

**OFFICE OF
THE CITY AUDITOR**

REPORT
VALLEY LINE LRT P3
AND DELIVERY AUDIT

AUGUST 31, 2023

Report Summary

BACKGROUND

The Valley Line LRT is an urban-style, 27 kilometre light rail line that will operate between Mill Woods in southeast Edmonton and Lewis Farms in west Edmonton. The line is being built in two distinct segments, Valley Line Southeast from downtown to Mill Woods and Valley Line West from downtown to Lewis Farms. These projects are structured as public-private partnerships (P3).

For each of these two LRT segments, the City has procured a private partner who is responsible for designing and building the line. The City's relationship with each partner is governed by a project agreement that outlines the project requirements and each partner's risks and responsibilities.

AUDIT OBJECTIVE & SCOPE¹

The objective of this audit was to determine if the LRT Expansion and Renewal Branch (the Branch) is overseeing the Valley Line LRT projects to meet the City's cost-effective and service delivery expectations.

Our audit focus included whether:

- P3 procurement was done in a fair, open, and transparent manner.
- The project agreements were designed to protect the City's interests and to clearly allocate risk between the City and the private partners.
- The Branch is overseeing the project without taking on additional risk for the City.

We did not audit:

- The selection of the P3 delivery model, concept plans and preliminary design, route planning, and feasibility studies.

¹ We conducted this engagement in conformance with the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing*.

- Technical components of the projects' design and construction.
- Work performed by the private partners, including their project management processes.

USE OF SUBJECT MATTER EXPERTS

Given the specialized nature of P3 projects, we engaged the services of two subject matter experts to assist with this audit:

Each of these subject matter experts has a background in working with or assessing P3 agreements and relationships. We engaged:

- A law firm with more than 20 years of experience with advising on major infrastructure projects, including P3 projects. They reviewed specific sections of the project agreement and assessed whether the project agreements clearly allocated risks and protected the City's interests.
- A PhD academic with numerous grant research and publications on P3 practices. They provided input into the procurement processes and management oversight applied to the projects, based on review of the City's processes in comparison to industry standards.

WHAT WE FOUND

Overall, the LRT Expansion and Renewal Branch is overseeing the Valley Line LRT projects to achieve cost-effective and service delivery expectations. Although the Valley Line Southeast project is substantially behind schedule, the City anticipates that it will come in under the original capital construction budget.

The City procured private partners for each Valley Line LRT project in a fair, open, and transparent manner.

Project agreements for the Valley Line Southeast and Valley Line West clearly allocated risks, protected the City's interests, and set out requirements for communication.

The Branch is overseeing the Valley Line Southeast project in accordance with the terms of the project agreement, while refraining from directly managing the design and construction of the project. The Valley Line West project is still too early in the stages of construction to allow us to conclude on the Branch's management of the project agreement, but the project oversight is set up similarly to Valley Line Southeast.

Based on our review of the City's procurement processes, the project agreement design, and project oversight, we saw no need to make formal recommendations as part of this audit.

WHY THIS IS IMPORTANT

Procuring P3 partners in an open, fair, and transparent manner, and using well-defined processes, creates the best opportunity for the City to select technically qualified candidates that represent the best financial value for the City.

Clearly laid out project agreements reduce the potential for disagreements by outlining who is responsible for specific terms and conditions, and the related timelines. They also protect the City financially, as they include payment deductions when certain thresholds are exceeded, such as lane closures, tree damage and transit impacts.

The City is holding its private partner accountable for delivery of the Valley Line Southeast infrastructure, in compliance with the project agreement.

Valley Line LRT P3 Summary

VALLEY LINE LRT

The Valley Line LRT is an urban-style 27 kilometre light rail line that will operate between Mill Woods in southeast Edmonton and Lewis Farms in west Edmonton. The City is building the line in two distinct segments, Valley Line Southeast from downtown to Mill Woods and Valley Line West from downtown to Lewis Farms. These projects are structured as public-private partnerships (P3).

WHAT IS A P3 PROJECT?

