ATTACHEMENT 1

THE CITY OF Edmonton
PLANNING AND DEVELOPMENT

WEST ROSSDALE
URBAN DESIGN PLAN

CARLYLE + ASSOCIATES
Landscape Architecture + Urban Design

ARMIN A. PREIKSAITIS & ASSOCIATES LTD.

sturgessarchitecture

Catherine C. Cole & Associates
Heritage Consultants

BUNT & ASSOCIATES
Transportation Planners & Engineers

Associated Engineering

The Plan has Won the Following Awards:

2010 – National Honour Award
Canadian Society of Landscape Architects
West Rossdale Urban Design Plan and Edmonton Legacy Master Plan ("The North Bank")

2009 – Unimplemented Urban Design Plans – Award of Excellence
The City of Edmonton Urban Design Awards
West Rossdale Urban Design Plan

THE CITY OF Edmonton
PLANNING AND DEVELOPMENT

WEST ROSSDALE
URBAN DESIGN PLAN

Prepared for City of Edmonton
Planning and Development

Consultant Team Carlyle + Associates
Armin A. Preiksaitis + Associates Ltd.
Sturgess Architecture
Catherine C. Cole + Associates
Bunt + Associates
Associated Engineering

CARLYLE + ASSOCIATES
Landscape Architecture + Urban Design

ARMIN A. PREIKSAITIS
& ASSOCIATES LTD

sturgessarchitecture

Catherine C. Cole & Associates
Heritage Consultants

B U N T
& ASSOCIATES

Associated Engineering

29 October 2010

Kulbir Singh, B. Arch, M.PL., M.C.I.P.
Director, Strategic Projects
Planning and Policy Services Branch
Planning and Development Department
6th Floor, 10250-101 Street NW
Edmonton Alberta T5J 3P4

Dear Mr. Singh:

Re: WEST ROSSDALE URBAN DESIGN PLAN | EDMONTON | ALBERTA

The City of Edmonton is to be congratulated on moving forward with the Amendment to the Rossdale Area Redevelopment Plan, associated Direct Control provisions and the Urban Design Plan for this extraordinary focus for Edmonton. It is the realization of the potential of this area that will enable the city to "Touch The Water".
The process leading to these plans is the result of the commitment of a wide range of interests. Broad community discussion has been ongoing from the initial Vision Building Workshops, and continues from a wide spectrum of interests.

We look forward to continuing to work with you towards the finalization of these plans.

Sincerely,

CARLYLE + ASSOCIATES

Landscape Architecture + Urban Design

Douglas M. Carlyle, RCA

Principal

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The purpose of the West Rossdale Urban Design Plan is to establish a shared, long-term vision for the plan area. Based on Council's direction on April 27, 2004, the Plan will:

- Determine the best future use of lands in West Rossdale.
- Provide development guidelines that reference the rich history of the area.
- Enhance West Rossdale as a main entrance or gateway to downtown.

The Plan addresses future land uses, streetscape concepts, servicing upgrade plan and design guidelines for this significant river valley neighbourhood.

The West Rossdale Plan was developed in coordination with the vision for the Central River Valley • Alberta's Capital City Integrated Planning and Design Initiative", "Alberta Legislature Centre Redevelopment Master Plan", and 2010 Capital City Downtown ARP. The Plan contains a number of references to areas outside the plan boundary, but if developed will enhance the West Rossdale vision.

The West Rossdale Urban Design Plan makes a series of recommendations reinforcing these initiatives and specific directions.

Respect and emphasize the history and archeological significance of the area:
Areas bounded by 96 Avenue, Rossdale Road and 104 Street are recommended for National Archeological site and interpretive development.

"Touch The Water":
The north bank is recommended to be a multi-modal promenade with a restored indigenous riverbank, and accesses to the river and docks.

Connect and integrate Downtown, the river, the Legislature and adjacent neighbourhoods:
The grid of streets through West Rossdale is recommended to be maintained and developed to support both the pedestrian friendly nature of the proposed neighbourhood and connect the river to the Legislature and Downtown.

Implement public realm improvements to animate the area through urban design and programming:
Principal streets are recommended to be transformed and developed to be both pedestrian and neighbourhood friendly, and to reinforce the significance and prominence of the view and access to the Legislature. Public realm improvements such as sidewalk development and boulevard tree planting are recommended for 96 Avenue, 97 Avenue and 105 Street to integrate the Legislature and its grounds with Rossdale and the river.

Improve mobility and sustainable transportation options:
While maintaining vehicle capacity, it is recommended alternate modes be promoted through improved transit services and the creation of an inviting pedestrian and cycling realm throughout the neighbourhood and its surroundings.

Create sustainable and complete neighbourhoods:

A wide variety of housing forms and densities are recommended, complementing those in the McKay Avenue area and other areas of Rossdale. Additionally, amenity and retail services are proposed along 96 Ave to both support the neighbourhood population and visitors.

Create and enhance gateways:

Both 105 Street and 97 Avenue are recommended to be developed as gateways. 105 Street is recommended to be developed in a manner integrating it with a new signature Walterdale Bridge through high quality architecture and a welcoming pedestrian realm of promenades along the bridge, the riverbank and up 105 Street. 97 Avenue is recommended to frame the view to the Legislature and connect the grounds to the Avenue. 97 Avenue is the complement to 108 Street - Capital Boulevard.

Preserve and enhance view corridors:

Principal views to the Legislature, the river and Downtown are recommended to be reinforced through the framing of views by building alignments, boulevard tree planting and a streetscape motif in keeping with the neighbourhood and the greater area.

Enhance parks and open spaces:

It is recommended to develop a diversity of park spaces, trails, riveredge promenade and recreational opportunities throughout the neighbourhood.

Work together in implementing various plans for West Rossdale, the Legislature Grounds, River's Edge and Downtown:

It is recommended the City take a proactive leadership role in both the further design, development, and implementation of the public realm, and the design and development of building parcels. Further, it is recommended the City explore potential ventures in association with the Province.

Implementation of the Urban Design Plan:

The Urban Design Plan shall be implemented through amendments to the existing Rossdale Area Redevelopment Plan, zoning bylaws, city capital budget, and public/private partnership.

"Touch The Water" by creating a promenade that allows people to interact with the river.

Create a complete, pedestrian-friendly and well connected neighbourhood.

Integrate the development of historical and/or archeological interpretation with other public amenities such as parks and gardens.

1. INTRODUCTION

View Along 97 Ave to the Alberta Legislature

Burial Grounds

North Along 102 Street Walk Alignment

1.1 PURPOSE OF THE WEST ROSSDALE URBAN DESIGN PLAN

The purpose of the West Rossdale Urban Design Plan is to establish a long-term vision for the area based on Council's direction on April 27, 2004:

"That the lands identified on Attachment 4 of the April 13, 2004, Planning and Development Department report 2004PDP047 be reviewed in light of consultants' reports on the West Rossdale area, and a report return to Council through Executive Committee as to the best use, development guidelines that reference history, the district and a main entrance to the downtown prior to any sale."

"That Administration identify what initiatives should be taken to commemorate and interpret all the significant history of Rossdale flats, including the many uses during the fur-trade era and variety of other uses that have occurred before and after that era, and such commemoration and interpretation should recognize the achievements of many cultures who lived and worked there for millennia using input received from Aboriginal, Metis, French Canadian, European and other identifiable groups and individuals."

The Urban Design Plan addresses future land uses, streetscape concepts, design guidelines and a servicing upgrade plan for this unique river valley neighbourhood.

An important aspect of the Plan is acknowledging Rossdale's location within the river valley, a major entrance way to downtown, and its historical and archaeological significance. *Should the 3 area properties(Ortona Armouries, Aboriginal Cemetery and Archaeological Block) receive Federal designation from the National Historic Monuments Board, the development rights of property owners will remain as they are today pursuant to the City's zoning and other bylaws.*

North Along Rossdale Road to 96 Avenue

A high quality of design excellence and attention to the public environment of parks, streets, squares, trails, public buildings, signage and exterior architecture will contribute to the area's success with each project contributing to community building and positive renewal.

1.2 PLAN AREA

The Plan area covers approximately 22.5 hectares of land situated immediately south of Downtown. It contains the three sub-areas of North, South and West Rossdale. Figure 1 - Urban Context illustrates where the area is located within central Edmonton.

Rossdale ARP Sub-Area

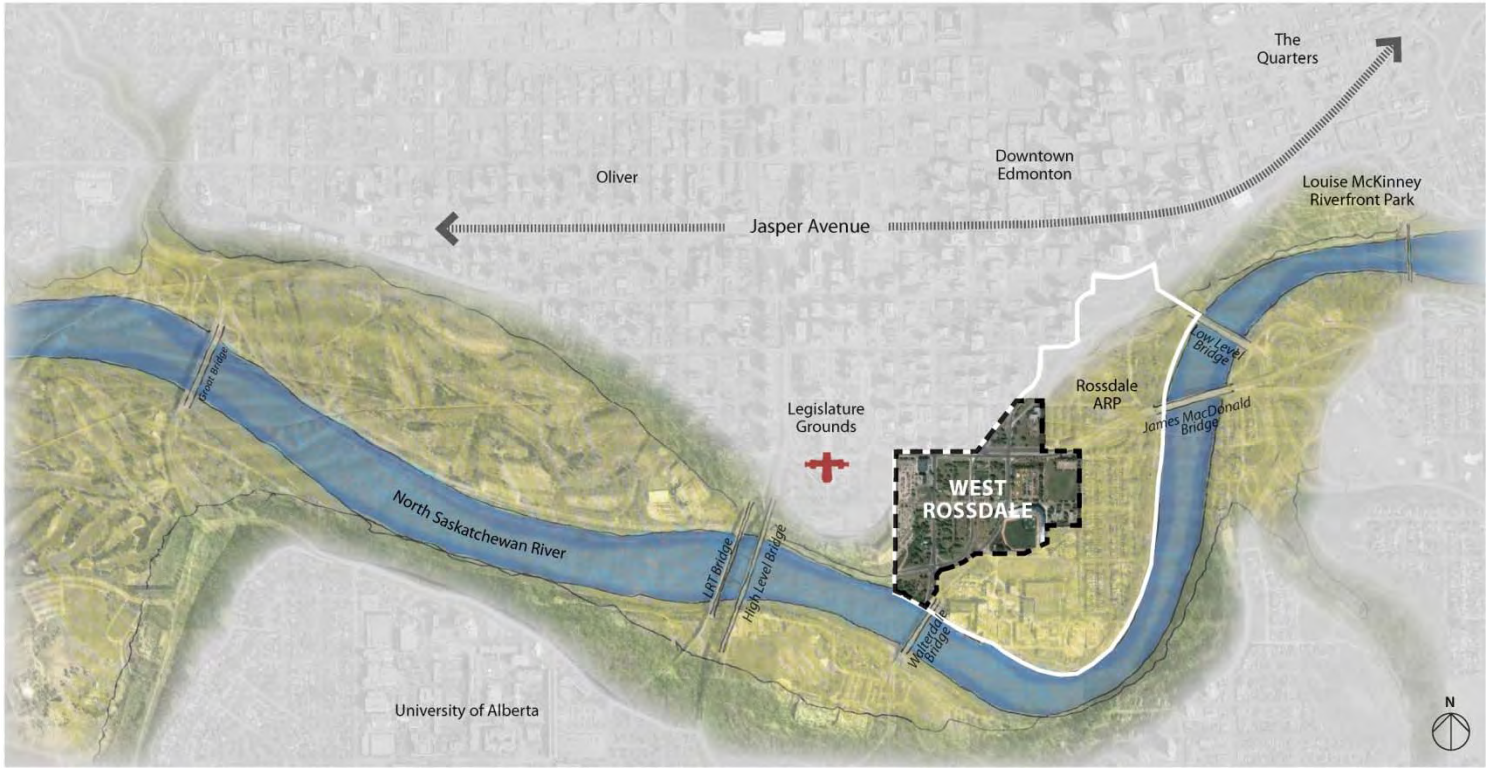


Figure 1 – Urban Context – Central River Valley · Alberta Legislature · Downtown · The Quarters · Louise McKinney Riverfront Park

1.3 VISION AND TEN STRATEGIC PRIORITIES

By 2020, West Rossdale will become a complete, diverse urban village in the heart of Edmonton. Neighbourhood residents, from First Nations to new Canadians, walk to downtown, within West Rossdale or along the river's edge to enjoy the world's largest urban park and meet neighbours and visitors alike along their way. This livable and environmentally sustainable neighbourhood for 4,500 people is well connected to the Downtown, Legislature Grounds, Capital City Parks and surrounding neighbourhoods. The high quality urban design of this neighbourhood serves as a gateway to the Downtown and welcomes those coming Downtown from south Edmonton. People are found outdoors in West Rossdale in all four seasons whether they are walking, running, skiing, launching kayaks, watching a baseball game or enjoying a coffee on the patio of a small café. This special place is one of the few neighbourhoods in Edmonton that comes down into the river valley and touches the water. Edmontonians from all parts of the city come here to connect with the river and enjoy this unique community.

Ten Strategic Priorities were derived from discussions at the October 28, 2008, Vision Building Workshop. They are:

1. **Create a complete, mixed-use, highly liveable, walkable and sustainable community.**
2. **Provide for a wide range of housing choices.**
3. **Integrate the area and connect it with Downtown, Legislature Grounds, Capital City Parks and surrounding neighbourhoods.**
4. **Commemorate and respect thousands of years of history, with the designation of historical places and structures.**
5. **Connect with the north bank of the North Saskatchewan River to make the waterfront a year round people place.**
6. **Promote and integrate sustainable transportation alternatives.**
7. **Enhance West Rossdale as a main entrance or gateway to the Downtown.**
8. **Design and develop the new Walterdale Bridge in a manner that makes it a community asset and minimizes negative impacts on West Rossdale.**
9. **Make West Rossdale and the surrounding area a destination for residents and visitors to Edmonton.**
10. **Provide a diversity of park spaces, trails, river edge promenade and recreation opportunities throughout the neighbourhood.**

Create a complete, mixed-use, highly livable, walkable and sustainable community.

Provide small-scaled commercial establishments to support the needs of the neighbourhood.

Potential for commemorating and respecting thousands of years of history through interpretive efforts.

Provide a wide range of housing choices.

Provide a diversity of park spaces, trails, river edge promenade and recreation opportunities throughout the neighbourhood.

Connect to the north bank of the North Saskatchewan River and make West Rossdale and the surrounding area a destination for residents and visitors to Edmonton.

There were many stakeholders involved in development of this Urban Design Plan. The following summarizes the process used to develop this Plan.

1.4 HOW THE PLAN WAS PREPARED

Key Person Interviews

The consultants conducted key person interviews with key stakeholders including relevant City Departments, representatives from the Rossdale Community League, Councilors Jane Batty and Ben Henderson of the former Ward 4, and stakeholders adjacent to the Plan Area such as the Province of Alberta and EPCOR.

Vision Building Workshops 1 and 2

Two vision building workshops were held for the West Rossdale Urban Design Plan. Workshop 1 was held on Tuesday, October 28, 2008 at the Old Timers Cabin in Edmonton. Workshop 2 was held on Wednesday, November 26, 2008 at the same location.

The City of Edmonton mailed 1,700 invitation letters with background information on the project to a variety of stakeholders including all property owners in the Rossdale Area Redevelopment Plan Area and McKay area of Downtown, the Mayor, Ward Councilors, aboriginal groups, the Province of Alberta, major associations and others. In addition, the workshops were advertised in the Edmonton Journal and on the City of Edmonton website. A total of 60 participants attended Workshop 1 and approximately 40 attended Workshop 2.

Meetings with Individual Stakeholder Groups

The consultant team met with the Rossdale Community League on January 22, 2009 and the Edmonton Aboriginal Urban Affairs Committee on January 28, 2009 to discuss the preliminary Urban Design Plan and proposed development concepts.

Edmonton Design Committee

The development concept for West Rossdale was presented to the Edmonton Design Committee on several occasions. First, for an informal Pre-Assessment Consultation Review in March 2009 and next for a formal presentation in June 2009 to obtain feedback on the development concept and Urban Design Guidelines. In September 2009, the consultants presented three documents that make up the West Rossdale Urban Design Plan: Urban Design Plan, Direct Control Provision (DC1) and Amendment to Rossdale Area Redevelopment Plan. The Edmonton Design Committee gave its formal support of all three documents in April 2011.

Vision Building Workshop 1

WEST ROSSDALE URBAN DESIGN PLAN PROCESS

Inventory and Analysis
July - Oct 2008

Background Research and Analysis

Interviews with Stakeholders

Design Charette- Exploring Opportunities and Constraints

Vision Building Workshop 1

Preliminary Urban Design Plan
Oct - Dec 2008

Interim Report

Interviews with Stakeholders

Preliminary Land Use and Development Options

Vision Building Workshop 2

Draft Urban Design Plan
Jan - June 2009

Interim Report

Draft Land Use Plan and Development Guidelines

Edmonton Design Committee

Site 4, Archaeological Study

Edmonton Aboriginal Urban Affairs Committee

Rossdale Community League

Final Urban Design Plan
Apr 2009 - June 2011

Draft Urban Design Plan, DC1 and Amendment to the Rossdale Area Redevelopment Plan

Rossdale Generating Station Repurposing - Preliminary Programme Statement

Walterdale Bridge Replacement: Concept Planning Study

Public Open House/ Meeting in conjunction with Walterdale Bridge (November 2010)
Council Public Hearing

After an inventory and analysis of the Plan Area, key person interviews, two vision building workshops, and consultation with various stakeholder groups, the following key issues and opportunities that influence the West Rossdale area have been identified. These have guided the formation of the recommended development concept in this urban design plan.

1.5 KEY ISSUES AND OPPORTUNITIES

Issues

- There is a need to make better use of underutilized and vacant land.
- The connectivity and walkability to surrounding areas such as Downtown, the river's edge and the Legislature Grounds needs to be improved.
- There is a lack of local commercial & amenity uses for area residents, the city and tourists.
- There is a lack of streetscaping, such as pedestrian friendly sidewalks and street trees.
- The exclusive north bound only direction of the Walterdale Bridge creates issues for the provision of efficient public transit in West Rossdale.
- The width of roadways in combination with the high volume and speed along major arterial roads have a negative impact on the pedestrian environment.
- Parking solutions, particularly for Telus Field and public amenities, need to be developed.
- There is a lack of ease of access to McKay Avenue, the Downtown and Legislature Grounds for pedestrians.

Opportunities

- Residential population should be increased to build a complete sustainable community, provide market support for commercial and community uses and improve safety.
- The connectivity of open spaces in and around West Rossdale should be enhanced.
- The proximity to the River can be built on as an amenity in Rossdale. The water's edge can be reclaimed for public use.
- The history of the area should be enhanced and celebrated to help create a strong sense of place.
- Pursue opportunities to improve connectivity and accessibility to surrounding areas including EPCOR Rossdale Generating Station and the Legislature Grounds.
- The area can be active and liveable year round, including the winter months. This can be enhanced through programming.
- Ensure the visions for the decommissioned EPCOR Plant and West Rossdale reinforce each other.
- Re-establish the area as an important meeting place, or 'pehonan'.
- Recognize and provide spaces for celebrating the history of all civilizations in the Edmonton Area.
- Reflect the area's importance as a gateway to the downtown of Alberta's Capital City.

This Plan builds upon the unique assets of West Rossdale and its association with the greater Rossdale area, the surrounding area of the Legislature Grounds, EPCOR Power Generation site and Downtown.

1.6 WHAT THIS PLAN DOES

Using West Rossdale's Unique Assets

West Rossdale occupies an essential location in Edmonton. It is considered a critical meeting area for millenia by First Nations People and the symbolic birthplace of Alberta.

West Rossdale is at the centre of the city encompassed by the downtown to the north, the provincial legislature grounds to the west, the North Saskatchewan River to the south and north Rossdale residential community to the east. It has a long and rich history and serves as the entry to downtown from the south. It is one of the few communities in Edmonton that comes so close to touching the water of the North Saskatchewan River. For this important area to be successful, it must capitalize on its unique characteristics and location.

This report is organized into the following seven (7) sections.

1.7 PLAN FORMAT

Section 1.0

Introduction: Provides an overview of the Plan purpose, vision, plan area, historical overview, methodology, key issues and opportunities and description of what this plan does.

Section 2.0

Area Analysis: Describes the urban context, policy context, area history and sites of historical significance, existing ownership and existing land use, existing zoning, existing traffic and circulation, and existing utilities.

Section 3.0

Development Concept: Presents the overall development concept for West Rossdale.

Section 4.0

Urban Design Guidelines: Presents both general urban design guidelines and area specific design guidelines for each of the areas identified in the development concept.

Section 5.0

Public Realm Plan: This section discusses the streetscape and park space improvements recommended as part of the West Rossdale Urban Design Plan

Section 6.0

Utility Improvements: Describes utility recommended upgrades.

Section 7.0

Appendices: Provides a detailed historical, utilities and transportation study.

2. AREA ANALYSIS

2.1 URBAN CONTEXT AND INITIATIVES

West Rossdale has the potential to be a key element of a reimagined Downtown - Legislature - River Valley initiative to integrate them together. The resulting integration would form a true Capital City focus for Edmonton. This focus would then be the fulcrum for an overall central river valley concept of "Touch The Water", from Louise McKinney Riverfront Park to the Glenora site of the Royal Alberta Museum and Government-House.

The Urban Design Plan for West Rossdale is currently being developed in coordination with a series of concurrent initiatives:

Government of Alberta and the City of Edmonton	1. Edmonton • Alberta's Capital City • Integrated Planning Approach and Design Initiative,
Government of Alberta	2. Alberta Legislature Centre Redevelopment Master Plan, by Alberta Infrastructure,
City of Edmonton	3. Capital City Downtown Plan Update Project, by City of Edmonton,
	4. Jasper Avenue • New Vision, by City of Edmonton,
	5. Walterdale Bridge Replacement, by City of Edmonton
	6. The North Bank • Edmonton Legacy
	7. Rossdale Generating Station Repurposing: Programme Statement
	8. The Way Ahead: Strategic Plan 2009 - 2018
	9. The Way We Move: Transportation Master Plan
	10. The Way We Green: Environmental Strategic Plan
Epcor	11. Decommissioning of the Rossdale Power Station, by Epcor,

Other Initiatives along the Central River Valley:

Government of Alberta	12. Louise McKinney Riverfront Park
	13. "The Quarters Downtown"
City of Edmonton The River Valley Alliance	14. Capital Region River Valley Park

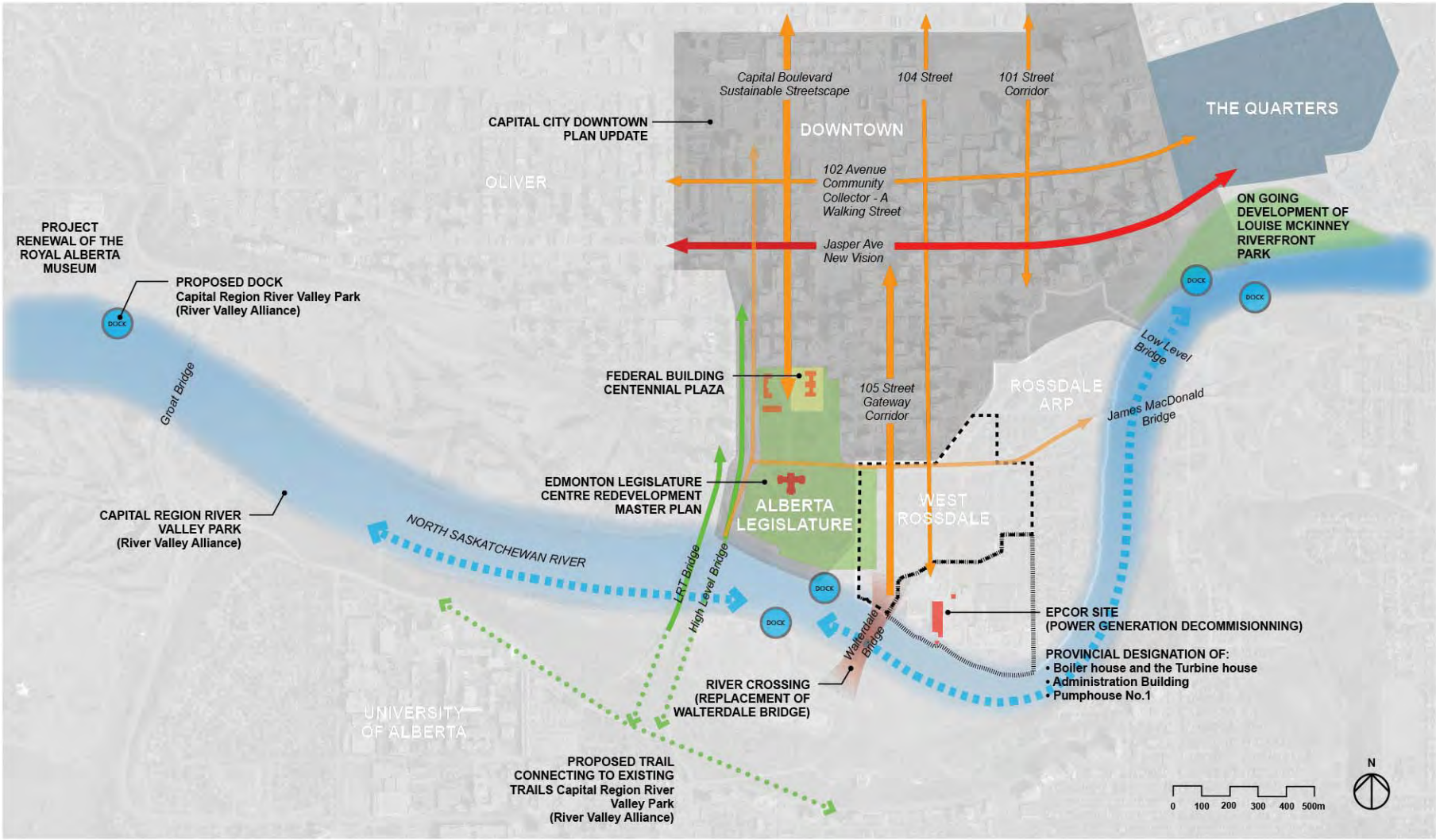


Figure 2 - Current Planning and Development Initiatives · A Number of Planning and Design Initiatives are Under Way Within the Immediate Vicinity of the West Rossdale Plan Area

Downtown

Over the past two decades, the introduction of a residential population in Downtown has had a positive impact on the vibrancy of Downtown after normal working hours. Several new mixed-use and residential high-rises have been built in the Downtown. Building on this momentum, the City has approved a new Downtown Plan focused on creating a vibrant, liveable and sustainable Downtown.

The West Rossdale Plan Area is immediately adjacent to the McKay Avenue District in Downtown. The goal for this area in the new Downtown Plan is to offer river valley oriented amenities and to have a diverse, walkable neighbourhood that has a mix of residential and neighbourhood commercial uses that transition into the office and commercial areas of downtown to the north of the McKay Avenue area. New downtown residential developments approved or proposed within the past three (3) years will create a total of 1217 new housing units.

Jasper Avenue: New Vision

This project calls for not only the renewal of Edmonton's most important street but also emphasizes the connections and integration with surrounding neighbourhoods including connections and integration with West Rossdale, the Valley and the Legislature Grounds.

Downtown Edmonton and the River Valley

Alberta Legislature

Alberta Legislature

The Provincial Legislature grounds are located west of West Rossdale, including two half blocks inside the western edge of the West Rossdale boundary. The Province is in the process of planning the Legislature grounds through the Alberta Legislature Centre Redevelopment Master Plan and will be evaluating the treatment of the eastern edge of the grounds that borders West Rossdale.

South Rossdale

To the east of West Rossdale are a number of established single family homes which run two blocks deep before reaching the river. Residents of Rossdale were invited to participate in both vision building workshops to ensure that the design integrates well with the existing fabric of the community. Consultation has also taken place with the Rossdale Community League.

EPCOR Rossdale Generating Station

EPCOR has operated power generation/ transmission and water services out of its Rossdale site for over 100 years. While the water plant will continue to operate in this location, the power plant is decommissioned. There is the potential for a portion of this site adjacent to the North Saskatchewan River to be open to the public and allow for the continuous development of the river valley trail system. A number of these buildings, including the Administration Building, the turbine and boiler halls and Switch House, and Pumphouse No. 1 are provincially designated historic buildings and are to be retained.

The Quarters Downtown

Revitalization of this area by the City of Edmonton and an Area Redevelopment Plan, Urban Design Plan, and rezoning were approved by Council in April 2009. The Quarters Downtown area is located east of 97 Street to 92 Street, from 103A Avenue southwest to Jasper Avenue/101A Avenue.

EPCOR Rossdale Generating Station

Louise McKinney Riverfront Park and Downtown Edmonton

Louise McKinney Riverfront Park

The Louise McKinney Riverfront Park, located in the river valley below The Quarters Downtown, is being developed as an urban park that serves as an amenity to all Edmontonians. Its emphasis is to enable access to "Touch The Water," celebrate Edmonton's culture and history and offer a series of facilities to celebrate being simultaneously in the valley and city. A riverfront promenade has the potential to link with West Rossdale and its facilities and support those potentially in West Rossdale.

River Crossing · Walterdale Bridge (South Downtown Approaches)

The City is planning the redevelopment of the Walterdale Bridge. The existing bridge requires replacement by 2014. The replacement bridge is to be a modern "signature" structure, including associated north and south approaches. The new bridge will provide improved vehicular, pedestrian and cyclist access for Rossdale.

River Valley Alliance · Alberta's Capital Region River Valley Park

The initial concept of creating an integrated park along the river valley goes back nearly 20 years. The River Valley Alliance (RVA) came into existence in 1996 as a group of volunteers representing five Capital Region municipalities. They shared a vision of transforming an 88 km stretch of river valley into a world-class metropolitan river front integrated park. Other municipalities joined and the RVA was formally incorporated in 2003. Its founding shareholders include the seven municipalities holding lands in the Capital Region North Saskatchewan River Valley – the Town of Devon, Parkland County, Leduc County, City of Edmonton, Strathcona County, Sturgeon County and City of Fort Saskatchewan. The RVA partners share a common goal- to protect, preserve and enhance the Capital Region's river valley park system for year-round accessibility and the enjoyment of its citizens and visitors. Each of the seven municipal shareholders appoints councilors and private individuals to serve on The RVA Board of Directors.

2.2 POLICY CONTEXT

The Way Ahead, Strategic Plan 2009-2018

The Strategic Plan presents a vision and guiding principles for the City of Edmonton as a whole to guide it through the next several years of development. The Strategic Plan contains a vision of Edmonton in 2040. The four principles are integration, sustainability, liveability and innovation. The Strategic Plan sets out the goals to strengthen environmental preservation and sustainability; to transform the city's urban form, making it more compact while maintaining and revitalizing neighbourhoods. It projects the changes Edmonton needs to make to promote a more integrated transportation system, and it forecasts how the City needs to build financial capacity and diversify its economy.

The Way We Grow, Municipal Development Plan, Bylaw #15100

The City of Edmonton Municipal Development Plan focuses on the need for "attractive and well served communities with an emphasis on compactness and walkability, active transportation, higher densities related to transit, integrated and mixed uses with proximity and access to daily needs and environmentally friendly buildings." Design Alternatives and Guiding Principles have been developed which are consistent with the policy directions of the MDP.

The Way We Move, Transportation Master Plan, Bylaw #15101

The transportation master plan focuses on a modal shift in the predominant forms of transportation and takes an integrated approach to land use planning and transportation planning. The Plan sees public transportation as a cornerstone and encourages active transportation. It seeks to manage the transportation system more effectively and keep the infrastructure well-maintained.

Smart Choices

The City of Edmonton's Smart Choices Program is inspired by the "smart growth" trend in urban planning. Smart Choices involves eight different initiatives:

- Transit oriented development
- Walkability
- Residential infill
- Neighbourhood re-investment
- Commercial redevelopment
- Planning for growth
- Urban design
- Planning education and consultation

The overall goals of the Smart Choices Program are to develop a more compact, walkable, and transit-oriented City with improved building and site design, and vibrant and engaged communities.

Rossdale Area Redevelopment Plan (ARP), Bylaw #8139

The Rossdale ARP was approved in June 1986 and was consolidated in September 2005. This Plan contains many policies that support the development concept taken in this Urban Design Plan. In particular, the Rossdale ARP states that as part of the Plan Concept:

"Over time, Rossdale will be transformed from a sparsely developed mixed use area to a dynamic urban environment with various housing forms, commercial facilities, and community and city oriented recreation facilities. It is expected that the ultimate population for Rossdale would be approximately 4,500 persons. This estimate is based on statistics of average household sizes by housing type for older neighbourhoods and the downtown area."

Other Relevant Policies / Programs

The plan area is also affected by the following:

- Zoning Bylaw 12800
- Bicycle Transportation Plan
- Parkland Bylaw 2202
- Cornerstones' Housing Program
- Edmonton Urban Design Guidelines
- City Policy C-458A - % for Art Policy to Provide and Encourage Art in Public Places
- North Saskatchewan River Valley Bylaw

Fort Edmonton, by Paul Kane, 1849-56 (Royal Ontario Museum)

2.3 HISTORIC OVERVIEW AND SITES OF HISTORICAL SIGNIFICANCE

Rossdale's Historical Significance

Proximity to the river and its role in transportation and industry led to the settlement of Edmonton's first neighbourhoods. The neighbourhood now called Rossdale is historically significant on many levels.

Rossdale has been inhabited for 8,000 years. Called Amiskwaciy (pronounced a-misk-wa-chee) by the Cree people, the area is valued by Aboriginal people because of their long use of the site. The terraces below the present Legislature building were a transitional zone between Cree and Blackfoot territories, a place where indigenous people met, traded, and celebrated long before European contact.

Located on the Flats is the Traditional Burial Grounds/Fort Edmonton Cemetery. Used as an Aboriginal burial ground prior to contact with Europeans, historical records from the beginning of the fur trade era in the late 18th

View of Rossdale Flats

century indicate that First Nations, French Canadians, Scottish, English, and Métis people were buried here.

Fort Augustus II and Edmonton House II were located in present-day Rossdale from 1802-1810 and, after a brief move downstream, Edmonton House IV and Fort Augustus IV were relocated to Rossdale in 1812-13. Following the amalgamation of the HBC and NWC in 1821, and in response to periodic flooding on the Flats, Fort Edmonton V was constructed on the present Legislature grounds in 1831.

The HBC Reserve was surveyed and subdivided for sale beginning in 1881. Rossdale was home to the Donald Ross farm and hotel, many early industries, residences, public buildings and parks. Prime Minister Sir Wilfrid Laurier inaugurated the Province of Alberta here in 1905.

The imprint of original survey plans and roads remains although most early structures have disappeared. Several significant heritage buildings and structures that pre-date the 1915 flood remain including: the Children's Shelter (now Ross Flats Apartments); Hudson's Bay Company Stables (now a film studio); Donald Ross School (recently home to the River Valley

View of the Alberta Legislature

Outdoor Centre for Edmonton Parks and Recreation); the soon to be decommissioned Rossdale Power Plant; and the Walterdale Bridge. *See Figure 3 – Map of Key Historic Sites.*

From 2001 to 2005 a significant planning exercise took place in West Rossdale area that included many stakeholders, First Nations groups and descendants concerning the future of the Traditional Burial Grounds/Fort Edmonton Cemetery, which was eventually created and designated at the north end of the existing Walterdale Bridge.

