COUNCIL REPORT

MILL CREEK TRESTLE BRIDGE (B034) AND CULVERT UNDER 76 AVENUE (B038)

Environmental Impact Assessment and Site Location Study

Recommendation

That Urban Planning Committee recommend to City Council:

1. That the Mill Creek Trestle Bridge (B034) and Culvert under 76 Avenue (B038) Replacement Environmental Impact Assessment and Site Location Study as outlined in Attachments 1 and 2 of the June 17, 2025, Integrated Infrastructure Services report IIS02807, be approved pursuant to the North Saskatchewan River Valley Area Redevelopment Plan, Bylaw 7188.
2. That the location of the proposed road bridge and Mill Creek realignment in the river valley, as outlined in Attachment 2 of the June 17, 2025, Integrated Infrastructure Services report IIS02807, be deemed essential pursuant 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 Places**	
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	Serving Edmontonians		
Council Policy, Program or Project Relationships	• Bridge Renewal Program		
Related Council Discussions	• N/A		

Executive Summary

- This report requests City Council's approval of the Environmental Impact Assessment (EIA) included in Attachment 1 for the Mill Creek Trestle Bridge Replacement within the River Valley. The project includes replacement of the historic timber trestle bridge, replacement of the adjacent 76 Avenue concrete culvert along Mill Creek with a roadway bridge, creek realignment along with a pile wall southwest of 76 Avenue to ensure slope stability and bank stabilization northeast of the trestle bridge to prevent further erosion.
- The report also requests City Council's approval of the Site Location Study (SLS) included in Attachment 2 for the culvert replacement and creek realignment and that the planned locations of the roadway bridge and creek realignment in the River Valley be deemed essential by the City Council.
- The Environmental Impact Assessment describes the Project's potential environmental impacts on fish and fish habitat, soils, surface drainage, vegetation and wildlife habitat. It concludes that negative residual impacts are anticipated to be negligible, given the implementation of mitigation measures through design and construction.
- The Site Location Study concludes that the roadway bridge and creek realignment locations are essential. The bridge is part of the 76 Avenue crossing of Mill Creek, an important east-west connection which accommodates current and future needs in an area with limited east-west connectivity. The creek realignment reduces erosion and restores water and creekside habitats.
- The same level of functionality for local users might not be provided if the project were proposed at another location inside the River Valley Bylaw area, and relocation outside of the River Valley would not be feasible. Removing the bridge along with vehicular traffic would re-direct vehicular traffic and access to surrounding roadways, reduce network options available for users, including emergency vehicles and have impacts on future mass transit plans.
- Approval of this report demonstrates the City's commitment to environmental reviews, environmental permitting and environmentally sound design, ensuring the City's environmental stewardship objectives are met during the construction of this Project.

REPORT

The Mill Creek Trestle Bridge (B034) and the existing culvert under 76 Avenue (B038) are located within Mill Creek, between 89 Street and 95 Street. Originally constructed in 1902, the trestle bridge was designated as a Municipal Historic Resource under Bylaw 13472 in August 2004. The culvert is located just south of the trestle bridge and conveys water from Mill Creek under 76 Avenue and outlets through the trestle bridge. Replacement of the trestle bridge is required as the structure has reached the end of its service life. The culvert is undersized for the amount of water it conveys, causing erosion and flooding issues. To address these issues, while aligning asset renewal timelines and improving environmental outcomes, the culvert will be replaced with a roadway bridge, and Mill Creek will be re-aligned and restored.

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While the trestle bridge is a designated Municipal Historic Resource, the structure does not contain original materials dating to 1902. Various past rehabilitation projects have replaced all original materials with matching in-kind materials. The current trestle bridge is beyond reasonable restoration, requiring it to be dismantled. The new trestle bridge will replicate the structure in terms of its design and materials, keeping with the Designation Bylaw and the Standards and Guidelines for the Conservation of Historic Places in Canada. The bridge will also be widened to meet current design standards to safely accommodate pedestrians and cyclists, which is acceptable from a heritage conservation perspective. Modern design details will be used where permitted.

The new roadway bridge will be a single-span, concrete girder bridge with a shared pathway. Mill Creek will be realigned to the southwest along with slope stabilization measures and landscape restoration.

