposed Densities.

Table 5.1 – Minimum and Maximum Densities		
Area	Minimum FAR	Maximum FAR
A		3.0
B	2.0	4.0
C	2.0	5.0
D	2.0	6.0
E	2.0	7.0
F	2.0	8.0

Table 5.1: Minimum and Maximum densities

Map 5.2: Proposed Densities



5.2 BUILT FORM AND URBAN DESIGN

Related Principles

- Principle 1: Human Scale
- Principle 2: Identity and Place-making
- Principle 5: Public Realm
- Principle 6: Complete Streets
- Principle 8: Community Well-being
- Principle 9: Safety
- Principle 10: Energy
- Principle 11: Water
- Principle 12: Waste
- Principle 13: Materials
- Principle 14: Biodiversity
- Principle 15: Longevity

The Municipal Development Plan recommends 13 urban design elements that are important to the creation of good urban environments. The vision and development principles established in this ARP embrace and refine the MDP recommendations; the urban structure and design of West Village should support the overall vision and key principles leading the development of the area: human scale, identity and architectural quality.

The subdivision pattern for the Plan area should consist of a block pattern that is approximately 80 metres by 80 metres. A continuous streetwall should be established throughout the Plan area by requiring buildings to be built with common walls along streetfronts (Map 5.3). Higher buildings will be strategically located on sites that are chosen for their landmark potential. Maximum building heights should be staggered to ensure sunlight exposure along streets and to create view corridors through the Plan area. Building facades within West Village should be designed and located such that they generate a sense of enclosure around public spaces and streets, provide for active streetwalls and contribute to comfortable and inviting pedestrian experience.

The design of buildings and public spaces in West Village should create landmark gateways into the area, particularly at the LRT station. The public spaces and street environments should be inviting and of high design quality. The use of cohesive design elements, inluding landscape design, is encouraged throughout the public realm. Public art and community facilities should be situated in key locations that support sightlines and/or terminate view corridors, e.g. riverfront.

Individual buildings should be designed with a view towards optimal integration into their surroundings and with their main orientation being toward the public street frontage. Building design should incorporate features of green architecture, e.g. green roofs, living walls, use of healthy and sustainable building materials and the attempt to fulfill the highest energy efficiency standards.

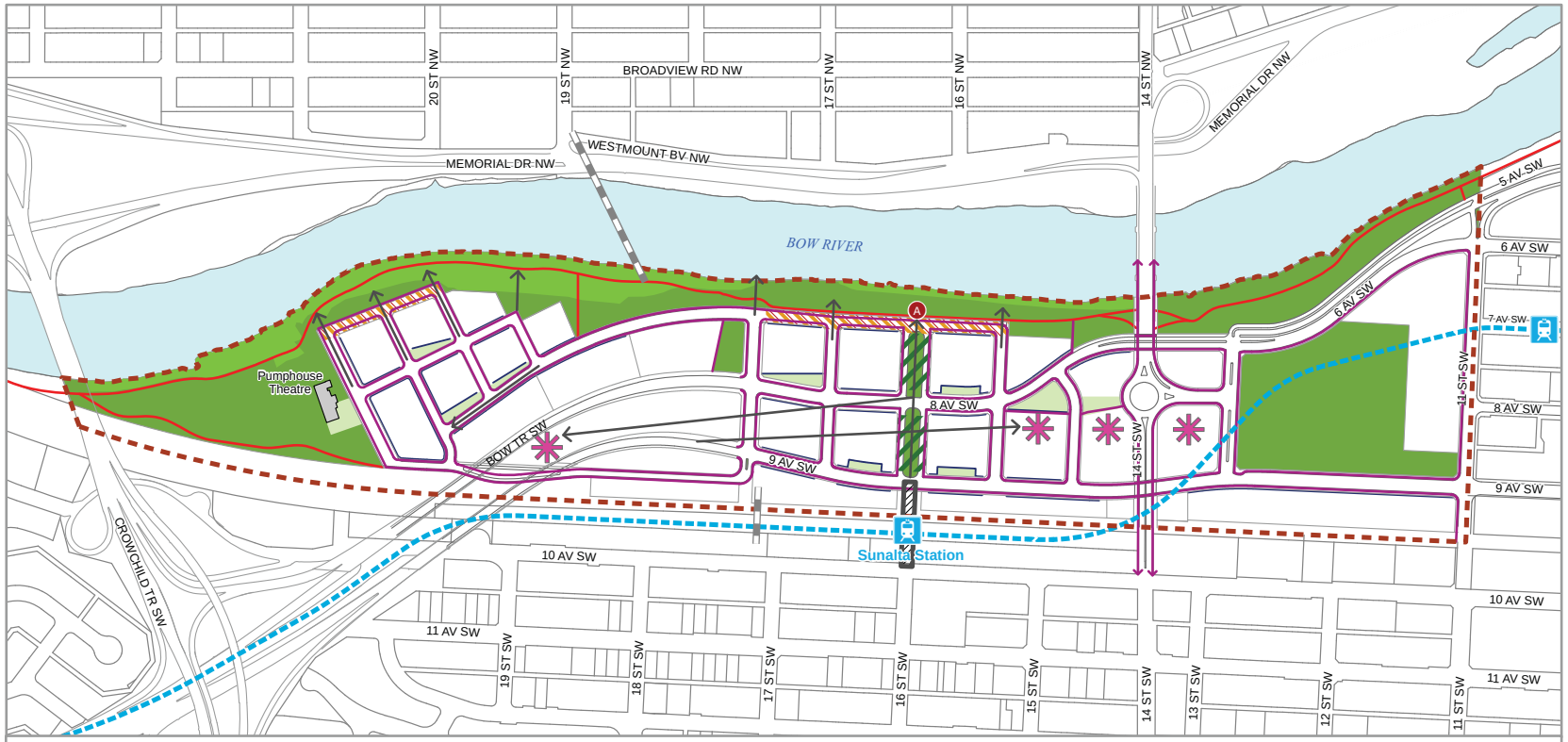
Urban Design Elements of the Municipal Development Plan of Calgary

Thirteen Urban Design Elements are important to the creation of good urban design:

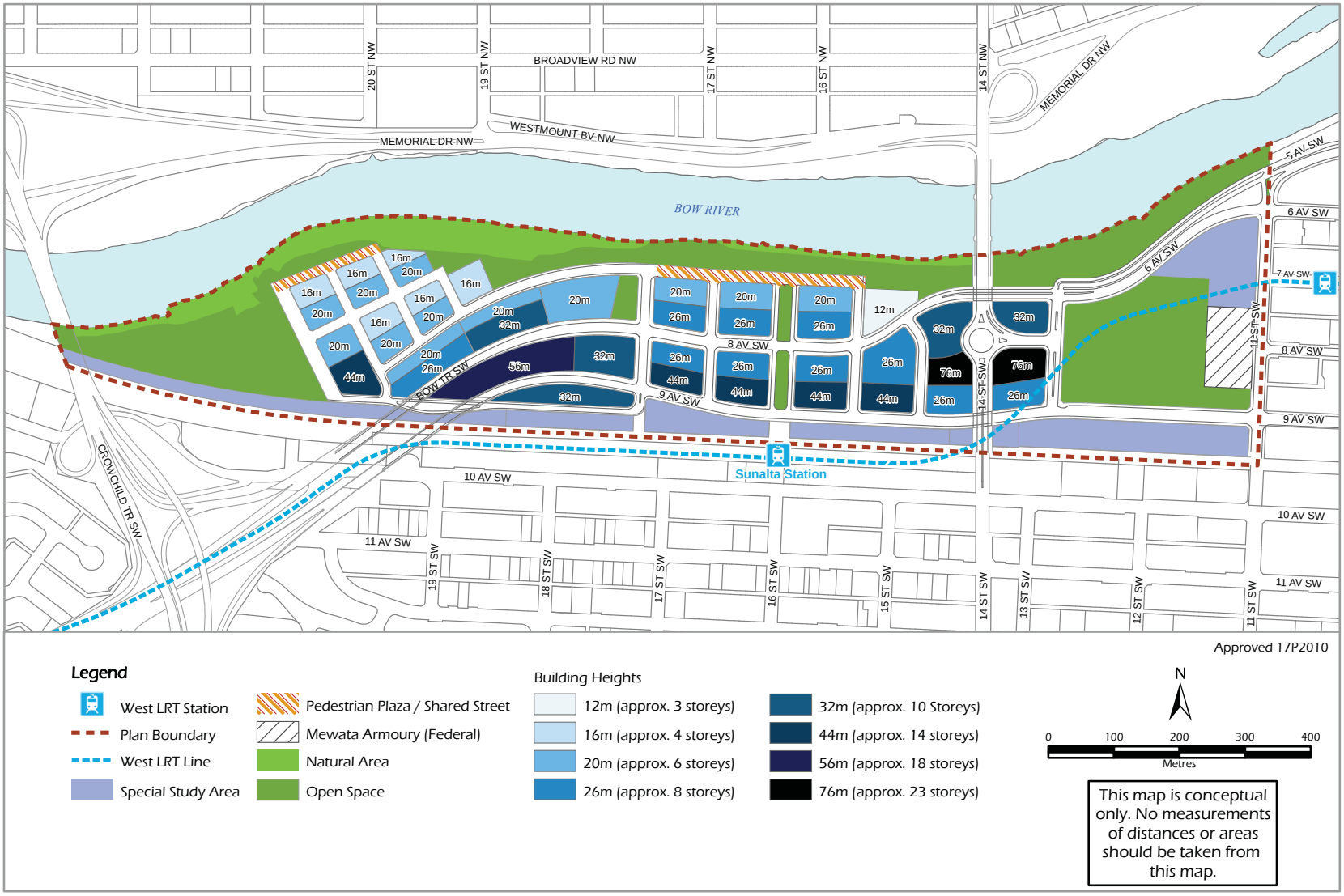
1. Creativity and innovation
2. Context and appropriateness
3. Connectivity and continuity
4. Functional and aesthetic integration
5. Legibility and accessibility
6. Enclosure and human scale
7. Comfort and safety
8. Quality and durability
9. Vitality and animation
10. Flexibility and adaptability
11. Diversity and variety
12. Sustainability and accountability
13. Wayfinding and orientation

(MDP, pg. 2-30)

Map 5.3: Built Form and Urban Design



Map 5.4: Height of Streetwalls



5.2.1 GENERAL POLICIES

1. New development should comply with the maximum building heights indicated on Map 5.4.

2. New development should contribute to the creation of pedestrian-oriented streetfronts through the following:

   - Locating active uses at grade along all major pedestrian frontages.
   - Aligning buildings to relate directly with the primary pedestrian frontage with lobbies and building entries oriented toward the sidewalks.
   - Modulating building faces in width, height and finishing materials to visually break up large building walls. The inclusion of smaller commercial retail units (CRUs) into the building façades of large retail tenants is encouraged.
   - A minimum of 70 per cent of non-residential building façades at grade should have transparent glazing (doors and windows).
   - Providing canopies or other forms of shelter for pedestrians and bicycle parking.

3. Tower elements should only be located in those areas identified for taller buildings in Map 5.3. Shadow studies will be required for developments within these areas for the hours of 10:00 am and 4:00 pm MDT on March 21 and September 21.

4. Towers located in landmark locations, as identified in Map 5.3, should exhibit exceptional signature architectural design, careful articulation of upper storey elements and be oriented in a manner to emphasize their landmark character and contribute to the development of a distinctive skyline for West Village. Public art at street level could further enhance the site as a landmark location.

5. Buildings should front directly onto the sidewalk, be built to the required setback lines and conform to the height requirements set out in Map 5.4.

6. Unless otherwise specified, maximum building setbacks are recommended as follows:

   - Commercial (Office / Retail): 0 – 3 metres; and
   - Residential: 1.5 – 3.0 metres.

   Variations should be considered where plazas and river setbacks may require greater setbacks.

7. The area between the maximum building setback and the property line should be occupied by building entryways, outdoor seating areas for restaurants, seasonal display, bicycle parking, street furniture, public art and residential front porches or yards.

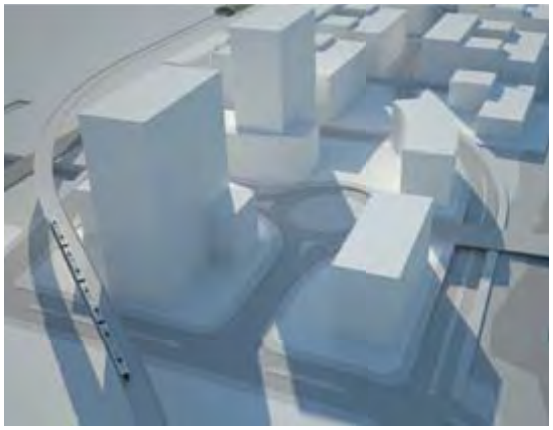


Figure 5.1: Gateway development (concept)

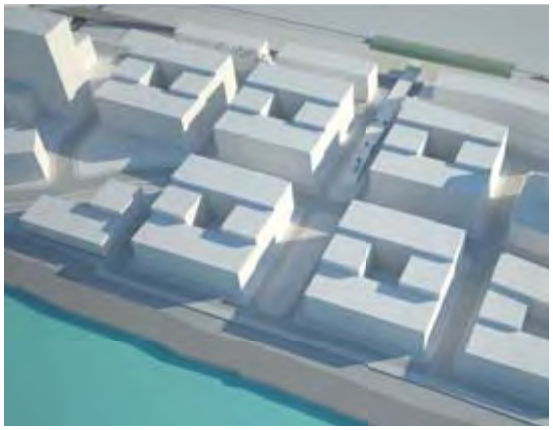


Figure 5.2: Built form (concept)

Figure 5.3: West Village Development Model (concept)

8. The street network and building configuration should be designed to maximize focal point opportunities. Where possible, views and vistas should be aligned with key buildings and should terminate with a landmark feature, a building or public space.

9. Continuous building frontages are desired, e.g. buildings should occupy a minimum of 80 per cent of primary pedestrian frontages. Building elements greater than four storeys are encouraged at corner locations.

10. Individual storefronts that are greater than 30 metres in width should provide multiple entrances at the street level, which may include incorporating separate individual retail units that have entrances oriented to the street.

11. The primary entrance of a building should be located along the pedestrian street and not an internal parking lot, focusing on pedestrian comfort.

12. Buildings forming a park edge or facing a park should incorporate design that enhances the interface with the park.

13. Landscaping should be incorporated into new developments to ensure proper integration, protection from the elements and comfortable pedestrian routes.

14. Landscaping area requirements may be met through a combination of at grade and above grade landscaping.

15. New buildings should be designed in accordance with The City's Access Design Standards to ensure universal access for all persons. Where feasible, buildings should be designed to eliminate the need for access ramps. Where this is not feasible,

the ramps should be designed to have minimal impact on the sidewalk and should not intrude into the pedestrian throughway.

16. New development will address the issues that will make higher density livable for families, specifically for children and for seniors.

17. In order to achieve the highest architectural quality for buildings in the Plan area, the following strategies should be considered:

    - Competitions to develop the design of buildings, in particular along the riverfront Promenade, facing the Boulevard and on landmark sites.

    - Agreements between The City and developers, which contain mandatory performance criteria governing the architectural design and environmental standards of buildings.

    - Employing a competition and bidding process when selling City-owned parcels to private developers in which the winning bid is determined according to its environmental performance and architectural merit.

18. Residential buildings should be designed based on the following:

    - At grade residential units that front a public sidewalk or a publicly accessible private sidewalk require individual, primary entrances (e.g., front doors) providing direct access to and from a public sidewalk.

    - All at grade residential units should be designed to provide visual privacy from any public or internal sidewalk without the need for high or non-transparent privacy fences or walls that detract from the active street edge.

    - All new residential units should be provided with private outdoor amenity space, either exclusive to an individual unit or as a common amenity available to all units within a development. Common amenity space may be provided at or above grade, within courtyards, behind façades or on rooftops, terraces or ground level patios that may be completely or partially visible from the street or other buildings.

19. Within the primarily residential Pumphouse Precinct, where a building is taller than 10 metres those portions of the building above 10 metres should stepback from the street frontages a minimum of 3 metres.

5.2.2 IDENTITY AND PLACE-MAKING

Key features and landmarks should be used in West Village to create clearly identifiable spaces and reinforce the character of the area. The Plan proposes the following key features and landmarks:

Residential frontages

Private amenity space atop underground parkade

- **The Riverfront Promenade:** this linear riverfront plaza should be an active interface zone connecting the four core area blocks to the Bow River Pathway system and riverfront views. Its design as a programmable urban plaza with space for diverse activities – cafes, restaurants, residential, events – makes it a destination along the otherwise naturally landscaped riverfront. People should identify this riverfront urban plaza with West Village.

- **The Grand Staircase:** this unique facility could be a key visual element and landmark in West Village. It would serve two purposes: first it could be the main entrance to the Sunalta LRT Station and to West Village; secondly it would be a community meeting space. The new LRT station will serve as the primary pedestrian entrance to West Village from the south. In keeping with the TOD principles, pedestrian access across 9th Avenue S.W. and the CPR tracks must be as inviting and convenient as possible. Therefore the Grand Staircase concept is envisioned as a wide, architecturally interesting pedestrian bridge platform linking the LRT station to the central pedestrian Boulevard in West Village at the +30 level.

  The northern terminus of the bridge should take the shape of a broad staircase that leads down into West Village via broad platforms. These platforms and the stairs would become public spaces for meeting with other Calgarians, enjoying the view and relaxing on a nice day. The structure beneath the stairs would be constructed as a multi-purpose space so that it can serve as the northern entrance to the LRT station as well as a community space. The structure would also accommodate services such as coffee shops, newspaper stands and a bike locker facility. The latter would serve LRT riders on their way to and from the station as well as local residents and visitors. Space could also be provided for community events and public art, such as rotating temporary displays. Functional design elements, such as elevators, escalators and ramps would be incorporated into the structure to ensure universal accessibility and ease bicycle use. Through these design measures the Grand Staircase would serve as a destination and landmark in West Village.

- **The Pedestrian Boulevard:** The Grand Staircase would come to ground on the main pedestrian spine of West Village. The Boulevard is designed as an extension of the 16th Street S.W. Greenway in Sunalta. Its wide green median is planted with trees and can be used for LID features such as bioswales. The Boulevard is the green spine of the area linking the station to the riverfront. It has a similar landmark function as Centre Street in the downtown core.

- **The Pumphouse Theatre:** The Pumphouse Theatre is a well-known cultural facility in Calgary. In the past it has, however, been very difficult to find. The concept for West Village capitalizes on the theatre and incorporates it into a distinct residential precinct. The theatre should serve as a key activity node for the Pumphouse Precinct. The precinct should be oriented toward the theatre.

- **14th Street Roundabout:** the 14th Street S.W./ Bow Trail junction is an important hub in the transportation network of downtown Calgary. As such, its capacity must be maintained in the redevelopment plan. This poses challenges for the directly adjoining development parcels and their access points. The Plan envisions these parcels to accommodate high-rise landmark towers that will mark this key intersection and the entrance gateway to West Village from the east.

- **Landmark buildings:** the Plan identifies sites where higher buildings should be sited in order to create visual landmarks. The sites have been selected to establish sight lines, create gateways and minimize shadow impacts.

