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SITE LOCATION STUDY

City of Edmonton

Terwillegar Drive Stage 2
Rainbow Valley Road Parking Lot Expansion
Bylaw 7188/18889 Amendment



MAY 2023



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1 INTRODUCTION

1.1 Project: Terwillegar Drive Stage 2 – Parking Lot Expansion

Associated Engineering Alberta Ltd. was retained by CIMA to complete a site location study (SLS) for the Terwillegar Drive Stage 2 project. A previous SLS for the project area was submitted and approved by the City of Edmonton in early 2022 this SLS corresponds to a proposed parking lot expansion south of the Rainbow Valley Road bridges, east of Whitemud Creek (Associated Engineering 2022). This proposed amendment to the project area falls within the North Saskatchewan River Valley Area Redevelopment Plan boundary (Bylaw 7188/18889) (City of Edmonton 2020a).

1.2 Regulatory Requirements

Pursuant to the North Saskatchewan River Valley Area Redevelopment Plan (ARP), all proposals for the development of a major facility that is publicly owned or is developed on public land shall be subject to an SLS, detailing financial, social, environmental, and institutional constraints that make the river valley location essential. The Whitemud Creek ravine falls within the North Saskatchewan River Valley ARP. This SLS outlines the constraints of a parking lot expansion as part of the Terwillegar Drive Stage 2 project for review and approval by Edmonton City Council. This report is submitted in conjunction with a memorandum outlining environmental sensitivities to meet the requirements of Bylaw 7188/18889 (Associated Engineering 2023).

2 PROJECT DESCRIPTION

The City of Edmonton and the project team proposed to expand the current gravel parking lot of Whitemud Park by approximately 30 stalls. The purpose of this expansion was to provide temporary overflow parking for Snow Valley; however, a permanent lot was recommended to be built in alignment with standards of permanent facilities. Currently, the existing lot often operates at or exceeds capacity during various times of the year due to the popularity of the walking trails in the area. Additionally, this expansion will create more overflow parking for the ski hill and other Snow Valley attractions when the existing parking lot immediately north of the Rainbow Valley Bridges is unavailable due to construction activities. Construction access for the parking lot expansion will be via Rainbow Valley Road.

3 PROJECT SCOPE

The proposed area of parking expansion is located along Rainbow Valley Road, southeast of the Rainbow Valley Road bridges within ATS 15-12-52-25-W4M. The existing parking lot is approximately 22 m by 51 m and consists of 28 parking stalls (including four that are barrier free). The size of the area will be increased to accommodate a total of 64 stalls (including four barrier free), a net increase of 36 stalls. The expansion will be located to the south of the existing gravel lot. Most of the surface will remain as gravel; however, concrete pads will be installed at the barrier-free parking stalls.

