



**Surrey Langley
SkyTrain**



transportation
investment
corporation

Monthly Status Report

Reporting Period: March 2026

1. Introduction

1.1. Project Overview

The Surrey Langley SkyTrain Project (the Project) will extend the Expo Line 16 kilometers on an elevated guideway from King George SkyTrain Station in Surrey to 203 Street in Langley City primarily along the Fraser Highway. The Project includes eight new stations (listed west to east):

- **Green Timbers Station:** Located (at 140 St. and Fraser Highway) adjacent to the Green Timbers Urban Forest and the Jim Pattison Outpatient Care and Surgery Centre and near the BC RCMP’s E Division Headquarters, this station will serve those who live, work, and recreate in the area. The station - with as small a footprint as possible - was designed to minimize impacts on surrounding treed areas and local aquatic and fisheries sources.
- **152 Street Station:** Located (at 152 St. and Fraser Highway) at the intersection of this heavily used north-south and east-west corridor that connects people travelling between South Surrey/ White Rock, Guildford, Langley, Surrey Centre, and beyond, this station will provide better connectivity to the growing business and residential community. This area in West Fleetwood, served by numerous small and medium sized commercial businesses, is slated for further growth and development.
- **Fleetwood Station:** Located in the heart of Fleetwood Town Centre (at 160 St. and Fraser Highway), the area surrounding this station is characterized by residential neighborhoods, a community centre with library and gym facilities, and a plethora of local retail, service, and commercial outfits.
- **Bakerview-166 Street Station:** Located in east Fleetwood (at 166 St. and Fraser Highway) adjacent to the bustling Surrey Sports and Leisure Complex, this station and transit exchange will serve the growing residential area.
- **Hillcrest-184 Street Station:** Located in west Clayton (at 184 St. and Fraser Highway), this station will serve a growing community through implementation of the City of Surrey’s Clayton Corridor Plan.
- **Clayton Station:** Located in east Clayton (at 189 St. and Fraser Highway), this station will also serve the growing community. The two stations in Clayton will be linked not only by SkyTrain, but by multi-use pathways that will traverse the Hillcrest Village and Clayton Crossing shopping plazas.
- **Willowbrook Station:** Located at Willowbrook Mall (196 St. and Fraser Highway), this station will feature a transit exchange to facilitate ridership from the Township of Langley and Cloverdale, and to accommodate the redevelopment of the surrounding area.
- **Langley City Centre Station:** This station (203 St. and Industrial Ave) is the catalyst for a major revitalization of the area. It will help to foster a vibrant, thriving transit-oriented neighbourhood in Langley City Centre, supported by the SkyTrain extension and a bus exchange that will connect residents and visitors to the rest of Metro Vancouver.

The Project also includes new fully separated multi-use pathways for people to walk, bike, or roll to stations, and bike racks and enclosed bike parking at each station.

The Project is the catalyst for transit-oriented development (TOD) around new SkyTrain stations and bus exchanges. TOD will help to foster greener, more livable communities through opportunities for more housing, services, jobs, retail and commercial enterprises, and public amenities in local neighbourhoods.

Additionally, the project includes 30 new SkyTrain cars, and funding toward initial planning, development, and advance works for a Maintenance and Storage Facility to store and service SkyTrain vehicles. Once in-service, the Project will fully integrate into the region's existing SkyTrain network, which TransLink operates and maintains.

Additional information about the Project can be found on the Surrey Langley SkyTrain website.

1.2. Project Delivery

Transportation Investment Corporation (TI Corp), a Provincial Crown Corporation, is delivering and overseeing this \$5.996 billion Project on behalf of the Ministry of Transportation and Transit.

The Project is comprised of three contracts:

Guideway Contract

- This contract is to design, build, and finance the elevated guideway and associated roadworks, utilities, and active transportation elements.
- SkyLink Guideway Partners, which is comprised of Dragados Canada, Inc., Ledcor Investments Inc., and Ledcor Mining Ltd. is the Guideway contractor.