5.2.3 ENVIRONMENTALLY SUSTAINABLE BUILT FORM

Construction and use of buildings has a range of environmental impacts resulting from the use of water, materials and energy and in the generation of waste. These impacts can be significantly reduced through the integration of high sustainability performance standards within design and construction and the adoption of more resource efficient behavior by occupants. This will not only minimize the impact on the environment, but also provide for an improved

Figure 5.4: The Grand Staircase (concept sketch)

Figure 5.5: Grand Staircase - view from southwest (concept)

Figure 5.6: The Boulevard - view from southeast (concept)

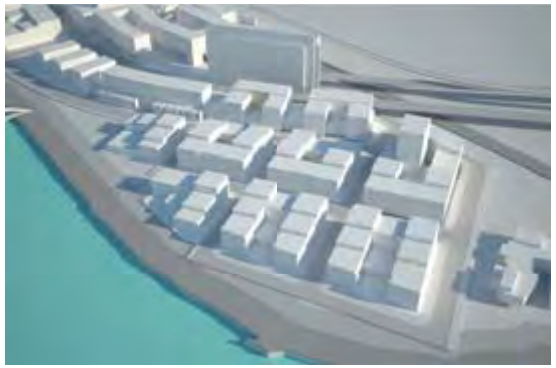


Figure 5.7: The Promenade Precinct (concept)

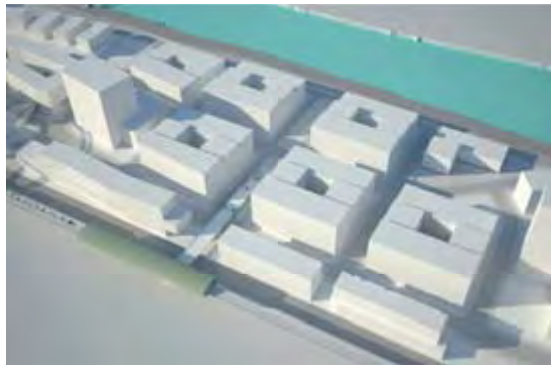


Figure 5.8: The Promenade Precinct (concept)

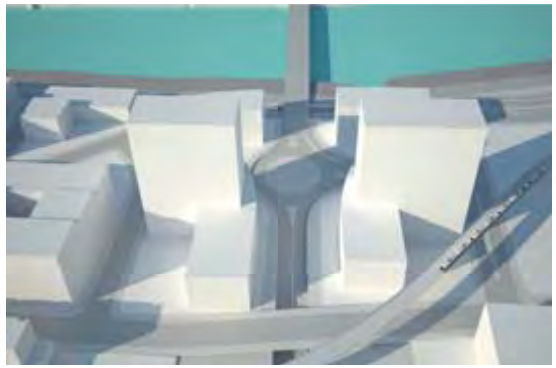


Figure 5.9: 14th Street Roundabout (concept)

overall well-being, cost effectiveness and quality of life within West Village.

In order to achieve the principles and targets for West Village related to the environment and natural resources, all buildings should be designed to achieve the highest standard of sustainable development. General sustainable building design policies and strategies are outlined below.

Policies

1. All new buildings in West Village should achieve the highest applicable environmental standard at the time of development, for example achieve a minimum design standard of LEED® Platinum rating.

Strategies

The following design concepts, development practices and technologies are examples of strategies that may be used to achieve the policy outlined above:

- Optimizing building energy performance
- Use of renewable energy sources
- Use of innovative wastewater technologies
- Stormwater management – reduction of quantity
- Water collection, filtering and reuse
- Provision of water efficient landscaping
- Provision of recycling facilities in buildings
- Maximizing day lighting and views
- Construction waste management – recycle to divert material from landfill sites
- Use of building materials with a high recycled component
- Use of durable and rapidly renewable materials
- Provision of green roofs

5.2.4 STREETSCAPE DESIGN

Streets are an essential part of the public realm and lively streetscapes comprised of a variety of design elements are key to a pleasurable pedestrian experience. Under the Calgary Transportation Plan, streetscapes are broken into two distinct zones: Roadside (trees, street lighting, furniture, sidewalk) and Interface (building overhang, entries, awnings). Collectively, these design elements are the physical infrastructure of place-making throughout the pedestrian realm.

One of the most important elements in creating attractive streetscapes is the presence of street trees. It is essential that tree selection and planting be conducted properly so they can thrive for many years.

Dense and pedestrian-friendly built form

Pervious landscaping

Pedestrian-friendly streetscapes

Coherent design elements

The design of the streetscapes should incorporate features that enhance the environmental performance of the streetscape. For example, low impact development measures, such as bioswales, could be incorporated into the planting component of the street. Where open bioswales are not possible or desirable, covered units could be used.

Policies

1. A coherent design theme specific to the West Village area should be applied to all streetscape elements along all streets.

2. Street furniture, lighting, signage and landscaping should be oriented towards the pedestrian and the cyclist where applicable.

3. Opportunities for public art should be incorporated throughout the pedestrian realm as part of the streetscape design.

4. Canopies and awnings should be employed along retail streetfronts.

5. Disruptions to the pedestrian network from curbcuts, parking access or above ground utilities should be minimized.

6. Underground utilities may require relocation to allow street trees within the roadside zone.

7. Driveway crossings should be aligned to allow space for tree planting.

8. The planting of street trees should be spaced to allow for bus loading where transit stops are anticipated.

9. Bus zones, including waiting and amenity areas, should be carefully designed as part of the streetscape. Amenities may include shelters, benches, garbage cans, electronic fare machines and next bus information displays. Waiting areas should be separate from pedestrian through space.

10. Necessary access for emergency vehicles should be fully integrated into the design. This should include accommodation of access, egress, and evacuation routes for emergency vehicles and people.

11. The planting of deciduous street trees is encouraged wherever possible.

12. The species diversity for trees in groomed parks and roadways in terms of genus, species and cultivar should be such that both the health and longevity of the trees and urban design concepts (e.g. street themes) are reflected.

13. The average species rating for trees planted in groomed parks and roadways should be 80 per cent.

14. The planting of street trees should be undertaken in a manner that will achieve a 25 year lifespan in sidewalk plantings and 50 years in tree

lawns. Designs must include sufficient root and branching space and should include a means of supplying supplementary water, fertilizer and air as well as protection against snow clearing and de-icing activities. Design should also accommodate removal of stumps and planting of replacement trees.

15. The City should consider providing charging stations for electric vehicles in the infrastructure of the streets.

16. The Access Design Standards of The City of Calgary should be applied in all streetscape designs in West Village.

5.2.5 SHARED STREETS

The Plan defines a formal pedestrian/cyclist friendly street as a Shared Street. Although the classification of a shared street is yet to be determined, the street could include a street right-of-way intended to accommodate a wide roadside zone. The roadside zone treatment will require co-ordination of street tree, furniture, and sidewalk placement. The design of the right-of-way should clearly indicate that accommodating pedestrian and cylclist movement is given priority over vehicular movement. The vehicular lanes and sidewalk areas should be similar in appearance, but provide a clear definition between the two areas for visually impaired, and should be separated by landscaping elements such as bollards, trees, rolled curbs and plantings.

Shared street, separation through design

Policies

1. A shared street should incorporate:
   - Pedestrians and cyclists as a priority.
   - Expanded sidewalk width (>2.5 metres), adequate planting strip width (that includes sustainable high canopy street tree plantings), furnishings (including benches and waste bins), and wayfinding signage.
   - On-street parking (where applicable) to be provided with design measures at intersections to narrow the crossing distance for pedestrians. Intersection measures are to be coordinated with the sidewalk design.
   - Similar surfaces, i.e. separation via landscape features.

Shared street design details

   - Cycling facilities (bike racks/lockers, signage, pavement markings).
   - Paving materials of the shared street should be of a texture and quality appropriate to the linear plaza and pedestrian focus.

2. Landscaping should be provided along the length of the boulevard with street trees planted at regular intervals.

5.2.6 DESIGN FOR CLIMATE

The public realm should provide protection and comfort to pedestrians and consider the impact of adverse weather conditions (e.g. wind and snow) on public spaces. Weather protection should be built into all projects, particularly in areas where pedestrians are encouraged to gather and wait. Transit stations, and

stops in particular, require care to provide comfort for waiting riders.

The key to enjoying winter in the city is to have comfort and escape from the cold, a visually stimulating environment, clear sidewalks for safe pedestrian travel and landscape design that incorporates changing seasons. Through appropriate planning and design, winter can be equally accommodating to outdoor pedestrian activity.

Policies

1. Weather protection should be incorporated into streetscape design. This can be achieved with use of canopies, shelters and street trees, and by:
    - Maximizing sun exposure for waiting areas (especially in winter months) by careful location of seating, plantings and building elements.
    - Providing protection from wind, rain and snow with plant screens, walls and canopies.
    - Avoiding wind tunnels and large barren expanses.
2. Pedestrian connections and waiting areas should incorporate durable paving that is resistant to salt and snowplow damage.
3. Ice-resistant surfacing is encouraged where feasible to keep areas clear of dangerous snow and ice buildups.
4. Use of colour, light, urban furniture, public art and natural materials is encouraged.
5. Incorporate coniferous trees into landscape design to provide natural colour in the winter and to act as a valuable windscreen.
6. A highly integrated development pattern with careful spacing of taller building elements as landmarks is encouraged to ensure wind movements are kept at higher levels and 'smoothed' out over low areas.

5.2.7 DESIGN FOR SAFETY

Crime Prevention Through Environmental Design (CPTED)

CPTED is an approach to designing the built environment to reduce the opportunity and the fear of random crime in the public realm. Basic principles include defining a boundary between public and private space, improving natural surveillance (by reducing blind spots and encouraging 'eyes on the street') and controlling access to private space.

Designing for safety is particularly important in transit areas where people are waiting, especially in the evening hours. By ensuring that the public realm, especially the transit waiting area, is well defined, active and well lit with clear sight lines, the built environment will discourage unwanted activity and increase perceptions of safety and security.

New development should be designed in accordance with the principles of Crime Prevention Through Environmental Design. In particular, the following factors should be considered in the evaluation of Development Permit applications:

- Clear distinctions between the public and semi-private realms.
- Clear sight lines along public pathways and in public spaces.
- Opportunities for natural surveillance of lanes, sidewalks, streets and other public spaces.
- Provision of adequate lighting of pedestrian and cycling routes, parking areas and other public spaces.
- Ensuring that landscaping does not compromise security by preventing clear views from streets to pathways, open space or car parking areas.

Emergency Services Safe Communities

Emergency Services Safe community design principles should also be applied throughout West Village. An Emergency Services Safe community promotes and maintains safe and healthy behaviours, supports effective emergency responses, and offers protection to people and their property.

5.3 SITE ECOLOGY AND PUBLIC OPEN SPACE

Related Principles

Principle 2: Identity and Place-making

Principle 5: Public Realm

Principle 8: Community Well-being

Principle 10: Energy

Principle 11: Water

Principle 14: Biodiversity

5.3.1 SITE ECOLOGY

Urban ecology deals with the relationships between the built urban environment and the natural elements and organisms found or designed within this same space, such as bodies of water, vegetation, landscape features, wildlife and humans. The concept of urban ecology should be a driver for site and building design in West Village. Not only should efforts be made to mitigate the negative effects of development and the built environment on the existing site, but significant emphasis should be placed on ecological restoration focusing on the site's future recreational and ecological role at varying scales: the Grassland Natural Region, the Bow River watershed, the Calgary open space system, the West Village open space system, and the individual natural area. The development overall should be designed and built with the natural ecosystem in mind; the ecosystem integrated within the built form in order to enhance its amenity to residents, visitors and employees, and conserve its ecological function in the larger context.

West Village benefits from its riverfront location where the riparian ecosystem presents tremendous opportunity in terms of biodiversity, amenity, and environmental quality. As the area redevelops, these attributes should be strengthened through carefully planned restoration of the West Village riparian areas. These lands also disproportionately contribute to an improved urban environment by cleaning the air, providing shade and comfort, and promoting water infiltration through root absorption. The ecological and qualitative benefits of these natural areas include:

- Wildlife and fisheries habitat.
- Habitat connectivity and stopover habitat for migratory and resident bird populations.
- Water conservation via storage and filtration of run-off and wastes.
- Cultural and historical linkages.
- Temperature modification via shading and shelter belts.
- Energy conservation.
- Abatement of air and noise pollution.
- Recreational opportunities.

Policies

General

The redevelopment of West Village should contribute to the enhancement and long-term resiliency of existing urban ecology through the following general policies:

1. The regeneration and enhancement of the riverside ecosystem by developing a Gallery Forest in the western section of the site's riverfront. The gallery forest should be integrated into the built form and be designed to accommodate the aesthetic needs of the residential community without affecting wildlife habitat. The West Village riverside forest should constitute primarily native species to promote beneficial ecological functions such as habitat provision, environmental services, and cultural experience.

2. The implementation of key Low Impact Development (LID) features in strategic locations throughout the West Village, including riparian areas. Filtering and storage functions should be designed into the Gallery Forest complementing control measures that assist in the prevention of flooding by intercepting and storing runoff locally.

   Several site conditions, such as the existing industrial contamination or river proximity, may pose some challenges for the effective application and implementation of LID design in West Village.

Low Impact Development *(LID) is the practice of managing stormwater run-off in manners that mimic predevelopment hydrologic patterns. This is done through the planning and engineering of small scale systems designed to deal with water on-site through infiltration, evaporation, natural filtration, and storage. These techniques improve water quality and prevent the entry of non-source pollutants and sediment into rivers and streams. Appropriate and deliberate design of parks, natural areas, open space and the public realm to incorporate LID elements greatly lessens the negative impact of development on the surrounding natural environment and contributes to collection of stormwater for irrigation purposes.*

Various forms of LID should be considered on a site by site basis to ensure water quality, habitat enhancement and cultural experience are addressed.

3. The integration of green infrastructure and natural processes within the design of the built form to provide improved aesthetics and ecological services. For example, living walls, green roofs, xeriscaping, tree planting, soft and natural landscaping should be incorporated as appropriate. Particular emphasis should be placed on the greening of streets that act as corridors leading to the riverfront.

Urban Ecology

4. With the submission of an Outline Plan, a Biodiversity Enhancement and Habitat Management Plan should be submitted to the satisfaction of the Development Authority. This plan should provide a site-wide design concept for West Village to demonstrate:

   - The ability of the designed West Village Gallery Forest to contribute to the integrity, biodiversity and functionality of riparian lands and the Bow River.
   - Enhancement strategies for natural areas and open spaces within the site.
   - Strategies to ensure a significant portion of the site surface area will be dedicated to urban wildlife habitat.
   - Strategies to protect natural areas from development.
   - Strategies to provide trees and shade for a significant portion of the development area, parking, and road area.
   - Strategies to maximize the ratio of surface water run-off filtered or treated on site.
   - Strategies to allocate a significant portion of the area to green infrastructure.

5. Outline Plan and Development Permit applications

Bioswales and natural vegetation

should be required to demonstrate:

- The integration of biodiversity and natural processes within the site and building design.
- The application compliance with the site-wide Biodiversity Enhancement and Habitat Management Plan and its strategies pertaining to ecosystem enhancement, native habitat protection, provision of tree shade and canopies, maximizing the treatment of surface run-off on site and the provision of green infrastructure as listed above.

Urban Forestry

6. Facilities for street trees should allow trees to achieve a 25 year lifespan in sidewalk plantings and 50 years in tree lawns. Designs should include sufficient root and branching space and should contain a means of providing supplementary water, fertilizer and air as well as protection against snow clearing and de-icing activities. Designs should also accommodate removal of stumps and planting of replacement trees. Landscapes and tree planting should be built employing sustainable practices.

7. Alternative methods of tree installation, irrigation,and maintenance that are compatible with LID techniques and sustainable urban design should be explored.

8. Natural areas or areas along the Bow River taken by The City as Environmental Reserve should be restored with indigenous trees and shrubs for the creation of improved riparian and upland conditions necessary for sustainment of their functionality and biodiversity.

9. Upon redevelopment, preservation of existing trees is encouraged to enable retention of the City's mature tree canopy. Tree removal shall be regarded as a last resort.

Low Impact Development and Open Space

10 Green spaces should be designed to effectively help manage stormwater run-off while enhancing their recreational and environmental potential through LID. Trees and vegetation should be used to ensure that there is minimal net discharge of stormwater into the river by designing for maximum on-site infiltration. This strategy aims at preserving water quality within the Bow River Watershed and minimizing encroachment into the remnant/restored riparian ecosystem riverbank. In specific cases where on-site filtration is not achievable, alternative techniques such as green roofs and living walls should be explored.

11. Stormwater should be treated as a resource rather than a waste product. Water harvesting and reuse features should be incorporated into various landscape designs and be used for irrigation for both landscaping and the gallery forest in addition to other suitable uses. Depending on specific conditions throughout the site, harvested water could also be used for replenishing ground water.

12. Opportunities for public education, exemplary ecology, design, local landscape vernacular, and art, should be provided and incorporated throughout West Village by The City to raise Calgarians' awareness of the importance of site ecology integration into LID and its effect on the human environment and urban ecology.

13. The unique characteristics of the riparian area should be preserved and its role as a wildlife corridor enhanced. Native vegetation should be planted and conserved with every opportunity to ensure that new plantings are suitable for the biological and physical landscape conditions present on the historic floodplain. Indigenous vegetation plays a part in the conservation of the existing natural habitat and has a high ability to filter and prevent pollutants from entering the Bow River.

14. Riparian buffer zones should be established where applicable as per the Environmental Reserve Setbacks Policy to enhance the quality of ground water flowing into the Bow River and the riparian natural habitat. The existing riparian forest should be augmented and riparian buffers designed within these zones to

Open spaces with pervious and impervious elements

significantly slow down run-off, diminish run-off quantity, and enhance the quality of the water reaching the Bow River. Riparian buffer zone selection should be based on Biophysical Impact Assessments and Environmental Assessments. The recommendations of this Plan should also be taken into consideration in the selection of riparian buffer zones.

15. In areas where the open space is constrained, compromised or insufficient to accommodate the desired LID threshold, other forms of green infrastructure and engineered green elements should be designed and incorporated (contaminated lands, riverfront parks immediately adjacent to roadways, conflict with park programming, etc.).

Sunlight Preservation

16. In general new development should occur such that sunlight access for all existing and new open spaces is preserved:

    - Along the riverfront pathway, new buildings should not cast shadows into an area 20 metres wide throughout, abutting the top of a south bank of the river, as determined by the Development Authority from 10am-4pm Mountain Daylight Time between March 21 and September 21.

    - Near any other park or open space, new buildings should not cast shadows beyond a line measured 20 metres into the park, parallel to any exterior property line between the hours of 12pm-4pm Mountain Daylight Time between March 21 and September 21.

    - Selection of future park space within West Village should give consideration to the amount of sunlight the site receives and the level of sunlight protection required to the functions of the park. Special consideration should be given to ensuring adequate sunlight access for rooftop gardens.

5.3.2 THE OPEN SPACE AND PARK SYSTEM

Calgary is a city of parks and green spaces linked by pathways and interconnected green belts. The purpose of the West Village open space system is to provide non-motorised connectivity and a range of diverse open spaces for passive, active, and programmable recreation. Regional and local pathways will provide connectivity throughout the community as well as key linkages to neighbouring areas. A variety of plazas, parks, and natural areas are planned as part of the West Village, incorporating a range of functions in amenities such as playgrounds, playfields, promenades, and community gardens.