4 LOCATION ANALYSIS AND JUSTIFICATION

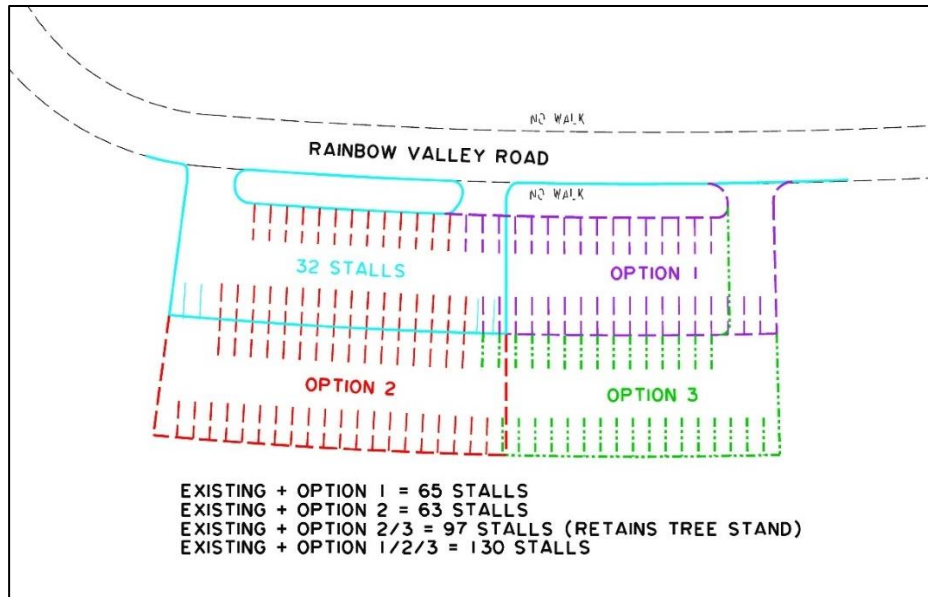
4.1 Alternative Location Review

Q: What other locations were considered for this project, including other river valley and non-river valley locations?

Given the location of the existing parking lot, the expansion was not considered for construction outside the boundary of the North Saskatchewan River Valley ARP. However, the project team considered various alternative configurations

for the Whitemud Park parking lot expansion. **Figure 4-1** illustrates three expansion options that were weighed and considered in various combinations.

Figure 4-1 Configuration Options for Parking Lot Expansion



Option 1:

- Option 1 involved expanding the parking lot to the east of the existing lot.
- Option 1 disturbed a stand of trees and was therefore not considered desirable.

Option 2:

- Option 2 involved expanding the parking lot to the south of the existing lot.
- Option 2 disturbed only grassed areas and was therefore considered more desirable than Option 1.

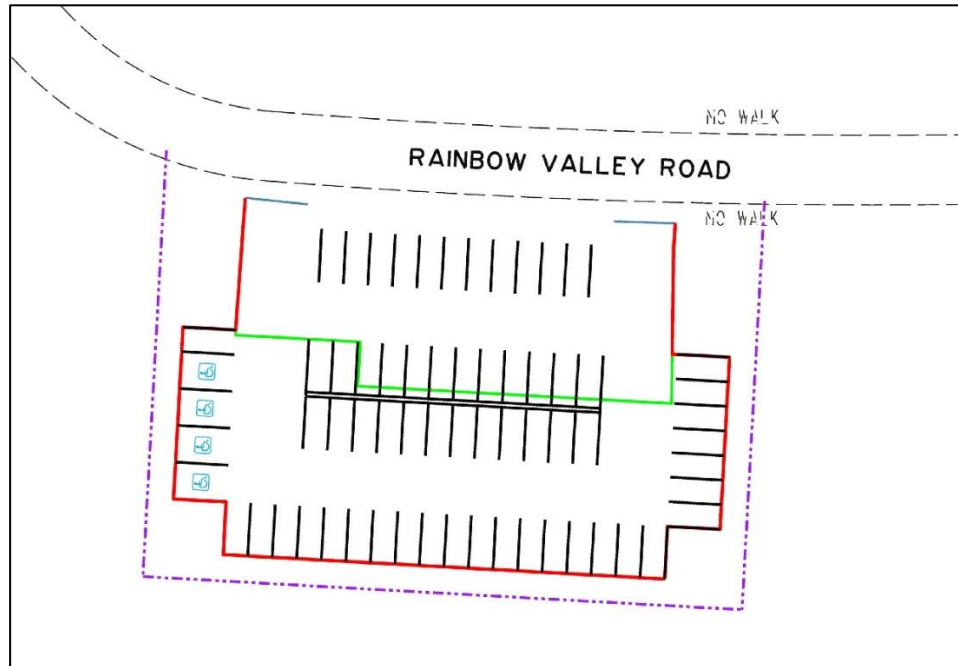
*Note that Option 2 was eventually further modified to include two bulb-outs to incorporate additional parking.

Option 3:

- Option 3 existed only in combination with Option 2 or both Options 1 and 2. It would be located southeast of the existing lot.
- Option 3 would disturb an area that was potentially being considered for a future storm pond and would have resulted in more stalls than needed at this time.