Stations Contract

- This contract is to design and build eight new stations for the project, including three transit exchanges and cycling and walking paths around the new stations.
- South Fraser Station Partners, which is comprised of Aecon Constructors, a division of Aecon Construction Group Inc., Acciona Infrastructure Canada Inc., and Pomerleau BC Inc. is the Stations contractor.

Systems and Trackwork Contract

- This contract is to design and build the systems and trackwork.
- Transit Integrators BC, which is comprised of AtkinsRéalis Major Projects Inc., AtkinsRéalis Canada Inc., and Western Pacific Enterprises Ltd., is the Systems and Trackwork contractor.

Early works started in spring 2024, including pre-construction site surveys, locating utilities, geotechnical investigations, and design work. This work complements the advance work by BC Hydro to relocate power lines along Fraser Highway, underway since early 2024.

Major construction started in November 2024, and the anticipated in-service date is late 2029.

1.3. Project Goals

Key benefits of the Project include:

- Encouraging and creating opportunities for sustainable and livable communities;
- Improving transit service by increasing capacity, reducing travel times, increasing reliability, and providing better user experience and comfort;
- Increasing sustainable mode share by shifting automobile trips to transit trips;
- Improving regional accessibility and promoting social and community cohesion by connecting local communities through rapid transit – providing access to more housing, employment, education, businesses, community facilities, and services;
- Encouraging long-term economic growth by improving access to employment and educational opportunities, creating new jobs, improving efficiency for businesses to get goods to market, supporting urban agglomeration and densification, increasing businesses’ access to the region’s labour force, and driving innovation by an increase in competition among firms;
- Encouraging physical activity, improving air quality, and providing better access to health services; and
- Providing a clean and resilient mode of transportation that improves the environment by reducing GHG emissions through reductions in vehicle kilometers travelled, replacing diesel bus service with electric SkyTrain service, reducing congestion-related idling, and reducing the need for roadway expansion.

2. Project Dashboard

		Objectives	Project Status	Comments
Project Delivery	Scope	Deliver Project's approved scope.	●	The Project scope includes delivery of 16 km of elevated guideway along Fraser Highway from King George Station on the Expo Line through to Langley City Centre. Includes eight above ground stations, thirty new SkyTrain vehicles, and new fully separated active transportation paths to support travel to and from new stations and connect communities. The Project scope has been confirmed and will be delivered accordingly.
	Schedule	Deliver Project within approved schedule with operations to commence in late 2029.	●	<ul style="list-style-type: none"> – The extension is expected to go into service in late 2029.
	Budget	Deliver Project within approved budget of \$5.996 billion.	●	<ul style="list-style-type: none"> – Project spending for the month of March 2026 was \$153.9 million, and other recoveries for the month was \$7.0 million. – Total Project spending to date is \$2.413 billion. – Federal recoveries to date total \$577.0 million. – Other recoveries to date total \$21.0 million.
	Safety	Ensure that Project work is performed safely, in compliance with all applicable safety regulations, and in accordance with government policy.	●	<ul style="list-style-type: none"> – There have been three (3) lost time injuries on the Project to date. – Lost Time Injury Frequency Rate (LTIFR) for the Project is 0.21 which is less than the 2024 WorkSafeBC rate of 1.7 for Construction Sector – Large Employers (100+ employees).
	Quality	Implement an effective Quality Management System.	●	<ul style="list-style-type: none"> – On-site and precast facility quality inspection testing continues. – The Project Team continues to review quality documentation including monthly quality reports, quality management plans, inspection and test plans, quality records, Non-Conformance Reports (NCRs). – Ongoing coordination with the Guideway, Systems and Stations contractors regarding quality management.
	Environmental	Ensure Project work is performed in an environmentally responsible manner.	●	<ul style="list-style-type: none"> – Permits are in place for the Project, as listed in Section 3: Project Documents and Achievements to Date. – The Project Team continues to review weekly and monthly environmental monitoring reports as submitted. – The Project Team is conducting regular site visits to confirm implementation of construction environmental workplans. – Ongoing coordination with the Guideway and Stations contractors for site archeological monitoring.