The primary public open space within the Plan area, is the Bow River Parkland. This linear park extends along the entire length of the development area (approximately 1.7 kilometres). It is envisioned as a sequence of park sections of varying design

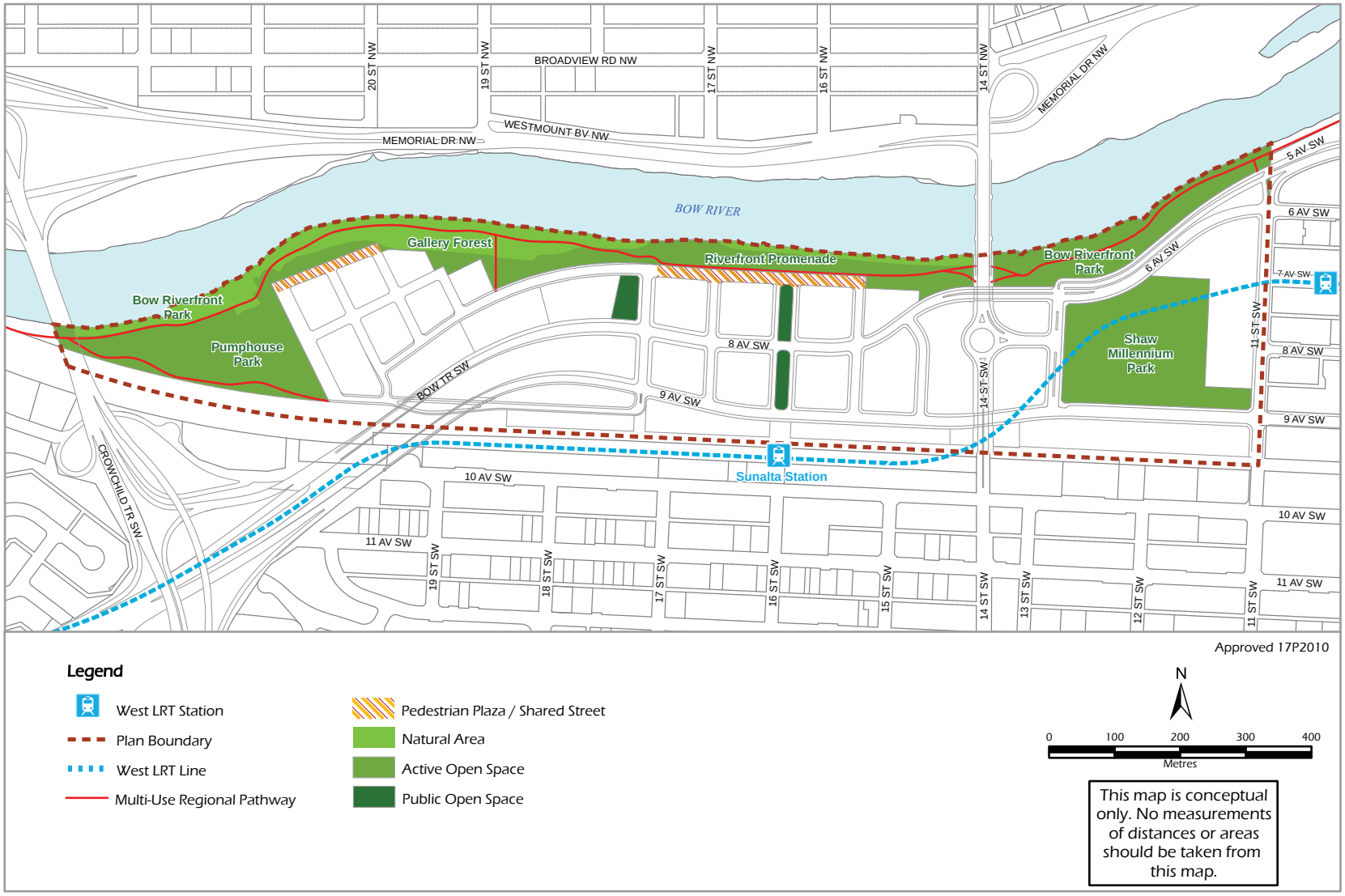
Sun-lit spaces

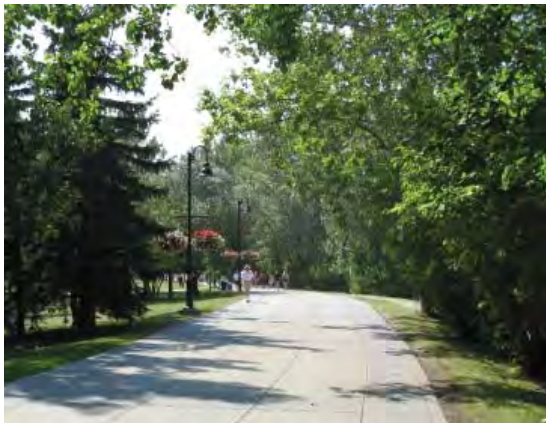
interconnected via the Bow River Regional Pathway. Although its immediate river interface should be designed to preserve the natural riparian environment, where appropriate, individual sections may have a more urban and hard landscaped theme to allow visitors to experience the Bow River more directly. The intent is to articulate a series of experiences, ranging from a softer natural aesthetic in the west to a more urban and hard textured one at the centre and eastern portions that appropriately reflect and interfaces with the adjacent landscape and building form.

From east to west the primary park sections are (Map 5.5):

- **Bow River Linear Park and Pathway (11th Street S.W. to 14th Street S.W.):** The Plan envisions this area as a direct continuation of the riverfront parks in the Centre City. It is a green,

Map 5.5: Open Space System





Bow River Regional Pathway

Outdoor seating and activity

landscaped space which accommodates a cycle path, pedestrian path and the existing sculpture garden in Nat Christie Park.

- **The Riverfront Promenade:** This approximately 400 metre section of riverfront corresponds to the core urban area of West Village and is centred on the pedestrian Boulevard that leads to the Sunalta LRT Station. The Riverfront Promenade is envisioned as a destination for urban activity and outdoor amenity along Calgary's otherwise quiet natural riverfront. Its design should therefore be more contemporary and incorporate more hardscaping elements than the other riverfront park sections. Its key landscaping should consist of a tree-lined linear plaza backed by riverfront mixed-use buildings.

  The plaza should accommodate outdoor cafe and restaurant seating, window shopping and casual strolling. It should serve as, and be designed as, the riverfront venue for neighbourhood events and selected city-wide activities. A shared street should be incorporated into the plaza to facilitate access to the adjoining development, create a front door aspect and thereby support activity throughout the day.

  Smaller plazas along this section of riverfront should supplement the main plaza. They should be designed and located to create a sequence of platforms for sitting and relaxing that could also be used as venues for special park features such as fountains, educational/interpretative features and public art looking out onto the Bow River. Trees and formal landscape/garden elements would highlight the platforms, but sightlines to the river would be maintained to reinforce the characteristic location on the Bow.

  At the terminus of the view corridor along the pedestrian boulevard from the LRT station a landmark (e.g. public art or a pavillion) should mark the riverfront.

  The Bow River Regional Pathway should be incorporated into the overall design of the Promenade such that conflicts between cyclists and pedestrians are minimized.

  Appropriate measures should be employed between the hard surfaces and the river, e.g. vegetated bioswales, rain gardens, or wetlands to protect the Bow River from water run-off from the Riverfront Promenade plaza.

- **West Village Gallery Forest:** The West Village gallery forest is located west of the Promenade section of riverfront park space. It is envisioned as the re-naturalized forest for the area. It should be designed to enhance the natural river landscape, offer some active and passive use areas, and provide natural filtration to stormwater before it reaches the Bow River. Here, the interface with the river should return to its natural riparian character and the landscape design should focus on conservation of the natural environment.

- **Pumphouse Park:** The design of this park should build on the existing character as a naturally landscaped park suitable for picnics, events and active recreation. It should serve as the natural

Figure 5.10: The Riverfront Promenade (conceptual sketch)

western gate and transition zone to the Plan area and city centre along the Bow River valley. The park landscape design and potential uses and expansion of the Pumphouse Theatre should be mutually co-ordinated to enable a variety of programmed and informal recreation in the park. This park should be both an oasis for the West Village residents as well as a cultural and recreational destination for theatre-goers and all Calgarians.

- **Existing and Neighbourhood Parks and Open Spaces:** Shaw Millennium Park is an existing regional park that consists of programming space, manicured landscaping, and a large skate park. The park should be maintained in its current form and function.

- **Recreation Spaces:** Various smaller recreation spaces and open spaces should be dispersed throughout the Plan area. Among these envisioned in the Plan are the green central area of the pedestrian Boulevard and an open space located north of 8th Avenue S.W., just west of the core urban area. This latter space would mark the entranceway and transition to the Pumphouse Precinct and riverfront area. Its functions and design should reflect its context. As such it could be designed as a plaza or neighbourhood park. It may also accommodate strategic LID infrastructure while serving first and foremost a recreational function.

- **Urban Agriculture:** In addition to the cultural, recreational and aesthetic value of open space and parks, the provision of facilities for local food growing should be considered in the Plan area. Local food growing provides a healthy outdoor pursuit, a strong magnet for community integration and a major contribution to sustainability. The demand for community gardens within Calgary has grown greatly within recent years in both the established and new community areas. The provision of attractive and well managed local food growing opportunities, for example, community gardens, orchards, and road verges would also be a major asset to the West Village community.

Recreation spaces

Local food

Policies

Existing Parks

1. The quality and function of Pumphouse Park should be enhanced to respond to the needs of the West Village residents, employees and visitors. The future building expansion and adjacent landscaping scheme should be mutually compatible. Other areas of the park should benefit from an increase in amenities and improved functionality to attract a broad range of park users.

2. A landscape and functional transition should be created along the riverfront, moving from an urban to a natural interface as one moves away from the city centre along the riverfront (east to west). This concept is compatible with the disturbed eastern edge and the more natural western edge where much of the native vegetation along the river should be retained and enhanced. LID measures should be pursued for the entire riverfront.

3. The function, viability, and diversity of Shaw

Millennium Park should be maintained and protected. Any adjacent redevelopment impacting redesign of the park should be done in consultation with the various park user groups.

Park Context and Design

4. The envisioned pedestrian Boulevard should be designed in a manner that will encourage and support formal and informal activities. Its design should incorporate unique features contributing to the creation of a meaningful space and distinctive character.

5. The impact of (re)development should be creatively mitigated and open space edge conditions should be improved with every opportunity. The quality and vitality of open spaces in West Village should be strengthened to increase the value of parkland to residents and visitors.

6. The vitality of existing and new open spaces should be supported and enhanced by adjacent land uses. e.g. commercial uses on ground floors, residential uses above.

7. Opportunities should be created to celebrate the historical and Aboriginal significance of the West Village landscape and other historical destinations such as the Pumphouse building.

8. Opportunities should be created to include public art within the public realm, specifically in existing and new West Village parks.

9. Connections linking various precincts of West Village to the open space system, between park sites, and to the regional pathway should be enhanced with every opportunity. Connections should be pedestrian and cyclist friendly by providing shortest and most comfortable routing.

10. Bicycle facilities should be incorporated in West Village parks and open spaces to promote cycling as a form of recreation and alternative mode of transportation.

11. The riverfront should be designed and promoted as a pedestrian and bicycle oriented activity hub and a destination in West Village and the City as a whole.

12. The potential for adverse environmental contamination impacts along the river shoreline originating from the previous industrial uses in the area should be considered and mitigated where enhanced access to the river is contemplated.

13. Parks and open spaces should be designed appropriately for Calgary's climate and landscape, addressing year round and 24 hour use, where appropriate.

14. Opportunities should be provided for alternative forms of recreation and open space and amenities such as community gardens, fitness amenities for adults and seniors, natural amphitheatre, and new types of playfields and leisure pursuits.

15. A park/plaza should be created within a five minute (approximately 450 metre) walk for residents and employees in West Village. Open space should be designed for accessibility (perceived and physical) and attract a diversity of people.

16. Public plazas, seating, and landscape features along the riverbank should be designed in a manner sensitive to, and respectful of, the existing natural habitat. Structures should only be constructed after appropriate environmental assessments are conducted and only if it is deemed that the disturbance will be minimal. Approved designs should benefit natural areas and visitors, enhancing both biodiversity and amenity value whilst minimising impact to natural areas.

17. The implementation of the Open Space Plan, the Urban Forest Strategic Plan, the Calgary Wetland Conservation Plan, the Municipal Development Plan, 10 Year Sport Strategic Plan and other plans pertaining to parks and open spaces should be supported and facilitated.

18. Unique design elements such as exemplary sustainable and ecologically-based water features, which use a non-potable water source, or structures are encouraged, subject to the Open Space System Implementation section.

19. Urban plaza spaces, formal in nature and scaled in proportion to the street and block grid should be provided. The design and programming of the plazas should be based on the intended uses and character of the adjacent blocks. The plazas may be retained as private land provided that they are publicly accessible and designed in conjunction with the private development.

20. The design of the parks in West Village should reinforce the urban character of the West Village area. The following factors should be considered in the design of the parks:

    - Park edges should be framed with vertical landscape elements.
    - Natural surveillance of the parks should be encouraged.
    - Pedestrian and bicycle linkages should be incorporated within and through the parks.
    - Pedestrian-friendly at grade connections should be provided from the parks to the rest of the Plan area in order to increase accessibility.
    - Parks and open spaces should be designed for universal accessibility according to the Access Design Standards of The City of Calgary.
    - A variety of recreation, arts and culture and social functions should be provided for, including active recreational areas, informal passive space, natural landscapes and formal areas. They should reflect meeting the needs and preferences of the local, regional and city-wide community.
    - Multi-functional hard surface areas (e.g., fountains, reflecting pools/skating rinks) should be considered.
    - Opportunities for food production uses such as urban agriculture and community gardening should be incorporated.
    - Public art should be incorporated into the parks.

21. All parks and plazas should be designed to be safe and active spaces through clearly defined entrances that provide access and act as a transition from surrounding uses.

22. Small public plazas and places should have clear and legible public access, either through signage or through inviting design elements, and be designed for social interaction and passive recreation.

Local Food Production

23. Opportunities for local food production, such as urban agriculture, community gardens and community orchards should be incorporated into local open space function and design.

24. Future local food production sites should be identified in the Plan area and the required infrastructure should be provided as part of the initial landscape construction design.

25. Incorporate edible plants and fruit trees as appropriate in the landscape design of manicured parks throughout the West Village.

Implementation

26. Publicly-owned parks should be designed to standards maintainable within The City's budget or be subject to special amenity or maintenance agreements.

27. To address long-term maintenance of special design features, effective mechanisms could be considered, such as a business association, endowment fund or special tax. A business association may also wish to own and maintain private parks.

28. At the Outline Plan or Subdivision stage, the developer should prepare conceptual development plans for each of the proposed parks and open space components, in consultation with Calgary Parks. Such plans should conceptually

address the park requirements outlined in the 'Development Guidelines and Standards: Landscape Construction' or otherwise in effect at the time of application.

5.3.3 RIVER SETBACK POLICIES

Land development along the Bow River must take two policies into particular consideration: the City of Calgary Environmental Reserve Setback Guidelines and the Floodway, Flood Fringe and Overland Flow regulations of Land Use Bylaw 1P2007.

The Environmental Reserve (ER) Setback Guidelines are intended to provide specific guidance on appropriate ER dedication setbacks to prevent pollution of waterbodies from non-point sources in accordance with the Municipal Government Act. To achieve these goals, it recommends that a minimum ER setback of 50 metres should be taken adjacent to the bank of the Bow River upon subdivision. This setback would provide a strip of land that would act as a buffer to prevent non-point pollution reaching the river through surface or non-surface means.

The Bow River

The objectives of the ER Setback Guidelines highlight the importance of a consistent application of the policy throughout the city and specifically reference applicability to Area Structure Plans. Within the context of an Area Redevelopment Plan in the built-up area close to the Downtown, application of the guidelines needs to take the specific, existing site constraints and opportunities into consideration. The West Village Area Redevelopment Plan recommends that those sections of the riverfront immediately adjacent to the Bow River and currently occupied by a portion of Bow Trail should be restored to a natural state. For this purpose, the Plan generally maintains a 50 metre setback along the riverbank. Restoration of the riparian zone should be done in such a way as to ecological goals, such as protection of water quality, habitat and the maintenance of ecological connectivity with the Bow River Corridor.

In addition to restoring the natural riparian environment immediately adjacent to the riverfront, it is also recommended that a portion of the Plan area should be developed as an urban riverfront (The Riverfront Promenade). The Promenade would include a plaza with space for outdoor seating, recreation and public events and would include a "shared street" designed to serve low vehicular volumes and provide access to this zone. In order to achieve a balance between restoring a natural riverbank environment and providing a lively public meeting place along the riverfront, it is considered appropriate to locate the Promenade within the 50 metre setback area within this very specific redevelopment context. Careful consideration of the interface between the built and natural environments will be an important element of this design.

The Plan also takes the Floodway, Flood Fringe and Overland Flow regulations of Land Use Bylaw 1P2007 into consideration. This section of the bylaw establishes requirements which protect development from river flooding and which ensure that the river's floodway and flood fringes are not obstructed by development. The Plan area contains mapped floodway areas, which have been taken into consideration in the redevelopment concept. There are no mapped flood fringe or overland flow areas in the Plan area.

Policies

1. Development along the Bow River should maintain a 50 metre setback in accordance with the Environmental Reserve Setback Guidelines of the City of Calgary. Within the Riverfront Promenade Zone of this area, a public plaza and "shared street" can be incorporated with appropriate design to ensure establishment of a functioning riparian zone.

2. At the time of development, site specific mitigation strategies to address riparian function, prevention of pollution and site remediation within the context of river setback requirements should be evaluated.

3. Shared streets in the setback area should be designed to be fully integrated into the public plaza space and such that vehicle speeds, noise and emissions are minimized.

4. The riparian zone along the riverbank should be incorporated into the design of the Promenade zone.

5. Developments should not obstruct the river's floodway.

5.4 MOBILITY

Related Principles

Principle 1: Human Scale

Principle 2: Connectivity – Local and Citywide

Principle 5: Public Realm

Principle 6: Complete Streets

Principle 8: Community Well-being

Principle 9: Safety

Principle 14: Biodiversity

This section sets out the conceptual mobility network for the West Village area. It introduces a plan for a comprehensive street and block network that will be one of the primary organizing elements of the community. It also provides an integrated network that connects key destination points throughout the area in a logical way. A concept for a street network begins with the understanding that urban streets have different functions and should consider the accommodation of every mode of transportation including walking, cycling, transit and vehicles. West Village requires a transportation strategy that achieves a balance between transit priority, a high-quality pedestrian environment, connections for cyclists and the private automobile network.

Existing conditions in the West Village area create barriers to pedestrian and cycling movement. These barriers include lack of an internal street network, long blocks that limit east-west/north-south movements through the area and an unfriendly pedestrian/bicycle environment dominated by the presence of large surface parking areas, lack of sidewalks, clear routes and pedestrian-friendly buildings.