For these reasons, expanding the existing parking lot in the direction of Option 2 (**Figure 4-2**) was the preferred alternative and was brought forward to the City team for review and consideration. Option 2 (existing lot plus expansion to the south) was selected for further review, and the decision was made to expand slightly on the east and west sides with additional perpendicular stalls, including the barrier-free stalls. These side extensions do not affect the tree stand on the east or encroach on space for a potential future storm pond. This modified option was approved, and design of the parking lot expansion proceeded on this basis.

Figure 4-2 Modified Option 2 – Approved Design



4.2 River Valley Dependencies

Q: Could the proposed project reasonably function at a location outside the North Saskatchewan River Valley Area Redevelopment Plan boundary?

Given the unique purpose and location of this parking lot, which provides additional convenient parking and access for the public to Whitemud Park and Snow Valley attractions, no consideration was given to designing and building separate additional parking infrastructure outside the North Saskatchewan River Valley ARP boundaries. The addition of a separate parking facility outside the ARP would not reasonably function and serve its purpose, as it provides access to the Whitemud Creek ravine and on its proximity to the park system and ski hill.

Q: Is the project dependent on either the river valley and ravine location or the users of the park system?

Yes, the expanded parking lot is dependent on the Rainbow Valley location as there are already many users of the park system in that area and the existing parking lot is already undersized for the number of users at this location.

4.3 Overview of Bylaws, Plans, and Policies

The following bylaws, plans, and policies apply to the development of the proposed Terwillegar Drive Stage 2 project.

4.3.1 North Saskatchewan River Valley Area Redevelopment Plan, Bylaw 18889 (Amendment to 7188)

Bylaw 7188/18889 protects the ecological value of the North Saskatchewan River Valley and regulates works conducted within it (City of Edmonton 2020a). The Plan is “based on the fundamental philosophy that a continuous open system, interspersed with recreational activity nodes, can meet the diverse demands for recreation in an urban

setting and yet protect the river valley environment.” It is a policy of this Plan that major public facilities shall not be constructed or expanded unless their location within the river valley is deemed essential and approved by City Council (this report). The major goals and the project-specific considerations are summarized in [Table 4-1](#).

Table 4-1 Major Goals of Bylaw 18889/7188

Goal	Project Specific
To ensure the preservation of the natural character and environment of the North Saskatchewan River Valley and Ravine System	Disturbance will be limited as much as possible, and no significant adverse environmental effects are expected from the expanded parking lot. The Bylaw 7188 amendment memorandum, included in this submission package, outlines several measures to mitigate adverse environmental effects and steps to preserve or restore the natural character and environment during construction. After construction, the effects on the environment are anticipated to be minimal.
To establish a public metropolitan recreation area	The proposed parking lot will allow more Edmontonians to use the dedicated pedestrian bridge and surrounding trails, during and after construction.
To provide the opportunity for recreational, aesthetic, and cultural activities in the Plan area for the benefit of Edmontonians and visitors of Edmonton	Expanded parking areas will provide more residents with additional access to areas of recreational and cultural activities.
To consider environmental factors when planning for use in the River Valley	The attached Bylaw 7188 amendment memorandum details several environmental mitigation measures for construction of the parking lot expansion.
To control the expansion and construction of major facilities and minimize the adverse impacts of major facilities on the natural environment and park development	The parking lot design option selected for construction uses existing access points and aims to maximize additional vehicle access to nearby trails and recreational activities while limiting new disturbance to manicured turf and tree stands.

4.3.2 Drainage Bylaw, Bylaw 18093

Bylaw 18093 regulates surface drainage on public and private land and fosters the well-being of the environment by prohibiting the release of dangerous or hazardous materials into the sewerage system (City of Edmonton 2020c). Releases of water into storm sewers and watercourses must adhere to the requirements for restricted wastes in Schedule B of this Bylaw. Mitigation measures, including erosion and sediment controls, are to be incorporated into the environmental construction operations plan to maintain compliance with this Bylaw during the construction phase of the project.

Project Specific: During construction, mitigation measures must be in place to prevent releases of prohibited wastes and control releases of restricted wastes into the sewerage system and/or watercourses, in accordance with this Bylaw.

