

GEORGE MASSEY TUNNEL REPLACEMENT PROJECT

MONTHLY STATUS REPORT
SEPTEMBER 2017

FOREWORD TO MONTHLY STATUS REPORT

On September 6, 2017, the Minister of Transportation & Infrastructure announced that the Ministry is proceeding with an independent technical review of the George Massey Tunnel Replacement Project.

The Province's work on the Project up to this point will be looked at closely as part of the independent review, including technical information developed by the project team and from Metro Vancouver municipalities, as well as new analysis that includes looking at how the removal of tolls will affect the crossing.

The review will focus on what level of improvement is needed in the context of regional and provincial planning, growth and vision, as well as on which option would be best for the corridor, be it the proposed 10-lane bridge, a smaller bridge or tunnel. Mayors from Metro Vancouver will be engaged, including Richmond & Delta, to gather their perspectives on the Project, and to ensure that any plan for this crossing fits into the overall vision for the region.

The review is expected to be finished in the spring of 2018 and will include recommendations to the Province on the way forward.

Based on the recommendations received, the Province will determine next steps to address congestion along the Highway 99 corridor.

George Massey Tunnel Replacement Project – Resources

The Project Team is committed to supporting the Ministry of Transportation and Infrastructure throughout the independent technical review and in the Ministry's mandate to provide sound infrastructure solutions that meet the requirements for the safe and efficient movement of goods, services and people.

The Project team's collective experience includes an extensive breadth of knowledge and experience in delivering major transportation projects to the Province and Project resources are available to support the independent technical review as required. The Project team's comprehensive expertise includes senior advisors, senior project management and engineering professionals, and subject matter experts across all disciplines.

Project Delivery Framework

The Project will be delivered within a framework that ensures adequate planning, guidance and controls are in place for all aspects of project work. Planning has been based upon industry best practices; accepted principles, standards, and policies; and a risk-based approach.

The application of the international standard ISO 9001 Quality Management Systems builds the foundation for excellence, accountability and continual improvement on the Project. The Project Quality Management System is an integral component of the Project delivery framework and requires that appropriate resources are available to ensure conformance with internal project requirements, as well as contractual and legal requirements (statutory and regulatory).

The Project delivery framework is built on a systematic approach to all disciplines, combined with the application of proven and recognized standards, principles and guidelines to these areas. The following provides a sampling of how this is applied on the Project:

- Safety planning and management of all Project activities are governed by the requirements of the Workers Compensation Act and WorkSafeBC Occupational Health and Safety Regulation;
- The Project's commitment to developing sound partnerships with Project stakeholders, community partners, and all project-related organizations is achieved by fostering and maintaining effective and collaborative relationships, and employing best practices that draw upon international standards.
- Environmental protection is managed within a framework provided by ISO 14001 Environmental Management Systems, ensuring that all statutory and regulatory requirements are met;
- Project Controls are governed by numerous Provincial policies such as the Ministry of Finance Capital Asset Management Framework and the BC Government Core Policy and Procedures Manual;
- Procurement processes are based on past transportation infrastructure projects, Ministry of Finance Capital Asset Management Framework (CAMF), Core Policy and Procedures Manual (CPPM), and industry best practices such as the "First Principles" method of estimating;
- Engineering is governed by the APEGBC Act and Bylaws, quality management guidelines, industry best practices, and the application of local and international standards including CSA-S6-14 Canadian Highway Design Bridge Code (CHBDC), Supplement to CHBDC S6-14, Transportation Association of Canada (TAC) Geometric Design Guide and BC Supplement to TAC; and
- The direction for risk management practices on the Project is provided by the Risk Management Guideline for the BC Public Sector issued by the Province of British Columbia Risk Management Branch and Government Security Office, the companion CAN/CSA ISO 31000: Risk Management – Principles and Guidelines, and the Core Policy and Procedures Manual, Chapter 14 (CPPM 14).