Urban artery

A primary objective of the Plan is to optimize the network, especially for pedestrians and cyclists. Introducing an integrated street network that will complement the mobility functions of 8th Avenue S.W. and 9th Avenue S.W. and the Sunalta LRT Station is an essential component to realizing this objective. The goal of the street network is to provide people with a means to move to, from and through the area and city centre efficiently, comfortably, safely and with universal accessibility. The street network will be the primary organizing element that will inform the location of open space, development parcels and the placement of buildings.

Figure 5.11: 8th Street S.W. Streetscape (concept sketch)

There should be a seamless integration of new development melding with existing development along existing street interfaces. Notwithstanding, it is important to ensure that potential traffic impacts from new development are minimized. A Mobility Assessment & Plan and/or Traffic Impact Assessment and a functional plan with a detailed right-of-way plan with cross-sections, grades and utilities shall be undertaken prior to the initial Outline Plan application to ensure that the pedestrian, bicycle, transit, and vehicular transportation network shown on Maps 5.6, 5.7 and 5.8 can adequately accommodate the interim and ultimate land use.

This Plan identifies a number of strategic improvements to the transportation network as well as guidelines for the street and sidewalk network improvements. Key strategies include:

- The realignment of westbound Bow Trail to the south.
- The construction of a 2 lane roundabout at 14th Street S.W.
- The introduction of a street grid composed of short blocks.

As part of the TOD approach for the area, the priority for the mobility plan is the pedestrian and the cyclist, followed by transit. Therefore, it is appropriate that on some roadways, some limitations of automobile mobility should be considered. However, vehicular mobility along 8th Avenue S.W. (the former Bow Trail westbound) and 9th Avenue and 14th Street S.W. during peak periods is a very important key aspect of the Plan. Further, this section outlines Transportation Demand Management (TDM) strategies that will reduce demand for automobile travel.

5.4.1 STREET TYPOLOGY

A diversity of street types will accommodate a variety of travel modes and purposes. The proposed street network is comprised of local streets and arterial streets that will be designed to enhance the quality and character of adjacent developments and land uses such as retail commercial, residential and parks.

Streets will be enhanced through the redevelopment process to provide a high-quality pedestrian environment that will accommodate bicycles, transit and automobiles. Arterial streets such as 9th Avenue S.W. and 8th Avenue S.W. will be designed to facilitate goods movement, transit and vehicular accessibility in and out of the city centre. 14th Street S.W. is identified as an Urban Boulevard in the Calgary Transportation Plan. As such, walking, cycling and transit movements should receive the highest priority, but accommodation of goods and auto performance should also receive attention. As part of this Plan street concepts have been developed and are shown in the Appendix.

5.4.2 STREET NETWORK

The street network provides the basic framework for the West Village area. Creating an interconnected street grid consistent with TOD principles will require large parcels to be redeveloped with the addition of new local streets to create the planned street grid.

With every new connection or street improvement, opportunities to improve pedestrian, bicycle and transit connectivity should be capitalized upon. In addition to improving sidewalks along the perimeter of the Plan area, this Plan envisions new high quality pedestrian and cycling friendly streets throughout the Plan area. These will be supplemented by providing better transit, pedestrian and cycling linkages to the surrounding areas.

The core components of the street network in West Village are described in the following.

- 8th Avenue S.W. (former Bow Trail westbound): Realigning Bow Trail is crucial in order to unlock the development potential the riverfront location offers. Various alignment alternatives were considered, including a bundled alignment with 9th Avenue S.W., but were found to provide fewer advantages to the central alignment chosen in this Plan.

  Although Bow Trail will still fulfill its primary role as a main artery out of the downtown core, its character will be significantly changed. It will be a tree-lined, urban arterial with wide sidewalk

zones, curbside off-peak parking on one side and mixed uses along its flanks with minimal setbacks. Numerous intersections will make pedestrian crossing easier and slow down traffic, thereby reinforcing the urban boulevard character of the street. To reflect the marked redesign, this section of the former Bow Trail is referred to in this Plan as 8th Avenue S.W. When redevelopment is complete, Bow Trail's character as a controlled access roadway will only manifest itself where it meets Crowchild Trail.

- **The Riverfront Promenade:** The Riverfront Promenade plaza is envisioned as a wide pedestrian zone that extends along the frontage of the core urban area of West Village and would form the active interface between the buildings and the riverfront's park and pathway. Although focused on pedestrian and cyclist use, the plaza should also accommodate a shared street for vehicular traffic (which will be classified at the Outline Plan stage). The street would be fully integrated into the surface and design of the plaza and would be delineated from the pedestrian areas by bollards or similar features. Including this street provides the following benefits:
  - It allows buildings to front onto the riverfront, which enhances their interface with the public open space (eyes on the street). Creating an active, programmable public space would be very difficult.
  - Large culs-de-sac would not be necessary at the ends of the north/south streets in the district; movement through the district would be facilitated; the pedestrian realm and urban design would be uninterrupted along the entire Promenade zone.
  - It would provide access to the riverfront area.
  - Some vehicular traffic would encourage active use of the area over a longer period of the day and year, making commercial uses more viable.
  - Street frontage would facilitate access to the residential units.
  - Necessary access ways for emergency vehicles would be fully integrated into the design of the public space.
- **The Pedestrian Boulevard:** The main north/south pedestrian spine extends from the Sunalta LRT Station north to the riverfront. This street should consist of a wide at grade pedestrian median flanked on each side by a one way traffic lane, a bike lane and a wide sidewalk area. The classification of this street will be determined at the Outline Plan stage.

  The spine is cut into two sections by 8th Avenue S.W. The southern section is envisioned in the Plan as a Grand Staircase gateway into the district from the station. The northern section is envisioned with a wide landscaped median which would serve as a neighbourhood recreation space.

Policies

1. All street designs should align with the Complete Streets objective set out in Section 3.7 of the Calgary Transportation Plan and the Complete Streets Program.
2. All new streets should contribute to the creation of an interconnected network of streets and blocks.
3. The intent of the proposed road network illustrated in Map 5.7 Mobility – Transit and Map 5.8 Mobility – Vehicles is not to prescribe exact alignments, but to illustrate the requirement for interconnected streets forming a coherent grid of walkable blocks. Exact alignment shall be determined through an Outline Plan, supporting Mobility Assessment & Plan and/or Traffic Impact Assessment, and a functional plan with a detailed right-of-way plan with cross-sections, grades and utilities.
4. A Mobility Assessment & Plan (MAP) and/or a Transportation Impact Assessment (TIA) and/or functional plan shall be completed with the first Outline Plan to examine the transportation impacts of the proposed build out of development within the West Village ARP area. The MAP and/or TIA iarerequired to determine transportation facility sizing, classification and infrastructure

requirements. Revisions to the transportation network, including the proposed roundabout on 14th Street S.W., may be required to improve mobility through the Plan area.

5. 9th Avenue S.W., 8th Avenue S.W. and 14th Street S.W. are designated truck routes and shall facilitate goods movement.

6. Roads identified on Map 5.6: Mobility – Pedestrians and Bicycles should be designed and constructed to exceed the minimum standards for safety and operations as referenced in the Pedestrian/ Bicycle Design Guideline.

7. The Development Authority should consider the approval of customized street cross-sections where they are required to implement the urban design and balanced mobility objectives of this Plan.

8. Air right development should be allowed over public rights-of-way in key locations to support the land use and urban design vision of this Plan, e.g. the Grand Staircase/pedestrian bridge over 9th Avenue S.W.; over 9th Avenue S.W. at the ramps to Crowchild Trail.

9. Vehicular access to parking areas should be from a private internal vehicle access route that is located on a side street.

10. Direct vehicle access to and from 9th Avenue S.W. and 8th Avenue S.W. to a development parcel is not allowed, provided alternative legal access is available.

11. Direct vehicle access to and from the Promenade to a development parcel is not allowed, provided alternative legal access is available.

12. Developers should be responsible for street and sidewalk improvements adjacent to their site in accordance with the detailed design of various street types that should be developed following approval of this Plan. Developers may also be required to contribute financially to complete incomplete pedestrian/cyclist connections within the Plan area to/from their development.

13. Pedestrian crossings at intersections should be designed in a manner that increases visibility between pedestrians and drivers. Design features to be considered at key intersections include extension of surface treatment through the intersection.

14. Proposed street networks should allow for universally accessible routes.

15. The Development Authority should ensure the dedication of lands for public streets or the registration of appropriate legal instruments ensuring the provision of publicly accessible streets prior to granting approval of a Subdivision and/or Development Permit application.

16. Green infrastructure should be investigated and implemented where possible.

17. Provision for future High Occupancy Vehicle (HOV) facilities along 8th Avenue S.W. and 9th Avenue S.W. should be maintained.

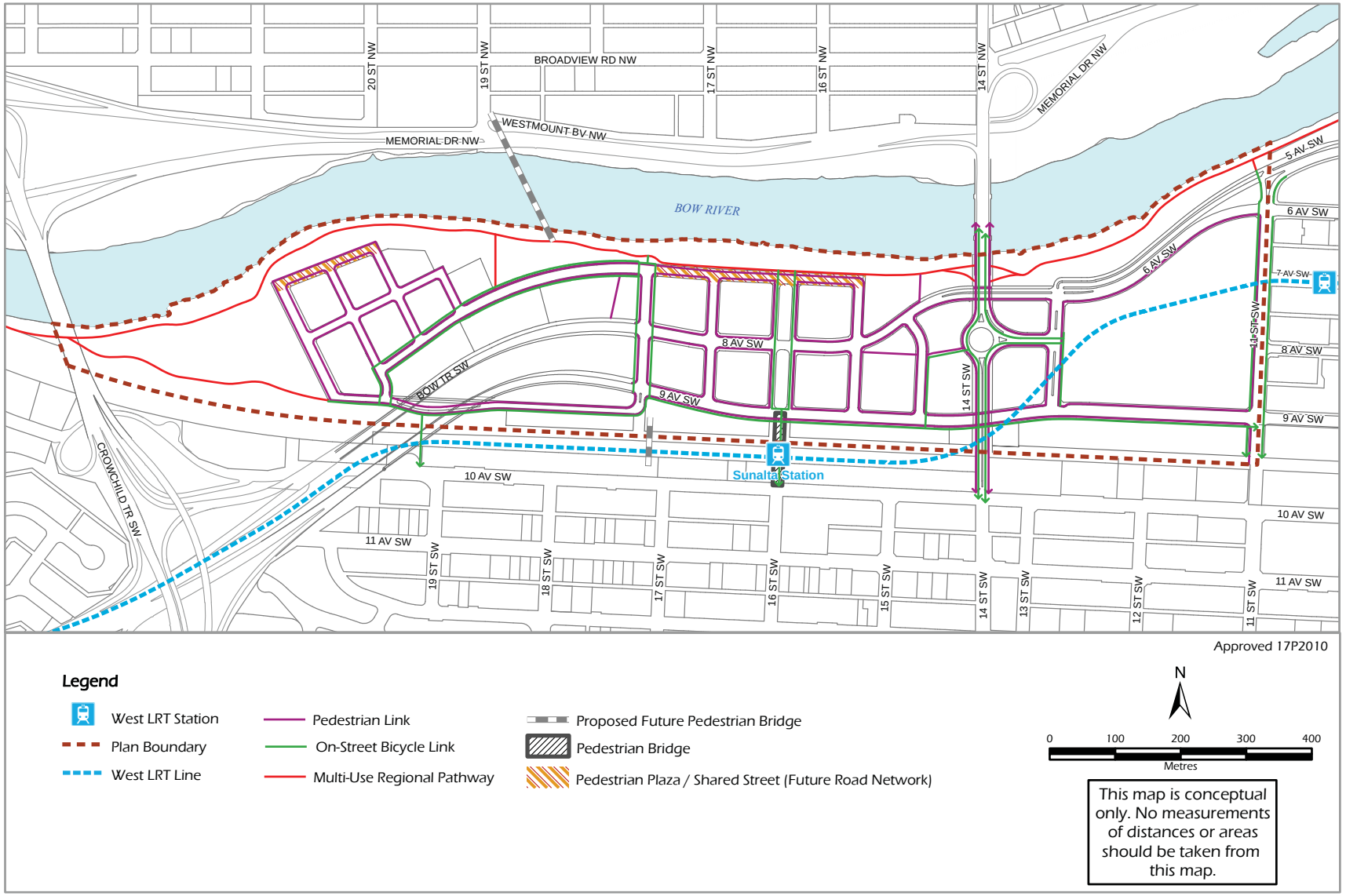
5.4.3 PEDESTRIAN AND BICYCLE NETWORK

One of the main attractions of the Plan is the ability to move freely and accomplish everyday tasks without a car. To enable a variety of travel modes, particularly walking and bicycling, the transportation network must ensure these modes are convenient, safe, efficient and pleasant. Further, the organization of density established in this Plan both requires and enables high quality pedestrian and bicycling infrastructure.

It should be emphasized that pedestrian networks and spaces serve more than simple mobility. Sidewalks and pathways are also public spaces, providing valuable opportunities for social interaction and passive recreation. Therefore, the pedestrian and bicycle network should have a prominent role in the transportation system.

To achieve this goal, the Plan emphasizes a number of design strategies. The sidewalk network should be completed throughout the West Village area and designed to accommodate and encourage walking. Well scaled street-oriented buildings, street trees and other streetscape improvements will create an attractive pedestrian realm with sheltering elements for inclement weather. The bicycling network (both on-street and off-street) should be completed and connected throughout the West Village area and designed to accommodate and encourage cycling for recreational, fitness and transportation purposes.

Map 5.6: Mobility - Pedestrians and Bicycles



The pedestrian network emphasizes at grade connections in order to encourage convenient pedestrian movement. However, the envisioned elevated pedestrian/cyclist connection from the Sunalta LRT Station across 9th Avenue S.W. (Grand Staircase) is a unique opportunity to provide a dynamic and exciting pedestrian/bicycle facility and connection.

Core components of the pedestrian and cycle network of West Village are described below.

- **The Grand Staircase (16th Street S.W.):** West Village is conceived as a transit oriented development to capitalize on the new Sunalta LRT Station. The LRT line and station are, however, separated from the planning area by the main line of the CPR and 9th Avenue S.W., a major traffic bearing artery. To overcome these barriers, the Plan proposes a wide pedestrian crossing over the CPR line and 9th Avenue S.W. at the +30 level.

  The crossing would link the LRT platforms to the main pedestrian spine of West Village. Access to the crossing would be via a Grand Staircase structure, which consists of broad stairs, open platforms and elevators to these platforms and the +30 level above 9th Avenue S.W and the CPR line. The Grand Staircase could accommodate LRT station services. It should also be designed to include a Class 1 bicycle storage facility for Bike & Ride commuters and a bike rental or repair facility. The latter could serve as the base for Public Bike Sharing or rental operations. Universal accessibility features should be fully incorporated into the design of the Grand Staircase to reinforce its role as the key pedestrian link and entrance to the area.

  The main north/south pedestrian spine through West Village should extend north to the riverfront from the stairs. The wide planted median and generous sidewalks would create an inviting pedestrian realm. Dedicated bicycle spaces along each side of the median would provide direct access between the riverfront and the station for cyclists.

- **Bow River Pathway:** The Bow River Pathway should be fully incorporated into the landscape design for the riverfront areas throughout West Village. Additional links should connect the path to the LRT station and various areas of West Village.

- **Bicycles along 9th Avenue S.W.:** An additional east-west bicycle connection is provided on the south side of 9th Avenue S.W. via an off-street cycle facility from the Pumphouse Precinct to 11th Street S.W.

- **Public Bike Share:** A municipal Public Bike Share (PBS) program functions as part of a city's intermodal transportation system. At a normal cost, a PBS provides transportation for travel further than walking, but shorter than bus transit. The basic idea is that users can pick up a bike from one docking station and drop it off at another when done. Docking stations are arranged at regular intervals around the city in strategic locations that make for easy use. A PBS ties into the vision for West Village.

- **Potential Bow River Pedestrian Bridge:** The redevelopment of West Village's riverfront as a sequence of inviting public open spaces with numerous recreational opportunities benefits the surrounding neighbourhoods as well as the new residents in the planning area. To make these facilities as easily and conveniently accessible as possible for residents on the north bank of the Bow River, a new pedestrian bridge should be constructed across the river. The bridge would also better and more directly connect these residents to the new West LRT line and Sunalta LRT Station.

- **Upgrade to Existing At Grade CPR Crossing:** The existing at grade pedestrian and bicycle crossing over the CPR railway line at approximately 20th

Pedestrian bridge

Street S.W. provides an important link between the riverfront and Pumphouse Theatre area and the communities south of the tracks. This link should be maintained, upgraded (if possible) and visually enhanced to make it more inviting and safe at all times.

- **Potential Pedestrian Bridge Across 9th Avenue S.W.:** A new pedestrian bridge located between the at grade railway crossing described above and Sunalta station would further enhance the pedestrian and cycle connectivity between West Village and the adjoining urban areas. It would furthermore facilitate the development of difficult parcels in this area of the site.

Policies

1. A continuous pedestrian network of sidewalks, multi-use pathways and shared roadway spaces should be provided throughout the Plan area in accordance with Map 5.6: Mobility – Pedestrians and Bicycles.

2. A continuous bicycle network of dedicated bicycle space (on and off-street), multiuse pathways and shared streets should be provided throughout the Plan area.

3. Shared streets identified in Map 5.8 should be designed to slow traffic throughout the area by means such as narrow roadway widths, bumping out corners, introducing textured paving materials and creating buffers, such as dedicated bicycle space or on-street parking, between moving traffic and the pedestrian realm.

4. Sufficient space must be maintained for on-street cycling (unless a facility is provided off-street).

5. The pedestrian realm (roadside and interface zone) should have four distinct zones as follows:

   - Street Edge - Used for curbs, signs, street lighting, street trees.

   - Furnishings – Used for, benches, bus stops, bicycle racks, way finding, etc.

   - Throughway – Used for pedestrian travel; must be kept clear of obstructions and can be used for underground utilities.

   - Interface – Used for outdoor seating, canopies, building and entrance projections, signage, planting boxes, landscaping, bicycle racks on commercial streets, etc. On residential streets, front yards and landscaping should be investigated.

6. The Regional Bow River Pathway along the north edge of the Plan area should be twinned into one pathway for pedestrians and another pathway for wheeled users (cyclists, in-line skaters, etc.).

7. Pedestrian scale lighting should be incorporated throughout the Plan area.

8. Sidewalks, crosswalks and signalized intersections should be designed to provide appropriate cues to the hearing and visually impaired. Corner curb cuts should also be provided to accommodate wheelchairs, carts and strollers.

9. Mid-block driveways should be minimized.

10. The design of streets, sidewalks and crossings should consider special design treatments such as differentiated paving material, enhanced landscaping, pedestrian lighting, public art and wider sidewalks to demarcate the area as a pedestrian priority district.

11. An elevated pedestrian/cyclist connection should be provided across 9th Avenue S.W. in close proximity to the Sunalta LRT Station.

12. Publicly accessible secure bicycle parking, locker and storage facilities should be provided at the transit hub.

13. All new development must make provision for class 1 and class 2 bicycle parking as required by the Land Use Bylaw and The City of Calgary Bicycle Parking Handbook.

14. 16th Street S.W. should be designed as a major pedestrian and cycling route between the LRT station and the Bow River Regional Pathway.

15. The Primary Cycling Network in the Calgary Transportation Plan should be fully integrated into the design of the West Village.