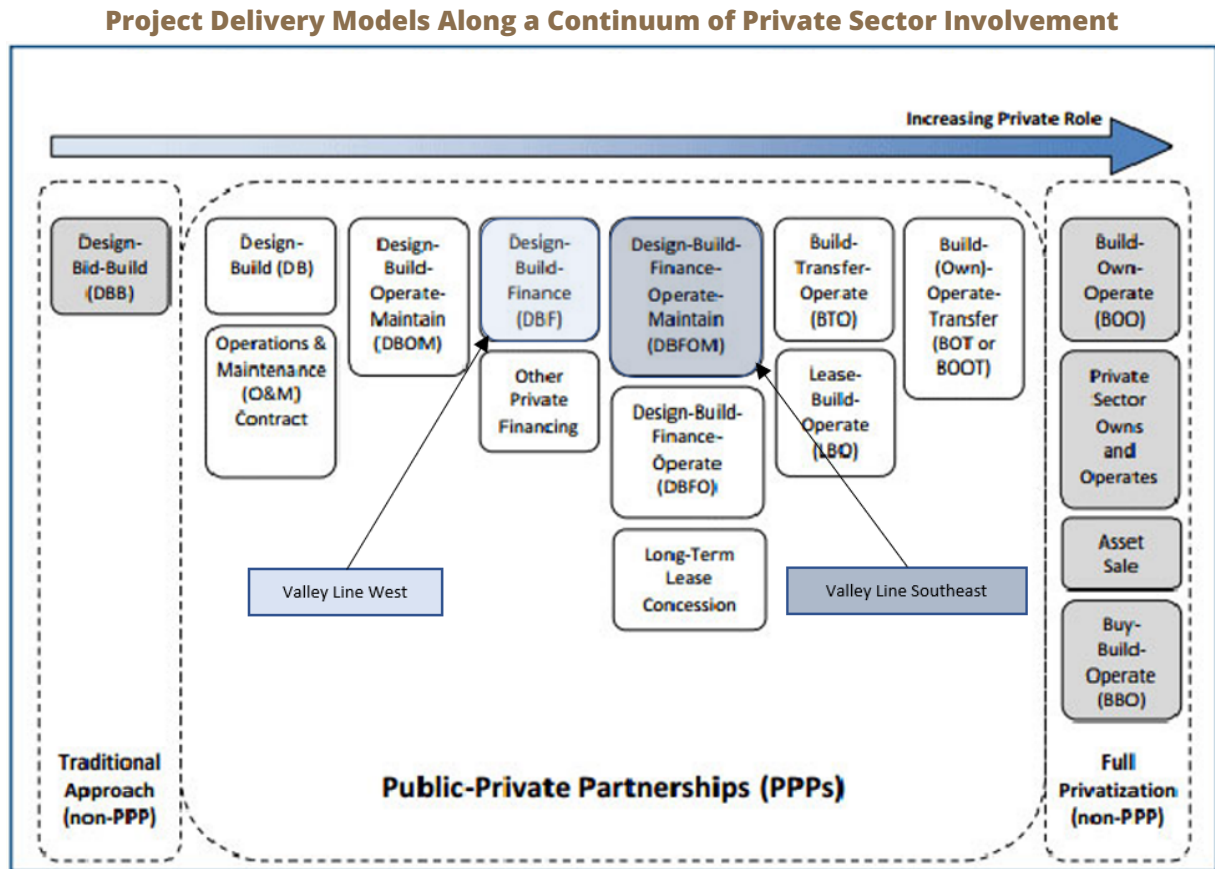
P3 projects are partnerships between governments and the private sector to build public infrastructure like roads, hospitals, or schools, or to deliver services. Depending on the P3 model, this approach requires the designer (engineer/architect), the builder, the lender, and possibly a maintenance and/or operations provider to form a team.²

The intent of a P3 project is for both parties to share risks and rewards in designing, building, and operating infrastructure.

The term P3 can refer to a variety of contract delivery models. These models range from solely having a private partner operate and maintain a project, to having that partner build, temporarily own, operate, and then transfer the asset back to the public partner.

The spectrum of project delivery models is shown below.

² Source - Canadian Council for Public-Private Partnerships



Source: <https://www.ncsl.org/research/transportation/building-up-how-states-utilize-public-private-partnerships-for-public-multi-sector-vertical-infrastructure.aspx>

As P3 projects move further along the continuum and transfer more risks from the government to the private partner, the relative amount of compensation the public partner pays to the private partner would also increase.

P3 PROJECT AGREEMENTS

Public and private partners formalize P3 projects via project agreements, which are the contracts in place. The Valley Line agreements govern the projects by laying out expectations and requirements of both the Project Owner (the City) and the Project Company (TransEd Partners for Valley Line Southeast and Marigold Infrastructure Partners for Valley Line West).

