

OWNER'S TABLE OF COMMITMENTS AND ASSURANCES

June 20, 2008

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Ref	Objective Commitments and Assurances	Timing	Delivered By
1.0	Responsible Environmental Management		
1.1	<p>Develop, implement and maintain an Environmental Management Plan (EMP) for the Project to demonstrate how the design, construction and operation, including maintenance, of the Project:</p> <ul style="list-style-type: none"> • Will be carried out to avoid or mitigate negative impacts; • Will be carried out in an environmentally responsible manner, in accordance with MOT Specifications for Protection of the Environment (DB SS165)²; • Will employ Best Management Practices (BMPs³); and • Will comply with federal and provincial legislation, permits, approvals and authorizations, including the Environmental Assessment Certificate (EAC). 	All phases	Contractor
1.2	Prepare and implement a Construction Environmental Management Plan (CEMP), (which is a component of the EMP) ⁴ , including relevant sub-plans, for the Project prior to the start of relevant construction activities.	Pre-construction	Contractor
1.3	Obtain required statutory permits, approvals, and authorizations before proceeding with construction that requires such permits.	All phases	Contractor
1.4	Adhere to the terms and conditions of the: EAC; federal screening report; the EMP; MOT specifications Section 165, Protection of the Environment; and any other applicable permits, licenses and approvals.	Pre-construction, Construction	Contractor

¹ The "Owner" is understood to mean the applicant for an environmental assessment certificate pursuant to BCEAA (i.e MoT) and to whom the Certificate may be issued. Any transfer of commitments and assurances in this *Appendix E* by the applicant to the selected Contractor, must comply with all conditions of the Certificate. A full transfer of the Certificate and its conditions to the Contractor - as the new "Owner" - requires a name change for the holder of the Certificate and necessitates an Amendment to the Certificate.

² Should there be a conflict between the DBSS165 and these commitments, the more stringent environmental protection measure will apply.

³ Those that are technically and economically feasible and as defined specifically in other sections of this Table.

⁴ As discussed in section 11 of the EA Application.

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1.5	<p>Establish an Inter-Agency Environmental Review Committee (IAERC), in accordance with the Terms of Reference developed during Application review, to provide for agency review and comment on plans and designs prior to construction, including but not limited to:</p> <ul style="list-style-type: none"> • Detailed design of stormwater management infrastructure; • Detailed vegetation and wildlife mitigation plans and mitigation monitoring plans; and • Environmental management plans. 	Pre-construction, construction	MOT/Contractor
1.6	Provide all project related EMPs, including component EMPs, to applicable regulatory agencies in the IAERC for review and comment, at least 30 calendar days prior to the start of construction that requires such plans.	Pre-construction	Contractor
1.7	<p>Relevant sub-plans to be included in the CEMP will include those to address environmental issues identified in the Application and supporting documentation submitted to the EAO during the Application review, and described in the Application (Section 11, pg. 523), including but not limited to:</p> <ul style="list-style-type: none"> • Agriculture Mitigation Plan; • Air Quality and Dust Control Plan; • Archaeological Mitigation / Monitoring Plan; • Construction and Hazardous Waste Management Plan; • Contaminated Sites Management Plan; • Contractor Awareness and Education Plan; • Environmental Monitoring Plan; • Fisheries Habitat Mitigation and Compensation Plan; • Health and Safety Plan; • Invasive Species Management Plan; • Noise and Vibration Management Plan; • Spill Management and Emergency Response Plan; • Surface Water Quality and Sediment Control Plan; • Wildlife and Habitat Management Plan.. 	Pre-construction	Contractor
1.8	Manage contamination encountered during project development, regardless of the current assessment of potential contamination, in accordance with applicable regulatory requirements.	All phases	Contractor