	Property Acquisition	Acquire and manage properties required to deliver the Project.	●	– Target met, all necessary properties have been acquired.
	Design and Construction	Develop design and construction specifications and related technical studies for the Project, review design and construction compliance to the Project Agreement and manage activities on site.	●	<ul style="list-style-type: none"> – The Project contractors are progressing toward final designs and Issued for Construction (IFC) drawings. – IFC drawings for the roadworks along the alignment have been completed and submitted. – IFC drawings for utility installation and relocations are substantially complete with construction underway. – IFC drawings for stations are being submitted progressively. – Guideway and station construction progressing along the alignment, along with underground duct bank construction, multi-use pathway (MUP), and utility works.
	Labour Model	Implement the Project Labour Agreement (PLA) labour approach.	●	– Implementation of the Surrey Langley SkyTrain Project Labour Agreement is ongoing.
Partners/Stakeholders	First Nations	Continue to build and maintain positive collaborative working relationships with First Nations.	●	– Ongoing consultation with First Nations to confirm potential impacts to their rights and interests and help inform drafting the accommodation agreements.
	Third Parties	Continue to build and maintain positive relationships with Project Partners and other third parties.	●	<ul style="list-style-type: none"> – Ongoing regular communication with: <ul style="list-style-type: none"> ○ City of Surrey ○ Township of Langley ○ City of Langley – Continued liaising closely with TransLink and subsidiaries to complete the review for the design submissions and discuss technical design items. – Ongoing monthly working groups to facilitate collaboration and reporting.
	Public and Stakeholder Engagement	Continue to build and maintain positive relationships with communities and other stakeholders.	●	– Ongoing community and stakeholder engagement through a number of mechanisms, including email, phone calls, in-person meetings, and events.

Status	Description
●	Managing critical issues, negotiating resolution; action required immediately
●	Managing some issues, negotiating resolution; action required in the near term
●	Managing day to day operations

3. Project Documents and Achievements to Date

Project Delivery	Project Planning and Development	<ul style="list-style-type: none"> - Surrey Langley SkyTrain Project - Resource Library - Province of British Columbia (gov.bc.ca) - Project Business Case (2022) - Service Delivery Option Analysis (2022) - Capital Cost Memo (2022) - Economic Analysis (2022) - Ridership Memo (2022) - Procurement Options (2022) - Project Risk Report (2022) - Level of Private Finance Memo (2022) - Market Sounding Report (2022) - Operating Cost Memo (2022)
	Environmental	<ul style="list-style-type: none"> - Environmental Screening Review Draft Terms of Reference (2019) - Environmental Screening Review Process Summary (2019) - Environmental Screening Review Summary Report (2020) - Environmental Screening Review Final Terms of Reference (2020) - Environmental Screening Review Summary Report (2022) - Environmental Screening Review Updated Terms of Reference (2022) - Obtained Letter of Advice from Fisheries and Oceans Canada confirming Fisheries Act Authorization is not required for the Project (2023) - Environmental Screening Review – Volume 1 – Technical ESR Sections (2023) - Environmental Screening Review – Volume 2 – Appendices (2023) - Construction Environmental Management Plan Framework (2023) - Obtained a Water Sustainability Act approval for the initial phase of construction (2024) - Obtained Agricultural Lands Commission permit for SLS construction (2024) - Obtained Dike Maintenance Act permit for Serpentine River crossing and Pacific Highway PPS (2025)
	Design and Construction	<ul style="list-style-type: none"> - Reference Concept Design - Track Alignment Design Drawings and Issued for Construction Drawings - Subsurface Utility Engineering Report - Serpentine River Dike Geotechnical Investigation Report - Completion of Drilled and Driven Test Pile Program - Completion of Geotechnical Investigation Program along Fraser Highway
Partners/ Stakeholders	Owner / Other Works	<ul style="list-style-type: none"> - City of Surrey – Road widening of Fraser Highway between 140 and 148 streets - BC Hydro - Transmission Line Relocations - BC Hydro - Distribution Line Relocations (in progress) - Various communication line work, e.g. Telus
	Labour	<ul style="list-style-type: none"> - Project Labour Agreement - Project Labour Agreement Contractor(s) Letter of Adherences
	First Nations	<ul style="list-style-type: none"> - Ongoing consultation with First Nations to confirm potential impacts to their rights and interests and help inform drafting the accommodation agreements.
	Third Parties	<ul style="list-style-type: none"> - City of Surrey: <ul style="list-style-type: none"> o Municipal Agreement (2023) o Fraser Highway Agreement (2023) o 152 Street Station Overpass Agreement (2023)