Mill Creek is part of the North Saskatchewan River Valley (NSRV) and is within the NSRV Area Redevelopment Plan (ARP) Bylaw 7188. Therefore, the planned bridge and culvert replacement, creek realignment and slope stabilization work trigger an environmental review as per the North Saskatchewan River Valley Area Redevelopment Plan.

The project is also subject to a Site Location Study for the Mill Creek realignment, restoration and culvert replacement. The study details costs and social, environmental and institutional constraints that make a River Valley location essential. The proposed bridge's location is shown in Figure 1.1 in Attachment 2.

The recommended bridge design was coordinated with the future renewal plans for 76 Avenue, for which planning is underway as part of the Neighbourhood Renewal Program. The environmental impacts and mitigation measures identified in this report are only associated with the bridge work. A future Environmental Impact Assessment for the 76 Avenue renewal project will be brought forward for Council's consideration at a later date, should one be required.

The Environmental Impact Assessment (Attachment 1) outlines the project area's current conditions and identifies adverse environmental impacts and how they can be eliminated, minimized or mitigated through design, compensation, or construction measures.

Potential environmental impacts are anticipated to be localized within the project area, and the project is anticipated to result in minimal cumulative impacts. Localized positive impacts related to slope stability and erosion issues in the project area are expected through geotechnical and hydrotechnical stabilization of Mill Creek bed and banks.

Some of the potential impacts and mitigations identified in the Environmental Impact Assessment include:

- Surface Water and Hydrology:
    - Potential impacts include alteration of Mill Creek surface hydrology, alteration of drainage patterns in the project area and erosion and sedimentation into Mill Creek during construction.

    - Mitigation measures include armouring the bed and banks of Mill Creek near bridge footings, maintaining drainage patterns through the site, flow-mitigation design within the new channel to reduce downstream flows, retaining entire seasonal and semi-permanent stream lengths and ensuring adequate vegetation in creek banks and side slopes to deter sedimentation of Mill Creek.
    - Other mitigations include requiring the contractor to develop an Erosion and Sediment Control (ESC) plan and an Environmental Construction Operations (ECO) plan and ensure frequent inspection of ESC measures.
- Geotechnical and Soils:
    - Potential impacts include alteration of banks as a result of earthworks to achieve engineering requirements, slope failure during construction, admixing of soils and interaction with contaminated soils.
    - Mitigation measures include limiting the project's construction footprint to the extent feasible, stabilizing creek banks by incorporating engineered vegetated slopes into the design, regularly monitoring and maintaining the slopes and segregation and testing of fill materials or stained soils excavated during construction to determine appropriate disposal options.
    - Further mitigations include the contractor's development of an Environmental Construction Operations (ECO) plan and the inclusion of recommendations listed in the Geotechnical Assessment in the construction plan.
- Vegetation loss and spread of invasive species:
    - Potential impacts include loss of native plant species and the introduction or spread of weeds resulting from construction activities.
    - Mitigations include limiting the project's construction footprint to the extent feasible, utilizing the existing bridge footprint, setting up a laydown area outside of Mill Creek Ravine and implementing a landscape and restoration plan for revegetation with species similar to existing conditions.
    - Other mitigations include developing a Tree Preservation Plan, requiring weed control prior to, during and after construction and including cleaning equipment in the contractor’s Environmental Construction Operations plan to reduce the spread of weeds.
- Wildlife and Wildlife Habitat:
    - Potential impacts include disturbance of nests, dens or hibernacula, breeding disturbance or overwintering of wildlife and mortality of wildlife during construction.
    - Mitigation measures include designing for wildlife passage under the bridge to facilitate access to additional habitat in Mill Creek, minimizing work footprint to avoid disturbance of natural habitats, completing wildlife and nest sweeps by a qualified wildlife specialist outside of nesting period and completing nest sweeps before the outset of construction to prevent incidental take during the nesting period.
    - Other mitigation includes identifying a setback through consultation with Environment and Climate Change Canada (ECCC) if migratory birds or their nests are identified

during the nest sweep, species of regulatory concern are encountered or dens or hibernacula are encountered.