In 2004, the "Rossdale Historical Land Use Study" was completed for the City of Edmonton by the Commonwealth Historic Resources Management Limited. It highlights the extensive history of the area and makes recommendations to complete archeological investigations and commemorations.

Pehonan · Waiting/Gathering Place

- Site of traditional ceremonies, celebrations, meetings, trade, and games
- Dating to at least 8,000 years ago.

Traditional Burial Grounds and Fort Edmonton Cemetery

- Used as a burial ground prior to contact with Europeans.
- First Nations, French Canadians, Scottish, English, and Métis people were buried here.
- The archaeological digs conducted by an archaeologist in 2007 and 2009 in nine sites in West Rossdale found no human remains.

Fur Trade

- Site home to a series of fur trade forts, beginning in 1799.
- 1812/13 Edmonton House IV and Fort Augustus IV built on Ross flats
- 1830-32 Fort Edmonton V built below current site of Legislature.
- Last Fort Edmonton was demolished in 1915.

Settlement

- Rossdale is named after Donald Ross who owned 70 acres in the area.
- Donald and Olive Ross's home became the Edmonton House, first hotel west of Portage la Prairie.
- Ross started area's first coal mine, market, garden and greenhouse.

Industrial History

- Rossdale was the early industrial heart of Edmonton
- In addition to EPCOR, many early industries were established in the area: coal mines, lumber yards, brewerys, etc.

Provincehood

- Rossdale is the symbolic birthplace of Alberta.
- Prime Minister Sir Wildred Laurier inaugurated the Province of Alberta on this site in 1905.

Recreation

- The Edmonton Exhibition was held on Rossdale flats from 1899-1909
- The City developed sports fields for football, soccer, baseball, tennis, hockey, etc.

Transportation

- John Walter operated a ferry across the river from 1882-1905
- The Edmonton Yukon and Pacific Railway (EY&PR) train steamed across the Low Level Bridge, October 20th, 1902.
- 105th Street (Walterdale) Bridge was constructed following the amalgamation of Edmonton and Strathcona in 1912 (completed 1915).

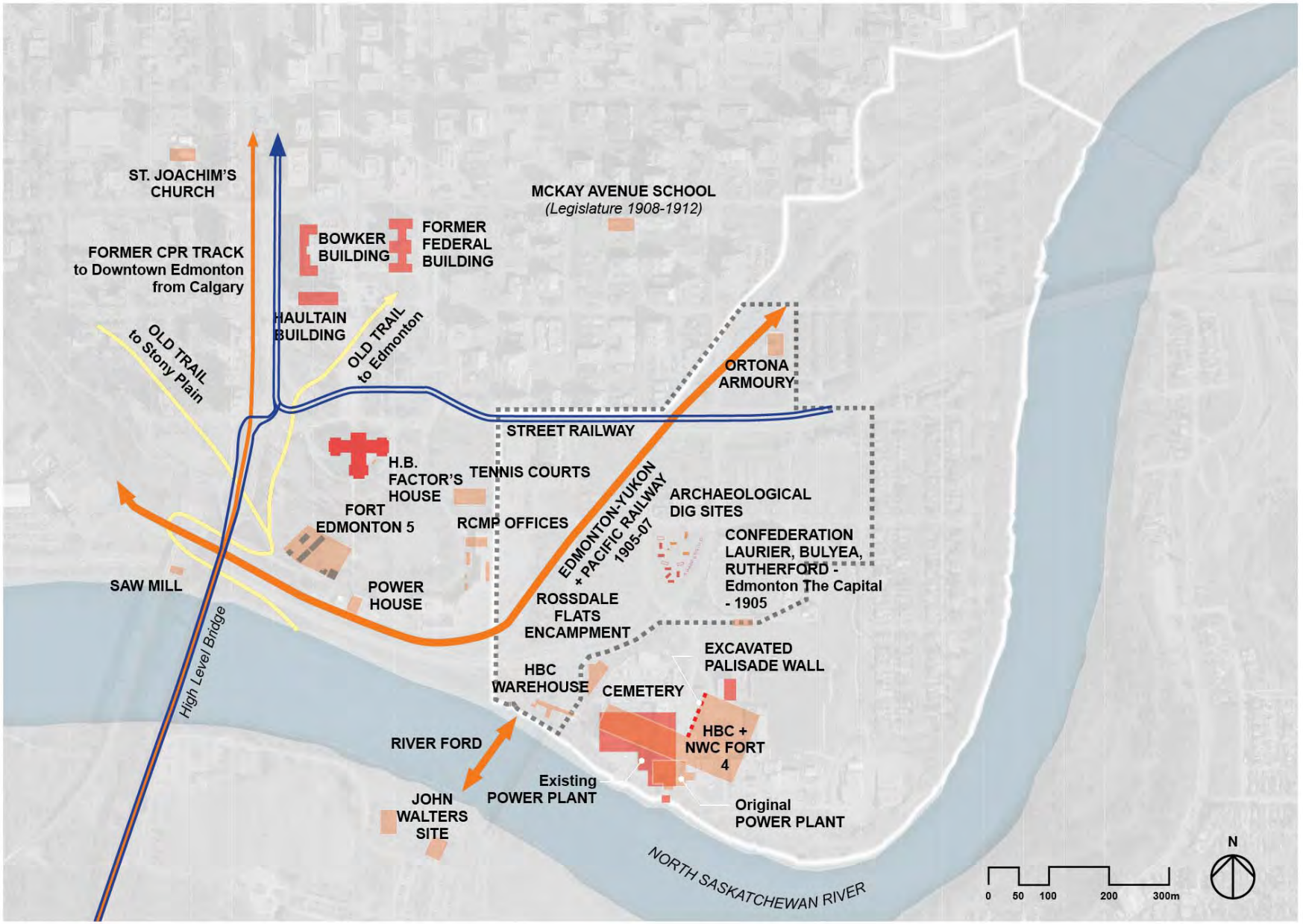


Figure 3 - Selected Sites of Historical Significance

2.4 EXISTING LAND USE

Figure 4 - Existing Land Use shows a mixture of institutional, low to high density residential uses, and park spaces.

Institutional uses include Telus Field, the Donald Ross school site, and the Ortona Armory Arts Building. Single detached homes in the area are modestly sized older homes. There are some low rise apartment buildings and one high rise rental apartment building in the northwest portion of West Rossdale.

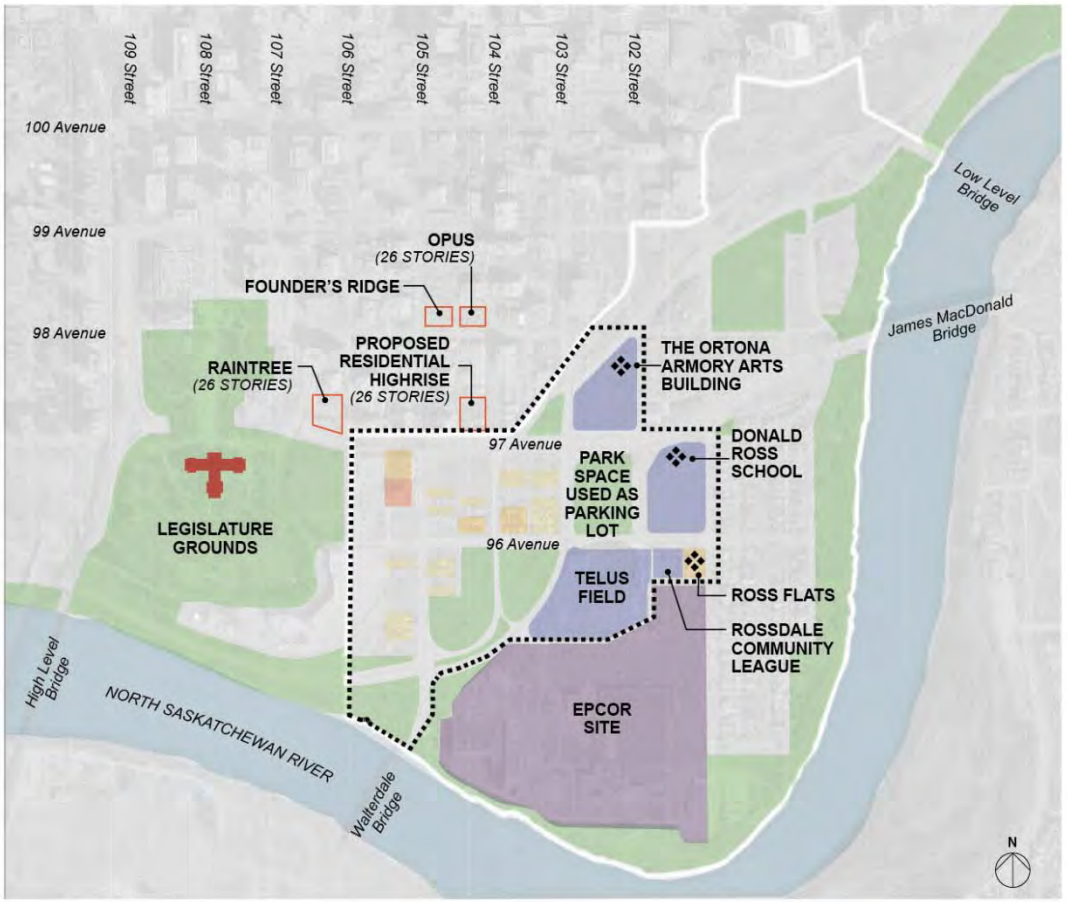


Figure 4 - Existing Land Use

LEGEND

- West Rossdale Study Area Boundary
- Rossdale ARP Boundary
- Historic Building
- Low Density Residential
- Medium Density Residential
- High Density Residential
- High Density Residential (Proposed)
- EPCOR Site
- Institutional
- Park/Open Space

2.5 FLOOD PROTECTION AREAS

Figure 5 - Flood Protection Area illustrates the 1:25 year and 1:100 year flood line as well as the floodplain protection area.

The 1:100 year floodplain is the geographic extent of land area which would be inundated by floodwater during a flood event which may occur once every 100 years and has a one percent (1%) chance of occurrence in any given year

The 1:25 year floodplain is the geographic extent of land area which would be inundated by floodwater during a flood event which may occur once every 25 years and has a four percent (4%) chance of occurrence in any given year

Source:
1:25 year and 1:100 year Flood Line
Rossdale Area Redevelopment Plan - Bylaw 8139
(Adopted on June 10 1986; Office Consolidation, September 2005)

Flood Protection Overlay
http://www.edmonton.ca/infraplan/zoningmaps/page17.pdf

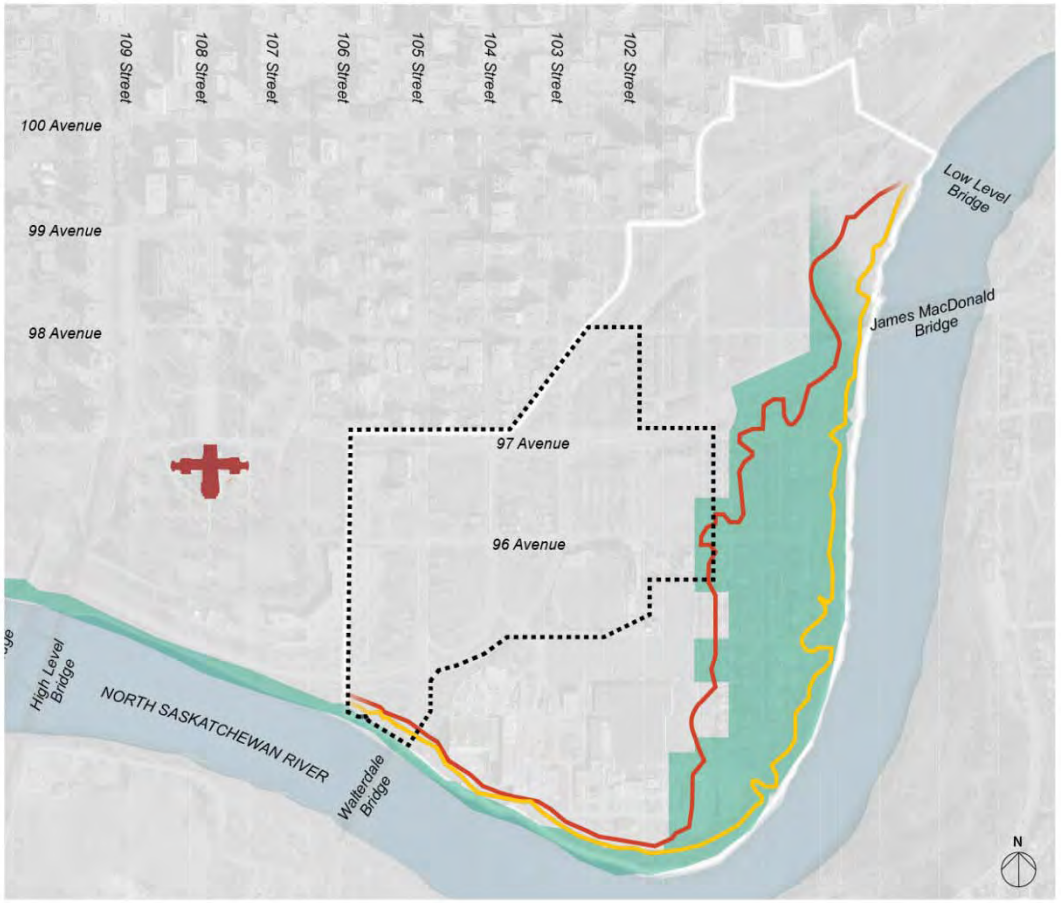


Figure 5 - Flood Protection Area

2.6 EXISTING ZONING
(JUNE 2011)

Figure 6 - Existing Zoning depicts the existing zoning within the Plan Area.
The west portion of West Rossdale is currently zoned (RA9) High Rise Apartment Zone which allows for development of high rise apartments at densities of 325 units/hectare, a Floor Area Ratio of 3.0 and heights up to 15 storeys. The (RA7) Low Rise Apartment Zone allows for the development of low rise apartments at densities of 125 units/hectare, a Floor Area Ratio (FAR) of up to 1.3 and up to 4 storeys.
The purpose of the (A) Metropolitan Recreation Zone is to preserve natural areas and parkland along the river, creeks, ravines and other designated areas for active and passive recreational uses and environment protection in conformance with *The Way We Grow* and the North Saskatchewan River Valley Area Redevelopment Plan. The purpose of the (AP) Public Parks Zone is to provide an area of public land for active and passive recreational uses.

Two sites within the West Rossdale area are currently zoned (DC1) Direct Development Control Provision. These sites are zoned DC1 because of the historic buildings on the sites. The first site is occupied by the Ortona Armory and the second by the Rossdale Flats.

The (US) Urban Services Zone allows for publicly and privately owned facilities which provide institutional or community services. It is currently occupied by Donald Ross School.
Source:
Zoning Map
http://maps.edmonton.ca

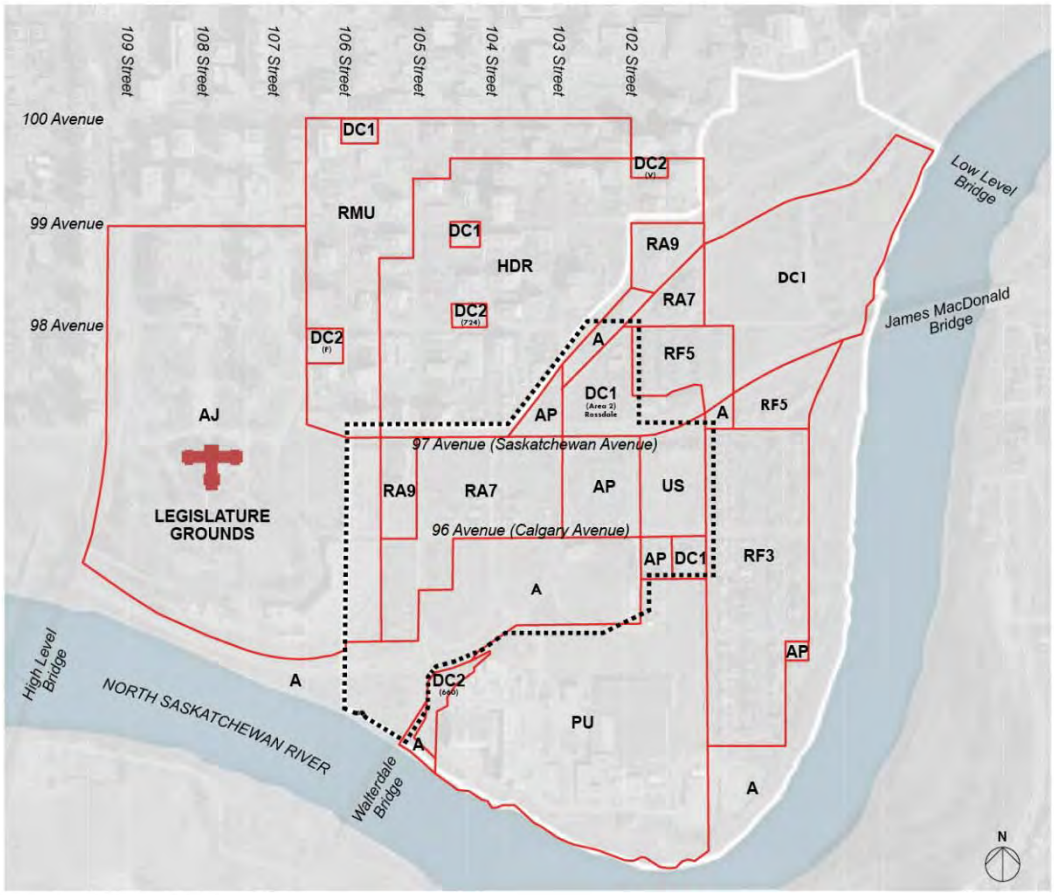


Figure 6 - Existing Zoning

LEGEND

- West Rossdale Study Area Boundary
- Rossdale ARP Boundary
- Zone Boundaries

RF3 Low Density Redevelopment Zone
RF5 Row Housing Zone
RA7 Low Rise Apartment Rise
RA9 High Rise Apartment Rise
DC1 Direct Development Control Provision
DC2 Site Specific Development Control Provision
US Urban Service Zone
PU Public Utility Zone
AP Public Parks Zone
A Metropolitan Recreational Zone
AJ Alternative Jurisdiction Zone

2.7 EXISTING OWNERSHIP
(JUNE 2011)

Figure 7 - Existing Ownership depicts land ownership patterns within West Rossdale. The City owns the majority of land within West Rossdale. The following table summarizes specific areas of land owned by the City of Edmonton, Province of Alberta, and private interests. The amount of land dedicated to roadways and circulation has also been noted.

Land Ownership	Approx. Area (hectares)
Privately Owned Lands	3.15
Province of Alberta	1.46
City of Edmonton	10.53
Roadways and Circulation	7.36
Total	22.5

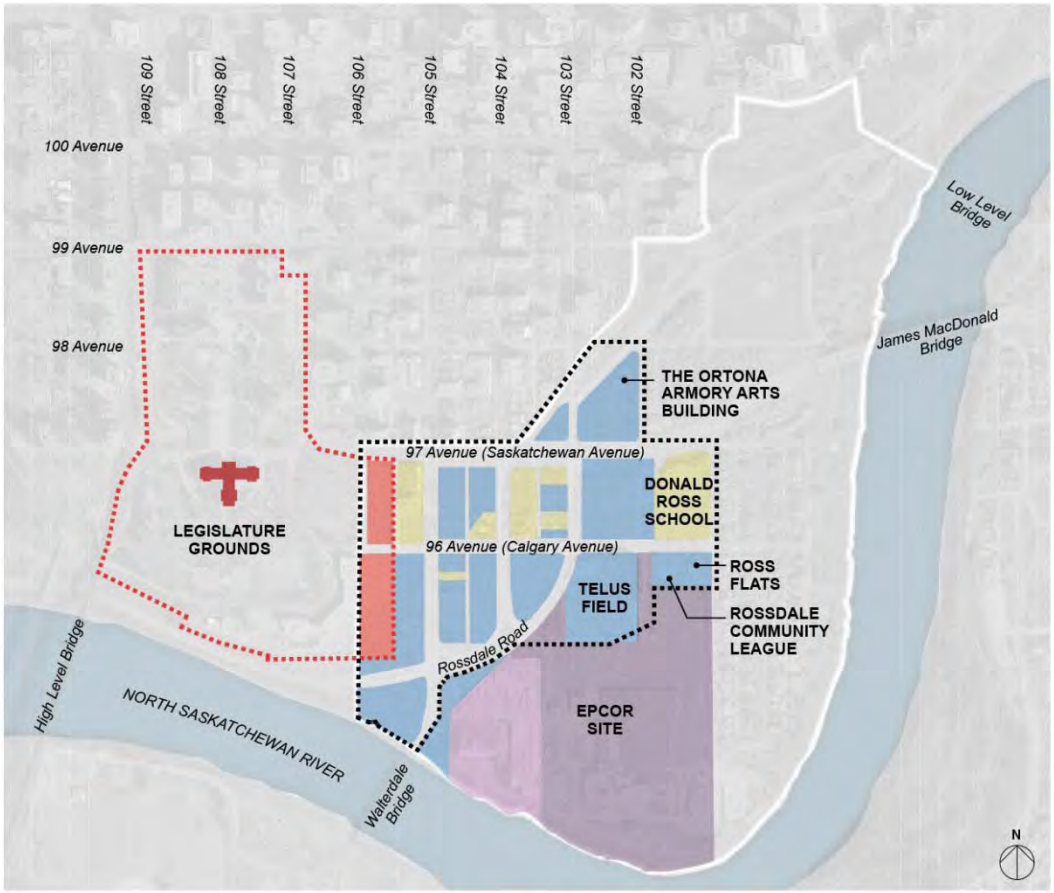


Figure 7 - Existing Ownership

LEGEND

- West Rossdale Study Area Boundary
- Rossdale ARP Boundary
- Legislature Grounds Boundary
- Privately Owned Lands
- Province Owned Lands
- City Owned Lands
- City Owned Lands EPCOR Water
- City Owned Lands EPCOR Power

2.8 TRANSPORTATION AND PARKING

General

The Plan area is located at the confluence of three major River crossings feeding traffic into and out of the Downtown. The existing configurations of arterial roadways servicing the bridges bisect the Rossdale community creating a barrier to development of a walkable residential oriented community.

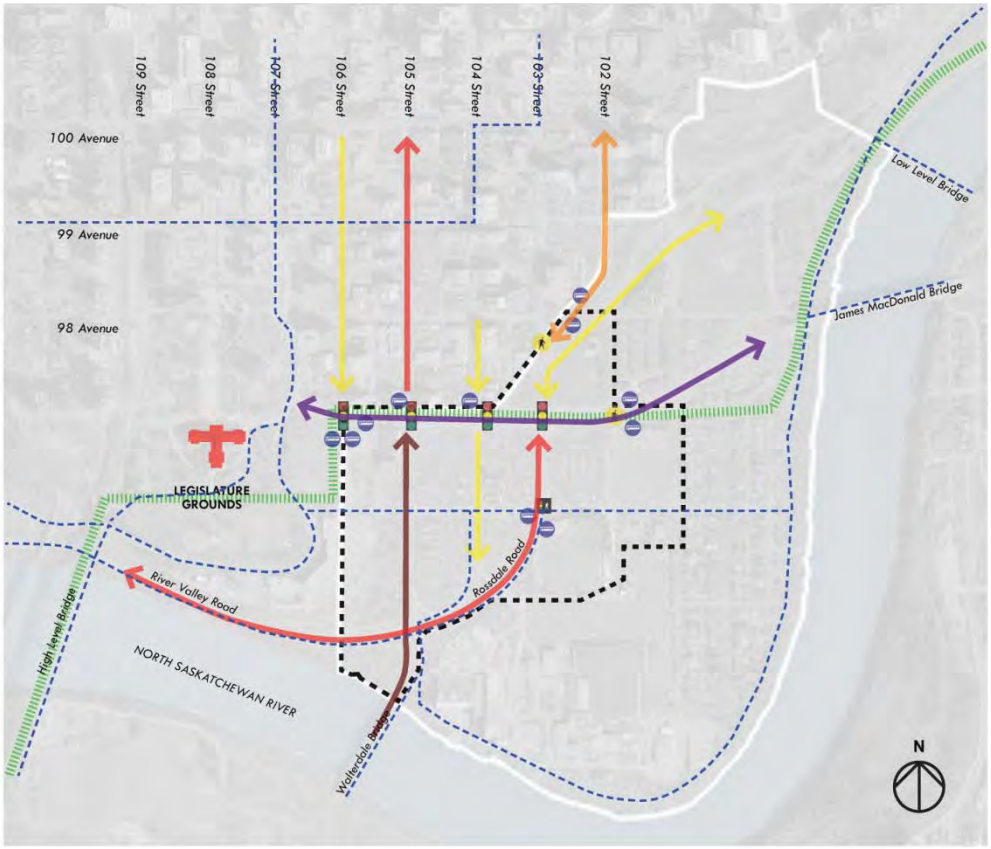


Figure 8 - Existing Transportation and Pedestrian Network

Existing Roadway Network

97 Avenue

97 Avenue is a six lane divided arterial roadway that ties 109 Street and the High Level Bridge with the James MacDonald Bridge, providing direct access to the Alberta Legislature parking lots. The annual average daily traffic on 97 Avenue east of 105 Street is 28,500 vehicles (2005); west of 105 Street 30,100 (2006), and on James MacDonald Bridge 36,600 (2007).

105 Street

105 Street is a one way northbound three lane urban arterial that connects the Walterdale Bridge with the downtown core. The annual average daily traffic on 105 Street per the City web site is 33,300 (2007) coming off the Bridge; north of 97 Avenue it is 16,800 (2004) and south of 97 Avenue it is 18,800 (2005).

River Valley Road

River Valley Road is a two lane arterial that parallels the North Saskatchewan River connecting Groat Road and Rossdale Road. Annual average daily traffic volumes are 16,300 based on 2005 counts by the City.

Rossdale Road

Rossdale Road connects River Valley Road to Bellamy Hill Road and to the Low level Bridge. It is a three lane one way northbound roadway that carries an annual average daily traffic volume of 30,800 prior to crossing 97 Avenue based on counts by the City in 2005.

104 Street

The two lane one way southbound arterial roadway connecting Bellamy Hill Road with 105 Street and River Valley Road carries an annual average daily traffic volume of 6,100 by 2005 counts by the City.

Intersection Traffic Control

In the West Rossdale ARP the following arterial roadway intersections are traffic signal controlled:

- River Valley Road and 105 Street
- Rossdale Road and 97 Avenue
- 104 Street and 97 Avenue
- 105 Street and 97 Avenue
- 106 Street and 97 Avenue

In addition there are two intersections that have pedestrian activated signals.

- Rossdale Road and 96 Avenue
- 102 Street and 97 Avenue

The intersections of 103 Street and Rossdale Road where they intersect Bellamy Hill Road are stop sign controlled on 103 Street and on Rossdale Road. Local roads are stop sign controlled where they intersect arterial roads.

Existing Transit Operations

Existing transit circulation is designed to provide service to the Government precinct with three routes (7,9,133) northbound on Walterdale Bridge, Rossdale Road, Bellamy Hill and one stop (#1021) in the community on the east side of Rossdale Road south of 96 Avenue. These routes return southbound on Bellamy Hill and proceed westbound on 97 Avenue with three stops on the north side at 104 Street (#1551), 106 Street (#1425), and west of 106 Street (#1153). There are another three routes (52,104,105) that cross Walterdale Bridge northbound on 105 Street and loop around on 106 Street via 97 Avenue and proceed to the Provincial Government Centre transit terminal. Stops for this route are on 106 Street at 97 Avenue (#1993) and north of 96 Avenue (#1728) and on 96 Avenue (#1629). Route 71 also uses 97 Avenue crossing James MacDonald Bridge and stopping on the three north side stops at 104 Street, and east and west of 106 Street.

Existing Parking Accommodation

Parking is accepted in the existing neighbourhood on the local and collector roadways but is not allowed on the arterial roadways with the exception of 104 Street south of 97 Avenue.

Existing Pedestrian Accommodation

Sidewalks are present on both sides of all roadways within West Rossdale with the exception of the park site fronting onto Rossdale Road and 104 Street south of 96 Avenue. A multi-use trail is constructed on the south side of 97 Avenue from 106 to 101 Street, and on River Valley Road from the 105 Street intersection west. There is a multi-use trail also on the extension of 102 Street from 97 to 96 Avenue with a signalized pedestrian crossing of 97 Avenue. The numerous arterial roadways providing accessibility to the downtown and government precincts for commuting traffic creates a barrier to safe pedestrian movement throughout the West Rossdale community and into surrounding areas.

2.9 EXISTING UTILITIES

The following is a brief summary of the existing utilities within in the Plan Area. Additional information regarding the existing utilities and infrastructure is contained in the Appendices B.

Drainage

- Existing combined/sanitary sewers and storm sewers are located along the majority of the roadways within the Plan Area.
- From site reconnaissance, there is no on-site stormwater management within the Plan Area.
- The major overland drainage path for the Plan Area is toward the southeast. All minor storm flows are collected in the storm sewer system and then discharged into the North Saskatchewan River. All major storm flows are conveyed overland to the River.
- Within the Plan Area, there is a problem with combined sewer overflows during extreme rainfall events into the River which are caused by the complex interconnections between the combined sewer system and the storm sewer system. In order to meet pollution control requirements of Alberta Environment, through the reduction of combined sewer overflows into the River, the City of Edmonton constructed the sanitary tunnel which crosses under the River and conveys flows to the waste water treatment facility.
- Although, due to the complex interconnections between the combined sewer system and the storm sewer system that still exist on 97 Avenue, there is still combined sewer overflow into the River during extreme rainfall events at the east end of 97 Avenue.

Water

- Existing water distribution mains and water transmission are located along the roadways within the Plan Area.

Power

- There are existing aerial power facilities within all laneways, existing underground power duct lines within the majority of the laneways and roadways, and there are underground power cables along 104 Street, along the east side of the H.B.C. Res. site south of 96 Avenue and along 96 Avenue east of Rossdale Road.

Gas

- The majority of the existing gas facilities are located in the laneways and are medium pressure mains. Additionally there are some intermediate pressure gas mains in the laneway east of 105 Street and along 101 Street.

Telephone

- There are existing aerial telephone facilities in all laneways and along 96 Avenue which cross 101 Street, existing telephone duct lines along 105 Street between the River and 96 Avenue, along 96 Avenue west of 105 Street, in the lane west of 105 Street north of 96 Avenue and in the lane east of 105 Street, and some existing direct buried telephone cables on the north and south sides of 97 Avenue.

Cable Television

- There are existing aerial cable television facilities in all laneways and along 96 Avenue which cross 101 Street, cable television facilities in the TELUS duct line along 105 Street between the River and 96 Avenue, along 96 Avenue west of 105 Street and in the lane west of 105 Street north of 96 Avenue, and underground cable television facilities along 96 Avenue between the lane west of Rossdale Road and 101 Street.

3. DEVELOPMENT CONCEPT

The development concept illustrated in Figure 9 Development Concept is the product of research and analysis throughout the West Rossdale Urban Design Plan process as summarized in the previous sections. It was also developed to parallel the vision for the Area as stated in Section 1.3 Vision and the Ten Strategic Priorities. As shown in Figure 9, the Plan Area is organized into twelve distinct precincts as elements of the development concept.

3.1 DEVELOPMENT CONCEPT

Key of the development concept include:

- The addition of low to high rise residential development to create a sustainable riverfront community while respecting the historical integrity of the site and existing single family dwellings in South Rossdale.
- Building heights will transition from low rise, east of the Plan Area, to high rise development, west of the Plan Area and towards 97 Avenue.
- Building massing along 97 Avenue and 105 Street is to create a strong sense of entrance to the downtown as well as opportunities to frame views to the Alberta Legislature.
- The incorporation of retail uses such as cafes, small scaled grocery store, bakery, flower shop, gift shop and/or bank along 96 Avenue, between 105 Street and 103 Street, to serve residents as well as visitors to the Plan Area.
- A focus on pedestrian-oriented connectivity within the area to promote walkability through streetscape improvements, and the integration of public open spaces from the Alberta Legislature Grounds to the river's edge.
- Streetscape improvements, including wider sidewalks, additional street trees and street furniture. A key focus is on improving the existing Trans Canada Trail that runs along the south side of 97 Avenue.
- Developing a public park space for potential commemoration and/or interpretation of the area's history. The park space will also be highly connected to other open spaces such as the Alberta Legislature Grounds and the river's edge.

Precinct specific design guidelines are provided in Section 4.3

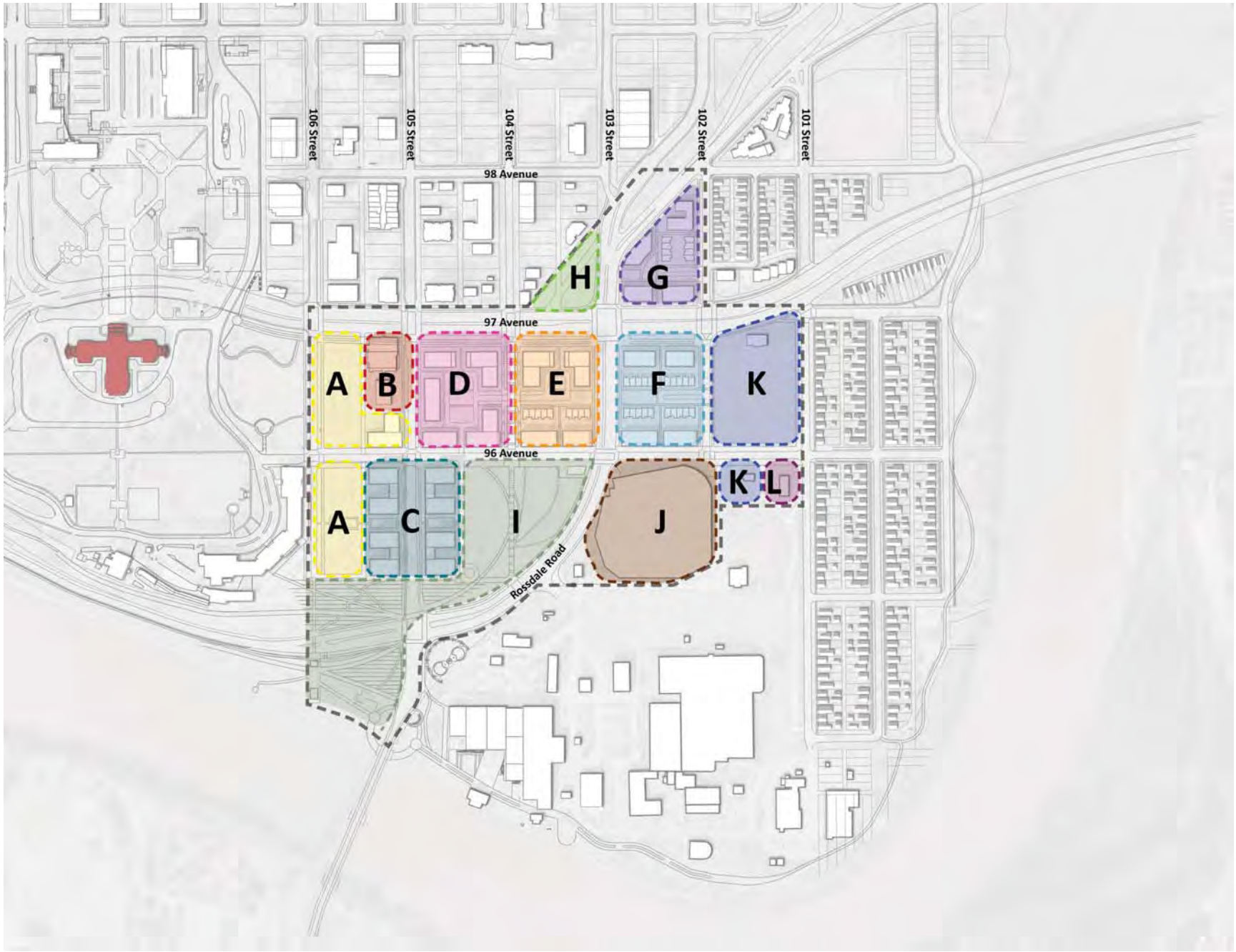


Figure 9 -Development Concept

3.2 POPULATION TARGETS

Based on the development concept, **Table 1** profiles the estimated development potential in each precinct and the associated potential population. The total anticipated residential development is 1700-2100 units, depending upon unit size variables.