Public and Stakeholder Engagement	<ul style="list-style-type: none"> - Township of Langley: <ul style="list-style-type: none"> o Municipal Agreement (2023) - City of Langley: <ul style="list-style-type: none"> o Municipal Agreement (2024) - TransLink Funding and Support Agreement (2024) - Metro Vancouver Accommodation Agreement (2023) - CP Rail Overpass-Grade Separation Construction Agreement (2024)
	<ul style="list-style-type: none"> - Public Engagement Boards – May to June 2022 - Public Engagement Summary Report – May to June 2022 - Public Engagement Boards – June to June 2024 - Public Engagement Summary Report - Round 1 - June to June 2024 - Public Engagement Boards - November to December 2024 - Public Engagement Summary Report - Round 2 - November to December 2024

4. Monthly Highlights and Three Month Lookahead

4.1. Safety

Scope:	<ul style="list-style-type: none"> – Establish Project Occupational Health and Safety (OH&S) plans. – Manage Project OH&S activities. – Monitor relevant OH&S performance metrics. – Ensure the Project complies with relevant WorkSafeBC regulations and government requirements. – Identify specific health and safety roles and responsibilities. – Outline relevant health and safety management processes and activities.
Monthly Highlights:	<ul style="list-style-type: none"> – Monitored Project contractor safety performance during utility relocations, guideway construction, station construction and manufacturing of guideway segments. – Conducted six (6) health and safety inspections throughout the project alignment and four (4) at the precast concrete facility. – The Lost Time Injury Frequency Rate (LTIFR) for the Project is 0.21 which is less than the WorkSafeBC 2024 rate of 1.7 for Construction Sector – Large Employers (100+ employees).
Three Month Lookahead:	<ul style="list-style-type: none"> – Continue to monitor relevant OH&S requirements. – Continue to provide owner health and safety oversight during construction. – Continue implementation of the Project Health and Safety Management Plan. – Monitor safety requirements for guideway launching gantry operations. – Perform a health and safety audit of guideway launching gantries. – Work with the Systems and Trackwork contractor to establish their safety management system.

4.2. Quality

Scope:	<ul style="list-style-type: none"> – Establish quality management Project objectives and performance measures. – Review and monitor Project quality management activities. – Conduct Quality Management surveillance audits of the Project work. – Monitor the Project contractors’ audits. – Monitor the Project contractors’ Non-Conformity Tracking System. – Identify and implement continuous improvement initiatives.
Monthly Highlights:	<ul style="list-style-type: none"> – The Project contractors continued performing internal and external quality audits and on-site quality testing. – Project contractors continued developing relevant quality plans and inspection and test plans, as needed. – The Guideway and Stations contractors continued on-site quality inspection and testing as well as verification testing for project elements. – Engaged with the Guideway contractor on next steps following a quality surveillance audit report. – The Systems, Guideway and Stations contractors initiated 19 Non-Conformity Reports (NCRs) this month, related mostly to, construction, environment, and traffic items. To date, there have been a total of 253 NCRs (227 closed and 26 open). – Reviewed numerous quality submissions and NCR resolutions.
Three Month Lookahead:	<ul style="list-style-type: none"> – Undertake and/or witness quality audits as per plans. – Lead and participate in meetings to discuss quality, including site inspections. – Continue reviewing the quality document submissions. – Review non-conformance management and provide input where needed.