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1.9	Prepare and implement an Operational Environmental Management Plan, prior to operation and maintenance activities. Provide the operational EMP to relevant reviewing and regulatory agencies, for review and comment, at least 30 calendar days prior to the onset of operation and maintenance activities.	Pre-construction	Contractor
1.10	At a minimum, review the Wildlife and Habitat Management Plan and modify if required, three years post-construction and make a decision regarding the next review date and/or determine the closure date for the plan(s). The method for review, modification, and decision on closure of the plan(s) will be defined by the applicable regulatory agencies within the IAERC.	Operations	Contractor
2.0 Monitoring			
2.1	Ensure that environmental monitoring and reporting for the Project will be conducted, with respect to the terms and conditions of the EAC and other regulatory permits, approvals and authorizations as applicable.	Construction	Contractor
2.2	Incorporate a monitoring component into all applicable sub-plans of the construction EMP developed for the construction phase of the Project.	Pre-construction	Contractor
2.3	Outline in each of the sub-plans of the construction EMP: <ul style="list-style-type: none"> • Rationale for monitoring; • Parameters to be monitored; • Monitoring program details; and • Required follow-up actions. 	Pre-construction	Contractor
2.4	The Owner will engage an Environmental Monitor for the construction phases of the Project to undertake environmental monitoring activities and oversee implementation of each of component plans of the EMP developed for the Project. The Environmental Monitor will monitor, evaluate, and report to the owner on construction activities and the effectiveness of the environmental management strategies and mitigation measures, with respect to the terms and conditions of the Application and other regulatory Permits, Approvals and Authorizations that may apply. The Monitor will be responsible for making on-site decisions and taking on-site action to avoid/respond to potential environmental effects which could include temporary stop work orders if necessary.	Construction	Contractor

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2.5	Implement environmental quality management program through monitoring, auditing and reporting activities for the Project with respect to the terms and conditions of the EAC and other regulatory permits, approvals and authorizations.	All phases	Contractor
3.0 Incident Management			
3.1	Respond to environmental incidents, including spill incidents in accordance with the Emergency Response, Plan to minimize effects and risks to the general public, on-site workers and the environment.	All phases	Contractor
3.2	<p>Include protocols, consistent with the BC Spill Reporting Regulation, for reporting spills to appropriate emergency response authorities, including;</p> <ul style="list-style-type: none"> • The Provincial Emergency Program, in the case of any spills of reportable deleterious substances into waters frequented by fish, regardless of the amount of the spill; and • To adjacent property owners and occupiers, including local government, where utilities cross the highway and there is a potential for an incident to extend beyond the Project boundaries. 	Pre-construction	Contractor
3.3	Train all field Project personnel regarding implementation of the Construction and Hazardous Waste Management and Spill Management and Emergency Response Plans.	All phases	Contractor
3.4	Incorporate relevant municipal contacts into the emergency contacts for the Construction and Hazardous Waste Management and Spill Management and Emergency Response Plans prepared for construction of the Project.	Pre-construction	Contractor
3.5	Follow applicable MOT standard specifications and Canadian Council of Ministers of Environment codes and procedures if temporary fuel storage/fuelling facilities are required during construction. Where there is a difference in standards, the most stringent measure for environmental protection will take precedence.	Construction	Contractor
4.0 Community Consultation			
4.1	Consult with local governments, stakeholders and the public during all stages of Project development.	Pre-construction, Construction	MoT, Contractor
4.2	Conduct community open houses and information sessions during the design review stage to obtain input on design refinements, during the preliminary and final design review stages.	Pre-construction,	MoT, Contractor

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4.3	Provide regular public information updates on the progress of construction, the schedule, and upcoming milestones.	Construction	MoT, Contractor
4.4	Consult with the Corporation of Delta (CoD) and the City of Surrey (CoS) during all stages of project development and construction.	Pre-construction, Construction	Contractor
4.5	Provide updated media information materials, as part of the Project commitment to making project information available to the public.	All phases	Contractor
4.6	Track project enquiries and responses.	All phases	Contractor
4.7	Discuss potential economic opportunities generated by the Project with participating First Nations throughout the Post-EA Certification, Design and Construction Phases of the Project.	Pre-construction, Construction	MoT, Contractor
4.8	Obtain input from participating First Nations to identify appropriate measures to mitigate potential project related impacts on their previously identified interests in relation to fisheries and habitat matters.	Pre-construction	Contractor
5.0	Stormwater Management		
5.1	Ensure that the design, construction and maintenance of stormwater management infrastructure for the Project takes an integrated approach to stormwater management and contributes to maintaining, or improving, drainage and water quality conditions directly adjacent to the corridor.	All phases	Contractor
5.2	Design, construct and maintain stormwater management infrastructure, such that it to meets the performance objectives outlined in the Stormwater Management Plan Outline (July, 2007) and the Application. Monitoring of the infrastructure will be undertaken to confirm performance objectives are met or, if necessary, additional steps are taken to ensure performance objectives are achieved.	All phases	Contractor
5.3	Consult with municipalities adjacent to the new construction area such that the approach to the management of stormwater and drainage design is complementary to, and can be integrated with, adjacent municipal stormwater infrastructure.	Pre-construction	Contractor