Stringent reviews during planning and development ensure a rigorous system is in place to ensure all Project requirements are met. Ongoing internal reviews for each aspect of the Project are conducted to ensure accountability, integrity, and continual improvement of the Project and the Quality Management System. Internal reviews confirm compliance, documentation, progress and performance throughout the lifecycle of the Project.

PROJECT STATUS DASHBOARD

Independent Technical Review

Status*

- Government announced on September 6, 2017 that the Ministry of Transportation and Infrastructure is proceeding with an independent technical review of the George Massey Tunnel corridor. The review will focus on what level of improvement is needed in the context of regional and provincial planning, growth and vision, as well as which option would be best for the corridor. ●
- The review is expected to be complete in the spring of 2018. Based on the recommendations received, the Province will determine next steps to address the congestion along the Highway 99 corridor.
- Pending the outcome of the review, the current procurement process has been cancelled.

Scope

Status*

- The independent technical review will look closely at the Province's work on the Project, including technical information developed by the project team and from Metro Vancouver municipalities, as well as new analysis that includes looking at how the removal of tolls will affect the crossing. ●

Schedule

Status*

- Project activities through the coming months will primarily be focused on providing support to the independent technical review team, generally aligned with the following tentative timelines: ●
 - September 2017 – Independent technical review announced

A summary of previous activities undertaken by the Project follows:

- **Consultation**
 - Phase 1 – Understanding the Need (2012)
 - Phase 2 – Exploring the Options (2013)
 - Phase 3 – Project Definition Report (2015/16)
 - Environmental Assessment Consultation (2016)
- **Environment**
 - Environmental Assessment Certificate obtained on February 9, 2017.
 - Approval from the Agricultural Land Commission (ALC) obtained on February 24, 2017.
- **Technical Studies**
 - Engineering, traffic, geotechnical and other technical studies.
- **Procurement**
 - Business case (October 2015)
 - Procurement Process - RFQ/RFP (June 2016- April 2017)
 - Independent technical review announced – procurement process cancelled (September 2017)

- **Construction**
 - Site preparation works commenced in both Richmond and Delta in April 2017 and continues in September. Monitoring settlement and performance of preload areas continues.

Cost

Status*

- The forecast for the current fiscal year is \$44M; to date, \$ 22M has been spent (this includes actuals plus incurred).
- Total Project expenditures are forecast to approximate \$66 million at the end of the current fiscal year.



*** Status Legend:** Green = No issues to report; Yellow = Minor issues to report; Red = Significant issues to report.

Report Structure

The table below provides a brief description of the contents of this report.

1. Introduction	<ul style="list-style-type: none">• Project overview and goals, key milestones achieved and current month highlights
2. Schedule	<ul style="list-style-type: none">• High-level Project schedule including major milestones and deliverables
3. Project Management	<ul style="list-style-type: none">• Objectives, monthly accomplishments and upcoming activities related to Safety, Quality and Project Controls
4. Project Development	<ul style="list-style-type: none">• Scope, monthly accomplishments and upcoming activities for the each of the major disciplines: Stakeholders, Environment, Agriculture, Aboriginal Groups, Procurement, Engineering, Construction and Property
5. Cost Report	<ul style="list-style-type: none">• Fiscal year cost summary
6. Risk Management	<ul style="list-style-type: none">• Key risks and mitigation strategies

1. INTRODUCTION

Project Overview

The George Massey Tunnel is an important link in the regional and provincial transportation system, carrying an average of 80,000 vehicles each day. It connects to key gateways such as Vancouver International Airport (YVR), the Peace Arch and Pacific Canada-U.S. border crossings, BC Ferries' Tsawwassen terminal, Deltaport and the Boundary Bay Airport. It is a vital goods movement route that fuels our local, regional, provincial and national economies, and a key access point for businesses in Delta, Surrey, Richmond, and Tsawwassen First Nation.