4.3.3 Corporate Tree Management Policy C456C

Edmonton's tree canopy, including all ornamental trees and natural treed areas on City property, will be procured, maintained, protected, and preserved by the City. Projects must take necessary steps to protect and preserve City trees impacted by construction activities (City of Edmonton 2020b).

Project Specific: No tree removal is required for parking lot expansion.

4.3.4 Community Standards Bylaw, Bylaw 14600

The Community Standards Bylaw 14600 (City of Edmonton 2007a) regulates noise within the City. Under this Bylaw, construction is restricted to between 7 a.m. and 9 p.m., except on Sundays and holidays, when construction is restricted to between 9 a.m. and 7 p.m.

Project Specific: Construction of the parking lot expansion will be planned within the time frames described in this Bylaw. If work outside the Bylaw hours is required, a permit will be obtained.

4.3.5 Parkland Bylaw, Bylaw 2202

This Bylaw regulates the conduct and activities of people on parkland to promote the safe, enjoyable, and reasonable use of such property and to protect and preserve natural ecosystems for the benefit of all citizens of the City.

Project Specific: Access onto parkland will be required for construction of the parking lot expansion. A parkland access permit will be obtained for access within areas covered under the Bylaw.

4.3.6 Natural Area Systems Policy C531

This Policy is implemented to safeguard the City of Edmonton's natural capital and associated ecological services through conserving, protecting, and restoring natural uplands, wetlands, waterbodies, and riparian areas as an integrated and connected system throughout the City (City of Edmonton 2007b). The purpose of this Policy is to:

- Enhance and sustain the quality of life for Edmontonians;
- Conserve, protect, and restore biodiversity throughout Edmonton, recognizing the urban context that Edmontonians work within;
- Ensure consistent, uniform, and equitable conservation practices that are based on the best available science;
- Direct administration to:
 - Plan the City so that ecological systems will function effectively at neighbourhood, city, and regional scales
 - Conserve natural area systems in discharging their duties
 - Require ecological information to support planning and development applications
- Conserve, protect, and restore natural area systems through the physical planning and development process, according to the provisions of municipal, provincial, and federal policy and legislation;
- Encourage voluntary conservation and corporate and private sponsorship of natural areas;
- Promote the awareness and participation of landowners, the general public, and non-government organizations in conserving, preserving, and restoring natural areas; and
- Incorporate the local ecological knowledge of Edmonton's citizens and organizations in our decisions.

Project Specific: The project will enhance the quality of life for Edmontonians by providing improved access to natural areas in the Whitemud Park ravine. The parking lot expansion design was chosen based on limitation of disturbance and protection of existing natural areas, while still achieving the benefit of additional parking stalls for users.

4.3.7 Breathe: Edmonton's Green Network Strategy

Edmonton's green network is an integrated system of open spaces, municipal parks, and it connects areas that provide value to residents and the environment (City of Edmonton 2017). Breathe: Edmonton's Green Network Strategy is a transformative strategy, meant to grow and adapt as the City grows, to ensure that neighbourhoods are supported by a network of open space for the next 30 years. It sets the direction for sustainable care and expansion of open spaces and how to preserve the integrity of our open space environment in the City.

Project Specific: Expanded parking options adjacent to Whitemud Creek would improve the connection of open spaces and municipal parks in Whitemud Park and the many trails that connect the surrounding local neighbourhoods.

4.3.8 Ribbon of Green SW + NE

The Ribbon of Green provides strategic direction to guide the protection and responsible use of the Edmonton River Valley and ravine system over the next 20 years (City of Edmonton 2020d). Previous versions of this document were developed in 1990 and 1992 and are now being consolidated into an updated version that can be used moving forward. Throughout these revisions, the goal remains the same: to conserve the natural features of the River Valley (wildlife, vegetation, and cultural resources) for future generations to prevent exploitation, destruction, or neglect. The vision for Ribbon of Green is:

The North Saskatchewan River Valley and Ravine System is a protected, connected landscape that supports ecological resilience and promotes healthy living through opportunities for recreation, active transportation, learning, and gathering in the tranquility of nature.

