COUNCIL REPORT

CAPITAL INFRASTRUCTURE PROGRAM

Delivery Model Overview

Recommendation

That the June 25, 2025, Integrated Infrastructure Services report IIS02811, be received for information.

Requested Action		Information only	
ConnectEdmonton's Guiding Principle		**ConnectEdmonton Strategic Goals**	
CONNECTED This unifies our work to achieve our strategic goals.		**Healthy City**	
City Plan Values	PRESERVE. CREATE.		
City Plan Big City Move(s)	A Rebuildable City	**Relationship to Council's Strategic Priorities**	Conditions for Service Success
Corporate Business Plan	Managing the Corporation		
Council Policy, Program or Project Relationships	• C591 Capital Project Governance Policy • C598A Asset Management Policy • C555A Capital Infrastructure - Project Delivery Policy		
Related Council Discussions	• February 21, 2024, Integrated Infrastructure Services report IIS02122, Major Capital Project Update • June 11, 2024, Integrated Infrastructure Services report IIS02382, Capital Project/Program Size Review • November 27, 2024, Integrated Infrastructure Services report IIS02537, Cost Benefit Analysis and Cost Drivers on Comparative Capital Projects • November 27, 2024, Integrated Infrastructure Services report IIS02537, Capital Project Planning and Design • December 10, 2024, Integrated Infrastructure Services report IIS02543, Capital Infrastructure - Project Delivery Policy		

Previous Council/Committee Action

At the December 10, 2024, City Council meeting, the following motion was passed:

> That Administration provide a report outlining the various delivery models being used with the current capital program and any current trends relating to new or emerging delivery models (i.e. Alliance) and their expected application for future capital projects.

Executive Summary

- Project delivery methodologies are used throughout the public and private infrastructure community to outline the contracting relationships required to provide the necessary resources, equipment and labour to complete the planning, design and construction of an infrastructure project.
- The City of Edmonton uses multiple construction project delivery methods depending on the type, size and complexity of the project.
- Administration strives to balance dependable project delivery methods, industry participation and collaboration and continuous improvement, with the goal of reducing the City of Edmonton's risk exposure.
- Administration continues to make capital infrastructure project decisions that achieve the most benefit for Edmonton while mitigating risk.

REPORT

Administration advances capital infrastructure through five distinct phases: strategy, concept, design, build and operation. Integrated Infrastructure Services (IIS) typically leads or supports capital projects as they progress through the project lifecycle from concept to build. This process allows for integration, collaboration, investigation and data collection to ensure the program and project needs are well supported with ample information that is available to aid in sound decision-making. Administration uses typical project tools, processes and frameworks to ensure a level of consistency through the decisions required in the development and delivery of the council approved capital plan.

Each capital infrastructure project has unique and specific characteristics that need to be reflected in project-level decisions to support successful outcomes.

One of the key decisions is the selection of a construction project delivery method. The project delivery method establishes how interested parties collaborate throughout the planning, design and building phases, offering varying levels of risk allocation. It determines the contractual environment that defines the design and construction process, including the sequencing of tasks from concept to delivery. It also defines project roles and responsibilities of the Owner, Designer and Contractor.

Project Delivery Method Selection

Selecting a project delivery method is one of many decisions made early in a project lifecycle to support the successful completion of a capital construction project. Each project delivery method

involves varying degrees of risk management, control and contractual obligations for all parties involved. Although every method could be used to deliver any project, different types of projects lend themselves to certain project delivery methods. Selecting the optimal method is a decision that includes multiple factors such as:

- Value for money,
- Market conditions and market interest (capacity, competency and risk tolerance),
- Project-specific considerations such as risks, complexity and size, and operational considerations (where applicable),
- Cost and schedule drivers; and
- Owner and industry expertise that will leverage private sector expertise and innovation opportunities.

Projects with less complexity and more common approaches to construction may achieve greater value from a more traditional project delivery method, such as Design-Bid-Build. Projects with higher levels of uncertainty or complexity could benefit from methods that are structured differently. More collaborative methods, like Integrated Project Delivery, require greater upfront resource investment from all involved parties including the owner, contractor and consultants, but they should offer the benefit of more informed design with higher confidence in the project development. This means project owners have to balance the needs of the project with the opportunities and risks each method presents.

Typically, the project delivery method is a decision collaboratively made by project participants that could include members such as project managers, Corporate Procurement and Supply Services, Legal Services, Financial Services, grant partners, industry feedback and other internal business partners. On larger projects, this decision could be informed by formal and/or informal market sounding. Based on the recent updates made to Council Policy C555A, Capital Infrastructure Project Delivery on December 10, 2024, projects that are more than $250 million are required to report to Standing Committee on the project procurement plan including information and analysis about the selected project delivery method.

Administration also works with private industry to evaluate interest, drive appropriate selection and collectively educate on different methods. If there is little to no experience with a newer delivery method with either the owners or industry, there is a potential for enhanced risk or a diminished market response. To mitigate this, Administration establishes working relationships with trusted industry partners and actively participates in various infrastructure associations including the Consulting Engineers of Alberta, Edmonton Construction Association, Alberta Roadbuilders and Heavy Construction Association, and Consulting Architects of Alberta.

The selection of an appropriate project delivery method depends on several factors and is not a decision made lightly. Project scope, timelines, budget, market, risk and delivery method dependability are important considerations in choosing the right delivery method to support project execution on behalf of Edmonton. Any delivery method could be used for any project, with varying results and outcomes. The process of selection is not about achieving perfection but rather about finding the best fit for the project while providing best value for Edmontonians.