The project agreements also dictate the financial terms of the projects, outlining when the Project Company gets paid, as well as clauses for situations where the Project Company will have

payment amounts reduced if specified thresholds are exceeded.

VALLEY LINE SOUTHEAST P3 DETAILS

The Valley Line Southeast is a \$1.8 billion capital project, initially approved by City Council in 2012. Funding for the southeast portion is being provided by:

- City of Edmonton (\$800 million)
- Province of Alberta (\$600 million)
- Government of Canada (\$400 million)

For \$250 million of its funding, the Government of Canada required the City to use a P3 delivery model.

The City completed the preliminary design of the entire Valley Line in 2013. Procurement of a project partner for Valley Line Southeast took place from 2014 to 2016 and construction began in 2016. The City planned for the Project Company to complete the line segment and for it to be operational by December of 2020. However, as of July 2023, it is still not operational. The operating period included in the project agreement is from service commencement to December 2050.

For delivery of Valley Line Southeast, the City contracted a private partner to:

- Provide detailed design related to the line
- Build the line
- Finance a portion of the project
- Supply the rail vehicles
- Operate and maintain the line

VALLEY LINE WEST P3 DETAILS

The Valley Line West is a \$2.6 billion capital project. Funding for the west portion is being provided by:

- City of Edmonton (\$562 million)
- Province of Alberta (\$1.047 billion)
- Government of Canada (\$991 million)

The City completed the preliminary design in 2013 and made adjustments to that design in 2018 and 2019. It began

procurement for Valley Line West in 2019, and chose a project partner in 2020. The Project Company began construction in 2021 and is contractually required to complete construction by December of 2026.

For the delivery of Valley Line West, the City contracted a private partner to:

- Provide detailed design related to the line
- Build the line
- Finance a portion of the project

This differs from the Southeast line, in that the City did not require the partner to supply vehicles, operate and maintain the line after it completes construction, or finance the project beyond the construction period. The City has procured vehicles directly, and will need to determine who will be responsible for operating and maintaining the West portion of the line at some point in the future.

PROJECT OVERSIGHT

The LRT Expansion and Renewal Branch (the Branch) is part of the Integrated Infrastructure Services Department. This Branch performs the planning and high-level design work, and manages contracts to deliver LRT infrastructure and expansion capital projects. This includes LRT stations, along with existing and future LRT lines and renewal work.

The Branch and each of the Project Companies also engaged Independent Certifiers to certify the progress of the project construction and other payment-related items. The Independent Certifiers provides an extra check in the approval process prior to the City paying invoices.

The Branch provides regular updates to Council, including during in-private sessions when matters are protected by legal privilege.³

³ Legal privilege restricts information from being publicly disclosed.

Procurement of P3 Partners

KEY FINDINGS

Overall, we found that the LRT Expansion and Renewal Branch procured the Valley Line LRT partners in a fair, open, and transparent manner.

The Branch used Request for Qualification and Request for Proposal processes, in line with best practices for large P3 projects, to select qualified candidates that represented the best financial value for the City.

REQUESTS FOR QUALIFICATION AND PROPOSAL PROCESSES

The procurement process included two distinct phases: Request for Qualification and Request for Proposal.

The Branch used the Request for Qualification process to assess whether there was sufficient interest in the Valley Line P3 projects, among potential private sector participants.

We found the process the Branch used was in line with best practice for large P3 projects in Canada:

- The procurement was posted publicly for teams to submit bids.
- Teams consisted of private sector companies, with different industry strengths to deliver all the aspects of the project. Interested teams submitted responses demonstrating their experience and strengths.
- The Branch evaluated and shortlisted the respondents to the top three, based on the criteria listed in the Request for Qualification.
- The three highest scoring teams moved on to the Request for Proposal stage.

The Request for Proposal stage provided an opportunity for the three qualified teams to submit detailed proposals. The Branch performed this process in line with best practices as well:

- The Branch evaluated the detailed proposals on a pass/fail basis, through a series of categories such as design, technical, and financial components.
- Once the Branch determined that the proponents passed each of these categories, the City awarded the contract to the proposal with the lowest bid.

MONITORING PROCUREMENT FAIRNESS

The City used a combination of internal resources and external experts to govern its procurement processes.