16. The accommodation of a potential Public Bike Share program will require the consideration of physical space for PBS bicycle docking stations on sidewalks and/or roadways close to intersections.

5.4.4 TRANSPORTATION DEMAND MANAGEMENT

Transportation demand management (TDM) is an umbrella term for a variety of strategies, services, and products that influence whether, why, when, where, and how people travel.

TDM initiatives shape the factors behind individual travel decisions to reduce automobile trips and encourage changes in individual travel behaviour such as:

- *modal shift* (more people choosing to walk, cycle, take transit, rideshare or telework).
- *trip reductions* (more people choosing to telework, shop online or conduct personal business by telephone).
- *driving reductions* (more drivers making fewer trips by car and to closer destinations).
- *time and route shifting* (more drivers changing the time or route of their driving trip to avoid traffic congestion).

TDM initiatives include providing subsidized transit passes to employees or residents (in place of subsidized parking spaces), parking management, rideshare or van/car pool programs, car share programs, flextime and telecommuting programs for local businesses.

Policies

1. Encourage developers and employers within the Plan area to adopt TDM measures such as transit incentives, parking management, van/car pool programs, car share co-ops and telecommuting.
2. Consider reductions in required parking rates with the adoption of proven and effective TDM measures.
3. Information on area transit routes and way-finding to pathways to make sustainable transportation easier choices.

5.4.5 TRANSIT SERVICE

Sunalta LRT Station will be the key transit hub on the West LRT line that will serve the West Village area. In addition to providing access to rapid transit throughout the city and city bus transit service, the station also has the potential to serve as a multi-modal hub for regional and inter-regional service through the integration of facilities for buses and high-speed rail.

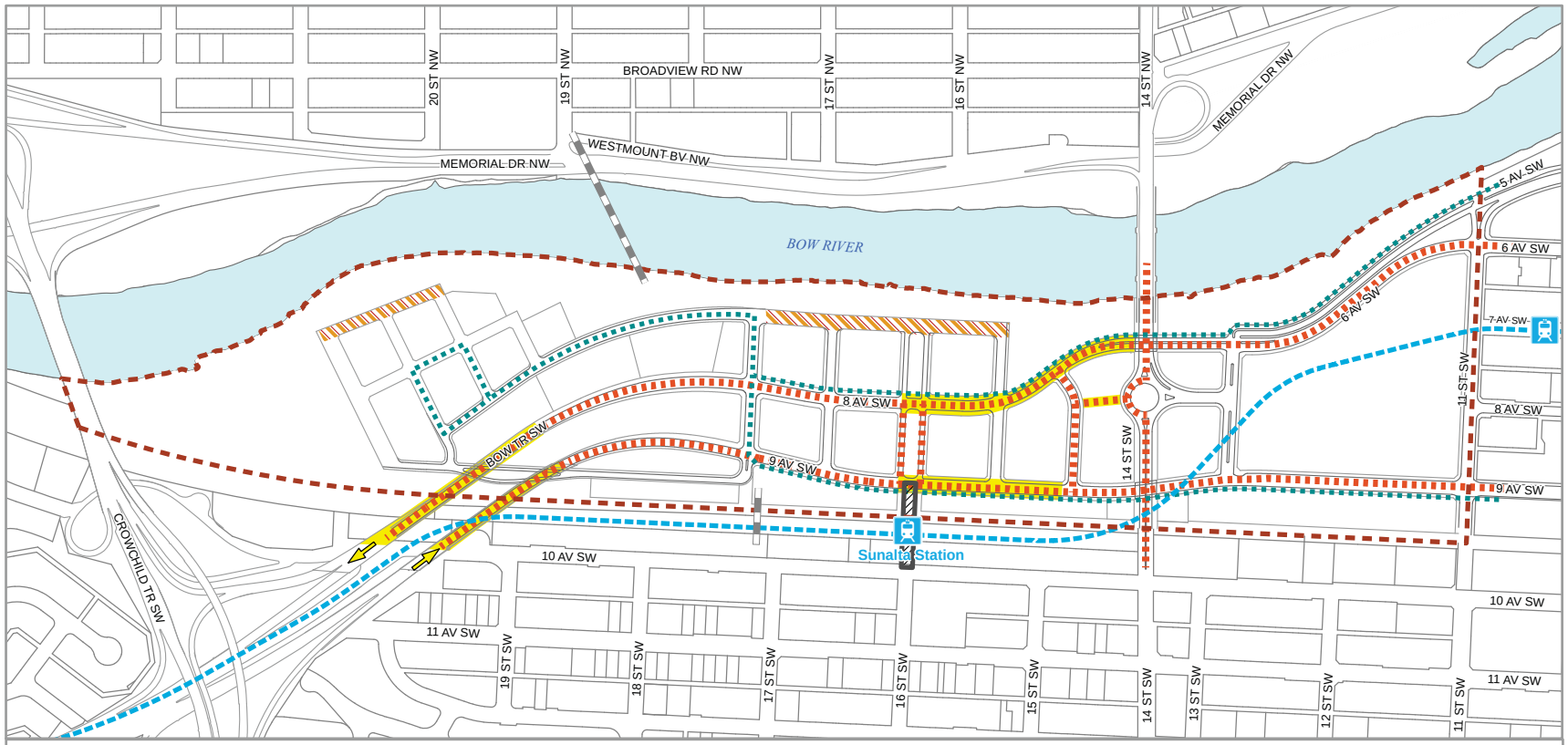
To facilitate redevelopment of West Village, the existing free-standing Greyhound terminal should be removed. Development of the Sunalta Station should therefore consider integrating facilities for regional and inter-regional buses into the station area. The future integration of high-speed rail platforms into the station area should also be taken into consideration. To provide full multi-modal connectivity, space should furthermore be provided for other modes, such as taxis and bicycles.

Proposed bus routes in and around West Village are illustrated in Map 5.7 Mobility – Transit. Bus service includes Bus Rapid Transit (BRT - direct, rapid, high-capacity service), cross-town service and local service providing connections from surrounding communities to West Village and the LRT station.

The local routing of buses is subject to the staging of implementation of the road network within West Village. Bus routing will likely be dispersed on several streets within West Village due to the need to serve different origins/destinations. Bus access to/from and along the roadways immediately adjacent to the transit hub will be a priority, and traffic restrictions will be applied to keep bus movement efficient, without delays. The consideration of 14th Street S.W. as being part of the Primary Transit Network in the Calgary Transportation Plan should also drive building design and transit service connections in the West Village area.

Street, building and sidewalk designs on bus routes within West Village must reflect the needs of buses and pedestrians walking to and waiting for buses. Streets identified on Map 5.7 as potential transit routes should be designed to accommodate buses and bus stops. Buildings adjacent to bus stops should provide

Map 5.7: Mobility - Transit



shelter to the sidewalk area since it is more desirable to incorporate shelter and passenger waiting amenities into adjacent buildings than it is to provide standalone transit shelters.

The elevated pedestrian/cyclist connection from Sunalta LRT Station across 9th Avenue S.W. has the potential to be integrated into the station. Bus zones will be carefully located to provide easy connections between bus and LRT service. The envisioned Grand Staircase should serve as the northern entrance to the station. To maintain the high amenity quality of this landmark feature, bus stops flanking the stairs should only be used for pick-up and drop-off of passengers and not for bus parking or waiting.

The LRT connection to downtown and other major destinations will serve as a catalyst for redevelopment. West Village represents one of the strongest opportunities for TOD in the city of Calgary. Due to the intensity of development this will generate in the Plan area, it is important to ensure that buses are able to navigate with minimal delay through the area.

Policies

1. Calgary Transit will construct an LRT Station and line in accordance with Map 5.7 Mobility – Transit.

2. Provide transit priority measures to minimize delay for bus access in and out of the West Village area. These measures can include:

   - Transit priority at traffic signals.
   - Queue jumps and a passby, particularly near the Sunalta LRT Station.
   - High Occupancy Vehicle (HOV) lane along 8th Avenue S.W.
   - Transit only connection to the 14th Street S.W. roundabout from the west.

3. Provide a local feeder bus system that offers frequent and accessible service throughout the Village and to surrounding communities, and reduces short distance auto trips within the Plan area.

4. Transit stops on perimeter streets should be upgraded when opportunities arise through streetscape redevelopment. This program could include improvements such as trees, shelters, seating areas, lighting and passenger information systems.

5. A transit/pedestrian/bicycle only connection should be provided west from the 14th Street S.W. roundabout to the adjacent street. If necessary an appropriate easement should be employed on the affected parcel.

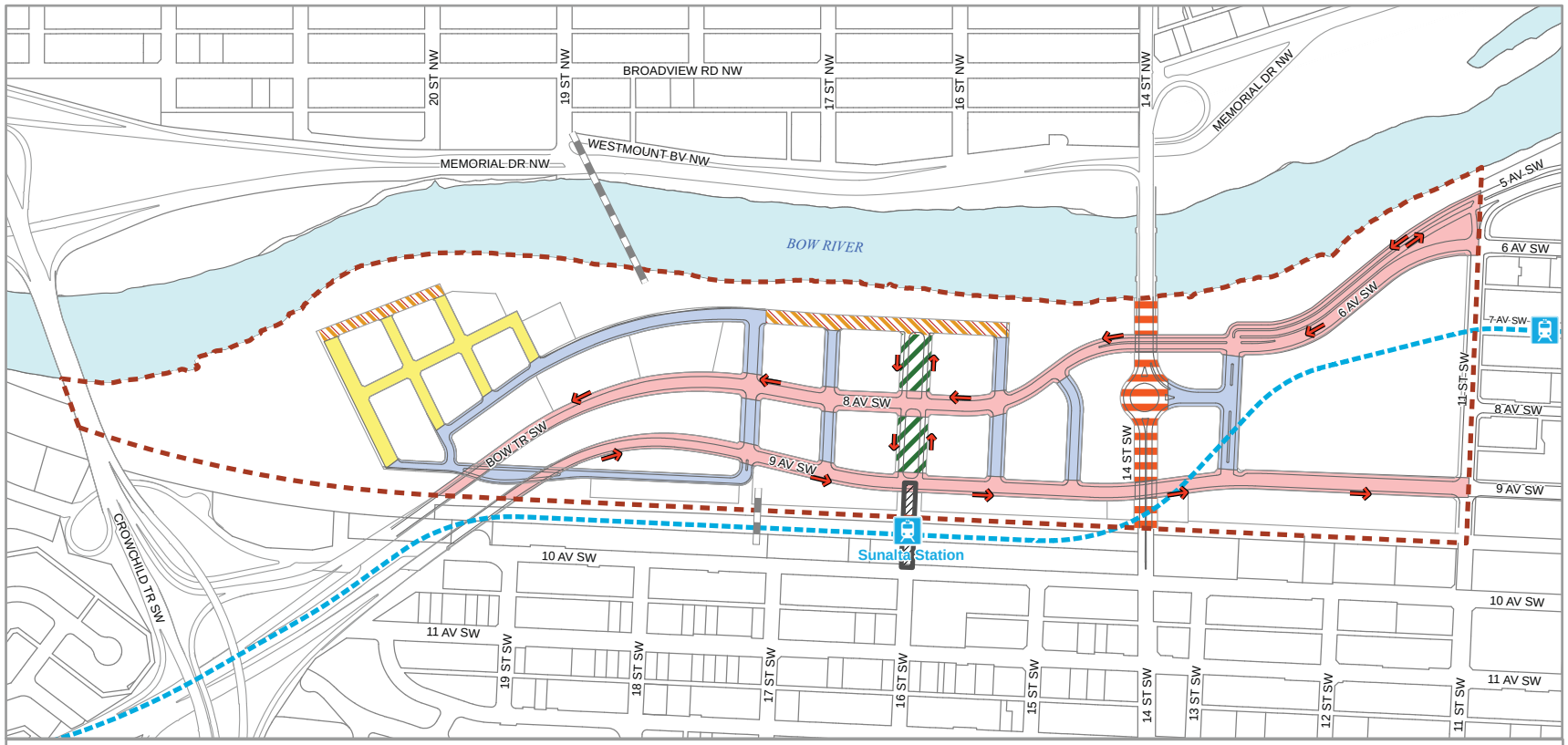
6. A Regional/Inter City/Transit Hub will be considered near Sunalta LRT Station as part of future road design.

7. Provide bus zones that will be well integrated with existing and future pedestrian connections to Sunalta LRT Station.

8. Provide bus zones for local and BRT routes that will allow passengers to easily connect to other buses and with Sunalta Station.

9. Provide information/maps on area transit routes and pedestrian and bicycle way-finding in order to encourage trips via walking, cycling and transit.

Map 5.8: Mobility - Vehicles



5.5 PARKING AND LOADING

Related Principles

Principle 1: Human Scale

Principle 2: Connectivity – Local and Citywide

Principle 5: Public Realm

Principle 6: Complete Streets

Principle 8: Community Well-being

Principle 9: Safety

The purpose of this Plan is to provide a land use and urban structure that supports transit use and other alternatives to private automobile trips. Although West Village will still accommodate personal vehicle use for occasional trips and tasks, it is not the intent of this Plan to provide plentiful and free parking for every possible use and trip.

Parking is an expensive amenity and adds tremendous costs to development – costs that detract from the ability to fund significant public realm improvements. Providing too much parking will only promote further use of the automobile, diluting the intent of creating a walkable, transit oriented area. It is also vital to manage the amount of parking in West Village to help mitigate traffic congestion in the area. Parking must be well managed to reduce demand and be in balance with other travel modes and urban design goals.

Policies

1. The area of the plan east of 14th Street S.W. shall continue to be guided by the provisions of the Downtown Parking Area in Land Use Bylaw 1P2007.

2. For the area west of 14th Street S.W., the maximum parking rate for office land use should be 1 parking stall per 100 square meters of net floor area.

3. There should be no minimum parking requirement for ground floor uses which are less than 465 square meters of use area in size when in buildings that contain dwelling units, hotel, multi-residential development or office uses above the ground floor. Minimum requirements for accessible parking should, however, be maintained.

4. The total amount of parking provided for a development should be minimized by employing various TDM measures to reduce parking demand for a particular project. These include provision of carpool stalls, shared parking with complementary development, provision of carshare vehicles, provision of cycling facilities (including showers and lockers) or other similar measures.

5. On-site parking between any new building and a street should not be allowed and new interior surface and structured parking areas should be accessed via side streets.

6. On-street parking is encouraged on all local streets. On-street parking should focus on serving visitors and customers to the area who have short stay parking and loading needs. Long stay on-street parking is discouraged. As there is no existing residential development in the Plan area, reserved residential parking must not be used. As residential development occurs in the Plan area, parking requirements must be accommodated on-site – street residential parking privileges will not be provided.

7. On-street parking efficiency should be maximized by using time limits and prices to encourage turnover.

8. Parking requirements may be substantially reduced, subject to City approval, by provision of shared parking facilities that serve multiple uses with peak parking demands at different times of the day (e.g. residential and office).

9. At grade permanent parking areas should be separated from public streets with active uses such as commercial or residential. New parking facilities that are not tied to development are not permitted.

Entrance to a residential underground parkade

10. Above grade parking structures should be screened from public streets by active uses at-grade and architectural treatments that make the parking areas indistinguishable from the rest of the building façade. They should also be screened from adjacent developments to the satisfaction of the Development Authority.

12. Explore the potential to use on-street parking revenues for public realm improvements within the plan area.

13. All new developments should make provision for common private parking and storage of bicycles.

14. Where possible, underground parking should be encouraged as an element of the remediation strategy of the site.

5.6 HERITAGE

Related Principles

Principle 2: Identity and Place-making

Principle 5: Public Realm

Principle 8: Public Well-being

It is anticipated that the Province of Alberta will require a comprehensive Historic Resource Impact Assessment prior to any comprehensive redevelopment occurring. This material and other historic documentation should be used to develop historic interpretive plan for the area that identifies significant historic themes and locations for potential interpretation. As the area is built out and developed, interpretive elements should be incorporated in alignment with the heritage awareness objectives of the Calgary Heritage Strategy and in keeping with good urban design principles of creating engaging, liveable places. The river pathway provides another, ideal opportunity to achieve this.

Redevelopment of West Village should align with the Vision and Principles of the Calgary Heritage Strategy (2008). This vision is "to create a visionary, credible, corporately aligned strategy which positions Calgary as a Canadian leader in Historic Preservation".

The Strategy defines the following principles:

- Identification – the first step in any heritage preservation strategy must be to identify those resources that have significant heritage value. There are currently three sites that have significant heritage value and are listed on Calgary's "Inventory of Evaluated Historic Resources". These are: Centennial Planetarium, Mewata Armoury and Pumphouse No. 2.

- Protection – significant historic resources should be accorded legal protection through either legal agreement or designation bylaw.

- Management – Once protected, historic resources must be managed to protect their heritage value. "The Standards and Guidelines for the Conservation of Historic Places In Canada" (Parks Canada, 2003) have been officially adopted by the City of Calgary to provide guidance that ensures heritage value is preserved while allowing historic resources to continue to have productive uses.

Pumphouse No. 2

Policies

Redevelopment of West Village should align with the policies of the Calgary Heritage Strategy (2008). Particular policies included in the Calgary Heritage Strategy to note include:

City-owned Historic Resources

1. The City of Calgary will serve as a role model for the creative use and adaptive reuse of City-owned heritage buildings and excellence in maintenance and restoration.

2. Place a high priority on making City-owned heritage buildings available for use by cultural and educational institutions, uses that have a difficult time finding space in the private market.

Heritage Awareness

3. Incorporate local history and Aboriginal culture interpretive elements through such means as plaques, public art, concrete etchings or other textural and photographic inserts in public realm improvement projects.

4. A community historic interpretive plan or strategy should be developed so that these elements can be incorporated as development occurs.

5. The river pathway provides an opportunity to incorporate historic interpretive elements to celebrate the industrial history and Aboriginal past of the area. In addition, new street names that relate to the history of the area should be used.

5.7 COMMUNITY AND SOCIAL DEVELOPMENT

Related Principles

Principle 4: Mixed Use

Principle 8: Community Well-being

Principle 7: Diversity

Principle 9: Safety

Principle 3.15: Longevity

In order to foster a socially sustainable community with a diverse socio-economic population, this plan supports the development of a broad range of housing types, encourages mixed use development, supports local economic development opportunities, and promotes enhanced public safety initiatives.

In order to support a socially sustainable community in West Village, the following objectives should be achieved:

- Ensure that public and private buildings, facilities, services and amenities are accessible to all persons.

- Encourage the development of an appropriate range of public and private amenities and services that are available to a diverse population including persons of various income levels, cultural backgrounds, or abilities.

- Encourage a diversity of housing options in order to provide choices in housing types to address the needs of different household sizes, family types, age groups, tenure types, income groups and lifestyles.

- Incorporate new development design that acknowledges and integrates existing affordable housing and social facilities within the community fabric. Housing developments which offer a variety of housing types including market and integrated non-market housing are encouraged.

- Encourage a minimum of 2 per cent of the Plan area to be affordable housing, including non-market rental and homeownership, and entry-level rental and homeownership, to be provided by builder, non-profit organizations, and The City (or through partnerships). The affordable housing units should be considered subject to the reasonableness of the contribution, including the economic viability of the development, the viability from an operator's perspective, the availability of public funding, and the availability of cost off-sets and incentives.

- Encourage spaces for locating economic development initiatives, including small business incubator programs, educational programs, artist live/work studios and community service agencies.