Project Specific: Project planning will limit and avoid, where possible, activities that have the potential to impact natural habitats in the project area. Various mitigation measures have been developed to limit effects on vegetation and wildlife in the area, especially within the river valley.

4.3.9 ConnectEdmonton: Edmonton's Strategic Plan 2019–2028

This strategic plan provides the collective vision for a future Edmonton and focus as the City grows (City of Edmonton 2019). The four strategic goals that focus on transformational change required in the next 10 years include:

1. **Healthy City** – Edmonton is a neighbourly city, with community and personal wellness that embodies and promotes equity for all Edmontonians.
2. **Urban Places** – Edmonton neighbourhoods are more vibrant as density increases, where people and businesses thrive and where housing and mobility options are plentiful.
3. **Regional Prosperity** – Edmonton grows prosperity for its metro region by driving innovation, competitiveness, and relevance for its businesses at the local and global levels.
4. **Climate Resilience** – Edmonton is a city transitioning to a low-carbon future, has clean air and water, and is adapting to a changing climate.

Project Specific:

1. **Healthy City** – An expansion of the existing parking lot in the river valley provides direct access to recreational and personal wellness opportunities for more Edmontonians.

2. **Urban Places and Regional Prosperity** – By improving accessibility, expanded parking options are likely to bring more people from the nearby neighbourhoods and existing ski hill, aerial park, and campground.

4.3.10 The Way We Green, Edmonton's Environmental Strategic Plan

The City of Edmonton protects, preserves, and improves the North Saskatchewan River Valley and Ravine System as an accessible year-round place for recreation and activity for people of all ages (City of Edmonton 2011).

Project Specific: The project directly improves the connections within the river valley and makes it more accessible for recreation and activity year-round.

4.3.11 The Way We Live, Edmonton's People Plan

The City of Edmonton provides for the well-being of its citizens through outstanding parks, natural, green, and public spaces (City of Edmonton 2010a).

Project Specific: The project improves access to these parks and natural spaces for more Edmontonians.

4.3.12 For the Love of Winter, WinterCity Strategy Implementation Plan

The strategy and implementation plan for transforming Edmonton into a world-leading winter city by focusing on four "winter pillars": life, design, economy, and story (City of Edmonton 2013).

Project Specific: The project meets all four winter pillars, including the following goals:

- **Winter Life**
 - Make it easier to go play outside: Provide more opportunities for outdoor activity
 - Improve winter transportation for pedestrians, cyclists and public transit users
- **Winter Design**
 - Design our communities for winter safety and comfort
- **Winter Economy**
 - Increase the capacity and sustainability of Edmonton's winter festivals
- **Our Winter Story**
 - Celebrate the season and embrace daily living in a cold climate

5 CONSTRAINTS ANALYSIS

5.1 Financial

Q: What are the financial constraints that limit the feasibility of locating the project outside the river valley?

To locate the parking lot expansion outside of the river valley would result in additional costs compared to expanding adjacent to the existing gravel pad.

5.2 Social

Q: What are the social constraints that limit the feasibility of locating the project outside the river valley?

Increased vehicle access spaces located outside the river valley would not have the same social impact as within the river valley. Many Edmontonians and visitors know of the North Saskatchewan River Valley and visit the trails for recreation and enjoyment of nature. The facilities in Snow Valley also draw visitors to the area; therefore, maximizing the accessibility of the area and increasing the number of people likely to visit the area.

5.3 Environmental

Q: What are the environmental constraints that limit the feasibility of locating the project outside the river valley?

Expanding parking near the current bridges and associated access infrastructure rather than in a new location avoids disturbing a larger area, which in turn limits the disturbance to vegetation and wildlife.

Although there will be some impacts to the natural environment during construction, the Bylaw 7188 amendment memorandum included with this application outlines mitigation measures to limit or eliminate the impacts on wildlife during construction. Following construction of the parking lot, the operational environmental impacts are expected to be minor.

5.4 Institutional

Q: What are the institutional constraints that limit the feasibility of locating the project outside the river valley?