Procurement Governance

The City established a general oversight committee for each of Valley Line Southeast and West. These committees were known as the LRT Governance Board for Valley Line Southeast and the Procurement Due Diligence Committee for Valley Line West.

Each of these committees provided oversight of the P3 procurement processes, including receiving reports and updates throughout the procurement process.

The LRT Governance Board was established by City Council and consisted of external members with relevant experience in engineering, municipal governance, and finance. The Procurement Due Diligence Committee consisted of one of the external LRT Governance Board members and internal City employees from legal, procurement, and the LRT Expansion and Renewal Branch.

Other Committees Involved in Procurement

Additional committees, consisting of a mix of internal (City) and external experts (accounting, legal and engineering support), played key roles:

- Relationship Review Committee - their role was to monitor, manage, and assist in the resolution of real, possible, or perceived conflict of interest or circumstances of unfairness in the procurement process.
- Evaluation Due Diligence Committee - their role was to oversee the evaluation of the procurement process and

ensure that all evaluation teams and participants diligently performed their roles (The Procurement Due Diligence Committee performed this role for Valley Line West).

There were also external legal, financial, and process advisors to provide legal advice and value for money reports relating to the procurement process and proponents' bids.

These committees and advisors performed monitoring and oversight of the procurement processes, to ensure overall fairness.

Fairness Monitors

The Branch also engaged external fairness monitors as part of the procurement process for each of the lines. The role of the independent fairness monitor was to ensure the procurement process was fair, open, and transparent. This included:

- Reviewing the final drafts of the Request for Qualification and Request for Proposal and any proposed amendments, from a fairness perspective.
- Monitoring material communications between the City and the proponents.
- Monitoring all meetings held between the City and the proponents.
- Monitoring the procurement evaluation processes.

The fairness monitors for each of the Valley Line Southeast and Valley Line West projects concluded that the procurement processes were open, fair, transparent, consistent, and unbiased.

WHY THIS IS IMPORTANT

By performing procurement of P3 partners in an open, fair, and transparent manner, the City demonstrated that all potential proponents had access to the same information, were treated equally, and all bids were evaluated using the same criteria. These principles are a requirement of all competitive City procurements.

The City used the Request for Qualification and Request for Proposal processes to confirm that potential proponents had the means and ability to fulfill the project agreement terms, based on information submitted, and chose the proposal with the lowest cost. They selected successful candidates, for each project, that were qualified to perform the work and represented the best financial value for the City.

Project Agreement Design

KEY FINDINGS

The City engaged external experts in the field to assist with developing the project agreements. Experts included:

- Engineers and architects
- Financial and process advisors
- Legal advisors

The experts that the City engaged were highly experienced in transit and P3 project delivery.

With the help of these experts the City created project agreements for the Valley Line Southeast and West that clearly allocated risks, protected the City's interests, and set out requirements for communication.

RISK OWNERSHIP

By its nature, a P3 project transfers more risk to the Project Company compared to a traditional contract. For example, the Project Company is responsible for the detailed design and construction of the line, including having their own engineers approve drawings and construction quality. If something goes wrong with either, the Project Company bears the risk and will be responsible to correct the issue at their own cost. Under a traditional contract approach, the City could bear some of that risk.

Also, the Project Company for the Valley Line Southeast was required to supply LRT vehicles. If there are issues with delivery of the vehicles or their functionality, it will be up to the Project Company to correct those issues.

This risk transfer is reflected in the Valley Line Southeast and West project agreements. Both agreements transfer a significant amount of risk to the Project Company, when compared to a traditional contract (i.e., the City manages all categories of the construction and operations), as shown in the table below.

Risk Owners by Project

Category	Valley Line Southeast	Valley Line West	Traditional Contract
Design	Project Company	Project Company	City of Edmonton
Build	Project Company	Project Company	City of Edmonton
Finance	Shared	Shared	City of Edmonton
Vehicle Procurement	Project Company	City of Edmonton	City of Edmonton
Operate	Project Company	City of Edmonton ⁴	City of Edmonton
Maintain	Project Company	City of Edmonton ³	City of Edmonton
Communications (Primary)	Project Company	Shared	City of Edmonton

PROTECTING CITY INTERESTS

The City has transferred the majority of risk to the Project Company, which also reduces the amount of control it has over detailed design and construction of the lines. Nevertheless, the City's interests are protected through various clauses in the project agreements, which the City monitors for compliance. Following are examples of how the City has protected its interests.