- Promote the inclusion of residents, users and other stakeholders who are representative of the diversity within the community in decisions affecting the community to ensure acceptability of such decisions.
- Ensure that the requirements of persons with special needs are attended to in the design of public and private spaces.
- Enhance the feeling of safety for residents, users and stakeholders living, working and spending time in the community.
- Encourage the continued development of a socially cohesive population with a strong sense of community.
- Support social infrastructure through the inclusion of a strong network of community services and facilities designed to meet the evolving needs of the community.

Policies

In order to achieve the preceding objectives, the following policies should be implemented:

Accessibility

1. Ensure all public and open space adheres to The City of Calgary's Access Design Standards.
2. Encourage developers to adopt the Access Design Standards in all public, commercial and residential developments.

Housing

3. Ensure a wide range of housing options in terms of unit size, family types, affordability and tenure types to encourage a varied social composition.
4. Encourage developers of multi-unit residential developments to provide common areas and community space to facilitate social gathering and the provision of community programs.
5. City Departments, including the Office of Land Servicing and Housing (OLSH), the Calgary Housing Company, Attainable Homes Calgary Corporation (AHCC) and relevant social agencies, should work together to explore the opportunity for providing affordable housing where feasible.
6. The Development Authority is encouraged to consider relaxation of:
   - Land Use Bylaw regulations where it is demonstrated that the relaxation is appropriate for the development and that the development is secured through a development agreement, or similar form of agreement.
   - Parking requirements for proposed affordable housing developments where it is demonstrated that a proposed affordable housing development would have a reduced automobile ownership rate and that the development is secured through a housing agreement to ensure long-term affordability for low income households.

Open Space

7. Provide sufficient non-programmed/passive open space to encourage and facilitate informal social gathering.
8. Encourage the development of community gardens or alternative on-site food growing opportunities to contribute to local food production and foster a sense of community.

Safety

9. Ensure that all public and private developments incorporate key CPTED principles, including natural surveillance, defensible space and functionality.
10. Ensure the safety of pathways by avoiding conflicting uses where possible.
11. Ensure that the needs of Calgary's homeless, who may currently be users of the riverfront, be respected in the development process.

Services

12. Encourage in the land use districts for the Plan area the inclusion of daycare, residential care facilities, health services, social services, pharmacies, grocery stores, recreation, arts and culture facilities and public washrooms.

5.8 UTILITY INFRASTRUCTURE

Related Principles

Principle 8: Community Wellbeing

Principle 10: Energy

Principle 11: Water

Principle 12: Waste

Principle 13: Materials

Principle 14: Biodiversity

Principle 15: Longevity

Despite the environmental benefits of regeneration versus new construction, it is still recognized that construction and operation of buildings and the associated infrastructure has a range of environmental impacts resulting from the use of water, materials and energy and in the generation of waste.

The principles of environmental sustainability should direct the development of the utility infrastructure at West Village in order that it may be constructed and exist within environmental limits. Full cost accounting and lifecycle assessment should drive the decisions made on this investment to ensure the most sustainable outcome in both environmental and social terms for the money invested. Emphasis should be placed on minimizing demands on resources and minimizing waste prior to addressing the most sustainable form of supply.

5.8.1 GENERAL POLICIES

1. An Environmental Management Plan should be developed for all deep utilities. This plan would include appropriate environmental site assessments, remedial action plans, risk management plans, and soil management plans.

5.8.2 ENERGY

West Village should take a total carbon approach to energy, recognizing and tackling each sector of the carbon footprint and prioritizing on the basis of the energy hierarchy: minimize demand, supply from local sources and maximize the use of renewable.

It is important that West Village influences total energy use; not only how the buildings and infrastructure are designed, but how the design can influence and encourage the co-operation of residents and visitors and their lifestyle choices related to energy use.

In order to achieve the vision, principles and targets for West Village, a community based approach to energy provision should be considered. Such an approach would maximise the efficiency of supply by reducing transmission losses. This could include for the provision of electricity from renewable sources and use of the waste heat locally. Detailed feasibility studies will be required to assess the most suitable renewable source and method for this specific site and phasing period.

The goal for the final build out should be that West Village achieves 100 per cent energy consumption from renewable sources. This could be achieved through an on-site renewable energy plant.

Policies

1. A suitable site should be maintained in West Village for the construction of a district energy plant. The plant should be located where it has minimal impact on the surrounding uses and where connection to the Downtown District Heating is facilitated, e.g. adjacent to the CPR lands. Appropriate provisions should be included in the land use designations in the Plan area to provide for the use and address the characteristics of a district energy plant as well as other site-specific considerations.

2. District energy pipe systems should be installed as part of the infrastructure in West Village. All development within West Village should be connected to, and its energy supplied by, the Downtown District Heating network as an interim form of heating supply prior to the completion and commissioning of the on-site renewable energy plant in order to ensure maximised energy efficiency for the site prior to complete build out.

3. Prior to submission of an Outline Plan, a strategy should be developed and submitted to the satisfaction of the Development Authority to

demonstrate how the district heating pipe network designed and built for West Village will be used to distribute heating from the on-site renewable energy plant once the plant comes online in order to ensure energy infrastructure is maximised.

Strategies

In order to achieve the targets and policies outlined above, energy aspects should be considered at the design stage at both the site-wide and building level:

- Built Form: The following design concepts, development practices and technologies provide examples of strategies at the built form level:
  - High levels of insulation for walls, roofs, floors and windows.
  - Low levels of uncontrolled air leakage.
  - Thermally heavyweight room surfaces to absorb daytime heat gains and contribute to 'natural' cooling.
  - Secure ventilation devices used in combination with opening windows to assist with 'natural' cooling.
  - Low energy lighting and appliances, daylight linked lighting controls in non-residential buildings and electrical circuit design to minimise standby in all buildings.
  - Educational information in home and building information packs related to energy efficiency and getting the most out of your home or building, provided to all residents and building users.
  - Metering and monitoring of the site-wide consumption of electricity and gas, together with the electrical and thermal energy delivered from site wide generation systems, should be implemented to enable an annual net balance to be calculated of energy supplied and exported to and from the site, together with an overall quantity of building energy related carbon emissions from the site.
  - Highly visual energy metering systems should be provided in all homes to provide real-time data on energy consumption and cost and, where applicable, energy generation from local systems, to home owners and tenants.
  - Solar Orientation - Calgary has abundant solar resources. Solar-sensitive design can reduce the need for heating and cooling, reducing energy costs and increasing sustainability. The sun plays a key role in the success of public spaces through all seasons. In accordance with this Plan's urban design policies, layouts and architectural design of buildings should, where possible, follow the principles of passive solar design:
    - Locate higher buildings on the north side of the urban boulevard and lower buildings on the south side to achieve density targets while permitting sun penetration.
    - Incorporate south-facing public open spaces in buildings fronting on the north side of the urban building.
    - Locate most office space on the more shady south side of the urban boulevard and retail on the north, to enliven the retail and provide a sunny shopping environment.
    - Include occupant controlled solar shading on windows facing south or southwest
    - In order to ensure the viability of solar thermal or photovoltaic systems, all buildings should have a main part of the roof facing south or southwest;
- Site-wide Energy Strategy: A detailed feasibility study should be undertaken to develop the site-wide energy strategy. This feasibility study should consider, but not be limited to, the following:
  - Area energy demand
  - Location of thermal plant
  - Transmission distances
  - Cooling load concentrations

- Substantial anchor loads
- Plant footprint
- Condenser water sources
- Age of buildings and life cycle
- Utility rates
- Achieving higher densities to support higher energy intensities.
- Achieving mixed use - mixing residential, commercial, industrial and recreational uses of land which decreases energy consumption by transportation demand and where appropriate, increases the feasibility of district heating.
- Reducing surface-to-volume ratio as much as possible (consider mix, location, etc).
- Site level planning - minimize the penetration of solar radiation into structures during warm periods of the year and to maximize it during cold periods.
- Achieving energy efficiency in all building types.
- Increase passive solar energy.

5.8.3 WATER

The treatment, pumping and disposal of water is responsible for significant quantities of energy and subsequent carbon emissions and use of chemicals. In order to reduce these 'unseen' impacts, West Village should be developed with full consideration of the water cycle in a consistent manner, through integration with the all other principles in the ARP and through the implementation of a water management hierarchy as outlined below:

- Reduce the demand for all water.
- Match non-potable supply to non-potable demand.
- Supply water from local sources.

5.8.4 POTABLE WATER SYSTEMS

The purpose of these policies is to provide for a more suitable water supply system designed to service the urban development requirements throughout the Plan area.

Policies

1. The water distribution system for the Plan area should be designed to adequately, safely, and efficiently serve the ultimate development of the area.
2. The developer should be required to provide information regarding the population and building type. Further analysis by Water Resources will be required to determine the sizing and layout of the distribution system.
3. The developer should be responsible for the installation of distribution mains within the Plan area.
4. Development should strive for reduction of potable water consumption.

Strategies

The following design concepts, development practices and technologies provide examples of strategies to achieve the policies outlined above:

- Minimize Demand
  - Use low-flow technology for all water fittings in all homes and non-residential buildings.
  - White goods and domestic appliances, particularly washing machines and dish washers, which are supplied and fitted, to be of the highest standards in terms of water efficiency.
  - Avoidance of high water use devices.
  - Select and design water-efficient open space, parks and other landscaped areas, select regionally appropriate plant species and install efficient, non wasteful irrigation infrastructure.

- Supply from Non-Potable Sources
    - Provide rainwater collection, storage and reuse systems for all buildings, preferably on a multi-building basis for increased effectiveness. The water collected could be used for internal functions requiring non-potable water.
    - Provide rainwater butts to all homes and multi-residential properties for the collection of rainwater for local garden irrigation.
    - Grey water recycling to supplement rainwater collection and used for internal functions requiring non potable water.

5.8.5 STORMWATER MANAGEMENT

The purpose of these policies is to provide for the design and development of a sustainable and efficient stormwater management system to serve urban development within the Plan area and for use to sustain the proposed riparian forest and riverfront regeneration.

Policies

1. The effective imperviousness within the Plan area. should be mimimized.
2. The natural filtration and treatment of surface run-off on-site should be maximized.
3. Information should be submitted prior to, or as part of an Outline Plan, Pre-application submission or Development Permit to demonstrate to the satisfaction of the Development Authority how
    - Effective impervious surfaces will be reduced.
    - Run-off will be treated and filtered naturally on-site.
4. A Master Drainage Plan should be developed for West Village. The new Master Drainage Plan would supersede all previous plans for the area. The plan should include the identification of volumes of stormwater required to sustain the proposed riparian forest, riverfront regeneration sites and associated green infrastructure and outline how this water requirement will be supplied.

    The Master Drainage Plan should also include the upstream catchments and should identify stormwater quality retrofit opportunities for improving the quality of stormwater run-off and/or reducing the volume of run-off. The opportunities should be limited to public lands or open spaces that could be acquired for these retrofit opportunities.

Strategies

- In order to meet these runoff volume requirements, development should employ LID stormwater management, including stormwater source control practices such as:
    - Bioswales, bioretention
    - Green roofs
    - Living walls
    - Permeable pavement or concrete
    - Absorbent landscaping
    - Rainwater harvesting
    - Stormwater reuse (irrigation of play fields, etc.).
- Stormwater management and LID measures should:

Effective imperviousness *is a measure of effectiveness in conveying rain water to a storm sewer collection system. Impervious areas that drain directly to street gutters and then to the sewer systems are 100% effective impervious. Runoff from impervious areas can be reduced by making them less impervious (porous pavements, green roofs, etc.), or draining them to properly designed pervious areas such as bioswales, bioretention and absorbent landscapes, or having the rain water stored for reuse. In other words, by applying stormwater source control practices, it can lower the effective impervious area for a development.*

- Function year round and protect the landscape from contamination; and

- Be incorporated into streetscape design elements such as landscaped medians, sidewalk planters and pervious paving.

- The implementation of Low Impact Development policies in the West Village area, particularly in areas with industrial contamination, will require further assessment. For example, enhanced infiltration of rain water and snowmelt in areas with environmental contamination may contribute to increased mobilization of contaminants to the water table and possibly to the river. Any consideration for the implementation of LID policies will require a review of available environmental assessments, a risk assessment and a maintenance agreement.

5.8.6 SEWERS

The purpose of these policies is to provide for a suitable sanitary sewer system designed to serve the urban development requirements throughout the Plan area.

Policies

1. As part of an Outline Plan/Land Use Amendment application, a developer shall submit a Sanitary Sewer Servicing Study to demonstrate that the subject land can be serviced in accordance with the overall design of the sanitary sewer system for the area.
2. The developer will be responsible for installation of the collection mains within the Plan area.
3. The developer will be responsible for downstream upgrades to the collection main along 9th Avenue S.W.

5.8.7 RIVER FLOODING

The northern boundary of the West Village Plan Area is the Bow River and as such, requires policies to mitigate the associated river flooding and related groundwater risks. Portions of the development area lie within mapped flood risk areas and are subject to controls in the City's Land Use Bylaw, the provincial Water Act, riparian setback policies and other federal or provincial regulations.

This regulatory and policy framework is aimed at ensuring planning processes yield development that will minimize accrual of incremental safety, property and environmental risk under river flood conditions while protecting the riparian function and aesthetics of the shoreline interface. Most of the Plan area has ground elevations only 0.5 to 1.5 metres above 1:100 year flood levels designated municipally and lies outside of mapped flood risk areas.

Policies

1. Design concepts should be evaluated using updated flood levels, updated river modelling and mapping.
2. Ice formation in December and January can rapidly create water levels as high as the 2005 flood (1:100 year). Ice effects must be considered in utility design (stormwater outfall gates, sanitary inflow and infiltration), appropriate building forms, structural and foundation drainage design, bank protection and geotechnical considerations.
3. The restrictive Land Use Bylaw controls for floodway areas apply. Any designs for path/promenade, landscaping and plantings in floodway areas must address regulatory elements in Water Act, Fisheries Act, and Navigable Waters Act from the earliest conceptual stages.
4. The Plan area sits on coarse alluvial soils that can rapidly be saturated by high river water levels due to ice or open water floods. Due to this proximity to the river, relative elevations and potential for floodwater intrusion via utilities, design conventions comparable to flood fringe building and land use controls (see below) should be applied in the Plan area. These include :

    - All roads should be constructed with minimum elevations higher than the design flood levels.

    - All buildings should have main floor elevations and primary electrical/mechanical features above design flood level (permanently habitable buildings should be avoided below the flood elevation).

- Buildings with foundations deeper than flood level should include adequate foundation drainage systems discharging to levels above the design flood levels.
- All buildings should be designed to preclude structural damage from floodwater or elevated groundwater.
- Minimum building opening elevations should exceed the 1:20 year flood level.
- The Land Use Bylaw requires a minimum building setback of 6 metre from the floodway or 60 metre from the edge of the Bow River in flood fringe areas. The Plan area contains no mapped flood fringe, however, in such instances the flood fringe and floodway limits are intended to coincide and the 60 metre setback is to be applied. It is at the discretion of the Development Authority to relax this requirement.
- Approximately 50 per cent of the south bank from Crowchild Trail S.W. to 14th Street S.W. has existing bank protection or flood structures along it, including vertical retaining walls. Detailed condition assessments should be made if any changes or adjacent development is contemplated.
- Bank rehabilitation works should be incorporated in planning of any pathway or shoreline improvement works.
- Any bank rehabilitation or modification of existing structures would be subject to Land Use Bylaw floodway and other provincial and federal regulations noted above.
- The City encourages bioengineering approaches, where viable, as preferential to more structural bank stability treatments and encourages naturalized riparian buffers which provide habitat and aesthetic value.
- All new or retrofitted stormwater outfalls should have minimum invert elevations at least as high as the 1:5 year flood.
- Gates must be installed on new or retrofitted stormwater outfalls servicing connections or land areas below the design flood.
- A review of emergency measures for extreme river floods should be undertaken as part of more detailed planning for the Plan area. This should include assessing possible utility shut-down or capacity restrictions, transportation under flood conditions including access and egress from the site, closure of paths, bridges, parks streets or public spaces and recommendations regarding parkades, material storage, or specific commercial operations that may be impacted.

5.8.8 WASTE AND MATERIALS

Most of the factors affecting inefficient resource use or waste generation should be addressed at the early design and planning stages. Development of West Village should consider 'waste' a resource and an integral part of the cyclical flow of materials into and out of the area in order to minimize waste production and truly respect the value of the materials used in both construction and operation.

Development of West Village should also consider the health implications of the materials used in construction, maintenance and operation of the development and take a whole life cycle approach when considering the environmental and also social impact of those materials. This could be achieved in West Village through:

- Good design aimed at creating healthy buildings.
- An emphasis on reducing resources used in construction.
- The provision of facilities in the home, at work and within the public realm to encourage and enable reuse, recycling and composting.
- Avoiding the use of insulants with a Global Warming Potential greater than 5.
- Avoiding the use of uPVC products.

- Using low Volatile Organic Compounds paints and finishes in construction.

- Encouraging the establishment of residential, commercial and institutional recycling drop-off sites at convenient locations for recyclable dry waste (paper, plastic, glass and metal) within the Plan area. Provision of a permanent composter for degradable wet waste and yard waste should also be investigated.

Policies

1. A recovery plan for any demolition should be submitted to the satisfaction of the Development Authority to outline how materials will be reclaimed, recovered and reused on-site or in the local vicinity.

2. A pre-design site waste management plan should be submitted as part of any Development Permit to demonstrate how the outlined waste recovery targets will be achieved and monitored. The plan should document initiatives to reduce material consumption and waste generation during construction.

3. All residential and non-residential buildings should be provided with internal and external waste storage facilities of a size and location satisfactory to the Development Authority to enable segregation of recyclable and compostable waste from residual waste.

4. Prior to any development in West Village, a detailed feasibility study should be completed and submitted to the satisfaction of the Development Authority to outline the viability of a community composting scheme.

Plan Concept

WEST
VILLAGE

IMPLEMENTATION

6 IMPLEMENTATION

6.1 ENVIRONMENTAL REVIEW

The purpose of these guidelines is to provide for the evaluation of the impact of an Outline Plan/Land Use Amendment application within the ARP area from an environmental perspective. This evaluation will involve circulation of a proposal to the appropriate external agencies for review and comment; and, the submission of the appropriate environmental, biophysical, archaeological, and grading information necessary to undertake this review.

Policies

Environmental Site Assessment

1. Prior to an Outline Plan/Land Use approval, a developer should:

    - Submit a current Phase 1 Environmental Site Assessment (ESA) to the satisfaction of the Development Authority and in compliance with The City of Calgary Terms of Reference to identify any actual or potential soil and groundwater contamination and determine if the site is suitable for the intended use.

    - If the Phase 1 ESA identifies any actual or potential site contamination, a Phase 2 ESA should be submitted to the satisfaction of the Development Authority and in compliance with The City of Calgary Terms of Reference to determine if there is a requirement for remediation or risk management on the site.

    - If the Phase 2 ESA determines a need for site remediation or risk management, a Remedial Action Plan or Risk Management Plan should be submitted to address the manner and extent that the site will be remediated or managed to render it suitable for the intended use.

2. Environmental report(s) shall be prepared by a qualified professional and may be reviewed to the satisfaction of The City of Calgary, and circulated to the appropriate regulatory agencies for review, as required by the Development Authority.