Since the Tunnel opened in 1959, Metro Vancouver's population and economy have grown, and its population is forecast to continue to grow by more than one million people over the next 30 years. Without improvements to this crossing, economic growth and regional livability will be constrained by congestion and increasing travel times for commuters, goods movers, commercial traffic and other traffic.

In 2012, the Ministry of Transportation and Infrastructure commenced a study of options to address the Highway 99 corridor and a new bridge to replace the Tunnel emerged as the proposed solution. Construction began in spring 2017, placing preload in areas of soft soils in advance of the primary works.

In September 2017, Government announced the Project will undergo an independent technical review. The review is expected to be finished in the spring of 2018, and based on the recommendations received, the Province will determine next steps to address the congestion along the Highway 99 corridor.

Project Goals

Based on the Ministry's mandate and results of consultation to date, six primary goals have been identified for the Project:

1. **Improve safety.** This includes improving traffic and seismic safety, as well as emergency response capabilities.
2. **Reduce congestion.** Improve travel times and reliability for all users.
3. **Support increased transit on the Highway 99 corridor.** Provide dedicated transit/HOV lanes on the new bridge to improve travel time reliability and add capacity for long-term transit improvements.
4. **Provide options for pedestrians and cyclists.** Provide multi-use pathways on the new bridge to connect cycling and pedestrian corridors in Richmond and Delta.
5. **Enhance the environment.** Enhance the environment under the new bridge and in the Project right-of-way on Deas Island.
6. **Support trade and commerce.** Improve access to local businesses and gateway facilities, and improve travel time reliability for goods movers and service providers.

Key Milestones Achieved to Date

Key milestones achieved to date are listed by category below. The reports can be found within the Document Library of the George Massey Tunnel Replacement Project website.

Independent Review	<ul style="list-style-type: none"> • Independent Technical Review announced (September 2017)
Consultation	<ul style="list-style-type: none"> • Phase 1 – Understanding the Need (2012) <ul style="list-style-type: none"> ○ Five Open Houses • Phase 2 – Exploring the Options (2013) <ul style="list-style-type: none"> ○ Three Open Houses • Phase 3 – Project Definition Report (2015/16) <ul style="list-style-type: none"> ○ Two Open Houses • Environmental Assessment Consultation (2016) <ul style="list-style-type: none"> ○ Three Open Houses ○ Working Group Meetings
Project Planning and Development	<ul style="list-style-type: none"> • Conceptual Highway and Interchange Design Summary Report (2014) • Evaluation of Crossing Scenarios (2014) • Project Definition Report (2015) • Business Case (2015) • Capital Cost Estimate Report (2015) • Operations, Maintenance and Rehabilitation Cost Estimate Report (2015) • Risk Report (2015) • Review of Replacement Options (2016) • Tunnel Decommissioning Options (2017)
Environmental	<ul style="list-style-type: none"> • Baseline studies • Environmental Assessment Certificate (February 2017) • Water Sustainability Act Approval – Upland Ditches (March 2017)
Agriculture	<ul style="list-style-type: none"> • Agricultural Land Commission (ALC) approval (February 2017)
Design/Engineering	<ul style="list-style-type: none"> • Compiled historical engineering information and studies about the Tunnel from Tunnel construction to the present • Reference Concept (2015) • Multiple traffic data and analysis reports (2013 to 2016) • Multiple geotechnical studies (2013 to 2017) • Pile Load Test (2016)
Procurement	<ul style="list-style-type: none"> • Procurement Options Report • RFQ/RFP issued (2016) • Procurement process cancelled (Sept 2017)
Construction	<ul style="list-style-type: none"> • Pile Load Test (2016) • Commenced site preparation works in Richmond and Delta (April 2017)