⁴ The Valley Line West does not include assignment of operations and maintenance. Discussion of this unaddressed line integration risk is included later in the report.

Construction Quality

The Valley Line West project agreement includes a warranty period, to help ensure that the line is well-constructed. The Project Company will replace infrastructure that doesn't last through the warranty, at their cost.

The Valley Line Southeast project agreement requires the Project Company to maintain the line until 2050. The project agreement also includes asset condition requirements that the Project Company must meet for the eventual transfer of Valley Line Southeast infrastructure to the City upon expiry. The Project Company is responsible for fixing deficiencies in construction quality.

Mitigating Construction Impacts

Excessive lane closures have a negative impact on the City and people driving within it. The project agreements specify the cost per hour incurred by Project Company for each closure of traffic lanes. Once a threshold is exceeded, the City has the ability to reduce payments to the Project Company by the specified amount.

In addition to lane closures, the City has prioritized minimizing impacts to transit. The project agreement includes payment reductions that apply in a similar manner to lane closure reductions, when there are negative transit impacts in key areas.

The City has an interest in protecting trees, as they contribute to livability. The project agreements set an expectation that the Project Company protects trees during construction. If damage occurs to the trees, the City is also able to reduce payments to the Project Company.

Even with these clauses in the project agreement, disagreements between the City and the Project Company arose through the course of Valley Line Southeast construction. The parties resolved these disagreements, allowing the project to continue moving forward. We found that the City resolved these disagreements in the interests of the City. Further details

are protected by legal privilege and cannot be publicly disclosed.

Financial Interests

The project agreements outline specific milestone dates (e.g., construction completion date, service commencement date, and the long stop date⁵) and include provisions for when the Project Company misses these milestone dates. These provisions protect the City's financial interests:

- The Valley Line West agreement includes financial holdbacks that apply beyond the construction completion. The Project Company is also required to pay the City an amount for each day past the target completion date if construction is not complete.
- The Valley line Southeast agreement includes not receiving payments for operating and maintaining the line, and a portion of construction payments. The section below discusses the financial impacts that the Project Company is now facing as a result of the delay in service commencement.

FINANCIAL IMPLICATIONS FOR DELAY OF THE VALLEY LINE SOUTHEAST COMMENCEMENT

The Valley Line Southeast project agreement splits payments to ensure that the City does not pay all of the construction value up front. The agreement was designed this way in order to incentivize the Project Company to complete the construction on time.

The Project Agreement for Valley Line Southeast is set up so that the Project Company gets paid for construction, based on the portion of work completed. However, through the course of construction, the Project Company is only entitled to be paid 50 percent of the total construction contract value, prior to service commencement. Once service begins on the line, the Project Company is entitled to a payment worth 16.7 percent of the construction value.

⁵ The long stop date is the latest date at which the Project Company must fulfill its obligations set out in the project agreement.

The remaining 33.3 percent of the construction value is then allocated to be included as part of monthly payments made over the operational life of the line (combined with the operating and maintenance payments). This operational period was defined as 30 years, ending in 2050.

By missing the target completion date for the Valley Line Southeast, the Project Company is not receiving these monthly payments. The City is not deferring these payments; rather it will no longer pay the amounts.

As of July 2023, the Project Company has not received construction, operating, and maintenance payments for 2.5 years of the 30 year contract.⁶ The Project Company will continue to not receive monthly payments until the line is in service.

**UNADDRESSED RISK -
OPERATION AND
MAINTENANCE OF THE
ENTIRE VALLEY LINE**

This City's risk of lacking a single party to operate and maintain the entire Valley Line (both Valley Line Southeast and West) remains unaddressed.

The project agreement for the Valley Line Southeast included a requirement for the Project Company to supply vehicles, and to operate and maintain that segment of the Valley Line and the vehicles, from service commencement until 2050. As part of the Valley Line West project, the City procured compatible but different vehicles. All of these vehicles will run on both segments of the line.

At this point the City has not determined who will be responsible for operating and maintaining the Valley Line West. If it is not the same company that is operating and maintaining the Valley Line Southeast, there could be uncertainty around whether one line's vehicles caused premature wear and tear on the other line's rails, or vice versa. This could result in difficulty determining responsibility to pay for repairs.