- Fish and Fish Habitat:
  - Potential impacts include fish mortality, alteration of riparian and instream fish habitat and sedimentation of the watercourse during construction.
  - Mitigation measures include accommodating fish habitat features within the new channel alignment, working in the low-water season and isolated conditions, limiting the extent of work, directing the grading away from Mill Creek to the extent possible and using design measures such as dams made of non-earthern materials to separate the work site from water flow.
  - Other mitigations include the contractor developing an Environmental Construction Operations plan that includes fish scare and rescue techniques, implementing erosion and sediment control measures and monitoring sediment release.
- Historic Resources:
  - Potential impacts include encountering incidental finds during construction that have historical value.
  - Mitigation measures include developing a chance-find procedure by the contractor for the incidental finding of historical resources during construction and paleontology monitoring for excavations that reach bedrock.
  - An archaeological and paleontological Historical Resource Impact Assessment (HRIA) has been completed, and a monitoring program will be implemented for excavations during construction.
- Recreational and Visual Resources:
  - Potential negative impacts include trail closures, construction detours, loss of historic aesthetic value and loss or change of vegetation aesthetic value.
  - Mitigation measures include designing the trestle bridge similar to the existing structure, incorporating design elements to complement the natural environment, narrowing construction limit, using fence during excavations, minimizing construction time and trail closures to the extent possible, providing signage at all trail entries notifying the public of closures and providing detour options well in advance.
  - Other mitigations include planting and seeding with native species known to be present in the Mill Creek Ravine, designing and implementing a Tree Protection Plan and incorporating an engineered vegetated slope to enhance the aesthetic value of the eroded creek bank.

The Site Location Study in Attachment 2 contains a summary of the location analysis and justification, as well as a review of financial, social, environmental and institutional constraints that make the roadway bridge location and creek realignment inside the North Saskatchewan River Valley essential. The Site Location Study highlights that the roadway bridge is part of the 76 Avenue crossing of Mill Creek, an important east-west connection in an area with limited crossings. It is dependent on its current location in the River Valley to accommodate current and future needs and due to the constraints of being a replacement project.

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Replacement of the culvert at an alternate location within Mill Creek Ravine would require additional disturbance to the natural environment and may not provide the same functionality for local users. Relocating the roadway bridge outside the River Valley would also not be feasible. Removal of the culvert along with vehicular traffic would re-direct motorists, emergency services and delivery vehicles to other surrounding corridors.

Creek realignment in this location helps improve stream flow, reduce erosion and restore water and creekside habitats. The most suitable option is replacing the culvert with a roadway bridge at the current location. This will maintain the vital east-west connective link while minimizing adverse environmental and user impacts, in alignment with the North Saskatchewan River Valley Area Redevelopment Plan, Breathe: Edmonton's Green Network Strategy, The City Plan, and other plans and policies.

Considering financial, social, environmental and institutional constraints, the Site Location Study highlights that the current River Valley location is essential because:

- Relocating the 76 Avenue crossing to a new location would have resulted in significant cost increases due to the need for additional roadworks and rehabilitation and restoration of the current location.
- Social and institutional benefits are tied to the current location of the 76 Avenue crossing in the River Valley. Maintaining 76 Avenue connectivity across Mill Creek ravine aligns with future City plans for mass transit and maintaining access to local businesses. The project supports the goals of Bylaw 7188 and Edmonton's Breathe: Green Network Strategy and Natural Connections Strategic Plan by balancing infrastructure needs with environmental preservation. The culvert replacement with a roadway bridge that includes the faithful replication of the Mill Creek Trestle Bridge upholds the existing Historic Designation Bylaw of the Trestle Bridge.
- Replacement of the 76 Avenue Mill Creek culvert crossing with a roadway bridge in the existing location minimizes new land disturbance in the city while restoring and enhancing the existing Mill Creek ecosystem. The open channel bridge will reduce barriers to fish passage, enhance hydraulic capacity and reduce erosion and flooding risks. The creek realignment and bank stabilization will strengthen the resilience of the ravine against extreme weather events and improve wildlife passage with improved light, sight lines and headspace.