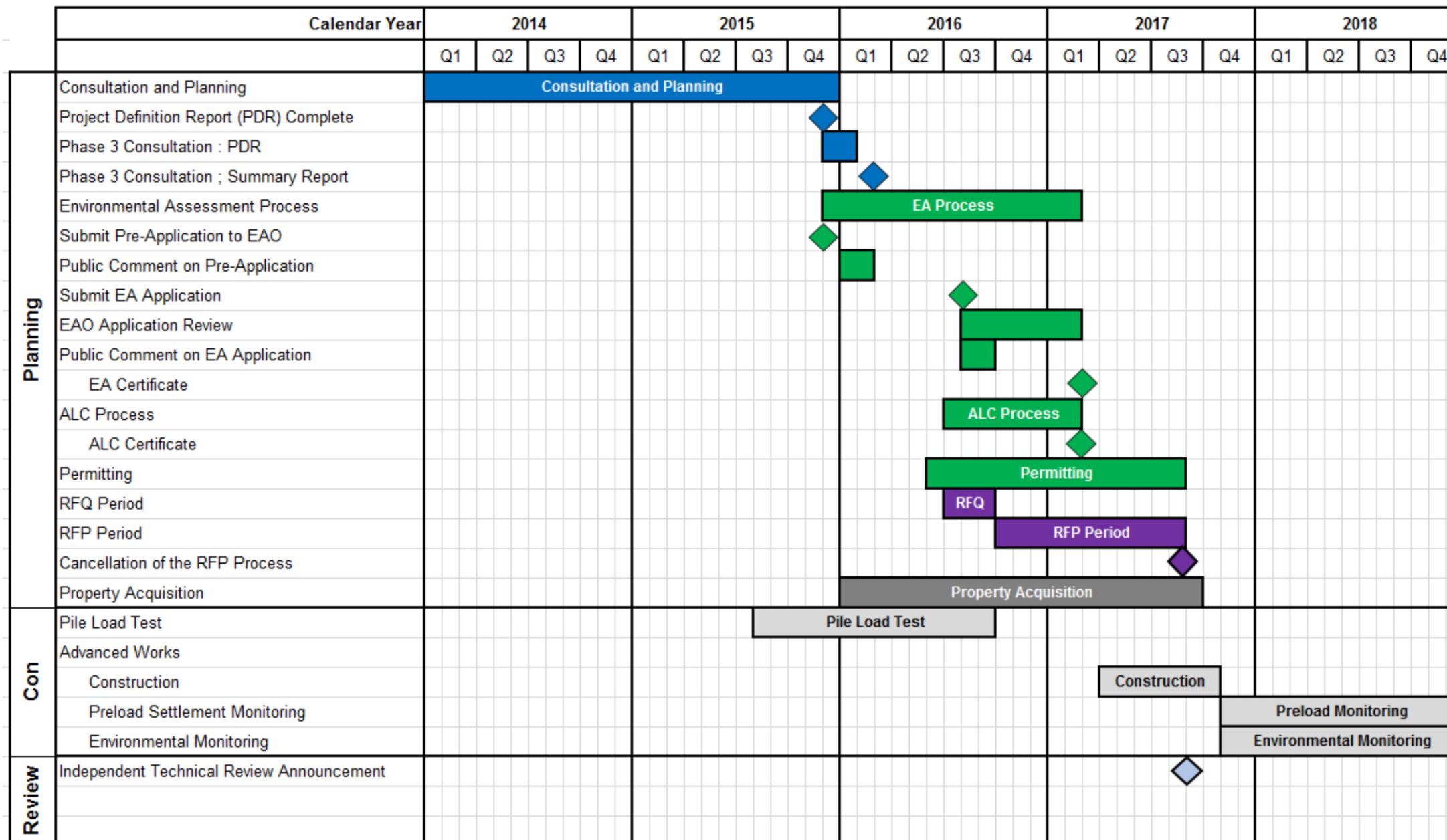
September 2017 Highlights

Independent Review	<ul style="list-style-type: none">• Independent Technical Review announced
Procurement	<ul style="list-style-type: none">• Procurement process cancelled
Construction	<ul style="list-style-type: none">• Continued Site preparation works in Richmond and Delta
Environment	<ul style="list-style-type: none">• Reviewed site preparation Environmental Monitoring Reports

2. SCHEDULE

The following schedule depicts deliverables, milestones and associated dates and timelines for the planning and procurement phases of the Project as well as anticipated construction timelines.