4.3. Environmental

Scope:	<ul style="list-style-type: none"> – Establish and manage environmental plans. – Liaise with regulators and stakeholders on commitments made through the environmental permitting and public engagement processes. – Manage outstanding environmental permits and associated environmental, monitoring, and compliance processes.
Monthly Highlights:	<ul style="list-style-type: none"> – Continued site visits and meetings with Project contractors to assess and discuss site conditions, with emphasis on sediment accumulation/dust suppression and noise mitigation. – Supported Project contractors in discussions with regulatory agencies. – Continued to facilitate Project contractor permitting efforts including facilitating amendments to the Project's Agricultural Lands Commission permit. – Reviewed the Environmental Work Plans (EWPs) pertaining to Erosion and Sediment Control plans. – Reviewed and approved restoration plan for small-scale areas requiring replanting. – Reviewed the EWP for the Guideway contractor's superstructures. – Reviewed and approved request from Guideway contractor to conduct launching gantry night work within residential areas with specific focus on enhanced noise and light mitigations. – Continued focus on monitoring and mitigating construction noise, including collaborative approach to sheet piling works within Langley Lane (laneway east of Highway 10). – Continued coordination of archaeological monitoring. – Received and returned the Systems and Trackwork contractor's Construction Environmental Management Plan; held follow-up workshops to facilitate review and re-submission.
Three Month Lookahead:	<ul style="list-style-type: none"> – Complete the acceptance and implementation of the Systems contractor's Construction Environmental Management Plan (CEMP). – Review Guideway contractor's noise impact modelling and collaborative approach to identifying noise mitigations for construction activities in the Langley area. – Review environmental survey/monitoring data as they become available, including noise and vibration levels. – Continue to review EWPs and associated revisions submitted by the Project contractors for upcoming works. – Work with Project contractors to identify and facilitate the submission of necessary permit amendments. – Continue coordinating archaeological monitoring for works conducted throughout the Project lands, by both Stations and Guideway contractors, where needed. – Continue weekly site visits to confirm appropriate implementation of the CEMP and EWP.

4.4. Design and Construction

Scope:	<ul style="list-style-type: none"> – Review and oversee compliance with the design and construction requirements of the Project Agreements, including undertaking reviews and audits, on-site monitoring, and other engagement with the Project contractors, as needed.
Monthly Highlights:	<p>Design:</p> <ul style="list-style-type: none"> – Continued to review the design submissions including Issue for Construction (IFC) Drawings from Project contractors. IFC Drawings are submitted progressively to meet the construction timeline. <p>Guideway:</p> <ul style="list-style-type: none"> – Guideway foundation and substructure construction underway along the alignment. – Continued guideway substructure construction at Willowbrook station site.

	<ul style="list-style-type: none"> - Continued erection of segments by Surrey Sprinter, Fleetwood Flyer, Clayton Clipper, and Langley Launcher. - Continued utility relocations and underground duct bank construction along the alignment. - Continued casting guideway segments at the precast concrete facility. - Continued roadworks construction along the alignment. - Transferred Clayton station site to Stations contractor. - Continued work to complete the first three sections of guideway for transfer to Systems contractor for the start of track installation. <p>Stations:</p> <ul style="list-style-type: none"> - Continued installation of catch basins at the headhouse area of Green Timbers Station. - Continued construction of the Propulsion Power Substations (PPS) at 96 Avenue and Fleetwood Station. - Continued foundation construction (pile installation) at 152 Street and Hillcrest-184 Street stations. - Continued station substructure work at Langley City Centre Station and the guideway substructure at Industrial Avenue. - Completed station foundation construction at Bakerview-166 Street Station. - Took over Clayton Station site from Guideway contractor. <p>Systems:</p> <ul style="list-style-type: none"> - Engaged in inspection and joint survey of guideway and started preparation work for the transfer of the first three sections of guideway from Guideway contractor.
<p>Three Month Lookahead:</p>	<p>Design:</p> <ul style="list-style-type: none"> - Continue to review the design submissions, including IFC Drawings, from Project contractors. <p>Guideway:</p> <ul style="list-style-type: none"> - Continue utility relocates. - Continue substructure works for the guideway, including pile installation and construction of pile caps, pier caps, and guideway columns. - Continue casting guideway segments at the concrete precast facility. - Continue guideway segment erection with all four launching gantries. - Continue casting guideway segments at the concrete precast facility. - Continue utility relocations and start foundation construction at Langley Lane and Industrial Avenue. - Start trenchless excavation for the underground duct bank work at Highway 10. - Transfer Willowbrook Station construction site to Stations contractor. - Start guideway segment erection at Fleetwood and Clayton stations. - Install steel guideway beams across Highway 15 and at the Pacific Highway PPS. - Transfer first three sections of guideway to Systems contractor. <p>Stations:</p> <ul style="list-style-type: none"> - Continue utility relocates. - Continue station construction at Green Timbers, 152 Street, Fleetwood, Bakerview-166 Street, Hillcrest-184 Street, Clayton, and Langley City Centre stations. - Start station foundation construction at Willowbrook Station. - Continue construction at the three standalone PPS: 96 Avenue, Pacific Highway, and 201 Street. - Install precast guideway beams across 203 Street at Industrial Avenue. <p>Systems:</p> <ul style="list-style-type: none"> - Start access to guideway for track installation.