Table 1 illustrates population projections for precincts C to G, the precincts designated for new residential development.

Table 1 - Estimated Development Potential

Precinct	Size (ha)	Floor Area Ratio	Dwelling units/Hectare	People/Unit	Population Forecast
C	1.23	3.0	445	1.75	765
D	1.12	3.5	545	1.75	854
E	1.11	3.0	440	1.75	683
F	1.10	1.8	260	2	456
G	.75	2.0	300	1.5	270
	5.31				3028

Commercial uses are encouraged in the West Rossdale area, concentrated along 96 Avenue (John Ducey Way). A total of 4100m^2 of commercial space is forecasted for the area.

Precinct D and E is intended to capture much of the commercial space in active retail frontages, while other commercial space can be accommodated in flexible work/live units to the east and west along 96 Avenue, located mainly in Precincts C, E, and F. This flexible approach allows commercial space to expand and shrink based on demand without leaving empty store fronts, as the space can be used for residential space if there is not adequate demand for commercial.

4. URBAN DESIGN GUIDELINES

Create a mixed-use urban neighbourhood with streets that promote walking.


Encourage a variety of housing forms.

4.1 URBAN DESIGN STRATEGIES

The purpose of this section is to describe overall design strategies in the West Rossdale Plan Area. They are to support the vision for the area as well as achieving high quality, sustainable and functional design. The general urban design guidelines are meant to apply to developments located throughout the Plan Area.

Mixed Use Development

Create a mixed-use urban environment with a balanced range of opportunities for living, working and recreation within the district by:

- Encouraging diverse uses to support around-the-clock activity.
- Create work / live opportunities (where appropriate) by permitting a mix of residential, live-work and commercial land uses.
- Encouraging a variety of housing forms to accommodate a range of household types.
- Enlivening the streets and promote walkability by designing buildings with active frontages, and multiple entrances and windows at grade.

Integration and Connections

West Rossdale has the potential to integrate with a reimagined Downtown - Legislature - River Valley, through a series of common routes and alignments that, if formalized and made pedestrian friendly, would serve to connect the areas and neighbourhoods and integrate them as one: thus "touching the water" from the Downtown would be enabled.

River's Edge

Touching the water at the river's edge is to be celebrated with public amenity:

- create a riverfront promenade and multi-use trail, including docks and piers.
- develop a formal Promenade sited from the former EPCOR Power Generation Station west to Fortway Drive, below the Legislature.
- a series of access points to the Promenade are to link back into the city.

Downtown Gateways

Create a sense of arrival to the north side and Downtown along the approaches crossing the river:

- 97 Avenue and James MacDonald Bridge as a major multi-modal gateway entrance leading to the Legislature and its grounds.
- Walterdale Bridge and 105 Street.
- Integrate with the riverfront promenade.

Pedestrian Ways

Develop an ease of pedestrian access from West Rossdale to its surrounding context:

- 96 Avenue as a major pedestrian route extending from the river bank in South Rossdale through West Rossdale to the south Grounds of the Legislature and the north entrance to the High Level Bridge.
- 104 Street as a major pedestrian route connecting the 104 Street Promenade and Jasper Avenue downtown with McKay Avenue, Rossdale, and potential public access through the former EPCOR Power Generation Site and river.

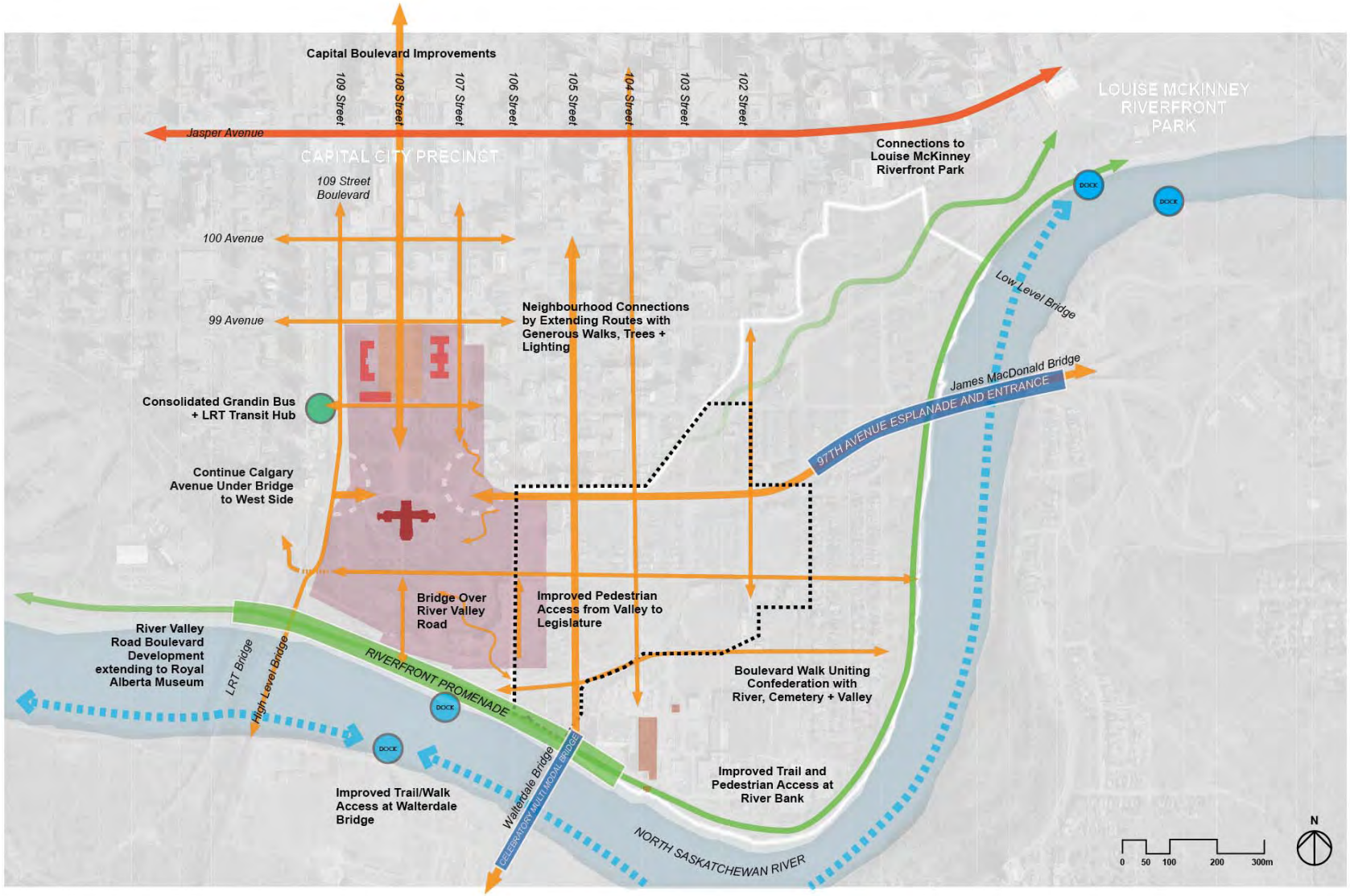


Figure 10 - Potential Connections and Integration · Land and Water

View of the river and river valley

View of the Alberta Legislature from 97 Avenue

View of the Alberta Legislature from 96 Avenue

Frame Views and Establish View Corridors

The views within the West Rossdale area capture a number of iconic Edmonton characteristics and are to be protected.

- The river valley slope, the river, the Legislature, Rossdale Generating Station and Downtown Skyline.
- Views along the streets and avenues are to be framed by building fronts, boulevard tree planting and other elements to capture views to these elements.

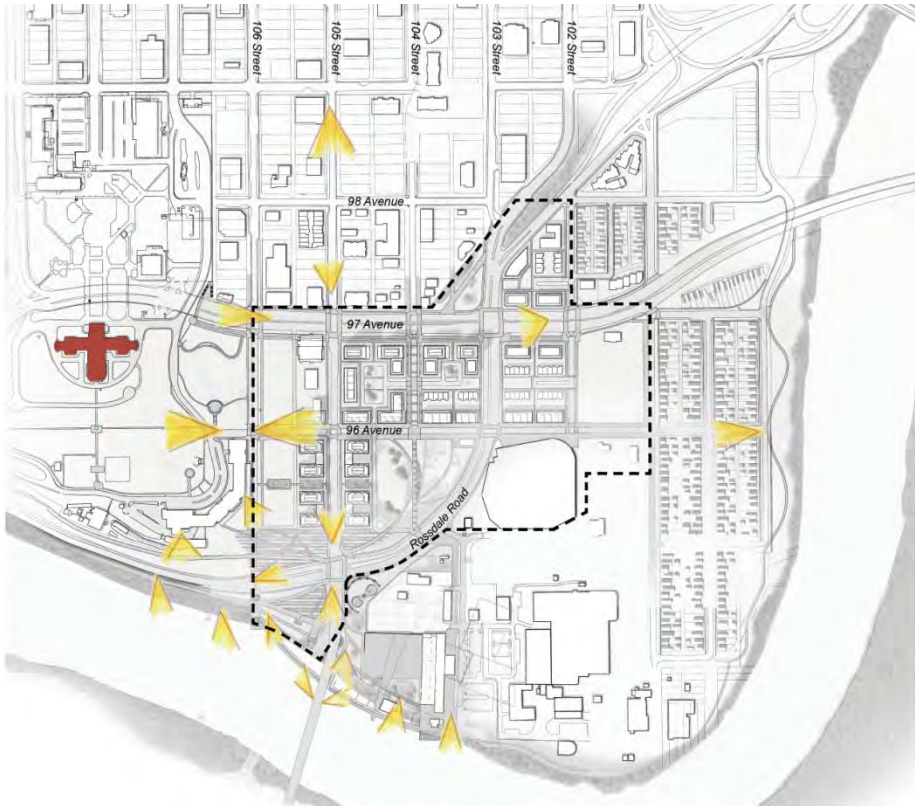
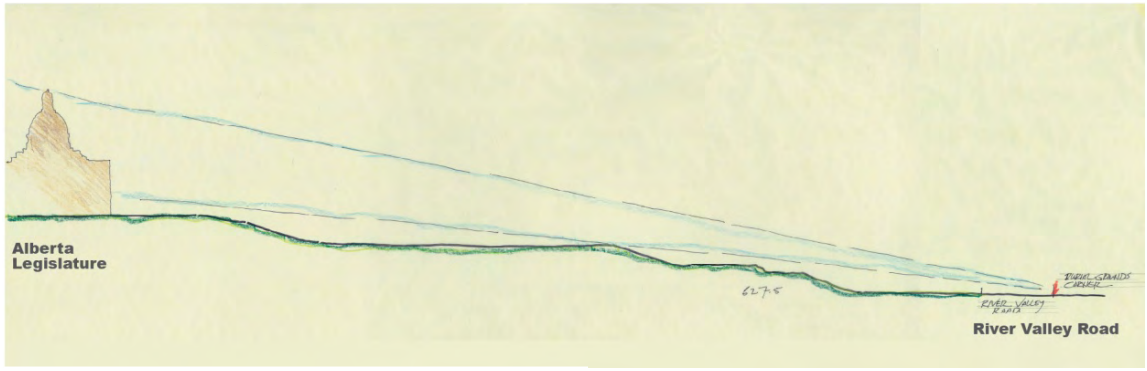
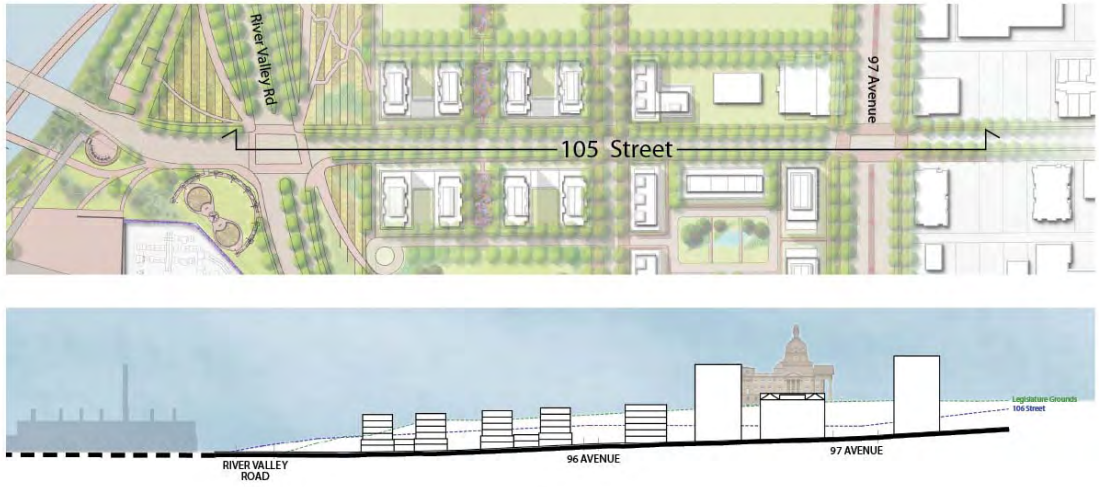


Figure 11 – Primary View Points

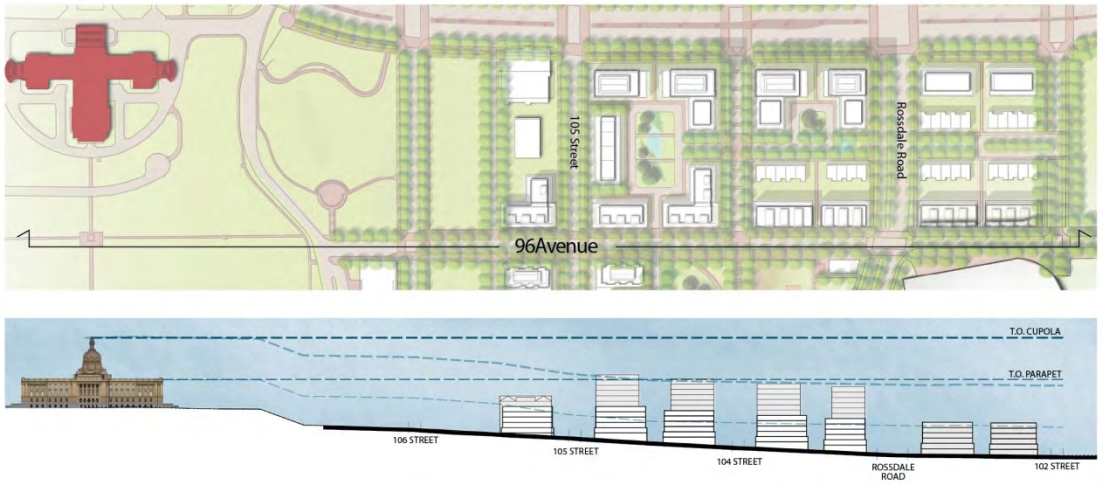
View towards Downtown at intersection of 105 Street and River Valley Road/Rossdale Road



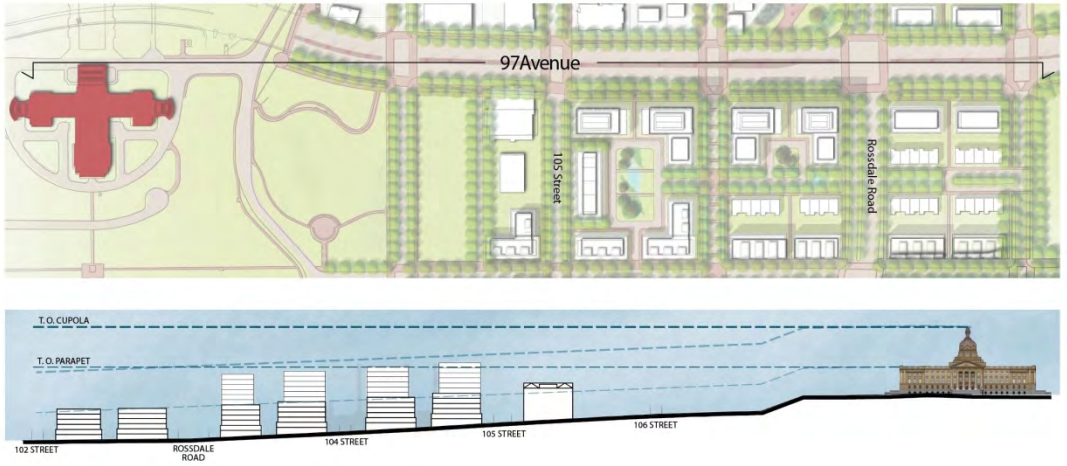
Schematic section of Alberta Legislature dome from River Valley Road (Burial Grounds Corner)



View Shed Study Along 105 Street from River Valley Road to 97 Avenue



View Shed Study: North Elevation Along 96 Avenue from 102 Street to Legislature Grounds



View Shed Study: South Elevation Along 97 Avenue from 102 Street to Legislature Grounds

Existing residential street north of 97 Avenue along 104 Street

Maintain the Grid of Streets and Blocks

- Maintain and reinforce the grid of streets, blocks and lanes to enable an ease of connection and access through the neighbourhood to the Legislature, riverbank and Downtown for the various modes of circulation.
- Adapting the reuse of the street's historic names, such as Saskatchewan Avenue and Calgary Avenue.

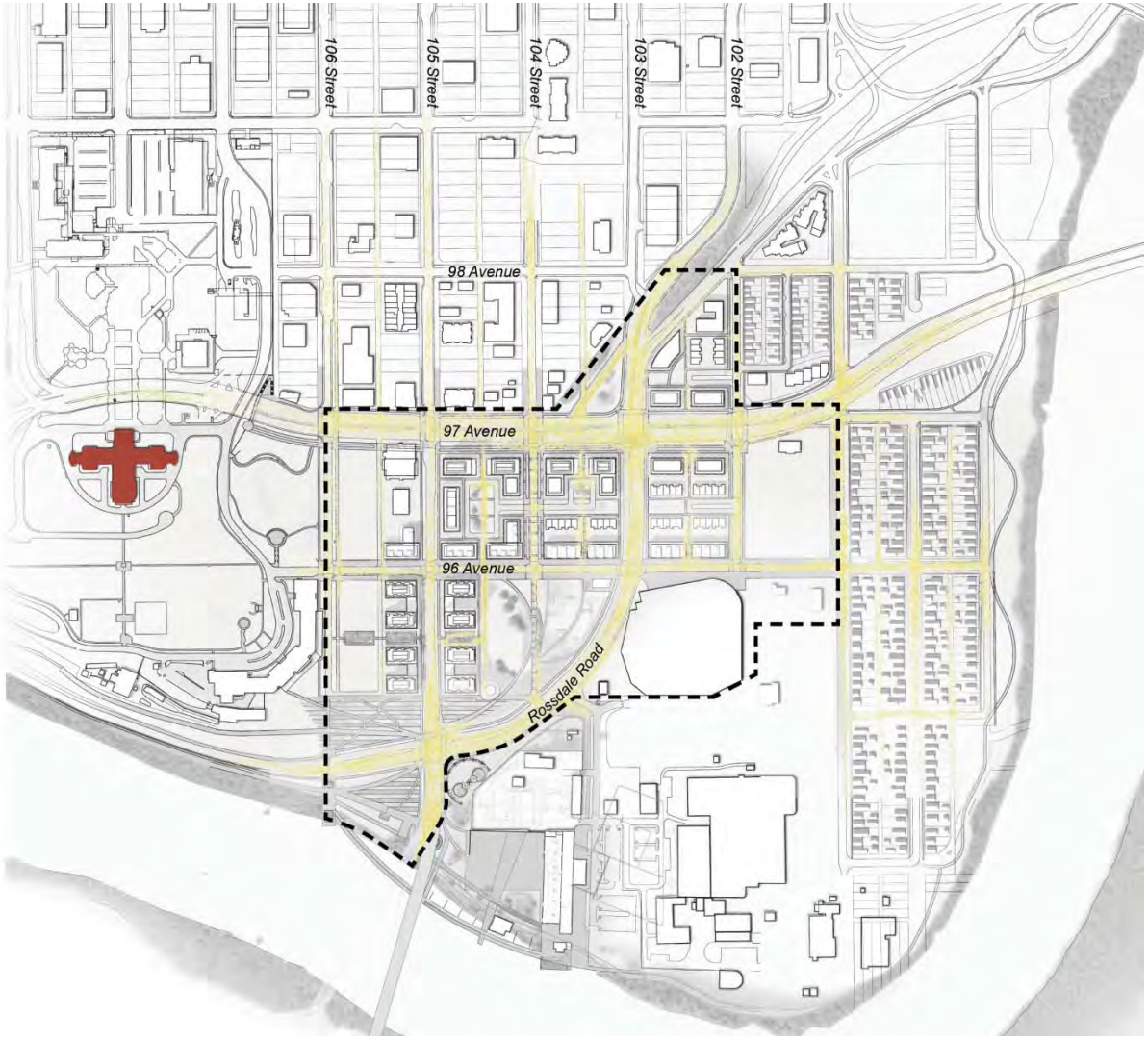


Figure 12 - Respecting Existing Street Grid and Block Organization

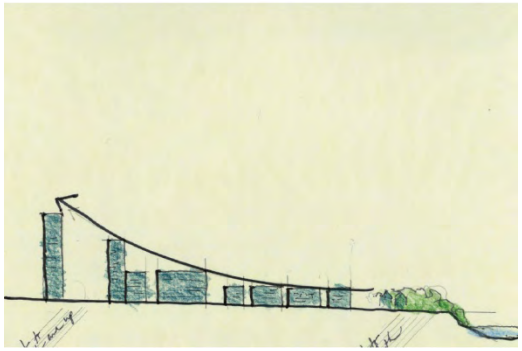


Figure 13 - Building Height Transitioning From River Valley to Downtown

Density

The qualitative benefits of a dense development include vibrant street life, a walkable community, quality public spaces, a renewed sense of place and community identity and an enhanced quality of life. Where appropriate, dense development will be encouraged in order to achieve a critical mass of population to enhance the urban vitality, efficient use of local services and economic viability of the area by:

- Providing an appropriate height and density transition from downtown to the Rossdale Neighbourhood.
- Encouraging a variation in building height and site coverage to maximize development potential and create a vital community.
- Establish quantitative measurements of density for precincts expressed by Floor Area Ratio (FAR), maximum height and units per hectare.

Building Height and Massing

The massing and heights of buildings are to rise towards the Downtown:

- Smaller scale buildings are to be located towards South Rossdale and the river. Taller buildings are to be located close to the McKay Ave neighbourhood, framing views to the Alberta Legislature.
- Gateways to the Downtown are created by emphasizing 105 Street and 97 Avenue with taller continuous buildings.
- Minimum allowable building height is 2.5 storeys or 11.0 m.

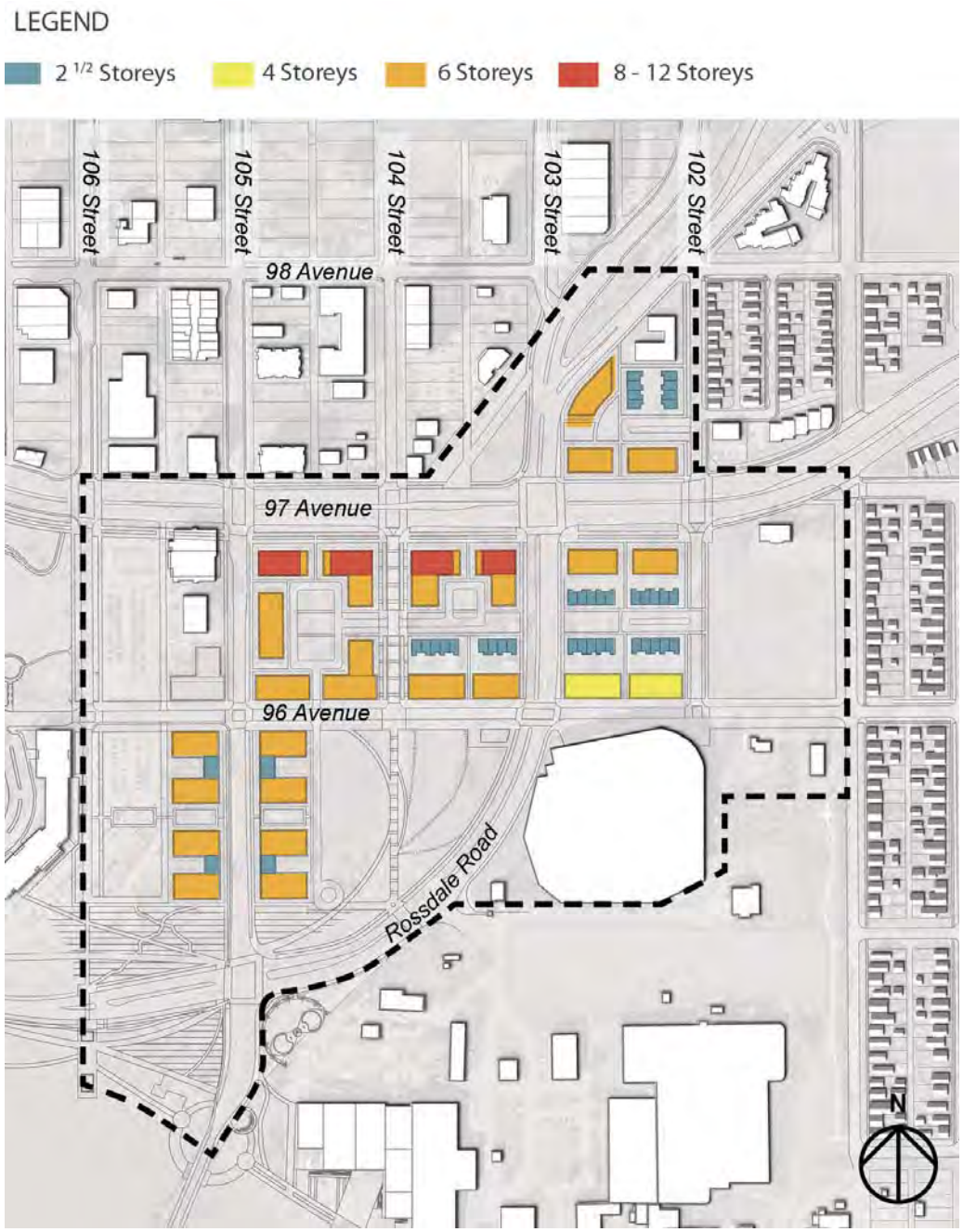


Figure 14 - Allowable Maximum Building Heights

Live-Work Uses

Retail uses on lower floor with residential above

Residential uses

Land Uses

The West Rossdale Plan Area is to be built at a relatively high density and will contain a range of scales and uses within it. The area consists of primarily residential developments with opportunities for live/work components and retail uses. A retail centre will be created along 96 Avenue between 104 Street and 103 Street. The scale of buildings vary from 12 storeys to 2 storeys, where most of the high rise buildings are concentrated along 97 Avenue, providing a strong street wall framing views to the Legislature. Low rise buildings are located towards the east as a transition from the existing single family houses of South Rossdale to the denser development towards the west. Upon build-out, the West Rossdale Plan Area will contain approximately between 1700 and 2100 units of housing.

Lower Floor Uses

Most lower floors are to be residential. Opportunities for live/work uses are provided along 96 Avenue between 106 Street and 104 Street, and 103 Street and 102 Street. Street level retail will be concentrated along 96 Avenue between 105 Street and 103 Street. There is a potential for retail along the facade of the Telus Field fronting 96 Avenue.

Upper Floor Uses

Almost all upper floors are to be residential. Live/work uses on the upper floors could be provided along 96 Avenue between 104 Street and 103 Street.

Figure 15 - Potential Ground Floor Uses

Figure 16 - Potential Upper Floor Uses

Active Retail Street Fronts


Active Residential Street Fronts


Active Residential Street Fronts

4.2 URBAN DESIGN GUIDELINES

Active Street Fronts

Create street level pedestrian activity to enhance the pedestrian realm:

- Entrances of buildings should address the street that it fronts.
- Pedestrian entries should be clearly visible and architecturally expressed on the exterior of the building.
- Entries should be generously proportioned and visually transparent so as to encourage connections to the public pedestrian realm.

Retail

- Retail storefronts are strongly encouraged along the ground floor of all buildings along 96 Avenue between 103 Street and 104 Street. These should be visually transparent to the interior with large areas of window display and should provide for direct entry from the sidewalk.
- The ground floors of buildings should be encouraged to contain public or semi-public uses such as retail or entertainment uses with direct entry from the street.
- Retail activities within buildings should be oriented towards the street and have direct access from sidewalks through storefront entries.
- Buildings should be open and inviting and should have multiple entry points along the streets in both principal and secondary locations.
- Buildings should generally be built up to the property line in a consistent plane with the other buildings on that street, with setbacks, if desirable above a minimum 4-storey base.
- Encouraging extensive use of active frontages, which allow for interaction between people in the building and people on the street to maintain an attractive streetscape.
- The main floor elevation of the commercial/retail establishments should be at or very near the elevation of the adjacent public walkway.

Residential

- Active residential street frontages to be provided through individual external access through the use of features such as stoops, porches and/or staircases.
- Residential buildings should feature individual doorways, stoops, porches and windows in association with display gardens.
- Display gardens should be provided within setback of any residential frontage with a maximum vertical grade separation of 1.0 m from any adjacent public sidewalk. The display garden is the immediate amenity area associated with the front door to a grade oriented unit.
- Each dwelling unit on the main floor of a building which is adjacent to a street, park or publicly accessible walkway is to have its front door entrance to that adjacent public area as its primary municipal address.
- The front door for each main floor dwelling unit (those that front onto a street or public thoroughfare) shall be designed and constructed to serve as the primary dwelling unit entrance.
- The primary dwelling unit entrance (front door) for all main floor dwelling units is to be the location at which visitors are greeted, where mail, newspapers and couriers deliver, door-to-door canvassing occurs, fast food is delivered, and the like.
- Front doors and associated walks and stairs from the public street or public thoroughfare are to be designed and constructed in ways that ensure the clarity and the visibility to the front door from the public street or public thoroughfare.

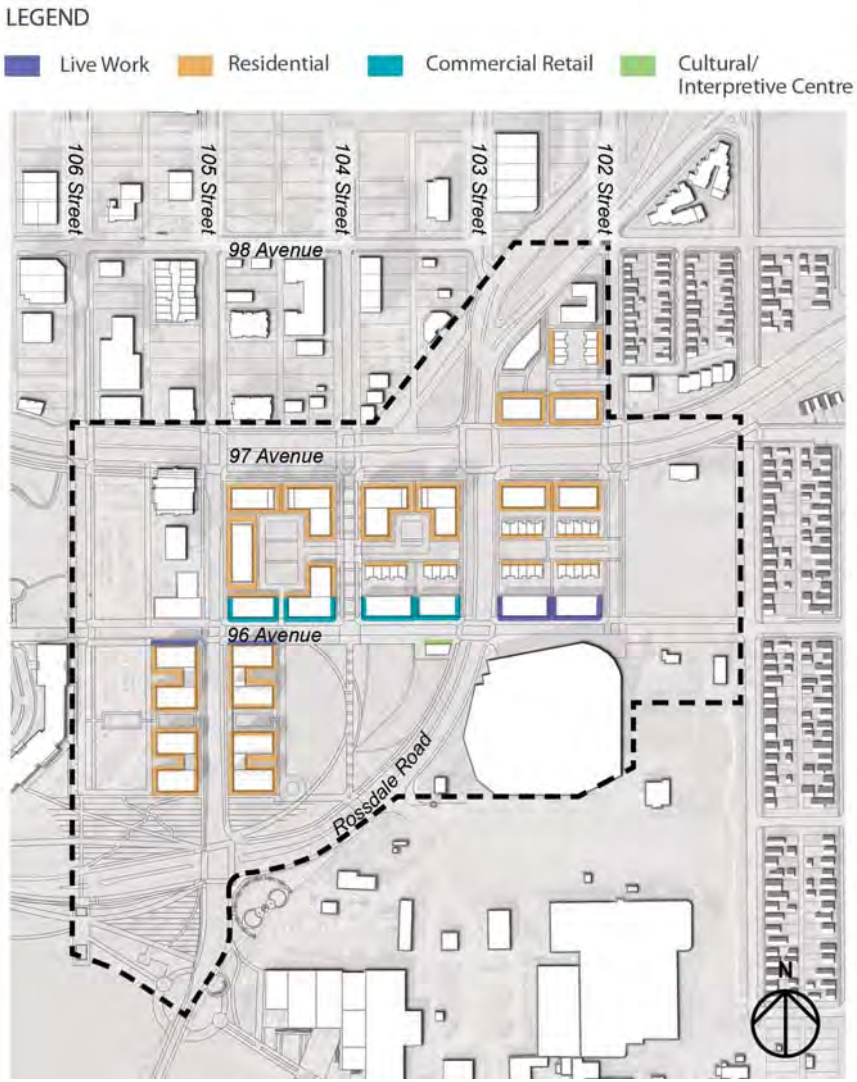


Figure 17 - Active Residential, Retail and Live-Work Frontages

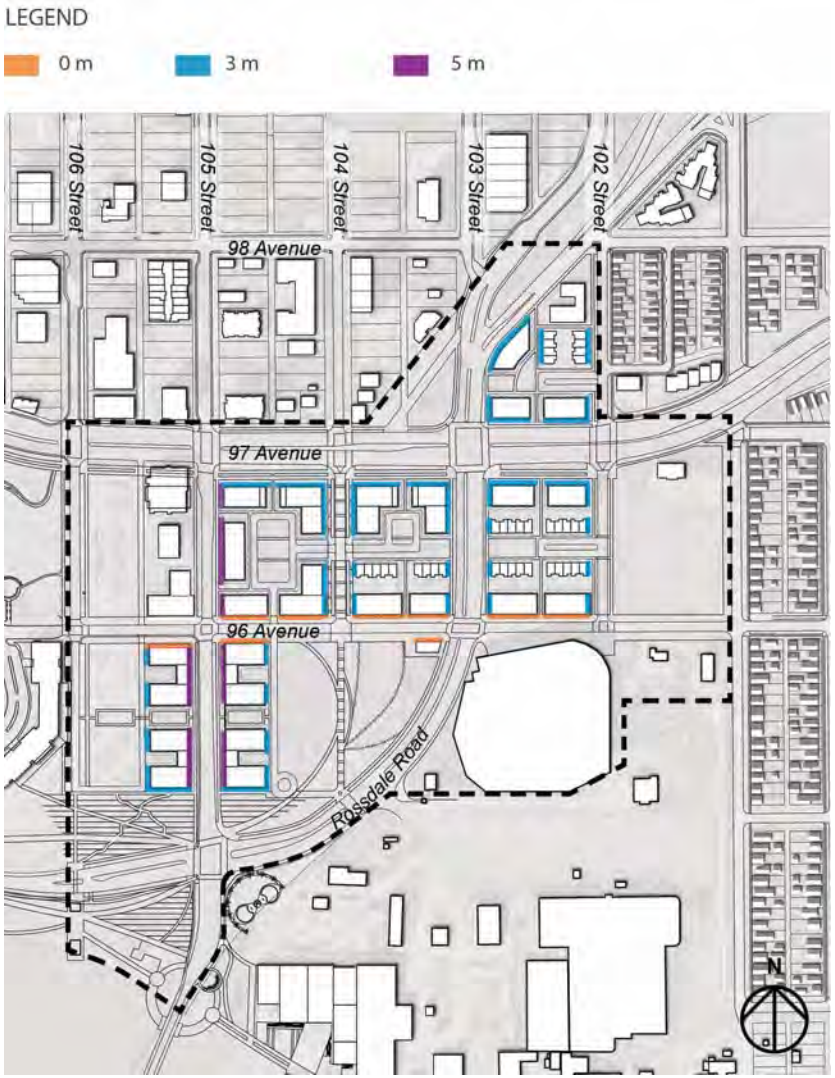


Figure 18 - Minimum Front Building Face Setbacks

Built Environment

Create a high quality, attractive built environment in the following ways:

- New development projects should strive for a contextual approach to design. A contextual design approach is not intended to necessarily mean a historicist approach, but rather one that is sensitive to the surrounding urban (built and natural) conditions.
- Massing that is compatible with and provides transition from downtown and the South Rossdale neighbourhood to the low density neighbourhoods to the east of 105th Street.
- Utilizing maximum height and minimizing building footprint to increase ground level open space.
- Dwellings and other elements of the development should be sited and oriented to minimize their impact on other dwellings, considering such things as daylight, sunlight, ventilation, visual privacy and views.
- Avoiding the creation of adverse micro-climatic effects due to building construction such as wind tunneling, shadowing and loss of sunlight (on and off site) through massing and location of buildings.
- All rooftop mechanical equipment should be concealed or screened in a manner that is compatible with the building's architectural character.
- The design of rooftops visible from high-rise buildings should be carefully considered. Where physically and economically feasible, green roofs, rooftop gardens and patios should be provided to improve rooftop aesthetics and provide additional amenity space.
- Use finishing material of high quality, consisting of glass and glazed window wall systems, stone, masonry, fiber cement siding, acrylic stucco, wood panel, metal and glass on the lower floors, and predominately metal and glass for the upper floors. The use of vinyl and masonry stucco as a finishing material is strongly discouraged.
- Facades should be treated with high quality materials and given vertical articulation and emphasis. Variation of building materials and colours should be used to break monotony of long building facades.
- Building accesses to be appropriately lit for easy identification and safety.