Legend:



3. PROJECT MANAGEMENT

Independent Technical Review

Objectives:	<ul style="list-style-type: none"> • Provide resources to support the independent technical review team in fulfilling its mandate • Provide background information and technical work developed by the project team for review • Update existing Project materials • Coordinate additional technical work or analysis requested by the independent technical review team
Accomplished in month:	<ul style="list-style-type: none"> • Summarized and assembled background materials
Key activities for next 3 months:	<ul style="list-style-type: none"> • Update existing Project materials • Provide full support and resources to independent technical review team as required

Safety

Objectives:	<ul style="list-style-type: none"> • Ensure a safe worksite at all times. • Provide clear information on health and safety responsibilities. • Ensure all required training is provided and evaluated. • Ensure that management of all Project activities is governed by the Workers Compensation Act and WorkSafeBC Occupational Health and Safety Regulation.
Accomplished in month:	<ul style="list-style-type: none"> • Conducted Joint Occupational Health and Safety Committee meeting. • Performed scheduled safety inspections.
Key activities for next 3 months:	<ul style="list-style-type: none"> • Provide ongoing safety training as required. • Provide Project safety orientations as required. • Assure independent technical review participants receive appropriate training, orientation and instruction for any in-field investigations.

Quality

Objectives:	<ul style="list-style-type: none"> • Ensure design services and construction works delivered to the Province are implemented within a quality standard consistent with Ministry standards and ISO 9001. • Ensure internal processes are conducted per Project quality requirements, consistent with Ministry standards and ISO 9001.
Accomplished in month:	<ul style="list-style-type: none"> • Quality Management input to site preparation works, including review of Quality Documentation.
Key activities for next 3 months:	<ul style="list-style-type: none"> • Continue Quality Management input and related monitoring/audits of site preparation works. • Provide support to independent technical review team regarding the Project's quality program.

Project Controls

Objectives:	<ul style="list-style-type: none"> • Effectively manage the Project's contracts, scope, schedule and cost. • Minimize potential negative impacts of any changes to the Project. • Ensure an efficient system for document control and records management. • Ensure project controls are governed by provincial policies such as the Ministry of Finance Capital Asset Management Framework and the Core Policy and Procedures Manual.
Accomplished in month:	<ul style="list-style-type: none"> • Held regular monthly project controls meetings with discipline leads. • Updated the Project cost and schedule pursuant to announcement of independent technical review.
Key activities for next 3 months:	<ul style="list-style-type: none"> • Ongoing updates to project schedule in alignment with independent technical review team progress and activities.

4. PROJECT DEVELOPMENT

Stakeholders

Scope:	<ul style="list-style-type: none">• Management of phased and ongoing public and stakeholder consultation, community relations and Project communications, employing best practices that draw upon international standards.
Key milestones achieved to date:	<ul style="list-style-type: none">• Phase 1 Consultation – Understanding the Need (2012)• Phase 2 Consultation – Exploring the Options (2013)• Phase 3 Consultation – Project Definition Report (2015/16)• 671 stakeholder meetings/presentations• Environmental Assessment Consultation (2016)
Accomplished in month:	<ul style="list-style-type: none">• Meetings held with BC Hydro pertaining to active works.
Key activities for next 3 months:	<ul style="list-style-type: none">• Provide support to independent technical review team.• Continue to address public enquiries during independent technical review period.