3. Where required by the Development Authority, a developer should undertake those mitigation measures identified by the ESA report for the subject site.

Buildings

4. As part of the overall environmental management strategy for the site, all future development approvals should require the following:

    - An environmental management plan that evaluates the site conditions, remediation plan, risk management plan (including soil and groundwater management), and long-term building management.

    - The installation of appropriately designed measures to exclude the infiltration of soil gas from the ground into the building.

6.2 POTENTIAL FINANCING

In order to encourage private and public sector development in the West Village area, extensive public infrastructure works will be required, along with a sustainable funding source which does not create an additional tax burden for citizens.

Recent changes to the Municipal Government Act enable The City of Calgary to implement a Community Revitalization Levy (CRL). This new financing mechanism is designed to provide up to 20 years of stable funding, which is necessary to achieve the vision for the West Village area as set out by ARP.

The CRL will be designed to have no impact on The City's operating and capital budgets over its 20 year time frame and thereby provide self-sustaining funding for the West Village redevelopment. A significant component of the Plan involves the Provincial portion of the property tax levies. During the 20 year period of the CRL, the Province will be asked to forego a portion of their property tax revenues in the West Village area, thereby enabling The City to leverage this contribution to fund redevelopment projects. The City will similarly dedicate the increased property taxes generated in the Plan area during the 20 year time frame towards recouping its costs.

In order to employ this levy, a Community Revitalization Plan will be required to outline a public infrastructure program that will facilitate the reclamation, redevelopment and revitalization of the West Village area.

6.3 APPROVAL PROCESS

The City finds itself in the unique position of being the landowner of the majority of the site. This enables The City to directly influence the design and realization of development more directly than in other projects. Being the primary landowner also places a higher responsibility on The City to fulfil the goals of the Plan as it is not as susceptible to real estate market fluctuations as the private sector.

The City should direct an appropriate body to serve as the steward for the implementation of the Plan. Instruments should be employed to ensure that the individual projects proposed in the area fulfill the vision, principles and qualitative and quantitative targets set out in the plan. The following instruments could be employed to this effect:

6.3.1 SUSTAINABILITY CRITERIA AND EVALUATION PROCESS

To achieve the aspirations of this ARP a detailed specification framework should be developed to outline specific additional requirements as part of the approval process and as a "condition subsequent" to the Purchase and Sale Agreement.

A key component of the specification framework would be sustainability performance criteria which The City would employ to assess the proposed development to determine if it aligns with the vision, principles and targets for West Village. Exemplary criteria are presented in the Appendix of this Plan.

The achievement of a minimum number of the criteria should be a condition of approval and of completion of sale of City land within West Village.

The sustainability performance criteria and evaluation system should be developed and ready for implementation prior to the development of individual parcels in West Village.

6.3.2 SUSTAINABILITY ASSESSMENT

A sustainability assessment should be required as part of any Outline Plan/Land Use Amendment application, or Development Permit application. The primary goal of the submitted sustainability assessment is to outline how the proposal complies with the West Village principles and achieves the West Village sustainability performance criteria outlined above.

It should be demonstrated within the application how the sustainability assessment has been used as a tool that is initiated at the very outset of a proposal's design in order to inform the design process and maximise the sustainability potential of the development. It should be used to assess the sustainability of the design, identify gaps and risk and also opportunities for improvements in sustainability performance in order to improve the project design and help lead decision-making.

The sustainability assessment should not be used to justify why the development is unable to meet targets or principles within the West Village ARP.

The sustainability assessment should be considered a requirement of the planning application (Outline Plan/ Land Use Amendment application, or Development Permit application). Any approval of a planning application should require the information contained within the sustainability assessment to form part of the approved plans in order to ensure that the commitments within the sustainability statement are realized.

The Development Authority should evaluate the results of the sustainability assessment to determine if the proposed project fulfills the requirements.

6.3.3 DESIGN CONTESTS

The City should employ design contests to generate ideas for the design and development of the public realm and built form of West Village. The contests could be implemented in a twofold manner:

- The City should use design contests for public projects, such as park landscaping, plazas, buildings, etc.
- The City should have interested developers compete for the right to purchase a parcel

from The City and develop a project on it. The developer's bid that best fulfills the design principles and sustainability performance criteria The City has established for West Village would be invited to purchase the parcel. Financial capability, price and experience of the purchaser should also be components considered in the land disposition evaluations. An agreement would be made between The City and the developer to ensure the development meets the Plan vision, principles and policies.

6.3.4 DEVELOPMENT AGREEMENTS

The City should enter into agreements with developers which ensure that the sustainability redevelopment principles, targets and policies are fulfilled by the project. Securities may be employed by the City to ensure compliance.

The requirement to achieve a pre-determined number of the sustainability performance criteria developed for West Village should form a core component of the Development Agreement and condition of sale.

6.4 FUTURE WORK

The approval of the ARP does not represent the final step in planning for West Village. A number of more detailed studies, design and construction efforts are expected in the area as part of the implementation program of this Plan. In order for the ARP to be successfully implemented, priorities to be pursued subsequent to its approval include, but are not limited to, the items in the following.

6.4.1 KEY IMPACTS OF THE REDEVELOPMENT CONCEPT

1. Realignment of Bow Trail and its utilities from the current location to a central alignment; revision of its cross-section and character in accordance with the principles of this Plan.

2. Refurbishment and enhancement of 9th Avenue S.W. in accordance with the principles of this Plan.

3. Redevelopment of the junction of 14th Street S.W. and Bow Trail according to the concepts of this Plan; a new bridge structure may be required along 9th Avenue S.W.

4. Prior to redevelopment of the Pumphouse Precinct, an alternative site, close to downtown must be secured prior to the Roads depot and snow dump being relocated outside of the West Village Area.

5. Prior to redevelopment of the Pumphouse Precinct, the groundwater treatment plant adjacent to the Pumphouse Theatre should be relocated within the West Village area.

6. During the construction of the road network, any required changes should be made to the main stormwater lines within the West Village area; further changes to the downstream stormwater system may also be required.

6.4.2 ACTION ITEMS

The design of key components of the infrastructure and public realm will be required at the site-wide scale. It is envisaged that these will be as follows:

1. The City should conduct further environmental site analysis and prepare a Remediation Strategy and Risk Management Strategy for the West Village area.

2. The City should prepare a Biodiversity Enhancement and Management Plan to provide a site concept design for development of the urban forest, riverfront habitat and associated green infrastructure within the built form and to demonstrate how the biodiversity and LID targets will be achieved.

3. A Mobility Assessment & Plan (MAP) and/or a Transportation Impact Assessment (TIA), and a functional plan with detailed right-of-way, cross-sections and utilities shall be completed with the first Outline Plan to examine the transportation impacts of the proposed build out of development within the West Village ARP area.

4. The City should prepare a Master Drainage Plan, to include how stormwater will be collected and used and LID measures incorporated as part of the Biodiversity Enhancement and Management Plan.

5. The City should develop a sustainability performance criteria and an assessment process for determining development agreements between The City and developers. They should be incorporated into the approval process.

6. The City should develop funding strategies such as a Community Revitalization Levy in order to fund remediation of the site and construction of major infrastructure in the West Village area.

7. A detailed feasibility study for the site-wide renewable energy strategy should be prepared.

8. The City should prepare a study to identify a suitable location for a new Roads depot and snow dump site.

9. The City should prepare a study to identify a suitable location for a new groundwater treatment plant that conforms to the new land use and urban design policies for West Village.

10. The City should develop a plan for community facilities/services.

11. The City should develop an affordable housing plan/strategy for the site.

12. The City should prepare a detailed landscape design for the riverfront park and pathway system which should include public art.

13. The City should undertake the development of a master plan for the Pumphouse Park which incorporates the Pumphouse Theatre expansion and other potential recreational uses into a comprehensive functional concept. The master plan should identify municipal infrastructure impacts and works required to facilitate expansion of the theatre and enhancement of the park.

14. The City should prepare concept designs for the key open spaces (e.g. neighbourhood parks, pocket parks) to inform development.

15. The City should prepare schematic designs for the public realm of key streets.

16 The City should develop a phasing plan for the development of West Village.

17. A review of emergency measures for extreme river floods should be undertaken as part of more detailed planning for the Plan area.

18. Opportunities should be investigated for The City to enter into partnerships for the development of affordable housing in the Plan area.

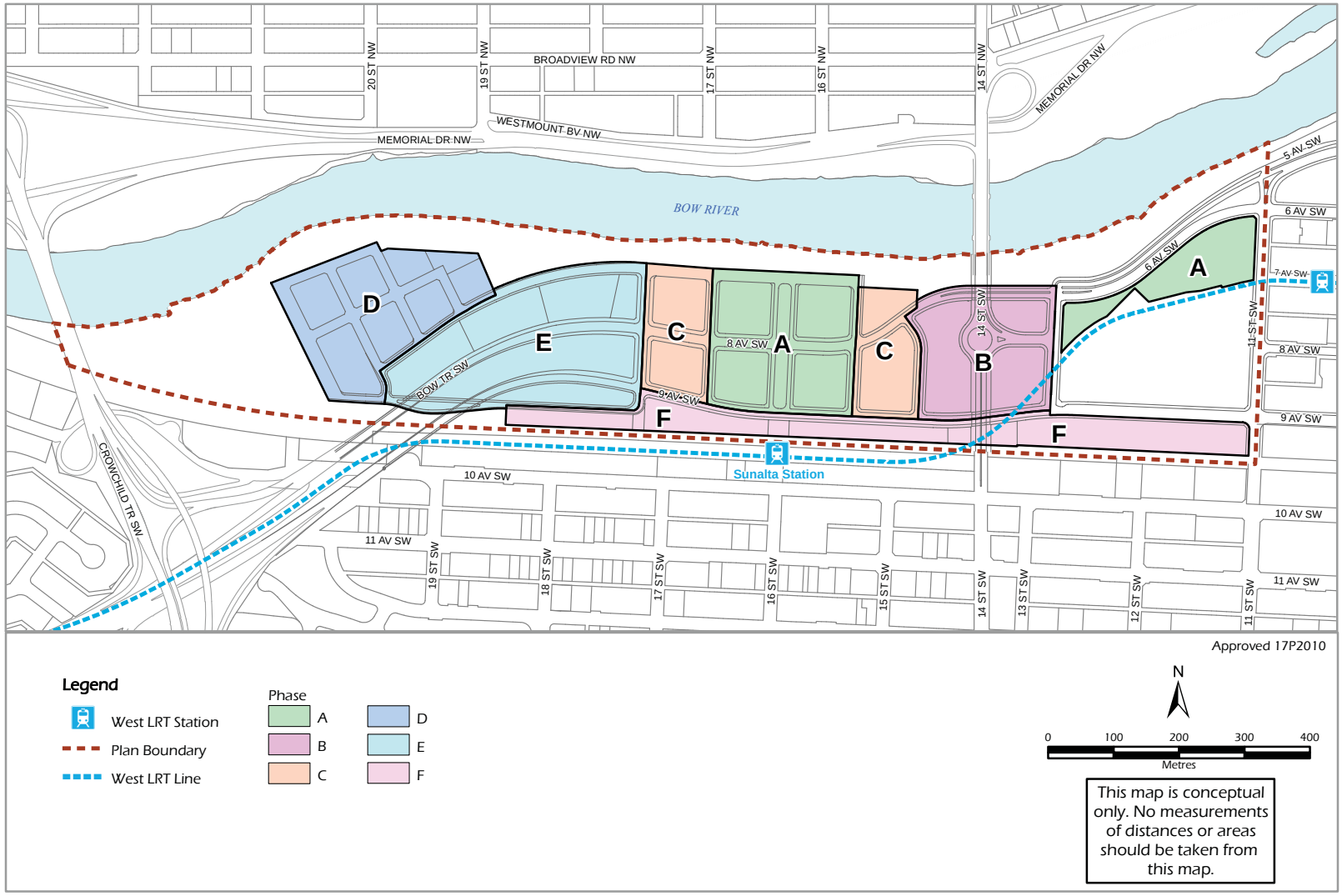
19. The City should develop a monitoring and reporting plan for the West Village plan area.

6.5 PHASING

It is recommended that the development of lands within the West Village occur in phases. A potential strategy is illustrated on Map 6.1. The outlined phases reflect functionally cohesive units and not necessarily a sequence of construction. Detailed engineering and infrastructure studies and implementation strategies will be required to confirm and refine the indicated phases. The City should also take into consideration the possibility that the redevelopment costs would not all be the responsibilty of the land developer. The following considerations may be used to determine the sequencing of the phases:

- Centennial Planetarium will become available for reuse in the immediate future (e.g. 2012).
- Construction of 9th Avenue S.W. and the new bridge over 14th Street S.W. could be completed in the near-term with minimal impact on existing properties.
- Construction of the 14th Street S.W. roundabout could be completed in the mid-term with minimal impact on Bow Trail (8th Avenue S.W.) westbound.
- Construction of 8th Avenue S.W. would have the largest impact on, and benefit to, adjacent properties.
- The most desirable properties should be marketed in the later phases to capitalize on escalating prices and increased demand generated by the completion of earlier phases.
- As redevelopment is long term and significant road and infrastructure studies are required

Map 6.1: Potential Phasing Strategy



during initial phases, existing leases do not have a significant impact on the phasing strategy. Maintaining interim revenue streams may be considered in the phasing strategy.

- The phasing strategy should allow for a certain amount of flexibility/autonomy of phases to enable the City to respond to changes in the economy without sacrificing the nature and quality of the development. This would prevent selling land at unfavourable conditions and for undesired development.

- The City should provide sufficient infrastructure (street and pathway systems) and amenities (open space, tree planting, etc.) to provide a liveable/complete neighbourhood at all phases of the project.

- Any reconfiguration or reworking of water and transportation systems should ensure continuity in provision of emergency services throughout the construction period.

- A remediation strategy must be developed for the site and in particular for those areas with the highest expected degree of contamination. Various strategies are conceivable from up-front remediation to incremental remediation as development occurs. Furthermore, risk management measures may also be employed. The realigned 8th Avenue S.W./Bow Trail passes through the area of contamination expected on the former Canada Creosote site. As construction measures for the roadway could be used to execute remediation measures on the site, this could be the initial development phase.

- The construction of stormwater filtration facilities should proceed before the adjoining sites are developed.

WEST
VILLAGE

APPENDIX




APPENDIX

A.1 ENVIRONMENTAL CONTAMINATION AND REMEDIATION - EXISTING SITUATION

The western boundary of the West Village area has been undeveloped parkland since the 1920s. Fill material of variable environmental quality has been placed throughout this area. Soil and groundwater impacts associated with the fill material have been identified (metals, petroleum hydrocarbons [PHC], polyaromatic hydrocarbons [PAHs]).

Wood preserving facilities (the former Canada Creosote Site) and petrochemical operations, historically located in the west-central portion of the West Village Area, caused widespread impairment to soil and groundwater quality. The principal contaminants of potential concern include PAHs, PHCs and chlorinated phenols. Free-phase liquid contamination has been identified in this area, as illustrated on Map 1.7 Opportunities and Constraints. This includes both dense non-aqueous phase liquids (DNAPL, e.g. creosote) and light non-aqueous phase liquids (LNAPL, e.g. hydrocarbons). Localized areas of PHC impacts are also present in this area. The Province of Alberta conducted a series of site investigation and remediation pilot programs on the former Canada Creosote Site lands in the late 1980s to mid-1990s. The Province ultimately commissioned the installation of a groundwater containment system in 1995 to control off-site migration of the contamination associated with the former wood preserving facilities. This system, comprised of a barrier wall adjacent to the Bow River, a series of groundwater extraction wells and a water treatment plant, has been operated by The City since 1997.

Several sites in the east-central portion of the West Village area have incorporated historical or current facilities for the storage or handling of petroleum fuel or lube oil. PHCs are likely to be the main contaminants of concern in this area. Uncontrolled placement of fill material of variable quality has resulted in soil and groundwater impairment throughout the area. Localized areas of soil and groundwater impacts (metals, PHCs, PAHs) due to other historical activities (auto wrecking, incineration, tar melting) are also anticipated, but have not been fully investigated.

The east portion of the West Village Area, east of 14th Street, was historically anchored by the Mewata Stadium/Armoury and associated supporting military infrastructure and housing. Redevelopment of the area beginning in the 1960s resulted in large scale placement of fill material of variable environmental quality. Commercial and light industrial developments have dominated the area south of 9th Avenue S.W. since the mid-1950s. Automotive repair/servicing and printing operations southwest of 14th Street S.W. are considered potential sources of petroleum hydrocarbon and solvent impacts.

The use of the area south of 9th Avenue S.W. by CPR over the past 130 years as the main east/west corridor to transport bulk goods has possibly resulted in localized areas of soil and groundwater contamination from metal impacted rail ballast, treated wood rail ties, and spills of transported materials.

A.2 ADDITIONAL POTENTIAL IMPLICATIONS OF ENVIRONMENTAL IMPACTS

The following are potential implications of environmental impacts:

- Additional area specific site assessments will be required in subsequent stages of the development approval process (Outline Plan, Subdivision, Development Permit).
- Due to known soil and groundwater impacts, portions of the West Village area may never be completely remediated (e.g. DNAPL zone of the former Canada Creosote Site), but may be partially remediated/risk managed to allow for development.
- The use and building form will dictate the nature and degree of remediation and/or risk management that may be required. For example, if no subsurface structures are planned, the remediation program will be different than if four levels of underground parking are planned.
- From a phasing perspective, the remediation of the former Canada Creosote Site area would ideally be completed as a single, comprehensive

program that addresses the identified contamination. This is due to the high nuisance odour potential, the cost of contaminated soil management, and the volume of materials to be removed. For this area, innovative controls (e.g. tied to plans, bareland condominium, etc.) may be required to ensure that the Development Authority ensures that adequate controls will be in place.

- Based on the information that Environmental and Safety Management currently has available, the remainder of the West Village area (i.e. non-CCS areas) could be managed on an incremental basis (e.g. per Outline Plan or Subdivision). The use and building form will dictate the degree of remediation and/or risk management that may be required.
- The potential for environmental impacts along the river shoreline originating from the historical uses of the area have not been fully investigated and should be considered if enhanced access to the river is contemplated.
- Utilities Policy: An environmental management plan will need to be developed for all deep utilities. This plan will include appropriate environmental site assessments, remedial action plans, risk management plans, and soil management plans.
- The implementation of Low Impact Development (LID) policies in the West Village area, particularly in areas with DANPL and/or LNAPL contamination, will require further assessment. For example, enhanced infiltration of rain water and snowmelt in areas with environmental contamination may contribute to increased mobilization of contaminants to the water table and possibly to the river. Any consideration for the implementation of LID policies will require a review of available environmental assessments and a risk assessment.

- Building Policy: As part of the overall environmental management strategy for the site, all future buildings will require the following:
  - An environmental management plan that evaluates the site conditions, remediation plan, risk management plan (including soil and groundwater management), and long term building management.
  - The installation of appropriately designed measures to exclude the infiltration of soil gas from the ground into the building.

A.3 STREET CONCEPTS

The following concepts are provided to illustrate the intended character of the streets in the Plan area. Detailed cross-sections are to be developed in conjunction with several stakeholders and are to be submitted prior to the first Outline Plan.