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5.4	Provide final designs for stormwater management infrastructure to relevant First Nations and reviewing and regulatory agencies for review and comment at least 30 calendar days prior to relevant construction activities in order to verify that the proposed infrastructure achieves agreed upon performance measures identified in the Stormwater Management Plan Outline (July 2007).	Pre-construction	Contractor
5.5	Drain stormwater and road runoff away from red and blue listed plant communities and do not construct integrated stormwater management infrastructure in such habitat areas.	Construction, Operation	Contractor
5.6	Obtain input from participating First Nations regarding mitigation measures outlined in the stormwater and drainage plan and effective integration of those measures into the design and operation of the Project.	Pre-construction	Contractor
6.0	Agriculture		
6.1	Consult with the Agricultural Land Commission (ALC), Ministry of Agriculture and Lands (MAL), Delta Farmers' Institute (DFI), individual farm owners and the CoD, through all future stages of Project development, construction and operation, to ensure impacts to agricultural lands and operations are minimized where possible and appropriately addressed where impacts are unavoidable.	All phases	MoT, Contractor
6.2	Obtain ALC approvals regarding areas within the Agricultural Land Reserve (ALR) required for the project, prior to construction.	Pre-construction	MoT, Contractor
6.3	Develop and implement an Agricultural Mitigation Plan as outlined in the Application that identifies potential impacts to agriculture as a result of project construction activities and measures for avoiding and addressing such impacts where possible. The scope will include those measures outlined in the Application and the Agricultural Enhancement Strategy (April 2008), including but not limited to mitigation measures focused on: <ul style="list-style-type: none"> • Road access; • Drainage and irrigation; • Utilities; and • Maintaining the agricultural land base. 	Pre-construction	Contractor

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6.4	Finalize and implement specific agricultural enhancement initiatives, including but not limited to, compensation mechanisms focused on improving road access and drainage and irrigation, as part of the application process to the ALC and summarily as part of the Agricultural Enhancement Strategy (April 2008).	Pre-construction, Construction	MoT
6.5	Retain the services of a Professional Agrologist to: <ul style="list-style-type: none"> • Liase with the owner, contractor and farmer(s); • Oversee a consultation and dispute resolution process for individual farmers affected by the Project; and • Oversee monitoring and effectiveness of measures proposed to address impacts to agriculture during design, construction and operation. 	All phases	MoT
6.6	Avoid, to the extent possible, using agricultural lands outside of the Right-Of-Way (ROW), for staging areas. For all agricultural lands that are required for use as staging areas, implement construction BMPs (as noted in the Agriculture Mitigation Plan in the EMP) to manage potential construction related effects and restore lands to pre-construction condition, or better agricultural capability, upon completion of project works.	Pre-construction, Construction	Contractor
6.7	Consult with individual farm owners, as well as MAL, ALC, CoD, DFI and other stakeholders, to identify potential impacts to agricultural operations and infrastructure and ensure that such impacts are avoided, mitigated for, or appropriately addressed during future stages of design and construction of the Project. The scope of potential impacts to farm operations includes, but is not limited to: <ul style="list-style-type: none"> • Agricultural drainage; • Utilities; • Road Access; and • Pollinators. 	Pre-construction, Construction	MoT, Contractor
6.8	Undertake reasonable measure to facilitate the consolidation of parcels of isolated agricultural lands, to promote continued agricultural use of such lands.	All phases	MoT
6.9	Undertake reasonable measures to minimize potential loss of ALR lands, including existing farm(s) by: <ul style="list-style-type: none"> • Refining the Project footprint where feasible; and • Optimizing use of existing ROW. 	Pre-construction, Construction	Contractor