Environment

<p>Scope:</p>	<ul style="list-style-type: none"> • Obtain Environmental Assessment (EA) Certificate. • Conduct project monitoring in accordance with conditions of the Environmental Assessment Certificate. • Manage the permitting process. • Ensure environmental protection is managed within the framework provided by ISO 14001 Environmental Management Systems.
<p>Key milestones achieved to date:</p>	<ul style="list-style-type: none"> • Baseline studies <ul style="list-style-type: none"> ○ At-Risk Amphibians ○ Barn Owl Habitat Suitability ○ Conspicuous Raptor and Great Blue Heron ○ Contaminated Sites ○ Health Impact Assessment ○ Heritage Significance and Conservation Opportunities ○ Hydrogeology ○ Land Use ○ Sediment and Water Quality ○ Small Mammal ○ Terrestrial Vegetation: At-Risk Plants Study and Terrestrial Ecosystem Mapping • Environmental Assessment Consultation, including public open houses • Environmental Assessment Certificate (February 2017) • Environmental Management Plan (March 2017) • Water Sustainability Act Approval – Upland Ditches (March 2017)
<p>Accomplished in month:</p>	<ul style="list-style-type: none"> • Reviewed site preparation Environmental Monitoring Reports. • Undertook environmental monitoring of site preparation activities.
<p>Key activities for next 3 months:</p>	<ul style="list-style-type: none"> • Continue environmental monitoring and auditing regarding completed site preparation works. • Provide support to independent technical review team regarding project’s environmental assessment process and activities.

Agriculture

Scope:	<ul style="list-style-type: none"> Identify and work with farmers and other agricultural stakeholders potentially affected by the Project. Obtain official Project approval from the Agricultural Land Commission (ALC). Prepare appropriate plans to mitigate potential agricultural effects and to enhance agricultural land use.
Key milestones achieved to date:	<ul style="list-style-type: none"> ALC approval (February 2017) Consultation with farmers from the Richmond Farmers’ Institute and Delta Farmers’ Institute. Consultation with Richmond and Delta Municipalities.
Accomplished in month:	<ul style="list-style-type: none"> N/A
Key activities for next 3 months:	<ul style="list-style-type: none"> Provide support to independent technical review team regarding agricultural stakeholders interests, engagement, input and the ALC process.

Aboriginal Groups

Scope:	<ul style="list-style-type: none"> Consultation and engagement with Aboriginal Groups.
Key milestones achieved to date:	<ul style="list-style-type: none"> Completion of consultation plans with all Aboriginal Groups. Engagement of Aboriginal Groups in initial, pre-Application and Application review phase consultation. Submission of Aboriginal consultation reports (initial, pre-Application phase and Application review phase). Receipt of Project-related studies by 13 Aboriginal Groups.
Accomplished in month:	<ul style="list-style-type: none"> N/A
Key activities for next 3 months:	<ul style="list-style-type: none"> Provide support to independent technical review team regarding Aboriginal Group interests, engagement, input and activities.

Procurement

Scope:	<ul style="list-style-type: none"> • Development of Request for Qualifications (RFQ), Request for Proposals (RFP) and subsequent evaluation of submissions.
Key milestones achieved to date:	<ul style="list-style-type: none"> • Procurement Options Report • RFQ issued (June 2016) • Proponent shortlist • RFP issued (October 2016)
Accomplished in month:	<ul style="list-style-type: none"> • Competitive Selection Process cancelled in concert with announcement of independent technical review – termination letters issued to Proponents.
Key activities for next 3 months:	<ul style="list-style-type: none"> • Provide support to independent technical review team regarding procurement processes and timelines.

Engineering

Scope:	<ul style="list-style-type: none"> • Development of a reference concept, technical requirements/specifications and related technical studies for the Project. • Traffic operations modelling, traffic data collection, and other related engineering services in support of the Project. • Technical input to the procurement and environmental processes. • Compliance reviews of work by Concessionaire.
Key milestones achieved to date:	<ul style="list-style-type: none"> • Draft reference concept for EA application, RFQ and RFP • Multiple traffic data and analysis reports • Multiple geotechnical studies • Pile Load Test • Reviewed technical compliance of proposals
Accomplished in month:	<ul style="list-style-type: none"> • Assembled background materials and studies for independent technical review.
Key activities for next 3 months:	<ul style="list-style-type: none"> • Update existing Project materials • Provide support to independent technical review team regarding reference concept, engineering challenges, approach and strategies.