Budget/Financial Implications

Funding for the Mill Creek Trestle Bridge and 76 Avenue culvert replacement was approved within the City's Transportation: Bridges & Auxiliary Structures - Renewal Capital Profile (CM-24-0000) as part of the 2023-2026 Capital Budget. The project has reached checkpoint 3 of the Project Development Delivery Model, therefore a request for the creation of a new standalone profile will be brought forward during the 2025 Spring Supplemental Capital Budget Adjustment for approval.

Legal Implications

Section 3.5.3 of Bylaw 7188 requires City Council to approve the attached Environmental Impact Assessment (Attachment 1) before the proposed replacement of the trestle bridge and 76 Avenue culvert can proceed to construction.

In addition, Section 3.5.3 of Bylaw 7188 requires City Council to approve the attached Site Location Study (Attachment 2) for the replacement of the 76 Avenue culvert with a roadway bridge and the realignment of Mill Creek, and that the location of the roadway bridge within the river valley be deemed essential by City Council before construction can proceed.

Community Insight

Stakeholder engagement was conducted during the preliminary design phase of the project. In late 2022, introductory project letters were sent to various external stakeholders, including community leagues, environmental organizations, river valley and active transportation groups. Meetings were arranged with the groups who expressed interest. Following the initial round of stakeholder meetings, the decision was made to replace the existing culvert under 76 Avenue. In light of this decision and to share project updates, follow-up project letters with an invitation to meet were sent to the same external stakeholders in late 2024.

The meetings (a combination of virtual and in-person) were held with the following stakeholders to share information and gather local knowledge and feedback to inform the development of environmental mitigation strategies and plans for traffic and active transportation accommodation. Input was gathered at the ADVISE level of engagement and considered as part of the design process.

- Paths for People
- Edmonton River Valley Conservation Coalition (ERVCC)
- North Saskatchewan River Valley Conservation Society (NSRVCS)
- Ritchie Community League
- Avonmore Community League

Other stakeholders who were provided information about the project but did not request meetings as of the time of this report preparation included:

- River Valley Alliance
- Sierra Club
- Bike Edmonton

The following information was shared with the stakeholders through the two rounds of meetings:

- Trestle bridge history, current condition, and preliminary replacement design
- Culvert condition and preliminary rehabilitation strategy (round 1) and replacement bridge preliminary design (round 2)
- Mill Creek realignment, restoration and slope stabilization scope
- Overall project timelines

- Environmental assessments and anticipated current construction plans with anticipated pedestrian and vehicular detours

Stakeholders generally supported the Project, particularly the decision to replace the culvert and include the realignment and daylighting of Mill Creek. Rehabilitation of the existing substandard culvert was initially a source of concern. General stakeholder support was provided based on understanding the tree removals required for the creek realignment and planned inclusion of rip-rap for bank stabilization. Bat boxes were also suggested. However, they are not currently planned due to the absence of bats observed during environmental site reviews.

Some stakeholders were concerned about the extent, accessibility and duration of pedestrian and traffic detours and suggested clear and proactive communication regarding the impacts prior to and during construction. This feedback will be considered as detour plans are developed. Project communications are anticipated to include a pre-construction information sharing session and additional information sharing during construction, which will be confirmed as the project advances.

A suggestion was made to close and renaturalize 76 Avenue at Mill Creek Ravine. 76 Avenue will remain an important east-to-west route for all modes of transportation as the area's mobility network evolves through ongoing projects and City plans. The Mill Creek Trestle Replacement project focuses on replacing the historic Mill Creek Trestle Bridge and addressing erosion and geotechnical issues in Mill Creek. With limited crossings over Mill Creek and the feedback we have received regarding the temporary lane restrictions on 76 Avenue caused by other erosion control work, closing 76 Avenue to vehicular traffic as part of the bridge replacement project is not feasible.

The project team is committed to ensuring continued communication and information sharing with area residents and stakeholders. The project webpage will continue to be updated with the most up-to-date information. Pre-construction communications will also be available to outline construction impacts or detours in advance of the construction start date.

GBA+

During the preliminary design phase of the project, a diverse range of communication tactics and engagement strategies were implemented for stakeholders to learn about the project and to share input. This included email communication and virtual and in-person meetings. While regulatory constraints such as the Municipal Historic Resource Designation Bylaw and River Valley Bylaw limit the scope for public input on the structure's design, GBA+ principles were integrated into areas where stakeholders' feedback could have a meaningful impact, including construction detours and environmental mitigation measures.