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7.0 Air Quality			
7.1	Ensure that the construction works and operations for the Project are conducted in compliance with environmental permits and approvals and that all reasonable measures are taken to address project-related effects on air quality.	Construction, Operation	Contractor
7.2	<p>Develop and implement an Air Quality and Dust Control Plan for the construction phase of the project. The plan will:</p> <ul style="list-style-type: none"> • Include an air quality monitoring program with thresholds, which if exceeded, will trigger the implementation of additional mitigation and corrective measures; • Commit to the best available, known and effective, measures for mitigating construction related air emissions, including diesel particulate matter (PM), as identified by relevant regulatory agencies. This would include, where practical, the use of diesel oxidation catalysts (DOCs) or diesel particulate filters (DPFs) on all on-road and off-road project equipment in combination with use of a B20 biodiesel blend; • Include an anti-idling policy for construction equipment and other vehicles associated with construction related activities; • Commit to fugitive dust minimization strategies (e.g., wheel wash and sweeping), and dust suppression techniques (e.g. watering) on roads; and • Identify site specific considerations, where applicable, such as proximity to sensitive environmental or human receptors. 	Pre-construction, Construction	Contractor
7.3	Provide the Air Quality and Dust Control Plan to Metro Vancouver, Environment Canada (EC), Ministry of Environment (MoE), Transport Canada, Health Canada (HC) and other relevant agencies for review and comment at least 30 calendar days prior to relevant construction activities.	Pre-construction	MoT, Contractor
7.4	Avoid burning as a means for disposing of land clearing debris.	Construction	Contractor
8.0 Traffic Management			
8.1	Ensure that the design of the Project is integrated with local road networks, and that construction of the proposed project includes measures for avoiding or minimizing impacts to local road networks		MoT, Contractor

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8.2	Prepare and implement a Traffic Management Plan in coordination with CoS and CoD to address construction related traffic conditions.	Pre-construction, Construction	Contractor
8.3	Consult with the CoD, CoS, MoT district office, and other stakeholders to design and construct project infrastructure so that it is effectively integrated with existing and planned local road networks.	Pre-construction, Construction	Contractor
9.0 Noise and Vibration			
9.1	Ensure that potential noise impacts associated with the project are considered and mitigation provided for during design, construction and operation of the project.	All phases	Contractor
9.2	Prepare and implement a Noise and Vibration Management Plan for the construction phase of the Project that will include specific mitigation measures, and locations where they will be applied to address construction related noise.	Pre-construction, Construction	Contractor
9.3	Prepare a noise complaint protocol as part of the CEMP Noise and Vibration Management Plan to respond in a timely manner to concerns and complaints raised by residents and take reasonable actions to reduce the Project-related construction noise in question.	Pre-construction	Contractor
9.4	Provide the construction Noise and Vibration Management Plan to the CoS, CoD and other stakeholders for review and comment 30 calendar days prior to the onset of relevant construction activities.	Pre-construction	Contractor
9.5	Design and construct mitigation measures to address potential operational noise impacts on residential areas as part of the project according to the MoT Noise Policy (1993).	Pre-construction, Construction	Contractor
9.6	Conduct noise monitoring at the baseline sites during the first year after construction is complete to assess the effectiveness of mitigation measures, with a commitment to further mitigation if necessary, technically feasible and practical.	Operation	Contractor
9.7	Consult with the CoD and CoS to look for opportunities to use tree planting and landscaping to mitigate potential visual, noise and air quality impacts.	Pre-construction, Construction	Contractor
9.8	Participate in meetings with affected communities and residents to address site-specific noise issues in the event that late evening or night time construction works prove necessary in the vicinity of residential areas.	Pre-construction, Construction	Contractor

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9.9	Perform pre-condition surveys to document existing state of buildings and facilities in the vicinity of SFPR construction activities as per standard geotechnical BMPs. This will form the baseline conditions, against which post-construction condition surveys will be carried out to assess any vibration impacts to buildings and facilities as a result of Project construction.	Pre-construction	Contractor
9.10	Monitor ground vibrations, as per standard geotechnical BMPs, adjacent to buildings to confirm that vibration levels are within ranges expected to avoid construction-related vibration.	Construction	Contractor
10.0	Contaminated Sites and Property Acquisition		
10.1	Ensure that potential site contamination is investigated, and managed in compliance with the Contaminated Sites Regulation (Environmental Management Act), during all stages of project development including property acquisition, design and construction		Contractor
10.2	Assess all Tier 1 and Tier 2 properties required for the ROW for potential contamination prior to construction and take steps, as required, to investigate and address site contamination that may exist.	Pre-construction, Construction	MoT, Contractor
10.3	Manage any contaminated groundwater encountered in accordance with the requirements of the <i>Environmental Management Act</i> and associated regulations.	Pre-construction, Construction	MoT, Contractor
10.4	Undertake risk assessment and remediation activities, as required, and manage potential contamination in compliance with the provincial <i>Environmental Management Act</i> and Contaminated Sites Regulation.	Pre-construction, Construction	MoT, Contractor
10.5	Should contaminated groundwater be identified along the route, include measures to control/mitigate the potential for impacts to surface water in future stormwater design.	All phases	MoT, Contractor
10.6	Notify MoE of potential migration of contaminants from known or identified Tier 1 off-corridor properties of concern discovered during supplementary investigations or Project-related activities and use information to manage and mitigate contaminated sites issues prior to construction.	Pre-construction	Contractor

