McKenney Creek Restoration and Enhancement Plan - Project Context, Issues, and Next Steps

Recommendations:

THAT Council receive this report for information; and

THAT staff report back to Council with a recommended McKenney Creek Restoration and Enhancement Plan for Council's consideration and direction.

Report Purpose and Summary Statement:	This report provides Council with an update on the McKenney Creek Restoration and Enhancement Plan project. The Plan is intended to improve the ecology of McKenney Creek while mitigating development and climate change impacts. The Plan is not intended to finalize detailed engineering design, pre-determine outcomes for individual private properties, or propose changes to Lougheed Transit Corridor Area Plan land use designations.
Financial Impact:	The current budget for the study phase is approximately $200,000. Future capital/operating impacts will be reported through the Capital Plan process, with order-of-magnitude costs and phasing.
Strategic Alignment:	The City's Climate Leadership & Environmental Stewardship strategy includes the objective of enhancing and protecting the health of our natural environment. This report introduces a study targeting one of the Key Results under that objective: "Develop a strategy to manage the health of the McKenney Creek system."
Climate Impact:	The Plan will consider projected increases in precipitation associated with climate change.
Communications:	Engagement will be limited to targeted stakeholders (e.g., Climate and Environmental Advisory Committee and Alouette River Management Society). Further consultation and collaboration will occur once the McKenney Creek Restoration and Enhancement Plan is complete and more detailed implementation plans and studies are underway.

Applicable Legislation/ Bylaw/Policy:

The Natural Features section of the Official Community Plan provides principles and policies that support the McKenney Creek Restoration and Enhancement Plan, such as:

Principle 23: The community values the protection of environmentally sensitive areas including, water (for its intrinsic value, habitat and aquifer recharge), areas of natural beauty, forests, etc.)

Principle 24: The community recognizes the environmental contribution made by lands within the ALR.

Principle 25: Providing access to nature by way of a trails system is important as a means to optimize recreational resources in an environmentally friendly way.

Principle 26: There is value in integrating natural features of the environment into development through planning and design.

Policy 5-6: Maple Ridge will work toward achieving the goal of a positive benefit for the [City's] natural features by designating Conservation areas and by mitigating the potential for habitat impacts with enhancement, restoration, environmental monitoring and other alternatives that are acceptable to the municipality.

Policy 5-38: Maple Ridge will encourage new developments to incorporate Low Impact Development (LID) elements into the design of sites to manage rainfall at the source.

To: Mayor and Council **File number:** 11-5255-20-082-06

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BACKGROUND:

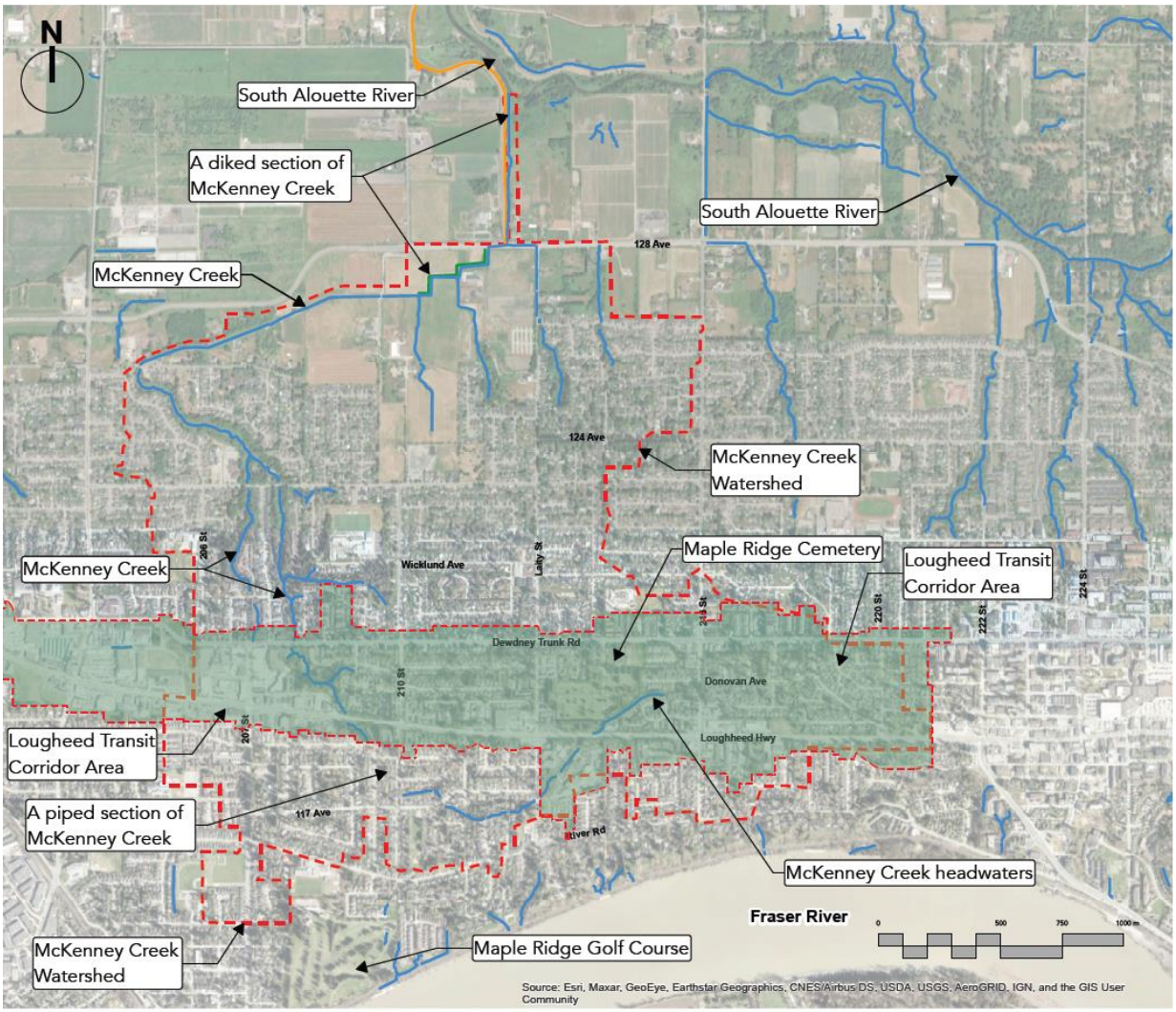
McKenney Creek is a critical natural asset existing within the City's western urban and agricultural areas. The McKenney Creek Restoration and Enhancement Plan is intended to protect and enhance the creek system while accommodating development in the catchment area, with an emphasis on development within the Lougheed Transit Corridor Area.

The City retained Gökotta Studio + Lab with sub-consultants Water Street Engineering and Diamond Head Consulting to provide specialized multidisciplinary expertise in developing a recommended plan addressing watershed health, drainage capacity, climate resilience, and restoration priorities.

The headwaters of the 500-hectare McKenney Creek catchment overlap the Lougheed Transit Corridor Area Plan (LTCAP) boundary. The downstream portion of McKenney Creek runs through the Agricultural Land Reserve (ALR) and is constrained by the Pitt Meadows Diking System (Figure 1).

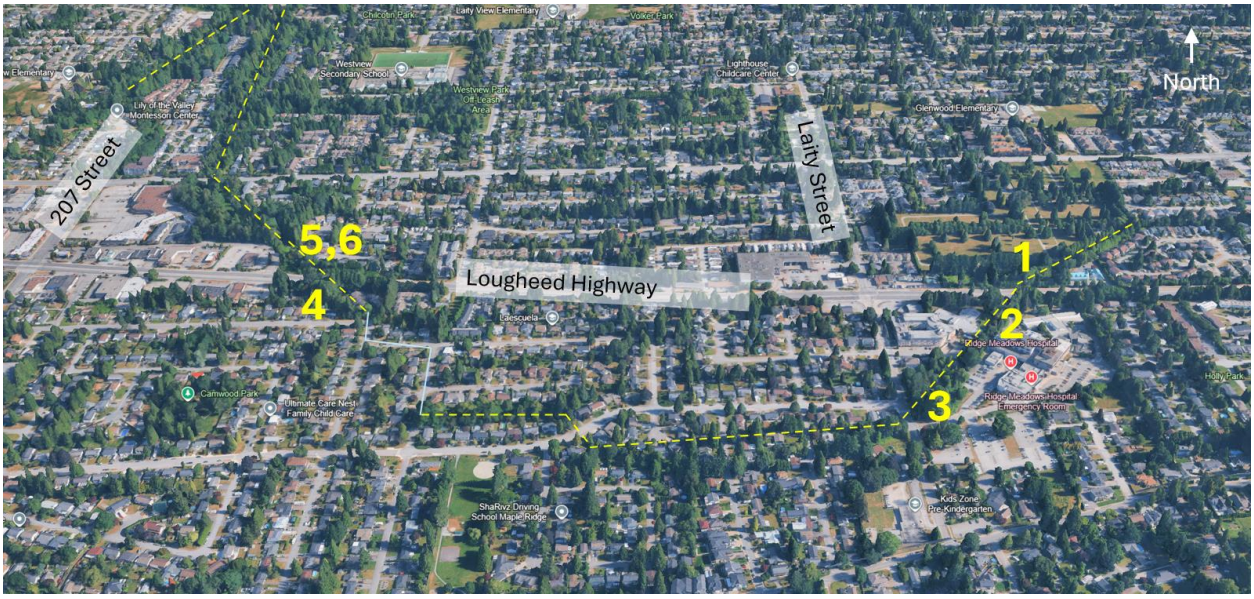
The Plan will document current environmental conditions; identify opportunities to mitigate urban densification and climate change impacts; set targets for managing peak flow rates and water quality; and propose phased measures to enhance and restore McKenney Creek.