Minimal impact parking garage entrances

Parking, Access and Loading

Adverse effects of parking, access and loading within the Plan Area will be reduced in the following ways:

- Parking and loading requirements to comply in accordance with parking requirements for the Capital City Downtown Area Redevelopment Plan.
- Parking is to be provided underground, with some exceptions for visitor parking.
- Parking and loading access is not permitted between the edge of the public right of way and the building face on any Street or Avenue.
- Access to underground parking and servicing to be provided via the rear of buildings from the lane.
- Parking entries should be designed at street level to minimize the size of the entrances to parking facilities to maintain an attractive pedestrian environment.

Screened utility elements

- Designing the parking garages to create contextually appropriate façade, minimize entries and, at a minimum, functionally designed ground-floor retail space along the principal street frontage.
- Loading docks and garage entrances should not be located on the major pedestrian street side of new buildings. Driveways and porte-cochere entries should provide sidewalks and pedestrian connections to the street.
- The façade should be designed so as to visually screen loading at the street level.
- Garbage collection for all buildings is to be located within parking structures or buildings and, if at grade, shall be located, constructed and screened from view of the adjacent residential sites.
- Gates and/or doors of the garbage enclosures must not open or encroach into road right-of-way.

Native planting as an option for a more sustainable landscape

Safety and Security

Safety and security of the Plan Area is encouraged in the following ways:

- Universally accessible design should be considered in the architecture of buildings and the design of open spaces where economically and physically feasible. Developments should be designed to be accessible to persons in wheelchairs, motorized scooters, strollers and persons with special needs.
- Consider the principles and techniques of CPTED in the design of new developments
- Avoid the creation of areas hidden from view.
- Provide clear sightlines, sufficient lighting and natural surveillance.
- Avoid the creation of isolated spaces.

Design for Winter City

New development in the Plan Area should be given appropriate consideration to the climate where it is located in the following ways:

- Consider the prevailing winter winds in the area during site design to avoid the creation of adverse microclimatic effects.
- Provide protection from the elements through the construction of awnings, canopies and transit shelters.

Supporting other modes of transportation

- Encourage the use of lighting to enhance the appearance of development during dark winter months.
- Snow removal and storage requirements are to be considered in building design.
- Using plant materials that provide colour throughout the year.
- Encouraging the use of building materials and colours which are attractive year round.

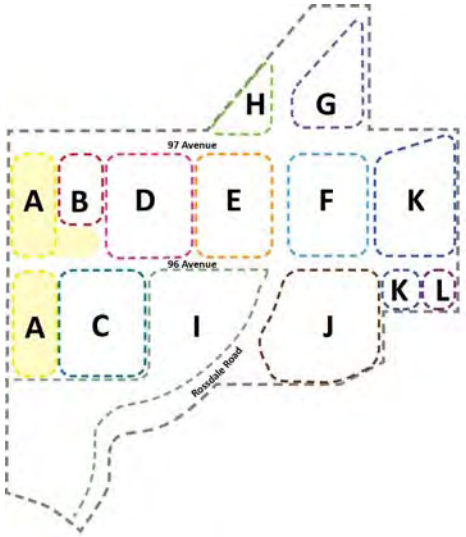
Sustainability

Sustainable development within the Plan Area will be achieved in the following ways:

- An emphasis should be placed on the use and development of transit and pedestrian systems and the reduction of automobile use wherever possible.
- Develop a pedestrian friendly environment to encourage walkability.
- Consider sustainable development principles in the planning and design of the development by providing a compact and well connected built form.
- Where economically and physically feasible, buildings should be designed to include on-site alternative energy sources.
- The incorporation of features such as recycling facilities, water saving strategies, low-water landscaping, energy efficient lighting, green roofs and other devices should be considered where economically and physically feasible in building and site designs to reduce the consumption of energy and materials.
- Contribute to a socially sustainable community by providing housing for a range of household types, ages and physical abilities, ages, incomes and demographics in accordance with appropriate city policy.
- Build high quality developments intended for long term use.
- Use infrastructure practices, building and site designs that reduce the consumption of water, energy and materials consistent with LEED.
- The development of larger sites should utilize site development technologies that conserve resources and reduce environmental impacts.
- Provide adequate natural lighting to all commercial and residential units.
- Consider the reduction of water consumption for landscaping through the use of native plants and the collection of rainwater.
- Encourage the development of green roofs and other environmentally responsible building practices. Alternative uses for building roofs such as terraces and roof gardens are encouraged.
- Develop with consideration of possible future uses and the use of recyclable materials.
- Provide adequate bicycle parking. Off-street bicycle rack parking is encouraged.

4.3 PRECINCT SPECIFIC DESIGN GUIDELINES

The purpose of this section is to provide precinct specific design guidelines for new developments in the West Rossdale Plan Area. This section identifies potential development and design guidelines for site planning and built form, addressing issues of land use, building density, building placement and orientation, building height and massing, parking and servicing, and street level activities. While the Plan provides direction for development in the Plan Area, Provincially owned lands are not subject to municipal bylaws.



A Government of Alberta

Intent

- To redevelop these provincially owned lands in a manner that is consistent with "Alberta Legislature Centre Redevelopment Master Plan" and integrated with the West Rossdale Urban Design Plan.
- Maintain views to the Alberta Legislature and the river.

Proposed Land Uses

- Potential uses to be determined through the "Alberta Legislature Centre Redevelopment Master Plan."

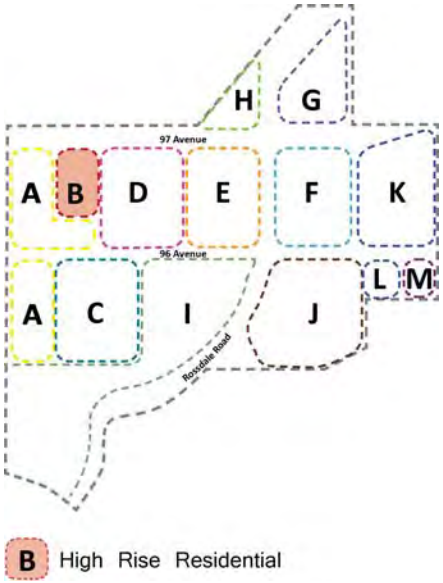
Building Density, Massing and Height

- Density, massing and height to be determined through the "Alberta Legislature Centre Redevelopment Master Plan."

Building Placement and Orientation

- Building placement and orientation to be determined through the "Alberta Legislature Centre Redevelopment Master Plan."

Sustain views to the Alberta Legislature



Intent
- Existing sites are assumed to remain.
- In the event of redevelopment sites are to be developed in a manner that is consistent with the West Rossdale Urban Design Plan.

Building Placement and Orientation
- Buildings should be placed along 97 Avenue in such a manner that creates a well defined streetwall, framing views to the Alberta Legislature.
- Front building face setback:
  - 105 Street: 5.0 m
  - 97 Avenue: 3.0 m*

* *The intent is to maintain the character of the street and streetwall along 97 Avenue and 96 Avenue.*

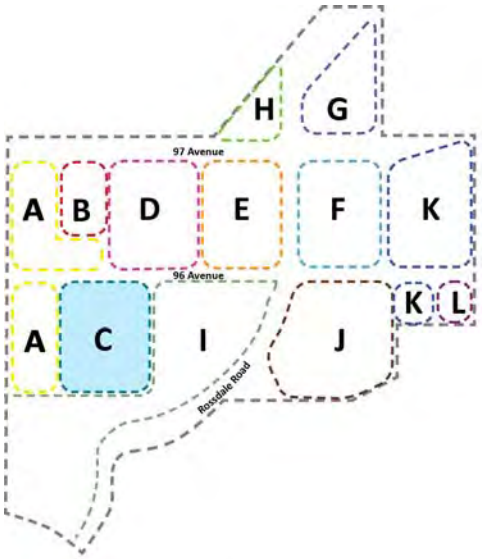
Active residential frontages with individual external accesses

- In the event of redevelopment, active residential frontages need to be encouraged along 105 Street, providing individual external access, through the use of features such as porches, stoops and/or staircases.

Massing and Height
- Maximum height of 15 storeys or 45.0m (under existing RA9 zoning)
- In the event of redevelopment:
  - High rise buildings to utilize small floor plates with a minimum 1.0 m stepback on all sides of the building above a 2 storey podium.
  - Maximum floorplate 750 m^2.

Parking Access and Loading
- In the event of redevelopment, parking and servicing is to comply with Parking, Access and Loading in the Urban Design Guidelines section 4.2.

Front doors with street address and main floors no more than 1.0m higher than the public sidewalk



C Mid Rise Residential

Intent
- Provide a choice of mid rise housing types with live/work components at street level along 96 Avenue.

Building Density
- Maximum Floor Area Ratio (FAR) 3.0.
- Maximum density: 450 Dwellings per hectare.

Building Placement and Orientation
- Buildings should be sited along 96 Avenue and 105 Street in such a manner that creates a well defined streetwall, framing views to the Alberta Legislature and creating a sense of entrance to downtown.
- Front building face setback:
  - 105 Street: 5.0 m
  - 96 Avenue: 0.0 m
  - Lane East of 105 Street: 3.0 m
  - Lane West of 105 Street: 3.0 m

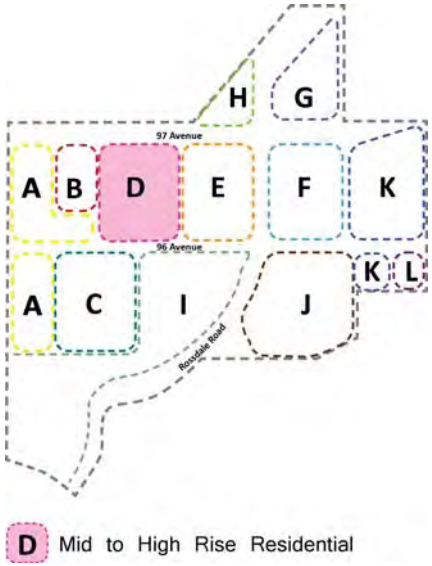
Massing and Height
- Maximum height not to exceed 6 storeys nor 24.0 m.

Active residential frontage

Pedestrian friendly environment with wide sidewalks and appropriate streetscaping

Parking and Servicing
- To comply with Parking, Access and Loading in the General Urban Design Guidelines section 4.2.

Other Design Considerations
- Live/work units are to have individual entrances at grade fronting 96 Avenue.
- Provide active residential street frontages through the use of individual unit external accesses for units located on the ground floor and features such as porches, stoops, staircases and/or projections/recesses along 96 Avenue, 105 Street and, the lanes east and west of 105 Street.



D Mid to High Rise Residential

Intent

- Provide a choice of mid and high rise housing types with active commercial frontages at street level along 96 Avenue.

Building Density

- Maximum Floor Area Ratio (FAR) 3.5.
- Maximum density: 520 Dwellings per hectare for residential sites.

Building Placement and Orientation

- Buildings should be placed along 96 Avenue, 97 Avenue, 103 Street and 104 Street in such a manner that creates a well defined streetwall, framing views to the Alberta Legislature and creating a sense of entrance to downtown.
- Front building face setback:
  - 105 Street: 5.0 m
  - 104 Street: 3.0 m
  - 97 Avenue: 3.0 m
  - 96 Avenue: 0.0 m
- High rise building types are to be oriented along 97 Avenue.

Massing and Height

- Maximum height of mid rise buildings: not to exceed 6 storeys nor 24.0m except for mid rise buildings adjacent to 96 Avenue where maximum height is not to exceed 6 storeys nor 26.0m (additional height to accommodate for higher floor to ceiling height for commercial units).
- Maximum height of high rise buildings not to exceed 12 storeys nor 45m
- High rise buildings to utilize small floor plates with a minimum 1.0 m stepback on all sides of the building above a 2 storey tower podium zone.
- Maximum floorplate 750 m^2.

Perspective rendering of the potential of 97 Avenue

Parking and Servicing

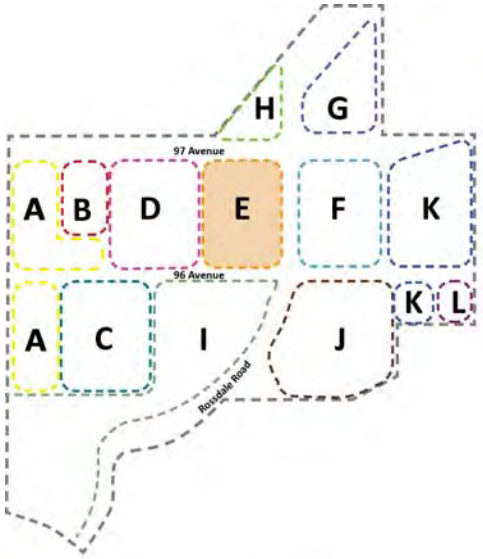
- To comply with Parking, Access and Loading in the General Urban Design Guidelines section 4.2.
- Access to underground parking and servicing to be provided via the rear of buildings from the lane accessed through 96 Avenue or 104 Street.

Other Design Considerations

- Live/work units are to have individual entrances at grade fronting 96 Avenue.
- Provide public open space within block interior.
- Potential open space uses includes children's playground, rain garden, and formal garden.

Residential development overlooking a public park

- Provide active residential street frontages through the use of individual unit external accesses for units located on the ground floor and features such as porches, stoops, staircases and/or projections/recesses along 97 Avenue, 96 Avenue, 105 Street, 104 Street and fronting the block interior's open space.
- North-south pedestrian access lanes into the block interior are to be developed as mid block mews, incorporating landscaping and paved walkway.
- Street level building facades of retail establishments are to incorporate a minimum of 60% clear glazing.
- Individual store frontages are not to exceed 10.0 m in width.
- Individual units to have entrances along the retail frontage with distances between doorways from one unit to another not exceeding 8.0m.
- Provide weather protection, in the form of a canopy or any other architectural element, at street level along the retail frontage.
- The owner/condominium corporations are responsible for the upkeep of the private open spaces.



E Low to High Rise Residential

Intent
- Provide a choice of housing types ranging from row housing to high rise apartments with active commercial frontages at street level along 96 Avenue.

Building Density
- Maximum Floor Area Ratio (FAR) 3.0.
- Maximum density: 450 dwellings per hectare for residential sites.

Building Placement and Orientation
- Buildings should be placed along 96 Avenue, 97 Avenue, 103 Street and 104 Street in such a manner that creates a well defined streetwall, framing views to the Alberta Legislature and creating a sense of entrance to downtown.
- Front building face setback:
  - 104 Street: 3.0 m
  - 103 Street: 3.0 m
  - 97 Avenue: 3.0 m
  - 96 Avenue: no setback
- High rise apartments are to be oriented along 97 Avenue.

Potential children's playground within block interior

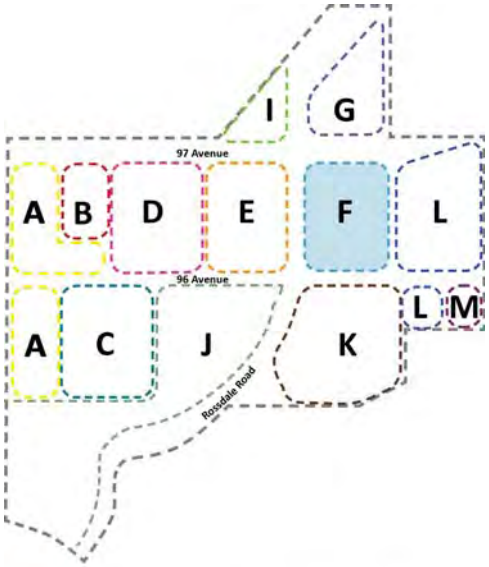
- Low rise row housing to be placed within block interior with an active residential street frontage fronting the block interior's open space and mid block open green space.

Massing and Height
- Maximum height of mid rise buildings: not to exceed 6 storeys nor 24.0m except for mid rise buildings adjacent to 96 Avenue where maximum height not to exceed either 6 storeys or 26.0m (additional height to accommodate for higher floor to ceiling height for commercial units).
- Maximum height of high rise buildings: not to exceed 12 storeys nor 45.0 m.
- High rise buildings: utilize small floor plates with a minimum 1.0 m stepback on all sides of the building above a 2 storey podium.
- Maximum floorplate of 750 m^2.

Parking and Servicing
- To comply with Parking, Access and Loading in the Urban Design Guidelines section 4.2.
- Access to underground parking and servicing to be provided via the rear of buildings from the lane accessed through 104 Street.

Perspective rendering of the potential of Rossdale Road as a pedestrian friendly two-way street

Other Design Considerations
- Provide public open space within block interior.
- Potential open space uses includes children's playground, rain garden, formal garden, etc.
- North-south pedestrian access lanes into the block interior are to be developed as mid block mews, incorporating landscaping and paved walkway.
- Street level building facades of retail establishments are to incorporate a minimum of 60% clear glazing.
- Individual store frontages are not to exceed 10.0 m in width with building entrances along the retail frontage at intervals of not exceeding 6.0- 8.0 m.
- Provide weather protection, in the form of a canopy or any other architectural element, at street level along the retail frontage.



F **Low to Mid Rise Residential**

Intent
- Provide a choice of housing types ranging from mid rise apartments to low rise row housing with live/work components at street level along 96 Avenue.
- Potential for a small scaled hotel at the corner of 102 Street and 96 Avenue across from Telus Field.

Building Density
- Maximum Floor Area Ratio (FAR) 1.8.
- Maximum density: 250 Dwellings per hectare.

Building Placement and Orientation
- Buildings should be placed along 96 Avenue, 97 Avenue, and 103 Street in such a manner that creates a well defined streetwall, framing views to the Alberta Legislature and creating a sense of entrance to downtown.
- Front building face setback:
  - 102 Street: 3.0 m
  - 103 Street/Rossdale Road: 3.0 m

Active retail frontage

  - 97 Avenue: 3.0 m
  - 96 Avenue: no setback
- Low rise row housing to be placed within block interior with an active residential street frontage fronting the block interior's open space and mid block open green space.

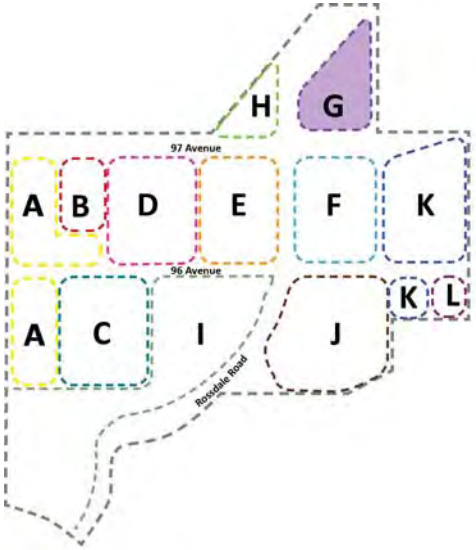
Massing and Height
- Maximum height not to exceed 6 storeys nor 24.0m.

Parking and Servicing
- To comply with Parking, Access and Loading in the Urban Design Guidelines section 4.2.
- Access to underground parking and servicing to be provided via the rear of buildings from the lane accessed through 102 Street.

Other Design Considerations
- Live/work units are to have individual entrances at grade fronting 96 Avenue.
- Provide public open space within block interior.
- Potential open space uses includes rain garden, formal garden, and landscape pedestrian linkage.

Low rise apartments

- Provide active residential street frontages through the use of individual unit external accesses for units located on the ground floor and features such as porches, stoops, staircases and/or projections/recesses along 97 Avenue, 96 Avenue, 105 Street, 104 Street and fronting the block interior's open space.
- North-south pedestrian access lanes into the block interior are to be developed as mid block mews, incorporating landscaping and paved walkway.



G Mid Rise Residential

Intent
- Provide a choice of mid rise buildings.
- Ortona Armoury Arts Building to remain.

Building Density
- Maximum Floor Area Ratio (FAR) 2.0.
- Maximum density: 260 Dwellings per hectare.

Building Placement and Orientation
- Buildings should be placed along 97 Avenue, 103 Street and Rossdale Road in such a manner that creates a well defined streetwall, framing views to the Alberta Legislature and creating a sense of entrance to downtown.
- Front building face setback:
  - 102 Street: 3.0 m
  - 103 Street/Rossdale Road: 3.0 m
  - 97 Avenue: 3.0 m
- Row housing to be placed within block interior with an active residential street frontage fronting the block interior's open space and mid block open green space.

Massing and Height
- Maximum height not to exceed 6 storeys nor 24.0 m.

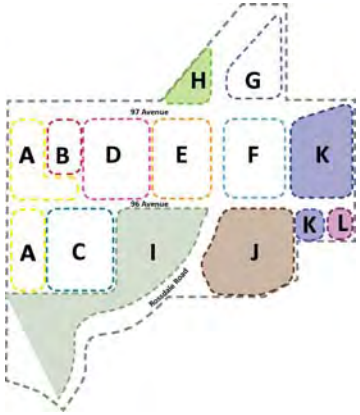
Parking and Servicing
- To comply with Parking, Access and Loading in the General Urban Design Guidelines section 4.2.
- Access to underground parking and servicing to be provided via the rear of buildings from the lane accessed through 102 Street.

Other Design Considerations
- Provide public open space within block interior.
- Potential open space uses includes rain garden, formal garden, and landscaped pedestrian linkage.
- Provide active residential street frontages through the use of individual unit external accesses for units located on the ground floor and features such as porches, stoops, staircases and/or projections/recesses along 97 Avenue, 103 Street, 102 Street and fronting the block interior's open space and mid block open green space.
- North-south pedestrian access lanes into the block interior are to be developed as mid block mews, incorporating landscaping and paved walkway.

Landscaped pedestrian link within block interior

Individual external accesses with a vertical grade separation from the adjacent public sidewalk with a display garden

Urban community garden



H 97th Avenue Plaza

Intent

- A public park that serves McKay Avenue and North Rossdale.
- Potential to signify entrance to Downtown.

I River's Edge – Interpretive Park

Intent

- Provide a river edge promenade that connects Louise McKinney Riverfront Park, Alberta Legislature Grounds, and River Valley Road.
- Provide a docking facility south west of Plan Area.
- Potential uses include historical interpretation, trails and passive park spaces.
- Provide a small scaled retail and/or interpretive kiosk at the corner of 96 Avenue and Rossdale Road.
- Integration with new Walterdale Bridge, EPCOR Rossdale Generating Station and River Valley Road.

J Telus Field

Intent

- Provide more active and varied programming.
- Potential for active retail frontage along 96 Avenue.
- Potential for shared parking spaces to reduce need of parking spaces within immediate surroundings.
- Provide for a 5 year lease for existing surface parking.

K Community Commons – Rossdale Community League

Intent

- A community core with existing facility and public open space including the Donald Ross School and the Rossdale Community League facilities.

L Ross Flats

Intent

- Respect the historical significance of the building.
- The building is to remain as is.

'Gateway' park

Riverfront promenade

Park space integrated with heritage interpretation

Figure 19 - Illustrative Site Plan

5. PUBLIC REALM PLAN

5.0 PUBLIC REALM PLAN

The public realm plan defines and guides aspects of the public environment in a manner that enhances the quality, character and experience of it. This plan is essential to the West Rossdale Urban Design Plan as it shapes the most prominent and visible aspects of the plan area, thus making the greatest impact on the image of West Rossdale and its surrounding neighourbourhoods.

Consistent with Section 1.3 Vision and Ten Strategic Priorities, the purpose of the public realm plan is to ensure that public realm contributes to the creation of a walkable community with a diversity of public open spaces that is integrated with other open spaces surrounding the plan area.

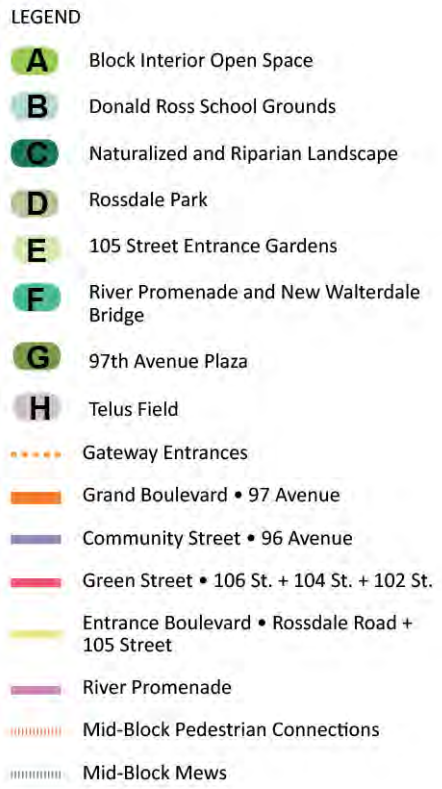


Figure 20 - Public Realm Plan

Sidewalk and street tree gate detail with public art element

5.1 STREETSCAPE IMPROVEMENTS

A key component of the West Rossdale Urban Design Plan is the function and character of the streets. Each street performs a specific role within the plan, with street types ranging from a Grand Boulevard to Green Streets.

To establish a pedestrian friendly neighbourhood, a fundamental principle is to improve the quality of the street environment and increase the percentage of area devoted to pedestrians. The following are general objectives that are applicable to all streetscape improvements:

1. Ensure generous sidewalk widths, free of obstruction and universally accessible to highlight the neighbourhoods' pedestrian quality.
2. Sidewalk widths are to be generous to emphasize the pedestrian, neighbourhood and sustainable nature of the area. Sidewalk widths range from 2.5m to 5.0m.
3. Streets are to be lined with trees at intervals of approximately 6.0m to provide tree canopies over sidewalks for summer shade and enhance the overall bucolic character of the Valley setting.
4. Wherever possible, provide street corner bulbouts at intersections of local neighbourhood streets as a means to encourage low traffic speeds, as well as providing additional sidewalk widths for pedestrians, public art, bus stops and/or other street furniture.
5. Amenities such as seating, planting, bicycle racks and street furniture including transit shelters should be provided in a manner that complements the streetscape of the rest of Rossdale.

Existing Rossdale streetscape

Bus shelter

Seating furniture

Street lighting

Tree lined promenade

Wayfinding

Litter and recycling receptacles

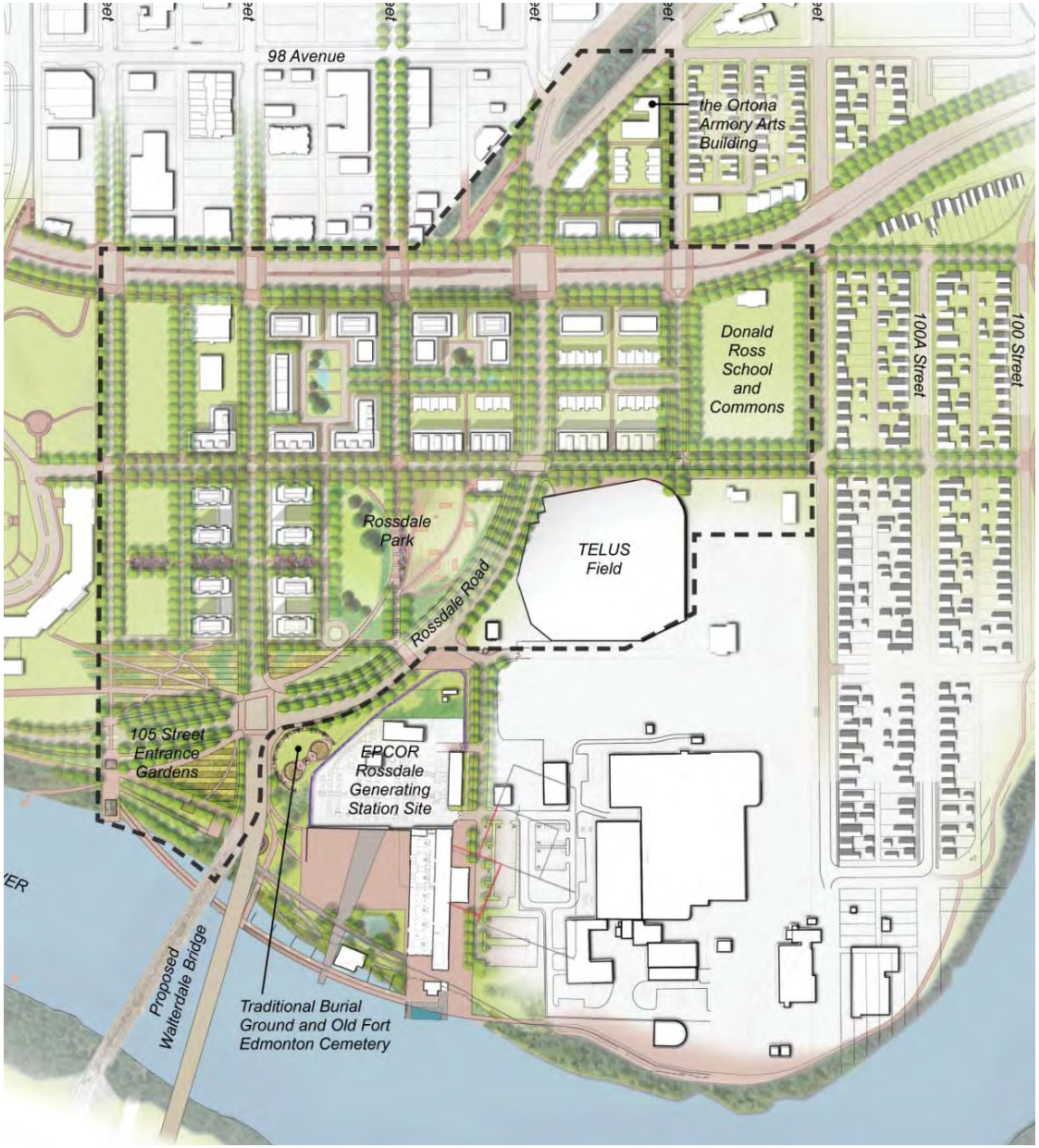
Examples of streetscape elements to be integrated into street design

5.2 STREETS

The streets of the plan area form a significant component of the Public Realm Plan. The network of streets and alleys remains largely in place from the time of its survey. However, significant changes to the nature of the roadways have occurred.

The following illustrative rights-of-way conceptually describe both the potential improvements for broader multi-modal uses (especially for pedestrians) and creating a setting supportive of fronting residential and commercial development.

The overall approach is to develop streets that both satisfy vehicle requirements and offer an attractive pedestrian environment, supportive of residential and commercial development fronting onto and addressing these streets. The actual dimensions are flexible within the overall objective of achieving a highly livable pedestrian quality.



Illustrative Site Plan

Key Plan

Grand Boulevard · 97th Avenue

Intent

- 97th Avenue is proposed to be developed as a Grand Boulevard, an axial complement to 108th Street (Capital Boulevard) leading to the Legislature, and a gateway experience into the City.
- Preserve the visual prominence of The Alberta Legislature from the James MacDonald Bridge ramp.

Characteristics

- Views to the Alberta Legislature are framed through generous tree lined sidewalks that flank either side of 97 Avenue. An esplanade of walks and multiple rows of trees is proposed along the south side of 97 Avenue (also the Trans Canada Trail) that extends up and into the Legislature Grounds.
- Continuous street walls along 97th Avenue are to define and frame views to the Alberta Legislature.
- A centre median is proposed as both a place for expressive elements in keeping with the view and a pedestrian refuge.
- Improve transit development along 97 Avenue to enhance connections from the West Rossdale neighbourhood to Downtown, across the river and beyond.