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10.7	As part of the CEMP, the Contaminated Sites Management, Construction and Hazardous Waste Management and Spill Management and Emergency Response Plans, develop and implement a protocol for identifying and managing contaminated and potentially contaminated materials during the construction phase of the Project.	Pre-construction, Construction	Contractor
11.0	Fisheries		
11.1	Ensure that all works and activities associated with the construction, operation and maintenance of the project are conducted in compliance with the <i>Fisheries Act</i> . This includes implementing mitigation measures and best management practices to ensure that the project does not cause any unauthorized harmful alteration, disruption or destruction of fish habitat, that the project does not cause any harm or mortality to fish, and that the project does not cause or result in the deposit of a deleterious substance of any type, including sediment, into a watercourse that is frequented by fish.	All phases	Contractor
11.2	Obtain an authorization under subsection 35(2) of the <i>Fisheries Act</i> for any unavoidable harmful alteration, disruption or destruction of fish habitat prior to relevant construction works or activities	All phases	Contractor
11.3	Develop and construct fish habitat compensation measures that offset all project impacts to fish habitat. These fish habitat compensation measures will be constructed by the proponent as directed by Fisheries and Oceans Canada and in accordance with any s. 35(2) <i>Fisheries Act</i> authorizations.	Pre-construction, Construction	Contractor
11.4	Implement appropriate measures to adequately mitigate the effects of the creation of impervious surfaces on volume of surface runoff, rate of runoff, and water quality. These will meet performance targets established in the Stormwater Management Plan Outline (July, 2007) for the project.	Pre-construction, construction, operation	Contractor
11.5	Establish and maintain riparian setback areas from drainage channels and watercourses in accordance with regulatory requirements	Pre-construction, construction, Operation	Contractor
11.6	Take all reasonable measures to prevent substances that may be harmful to fish from entering the aquatic environment at the construction sites in the proximity to fish and aquatic habitat, paying particular attention to discharges of suspended sediments, construction waste, handling of uncured concrete and other deleterious substances.	Construction	Contractor

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11.7	Construct bridges for watercourse crosses in the vicinity of Delta Ravines (i.e. Norum , McAdam, Collings, Nelson View and Gunderson Creeks), as shown in plans attached to the Application (Technical Volume 1) and over a minimum 450 m portion of the Fraser Heights Wetlands, using the design and the construction methods outlined in the draft Fraser Heights Wetlands Bridge Preliminary Design Report.	Pre-construction, construction	Contractor
11.8	Obtain input from the Musqueam Indian Band and other participating First Nations to identify appropriate measures to mitigate potential project related impacts on the identified interests of the Musqueam Band in relation to fisheries and habitat matters. Identify potential opportunities for mutually agreeable opportunities to assist in advancing the fisheries interests of the Musqueam Indian Band or other participating First Nations..	All phases	MoT, Contractor
11.9	Review with the applicable regulatory agencies, including but not limited to DFO and MOE, proposals for compensation habitat, including opportunities for habitat to be constructed in advance of other Project construction (i.e. "habitat banking"), to determine the ratio of habitat types and to which drainage compensation will apply.	Pre-construction	Contractor
11.10	Follow BMPs in the construction of all new ditches and stormwater watercourses.	Construction	Contractor
11.11	Retain maintenance responsibility for compensation sites within the Project limits. For sites constructed in areas outside of the Project limits, establish site-specific agreements for access and maintenance with the relevant stakeholder/landowner.	Operations	Contractor
12.0	Water Quality		
12.1	Ensure that the construction works and operations for the Project are conducted in compliance with environmental requirements and BMPs in order to avoid impacts to water quality.	All phases	Contractor
12.2	Develop and implement a Surface Water Quality and Sediment Control Plan and provide the plan for review and comment by relevant environmental agencies at least 30 calendar days prior to the start of relevant construction activities.	Pre-construction	Contractor