Figure 1: McKenney Creek catchment area and Lougheed Transit Corridor Area



McKenney Creek has been heavily impacted by urban and agricultural development; however, the stream remains an important natural asset with tremendous potential. The maps and photos below introduce some of the stream's many faces.

McKenney Creek, south end looking north with numbered photo locations (Google Earth)



McKenney Creek, north end looking south with numbered photo locations (Google Earth)

PHOTO 1: North of Lougheed Highway, across from Ridge Meadows Hospital (wet weather):

PHOTO 2: South of Lougheed Highway at Ridge Meadows Hospital (wet weather)

PHOTO 3: East of Laity Street at Ridge Meadows Hospital (wet weather)

PHOTO 4: South of Lougheed Highway near White Spot Restaurant (wet weather)

PHOTO 5: North of Lougheed Highway near White Spot Restaurant (wet weather)

PHOTO 6: North of Lougheed Highway near White Spot Restaurant (between storms)

PHOTO 7: South of Abernethy Way & west of 208 Street (wet weather)

PHOTO 8: South of Abernethy Way & west of 208 Street (between storms)

PHOTO 9: Laity Creek (once joined by McKenney Creek) between Abernethy Way and South Alouette River

PHOTO 10: Laity Creek (once joined by McKenney Creek) flowing into South Alouette River

PROJECT OBJECTIVES AND MITIGATION REQUIREMENTS:

The Restoration and Enhancement Plan is intended to achieve the City's Objective/Key Result titled "Develop a strategy to manage the health of the McKenney Creek system." The Plan will outline objectives, target criteria and interventions to manage the health of the McKenney Creek system and mitigate the combined effects of development and climate change. This section outlines issues the Plan is expected to address.

Ecological Health, Biodiversity, and Invasive Species:

The Plan will propose restoration actions to improve stream and riparian condition throughout the McKenney Creek corridor, recognizing that current conditions vary by section and have been influenced by historical alteration. Significant issues include the presence of invasive plant species (e.g., reed canary grass and Himalayan blackberry), constraints on habitat continuity, and limited riparian shading and in-stream habitat complexity in the lower agricultural reaches.

Water Quality:

Urban stormwater runoff contains pollutants and increasing traffic volumes are expected to increase pollutant loading to McKenney Creek unless treatment measures are implemented. The Plan will identify opportunities and targets to improve stormwater quality treatment.

Beautification / Community Connectivity:

The Plan will support broader community objectives by identifying opportunities to enhance the appearance and function of the McKenney Creek corridor as a valued natural amenity, including improved community access and connectivity to the creek where feasible. These objectives will be pursued within the existing LTCAP framework as development progresses.

Flooding / Drainage Capacity:

The Plan will set stormwater management targets for developments and identify infrastructure upgrades to address flood risks. Mitigation options will focus on measures such as on-lot rainwater storage with controlled release rates, infiltration where permitted, drainage system upgrades, and the management of invasive vegetation and beaver dams that impede water flow.

CHALLENGES:

The McKenney Creek Restoration and Enhancement Plan must address and overcome several challenges, as described in this section.

Increased Stormwater Runoff from Urban Densification and Climate Change:

Redevelopment will increase impervious surface area within the catchment as precipitation increases due to climate change. On and off-lot rainwater management controls must be implemented to offset these changes.

Infiltration Constraints:

The City's Fraser River Escarpment Policy restricts rainwater infiltration in the area bound by 207 Street, 124 Avenue, 224 Street and the Crest of the Fraser River Escarpment. The policy states:

- No groundwater discharge of new construction residential, commercial, road or parking areas shall be allowed
- Landscape ponding is not permitted

Rainwater infiltration is typically an important feature in offsetting development impacts. With so much of the McKenney Creek catchment area within the Escarpment Policy area, it will be important for the Plan to offer solutions that work around this restriction.