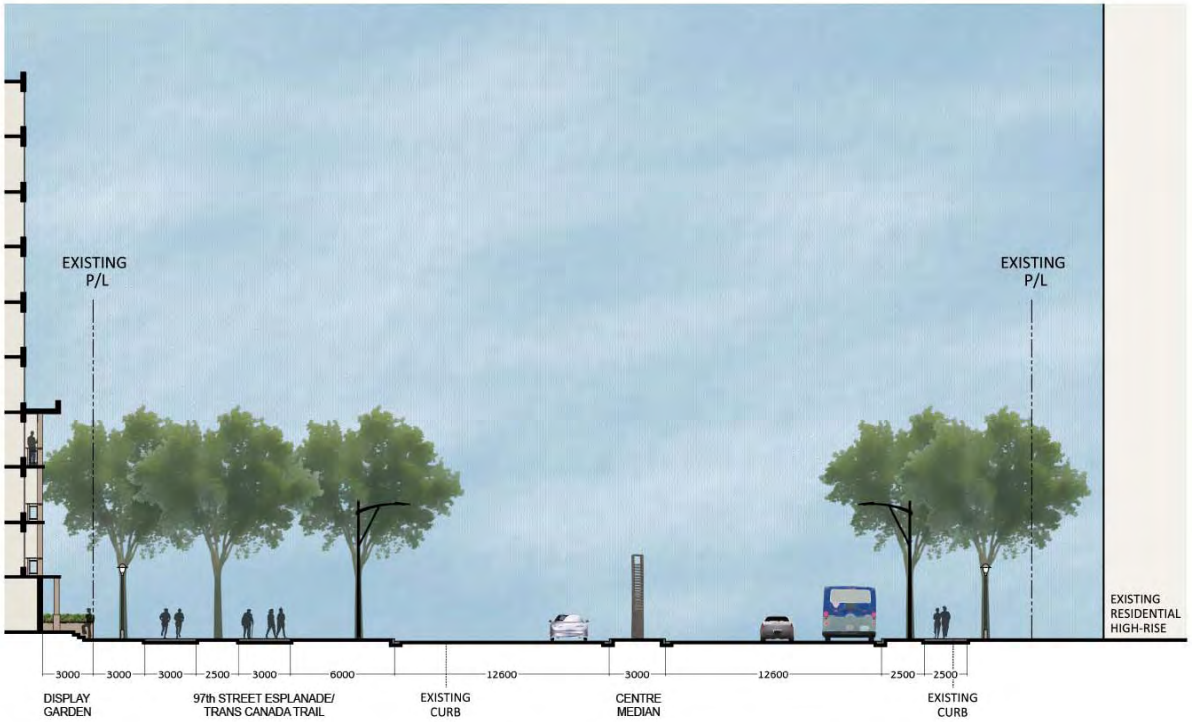
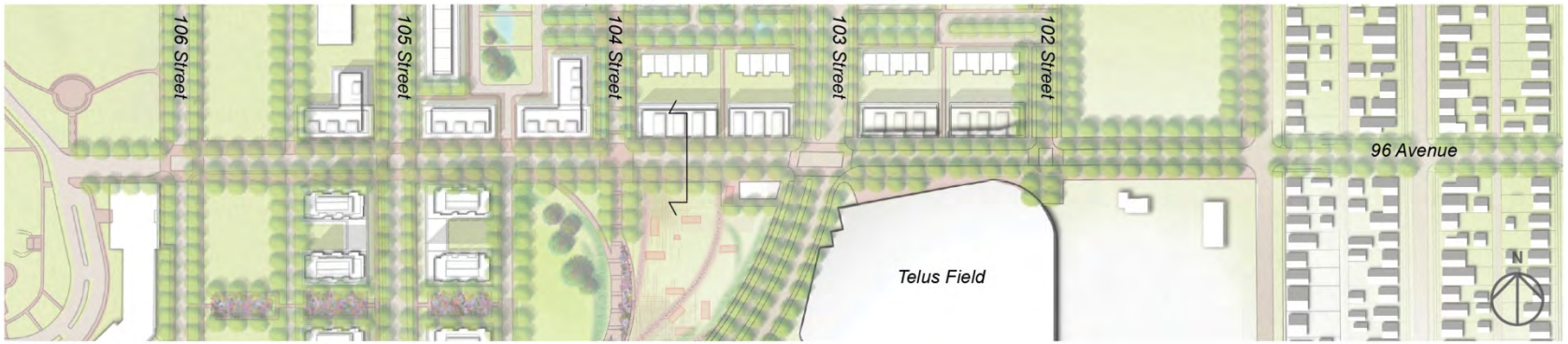


Figure 21 – Illustrative Section of 97th Avenue Looking West, Between 104 and 105 Street

Existing Conditions Along 97th Avenue

Potential pedestrian environment along 97 Avenue

Figure 22 - Potential Development of 97th Avenue Looking Towards the Alberta Legislature



Key Plan

Community Street · 96th Avenue

Intent

- 96th Avenue is proposed to be developed as a community street with retail support services and amenity for the Rossdale community, users of the Alberta Legislature Grounds, McKay Avenue and surrounding parks and river.
- Offer a direct link from the south grounds of the Alberta Legislature to South Rossdale and the North Saskatchewan River.

Characteristics

- Generous sidewalks on either side of 96 Avenue.
- Tree-lined sidewalks with planting beds;
- Lower scale buildings with retail and live/work convertible space at street level with residential above.
- A retail core between Rossdale Road and 104 Street, and convertible live-work space to the east and west.
- Telus Field also has the potential for shops along its northern side of 96 Avenue frontage.

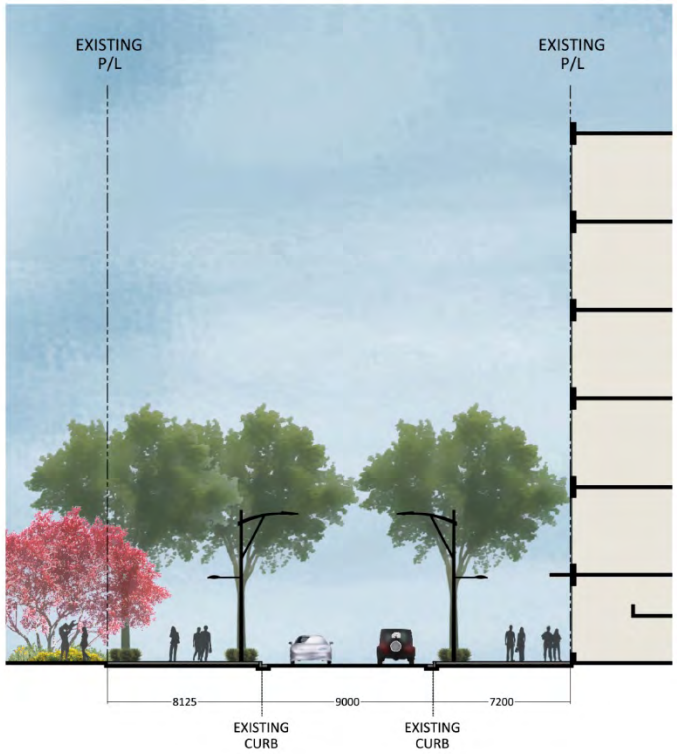


Figure 23 – Illustrative Section of 96th Avenue Looking West, Between 104 and 105 Street

Active retail frontage

Active retail frontage

Legislature as seen from 96 Avenue alignment of Elm Tree Arcade

Existing Conditions Along 96th Avenue

96 Ave.

Figure 24 - Potential Development of 96th Avenue Looking Towards Retail Establishments on the North Side of 96 Avenue

Crosswalk details

Potential pedestrian environment

105 Street

Intent

- 105th Street is proposed to be developed both as a major entrance into the downtown in association with the potential for a new bridge crossing.
- It is also to be a community oriented street with predominantly residential addresses.

Characteristics

- Broad pedestrian walk with integrated places for interpretation and enjoyment.
- Street environment is to be integrated with the new bridge.
- Tree-lined sidewalks with a generous width boulevard separating the vehicular realm from the pedestrian realm.
- Mid rise development on townhouse podiums stepping up the slope of the street.

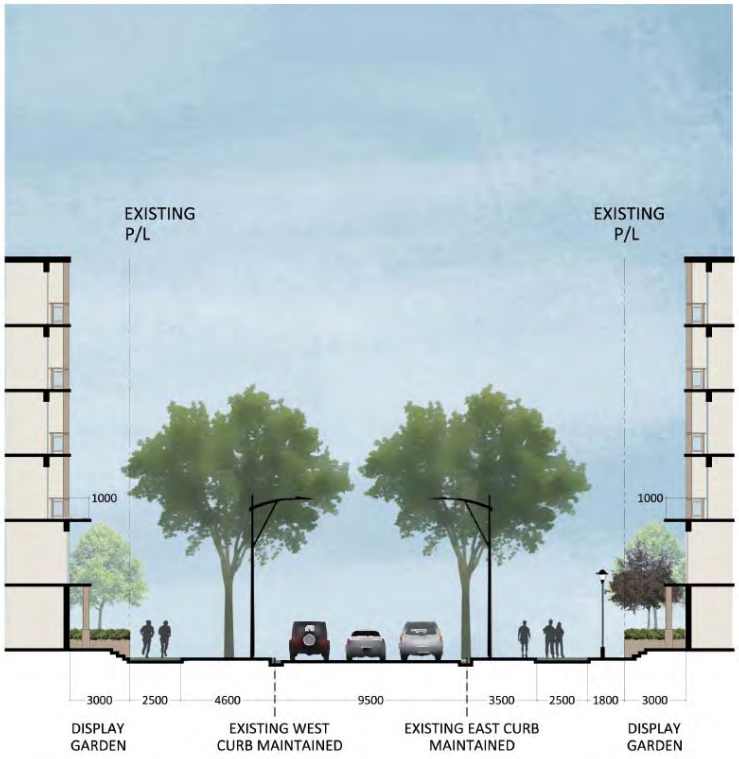
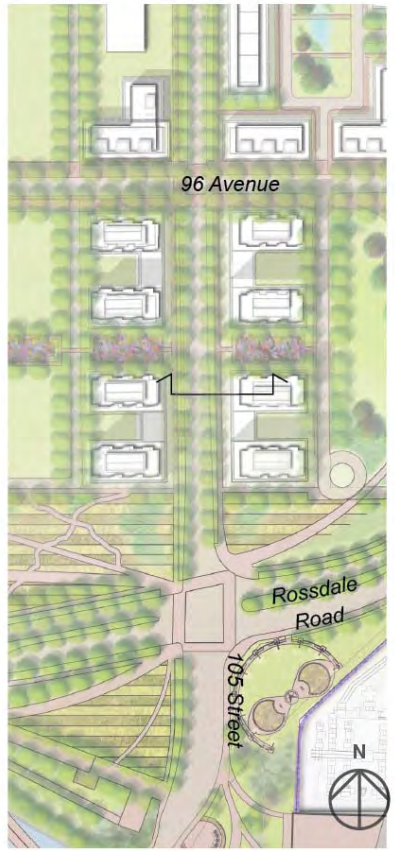


Figure 25 – Illustrative Section of 105th Street with Existing Curb Alignment and a Widened Sidewalk



Key Plan

Plantings integrated into bulbouts

Native planting for local "green" streets

Planted mews and lanes

"Green" Streets · 106 Street, 104 Street, and 102 Street

Intent

- These alternating local streets may offer the potential to create sustainable infrastructure such as rain gardens and local amenity using native plant species, especially along 104 Street and 102 Street.

Characteristics

- Tree lined with generous walks.
- Wide boulevard for rain gardens.
- Generous sidewalks.
- Roadways for local traffic and access to underground parking, including limited on-street parallel parking.
- 104 Street is proposed as a significant pedestrian connection between the Downtown and the river, linking West Rossdale to the potential repurposed Rossdale Generating Station, river promenade, plaza and amenities.

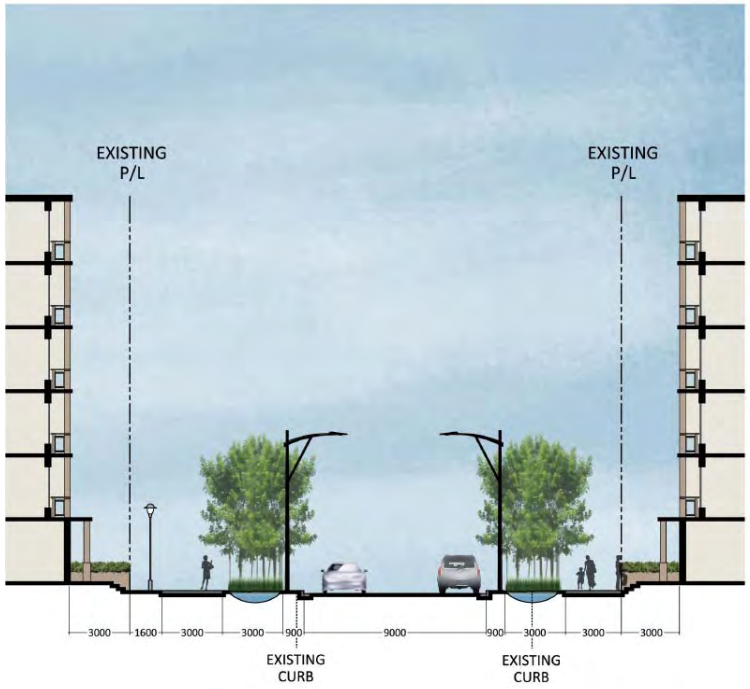
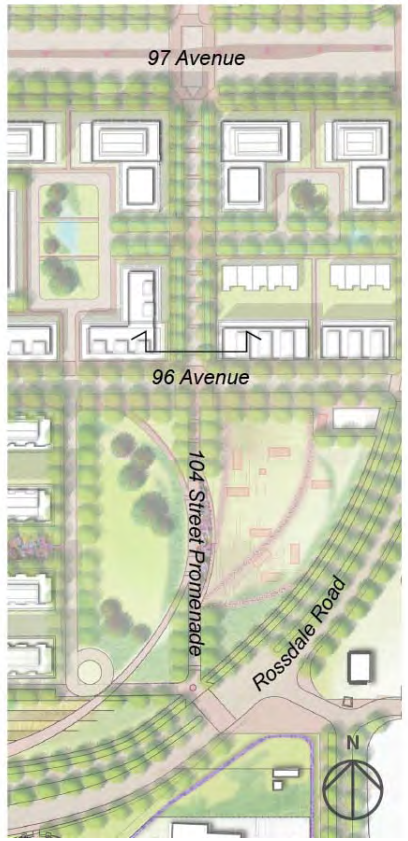
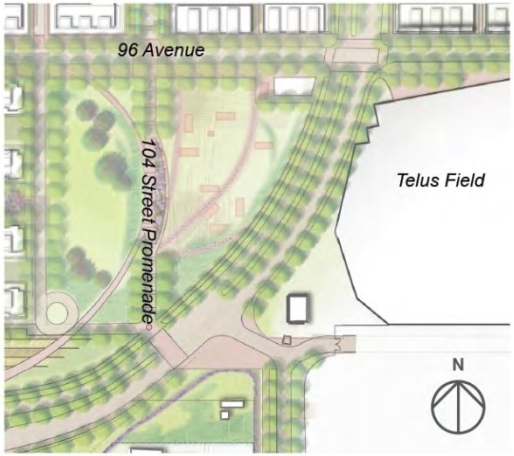


Figure 26 – Illustrative Section of 104 Street, a Local Green Street





Key Plan

Rossdale Road

Intent

- Rossdale Road is proposed to be developed as a two-way traffic route, thus extending the two-way nature of River Valley Road, enabling a reduction in through traffic between 105 Street and Rossdale Road and a central area focused on pedestrian activity.

Characteristics

- Tree lined with generous walks.
- A center median is developed with tree planting and shrub understorey.
- Pedestrian access across to reach The North Saskatchewan River, EPCOR's potentially publicly accessible areas, South Rossdale and the Telus Field.

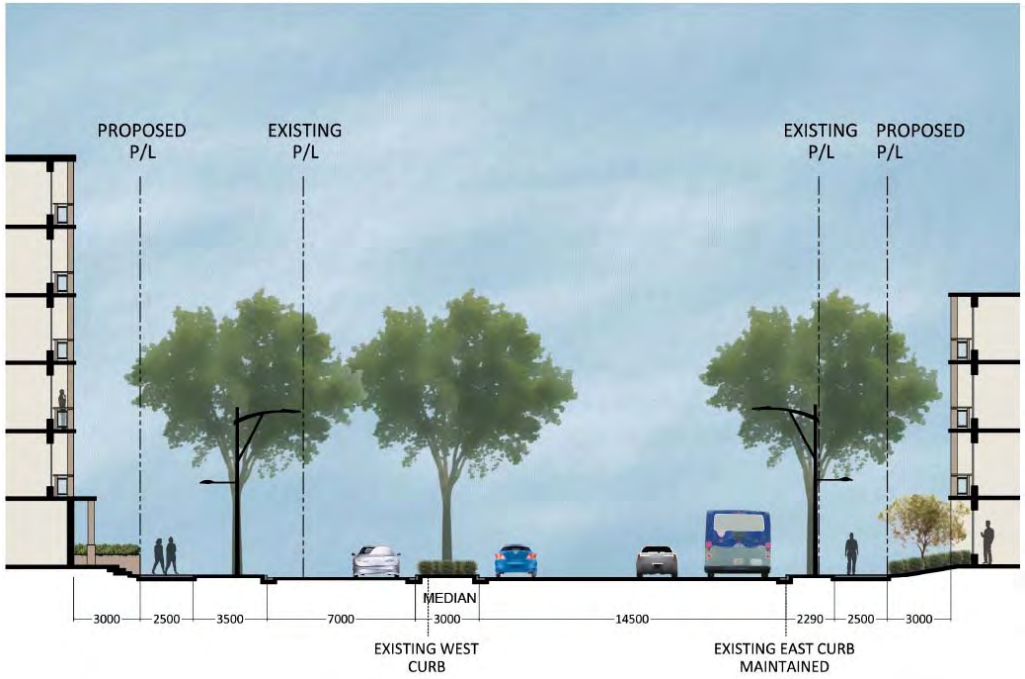


Figure 27 – illustrative Section of Rossdale Road Looking North

Existing Conditions Along 96th Avenue

Figure 28 - Potential Development of 96th Avenue - View North Towards Downtown - Intersection of Rossdale Road and 96th Avenue

5.3 PARKS AND OPEN SPACES

West Rossdale and its immediate surroundings of the North Saskatchewan River and the Alberta Legislature grounds offer the opportunity for an extraordinary diversity of public open spaces. The plan responds to both overall cultural and environmental needs as well as those of neighbourhood residents.

There are four general types of public open spaces proposed within the study area to complement the greater open space surrounding it:

- Areas of natural riparian river bank along the North Saskatchewan.
- Passive park areas containing gardens, walks, and places to sit.
- Casual and active play areas.
- Areas focused on the extensive history of the area.

Within these four types are opportunities for public art, interpretive features and play areas. Interpretation may include natural and cultural history as well as sustainability themes. Further detail design study should be carried out on park spaces such as Rossdale Park and River Promenade to address Council's direction as stated in Section 1.1 to "*commemorate*

Passive park areas with places to sit

Walks within parks

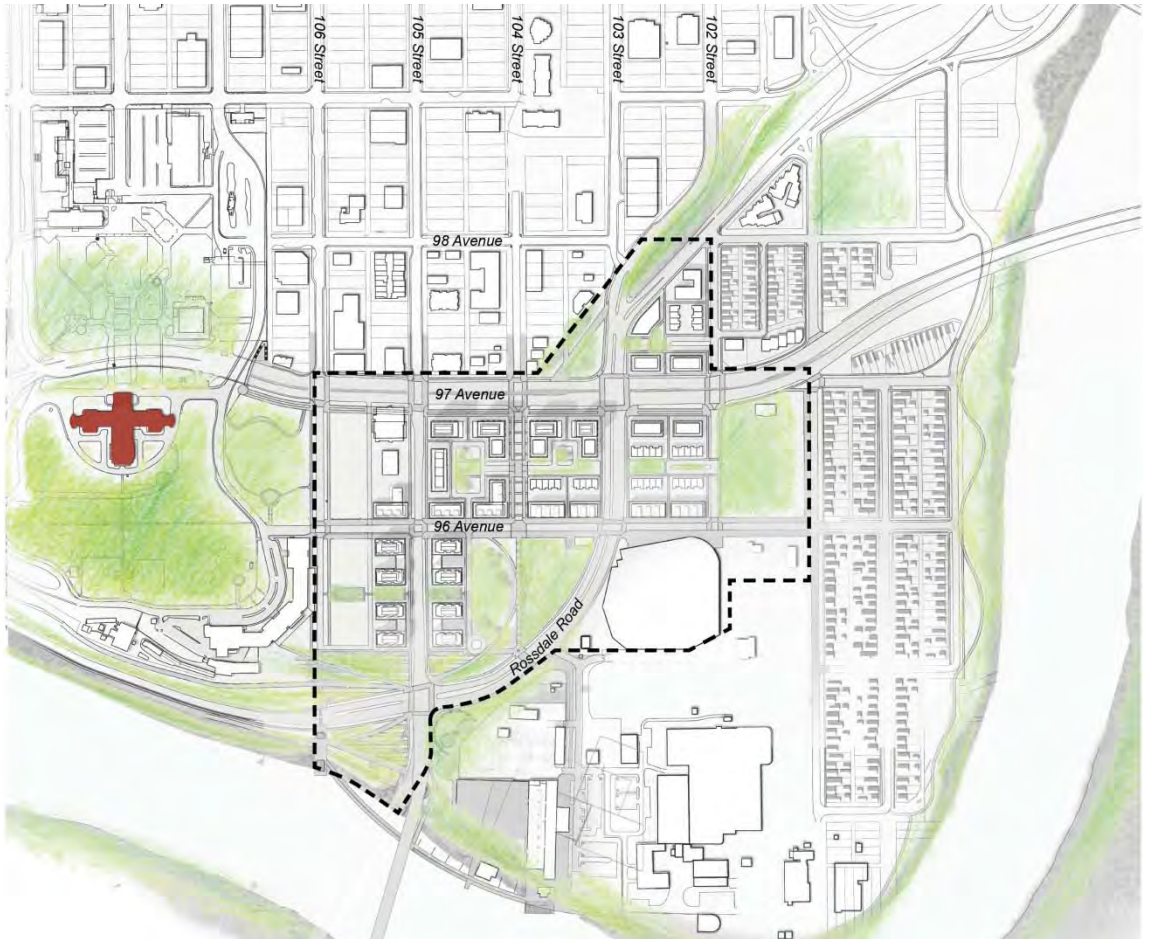


Figure 29 – Connectivity between all parks and public open space is proposed by creating pedestrian friendly streets

Integrate native planting in parks and gardens

and interpret all the significant history of Rossdale flats [...] and such commemoration and interpretation should recognize the achievements of many cultures who lived and worked there for millennia. [...]"

In addition to the public open space, display gardens associated with the front doors of ground floor residential units, selected back garden spaces, and roof gardens or terraces are proposed.

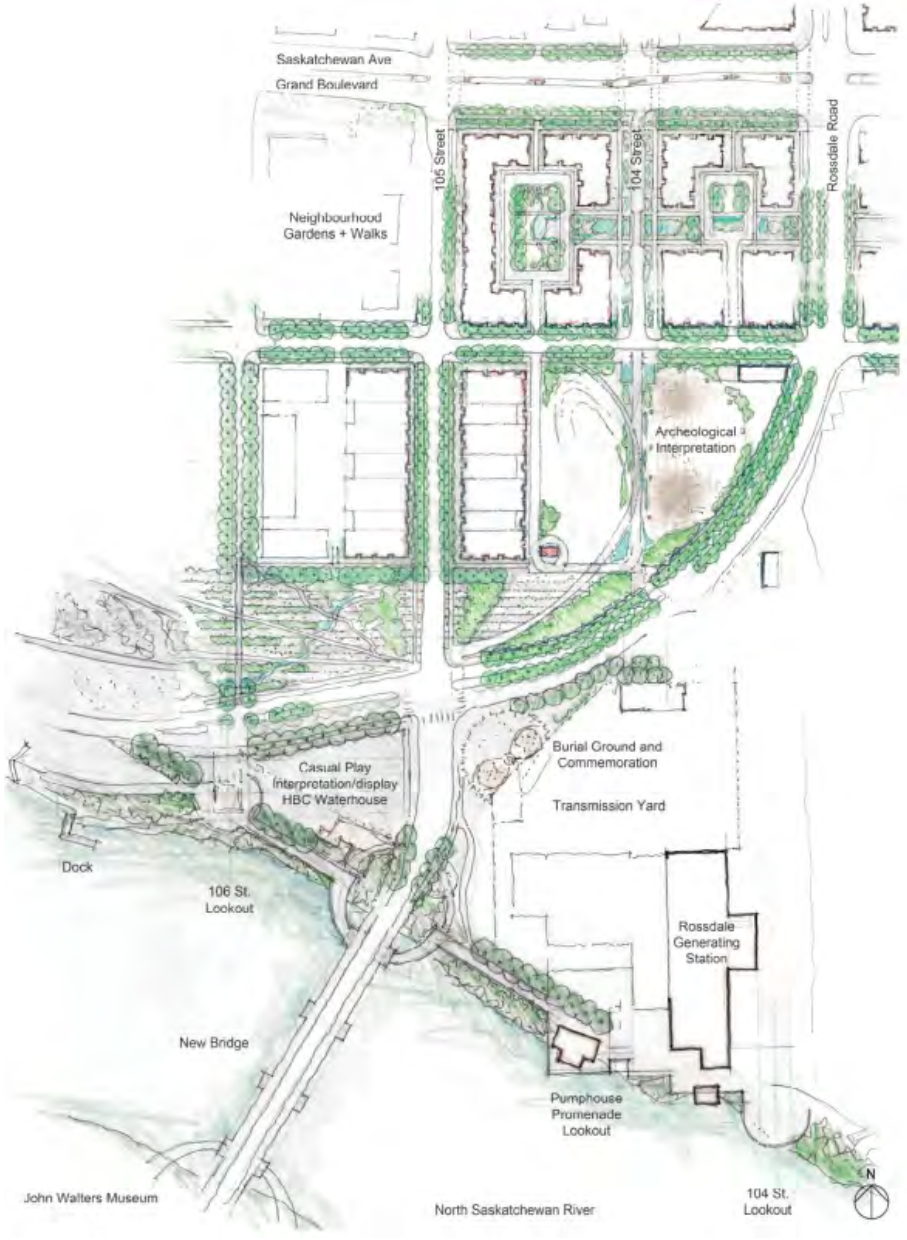


Figure 30 - Conceptual Design of Parks and Public Open Spaces Within West Area of the West Rossdale Plan Area

River Promenade and New Walterdale Bridge

The proposed promenade in the Plan Area is a small portion of a potential promenade extending from east of the Rossdale Generating Station and west along the foot of the Legislature Grounds and on to Government House Park and the Royal Alberta Museum of Nature.

The proposed new Walterdale Bridge has been identified by the City as a signature gateway entrance into the downtown. It replaces the existing structure using approximately the same north abutment alignment.

Intent

- The proposed bridge and promenade have the potential to be integrated as a single coherent river experience for pedestrians.
- Given its critical position in proximity to existing and potential destinations and landmarks, there is the potential to accommodate multiple functions. The bridge and promenade enable formal connections from the Legislature, Rossdale open spaces, potential uses on the EPCOR Power Generation Site and Kinsmen Field House.
- The promenade may be integrated with an independent pedestrian bridge to create direct connection and offer unique river amenity.

Proposed Characteristics

- The bridge is to be a signature gateway visually and experientially, creating a precedent for celebrating the river and Edmonton's association with the river. This approach would enable the integration of promenades, viewing and fishing niches, interpretation and public art as integral components of the bridge.
- The bridge, its approaches and supports, would enable vehicles, pedestrian and cyclist movement but also offer a place to linger and experience the river, valley and city. It would also enable users to experience sustained views to the Legislature.
- The promenade is the edge where both the river and city are experienced together. It is a place for strolling, cycling, sitting and potentially fishing. It offers a formality to clearly distinguish itself from the river and its riparian banks.
- The foot of existing north-south and east-west street alignments are potential places for lookouts, which terminate at the edge of the riverbank, celebrating views down the alignment and across the river. They are places for sitting, interpretation and potential physical accesses to the river.
- Docks, as identified by the River Valley Alliance, may be connected to the promenade, such as at the John Walters' north landing. There may also be opportunities for nature walks between the formal promenade and the river depending on the steepness of the bank.
- At both the north and south banks, the bridge will enable an ease of movement between vehicles, pedestrians and cyclists, and also to enable the promenade to be continuous without interruption along the riverbank.

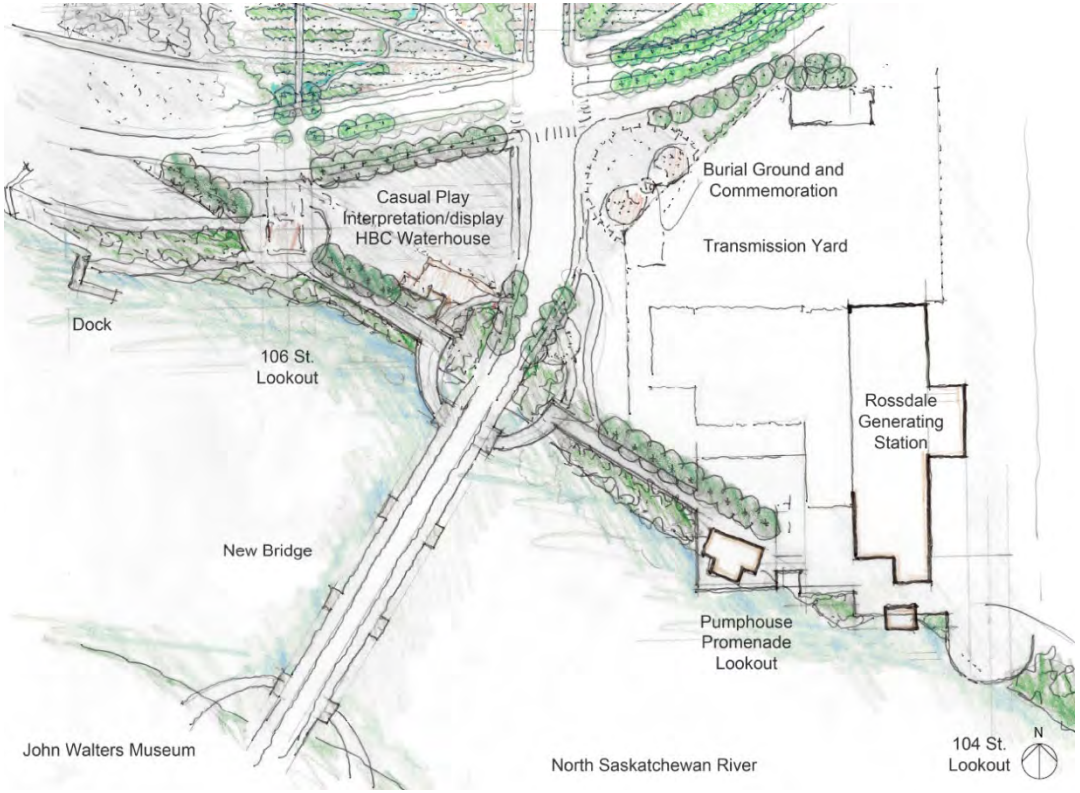


Figure 31 - Conceptual Design illustrating the New Bridge River Crossing and Connection to the River Promenade and Entrance Gardens

Potential cafes by the river promenade - Example

River promenade - Example

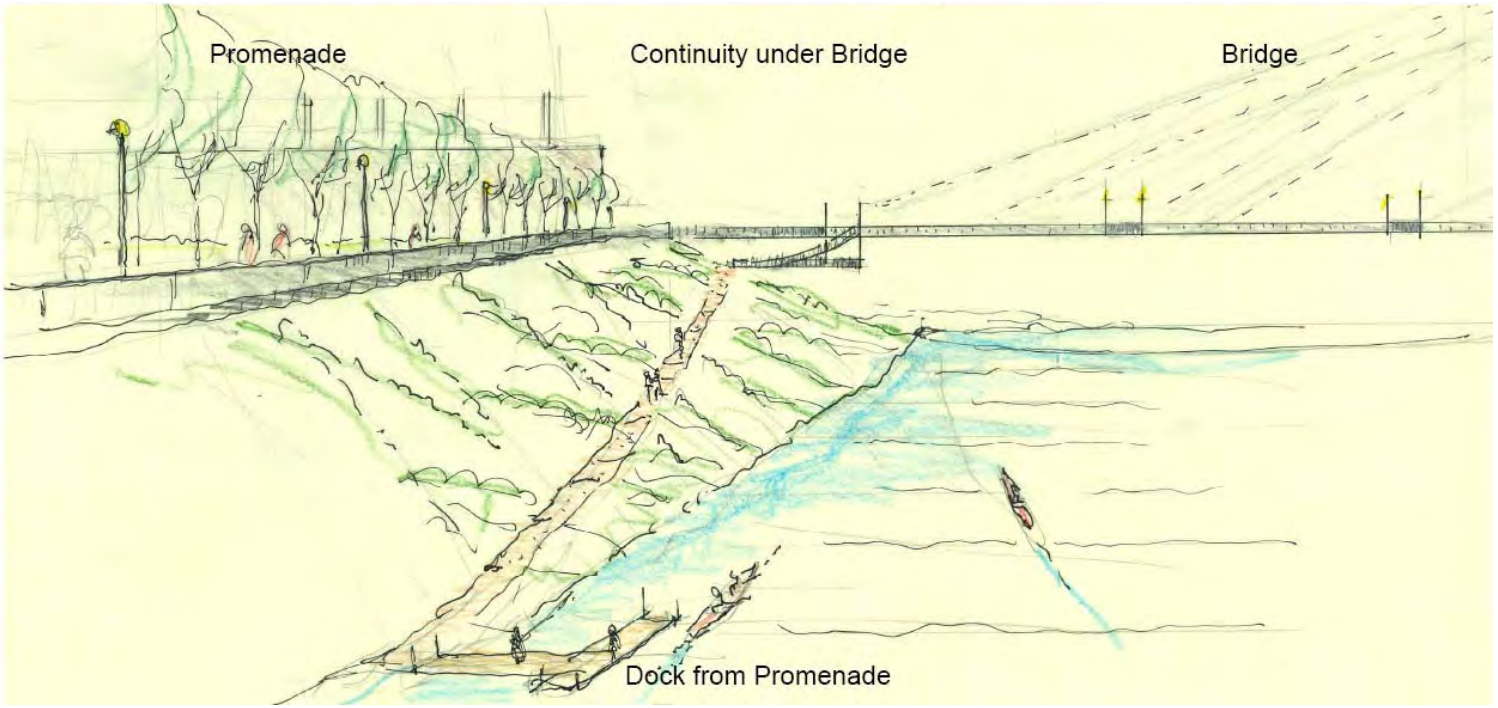


Figure 32 - Riverfront Promenade, View East Towards Potential New Bridge Crossing

Capital Downtown Gardens – Entrance Concept

Rossdale Park Interpretation Centre Concept

Rossdale Park

105 Street Entrance Gardens

Intent

- The 105 Street Entrance Gardens are proposed to create a significant open space that celebrates the entrance to the city, enables clear sustained views to the Legislature (pending potential removal of the Terrace Building) and offers a series of routes for pedestrians and cyclists to the river.
- The gardens are to integrate and connect with the new Walterdale Bridge, the proposals in the adjoining grounds of the Legislature (as described in the Alberta Legislature Centre Redevelopment - Master Plan), proposed Rossdale Park, and adjoining roadways.
- The gardens are to respect the Traditional Burial Grounds and Old Fort Edmonton Cemetery, as well as interpret the history and archeology of the site and surrounding areas including the HBC warehouse and John Walters ferry landing.
- The gardens are to be visually stimulating throughout the seasons for both motorists and pedestrians using the park.

Figure 33 - Conceptual Design of Entrance Gardens and Rossdale Park Within the West Rossdale Plan Area

Proposed Characteristics

- The 105 Street Entrance Gardens are to be coordinated with the gardens proposed in the Alberta Legislature Centre Redevelopment - Master Plan.
- Adjoining streets are to incorporate broad tree lined boulevards and walks along the streets.
- The gardens are to integrate with the river promenade and include a lookout potential at the foot of the 106 Street alignment which would further lead to a dock in the approximate vicinity of the John Walters' Ferry.
- Plant species are to be indigenous along the riverbank and indigenous to the Parkland on the flats and slopes, potentially blending with those on the grounds and in Rossdale Park. The organization of spaces and planting are to be in a contemporary expression with the potential for public art.