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Ref	Objective Commitments and Assurances	Timing	Delivered By
12.3	Sample water from potentially impacted drinking water wells to assess potential adverse effects to water quality associated with during construction and operation phases of the project. Provide sampling water quality data to the local health authority for review and comment.	Construction, Operation	Contractor
12.4	<p>The Surface Water Quality and Sediment Control Plan will at a minimum:</p> <ul style="list-style-type: none"> • Identify requirements for additional water quality monitoring prior to and during construction to ensure preventative and mitigation measures can be taken as appropriate, to avoid impacts to water quality; • Identify potential water quality contaminants of concern generated by construction activities and associated preventative and mitigative measures; • Include a BMP maintenance plan to ensure BMPs implemented are functioning as designed and corrective actions are taken when required; and • Be submitted to the applicable regulatory agencies at least 30 calendar days prior to start of construction activities for review. 	Pre-construction, Construction	Contractor
13.0	Wildlife and Vegetation		
13.1	Ensure that the design, construction, and operation of the project, avoids where practical and technically feasible, impacts to vegetation and wildlife.	All phases	Contractor
13.2	Prepare and implement a Wildlife and Habitat Management Plan to avoid and, where necessary, mitigate potential impacts to vegetation, wildlife and wildlife habitat. Provide the Plan to relevant regulatory and reviewing agencies for review and comment at least 30 calendar days prior to relevant construction activities beginning. The Wildlife and Habitat Management Plan will include best practices including but not limited to those identified in the Application (Table 7.7-17), draft Wildlife Mitigation Crossing Plan (April 2007), and Zones of Influence memo (July 2007) in order to avoid, and where necessary, mitigate potential effects on vegetation and wildlife. This plan will also identify protocols for the survey and salvage of vegetation and wildlife as appropriate and required.	Pre-construction, Construction	Contractor
13.3	Develop and implement mitigation measures to avoid and minimize impacts to wildlife during construction and operation of the project including, but not limited to those measures identified in the Application (September, 2006), draft Wildlife Mitigation Crossing Plan (April 2007) and Zones of Influence Assessment memo (July 2007).	Pre-construction, Construction	Contractor

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13.4	During the design phase, the MoT will finalize its determination of the type and location of sound barriers to be constructed along the perimeter of Burns Bog. For the south-western alignment (adjacent to Crescent Slough), this design will include the construction of a solid sound barrier or a barrier that will provide equivalent mitigation. MoT will ensure on-going consultation with TC, EC, MoE and other IAERC members as appropriate, during design regarding the proposed type and location of sound barriers to be installed around Burns Bog	Pre-construction	MoT, Contractor
13.5	Consult with the MoE and the Canadian Wildlife Service (CWS) of Environment Canada, to identify suitable compensation, including but not limited to that identified in the Wildlife and Habitat Management Plan and Habitat Compensation Plan (February, 2007), to address residual effects on vegetation and wildlife as a result of the Project.	Pre-construction	Contractor
13.6	Work with reviewing and regulatory agencies to develop and implement a comprehensive and long term Mitigation Monitoring Plan (MMP), based on the Vegetation and Wildlife Mitigation Monitoring Strategy (April 2007), to monitor the effectiveness of proposed mitigation measures in addressing Project-related effects on vegetation and wildlife, including species at risk. Data collection and monitoring in support of the implementation of the MMP will begin prior to construction and continue for a period of time, to be determined with relevant regulatory agencies, during operation. Information collected in relation to the MMP will be used to guide detailed planning of mitigation, assess the effectiveness of such mitigation, and determine where additional measures may be required. The MMP will include scientifically defensible thresholds or performance measures to facilitate the evaluation of the effectiveness of mitigation.	All phases	Contractor
13.7	Undertake site-specific vegetation surveys in accordance with the regionally supported <i>Protocols for Rare Plants Surveys</i> , to identify the presence and distribution of red- and blue-listed plants species prior to final design and construction. Provide information on the presence and distribution of such plants species to MoE for review and use the information to guide final design and construction to avoid or mitigate impacts to these species.	Pre-construction	Contractor