Figure A.1: 9th Avenue S.W. looking West

A1 Arterial - 4 Lane, One-way, Off-peak parking, off-street cycle facility

Figure A.2: 8th Avenue S.W. looking West

A2 Arterial - 4 Lane, One-way, Off-peak parking

Figure A.3: Grand Staircase/Boulevard

B1 Main Boulevard - One-way couplet, On-street parking, cycle facilities, Grand Staircase

Figure A.4: Grand Staircase/Boulevard looking north

B1 Main Boulevard - One-way couplet, On-street parking, cycle facilities, Grand Staircase

Figure A.5: Grand Staircase looking south

B1 Main Boulevard - One-way couplet, On-street parking, cycle facilities, Grand Staircase

Figure A.6: The Boulevard looking south

B2 Main Boulevard - One-way couplet, On-street parking, cycle facilities, Green Space

Figure A.7: Commercial Street

C1 Local Commercial Street, two-lane, two-way, on-street parking

Figure A.8: Local Residential Street

C2 Local Residential Street, two-lane, two-way, on-street parking

Figure A.9: Local Commercial Street

C1 Local Commercial Street, two-lane, two-way, on-street parking, two-way cycle facility

Figure A.10: Local Commercial Street

C1 Local Commercial Street, two-lane, two-way, on-street parking, cycle facilities

Figure A.11: The Promenade

D The Promenade/Shared Street, two-lane, two-way

Figure A.12: Local Street Facing Park

E Local Street facing park, two-lane, two-way, off-peak parking, cycle facilities

Figure A.13: Local Shared Commercial Street

F1 Local Shared Commercial Street, two-lane, two-way, on-street parking

Figure A.14: Local Shared Residential Street

F2 Local Shared Residential Street, two-lane, two-way, on-street parking

A.4 GREEN INFRASTRUCTURE IN STREET CORRIDORS

A Decision Matrix should be used as a guide to implement green infrastructure strategies. Each strategy represents a different design and land use with associated street pattern. The following elements should be considered when building green infrastructure into mobility corridors: site assessment, streetscape, pavement, utilities, stormwater management, landscape, construction practices and maintenance agreements. This matrix could be utilized in each road and street type depending on the adjacent land use and/or pedestrian traffic volume.

The columns on the Matrix should refer to the following:

- "Strategies" refer to the green infrastructure strategies introduced in this document.
- "Space" refers to the widths in the road or street right-of-way available for green infrastructure.
- "Uses" refers to land use and pedestrian or bicycle traffic.
- "Adjacent use" refers to the adjacent land use, particularly low or high density residential or commercial uses.
- "Ped. Traffic" refers to intensities of pedestrian or bicycle traffic, where "high" is high intensity traffic, which implies the need for wider sidewalks.

Other conditions:

- "Redevelopment" refers to three types of redevelopment of roads and streets:
  - "full" refers to redevelopment and replacement of most or all utilities, pavement, lighting, etc.;
  - "partial" means only some of these are being replaced; and
  - "new" refers to a newly built street.
- "Soil infiltration" refers to the rate at which water can percolate through the native soil on the site. "High" refers to fast rates, as with sand; "low" refers to slow rates, as with high-clay soils.
- "Sand/salt" refers to the rates and frequency of winter sanding and salting of roads and streets.

The matrix should be applied whenever transportation corridors are planned, constructed, repaired or maintained. Not every strategy will be applicable in these corridors. In order to provide a degree of protection to the natural environment, as many elements as possible, should be included. In order to achieve sustainable targets (especially the target for perviousness) strategies that provide the greatest environmental benefits should be integrated into the corridor.

A.5 TARGETS AND INDICATORS

The following table provides examples of indicators and targets that could be employed as sustainability performance criteria and used in the sustainability assessment of proposed projects. The table should be understood as an outlook; the indicators, targets must be studied further at an interdisciplanary level to establish final targets and indicators for each field.

These indicators and targets should be regularly evaluated against existing standards at the time of development. Necessary revisions should be undertaken to ensure they always fulfill the vision and policies of this Plan.

As the community is going to be built over the long-term (20-30 years), it will be essential to develop a phasing plan. At that stage, corresponding short-term targets may be identified.

Table A.1: Exemplary Target and Indicator Framework

No.	Indicator	Target	Relevant Principles
1.	Mixed Use	The percentage of buildings that contain one or more uses should be 70 per cent or higher. Performance tool at Development Permit stage.	4: Mixed use 7: Diversity
2.	Public Art	The percentage of dollars invested in public art should be 2 per cent or higher (inclusive of the 1 per capital art infrastructure program).	2: Identity & Place making 7: Diversity
3.	Ecology & Biodiversity	Naturalized Green Spaces: The percentage of Plan area restored to having ecological value should be 30 per cent or higher.	1: Human Scale 2: Identity & Place making 6: Complete Streets 10: Energy 14: Biodiversity
		Significant Habitat: The percentage of development area with native habitat protected from development should be 10 per cent or higher.	
		Tree Canopy: the percentage of parking and road area shaded by trees should be approximately 50 per cent.	
		Tree Canopy Total: the percentage of tree canopy area provided for the Plan area should be 18 per cent or higher.	
4.	Green House Gas (GHG) emissions	GHG emissions from fixed sources, excluding transportation, should be zero.	10: Energy
5.	Water Consumption	100 per cent of buildings should be designed for a per capita potable water consumption of 120 litres or less.	11: Water
6.	Waste	Construction waste management: the percentage of total diverted construction waste should be 100 per cent.	10: Energy 12: Waste
		Construction material recycling: the percentage of building materials recycled on site during construction should be 100 per cent.	
		Operational waste disposal: the amount of annual solid waste disposal should be 200kg per capita.or less.	
		Operational recycling & composting: the percentage of buildings with facilities for the segregation of waste and for composting shall be 100 per cent.	
7.	Materials	80 per cent of materials in construction should be responsibly sourced.	8: Community well-being 13: Materials
		50 per cent of materials used in construction should be from a recycled source.	
		100 per cent of insulating materials used in construction should have a Global Warming Potential (GWP) of 5 or less.	

A.6 EXEMPLARY SUSTAINABILITY ASSESSMENT CRITERIA

The following table illustrates a potential approach toward evaluating a proposed project against sustainability performance criteria. The table should be understood as providing an outlook on a possible evaluation matrix; the individual fields, point system and weighting of the points must be studied further.

Table A.2: Exemplary Performance Assessment Matrix

Performance Field	Criteria	Point Allocation	Score
Environmental	Will the proposed remediation plan meet or exceed the current requirements?	Pass: yes Fail: no	
Economic	Will the costs for the proposed remediation strategy meet The City's financial targets?	Pass: yes Fail: no	
Economic	What risks for remediation are assumed by the proponent?	15: proponent assumes all risk 0: City assumes all risk	
Social	Does the development provide a mix of use consistent with that proposed in the ARP?	10: Consistent with the Plan 7 – 2: somewhat consistent with Plan 0: single use or not consistent at all	
Social	Does the residential portion of the development provide a mix that satisfies the needs of a broad range of ages, incomes, lifestyles and rental/ownership units?	5: provides a mix of residential units 4 – 3: provides some mix of residential units 0: provides no mix	
Economic	How much employment (post construction) will be generated in the proposed commercial and retail use?	Range: 5: proposal creating the most employment 0: no employment	
Environmental	Is the mix of uses such that environmental concerns such as noise and water and air pollution are considered through design?	5: Proposal indicates mitigation measures for both 4 – 1: proposal indicates partial mitigation 0: proposal indicates no mitigation	
Social	Does the proposed overall density of the development vary from the density recommended in the ARP?	Range: 10: density adheres to Plan 0: Density ignores Plan proposal entirely	

Performance Field	Criteria		
Economic	Does the proposed density require an increase of civic infrastructure?	2: zero impact 0: infrastructure upgrade required	
Economic	What are the economic spin offs of the proposed development?	5: positive 2: neutral 0: negative	
Social	How well does the proposed development meet the objectives of the ARP?	10: excellent 7: very good 5: good 2: poor 0: not at all	
Environmental	Does the proposed development incorporate the highest environmental standards in its urban design aspects?	30: full compliance with highest standards 10: Partial compliance with highest standards 1: compliance with lowest standards	
Environmental	Does the building employ a green roof?	Points per percentage of green roof space, e.g 10 points for 100% green roof, 5 points for 50% green roof	
Social	Does the building massing, form and character coincide with the Plan? Does the proposal correspond with the texture of the development area?		
Economic	Is the quality of the construction consistent with the Plan in terms of massing, form and character (with respect to articulation of massing)?	10: yes 0: no	
Environmental/social	Is the quality of construction consistent with the Plan in terms of building materials?	10: yes 0: no	
	Does the design of massing, form and character take into consideration wind, light and shadow and sight lines consistent with the Plan?	15: excellent 10: very good 5: good 2: poor 0: not at all	

Performance Field	Criteria		
Social	Does the design encourage circulation and connectivity and sense of place?	15: excellent 10: very good 5: good 2: poor 0: not at all	
Social	Is the building's interface with the streetscape designed for 1) Human scale? 2) Pedestrian-friendly? 3) Achieving an inviting public realm? 4) Interaction with public realm? 5) Shelter for pedestrians?	Each of the 5 elements can score a potential of 4 points as follows: 4: excellent 3: very good 2: good 1: poor	
Social	Does the proposal meet CPTED and Emergency Services Safe Community requirements?	10: yes 0: no	
Economic	Upkeep costs of the public realm. Does the developer assume cost responsibility?	4: full costs 0: no costs	
Environmental	What environmental protection measures or enhancement of natural resources are employed beyond the Plan?	15: excellent 10: very good 5: good 2: poor 0: not at all	
Social	Does the proposal provide spaces or functions that meet local community needs?	10: excellent 7: very good 5: good 2: poor 0: not at all	
TOTAL SCORE		**XX**	

A.7 POPULATION AND EMPLOYMENT OUTLOOK

The potential population and employment figures for the Plan area are presented in the adjoining table. The forecast shows the maximum scenario and is based on parcel areas, maximum floor area ratios and assumptions regarding residential and commercial ratios, residential floor space per resident and floor space per employee.

Table A.3: Potential Population and Employment Outlook

Population and Employment						
Precinct/Site	Site Area ha	Site Area sq. m	Development Yield sq.m	Development Yield sq. ft	Population (Residents)	Jobs (Employees)
Pumphouse	6.88	68,800	362,900	3,906,219	6,221	2,074
Promenade	5.10	51,000	338,900	3,647,886	5,810	1,937
Gateway	2.16	21,600	126,000	1,356,251	864	2,016
Other	3.29	32,900	131,600	1,416,529		3,008
Total	**17**	**174,300**	**959,400**	**10,326,886**	**12,895**	**9,034**

GLOSSARY

+15 Network: refers to Calgary's network of grade-separated pedestrian walkways and bridges fifteen feet above the road grade.

+30: refers to an elevated pedestrian connection 30 feet above the road grade and is the height generally required to cross above the CPR tracks.

Acre: 0.4 hectares

Affordable housing: Council defines affordable housing as adequately suiting the needs of low and moderate income households at cost below those generally found in the Calgary market. It may take a number of forms, such as emergency shelter, transitional housing, market rental and formal and informal rental. From a land use policy perspective, affordable housing is defined in terms of housing that can meet a broad range of user needs and can be built at lower cost (to the developer) than traditional market based housing.

ARP: Area Redevelopment Plan means a planning document, adopted as bylaw by City Council that sets out comprehensive land use policies and other proposals that help guide the future communities or a designated area. An ARP supplements the Land Use Bylaw by giving a local policy context and specific land use and development guidelines on which the Development Authority can base its judgements when rendering decisions on land use and development applications.

Built form: consists of buildings and structures.

Biodiversity: means the diversity of plant and animal life in a particular habitat (or in the world as a whole).

Brownfield: means a site that was previously used, and generally implies the previous use was for industrial or commercial purposes.

Class 1 Bicycle Parking: Class 1 facilities are lockers or controlled areas where a bike can be stored. These facilities will protect bikes from adverse weather conditions, vandalism and theft by enclosing them in secure places. They are suitable for long-term parking at key cycling destinations, such as high-density residential complexes, employment centres and schools.

Class 2 Bicycle Parking: Class 2 facilities include any device that is specifically designed to park bikes. The preferred bike racks allow cyclists to secure both wheels and the bike frame to the rack. These facilities are primarily for short term use at a variety of destinations, including commercial and recreation centres, shopping centres, restaurants and schools.

Community Facilities: means public facilities serving the community, e.g. library, recreation centre, etc.

Concept: means a general notion or idea.

Connections: means the linkages that bring together and move pedestrians, bicycles, vehicles, etc. from one area to another.

Council: the Council of The City of Calgary.

CPR: Canadian Pacific Railway

CPTED: Crime Prevention Through Environmental Design

CRL: Community Revitalization Levy

Density: the number of dwelling units on a site expressed in dwelling units per acre (u.p.a) or units per hectare (u.p.ha). Density can also be expressed by floor area ratio or FAR.

Development Authority: the Calgary Planning Commission or the Development Officer or both, as the context provides.

Development Permit: means a document authorizing a development, issued by a Development Officer pursuant to the Land Use Bylaw, or any previous Bylaw or other legislation authorizing

development within the city, and includes the plans and conditions of approval.

District: means an area identified by a distinguishing feature, such as land use, heritage, cultural and/or any other significant characteristic.

Diversity: means a mixture of age groups, income groups, social groups and family and household types supported by a mixed range of employment opportunities, land uses, building typologies, residential forms and recreational activities.

DNAPL: means dense non-aqueous phase liquids.

FAR: Floor Area Ratio means the quotient of gross floor area of a building divided by the gross site area. FAR is one way of controlling the size/density of a building in relation to the size of the parcel of land it occupies.

Gallery Forest: means a forest growing along a watercourse in a region otherwise devoid of trees, where increased soil moisture and clay soils adjacent to the rivers allows trees to persist in areas well outside their usual ranges.

Greenway: means a street with enhanced planting and sidewalks that serves as a linear vegetation corridor to reinforce the natural environment and provide appealing pedestrian connections. Greenways generally link significant open spaces or natural areas to each other.

Hectare: 2.47 acres

HOV lane: High Occupancy Vehicle lane, means a lane the use of which is restricted, either permanently or at certain times, to vehicles carrying numerous passengers; also used to indicate lanes restricted to buses or taxis.

Human Scale: means that buildings and spaces maintain proportions that make humans feel comfortable.

Landmark: means a building, structure, such as a bridge, public art piece or memorial, and/or landscape feature, such as plazas that have a architectural, historic or cultural significance. In terms of new buildings, landmarks are also employed to identify a location via view corridors and sightlines.

Land Use Bylaw: means the bylaw that establishes procedures to process and decide upon Land Use Amendment and Development Permit applications and divides the city into Land Use Districts. It sets rules that affect how each piece of land in the city may be used and developed. For this ARP this refers to The City of Calgary Land Use Bylaw 1P2007 until such a time as Council approves a new Land Use Bylaw for the Plan area.

Land Use District: means an area of the city designated for particular uses contained in the Land Use Bylaw.

Land Use Diversity Index: This metric describes the number of existing uses within a city's urban area, and the share of land within each type. This metric considers 11 land use groupings. Calculated at a community scale, this metric illustrates the distribution and range of the land uses within the community. The City has established a 60 year Land Use Diversity index target of 0.7 city-wide.

Live/Work unit: means a dwelling unit that is also used as the place of employment of its resident and may have specific design features for this, e.g. extra rooms.

LNAPL: means light non-aqueous phase liquids.

LRT: Light Rail Transit means lighweight, multi-car passenger trains, operated on city streets, and in Calgary, operated within its own rights-of-way. In Calgary also known as the CTrain.

MDP: Municipal Development Plan of The City of Calgary.

MGA: Muncipal Government Act of Alberta.

Mixed Use Development: means the development of land, a building or a structure with two or more different uses in a compact form, such as residential, office, retail.

Mode: means a method of travel, e.g. car, bicycle, transit, walking.

Multi-modal: means employing multiple types of transportation and generally includes trains, buses, bicycles, pedestrians, taxis and private vehicles.

NAPL: means non-aqueous phase liquids.

Pedestrian-oriented or Pedestrian-friendly: means an environment designed to make movement (on foot or by wheelchair) attractive and comfortable for various ages and abilities (e.g. visual and hearing impaired, mobility impaired, etc.).

Plan, the: Refers to the West Village Area Redevelopment Plan.

Primary Transit Network: The Primary Transit Network is defined by level of service – not by mode. It comprises a permanent network of high-frequency transit services (i.e., LRT, Bus Rapid Transit (BRT), streetcars/trams and frequent bus service) that will operate every 10 minutes or less over an extended operating period, seven days a week. The Primary Transit Network will form the foundation of the transit system and incorporate the highest standards with regard to level of service, operating speed, connectivity and amenities to attract new customers.

Primary Cycling Network: The Primary Cycling Network does not outline all future bicycle routes. Instead, it defines high-priority bicycle routes where the most concentrated activity will occur. This network will connect major destinations such as Activity Centres, Corridors and major institutions. Each segment of the network will include the best possible cycling infrastructure that can reasonably be accommodated. Connections will be as direct as possible, making cycling between these locations direct and expedient, while also safe and appealing.

Promenade: means a formally designed pedestrian priority walkway or plaza along the riverfront. Here it refers to the linear riverfront plaza in the Promenade Precinct.

Public realm: means the publicly accessible space of the city, e.g., sidewalks, streets, plazas, parks, and open spaces.

Riparian: means of, on or relating to the banks of a natural course of water.

Setback: means an area measured as a distance from a public right-of-way or private lot line restricting building development.

Shared Street: means a street which is designed to enhance the pedestrian realm and amenity quality of the street environment, e.g. by using similar surface treatments for both areas. The delineation between pedestrian space and vehicular space occurs via design measures such as trees, plantings and bollards as opposed to curbs. Traffic calming measures can be employed to reduce vehicle speeds, e.g. paving materials.

Streetscape: means all the elements that make up the physical environment of a street and define its character. This includes paving, trees, lighting, building type, style, setback, pedestrian amenities, street furniture, etc.

TOD: Transit Oriented Development, means land use composition, pedestrian and street networks and built form are designed to provide highly convenient accessibility to a transit station.

Traffic calming: means the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driving behaviour and improve conditions for non-motorized street users. Typical devices include surface treatments, curb extensions, speed bumps and roundabouts.

Appendix

Transit Hub: (Primary) Transit hubs are focal points for terminating primary transit lines or major transfer centres between intersecting Primary Transit lines. These stations will accommodate higher passenger volumes than other transit stations and, therefore, should include enhanced amenities to provide a pleasant customer experience and to accommodate expected ridership levels. Primary Transit hubs generally coincide with Major Activity Centres and Community Activity Centres, which will further increase transit demand and reduce single occupant vehicle use.

Urban Ecology: Urban ecology deals with the relationships between the built urban environment and the natural elements and organisms found or designed within this same space, such as bodies of water, vegetation, landscape features, and wildlife.

uPVC: means unplasticised polyvinyl chloride

Woonerf: ("Street for living") Is a Dutch term for a common space created to be shared by pedestrians, bicyclists, and low-speed motor vehicles. See also "shared street".

Zero Waste: means reducing waste to an absolute minimum by avoiding waste or diverting waste from landfills, e.g. by recycling, composting, re-use of materials.