4.5. First Nations

Scope:	<ul style="list-style-type: none"> – Consultation and engagement with First Nations on the Project design, logistics, permitting, archaeology program, environmental plans, economic development opportunities, cultural awareness and recognition, and construction monitoring.
Monthly Highlights:	<ul style="list-style-type: none"> – Continued engagement with First Nations on opportunities for participation on the Project. – Continued engagement on environmental incidents, archaeology, and permitting. – Continued conversations with First Nations on impact benefit negotiations. – Continued cultural recognition discussions with interested First Nations. – Continued collaboration with Indigenous Coordinators to share information and resolve issues. – Engaged with four First Nations on artwork logistics for cultural recognition program.
Three Month Lookahead:	<ul style="list-style-type: none"> – Continue negotiations on outstanding accommodation agreements. – Continue work with interested First Nations on cultural recognition program in alignment with station design schedule. – Monitor the Project contractor's implementation of the Indigenous Participation plans.

4.6. Third Parties

Scope:	<ul style="list-style-type: none"> – Project-specific Municipal Agreements (MA) with the City of Surrey, the City of Langley and the Township of Langley. – TransLink Funding and Support Agreement. – Engagement with the municipalities and TransLink on construction impacts, public and stakeholder queries, design submissions, and other inputs to the Project. – Coordination with BC Hydro on system upgrades, relocating distribution lines and poles and installing underground ducts.
Monthly Highlights:	<p>City of Surrey:</p> <ul style="list-style-type: none"> – Ongoing meetings between the Project Team and City staff. <p>Township of Langley:</p> <ul style="list-style-type: none"> – Ongoing meetings between the Project Team and Township staff. <p>City of Langley:</p> <ul style="list-style-type: none"> – Ongoing meetings between the Project Team, Guideway and Stations contractors and City staff. <p>Utilities:</p> <ul style="list-style-type: none"> – Conducted regular coordination meetings with BC Hydro on system upgrades and relocations.
Three Month Lookahead:	<ul style="list-style-type: none"> – Monitor and support BC Hydro's progress on system upgrades and relocations.