Rossdale Park

Intent

- Rossdale Park is to be the primary open space directly associated with West Rossdale that also serves the broader community. It is also the primary site of archeological investigations. It is the site of a 3300-2000 years BP (before present) old projectile point.
- The park results from the proposed closure of 104 Street as a vehicular roadway to a pedestrian promenade. The closure is enabled by the development of Rossdale Road as a two-way road.

Proposed Characteristics

- The site is organized for both neighbourhood use and events as well as the interpretation of the area's archeology and history.
- A promenade, that is also an emergency access route, is overlaid on the 104 Street alignment. The promenade is a pedestrian link from 96 Avenue to a pedestrian crossing at Rossdale Road to the EPCOR Power Generation Site, if it becomes publicly accessible.
- The promenade in the 104 Street alignment is a place from which to watch the neighbourhood activities along the west side and archeological and historic oriented activities along its east side.
- The corner of 96 Avenue and Rossdale Road may be an opportunity for a small scale interpretive facility, with exhibits and educational spaces with an associated terrace.

Donald Ross School Grounds

Intent

- Maintain the play field to the south of the school building as it is owned by Edmonton Public Schools.
- The field perimeter is to be designed to enhance the perception that the area is a common central open space for the three areas of Rossdale: North, South and West.
- Existing field uses are to be maintained and to include casual neighbourhood play.

Proposed Characteristics

- The play field is maintained but is defined by broad walks with seating and double arcades of boulevard tree planting, consistent with neighbourhood streets.

Public art - plaques and/or poetry

97 Avenue Plaza

Intent

- Provide a public amenity for Rossdale and McKay Avenue residents while offering a significant site for interpretation and public art.

Proposed Characteristics

- This plaza and garden results from the reorganization of the 104 Street, Rossdale Road and 97 Avenue intersections. It is a site of significant underground utilities, which are assumed to remain in place for the duration of Plan life.
- The plaza is located above a portion of the alignment of the Edmonton Yukon and Pacific Railway. It is therefore proposed that the railway and its significance be interpreted through public art.

Garden Squares

Intent

- Create a small-scaled public realm complementary to the perimeter streets to enrich the overall neighbourhood pedestrian experience. They also offer a clear local vehicle access route to limited underground parking entrances. Several garden squares are proposed within the centres of selected blocks.

Proposed Characteristics

- Their form within the blocks varies, enabling a range of activities from formal gardens to play areas.
- The garden squares are connected east-west to the perimeter streets by tree lined roads and walks within the interior of the street blocks. All tree lined roads and walks will have a boulevard like character to signal their public nature although they may require easements as part of the private development.
- Each garden square is to be addressed with residential frontages with individual ground floor unit entrances.

Telus Field

Intent

- Maintain the baseball stadium and field for its current uses.
- Surface parking to the north and west of the Telus Field may be maintained for the immediate future, but alternate parking strategies must be considered to enable the development of these sites for both park and residential/commercial uses as indicated in the West Rossdale Urban Design Plan.

Proposed Characteristics

- The characteristics of the current parking sites are described in the West Rossdale Urban Design Plan as Precinct F (north of Telus Field stadium) and Rossdale Park (west of Telus Field stadium).
- The stadium is proposed to be investigated further for its potential to incorporate street oriented uses along 96 Avenue.

5.4 INTERPRETATION AND PUBLIC ART

It is recommended that a complete Interpretation and Public Art Plan be undertaken as part of the overall development of a detailed Public Realm Plan to guide the procurement and integration of public art. The plan is to establish a vision, guiding principles and themes in both broad and site specific

Sculptural water feature

Sculptures

proposals from sustainability, diversity, and ideas about site significance. Themes are to include sustainability, park and valley integration, the river experience, archeology and history and reinforcing the area's unique geography and potential urban form.

The public art can be used to express underlying ideas within the site. They may be based on themes ranging from communities of settlement over the millennia, the idea of gateway to be sited along 97 Avenue and Walterdale Bridge/105 Street, Edmonton's relation to the water and the river or neighbourhood identity, creating the potential for a highly desirable public amenity and attraction.

The Plan is to identify locations for each of the themes and key ideas. This includes gateways along 97 Avenue and Walterdale Bridge/105 Street, archeology and history both along the riverbank and in Rossdale Park and 97 Avenue Plaza and the river and water experience along the river promenade.

Figure 34 – Site of Significant Interpretation and Public Art

Sculpture in South Rossdale

Traditional Burial Grounds and Fort Edmonton Cemetery

Traditional Burial Grounds and Fort Edmonton Cemetery

5.5 HERITAGE INTERPRETATION

Integration of Commemoration

The history of the Rossdale area, both natural and human, is among the most significant in the Edmonton area and Western Canada. Interpretation is proposed at a variety of scales from the make up and character of open spaces to individual elements.

The riverbanks are proposed to be restored to indigenous riparian plant communities. The restoration is to reflect the North Saskatchewan River's natural characteristics and dynamic processes such as flooding, fluctuating water levels and its meandering nature.

Recent archeological investigations have focused on the area bounded by Rossdale Road, 96 Avenue and 104 Street. This area is proposed to be retained as an open space for primarily outdoor cultural interpretation using the archeological investigations to describe the pre-contact period of settlement. The corner of 96 Avenue and Rossdale Road may be an opportunity for an interpretive facility including interpretive programme and educational spaces.

The Traditional Burial Ground and Old Fort Edmonton Cemetery is respected and reinforced as an important focus in the context of the surrounding Entrance Gateway Gardens.

The fur trade and industrial periods have the potential to be interpreted at their former sites. The site of the HBC warehouse at the riverbank, west of the existing Walterdale Bridge, has the potential for exploration of both the fur trade and John Walters' Ferry and the site of the river ford. The 97 Avenue Plaza has the potential to depict and explore the impact of the EY+P Railway and industrial development that it supported.

Historically significant public buildings within the study area are retained within the Plan. They include Donald Ross School, Ross Flats and Ortona Armouries (Hudson's Bay Warehouse).

Streetscape details can be designed to allude to the area history with elements such as interpretive kiosks, public art and continued use of the original street names on street sign blades.

Several other recommendations for site specific heritage commemoration are also included in the Appendices, ranging from an archaeological interpretive facility, groundmarking, public art, interpretive plaques, naming, walking tours and first person interpretation. The most important recommendations are dependent upon providing public access to the river west of the Walterdale Bridge.

Interpretive Panels

Heritage Interpretation

Coordination of Interpretation in the Neighbourhood

The City is considering applying to the Historic Sites and Monuments Board of Canada for national recognition of the significance of the area. Current discussions about developing a provincial history museum on the legislature grounds, establishing a city museum and the redevelopment of the Rossdale power plant may all have significant implications for other forms of heritage interpretation in Rossdale. One potential use for the decommissioned power plant that was recommended through a community consultation process was to develop a city museum focusing on the history of the area: Aboriginal, fur trade, settlement and industrial development. The interpretation at Rossdale should complement heritage interpretation of the river valley, the parks system and river valley neighbourhoods introduced in other locations along the river.

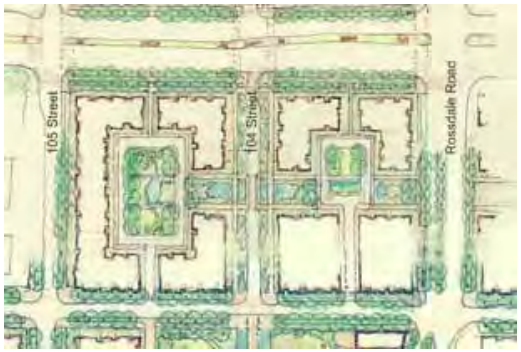


Figure 35 - Conceptual Design of Mid-Block Connections and Block Interior Gardens

Crosswalk paving treatment - Example

Cycling

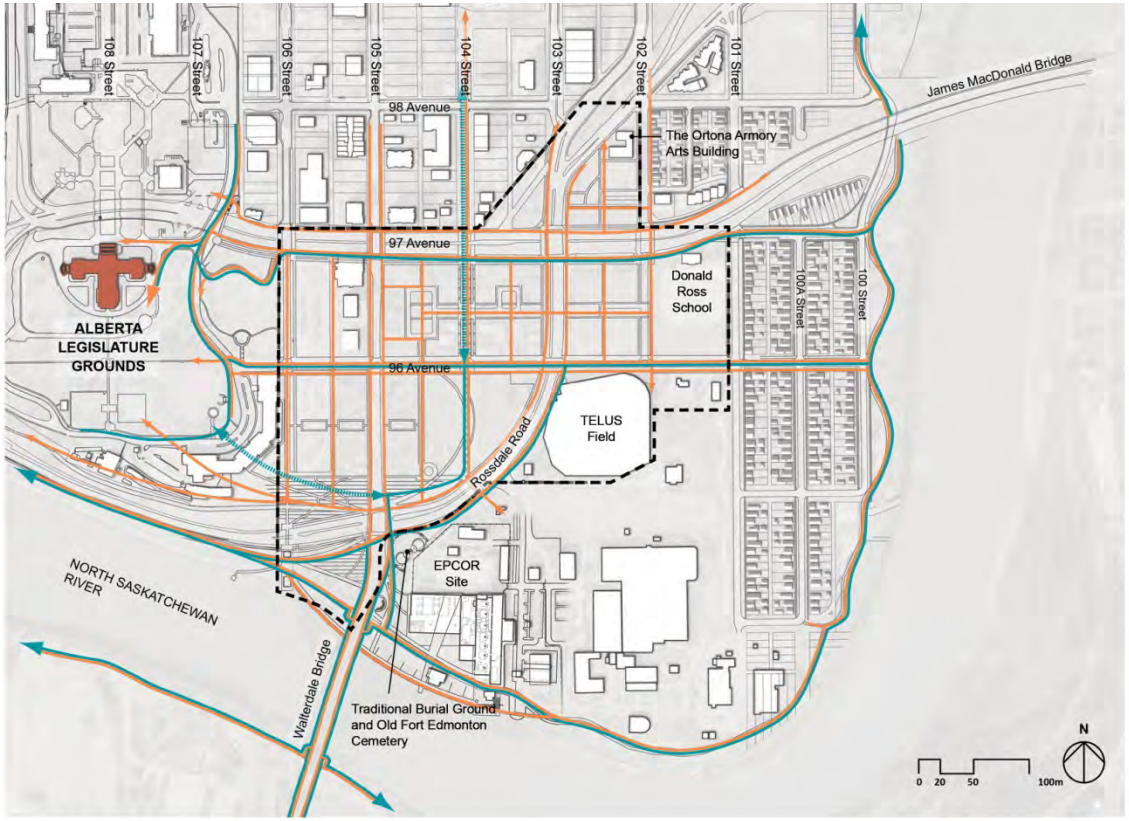


Figure 36 - Pedestrian and Bicycle Circulation

5.6 TRANSPORTATION

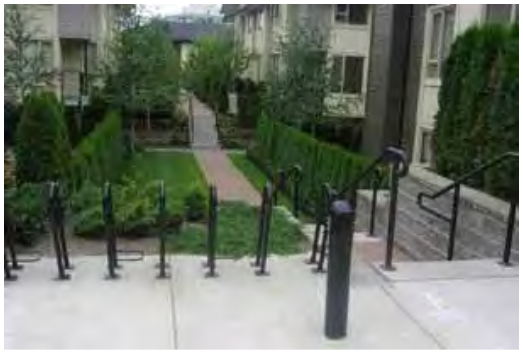
Sustainability

Sustainability from a transportation perspective is about encouraging alternative transportation by making transit easily accessible, creating walkable communities, and communities that are in close proximity to employment centers and retail and commercial outlets. It is also about minimizing vehicular congestion and maintaining traffic flow to reduce idling pollution.

Pedestrian and Cycling Connections

All streets are to be pedestrian friendly with boulevard walks and on-street parking to discourage excessive speeding on the streets and provide good separation from vehicle and pedestrian flows. Connection of the community streets to the existing multi-use trails and the River promenade are essential to the plan. The pedestrian mews and mid block connections will tie into the existing walk systems on the arterial roadways. Safe pedestrian crossing of arterial roads will be encouraged at the signalized intersections recognizing directness of circulation. The community street (96 Avenue) will be the primary pedestrian and bicycle community connection.

Walkable streets



Mid-block open green space

Public transit infrastructure

The one existing pedestrian actuated signalized crossing of 97 Avenue at 102 Street should be reviewed from a safety perspective to see if an alternative location may be more appropriate for community interconnection. Of particular concern is the high eastbound (97 Avenue) volume in the PM peak combined with the heavy northbound right turn volume (Rossdale Road to 97 Avenue) and the short spacing between the intersection and the pedestrian crossing. The accelerating right turning vehicles with driver attention being paid to vehicles approaching from the west come upon the pedestrian crossing very quickly.

Mid-Block Open Green Space

The opportunity for mid-block open green space is mainly presented in Precincts C, D, E and F, as part of the garden squares, offering a finer-grained open space network.

The mid-block open green spaces are to provide adequate lighting, landscaping, paved walkways improved pedestrian connectivity and active residential frontages that are complementary to the garden squares.

Mews

The mews are aligned over existing public lanes oriented north-south, south of 97 Avenue. They offer predominantly an alternate pedestrian access within the block interior between 96 Avenue and 97 Avenue. The mews each have a boulevard-like character to signal their public nature although they may require easements as part of the private development. Broad walks are centred over the existing lane alignments. The mews lead and connect to the garden squares sharing the same public realm character as the garden squares and the mid-block open green space.

Crosswalks

Distinct crosswalks at key intersections along 97 Avenue and 96 Avenue through feature paving treatments as a way to enhance the pedestrian environment while providing a sense of comfort and safety.

Bicycle Routes

Bicycle routes along the esplanade along 97 Avenue, the “green streets”, River Promenade, and 96 Avenue will be improved.

Public Transit

Improved transit accessibility for the new community would encourage the use of alternative transportation and promote the sustainability elements of the plan. With the continuation of the Government Centre transit terminal access being obtained from 106 Street, 96 Avenue, and 107 Street, opportunities are available to provide a bus loop through the study area via 96 Avenue. Provisions of marked pedestrian crosswalks at the existing signalized intersections to connect to the bus stops on the north side of 97 Avenue will also continue to encourage bus commuting.

Additional routing of buses could possibly provide further transportation alternatives and improve accessibility to the River Valley and waters edge for all Edmontonians. New routes could improve the access between the north and south sides of the river and then connect Old Strathcona and Rossdale. A replication of the old John Walter Ferry connection would bring Edmontonians to the north bank of the River flats.

On street parking with landscaped bulb-outs

The Rossdale Generating Station would also benefit from the support of transit as parking will be limited. While parking can be accommodated on site the number of stalls will be limited by the amount of land being allocated to the development. The stalls available may more closely resemble the requirement for bylaw parking in the downtown core requiring the support of transit to bring patrons to the development.

Revised Roadway Geometry

In order to reduce the number of transecting arterial roadways and to create walkable residential pockets, a realignment of 104 Street is suggested as shown on Figure 37. The development of a divided roadway with planted medians and boulevards provides a more comfortable pedestrian environment and removes one arterial road from the community increasing a walkable development area.

Intersection realignment on 97 Avenue could also create opportunities for median planting which provides a peripheral encouragement to reduce excessive speeding on the arterial roadway. Changing the one way operation on 104 Street and on Rossdale road to a two way operation complies with the intent of the new downtown plan.

On street parking along residential frontage

The change in the operation of the intersections of Bellamy Hill Road and 103 Street with 97 Avenue required a review to determine the extent of the geometric revisions and operational characteristics of the new intersection. A technical Memorandum was completed by Bunt & Associates to understand the effect on roadway operations with this new alignment and is attached in the Appendix B.

Neighbourhood Access

The recommended plan suggests that 1,700 - 2,100 units will be added to the West Rossdale area. These units will be accessed from the 96 Avenue collector road which provides east/west connectivity from East Rossdale through to the Legislative Grounds and 107 Street. This collector road ties into the arterial system at 105 Street and at Rossdale Road providing the two primary access points for the neighbourhood. Secondary access is accommodated via 96 Avenue to 101 Street, 106 Street and 107 Street. Traditional traffic analysis for 1,700 -2,100 units of multi-family development would suggest a daily volume of 11,250 vehicles/day. While the sustainable and walkable nature of this inner City development in near proximity to high employment nodes and alternative transportation would suggest a significant reduction in vehicular traffic, the five access locations should easily be able to accommodate and integrate the vehicular traffic generation onto the adjacent arterial system.

Study Findings

While the continued operations of the key arterial roadways into the downtown core is of great importance, it is essential to revise the arterial pattern through Rossdale to create a complete and walkable neighbourhood in this historically significant inner City area.

On-Street Public Parking

On-street parking is a key element to sustainable communities as paved parking lots are a detriment to sustainability. On-street parking also improves the walkability of a community by naturally reducing speeds and providing a physical barrier between traveling vehicles and the pedestrians. The proximity of the community to large employment centers may encourage commuting traffic to utilize the on-street parking and thus a neighbourhood parking program may need to be implemented to discourage this type of use.

A potential parking strategy for the Plan Area is to coordinate shared parking with major parking facilities within the area.

LEGEND

- Curb Realignment
- New walk/multi-use path
- New lane division
- Boulevard Tree

Figure 37 – Potential Road Realignment

6. UTILITY IMPROVEMENTS

6.1 UTILITY IMPROVEMENTS

The following information is a brief summary of the conceptual utility servicing assessment that was completed for the Plan Area. For additional information, please refer to the Appendices.

Servicing requirements for the Plan Area include sanitary, storm, water, power, gas, telephone and cable television. The following servicing information is based on conceptual project information and is subject to change until detailed design is complete.

Note that each separately titled lot must have its own service and must not drain onto private property.

The City requirement is that any impacted combined sewer services are separated into individual sanitary and storm services, and if practical that the stormwater flows from the Plan Area are removed from the combined sewers and discharged to the nearest storm sewer. It also requires that aerial utilities that require modifying (relocating or upgrading) be buried.

Erosion and sedimentation control measures meeting or exceeding the City of Edmonton Guidelines must be implemented during the construction of this project.

Drainage

- The analysis of the sanitary and storm servicing requirements for the Plan Area must be conducted using the latest published edition of the City of Edmonton Design and Construction Standards.
- In order to meet pollution control requirements of Alberta Environment, the City is trying to reduce the amount of combined sewer overflows into the River during extreme rainfall events. Therefore, in order not to add to this overflow problem, Drainage Service has requested that any additional sanitary flows from the redeveloped Plan Area by-pass the combined sewer on 97 Avenue.
- In order to service the entire Plan Area with new sanitary sewer which by-passes the combined sewer along 97 Avenue, new sanitary sewers along 105 Street, Rossdale Road and 102 Street between 97 Avenue and 96 Avenue, new sanitary sewers along 96 Avenue between 105 Street and 101 Street, and new sanitary sewers along 101 Street between 96 Avenue and 95 Avenue will be required. The new sanitary sewers will flow south and will discharge into the Sanitary tunnel that crosses the River.
- New storm sewers will be required along 105 Street and 104 Street to service buildings on the east side of 105 Street and the east side of 104 Street respectively. Additional storm sewers may be required to service other portions of the Plan Area - to be determined at the preliminary design stage.
- Any existing combined/sanitary sewers and storm sewers that are proposed to be utilized to service the Plan Area, will have to be evaluated with respect to capacity to accept post development flows.
- Drainage Services requires that storm flows are removed from the combined sewer system as much as possible. If the roadways are reconstructed/realigned as part of the redevelopment project, then additional storm sewers should be installed and existing catchbasins should be removed from the combined sewer system and connected into the storm sewer system in order to separate the sanitary and storm flows.
- Due to the proximity of the Plan Area to the River, on-site stormwater management will not be required unless the existing combined sewer system or storm sewer system does not have capacity to convey the post development storm flows for the 1:5 year storm event.
- Stormwater Best Management Practices (BMPs) will be implemented to reduce water quality degradation prior to discharging to the River.
- A utility right of way across the existing Bellamy Hill is required once Bellamy Hill is realigned for the existing combined sewer. If a utility right of way cannot occur, then the existing combined sewer will require relocating provided that an adequate alignment can be found.
- Storm catchbasins will require relocating along the new curb alignment along 97 Avenue and at all intersections within the Plan Area. Storm sewers may also require relocating due to the road alignment change of 97 Avenue.

Water

- The analysis of the water servicing requirements must be conducted in

conjunction with EPCOR Rossdale Water Treatment.
- Since there are existing distribution mains along the majority of the roadways, most proposed building pockets will be serviceable with water without new watermain installations except along 102 Street between 97 Avenue and 96 Avenue to service the proposed buildings on the west side of 102 Street.
- The on-street fire flow protection rate within the Plan Area is expected to be 300 L/s.
- Based on the location of the existing hydrants, additional hydrants are needed to meet the 90 m spacing requirement (as per EPCOR water).
- All services and hydrants must be connected into distribution watermains (less than 350mm diameter). Connection into transmission watermains (350mm diameter and larger) is not allowed.
- Cast iron distribution watermains with a diameter of 150 mm will require upsizing to provide on-street fire flow protection.

Power

- A utility right of way across the existing Bellamy Hill is required once Bellamy Hill is realigned for the existing power duct line and aerial facilities. If a utility right of way cannot occur, then the existing power duct line and aerial facilities will require relocating provided that an adequate alignment can be found.

Gas

- The existing gas system within the Plan Area does not have capacity to service the proposed developments, therefore, ATCO Gas will install a new intermediate pressure gas system to service the Plan Area. The new intermediate pressure gas system will tie into the existing intermediate pressure gas main at the intersection of 101 Street and 96 Avenue.
- ATCO Gas requires a suitable alignment for the new gas pressure system. The gas alignment will be determined at the preliminary design stage and once a phasing plan has been determined.
- A utility right of way across the existing Bellamy Hill is required once Bellamy Hill is realigned for the existing gas main. If a utility right of way cannot occur, then the existing gas main will require relocating provided that an adequate alignment can be found.

Telephone

- TELUS indicated that the existing underground and aerial telephone facilities within the Plan Area have capacity to service the proposed developments.
- In order to service the proposed development between Rossdale Road and 102 Street and between 96 Avenue and 97 Avenue, new direct buried telephone line will require extending along Rossdale Road and through a utility easement within the proposed development. The new direct buried telephone line will connect into the existing telephone vault located on the southeast corner of 97 Avenue and Rossdale Road.
- A utility right of way across the existing Bellamy Hill is required once Bellamy Hill is realigned for the existing aerial telephone facilities. If a utility right of way cannot occur, then the existing aerial telephone facilities will require relocating provided that an adequate alignment can be found.

Cable Television

- Shaw Cable indicated that if the existing underground and aerial cable television facilities within the Plan Area require upgrading to service the proposed development Shaw Cable will be responsible for these upgrades.
- New cable television infrastructure will be required to service the proposed development between Rossdale Road and 102 Street and between 96 Avenue and 97 Avenue. The alignment of the new cable television infrastructure will be determined by Shaw Cable. The alignment will most likely be from the northwest corner of 101 Street and 96 Avenue.
- A utility right of way across the existing Bellamy Hill is required once Bellamy Hill is realigned for the existing aerial cable television facilities. If a utility right of way cannot occur, then the existing aerial cable television facilities will require relocating provided that an adequate alignment can be found.

7. APPENDICES

Theme	Sub-theme	Existing Interpretation	Proposed Interpretation
The North Saskatchewan River as a Force in the Early Use of the Area	*Natural History*		

	• Formation of the river valley 12,000-8,000 years ago
	• Creation of four terrace levels, each with a slightly different stratigraphy, the lowest a flood plain, flats a good site for camping, later construction and farming, supply of quartzite for making tools
	• Aspen parkland Ecotome, shelter of the valley, fescue grasslands and woodlands (lumber, boat-building, firewood): 4 main plant communities
	• Beginning of animal life in the area 11,600 years ago: historically 49 species of mammals, buffalo forage in winter, currently 21 species of fish
	
	• Floods:
	  • 1825 led to relocation of Fort Edmonton
	  • 1899 led to increased height of low level bridge
	  • 1900
	  • 1915 led to relocation of early industries and residences
		• Walking tours of archaeological sites
		• Extensive interpretation of the natural history of the region in the Royal Alberta Museum
			• The river as a natural force shaping human events and development in Edmonton is a proposed theme to be interpreted at Louise McKinney Park
			1. **Recommendation:** Interpretation of the river as a natural force in shaping human events and development should be consistent throughout the valley, with a series of interpretive panels about the river as a whole, and about what is unique about this part of the valley; focus on aspects that can be seen from this place
			2. **Recommendation:** That on-site interpretation be provided for any future archaeological investigations as they occur
			3. **Recommendation:** That an interpretive facility be developed, approximately on top of the archaeological excavation, see: Pointe à Callière, the birthplace of Montreal as an example
			
			http://www.pacmuseum.qc.ca /index.aspx?lang=EN-CA
			
			Note: The recommendations in this section are part of the ongoing heritage activities in the Rossdale area, and are not part of he Urban Design Plan

Theme	Sub-theme	Existing Interpretation	Proposed Interpretation
	Transportation Corridor • Traditional transportation and trade route of aboriginal people • Importance of the river to the development of the fur trade • Increase in overland transportation (Red River carts) in 1860s and subsequent decline in importance of the river for transportation • 1875 steamboats carried goods and people from Winnipeg • Early 1880s: CPR decision to route transcontinental railway through southern prairies; 1891 before Strathcona connected to system ending long distance hauling on the river • John Walter's ferry linked Strathcona and Edmonton from c1876-1882 to c1915, although its importance diminished after construction of the low level bridge	• C&E Station museum in old Strathcona • John Walter Museum in Walterdale	4. **Recommendation:** If access to the river is provided west of 105th St, link the spot on the north side of the river where the ferry landed to the John Walter site in Walterdale, e.g., dock, ground marking of the trail, interpretive panels and/or public art

Theme	Sub-theme	Existing Interpretation	Proposed Interpretation
	Aboriginal Use of the Land		
	• Beginning of human life ~8,000 years ago: used by both woodland and plains tribes; mixed Cree and Assiniboine use by mid-18thC, river the historic dividing line between Cree and Blackfoot • By the time Edmonton House was established near present day Fort Saskatchewan in 1795, Edmonton area was the western fringe of Cree land • Flats were a traditional meeting place for aboriginal people; it has been referred to as a Pehonan (waiting place or gathering place), a site of traditional ceremonies, celebrations, meetings, trade, and games • Beginnings of Métis presence during the fur trade period • The HBC field was used as a short-term campground by Aboriginal people in the summer when they collected their treaty money and during the Exhibition	• Commemoration of traditional burial ground and Fort Edmonton Cemetery includes early Aboriginal use of the land	• HSMBC nomination is being pursued by the City 5. **Recommendation:** That the interpretive facility regarding the archaeological and Historical build in consultation with the Edmonton Aboriginal Urban Affairs Committee.

Theme	Sub-theme	Existing Interpretation	Proposed Interpretation
	Fur Trade • 1754 Anthony Henday visit • Flats a level site for construction of fur trade posts; easily tilled soil for agriculture • Burial ground in the area prior to contact with Europeans; eventually First Nations, French Canadians, Scottish, English, and Métis people were buried in and around the Fort Edmonton Cemetery; the extent of burials remains unknown • Ca 1801-1810: Edmonton House II on EPCOR land; Fort Augustus II on riverbank west of present day 105th St • ca 1813-1830: Edmonton House and Fort Augustus II on flats west of present day 105th St • 1830- on terrace south of the present day Legislature • 1881-82 HBC warehouse constructed on flats under and west of present day 105th St • Decline of the fur trade: strategic value of Fort Edmonton and North Saskatchewan River eroded further following end of the Buffalo during 1870s-80s • Sale of Rupert's Land 1869/transfer 1870	• Commemoration of the traditional burial ground and Fort Edmonton Cemetery includes fur trade history • Fort Edmonton V has been designated a national historic site but the plaque has not been mounted • Fort Edmonton V is commemorated on the legislature grounds • Fort Edmonton's history is commemorated through the reconstruction at Fort Edmonton Park, although many Edmontonians do not realize that Fort Edmonton. Park is not at the original site	6. **Recommendation:** If access to the river is provided west of 105th Street, the locations of the various forts should be identified, as close to their original locations as can be determined. 7. **Recommendation:** Identify a site for the HSMBC plaque for Fort Edmonton V and have a ceremony to unveil the plaque.

Theme	Sub-theme	Existing Interpretation	Proposed Interpretation
Settlement and Economic Development	*HBC Reserve Land*		
	• Survey and sale of HBC reserves • HBC's efforts to maximize profit from the sale of its lands ⊠ HBC constructed stables for horse-drawn delivery vehicles in 1914; the building was leased to the Edmonton Pure Butter Company in 1924; the Royal Canadian Navy Volunteer Reserve, Edmonton Half-Company used it from 1939-1965 when the Loyal Edmonton Regiment, 3rd Battalion moved in.	• The HBC stable is listed as a Municipal Historic Resource; there is an interpretive plaque on the building.	• Included in the City's HSMBC nomination. (see page 87)
	Settlement in Rossdale		
	• Donald Ross owned 70 acres of land; his home became Edmonton House, the first hotel west of Portage la Prairie; Ross also started the area's first coal mine, market garden and greenhouse • In 1899 there were 135 residents in the area, working class neighbourhood • Most private development east of 101 Street (the boundary of the HBC Reserve) and public development west • By the mid-1920s, most of the area had some development • Post-WWII small-scale apartments	• The name of Donald Ross has been given to the neighbourhood and the school.	8. **Recommendation:** Work with the City's Names Committee to ensure that the names of condominium developments, streets, and parks reflect early residents or businesses; the significance of the name should be interpreted, e.g., interpretive panels in condo lobbies. • Included in the City's HSMBC nomination. • Included in the City's HSMBC nomination.

Theme	Sub-Theme	Existing Interpretation	Proposed Interpretation
	Strathcona and Edmonton		
	• When Edmonton annexed Strathcona in 1912 the construction of the high level bridge was underway and Walterdale/105th St. bridge promised, completed in 1915 • Early civic facilities were established in the area, e.g., children's shelter, Donald Ross school, dog pound • An Anglican mission, Catholic church and Catholic school were located in Rossdale	• The Donald Ross school is on the municipal registry. • The children's shelter is designated a Municipal Historic Resource, has an Edmonton Historical Board plaque, and is listed on HistoricPlaces.ca	• Included in the City's HSMBC nomination. (see page 87) • Included in the City's HSMBC nomination
	Bridges and Railroad		
	• Low Level bridge the first bridge over the river at Rossdale, completed in 1900 • The Edmonton, Yukon and Pacific Railway (EYPR) connected Strathcona and Edmonton over the low level bridge in 1902 to 1954 when tracks were removed	• There is an EHB plaque for the Low Level Bridge • EYPR designated a national historic site by the Canadian Society for Civil Engineering	
	• High Level bridge, completed in 1913 • Construction of a CN spur line to transport coal to the power plant, reducing cost of producing power • The significance of the Walterdale Bridge as the entry to downtown Edmonton grew post WWII • James MacDonald Bridge, opened 1971, impact on 97th Ave and Rossdale Road – demolition of 80 homes, division of neighbourhood into three areas: North, South and West Rossdale; City became primary landowner	• The High Level Bridge is a Municipal Historic Resource, designated provincially and listed on HistoricPlaces.ca • There are plaques about the High Level Bridge on the bridge and on the legislature grounds	9. **Recommendation:** Include interpretation of the debate over parkland and freeways, and the efforts to save the community in any future overview of Rossdale history

Theme	Sub-theme	Existing Interpretation	Proposed Interpretation
	Recreation: Exhibition Grounds/Renfrew Park		
	• Edmonton Industrial Exhibition Association purchased land from the HBC in 1899 and the exhibition was held on the flats from 1899-1909 • The City's parkland acquisition began in the 1890s • Golf course on the flats below Richard Hardisty's Big House extended from the graveyard west of the area at the turn of the century • Symbolic birthplace of Alberta; site of the inauguration of Alberta as a province in 1905 • City purchased the former exhibition grounds in 1907 • 1919 establishment of Amusement Association by HCB employees, 96th and 97th Avenues between 103 and 102 Streets; City began to take an active role in developing these facilities in 1930s and 1940s and purchased the property in 1954 (baseball parking) • 1923 Renfrew Soccer-Football field, south of 96th Ave, between 102 and 104 Streets; in 1933 redeveloped as the Renfrew Baseball Park • Informal recreation: swimming, skating, tobogganing, horseback riding, etc.	• The Inauguration is recognized as an event of national historic significance with a plaque at the Legislature • MacKay Avenue School on 100th Avenue interprets the inauguration; as do the interpretive panels on 96th Ave. that provide an overview of the history of the area • The exhibition is also interpreted on the 96th Ave. panels	

Theme	Sub-theme	Existing Interpretation	Proposed Interpretation
	Power and Water Treatment Plants		
	• 1903 Exhibition Society sold land to the City for power and treatment plants – powerhouse constructed over many years, beginning in 1903 • Water treatment plant built adjacent to the power plant	• The Rossdale Power Plant (the Administration Building, Low Pressure Plant, consisting of the Turbine House and Boiler House, and Pumphouse No. 1), has been provincially designated and listed on Historic Places.ca	10. **Recommendation:** Plans for the adaptive re-use of the power plant have not been finalized by The City, but community recommendations include a potential museum focusing on Aboriginal history, fur trade, settlement and industrial history of the area.
	Industrial Development		
	• Railway attracted a number of industries to Rossdale: Dowling Grist Mill, Edmonton Brewing and Malting Company, Coal Mining • Gravel pit 107th St – 106th St, 96 Ave – 95th Ave c1894-1903 to 1910s – disruption of burial ground		11. **Recommendation:** Work with the City's Names Committee to ensure that the names of condominium developments, streets, and parks reflect early residents or industries; the significance of the name should be interpreted, e.g., interpretive panels in condo lobbies.
Impact of 1915 Flood	*Closure of Industry*		
	• The City's decision to demolish buildings north of the exhibition grounds, and not sell the land to industries such as the Edmonton Concrete Co., in 1911, limited industrial growth in the area		

Theme	Sub-theme	Existing Interpretation	Proposed Interpretation
	Decline of the Neighbourhood		
	• Immediate decline following 1915 flood • In the 1950s, the City began refusing any municipal upgrades in Rossdale • In the 1960s, the City made it increasingly difficult for homeowners to get building permits for renovations: property values declined and new homeowners had trouble getting mortgages • 1963: Urban Renewal Study recommended the area be cleared for parks • The City purchased properties as they came up for sale and expropriated homes in Rossdale for park and road development • The City prohibited new construction in 1968 • Further decline following construction of James MacDonald Bridge, 1971 • The school closed in 1973	• The flood is also interpreted on the 96th Ave. panels	12. **Recommendation:** If access to the river is provided west of 105th Street, the flood could be interpreted in situ: in addition to interpretive panels showing the views from a particular spot, the water levels during flood years could be marked on a pole on the river bank (note: Riverdale has such a pole, but no interpretation; historical photographs and discussion with elder residents could provide necessary information)
	Establishment of the River Valley Park System		
	• The City's parkland acquisition began in the 1890s • Canada's first landscape architect Frederick Todd is acknowledged as the father of the river valley parks as he advised council to preserve parkland along the river in his 1907 report • The City began acquiring river valley land for parks through non-payment of taxes in 1933 • Bland-Spence-Sales Report (1949) first concrete step towards systematic park development in river valley • Planning for river valley parks accelerated in 1970s and 1980s		• The Vision for Change and Creating a Park Legacy is one of the themes to be interpreted at Louise McKinney Park 13. **Recommendation:** Interpretation of the River Valley Park System theme should be consistent throughout the valley, with a series of interpretive panels about the system as a whole, and about how the particular area fits within the larger system

Theme	Sub-theme	Existing Interpretation	Proposed Interpretation
	Redevelopment of Rossdale		
	• In 1985, Rossdale won its fight for survival and allowed residential development • 1986 adoption of Rossdale Area Redevelopment Plan • Role of the Rossdale Community League		14. **Recommendation:** Include interpretation of the debate over parkland and freeways, and the efforts to save the community in any future overview of Rossdale history
	General History		
		• The Rossdale Community Hall has a display of a number of historical photographs • Interpretive panels on 96th Ave. cover a number of themes – the City has not determined whether they will remain following this redevelopment	15. **Recommendation:** That the history of Rossdale be reflected in a variety of media: walking tours, first person interpretation at public events, public art, in addition to the interpretation of specific places within the neighbourhood • The proposed redevelopment of EPCOR and city museum may also have implications for historical interpretation in the neighbourhood.