CAPITAL INFRASTRUCTURE PROGRAM - Delivery Model Overview

Project Delivery Methods

There are a number of project delivery methods that can be used to enhance the opportunities for project success depending on multiple factors specific to each capital infrastructure project. While many methods exist, most are variations of the five most common models described below:

- **Design-Bid-Build (DBB)** is a traditional project delivery method that involves completing three distinct phases in sequence. The owner holds separate, distinct contracts with the designer and contractor. Construction does not begin until the design process is complete, so there is no overlap between design and construction.
- **Design-Build (DB)** requires only one contract with an entity, including a designer and contractor working together, covering both the design and construction phases. The project usually progresses as an integrated process, overlapping the two phases of design and construction.
- **Construction Management (CM)** involves retaining a contractor during the design phase. This process allows for collaborative input into the design phase to inform constructability and cost estimating, allowing for the overlapping of the two phases of design and construction.
- **Public-Private Partnerships (P3)** generally include one contract with a single entity responsible for design, construction and some form of private financing. This type of model may also include operating and maintenance terms extending beyond the design and construction phases.
- **Integrated Project Delivery (IPD**) aims to spread the risk, responsibility and liability for project execution amongst the primary parties (owner, designer and contractor) through partnership agreements or multi-party contracts. This method is designed to create a single project team at the onset of a project.

Further details on characteristics for these models are found in Attachment 1. Administration balances using tried-and-true project delivery methods while being open to new and changing methodologies. This approach allows for continuous improvement opportunities while shielding the corporation from unneeded risks.

Within the capital construction program, all of the above delivery methods are used in some capacity depending on the project requirements. Attachment 2 provides an overview of the utilization of the different delivery methods for active construction projects within IIS.

No two construction contracts are ever the same, so project delivery methods are only one aspect and one decision that supports the execution of a project; procurement method and contract are also critical to achieving desired outcomes. Attachment 3 outlines how procurement and contract management also have a significant role in project decision making.

Trends in Project Delivery Methodology

Design-Bid-Build gained popularity and consistency from the mid-1900s to the 1990s and is still a dominant method used today. In the 1990s, methods such as Public-Private Partnerships (P3), Construction Management and Design-Build began to be used more often, along with other contract methods beyond the traditional low-bid/lump-sum approach. This shift coincided with

an increase in the complexity of construction projects and a growing need for more engagement with interested parties.

The 2000s saw the rise of Integrated Project Delivery, with Canada's first project in 2012 and the establishment of the Integrated Project Delivery Alliance in 2015. Over the first quarter of the 2000s, the drive for increased collaboration and early contractor involvement resulted in nuanced versions of various delivery methods, such as progressive Design-Build. Administration has been deliberate in learning and incorporating different delivery methods into the capital program over time.

While various early contractor involvement methods are evolving, this does not indicate that more established methods such as Design-Bid-Build are ineffective. In fact, Design-Bid-Build is still one of the most commonly used methods due to industry experience and positive outcome predictability.

Over the past 10 to 15 years, Administration has been adopting and applying different delivery methods to respond to these evolving characteristics. Early contractor involvement and collaboration are not delivery models but rather references to the need for early or increased contractor involvement. Various delivery models, including Integrated Project Delivery and Construction Management projects, are being used to provide this.

The Alliance delivery method is a relatively new collaborative methodology where a single contract defines shared responsibility including risk and reward provisions for Owner, Designer, Contractor and other interested parties. It should be used for complex infrastructure projects where the project scope is difficult to define, risks cannot be adequately defined or measured, or the cost of transferring risk to the contractor is too high.

In 2024, Administration presented Integrated Infrastructure report IIS02122, Major Capital Project Update, which reported on an independent major capital project review to evaluate levels of oversight and project management practices. The review concluded that Administration’s established capital infrastructure project management framework is aligned with industry best practices. Furthermore, it stated that the City's non-prescriptive approach enables the exploration and adoption of new and evolving delivery methods.

In the 2022 Ottawa Light Rail Transit Public Inquiry, the findings warn against starting projects “with the mindset that there is only one acceptable delivery model” and instead recommended that owners “critically analyze the full range of delivery model options using objective criteria appropriate to the project’s circumstances and the public procurer’s various priorities.”[1] The recent update of Policy C555A in December 2024 is a reflection of Administration heeding the findings of this inquiry.

As infrastructure projects continue to become more complex and face a multitude of challenges, Administration strives to strike a balance between the expectations placed on projects, the availability of resources and the tolerance for risks. This balance is underpinned by a concerted effort to institute comprehensive planning and estimation practices as cornerstones of project

[1] Ottawa Light Rail Transit Commission, "Report of the Ottawa Light Rail Transit Public Inquiry, Final Report" (November 2022) (ISBN 978-1-4868-6352-5)

success. Administration continues to drive improvements to support efficient and effective delivery of capital infrastructure projects, including the use of various project delivery methods, to achieve desired project outcomes.

Community Insight

IIS works with industry and associations on awareness building, best practices and market interest assessments when determining project delivery methods. Administration continues to listen to and engage with the public and varied interested parties during the different phases of a capital project, including planning, design and construction. The feedback gathered through the engagement process helps Administration adjust designs and mitigate any potential impacts to reflect the needs of Edmontonians.

GBA+

GBA+ was not completed as part of this report. The scope of the report was to analyze in-house capital construction project data and provide information on project delivery method selection. A detailed GBA+ review of Edmonton's infrastructure projects is commonly initiated during a project's planning and design phases. Administration relies on GBA+ to inform decision-making processes, ensuring diverse perspectives and needs are considered, leading to more equitable and inclusive outcomes.

Environment and Climate Review

This report was reviewed for environmental and climate risks. Based on the review completed, no significant interactions with the City's environmental and climate goals were identified within the scope of this report.

Attachments

1. Project Delivery Method Overview
2. Project Delivery Method Analysis
3. Project Decisions Influencing Project Execution