Stakeholder meetings were held during the preliminary design phase with diverse groups such as nearby community leagues, Paths for People and the Edmonton River Valley Conservation Coalition. This allowed the project team to gather feedback from different perspectives to identify additional design considerations to mitigate or remove barriers to equity and support equality of outcomes, such as ensuring detour routes during construction are accessible to users of all ages

and abilities. Stakeholder input will continue to inform decisions on construction impacts and accessibility planning.

Environment and Climate Review

Mill Creek forms a hydrological and ecological connection to the North Saskatchewan River and plays a significant role for the residents of the City of Edmonton. The Environmental Impact Assessment report for the 76 Avenue road bridge over Mill Creek (B038), the Trestle Bridge (B034) replacement, and Mill Creek realignment (together referred to herein as the Project) describes the pre-construction environmental conditions for the valued ecosystem components and outlines mitigation measures for environmentally sensitive areas. The mitigation measures will be implemented during the Project's design and construction phases. The following is of note:

Regulatory Requirements and Permits

- Appendix B of the Environmental Impact Assessment report lists all regulatory approvals, permits and notifications needed for the Project. While these regulatory requirements are necessary, the Project must also comply with all other applicable environmental statutes, regulations, policies and standards. Key environmentally sensitive areas of interest that require specific regulatory protection are:
    - The realignment of Mill Creek and bank stabilization, which will change the hydrological and ecological aspects of the creek, will require a permit application under the provincial Water Act. Submission for a permit will be completed during the detailed design stage of the Project.
    - Replacement of the culvert and the trestle bridge will require an application under the provincial Water Act's Code of Practice, which will be completed at the tendering stage of the Project.
    - The federal Department of Fisheries and Oceans (DFO) is expected to review the Project due to instream work that will affect fish habitat and alter the riparian zones. If the proposed mitigation measures to protect fish and fish habitat through open bridge design and minimization of sedimentation during construction are deemed sufficient, an Authorization or Letter of Advice will be issued prior to project commencement.

Creek Realignment and Roadway Widening

- Mill Creek will be realigned from its current orientation to assume a more perpendicular alignment to accommodate the new open road bridge, which replaces a culvert that was previously carrying the Creek under 76 Avenue. While this option will result in the Creek's most naturalized and daylighted sections, bank stabilization and erosion from bank slope alterations will still need to be mitigated. Widening 76 Avenue will also cause further erosion risk. To mitigate the risks, armouring the Creek banks using a pile wall and integrated plant-based bioengineered slope stabilization measures has been recommended for short-term and long-term bank stability.

Fish and Fish Habitat

- Instream work that will affect fish and fish habitat is anticipated to occur as part of this Project, due to alteration of the riparian zones and realignment of the Creek. The contractor will be responsible for completing any notifications required by regulations. The contractor will also be developing and implementing an erosion and sediment control plan as identified in the Environmental Impact Assessment. Measures to protect fish and fish habitat will include fish habitat features within the new channel alignment, such as riffles, flats and both large and deep pools. A 'low-flow' channel will be incorporated into the design to allow fish habitat to be present during drought conditions.

Tree Removal and Restoration

- Removal of public trees is proposed as part of the Project. A separate Tree Preservation Plan is being developed in consultation with the City's Urban Forester and Natural Area Operations team to provide a clearer understanding of tree removal requirements. 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.

Bird Protection

- The Project may impact birds protected under the *Migratory Birds Convention Act*. To address this, the Environmental Impact Assessment 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 Environmental Impact Assessment identified that the Project Area and 100-meter buffer around it provide moderate to high potential habitats for various bat species. If bat roosts are identified during construction and could be further affected by the project, the contractor will be responsible for preparing and completing any required notifications or consultations with regulatory agencies.

Adherence to the Environmental Impact Assessment mitigation measures will support the City in meeting compliance requirements.

Attachments

1. Mill Creek Trestle Bridge (B034) and Culvert under 76 Avenue (B038) Replacement - Environmental Impact Assessment
2. Mill Creek Trestle Bridge (B034) and Culvert under 76 Avenue (B038) Replacement - Site Location Study