1 INTRODUCTION

West Rossdale (Plan Area), as indicated on ***Figure 1*** (Part 1.2), is located south of downtown Edmonton on the north side of the North Saskatchewan River. The Plan Area is bounded by 97 Avenue and Bellamy Hill to the north, the Rossdale Power Plant and the Rossdale Water Treatment Plant to the south, 101 Street to the east and the lane west of 105 Street to the west.

The project involves developing a redevelopment plan for the Plan Area. Carlyle and Associates provided Associated Engineering (AE) with a Neighbourhood Concept Plan of the Plan Area on March 20, 2009. Upon redevelopment, the Plan Area is anticipated to consist of approximately 1700 - 2100 multi-family residential units and main floor commercial/retail space along the north side of 96 Avenue. Proposed buildings will range from 2 to 12 storeys.

AE assessed the Neighbourhood Concept Plan in terms of utility conflicts and with servicing the proposed buildings with sanitary, storm, water, power, gas, telephone and cable television. The assessment was based on conceptual project information and is subject to change until detailed design is complete. The following is a summary of AE's assessment:

2 EXISTING UTILITIES

2.1 Drainage

- Existing combined/sanitary sewers and storm sewers are located along the majority of the roadways within the Plan Area, as shown on ***Figure 2.1.***
- From site reconnaissance, there is no on-site stormwater management within the Plan Area.
- The major overland drainage path for the Plan Area is toward the southeast. All minor storm flows are collected in the storm sewer system and then discharged into the North Saskatchewan River. All major storm flows are conveyed overland to the River.
- There are existing combined sewers along 105 Street (south of 96 Avenue) and 101 Street (south of 97 Avenue) that discharge into the existing sanitary tunnel that crosses under the River. The north end of the sanitary tunnel is located on 101 Street south of 94 Avenue. The existing sanitary sewer along 104 Street (south of 97 Avenue) also discharges into the existing sanitary tunnel.
- There are existing combined sewers along Rossdale Road (north of 96 Avenue) and 102 Street (north of 96 Avenue) that discharge into the combined sewer on 97 Avenue. The existing sanitary sewer along 105 Street (north of 96 Avenue) also discharges into the combined sewer on 97 Avenue.
- Within the Plan Area, there is a problem with combined sewer overflows during extreme rainfall events into the River which are caused by the complex interconnections between the combined sewer system and the storm sewer system. In order to meet pollution control requirements of Alberta Environment, through the reduction of combined sewer overflows into the River, the City of Edmonton constructed the sanitary tunnel which reduces combined sewer overflows to the River during extreme rainfall events and conveys dry weather flows to the waste water treatment facility.
- Although, due to the complex interconnections between the combined sewer system and the storm sewer system on 97 Avenue, there is still combined sewer overflow into the River during extreme rainfall events at the east end of 97 Avenue.
- Note that a City wide study has been completed on the sewer interconnections in which the Rossdale area was included. The study was completed in 2004 and is titled "Interconnection Control Strategy Rectification Assessment – Phase II." At this time, it is the City of Edmonton Drainage Services Department (Drainage Services) understanding that further analysis of the individual interconnections and a City wide project is required to prioritize and rectify the sewer interconnections.

2.2 Water

- Existing water distribution mains (less than 350 mm diameter) and water transmission mains (350 mm diameter and larger) are located along the roadways within the Plan Area, as shown on ***Figure 2.1***.
- There are existing hydrants throughout the Plan Area. The flow rate of these hydrants is unknown as EPCOR Rossdale Water Treatment does not have any up to date flow test data.
- As part of this project, EPCOR Rossdale Water Treatment checked the break history of the water mains in the Plan Area and determined that there are no mains that qualify for a renewal as of January 2009.

2.3 Power

- As shown on ***Figure 2.2***, there are existing aerial power facilities within all laneways, existing underground power duct lines within the majority of the laneways and roadways, and there are underground power cables along 104 Street, along the east side of the H.B.C. Res. site located south of 96 Avenue and along 96 Avenue east of Rossdale Road.

2.4 Gas

- As shown on ***Figure 2.2***, the majority of the existing gas facilities are located in the laneways and are medium pressure mains (100 kPa). Additionally, there are some intermediate pressure gas mains (550 kPa) in the laneway east of 105 Street and along 101 Street.

2.5 Telephone

- As shown on ***Figure 2.2***, there are existing aerial telephone facilities in all laneways and along 96 Avenue which cross 101 Street, existing telephone duct lines along 105 Street between the River and 96 Avenue, along 96 Avenue west of 105 Street, in the laneway west of 105 Street north of 96 Avenue and in the laneway east of 105 Street, and some existing direct buried telephone cables on the north and south sides of 97 Avenue.

2.6 Cable Television

- As shown on ***Figure 2.2***, there are existing aerial cable television facilities in all laneways and along 96 Avenue which cross 101 Street, cable television facilities in the TELUS duct line along 105 Street between the River and 96 Avenue, along 96 Avenue west of 105 Street and in the lane west of 105 Street north of 96 Avenue, and underground cable television facilities along 96 Avenue between the lane west of Rossdale Road and 101 Street.

3 UTILITY SERVICING CONCEPTUAL ASSESSMENT

Servicing requirements for the Plan Area include sanitary, storm, water, power, gas, telephone and cable television. Note that each separately titled lot must have its own service and must not drain onto private property.

All utility owners must coordinate their new installations and service abandonment/removal to ensure continuity of service to existing customers.

According to City administration, in any site redevelopment, it is a requirement that any impacted combined sewer services are separated into individual sanitary and storm services, and if practical that the stormwater flows from the Plan Area are removed from the combined sewers and discharged to the nearest storm sewer. It also requires that aerial utilities that require modifying (relocating or upgrading) be buried.

Note that erosion and sedimentation control measures meeting or exceeding the City of Edmonton Guidelines must be implemented during the construction of this project.

3.1 Drainage

- The analysis of the sanitary and storm servicing requirements for the Plan Area must be conducted using the latest published edition of the City of Edmonton Design and Construction Standards.
- In order to meet pollution control requirements of Alberta Environment, the City is trying to reduce the amount of combined sewer overflows into the River during extreme rainfall events. Combined sewer overflows in the Plan Area are caused by the complex interconnections between the combined sewer system and the storm sewer system along 97 Avenue. The sewers along 97 Avenue, during extreme rainfall events, outfalls into the River at the east end of 97 Avenue. Therefore, in order not to add to this overflow problem, Drainage Services has requested that any additional sanitary flows from the redeveloped Plan Area by-pass the combined sewer on 97 Avenue.
- Within the Plan Area, the sanitary sewer along 105 Street, the combined sewer along Rossdale Road and the combined sewer on 102 Street all connect to the combined sewer on 97 Avenue. The combined sewer on 105 Street south of 96 Avenue, the combined sewer on 101 Street, and the sanitary sewer on 104 Street already by-pass the combined sewer on 97 Avenue since they flow to the south and connect into the combined trunk sewer at the intersection of 95 Avenue and 101 Street. This combined trunk sewer eventually discharges into the sanitary tunnel that crosses the River.
- In order to service the entire Plan Area with new sanitary sewer which by-passes the combined sewer along 97 Avenue, new sanitary sewers along 105 Street, Rossdale Road and 102 Street between 97 Avenue and 96 Avenue, new sanitary sewers along 96 Avenue between 105 Street and 101 Street, and new sanitary sewers along 101 Street between 96 Avenue and 95 Avenue will be required. The new sanitary sewers will flow south and will discharge into the sanitary tunnel that crosses the River. Refer to ***Figure 2.1***.
- For each development that includes a commercial component, a sampling manhole on the sanitary service is required on private property.

- New storm sewers will be required along 105 Street and 104 Street to service buildings on the east side of 105 Street and the east side of 104 Street respectively. Additional storm sewers may be required to service other portions of the Plan Area – to be determined at the preliminary design stage.
- Any existing combined/sanitary sewers and storm sewers that are proposed to be utilized to service the Plan Area, will have to be evaluated with respect to capacity to accept post development flows at the preliminary design stage.
- Drainage Services requires that storm flows are removed from the combined sewer system as much as possible. If the roadways are reconstructed/realigned as part of the redevelopment project, then additional storm sewer should be installed and existing catchbasins should be removed from the combined sewer system and connected into the storm sewer system in order to separate the sanitary and storm flows.
- Due to the proximity of the Plan Area to the River, on-site stormwater management will not be required unless the existing combined sewer system or storm sewer system does not have capacity to convey the post development storm flows for the 1:5 year storm event.
- Stormwater Best Management Practices (BMPs) will be implemented at the detailed design stage to reduce water quality degradation prior to discharging to the River. Such BMPs may include:
  - Source control BMPs
  - Lot-level BMPs (surface ponding, rooftop storage, on-lot infiltration system etc.)
  - Conveyance system BMPs (bio-swales, grassed swales etc.)
  - End-of-pipe BMPs (ponds)
- Refer to ***Figure 2.1*** for the conceptual sanitary and storm sewer service points.
- With the discharge of the railroad right of way, the combined sewer in this right of way will need to be abandoned. New storm and sanitary sewers may be required to re-service existing customers that were connected to this combined sewer.
- If 104 Street is closed upon redevelopment, a utility right of way will be required along 104 Street for the existing sanitary sewer.
- If the road right of way north of Rossdale Road between 104 Street and 105 Street is closed upon redevelopment, a utility right of way will be required for the existing combined sewer.
- A utility right of way across the existing Bellamy Hill is required once Bellamy Hill is realigned for the existing combined sewer. If a utility right of way cannot occur, then the existing combined sewer will require relocating provided that an adequate alignment can be found.
- Storm catchbasins will require relocating along the new curb alignment on 97 Avenue and at all intersections within the Plan Area. Storm sewers may also require relocating due to the road alignment change of 97 Avenue – to be assessed at the preliminary design stage.
- Storm catchbasins may require abandonment upon realignment of Bellamy Hill.
- All unused existing combined/sanitary and storm services must be abandoned upon redevelopment.

3.2 Water

- The analysis of the water servicing requirements must be conducted in conjunction with EPCOR Rossdale Water Treatment.
- Since there are existing distribution mains along the majority of the roadways, most proposed building pockets will be serviceable with water without new watermain installations except along 102 Street between 97 Avenue and 96 Avenue to service the proposed buildings on the west side of 102 Street. Refer to ***Figure 2.1***.
- EPCOR Rossdale Water Treatment indicated that in general the water pressure within the Plan Area is greater than 550 kPa, therefore, pressure reducing valves will be required on private property for each water service. The water pressures are high within the Plan Area due to its close proximity to the Rossdale Water Treatment Plant.
- The on-street fire flow protection rate within the Plan Area is expected to be 300 L/s based on the current Neighbourhood Concept Plan. Hydrant testing will be required to determine the existing flow rates.
- The hydrant spacing is to be 90 m, as per EPCOR Rossdale Water Treatment. Based on the location of the existing hydrants, additional hydrants are needed to meet the 90 m spacing requirement.
- All services and hydrants must be connected into distribution watermains. Connection into transmission watermains is not allowed.
- Cast iron distribution watermains with a diameter of 150 mm will require upsizing to provide on-street fire flow protection. As shown on ***Figure 2.1***, these watermains are located along:
- 105 Street between Rossdale/River Valley Road and 97 Avenue
- Rossdale Road between 96 Avenue and 97 Avenue
- 97 Avenue between Rossdale Road and 102 Street
- Additional main line valves may be required to provide better distribution system operations. This requirement is to be determined at the preliminary design stage.
- Refer to ***Figure 2.1*** for the conceptual water service points.
- If 104 Street is closed upon redevelopment, a utility right of way will be required for the existing watermain.

- If the road right of way north of Rossdale Road between 105 Street and 104 Street is closed upon redevelopment, a utility right of way will be required for the existing watermain.
- Watermains may also require relocating due to the road alignment change of 96 Avenue – to be determined at the preliminary design stage.
- All unused existing water services must be abandoned upon redevelopment.

3.3 Power

- Refer to ***Figure 2.2.***
- If the laneways within the Plan Area are closed upon redevelopment, utility right of ways will be required for the existing power facilities.
- If the road right of way along the north side of River Valley/Rossdale Road is closed upon redevelopment, a utility right of way is required for the existing power duct lines and aerial facilities.
- A utility right of way across and along the existing Bellamy Hill is required once Bellamy Hill is realigned for the existing power duct lines and aerial facilities. If a utility right of way cannot occur, then the existing power duct lines and aerial facilities will require relocating provided that an adequate alignment can be found.
- Note that the above information concerning the conceptual power servicing assessment is based on Associated Engineering's knowledge of power servicing and requires confirmation with EPCOR Power Generation Site.

3.4 Gas

- Refer to ***Figure 2.2.***
- The existing gas system within the Plan Area does not have capacity to service the proposed developments, therefore, ATCO Gas will install a new intermediate pressure gas system to service the Plan Area. The new intermediate pressure gas system will tie into the existing intermediate pressure gas main at the intersection of 101 Street and 96 Avenue. ATCO Gas will incur the cost for the new gas pressure system within public property.
- ATCO Gas requires a suitable alignment for the new gas pressure system. The gas alignment will be determined at the preliminary design stage and once a phasing plan has been determined.
- Each building (separately titled lot) will require a separate gas service. The developer is responsible for the cost of a new gas service.
- If the laneways within the Plan Area are closed upon redevelopment, utility right of ways will be required for the existing gas facilities.
- If the road right of way along the north side of River Valley/Rossdale Road is closed upon redevelopment, a utility right of way will be required for the existing gas main.
- A utility right of way across the existing Bellamy Hill is required once Bellamy Hill is realigned for the existing gas main. If a utility right of way cannot occur, then the existing gas main will require relocating provided that an adequate alignment can be found.

3.5 Telephone

- Refer to ***Figure 2.2.***
- TELUS indicated that the existing underground and aerial telephone facilities within the Plan Area have capacity to service the proposed developments.
- In order to service the proposed development between Rossdale Road and 102 Street and between 96 Avenue and 97 Avenue, new direct buried telephone line will require extending along Rossdale Road and through a utility easement within the proposed development. The new direct buried telephone line will connect into the existing telephone vault located on the southeast corner of 97 Avenue and Rossdale Road. TELUS will incur the cost for the new direct buried telephone line within public property.
- Each building (separately titled lot) will require a separate telephone service. The developer is responsible for the cost of a new telephone service.
- If the laneways within the Plan Area are closed upon redevelopment, utility right of ways will be required for the existing telephone facilities.
- If the road right of way along the north side of River Valley/Rossdale Road is closed upon redevelopment, a utility right of way will be required for existing aerial telephone facilities.
- A utility right of way across the existing Bellamy Hill is required once Bellamy Hill is realigned for the existing aerial telephone facilities. If a utility right of way cannot occur, then the existing aerial telephone facilities will require relocating provided that an adequate alignment can be found.
- As per TELUS, the aerial telephone facilities in the laneway may be buried upon redevelopment. The cost to bury the aerial telephone facilities and the cost to install new underground telephone facilities and re-service existing customers will be borne by the developer.

3.6 Cable Television

- Refer to ***Figure 2.2.***
- Shaw Cable indicated that if the existing underground and aerial cable television facilities within the Plan Area require upgrading to service the proposed developments, Shaw Cable will be responsible for these upgrades.
- New cable television infrastructure will be required to service the proposed development between Rossdale Road and 102 Street and between 96 Avenue and 97 Avenue. The alignment of the new cable television infrastructure will be determined by Shaw Cable. The alignment will most likely be from the northwest corner of 101 Street and 96 Avenue. Shaw Cable will incur the cost for

the new cable television infrastructure within public property.
- Currently, there are no upgrades scheduled within the Plan Area by Shaw Cable.
- Each building (separately titled lot) will require a separate cable television service. The developer is responsible for the cost of a new cable television service.
- If the laneways within the Plan Area are closed upon redevelopment, utility right of ways will be required for the existing cable television facilities.
- If the road right of way along the north side of River Valley/Rossdale Road is closed upon redevelopment, a utility right of way will be required for existing aerial cable television facilities.
- A utility right of way across the existing Bellamy Hill is required once Bellamy Hill is realigned for the existing aerial cable television facilities. If a utility right of way cannot occur, then the existing aerial cable television facilities will require relocating provided that an adequate alignment can be found.
- As per Shaw Cable, the aerial cable television facilities in the laneway may be buried upon redevelopment. The cost to bury the aerial cable television facilities and the cost to install new underground cable television facilities and re-service existing customers will be borne by the developer.

4 Closure

This assessment was completed to determine the effects of redevelopment on existing utilities and new utility installations due to proposed land use change and increase in population. Further assessment is required once more detailed project information is known such as a site plan indicating the number of units per building and the proposed Plan Area phasing plan.

Figure 2.1: West Rossdale - Deep Utilities Conceptual Servicing and Utility Conflicts March 23, 2009

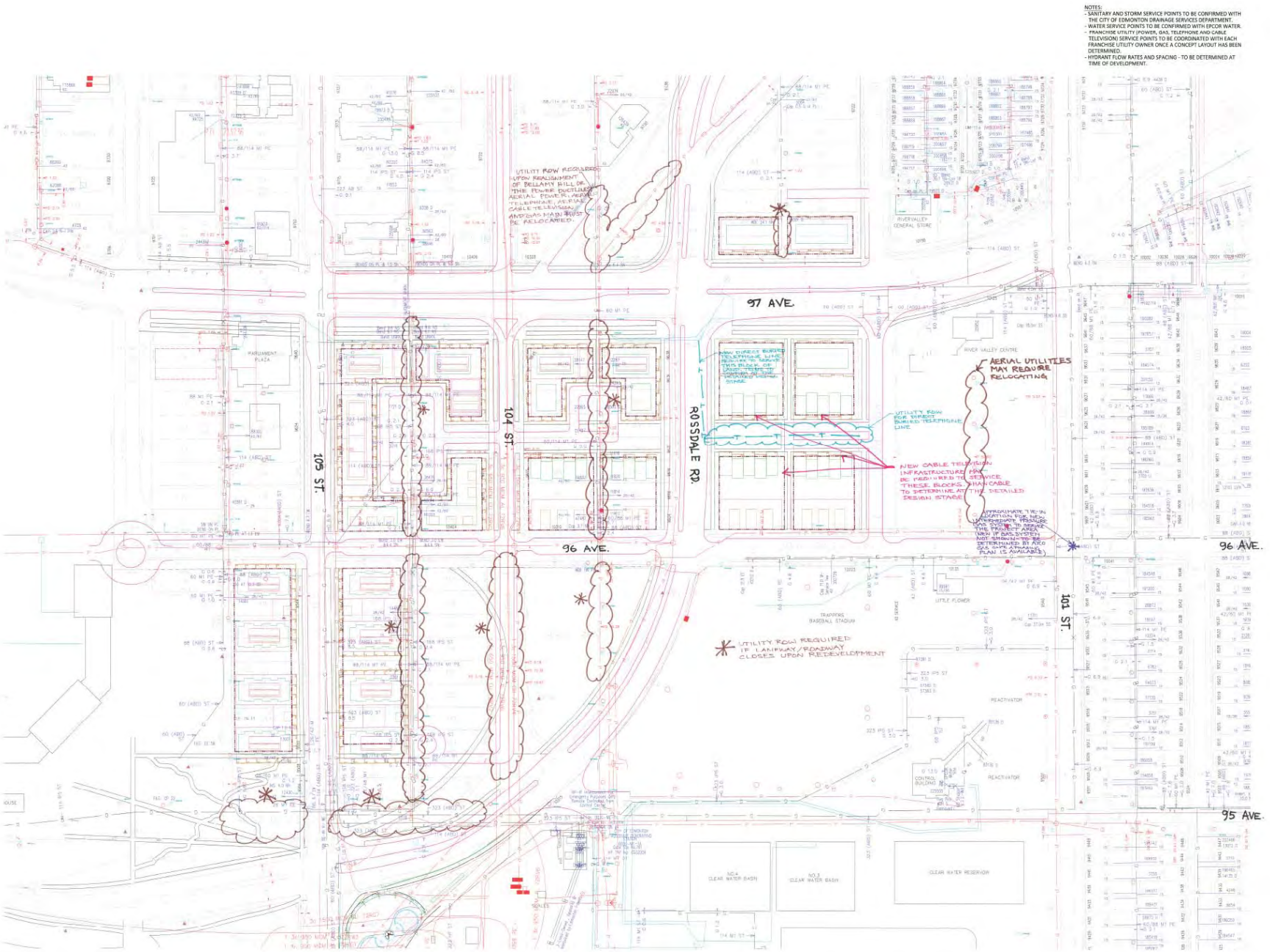


Figure 2.2: West Rossdale Franchise Utilities Conceptual Servicing and Utility Conflicts
March 23, 2009

Subsequent to the December 2, 2009 meeting with the Private Development and Strategic Planning groups of Drainage Services on the most recent West Rossdale Urban Design Plan, a more detailed Conceptual Sanitary System Analysis for the area covered by the proposed West Rossdale redevelopment area was requested.

CONCEPTUAL STORM SEWER ANALYSIS

Existing Storm Sewers

The following assumptions were used in the assessment of the existing storm sewers within the West Rossdale Urban Design Plan Area.

- The calculations are based on the current edition of the City of Edmonton Design and Construction Standards and Guidelines.
- The capacities of the existing sewers were calculated for non-surcharged conditions.
- The existing buildings do not have weeping tile drains to storm sewers

The existing storm sewers, within the West Rossdale Urban Design Plan area, as identified on the City of Edmonton cadastral base and record plans are described below. Also indicated are the year the storm sewers were installed, the range of sizes and capacities for each of the storm sewers and the contribution area that discharges to the storm sewer.

- 97 Avenue North Storm Sewer (106 Street to Grit Chamber / River Discharge) – Installed in 1935. Ranges in size from 375 mm dia., starting at 106 Street, to 600mm dia. at the discharge. Flow capacity ranges from 0.494 m3/s to 0.525 m3/s. This storm sewer collects street drainage from the west bound lanes of 97 Avenue. A 200 mm dia. storm sewer connects at 103 Street from the north.

- 97 Avenue Central Storm Sewer (From west of 106 Street to Grit Chamber / River Discharge) – Installed in 1950. Ranges in size from 1200 mm dia., at 106 Street, to 1275 mm dia. at the discharge to the grit chamber and river. Flow capacity of the storm sewer ranges from 3.0 m3/s to 4.8 m3/s. This storm sewer carries storm flows from west of 106 Street. A 750 mm dia. connects at 102 Street from the north.

- 97 Avenue South Storm Sewer (105 Street to 102 Street) – Installed in 1970. Ranges from 375 mm dia., at 105 Street, to 600mm dia. at the discharge to the 1350 mm storm tunnel just east of 102 Street. Flow capacity of the storm sewer ranges from 0.434 m3/s to 1.596 m3/s. This storm sewer collects street drainage from the east bound lanes of 97 Avenue. A 375 mm dia. storm sewer connects at 103 Street from the south.

- 103 Street Storm Sewer (96 Avenue to 97 Avenue) – Installed in 1933 and is 375mm dia. from 96 Avenue to the discharge into the 97 Avenue South Trunk Sewer at 103 Street. The capacity of the storm sewer is 0.088 m3/s. This storm sewer collects street drainage from 103 Street between 96 Avenue and 97 Avenue.

- 96 Avenue Storm Sewer (105 Street to 103 Street) – Installed in 1952. Ranges from 200 mm dia. at 105 Street to 250 mm dia. at the discharge the 103 Street storm sewer. Flow capacity ranges from 0.167 m3/s at the upper (steeper) end to 0.059 m3/s at the lower end. This storm sewer collects street drainage from 96 Avenue between 105 Street and 103 Street.

- Rossdale Road Storm Sewer (104 Street to 96 Avenue) – Installed in 1945 and is 250 mm dia. from the intersection of 104 Street to the discharge to the 103 Street storm sewer at 96 Avenue. Flow capacity of the storm sewer is 0.036 m3/s. This storm sewer collects street drainage from Rossdale Road south of 96 Avenue.

- 102 Street Storm Sewer (96 Avenue to 97 Avenue) – Installed in 1994 and is 600mm dia. from 96 Avenue to the discharge into the 1350 mm tunnel just east of 102 Street on 97 Avenue. Flow capacity of the storm sewer is 0.363 m3/s. This storm sewer collects street drainage from 96 Avenue.

2 Pre and Post Development On-Site Storm Water Runoff and Release Rates

A summary of the pre and post-development runoff rates for the Development Parcels C to G and H to I, as indicated in Figure 9 from the Urban Design Plan, are presented below in Tables 2A and 2B respectively. A breakout of the predevelopment runoff rate and the post development release rate for each building pocket within the Development Parcels C to G and the pre and post-development runoff rates for Parcels H and I are presented on the attached Tables 2.1 and 2.2.

Parcels C to G currently consist of a mix of single family homes, small apartments and grassed open space. Parcel H currently consists of grassed open space and roadway (Bellamy Hill). Parcel I is predominantly open space and some roadway (104 Street).

Upon redevelopment Parcels C to G will consist of Low to Medium Rise apartments and Town homes. Parcel H and I will be redeveloped into park space with trails and local roads.

For all storm events the predevelopment runoff from Parcel C drains to 105 Street; from Parcel I drains to Rossdale Road; from Parcels D, E, and F drains to 96 Avenue; and from Parcels G and H drains to 97 Avenue. Runoff is captured by the existing storm sewer system until its capacity is reached then the excess flows travel along the major overland flow path as described below in Section 5.

The following assumptions were used in the calculations of the runoff and release reates within the West Rossdale Urban Design Plan Area.

- The calculated storm water runoff rates are based on the current edition of the City of Edmonton Design and Construction Standards and Guidelines.
- The existing buildings do not have weeping tile drains to storm sewers.
- Future buildings will capture and store up to the 1:100 yr Storm event with a release rate of 35 L/s/ha.

The runoff rates are calculated using a rainfall intensity based on an 8 minute time of concentration. The Average runoff coefficient is calculated on a C factor of 0.4 for existing development and 0.9 for future development.

Table 2A - Pre and Post-Development On-Site Runoff and Release Rates - Parcels C to G

PARCEL	AREA	PREDEVELOPMENT				POST DEVELOPMENT		
	Ha	RUNOFF COEFF	RUNOFF RATE (m3/s)			CONTROLLED RELEASE RATE (For storm events up to 1:100 Yr)	RUNOFF FOR 1:200 yr STORM EVENT (Represents flows in excess of on-site 1:100 Yr storage capacity)	
			1:5 Yr	1:100 Yr	1:200 Yr	m^3/s	RUNOFF COEFF	RUNOFF RATE
C	1.261	0.4	0.107	0.205	0.227	0.044	0.9	0.050
D	1.193	0.4	0.102	0.194	0.215	0.042	0.9	0.048
E	1.188	0.4	0.101	0.193	0.214	0.042	0.9	0.048
F	1.179	0.4	0.100	0.191	0.212	0.041	0.9	0.047
G	0.811	0.4	0.069	0.132	0.146	0.028	0.9	0.032
		TOTAL	0.479	0.915	1.014	0.197		0.225

As indicated in the above table the amount of post development runoff from the building parcels is significantly reduced from the predevelopment conditions due to the control of runoff with on-site storage.

Post-development runoff from Parcels C to G will discharge to a new larger capacity storm sewer system as discussed in Section 3.

Table 2B - Pre and Post-Development On-Site Runoff Rates - Parcels H & I

PARCEL	AREA	PREDEVELOPMENT				POST-DEVELOPMENT			
		RUNOFF COEFF	RUNOFF RATE (m3/s)			RUNOFF COEFF	RUNOFF RATE (m3/s)		
			1:5 Yr	1:100 Yr	1:200 Yr		1:5 Yr	1:100 Yr	1:200 Yr
H	0.360	0.67	0.051	0.098	0.109	0.2	0.015	0.029	0.032
I	1.918	0.34	0.138	0.264	0.293	0.2	0.082	0.156	0.173
		TOTAL	0.189	0.362	0.402	TOTAL	0.097	0.185	0.205

As indicated in the above table the amount of post development runoff from the future park sites reduced from the predevelopment conditions.

Post-development runoff from Parcels H and I will discharge overland to nearby roads to be capture by the storm sewers.

3 On-Site Storage and Discharge

With the redevelopment of the West Rossdale Area runoff from all storm events is to be directed to on-site storage. The storage is calculated based on the capture of the runoff from a fully developed site with a coefficient of 0.9 for a 1:100 Yr storm event with a release rate of 35 L/s/ha.

A summary of the on-site storage for each Development Parcel C to G is indicated in Table 3 below. The storage requirement for each of the building pockets within each of the parcels in included on the attached Table 3.1.

The following assumptions were used in the calculation of the On-site storage requirement for each parcel within the West Rossdale Urban Design Plan Area.

- The calculated storm water runoff rates are based on the current edition of the City of Edmonton Design and Construction Standards and Guidelines.
- Building parcels will capture and store up to the 1:100 yr Storm event with a release rate of 35 L/s/ha.
- Flows in excess of the 1:100 year storm event will flow along the major overland storm routes.

Table 3 - On-Site Storage and Discharge Rate Per Parcel

PARCEL	AREA	RUNOFF COEFFICIENT	RELEASE RATE	ON-SITE STORAGE	DISCHARGE RATE
	Ha		m3/s/ha	m3	m3/s
C	1.261	0.9	0.035	327.6	0.044
D	1.193	0.9	0.035	309.8	0.042
E	1.188	0.9	0.035	308.6	0.042
F	1.179	0.9	0.035	305.8	0.041
G	0.811	0.9	0.035	210.4	0.028
			TOTAL ON-SITE STORAGE	1462.2	

The storm service for each of the buildings in Parcel C will discharge to a new storm sewer along 105 Street. This storm sewer runs south along 105 Street to the south end of Parcel C east to connect to south end of the storm sewer on Rossdale Road.

Storm services for the north buildings on Parcels D, E and F will be extended from existing manholes on the 97 Avenue South Storm Sewer.

Storm service to the remaining buildings on the west ½ of Parcel D will be to a new storm sewer along 105 Street which will discharge to the 96 Avenue storm sewer.

Storm services to the south buildings on Parcels D and E will discharge to the storm sewer on 96 Avenue.

Storm services to buildings from the east ½ of Parcel D and the west ½ of Parcel E will discharge to a new storm sewer on 104 Street.

Storm services to buildings from the east ½ of Parcel E and the west ½ of Parcel F will discharge to the storm sewer on 103 Street.

Storm services to buildings from the east ½ of Parcel F will discharge to the existing storm sewer on 102 Street.

4 Road Runoff Calculations

The streets and avenues within the West Rossdale area are to be reconstructed to incorporate the pedestrian friendly elements identified in the Urban Design Plan.

With the reconstruction of the roadways as per the Plan the amount of hard surface area will increase. This will increase the amount of runoff from all storm events. The runoff rates are calculated using a rainfall intensity based on an 8 minute time of concentration. The Average runoff coefficient is calculated on a C factor of 0.9 for hard surfaces and 0.2 for soft surfaces.

A summary of the pre and post-development runoff rates are presented below in Table 4A.

Table 4A - Pre and Post Roadway Runoff

ROAD SEGMENT	PREDEVELOPMENT					POST-DEVELOPMENT				
	AREA	AVERAGE RUNOFF COEFF	RUNOFF RATE 1:5 Yr	RUNOFF RATE 1:100 Yr	RUNOFF RATE 1:200 Yr	AREA	AVERAGE RUNOFF COEFF	RUNOFF RATE 1:5 Yr	RUNOFF RATE 1:100 Yr	RUNOFF RATE 1:200 Yr
105 Street 1	0.3766	0.603	0.048	0.092	0.102	0.3766	0.661	0.053	0.101	0.112
105 Street 2	0.4739	0.632	0.064	0.121	0.135	0.5363	0.633	0.072	0.138	0.153
104 Street	0.3645	0.623	0.048	0.092	0.102	0.3645	0.632	0.049	0.093	0.104
103 Street	0.3660	0.774	0.060	0.115	0.127	0.5325	0.782	0.089	0.169	0.187
Rossdale Rd 1	0.4387	0.710	0.063	0.121	0.134	0.6750	0.807	0.111	0.211	0.234
Rossdale Rd 2	0.4550	0.760	0.074	0.140	0.156	0.4550	0.750	0.073	0.138	0.154
102 Street	0.3660	0.200	0.016	0.030	0.033	0.3660	0.544	0.042	0.081	0.090
96 Avenue	1.1664	0.563	0.140	0.268	0.296	1.1664	0.900	0.224	0.424	0.472
		TOTAL	0.513	0.979	1.085		**TOTAL**	0.713	1.355	1.506

The increase in hard surface with the widening of Rossdale Road and 103 Street to accommodate southbound traffic and wider sidewalks along the other roads has increased the runoff rate from the roads by approximately 40%.

5 Proposed Storm Sewers

The discharge from all buildings in Parcel C, the surface runoff from Parcel I and the Road Runoff from 105 Street (2) south of 96 Avenue will discharge into the Rossdale Road Storm Sewer. Additional flows from Rossdale Road will enter the system before discharging to the 103 Street Storm Sewer. The collected flows are calculated to be approximately 0.295m3/s not including unknown flows from Telus Field and the EPCOR yard. The existing capacity of the Rossdale Road Storm Sewer is 0.036m3/s. Therefore a new storm sewer ranging in size from 300 mm to 600 mm will be required.

The 96 Avenue Storm Sewer will collect all of the discharge from the south and west building pockets plus the road runoff from 105 Street (1), 104 Street and 96 Avenue between 106 Street to 103 Street. The collected flows are calculated to be approximately 0.193m3/s. The capacity of the existing 96 Avenue Storm Sewer is 0.059 m3/s. Therefore a new storm sewer ranging in size from 300 mm to 525 mm will be required.

The 103 Street Storm Sewer collects all of the flows from the Rossdale Road Storm Sewer, the 96 Avenue Storm Sewer and the building pockets from the east ½ of Parcel E and the west ½ of Parcel F. The collected flows are calculated to be approximately 0.707m3/s. The capacity of the existing 103 Street Storm Sewer is 0.088m3/s. Therefore a new storm sewer 750 mm in dia. will be required.