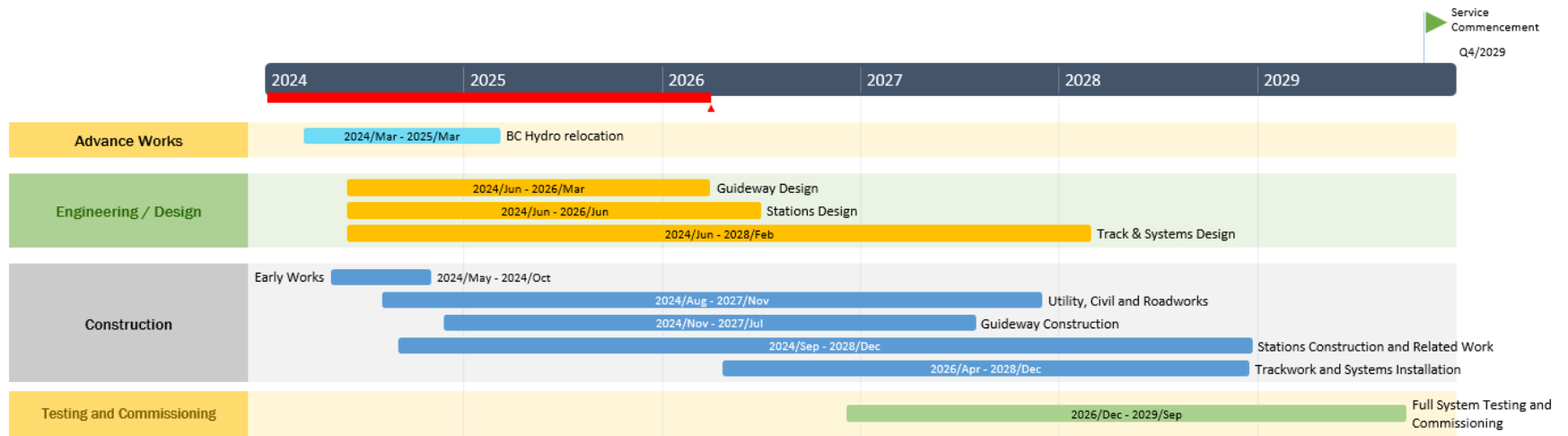
4.7. Public and Stakeholder Engagement

Scope:	<ul style="list-style-type: none"> – Manage ongoing public and stakeholder communications and engagement.
Monthly Highlights:	<ul style="list-style-type: none"> – Continued to distribute notifications and respond to enquiries. – Regular meetings with Fleetwood Business Improvement Association, Cascades Casino, and QuadReal Property Group (Willowbrook Mall). – Provided a project overview and construction update to employees at Fortis BC's head office, which is located near Bakerview-166 Street Station. – Began targeted engagement with businesses and property owners along Industrial Avenue about upcoming foundation construction. – Continued to engage with businesses and property owners along Industrial Avenue about the future configuration of the road when construction is complete.

	<ul style="list-style-type: none"> – Continued to engage with businesses and property owners along Langley Lane (laneway east of Highway 10) about construction impacts. – Initiated public and stakeholder notifications regarding the full closure of Highway 15 at Fraser Highway for up to four consecutive nights in April 2026. – Distributed notifications to residents, businesses, and newsletter subscribers regarding project activities such as utility relocations, roadway construction, pile installations, and foundation construction. – Completed business walks, targeted meetings, site visits and outreach with affected businesses and residents, as needed.
Three Month Lookahead:	<ul style="list-style-type: none"> – Continue to distribute notifications and respond to enquiries. – Continue business walks and ongoing outreach to residents and businesses in proximity to construction activities, as needed. – Continue regular meetings with Traffic Liaison Committee, Fleetwood Business Improvement Association, Fleetwood Community Association, Greater Langley Chamber of Commerce, Cascades Casino, and QuadReal Property Group (Willowbrook Mall). – Continue with artist selection process for station art. – Continue to engage with businesses along Langley Lane about construction impacts. – Continue to engage with businesses along Industrial Avenue about construction impacts.

5. Schedule

The following schedule depicts the estimated deliverables, milestones, and timelines from the design to commissioning phase of the Project:



6. Project Photos



Figure 1: Precast Concrete Facility where guideway segments are produced and stored.



Figure 2: Green Timbers Station and the future guideway down the centre of Fraser Highway looking east.

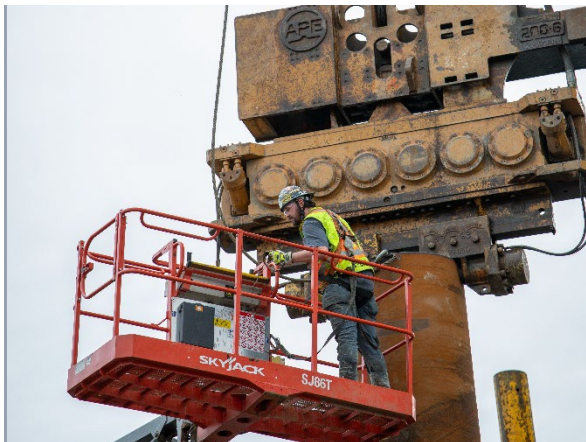


Figure 3: Driven pile installation as part of ongoing foundation work at station sites.



Figure 4: Guideway segment being lifted into place by a launching gantry.