Property Access:

McKenney Creek traverses both City-owned lands and private properties. Stream Restoration and Enhancement projects at some locations will be delayed pending land dedications through development or other forms of obtaining approval/access.

Funding and Financial Implications:

Implementation of the Plan will depend on the availability, timing, and eligibility of funding.

OPPORTUNITIES:

Much can be done to offset the impacts of development and climate change while restoring and enhancing the health of McKenney Creek. Opportunities include making space for water, slowing the movement of water, infiltrating water where possible and improving stream and riparian ecology. The McKenney Creek Restoration and Enhancement Plan will recommend improvements such as:

- Setting specific targets for development projects to store rainwater and slowly release it
- Dedicating green areas that will absorb rainfall
- Installing features that will reduce pollutant loadings in water before it enters McKenney Creek
- Upsizing drainage infrastructure
- Reinstating riparian areas and naturalizing degraded sections of the watercourse
- Removing invasive plant species and planting native species
- Increasing access to and appreciation for McKenney Creek

Several policy frameworks and City initiatives already exist that will support the Plan.

Lougheed Transit Corridor Area Plan Policies:

The Lougheed Transit Corridor Area Plan lists several policies that will support the McKenney Creek Restoration and Enhancement Plan through:

- Dedication of lands for parks, conservation areas, and recreational trails
- Prioritizing retention of existing trees and planting of new trees as part of new development
- Supporting nature-based solutions and healthy riparian areas with high vegetation cover
- Placing a focus on stormwater management and green infrastructure

Maple Ridge Climate Action Plan

The City's Climate Action Plan sets targets that will complement and support the McKenney Creek Restoration and Enhancement Plan, in particular:

- Achieving 40% tree canopy cover in the urban area by 2050
- Limit site impervious on [non-apartment] residential parcels to 60% or less

Maple Ridge Integrated Stormwater Management Plan

The City's South Alouette Integrated Stormwater Management Plan provides recommendations that may be implemented as part of the McKenney Creek Restoration and Enhancement Plan such as the following:

- Projects that provide water quality treatment of roadway runoff that is piped directly into sensitive aquatic habitats
- Seek to achieve effective watershed habitat networks
- Conduct erosion and bank stability monitoring as well as stream substrate monitoring
- Work with the Agricultural Land Commission, BC Ministry of Agriculture and Food, BC Ministry of Environment and Parks, Fisheries and Oceans Canada and others to encourage and support environmental enhancements on farms, in achievement of a riparian buffer area adjacent to watercourses
- Strengthen the City's Design Criteria with respect to stormwater quality treatment and associated performance targets, with stronger emphasis on landscape-based green infrastructure where possible

Green Infrastructure Guidelines:

Under the City's Climate Leadership & Environmental Stewardship Strategy, an Objective and Key result have been set for mitigating and adapting to the impacts of climate change through development of green infrastructure design guidelines. The green infrastructure design guidelines are currently in development for delivery in 2026 and will support the McKenney Creek Restoration and Enhancement Plan.

Fraser River Escarpment Assessment:

The City is currently undertaking a Fraser River Escarpment Assessment Project which could recommend relaxation of infiltration policies which limit stormwater management solutions.

NEXT STEPS:

The next steps of the project will focus on targeted consultation, report development and refinement. Staff will bring the McKenney Creek Restoration and Enhancement Plan report to Council for consideration at a future meeting.

CONCLUSION:

A McKenney Creek Restoration and Enhancement Plan is being developed to fulfill the "Enhance and protect the health of our natural environment" objective under the City's Climate Leadership & Environmental Stewardship strategy. Gökotta Studio + Lab along with sub-consultants Water Street Engineering and Diamond Head Consulting have been retained to develop the Plan with involvement of City staff from various departments and targeted consultation. Staff will report back to Council with the Plan for consideration.

Prepared by: Yvonne Wai, Senior Project Engineer

Report Approval Details

Document Title:	McKenney Creek Enhancement and Restoration Plan Status Update April 2026.docx
Attachments:	
Final Approval Date:	Mar 30, 2026

This report and all of its attachments were approved and signed as outlined below:

Joe Dingwall, Manager of Utility Engineering

Zvi Lifshiz, Director of Corporate Strategy/Chief Strategy Officer

Carolyn Mushata, Director of Legislative Services and Corporate Officer

Scott Hartman, Chief Administrative Officer