COUNCIL REPORT

CAPITAL LINE SOUTH EXTENSION BLACKMUD CREEK CROSSING

Environmental Impact Assessment and Site Location Study

Recommendation

That Urban Planning Committee recommend to City Council:

1. That the Environmental Impact Assessment for the Blackmud Creek Crossing as part of the Capital Line South Extension LRT Project, as outlined in Attachment 1 of the January 21, 2025, Integrated Infrastructure Services report IIS02804, be approved.
2. That the Site Location Study for the Blackmud Creek Crossing as part of the Capital Line South Extension LRT Project, as outlined in Attachment 2 of the January 21, 2025, Integrated Infrastructure Services report IIS02804, be approved.
3. That the location of the proposed Blackmud Creek Crossing as part of the Capital Line South Extension LRT Project, as outlined in Attachment 2 of the January 21, 2025, Integrated Infrastructure Services report IIS02804, be deemed essential pursuant to Section 3.4.1 of the North Saskatchewan River Valley Area Redevelopment Plan, Bylaw 7188.

Requested Action		Council decision required	
ConnectEdmonton's Guiding Principle		**ConnectEdmonton Strategic Goals**	
CONNECTED This unifies our work to achieve our strategic goals.		**Urban Place**	
City Plan Values	ACCESS		
City Plan Big City Move(s)	A community of communities	**Relationship to Council's Strategic Priorities**	Mobility network
Corporate Business Plan	Transforming the future		
Council Policy, Program or Project	• Bylaw 7188 - North Saskatchewan River Valley Area Redevelopment Plan		

ROUTING - Urban Planning Committee / City Council | DELEGATION - C. Walbaum, B. Ferguson, J. Karpiejuk
January 21, 2025 – Integrated Infrastructure Services IIS02804

Relationships	
Related Council Discussions	N/A

Executive Summary

- This report requests City Council's approval of the Environmental Impact Assessment (EIA) included in Attachment 1 and the Site Location Study (SLS) in Attachment 2 for the proposed Capital Line South Extension LRT bridge and multi-use trail west of the LRT bridge (the Project), located within the North Saskatchewan River Valley Area Redevelopment Plan (ARP), Bylaw 7188.
- The EIA assesses the Project's potential environmental impacts on Blackmud Creek's floodplain, channel hydraulics, vegetation, wildlife and historical resources. It concludes that adverse effects related to the construction can be effectively managed by implementing the recommended mitigation measures outlined in the report.
- Pedestrian access across Blackmud Creek will be provided through the existing roadway bridge. The new LRT bridge will be located immediately west of the existing roadway bridge, minimizing overall footprint and impact on the valued ecosystem components (VECs) in the project area.
- Approval of this report reflects the City's commitment to environmental stewardship, regulatory compliance and sustainable urban design in the expansion of Edmonton's LRT network.

REPORT

The Blackmud Creek LRT Crossing is part of Phase 1 of the Capital Line South LRT Extension project, extending LRT service from Century Park to Ellerslie Road. This 4.5-kilometre extension enhances connections to neighbourhoods, supports transit-oriented development and improves accessibility.

The Project includes building a new LRT bridge over Blackmud Creek, adjacent to the existing roadway bridges and multi-use trail. The existing bridges accommodate vehicle traffic, pedestrians and cyclists, ensuring connectivity across the ravine is maintained.

Blackmud Creek, part of the Whitemud and Blackmud Ravine network, is located within the North Saskatchewan River Valley ARP boundaries, as outlined in Bylaw 7188. This designation requires the completion of an Environmental Impact Assessment (EIA) under the bylaw. The creek and its surrounding ravine function as a wildlife corridor, and provide ecological and recreational value to Edmontonians with various trails and boardwalks throughout the area.

An initial environmental impact assessment was prepared by Associated Environmental Consultants in 2019 to understand site conditions and mitigation plan requirements at the

Blackmud Creek Crossing site. The EIA was updated in 2024 to ensure environmental reviews coincide with the latest design information and the delivery phase of the project.

The Capital Line South LRT design includes a new LRT bridge across Blackmud Creek just west of the existing two roadway bridges on 111 Street and will have a vertical profile consistent with the surrounding infrastructure. The existing roadway bridge will continue to provide pedestrian and cyclist access across Blackmud Creek and the multi-use trail being constructed as part of the Capital Line South project will connect into it at both ends of the bridge.

Figure 1: Project area showing proposed LRT bridge across Blackmud Creek, looking South

The current LRT-only bridge design is expected to result in fewer impacts on valued ecosystem components (VECs) than the combined LRT/Shared Use Pathway bridge contemplated during the preliminary design. To ensure compliance with the approved EIA, key environmental considerations have been incorporated, including:

- Preserve an openness ratio to support wildlife movement under the bridges by maintaining a minimum spacing of 3.5 metres between the existing roadway bridges and the new LRT bridge.
- Ensuring construction limits (including temporary laydown areas) remain above the 1:5-year high water level (HWL) of Blackmud Creek, with all bridge components situated above the 1:100-year flood level.

The EIA (Attachment 1) details the current environmental conditions, assesses potential risks and outlines mitigation actions associated with construction. As construction is anticipated to start in 2025, many of the mitigation measures for environmental risks will be developed in collaboration with the Design-Build contractor. Prior to mobilizing for construction, the contractor will be required to submit detailed construction and mitigation plans for review

Fby the City. These plans will address specific risks and ensure compliance with the mitigation measures outlined in the EIA.