⁶ We are unable to disclose the specific amounts of forgone payments due to the Freedom of Information and Protection of Privacy Act. Disclosure of those amounts would be harmful to the business interest of the Project Company.

The City was aware of this risk from the outset of the Valley Line Southeast project. The initial project agreement included terms related to interface and integration obligations, and considered possible ways to work towards the eventual consolidation of the two Valley Line segments.

The City has taken steps in recent years to work towards certainty around future operations and maintenance of the entire Valley Line. Details of these steps are protected by legal privilege and cannot be publicly disclosed.

PROJECT COMMUNICATIONS

The Valley Line Southeast project agreement outlines the requirements for communications. The general guidance is that the Project Company provides timely and accurate information to stakeholders.

There is a joint working group between the City and the Project Company. However, the project agreement allocates the majority of communication responsibility to the Project Company. This includes:

- Maintaining social media accounts to communicate information regarding design and construction activities.
- Conducting public engagements and engagements with citizen working groups to discuss matters regarding design and construction activity.
- Managing inquiries from the public and media.
- Providing quarterly reports and periodic news releases on project websites.

The Project Company has generally been compliant with the communications requirements set out in the project agreement.

The Valley Line West project agreement is structured differently. The City takes the lead for certain communications areas that were previously allocated to the Project Company under the Southeast project agreement. According to management, this was done as a result of the different project

structure, lessons learned from the Valley Line Southeast project, and also so that the City could retain more direct control.

WHY THIS IS IMPORTANT

The City has entered into project agreements that clearly allocate risks and allow for the construction of the Valley Line LRT, satisfying cost, quality, and timeline expectations. The Project Company's communications on the project provides transparency to the public on the progress and its impacts to these components. When performance of one of these components is lacking, the City has protected its interests through the use of payment deductions when certain thresholds are exceeded.

Valley Line Southeast Project Agreement Management

KEY FINDINGS

The Branch's management of the Valley Line Southeast project agreement includes:

- Obtaining information and observing compliance with project agreement requirements. The Branch is overseeing the Valley Line Southeast project, while refraining from directly managing the design and construction of the project, to avoid taking on additional risk.
- Verifying the extent of work completed, for invoice accuracy prior to payment.

As of July 2023, the City anticipates that the Valley Line Southeast project will come in under the original capital construction budget.

The Valley Line West project is still too early in the stages of construction to be able to conclude on the Branch's management of that project agreement, but we note that the project oversight is set up similarly to Valley Line Southeast.

PROJECT AGREEMENT MONITORING

The project agreement sets out how the Branch obtains information on the Project Company's compliance with the project agreement. This includes:

- Regular reports from the Project Company, including updated schedules and project performance indicators around scope, schedule, quality, safety, the environment, public communications, and risk exposure.
- Regular meetings between the Project Company and the Branch to discuss project progress and areas of potential concern.

- Reports provided to the Branch by contracted field monitors, who perform site visits during various stages of the construction period.

Due to the nature of the P3 design, the City's ability to directly manage the project is limited so as not to transfer risk back to the City. For example, the project agreement terms limit the City's ability to compel the Project Company to do something differently. Ultimately, the Project Company will have to deliver an end product that complies with the project agreement.

VERIFICATION OF WORK COMPLETED

The City makes payments in accordance with the project agreement. An Independent Certifier verifies the actual work completed and invoice accuracy prior to payment.

Payment-Related Clauses

Payment-related clauses and how they protect City interests are discussed earlier in this report. These clauses include lane closures, tree removals, and transit impacts.

An example of the City employing one of the payment-related clauses is that the City is currently keeping track of all trees the Project Company has damaged, and will deduct amounts for the damage at service commencement.

However, the City has also decided not to enforce some of the payment-related clauses. An example of the City not enforcing a payment-related clause is that at times the City has chosen not to fully deduct the lane closure amounts. According to management, they did this with the intent of fostering the working relationship with the Project Company or obtaining other benefits for the City or residents.

WHY THIS IS IMPORTANT

By managing the project agreement, the City is holding the Project Company accountable for achieving cost effective delivery of the Valley Line Southeast infrastructure, in compliance with the project agreement.

ACKNOWLEDGEMENT

We would like to thank the staff and management of the LRT Expansion and Renewal Branch for their cooperation during this audit.