The east ½ of Parcel F will connect to the existing 102 Street Storm Sewer at 2 locations. The total discharge entering this storm sewer is calculated to be approximately 0.015m3/s. A new storm sewer will not be required.

The west ½ of Parcel G will connect to the existing 103 Street Storm Sewer (North of 97 Avenue) at 2 locations. The total discharge entering this storm sewer is calculated to be approximately 0.014m3/s. A new storm sewer will not be required.

The east ½ of Parcel G will connect to the existing 102 Street Storm Sewer (North of 97 Street) at 2 locations. The total discharge entering this storm sewer is calculated to be approximately 0.014m3/s. A new storm sewer will not be required.

6 Major Overland Flow Routes

The post-development major overland flow routes will not change from the existing major overland flow routes. These are provided on Plan 4.6 in the "Rossdale Area Drainage Study - Dry and Wet Weather Flow Analysis Report".

The simplified assessment of the Major Overland Flow Routes with the West Rossdale Area is:

- All roads immediately north of 97 Avenue drain to 97 Avenue.
- 97 Avenue drains east to 100 Street
- All roads immediately north of 96 Avenue drain to 96 Avenue.
- 96 Avenue drains east to 100 Street
- Rossdale Road drains east then north to 96 Avenue at 103 Street.
- Intersection of Rossdale Road / River Road and 105 Street is a high point for Major Overland Flows
- All roads immediately north of Rossdale Road drain to Rossdale Road.
- 105 Street from Walterdale Bridge to 95 Avenue drains north.
- Legislature parking lots do not discharge to West Rossdale Area. Surface drainage is directed southwest toward River Road.

The limited capacity of the existing West Rossdale storm sewers results in the vast majority of runoff to travel overland during many storm events. Therefore we have maintained 1:5 Year event flows in Tables 6A and 6B below. We have included the 1:200 year event to identify the major overland flow rate during extreme events. This will allow for additional runoff from the development parcels once the on-site storage system is at capacity.

Table 6A - Pre and Post Major Overland Flows South of 97 Avenue

DESCRIPTION	PREDEVELOPMENT RUNOFF			POST DEVLEOPMENT RUNOFF		
	RUNOFF RATE			RUNOFF RATE		
	1:5 Yr	1:100 Yr	1:200 Yr	1:5 Yr	1:100 Yr	1:200 Yr
Parcel C	0.107	0.205	0.227	0.000	0.000	0.050
105 Street (2)	0.064	0.121	0.135	0.000	0.138	0.153
Parcel I	0.138	0.264	0.293	0.082	0.156	0.173
Rossdale Road (2)	0.074	0.140	0.156	0.000	0.138	0.154
Rossdale Road (1)	0.063	0.121	0.134	0.000	0.211	0.234
105 Street (1)	0.048	0.092	0.102	0.000	0.101	0.112
Parcel D	0.102	0.194	0.215	0.000	0.000	0.048
104 Street	0.048	0.092	0.102	0.000	0.093	0.104
Lot E	0.101	0.193	0.214	0.000	0.000	0.048
103 Street	0.060	0.115	0.127	0.000	0.169	0.187
96 Avenue	0.140	0.268	0.296	0.000	0.424	0.472
Parcel F	0.100	0.191	0.212	0.000	0.000	0.047
102 Street	0.016	0.030	0.033	0.000	0.081	0.090
Total	1.061	2.026	2.246	0.082	1.511	1.872

Table 6B - Pre and Post Major Overland Flows North of 97 Avenue

DESCRIPTION	PREDEVELOPMENT RUNOFF			POST DEVLEOPMENT RUNOFF		
	RUNOFF RATE			RUNOFF RATE		
	1:5 Yr	1:100 Yr	1:200 Yr	1:5 Yr	1:100 Yr	1:200 Yr
Parcel G	0.069	0.132	0.146	0.000	0.000	0.032
Parcel H	0.051	0.098	0.109	0.015	0.029	0.032
Total	0.120	0.230	0.255	0.015	0.029	0.064

CONCEPTUAL SANITARY SYSTEMS ANALYSIS

1 Land Use Populations

Updated the previous overall combined/sanitary sewer system analysis by using the current Urban Design Plan (September 28, 2009) to determine the proposed land uses and dwelling densities for each Area. The land use and dwelling densities for each Area are as follows:

Area	Land Use	Dwelling Densities (units/ha)	Lot Area (ha)	Estimated Design Population[1]
C	2-6 Storey Residential Buildings including Work Live	450	1.26 (excludes 105 Street)	1232
D	4-12 Storey Residential Buildings including 2100m^2 of commercial space	430	1.19	1068
E	4-12 Storey Residential Buildings, 2.5 Storey Residential Row Housing, including Work Live and 2000m^2 of commercial space	430	1.19	1142
F	4-6 Storey Residential Buildings and 2.5 Storey Residential Row Housing	265	1.18	840
G	4-6 Storey Residential Buildings and 2.5 Storey Residential Row Housing	392	0.81	776

Notes:

1. The design population for the residential land uses was calculated by using Table A1 in Section 8.14 of the latest published edition of the City of Edmonton Design and Construction Standards. RA9 zoning (High Rise Apartment) was used for buildings between 6-12 Storeys, RA8 zoning (Medium Rise Apartment) was used for buildings between 2-6 Storeys, and RF5 zoning (Row Housing) was used for row housing. The densities for RA9, RA8 and RF5 from Table A1 are 1.89 people/unit, 2.17 people/unit and 3.17 people/unit respectively.

2 Wastewater Generation

The sanitary generation rates for the redevelopment area based on the proposed land uses and dwelling densities mentioned above were calculated based on the estimated design population. At this conceptual design stage, we assumed that the wastewater generated from the work live units is equivalent to the wastewater generated from the residential units. We also assumed that the Dwelling Densities in the above table include residential and work live units. The commercial sanitary generation rates were based on the average daily rate of flow per area of development. Since the exact type of commercial developments are unknown at this time, the average value of the applicable "average flow generation" (approximately 91 m^3/ha/day) found in Table A3 of the City of Edmonton Design and Construction Standards was used.

The following formulas were used to calculate the residential and commercial sanitary generation rates:

Peak Dry Weather Flow for Residential:

$$Q_{PDW} = \frac{G \times P \times PF}{86{,}400} \text{ where,}$$

Q_{PDW} = Peak Dry-Weather Flow Rate (L/s)

G = Per Capita Daily Sewage Flow Generation $(300L/day/person)$

P = Design Contributing Population

PF = Peaking Factor (shall be larger than 1.5) and,

$PF = 2.6P_{pf}^{-0.1}$ where,

P_{pf} = Design Contributing Population in 1,000's

Peak Dry Weather Flow for Commercial:

$Q_{PDW} = PF \times Q_{AVG}$, where

Q_{PDW} = Peak Dry-Weather Flow Rate (L/s)

$Q_{AVG} = (Area \times Q_{flow}) \times 1{,}000$, where

Q_{AVG} = Average Dry Weather Flow (L/s)

$Area$ = Development Area (ha)

Q_{flow} = Average Flow Generation $(m^3/s/ha)$

$PF = 10 \times Q_{AVG}^{-0.45}$, where

PF = Peaking Factor (max.=25 and min.=2.5)

Wet Weather Flow for Residential and Commercial:

An extraneous flow allowance was applied to all sanitary wastewater calculations to account for the wet weather inflow water from surface runoff into manholes and infiltration of groundwater seepage into leaky pipes and manholes. The following infiltration allowance was applied to the total area of development regardless of land use classification:

$$I/I_{ALLOW} = 0.28L/s/ha$$

Peak Wet Weather Flow for Residential and Commercial:

$Q_{PWW} = Q_{PDW} + 0.28L/s/ha \times Area$ where,

Q_{PWW} = Peak Wet-Weather Flow Rate (L/s)

$Area$ = Total area susceptible to wet-weather flow (ha)

3 Proposed Sanitary Sewers and Servicing

As per the previous analysis of the combined/sanitary sewer, Drainage Services requests that sanitary and storm flows be separated where possible and that all existing sanitary services that discharge into the combined sewer along 97 Avenue be removed and redirected into the sanitary tunnel on 101 Street and just south of 94 Avenue. Note that during major rainfall events the combined sewer along 97 Avenue will overflow into the river.

It is assumed that the combined sewer in the railway right-of-way and the existing service in the lane west of 105 Street will be abandoned as part of this redevelopment.

In order to provide sanitary sewer service to the redevelopment parcels and to not direct additional flows to the combined sewer on 97 Avenue we have proposed new sanitary sewers along 105 Street between 96 Avenue and 97 Avenue to service the west half of Parcel D; along 103 Street and 102 Street between 96 Avenue and 97 Avenue to service the east half of Parcel E and Parcel F; along 103 Street and 102 Street between north of 97 Avenue to service Parcel G; along 96 Avenue between 105 Street and 101 Street and new sanitary sewer along 101 Street between 96 Avenue and the lane south of 94 Avenue to convey sanitary flows from the redevelopment area to the existing sanitary tunnel.

Parcel C, the east half of Parcel D and the west half of Parcel E may be serviced from existing combined/sanitary sewers along 105 Street, south of 96 Avenue, and 104 Street, south of 97 Avenue, which currently discharge into a combined sewer that runs east from 105 Street to 101 Street along "95 Avenue" between Telus Field and the Rossdale power and water plants and then south along 101 Street to the tunnel.

However, we recommend that new sanitary sewers along 105 Street between south of 96 Avenue and along 104 Street between 96 Avenue and 97 Avenue be installed to service Lot C, the east half of Lot D and the west half of Lot E in order completely separate sanitary flows from storm flows. Due to existing topography, the new sanitary sewer that we are proposing along 105 Street to service Parcel C, between Rossdale Road and 96 Avenue, may require a lift station to pump flows into the proposed sanitary sewer along 96 Avenue. Refer to the attached sketch for the recommended conceptual sanitary sewer system.

In discussions with Drainage Services Strategic Planning it was discussed that the four buildings proposed for Parcel G may be serviced with sanitary sewer via the combined sewers on 103 Street and 102 Street north of 97 Avenue since Parcel G is only anticipated to generate a small amount of sanitary flow (approximate peak dry flow of 7.2 L/s). However, since the combined sewers on 103 Street and 102 Street discharge into the combined sewer on 97 Avenue, which may overflow into the river during major storm events, we have developed an option showing the installation of new sanitary sewers along 103 Street and 102 Street crossing 97 Avenue to convey flows from Parcel G into the proposed new sanitary sewer on 96 Avenue.

We recommend upgrading and converting the existing combined sewer along 101 Street, from 96 Avenue to the tunnel located south of 94 Avenue, to a minimum 375 mm sanitary sewer. This size is based on a minimum pipe slope of 0.15%. In conjunction with this recommendation we are also recommending that storm sewers be extended north and south of 96 Avenue along 100 Street and 101A Street to allow for the disconnection of catch basins from the combined sewer.

Additionally we recommend that the existing catch basins located midblock on 101 Street between 95 Avenue and 94 Avenue be disconnected from the combined sewer and connected to the existing 450 mm storm sewer.

Flows from existing development on the west side of 105 Street north of 96 Avenue entering the proposed sanitary sewer at MH 14 and the flows from the existing development east of 101 Street entering the combined sewer at the proposed MH 2 from the east must be determined at the preliminary design stage. This additional combined/sanitary flow may require an increase to the proposed 375 mm diameter sanitary sewer between MH 4 and the entry into the Tunnel.

An appropriate alignment for the proposed sanitary sewer is to be determined at the preliminary design stage. All sanitary sewer sizes and slopes must also be confirmed at the preliminary design stage. For conceptual purposes we assumed that all sanitary sewers will be installed at the minimum slope as outlined in the City of Edmonton Design and Construction Standards.

4 Conceptual Cost Estimate

The estimated cost for construction of the sanitary sewer system is as follows:

Underground works	$1,035,000	
Lift Station (Wet well only)	500,000	* Add $2,500,000 for a wet well / drywell lift station.
Service Reconnections (101 Street)	100,000	
Surface Restoration (101 Street)	105,000	
Construction Total	$1,740,000	
Contingency Allowance (50%)	870,000	
Sub-Total	$2,610,000	
Engineering (15%)	390,000	
Project Total	$3,000,000	

Please note that we have assumed that the sanitary sewer will be installed at the same time as the surface improvements are completed. Therefore no costs have been included for surface improvements within the West Rossdale Urban Design Plan Area.

Associated Engineering

ASSOCIATED ENGINEERING ALBERTA LTD.
MUNICIPAL ENGINEERING GROUP
SANITARY SEWER DESIGN CHART
RATIONAL METHOD FOR CIRCULAR PIPE
SYSTEM HYDRAULIC ANALYSIS - DECEMBER 2009

Per Capita Flow Generation	300 L/c/day
Peaking Factor	Harmons
General Infiltration	0.28 L/s/ha
Manning's n for PVC Pipe	0.013

Residential
PF = 2.6 (P/1000)^-0.1
Commercial
PF = 10 x Qavg^-0.45

Q flow = 0.000105324

Design Flow Residential = F x 300 x PF / 86,400

Design Flow Commercier = PF x Qavg where Qavg = Qflow x Floor Area

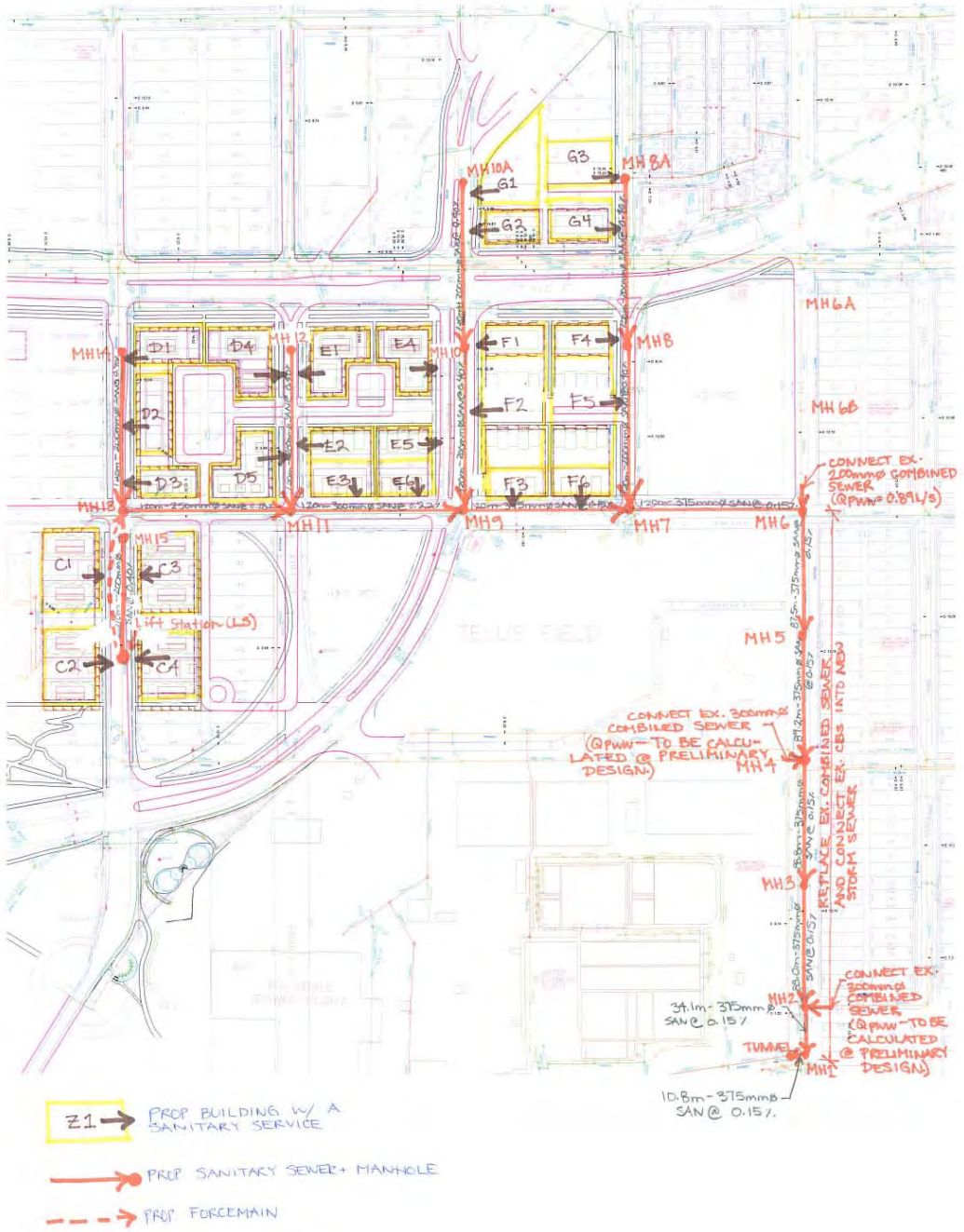
CLIENT City of Edmonton
PROJECT West Rossdale
PROJECT NO. 20063682.E.03.00

DESIGNED BY HH
PAGE 1 OF 1

DATE DESIGN/
CHECK 22-Dec-09

From MH	To MH	Population MF Residential	Total Population MF Residential	Peaking Factor	Design Flow MF Residential	Added Area (ha) Infiltration Area	Total Area (ha) Infiltration Area	Q I/I	Commercial: Floor Area	Commercial: Accumulative Floor Area	Commercial: Qavg	Commercial: Peaking Factor	Commercial: Design Flow Commercial	Total	Pipe: Length	Pipe: Diameter	Pipe: Type	Pipe: Slope	Pipe: Q_{cap}	Pipe: 86% Q_{cap}	Pipe: V	Available Capacity
			P	PF	L/s	ha	ha	L/s	m^2	m^2	L/s	PF		L/s	m	mm		%	L/s	L/s	m/s	L/s
MH 15	LS	1232	1232	2.55	10.89	1.501	1.501	0.420	0.00	0.00	0.00	0.00	0.00	11.31	90.00	200	PVC	0.40	20.74	17.8	0.66	6.5
LS	MH 13													11.31	120.00	100	HDPE					
MH 14	MH 13	534	534	2.77	5.13	1.248	1.248	0.350	1050.00	1050.00	0.11	25.00	2.76	8.25	120.00	200	PVC	0.40	20.74	17.8	0.66	9.6
MH 13	MH 11	0	1766	2.46	15.06	0.291	3.041	0.851	0.00	1050.00	0.11	25.00	2.76	18.68	120.00	250	PVC	0.28	31.47	27.1	0.64	8.4
MH 12	MH 11	962	962	2.61	8.72	1.359	1.359	0.380	1050.00	1050.00	0.11	25.00	2.76	11.86	120.00	200	PVC	0.40	20.74	17.8	0.66	6.0
MH 11	MH 9	286	3014	2.33	24.37	0.572	4.972	1.392	2000.00	4100.00	0.43	14.59	6.30	32.06	120.00	300	PVC	0.22	45.36	39.0	0.64	6.9
MH 10A	MH 10	388	388	2.86	3.85	0.687	0.687	0.192	0.00	0.00	0.00	0.00	0.00	4.04	120.00	200	PVC	0.40	20.74	17.8	0.66	13.8
MH 10	MH 9	743	1131	2.57	10.09	1.246	1.933	0.541	0.00	0.00	0.00	0.00	0.00	10.63	120.00	200	PVC	0.40	20.74	17.8	0.66	7.2
MH 9	MH 7	210	4355	2.24	33.94	0.573	7.478	2.094	0.00	4100.00	0.43	14.59	6.30	42.33	120.00	375	PVC	0.15	67.91	58.4	0.61	16.1
MH 8A	MH 8	388	388	2.86	3.85	0.644	0.644	0.180	0.00	0.00	0.00	0.00	0.00	4.03	120.00	200	PVC	0.40	20.74	17.8	0.66	13.8
MH 8	MH 7	315	703	2.69	6.57	0.765	1.409	0.394	0.00	0.00	0.00	0.00	0.00	6.97	120.00	200	PVC	0.40	20.74	17.8	0.66	10.9
MH 7	MH 6	0	5058	2.21	38.83	0.281	9.168	2.567	0.00	4100.00	0.43	14.59	6.30	47.70	120.00	375	PVC	0.15	67.91	58.4	0.61	10.7
MH 6A - MH 6B	MH 6	52	52	3.49	0.63	0.941	0.941	0.264	0.00	0.00	0.00	0.00	0.00	0.89	147.70	200	Existing pipe with existing flows only.					
MH 6	MH 5	25	5135	2.21	39.36	0.482	10.590	2.965	0.00	4100.00	0.43	14.59	6.30	48.63	87.50	375	PVC	0.15	67.91	58.4	0.61	9.8
MH 5	MH 4	25	5160	2.21	39.53	0.510	11.100	3.108	0.00	4100.00	0.43	14.59	6.30	48.94	89.20	375	PVC	0.15	67.91	58.4	0.61	9.5
MH 4	MH 3	28	5188	2.21	39.73	0.509	11.609	3.251	0.00	4100.00	0.43	14.59	6.30	49.28	88.80	375	PVC	0.15	67.91	58.4	0.61	9.1
MH 3	MH 2	25	5213	2.20	39.90	0.498	12.107	3.390	0.00	4100.00	0.43	14.59	6.30	49.59	88.00	375	PVC	0.15	67.91	58.4	0.61	8.8
MH 2	MH 1	7	5220	2.20	39.95	0.186	12.292	3.442	0.00	4100.00	0.43	14.59	6.30	49.69	34.10	375	PVC	0.15	67.91	58.4	0.61	8.7
MH 1	TUNNEL	0	5220	2.20	39.95	0.000	12.292	3.442	0.00	4100.00	0.43	14.59	6.30	49.69	10.80	375	PVC	0.15	67.91	58.4	0.61	8.7

Notes:
1 Proposed sanitary forcemain (approximate length = 110m) from Lift Station (LS) to MH 13.
2 Replace existing pipe from MH 6 to TUNNEL.
3 Existing flows from the west at MH 4 and existing flows from the east at MH 2 must be calculated at preliminary design. These existing flows may cause the proposed 375 mm diameter between MH 4 and TUNNEL to increase in diameter and/or slope.



Conceptual Sanitary Sewer Design

The following assumptions were used in the assessment of the major overland flow routes within the West Rossdale Urban Design Plan Area and to their discharge point to the River on 100 Street at 97 Avenue and 95 Avenue.

- The calculated storm water runoff rates are based on the current edition of the City of Edmonton Design and Construction Standards and Guidelines.
- Runoff from up to the 1:5 yr storm event will be captured by the storm sewer.
- Pre and post-development runoff from 97 Avenue are the same.
- Rehabilitation / reconstruction of the existing roads will not alter the existing major overland flow routing.

As noted in table 6A and 6B the rate of flow that will travel along the Major Overland Flow Path for West Rossdale is reduced after the development of the West Rossdale Urban Design Plan.

7 DOWNSTREAM PONDING AREAS

The downstream ponding areas will not change from the existing ponding areas identified in the "Rossdale Sewer Relief – Predesign Report". The reduced quantity of total runoff will lessen the severity of the ponding.

8 CONCEPTUAL COST ESTIMATE

The estimated cost for construction of the storm sewer system is as follows:

Underground works	
$1,044,000	
Construction Total	$1,044,000
Contingency Allowance (50%)	
522,000	
Sub-Total	$1,566,000
Engineering (15%)	
235,000	
Project Total	$1,801,000

Please note that we have assumed that the storm sewer will be installed at the same time as the surface improvements are completed. Therefore no costs have been included for surface improvements within the West Rossdale Urban Design Plan Area.

Also please note that no allowance for archaeological or any other special requirements have been included.

APPENDIX D: PROPOSED ROADWAY REALIGNMENT

1.0 INTRODUCTION

The West Rossdale Area Urban Design Plan (UDP) was initiated by The City of Edmonton to provide development guidelines that reference the rich history of the area and to enhance West Rossdale as a main gateway to downtown Edmonton. The UDP area is located east of the Alberta Legislature grounds and includes the lands between 102 Street and 106 Street and between the North Saskatchewan River and 97 Avenue.

As part of the development of the West Rossdale UDP a revised roadway network option was developed to reduce the number of arterial roadways that bisect the area and to facilitate in the development of a walkable residential neighbourhood. This Technical Memorandum summarizes the operational review completed for the revised roadway network option.

2.0 PROPOSED ROADWAY RE ALIGNMENT

The revised roadway network option includes the re-alignment of 104 Street/Bellamy Hill to intersect 97 Avenue at Rossdale Road. The closely spaced intersections along 97 Avenue at 103 Street and 104 Street are proposed to be combined into a single intersection. The revised intersection geometry is proposed to include the following:

- West Approach – one left turn bay, two through lanes, one shared through/right lane
- East Approach – dual left turn bays, two through lanes, one shared through/right lane
- South Approach – one shared left/through lane, two through lanes, one shared through/right lane, one right turn bay
- North Approach – one left turn bay, one shared left/through lane, one through lane, one right turn bay

3.0 REVISED TRAFFIC VOLUMES

Intersection turning movement counts were obtained from the City of Edmonton for the following intersections:

- 97 Avenue and 103 Street (Rossdale Road) – October 30, 2008
- 97 Avenue and 104 Street/Bellamy Hill – September 30, 2008

As there is only one alley access along 97 Avenue between 103 Street and 104 Street, the 2008 intersection turning movement volumes were balanced along the corridor. The balanced 2008 traffic volumes were then re-assigned based on the revised network configuration proposed in the West Rossdale ASP. Exhibit 2 illustrates the existing 2008 volumes at the 97 Avenue/103 Street and 97 Avenue/104 Street intersections and the revised 2008 volumes at the 97 Avenue/103 Street intersection.

4.0 INTERSECTION ANALYSIS

Synchro 7.0 intersection assessments were completed for the study area intersections under the existing and revised roadway network using the 2008 balanced traffic volumes. Tables 1 and 2 summarize the AM and PM peak hour assessments for the 97 Avenue/103 Street and 97 Avenue/104 Street intersections respectively. Table 3 summarizes the AM and PM peak hour assessments for the 97 Avenue/103 Street intersection under the revised roadway network.

As shown in Table 1, the 97 Avenue/103 Street intersection currently operates well in the AM peak hour. In the PM peak hour the analysis indicates that the northbound right turn movement is over capacity. As the volumes used in the assessment reflect measured peak hour volumes, the movement cannot be over-capacity as suggested by the Synchro analysis. Therefore, it is assumed that the northbound right turn is operating at capacity during the PM peak hour under existing conditions.

As shown in Table 2, the 97 Avenue/104 Street intersection is operating well in the AM peak hours. In the PM peak hour the westbound left turn at the 97 Avenue/104 Street intersection is shown to exceed capacity; however, as the volumes used in the assessment reflect measured volumes the movement is considered to be at capacity.

It should be noted that Synchro does not take into account queue spillover from downstream intersections. Based on site observations, the eastbound through and southbound left turn movements at the 97 Avenue/104 Street intersection are impacted by the short queuing space and available eastbound green time at the 97 Avenue/103 Street intersection. While the analysis shows that sufficient green time is provided at the 97 Avenue/104 Street intersection to accommodate the eastbound through and southbound left turn movements in the PM peak hour, the closely spaced intersections results in reduced capacity along the corridor.

	Eastbound		Westbound		Northbound		
Movement	**L**	**T**	**T**	**R**	**L**	**T**	**R**
2008 AM Peak Hour – Signalized (120s cycle)							
Geometry	L/T/T/T		T/T/T/T/R		LT/T/T/TR/R		
Volume (vph)	25	1016	2754	543	13	1189	518
v/c	0.42	0.31	0.62	0.59	0.68		0.51
Delay (s)	33.4	8.1	16.3	18.2	34.4		20.6
LOS	C	A	B	B	C		C
95th Queue (m)	m#17	29	112	113	94		m59
Intersection Delay		**19.6**	**Intersection LOS**				**B**
2008 PM Peak Hour – Signalized (120s cycle)							
Geometry	L/T/T/T		T/T/T/T/R		LT/T/T/TR/R		
Volume (vph)	66	2601	1311	124	24	508	1131
v/c	0.28	0.85	0.30	0.13	1.07dr		1.08
Delay (s)	7.3	17.6	12.1	3.5	36.8		105.0
LOS	A	B	B	A	D		F
95th Queue (m)	m6	m107	43	11	67		#228
Intersection Delay		**28.2**	**Intersection LOS**				**C**

Table 1: 97 Avenue and 103 Street – Existing Conditions

	Eastbound		Westbound		Southbound		
Movement	**T**	**R**	**L**	**T**	**L**	**T**	**R**
2008 AM Peak Hour – Signalized (120s cycle, WB L Phase)							
Geometry	T/T/TR		L/LT/T/T		L/LT/TR/R		
Volume (vph)	753	13	550	2217	288	151	371
v/c	0.33		0.85	0.80	0.43	0.43	0.44
Delay (s)	14.3		39.4	8.7	38.7	36.6	37.9
LOS	B		D	A	D	D	D
95th Queue (m)	20		#85	40	67	56	60
Intersection Delay		**18.2**	**Intersection LOS**				**B**
2008 PM Peak Hour – Signalized (120s cycle, WB L Phase)							
Geometry	T/T/TR		L/LT/T/T		L/LT/TR/R		
Volume (vph)	1794	25	472	863	873	328	447
v/c	0.96		1.06	1.06dl	0.59	0.57	0.56
Delay (s)	36.9		116.4	18.2	36.7	29.7	23.4
LOS	D		F	B	D	C	C
95th Queue (m)	#108		#104	76	118	98	83
Intersection Delay		**34.2**	**Intersection LOS**				**C**

Table 2: 97 Avenue and 104 Street – Existing Conditions

	Eastbound			Westbound			Northbound			Southbound		
Movement	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**
2008 AM Peak Hour – Signalized (120 s cycle, WB & SB Prot L Phases)												
Geometry	L/T/T/TR			L/L/T/T/TR			LT/T/T/TR/R			L/L/T/R		
Volume (vph)	25	728	13	550	2204	543	13	1189	518	288	151	371
v/c	0.42	0.49		0.79	0.96		0.91		0.47	0.98	0.22	0.65
Delay (s)	43.9	22.6		55.6	37.5		47.2		4.0	102.1	26.9	37.6
LOS	D	C		E	D		D		A	F	C	D
95th Queue (m)	#17	23		85	#241		#100		m6	#64	42	111
Intersection Delay						**40.5**	**Intersection LOS**					**D**
2008 PM Peak Hour – Signalized (120s cycle, WB & SB Prot L Phases)												
Geometry	L/T/T/TR			L/L/T/T/TR			LT/T/T/TR/R			L/L/T/R		
Volume (vph)	66	1728	25	472	839	124	24	508	1131	873	328	447
v/c	0.38	1.03		1.22	0.38		1.37dr		1.25	1.17	0.42	0.63
Delay (s)	25.1	54.8		163.9	20.7		57.2		156.9	133.0	25.9	25.3
LOS	C	D		F	C		E		F	F	C	C
95th Queue (m)	m9	#177		#105	59		#77		#205	#168	81	104
Intersection Delay						**73.5**	**Intersection LOS**					**E**

Table 3: 97 Avenue and 103 Street – Revised Geometry

As shown in Table 3, the revised roadway network can accommodate the AM peak hour volumes from a capacity perspective, although a number of movements are projected to approach capacity.

In the PM peak hour a number of movements are projected to be over capacity. Previously the westbound left and northbound right turns were projected to be operating at capacity with v/c ratios in the order of 1.06 and 1.08 respectively. With the proposed modifications to the geometry, these movements are anticipated to actually exceed the available capacity in the PM peak hour based on v/c ratios in the order of 1.22 and 1.25. As well, the eastbound through and the southbound left turn movements are anticipated to exceed the available capacity under the revised geometry. While the previous assessment may have underestimated the v/c ratios for the southbound left turn volumes, the analysis was based on measured volumes; therefore, maximum v/c ratios of 1.0 could have been considered.

While the revised network geometry removes the 104 Street all-directional intersection, effectively removing the queuing impact that is currently estimated to be contributing to congestion along the 97 Avenue corridor in the PM peak hour, the revised intersection geometry is anticipated to be slightly less effective. Under the revised roadway network geometry, the new intersection operates as a four-legged intersection with significant turning volumes for some movements. The addition of the fourth leg at the intersection requires the addition of a southbound left turn phase, which is anticipated to be a protected left turn phase only, given that it is opposed by four through lanes. As well, the westbound left turn is anticipated to also be converted to a protected left turn phase. The addition of a southbound left turn phase, and the use of protected only phasing reduces the effectiveness of the traffic signal during peak periods. While there are existing capacity issues in the PM peak hour, the reduced effectiveness of the intersection operations can be seen in the AM peak hour operations where three movements are projected to be approaching capacity under the revised roadway network, while the existing analysis showed all movements to be operating well with v/c ratios of 0.85 or less.

CONCLUSIONS

Based on the analysis completed, it is anticipated that the revised roadway network is slightly less efficient that the current configuration from a traffic operations perspective.

APPENDIX E
GLOSSARY

Mid-Block Mews
Mid-block mews are public pedestrian oriented places fronted by active residential or retail frontages. The mews provide a convenient alternative north-south access to streets by accessing the interior of the block along the alley right of way. The mews should include:

- Minimum 2.5m walkway
- Permeable paved walkway surfacing
- Soft landscape materials such as low shrub planting and/or ornamental grasses
- Entry paths leading directly to residential or commercial units
- Pedestrian scaled lighting, consistent in appearance with mid-block pedestrian connection pedestrian scaled light strategy
- Opportunities for casual seating

Mid-Block Pedestrian Connection
Mid-block pedestrian connections provide a convenient east-west pedestrian access via the block interior edged by active residential frontages, vehicular public access streets and/or open green space. The pedestrian connection should provide:

- Minimum 2.0m walkway
- Paved walkway surfacing
- Row of street trees
- Where applicable, entry paths leading directly to at-grade residential dwelling units
- Street-scaled and pedestrian scaled lighting
- Where it is not adjacent to a vehicular access street, pedestrian scaled lighting that is consistent in appearance with mid-block mews lighting strategy

Display Gardens
Display gardens provide a physical separation and buffer between the residential dwelling units and the public walkways, as well as the street and other publicly accessible space that the units front onto. The display garden should:

- Comprise of soft landscaping such as low shrub planting, ornamental grasses or flowers
- Incorporate low parapet walls, a walk, gate and stairs to a stoop at the front entrances
- Opportunities for usable outdoor space such as a patio

Rain Gardens
Rain gardens are vegetated depressions that allow for rainwater catchment and infiltration, reducing the rate of rainwater runoff into storm sewer. The rain garden should:

- Use native plant selection that tolerates both saturated and dry soils
- Provide porous gravel zones within the subsurface
- Provide an overflow pipe system or catch basins to redirect excess rainwater to the storm sewer

BIBLIOGRAPHY

1. Municipal D Development Plan, The Way We Grow, 2010
2. Transportation Plan: The Way We Move, 2009
3. Rossdale Historical Land Use Study, February 2004 by Commonwealth Historic Resource Management Ltd.
4. Final Report: Historical Resource Impact Assessment West Rossdale Area Archeological Study Bison Historical Services Ltd.
   Gareth Spicer, Senior Project Archeologist
   December 2007
5. Final Report: Historical Resources Impact Mitigation (Stage 1), West Rossdale Area, Site 4
   Gareth Spicer, Devin Hill
   Turtle Island Cultural Resource Management Inc., September 2009
6. Rossdale Area Redevelopment Plan, Bylaw 8139, Consolidation, September 2005
7. Zoning Bylaw