Through thoughtful design, construction best practices and landscaping measures, potential environmental impacts are expected to remain localized to the project area. Positive outcomes, such as enhanced slope stability and erosion control, are anticipated through the proposed naturalization and bioengineering measures.

Some of the potential impacts and mitigations identified in the EIA include:

- Topography and Soil
    - *Impacts:* Soil erosion from construction activities on steep slopes and during material handling near Blackmud Creek.
    - *Mitigations:* Erosion and sediment control (ESC) measures, such as silt fences, check dams and ESC plans, will prevent runoff and protect soil stability during construction.
- Surface Water, Groundwater and Aquatic Habitat
    - *Impacts:* Risks of runoff contamination to Blackmud Creek and potential groundwater contamination during construction.
    - *Mitigations:* Use of double containment for hazardous materials, regular equipment inspections and installation of oil and grit separators to safeguard water quality. Proper material handling and groundwater monitoring in open excavations will further reduce risks.
- Vegetation
    - *Impacts:* Loss of native vegetation and the potential spread of invasive species from equipment movement and soil disturbance.
    - *Mitigations:* Minimize native vegetation removal, implement a landscape restoration plan using native species and enforce a Tree Protection Plan. All equipment will be cleaned to prevent invasive species spread.
- Wildlife and Movement Corridors
    - *Impacts:* Disturbance to wildlife, including migratory and non-migratory birds, during nesting periods.
    - *Mitigations:* Schedule construction to avoid nesting seasons, implement a Bat Mitigation Plan to protect endangered bat species and develop a wildlife encounter protocol within the contractor's Environmental Construction Operations (ECO) plan.
- Historical Resources
    - *Impacts:* Potential discovery of historical or archaeological resources within the project footprint.
    - *Mitigations:* Work will immediately cease in the affected area if historical or archaeological resources are found, and Alberta Culture, Multiculturalism and Status of Women (ACMSW) will be contacted.

Legal Implications

Section 3.4.1 of Bylaw 7188 requires:

City Council approval of the Environmental Impact Assessment (Attachment 1); City Council approval of the Site Location Study (Attachment 2); and Council must deem the Blackmud Creek LRT Crossing essential, before construction of the Blackmud Creek LRT Crossing can commence.

Community Insight

Extensive public and stakeholder engagement occurred during the Capital Line South LRT project's concept planning and preliminary design phases. Engagement activities included open houses, online surveys, stakeholder meetings, Indigenous consultations and the formation of a formal Community Advisory Committee (CAC).

Public engagement began with the Capital Line South Concept Plan in 2008, continuing through preliminary design in 2010. Additional consultations occurred between 2017 and 2019 and have been ongoing from 2020 to the present. Information-sharing activities included community town halls, information sessions and surveys.

The CAC, comprising representatives from community leagues and the public, has provided consistent feedback on the project, particularly regarding early construction impacts and community concerns. While the CAC is not a decision-making body, it serves as a vital communication bridge between the City and impacted communities.

GBA+

The Capital Line South LRT Extension, including the Blackmud Creek LRT Crossing, aligns with the Infrastructure Planning and Development priority and supports Edmonton's transformation into a more accessible, multi-modal city. The Project is a cornerstone of the approved LRT Network Plan and The City Plan, both of which envision Edmonton as a city with universal access for a population of two million. This Project will contribute to increased public transit accessibility, encourage sustainable urban growth and improve transportation equity across communities.

Environment and Climate Review

The EIA report has effectively described pre-construction environmental conditions for valued ecosystem components in the Blackmud Creek area and outlines mitigation measures for potential impacts on environmentally sensitive ecosystems. The following environmental aspects are of note:

- **Bird Protection**
  The Project may impact birds protected under the *Migratory Birds Convention Act*. To address this, the EIA recommended mitigation measures, such as bird sweeps, conducted during nesting periods and the implementation of appropriate protection measures such as nest/cavity avoidance or relocation if permitted. Additionally, as some

bird species that have been observed in the project area or that may occur in the Edmonton area have year-round nest protection, bird sweeps would need to be conducted outside of the typical nesting period to ensure compliance with these regulations.

- **Bat Protection**
  The Project may impact bats, which are protected by federal and provincial regulations. The EIA identified that a Bat Mitigation Plan will be prepared to mitigate this potential impact. The contractor will be responsible for preparing this plan and completing any required notifications or consultations with regulatory agencies if bat roosts are identified and could be affected by the Project.
- **Fish and Fish Habitat**
  No in-stream work is anticipated as part of this Project, and as such, direct impacts to fish and fish habitat are expected to be low. The contractor will be responsible for completing any notifications required by regulations and developing and implementing an erosion and sediment control plan as outlined in the EIA.
- **Tree Removal and Restoration**
  Removal of public trees is proposed as part of the Project. Site location considerations included choosing a crossing location that minimized tree removals (see Figure 1 for imagery with the existing site vegetation). Affected trees will be determined through detailed design in consultation with the City's Urban Forester and Natural Area Operations team. This process shall adhere to City Policy C456C - Corporate Tree Management Policy and Bylaw 18825 - Public Tree Bylaw to ensure the community's tree canopy is carefully stewarded. Finalized plans will include a Tree Protection Plan, a Tree Preservation Plan and restoration and landscaping plans.

Attachments

1. Capital Line South LRT Extension - Blackmud Creek Crossing - Environmental Impact Assessment
2. Capital Line South LRT Extension - Blackmud Creek Crossing - Site Location Study