An expanded parking area will increase the usability of an already highly use existing trail network that connects to Whitemud Park. Additionally, visitors are already attracted to the area and visit the ski hill, aerial park, and campground. This option is more economical and efficient than expanding parking at a lesser-known site that is less familiar to residents.

6 CONCLUSION

After assessing the financial, social, environmental, and institutional constraints, the proposed project would have an overall benefit to Edmontonians and other potential visitors to the area. Increasing access to the River Valley aligns with the goals and policies of the North Saskatchewan River Valley Area Redevelopment Plan, Bylaw 18889 (previously 7188), and other City of Edmonton plans and policies. It will serve to connect people with nature and will provide an opportunity to celebrate the area's ecological, recreational, and cultural value.

Construction will not commence until the Edmonton City Council has approved the SLS and approval amendment information, as per the direction provided in the North Saskatchewan River Valley Area Redevelopment Plan.

CLOSURE

This report was prepared for the City of Edmonton for approval under the North Saskatchewan River Valley Area Redevelopment Plan, Bylaw 18889/7188.

The services provided by Associated Engineering Alberta Ltd. in the preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practising under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted,

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REFERENCES

- Associated Engineering Alberta Ltd. (Associated Engineering). 2022. Site Location Study. Prepared for City of Edmonton.
- Associated Engineering Alberta Ltd. (Associated Engineering). 2023. Memorandum: Bylaw 7188 Amendment – Rainbow Valley Road Parking Lot. Prepared for City of Edmonton.
- City of Edmonton, 2007a. Bylaw 14600. Community Standards Bylaw. Available online: [Bylaw 14600 - Community Standards Bylaw \(edmonton.ca\)](#). Accessed March 2023.
- City of Edmonton. 2007b. Natural Area Systems Policy C531. Available online: https://www.edmonton.ca/city_government/documents/PoliciesDirectives/C531.pdf. Accessed March 2023.
- City of Edmonton. 2010a. The Way We Live: Edmonton’s People Plan. Available online: https://www.edmonton.ca/sites/default/files/public-files/assets/The_Way_We_Live_Plan_July_2010.pdf. Accessed March 2023.
- City of Edmonton. 2011. The Way We Green: Environmental Strategic Plan. Available online: http://uccrnna.org/wp-content/uploads/2017/06/42_Edmonton_2011_The-Way-We-Green.pdf. Accessed March 2023.
- City of Edmonton. 2013. For the Love of Winter: WinterCity Strategy Implementation Plan. Available online: https://www.edmonton.ca/city_government/documents/PDF/TheLoveofWinter-ImplementationPlan.pdf. Accessed March 2023.
- City of Edmonton. 2017. Breathe: Edmonton’s Green Network Strategy, Parts 1 to 5. Available online: https://www.edmonton.ca/city_government/initiatives_innovation/breathe.aspx. Accessed March 2023.
- City of Edmonton. 2019. ConnectEdmonton: The City of Edmonton’s Strategic Plan 2019-2028. Available online: https://www.edmonton.ca/city_government/documents/ConnectEdmonton_Book_Web.pdf. Accessed March 2023.
- City of Edmonton. 2020a. North Saskatchewan River Valley Area Redevelopment Plan. Bylaw 18889. Adopted on February 26, 1985, Amended, October 2020. <https://www.edmonton.ca/sites/default/files/public-files/assets/Bylaws/18889.pdf?cb=1628187518>. Accessed March 2023.
- City of Edmonton. 2020b. Corporate Tree Management Policy C456C. Available online: <https://www.edmonton.ca/sites/default/files/public-files/assets/PDF/Corporate-Tree-Management-Policy-C456C.pdf>. Accessed March 2023.
- City of Edmonton. 2020c. Bylaw 18093. Drainage Bylaw. Available online: <https://www.edmonton.ca/sites/default/files/public-files/assets/Bylaws/C18093.pdf>. Accessed March 2023.

City of Edmonton

City of Edmonton. 2020d. Ribbon of Green SW + NE. Available online:

https://www.edmonton.ca/sites/default/files/publicfiles/assets/RibbonofGreenSW_NEPlanJune2020.pdf?cb=1628742756. Accessed March 2023.