Construction

Scope:	<ul style="list-style-type: none"> Overall planning, coordination and implementation of construction activities.
Key milestones achieved to date:	<ul style="list-style-type: none"> Pile Load Test (2016) Commenced site preparation works in both Richmond and Delta
Accomplished in month:	<ul style="list-style-type: none"> Completed preload placement at both Delta and Richmond preparation sites. Continued settlement gauge readings and environmental monitoring at both Delta and Richmond preparation sites.
Key activities for next 3 months:	<ul style="list-style-type: none"> Continue settlement gauge readings and environmental monitoring of completed site preparation works. Preload and drainage sites maintenance

Property

Scope:	<ul style="list-style-type: none"> The acquisition of land rights required to deliver the Project. Review of properties along the Project corridor and development of a property acquisition strategy. 36 properties have been identified for acquisition, the majority of which are partial acquisitions given the Project is primarily within the existing Highway 99 Right-of-Way.
Key milestones achieved to date:	<ul style="list-style-type: none"> Finalized agreements on 14 properties. Established nine parcels as Arterial Highway. Completed legal surveys on 33 properties.
Accomplished in month:	<ul style="list-style-type: none"> Completed acquisition of one property as previously negotiated.
Key activities for next 3 months:	<ul style="list-style-type: none"> Provide support to independent technical review team regarding property requirements and planned land exchanges to increase local Agricultural Land Reserve (ALR) inventory.

5. COST

<p>Objectives:</p>	<ul style="list-style-type: none"> • Development of the Capital Cost and, Operation, Maintenance and Rehabilitation Cost Estimates • Ensure costs for works performed are in accordance with scope and schedule • Control cost variance from budget • Regular review of the estimated Project Cost • Ensure cost control activities are governed by provincial policies such as: <ul style="list-style-type: none"> ▪ Ministry of Finance Capital Asset Management Framework (CAMF) (2002); ▪ Ministry of Finance Core Policy and Procedures Manual (2015); ▪ Auditor General Act; ▪ Financial Administration Act; ▪ Balanced Budget and Ministerial Accountability Act; ▪ Supply Act; ▪ Budget Transparency and Accountability Act; and ▪ Transportation Investment Act.
<p>Key milestones achieved to date:</p>	<ul style="list-style-type: none"> • Business Case (2015) • Capital Cost Estimate Report • Operation, Maintenance and Rehabilitation Cost Estimate Report • Risk Report
<p>Status:</p>	<ul style="list-style-type: none"> • The forecast for the current fiscal year is \$44M; to date, \$22M has been spent (this includes actuals plus incurred). • Total Project expenditures are forecast to approximate \$66 million at the end of the current fiscal year. • The Project will not be budgeted for in the government’s capital plan until a solution has been identified.

6. RISK MANAGEMENT

Objectives:	<ul style="list-style-type: none">• Implementation of risk management at the operational level, while abiding by enterprise-level protocols and other considerations• Development of a Risk Management Plan that details the standard risk management processes and practices implemented on the Project• Ongoing development and management of a risk register for the Project, which includes risk mitigation strategies• Ensuring that risk is managed using the following guiding framework, principles and policies:<ul style="list-style-type: none">▪ Core Policy and Procedure Manual, Chapter 14 (CPPM 14) (2015)▪ Risk Management Guideline for the BC Public Sector (2012)▪ CAN/CSA ISO 31000: Risk Management – Principles and Guidelines (2010)
Key milestones achieved to date:	<ul style="list-style-type: none">• Risk Report (October 2015)• Project Risk Management Plan• Creation and management of the Project’s Risk Register
Status:	<ul style="list-style-type: none">• Risk register updated to reflect the independent technical review.