

CAPITAL PROJECT CHARTER

Year: 2025 – 2028

Charter Number: STORMWT-021

Charter Name: Carrot Creek Erosion and Sediment Control (Multiple Locations)

Lead Department: Engineering Services

Type: Growth

Explanation (RMR or Growth): This project will enhance long term bank stability, preserve riparian areas, improve stormwater conveyance, and ensure the resilience of Carrot Creek.

Asset Category: Roads & Other Engineered Structures

Scope Statement: Scope shall include engineering, design, regulatory approvals, and construction of targeted erosion and storm conveyance protection measures along Carrot Creek.

PROJECT CHARTER JUSTIFICATION

Current State

Carrot Creek is a key regional watercourse that flows through the northern and western areas of St. Albert and outfalls into Big Lake. Carrot Creek serves as the natural drainage watercourse and conveyance of stormwater runoff for a significant area within St. Albert. Carrot Creek is fed predominantly through precipitation and is susceptible to flooding during spring snow melt and high precipitation events. Protecting this natural drainage asset, is vital for the long-term sustainability of St Albert's stormwater management and to support ongoing drainage needs.

The Carrot Creek Regional Drainage Master Plan (CCRDMP) was completed in 2022 and done in collaboration with the Town of Morinville and Sturgeon County. This study assessed the current state of Carrot Creek through geomorphic assessment, site inspections, and computer modeling of various stormwater events. The analysis identified several areas of concern along the creek which are facing bank failures, ongoing erosion issues, localized scouring, and flooding issues. Many of these issues occur at infrastructure crossings, such as road or rail crossings. The study provided recommendations for the general remediation and protection of Carrot Creek against further ongoing erosion and sediment issues.

A total of five priority locations were identified in the report as listed on Table 6-13 of the CCDMP. The project scope will include detailed design, regulatory approvals, landowner coordination, and construction. Specific improvements will include erosion protection, rip-rap, bioengineered options, and culvert upgrades.

Issue(s)

1. Hazards observed along the creek during the geomorphic assessment and site observations include:
 - Bank failures
 - Broad floodplains prone to flooding
 - Undercut banks and ongoing erosion
 - Localized scouring around bridge crossings and culverts
 - Channel degradation

These hazards pose long-term risks to critical infrastructure such as road and rail crossings through the ongoing erosion and undercutting around culverts, wingwalls, and banks.

2. Flooding was observed in April 2020 upstream of the CN railway crossing. During that period over a dozen skid mounted pumps were required to mitigate flood impacts.
3. The ongoing erosion of the creek's banks causes sediment loading in the creek, which is carried downstream and can settle in slow moving water areas. This suspended sedimentation also has a detrimental impact on the overall water quality and ecosystem.

Opportunities

1. St Albert was the recipient of the Drought and Flood Protection Program (provided through the Province) where the City has received grant approval for funding up to \$2,821,000, covering 70% of the projects total expected costs.
2. By remediating and protecting Carrot Creek through the project's proposed erosion and sediment control measures, it will increase the resilience of the creek, allowing it to handle increasingly dynamic weather events such as flash floods and continue to be a reliable drainage system for the City's stormwater management strategy. Critical infrastructure such as road and rail crossings will benefit from lower erosion and improve bank stability at these junctions.
3. This project will enhance and protect one of our natural drainage assets while preserving the ecological value of the creek.
4. This project will provide the confidence to increase the post development storm discharge rate currently permitted at 1.8 L/s/ha to 2.5 L/s/ha, enhancing the ability to have smaller storm water management facilities in the future developable areas.
5. The advancement of this project warrants additional coordination or re-prioritization with City's future planned projects along this water course such as bridge rehabilitation or replacement.

Risks

1. The project costs are currently scoped at a high-level estimate (conceptual level). Detailed design and future market condition will dictate the final cost of this project which may trigger additional budget request or revisiting of the scope and deliverables.
2. Work will require adjacent landowner consent in certain areas for construction access and working space around the creek.
3. CN Rail approvals will be required for any work within or in proximity to railway right-of-way. Additional negotiations are required to garner the opportunity regarding the upgrade of CN culvert in tandem with this project, which may have schedule impacts to certain scope of this project.
4. Any work within the creek requires environmental regulatory approvals, which may influence the schedule, scope and budget of the project.
5. Costs may escalate beyond original estimates over time due to unforeseen impacts or higher than anticipated inflation.

STRATEGIC PLAN & CORPORATE BUSINESS PLAN ALIGNMENT

Council Strategic Priority: 4. Adapting to a Changing Environment

Initiatives: 4.5 Resilient Infrastructure Strategy

Operational Excellence Priority Area: N / A

Initiatives: N / A

Stakeholder Identification:

- Council: project status, Off Site Levy Updates, budget considerations.
- Planning and Development: Connection to ongoing development
- BILD members: Technical Working group and OSL working group
- Public Operations: Planned projects and timelines for operational impact identification.
- External Agencies: Approvals, project status
- Grant Authority: Financial updates, project status, reporting
- Other internal City departments

Timeline:

- Detailed Engineering Q2 2025 to Q4 2025
- Regulatory Approvals & Working Space Agreements Q1 2026 to Q4 2026
- Tender Q1 2027 to Q2 2027
- Construction Q2 2027 to Q3 2028

FINANCIAL INFORMATION:	Investment Year	2025	\$	503,750
		2026		-
		2027		3,526,250
		2028		
		2029		
		2030		
		2031		
		2032		
		2033		
		2034		
		Total	\$	4,030,000
	See Capital Project Worksheet for details.			

Operational Impacts: Minimal: the improvements are passive infrastructure (i.e. rip rap, bioengineering, culverts)

Associated Operating Business Case: No

CAPITAL PROJECT WORKSHEET

PROJECT COMPONENT	2025	2026	2027	2028	2029	2030	2031	2032	2033
Land Determined Costs									
Concept Planning									
Detailed Planning and Design	\$ 503,750		\$ 503,750						
Site Servicing									
Structure/Building Construction			\$ 2,418,000						
Landscaping									
Construction Management									
Commissioning and QA/QC									
Contingency			\$ 604,500						
Inflation									
Equipment									
Other									
TOTAL	503,750	-	3,526,250	-	-	-	-	-	-

Comments: The year of construction will be dependent on obtaining all necessary regulatory approvals and agreements