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13.8	Avoid direct impacts to sensitive red and blue listed plant communities where possible and adhere to construction exclusion windows determined by regulators.	Construction	Contractor
13.9	Develop a plan for salvaging plants and seeds, for review by MoE, where impacts to red and blue listed plant species cannot be avoided, for replanting off-alignment.	Pre-construction	Contractor
13.10	Make all reasonable efforts to avoid impacts to confirmed streambank lupine habitat and confirmed stream bank lupine seed banks in the project corridor, as identified in consultation with the Streambank lupine recovery team, during design construction and operation of the Project. Where impacts to such areas cannot be avoided, work with the Ministry of Environment and the Streambank Lupine Recovery team to identify and carry out appropriate mitigation measures including, but not limited to, the stockpiling of soil containing streambank lupine seeds.	Construction	Contractor
13.11	<p>Undertake pre-construction bird nest surveys and restrict clearing during the breeding season. Pre-construction bird nest surveys will include, but not necessarily be limited to the following:</p> <ul style="list-style-type: none"> • Conduct pre-construction raptor, heron or any listed species nest and roost tree surveys, consistent with applicable BMPs, to determine presence of active/inactive raptor and heron nests in the corridor and work scheduling with respect to the nest locations and applicable timing restrictions. • Prepare pre-construction bird nest survey protocols should works include clearing of vegetation during the general bird breeding time period as determined by MOE. • Conduct pre-construction bird nest surveys to the satisfaction of the MOE should the Contractor intend to seek approval from the MOE for vegetation clearing within the bird breeding time period (defined by MOE) in any year during the Contract Period. 	Pre-construction	Contractor
13.12	Consult with MoE on the development and implementation of an Invasive Species Management Plan to address potential effects of the project related to the spread of invasive plant and aquatic wildlife species within the project corridor.	Pre-construction, Construction	Contractor

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13.13	Include large mammal crossings adjacent to the perimeter of Burns Bog. The final number and location of wildlife crossings will be identified in the Wildlife Mitigation Crossing Plan, which will be finalized in consultation with MoE and EC.	Pre-construction	Contractor
13.14	Follow the design criteria outlined in the MOT Manual of Aesthetic Design Practice and the MOT Landscape Policy and Design Standards that form the landscape and site restoration design criteria for the Project.	Pre-construction, Construction	Contractor
13.15	Use data collected through the MOT administered Wildlife Accident Reporting System to identify areas of increased wildlife collisions and to monitor direct effects on wildlife.	Operations	Contractor
13.16	Identify the location of sensitive wildlife habitats, including but not limited to habitat for species at risk, red and blue listed plant communities and high biodiversity habitats, on detailed design drawings in order to avoid or minimize potential effects to these areas.	Pre-construction	Contractor
14.0	Species at Risk		
14.1	Ensure that all reasonable measures are taken to avoid or lessen effects of the Project on listed wildlife species and their critical habitat and that potential effects that could occur are monitored. All mitigation and monitoring measures will be undertaken in a manner that is consistent with applicable recovery strategy and actions plans.	Pre-construction, Construction	Contractor, MoT
14.2	Undertake a salvage program for Pacific water shrew from, at a minimum, high and moderate-rated habitat adjacent to the SFPR. Other areas potentially requiring salvage will include lower-rated habitat, connected to higher-rated habitat, and will be determined in consultation with MoE and the PWS Recovery Team.	Pre-construction, Construction	Contractor
14.3	Consult with MoE regarding the mitigation of potential effects on Pacific water shrew and take all practical steps to apply the most recent Pacific water shrew best management practices to address potential effects including identifying additional opportunities to avoid direct effects to areas, designated as critical habitat by the PWS Recovery Team, during design, construction and operation.	Pre-construction, Construction	Contractor

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14.4	Consult with MOE to develop a mitigation and compensation strategy for Pacific water shrew, where opportunities are available, based on habitat quality and connectivity to surrounding habitat. Undertake sampling program, where required, to determine the presence and distribution of Pacific water shrew to support detailed design of mitigation.	Pre-construction, Construction	MoT/Contractor
14.5	Detailed design of wildlife crossing mitigation for southern red-backed vole (RBV) will be conducted assuming the presence of RBV in high and moderate rated habitat identified in the EA. Monitoring of the use of wildlife crossing structures will include provisions for assessing the use of such structures by RBV.	Pre-construction	Contractor
14.6	Undertake a review of local museum specimens to confirm the distribution of <i>Sorex rowheri</i> within the Lower Fraser Valley. Where possible, use findings to support detailed design of mitigation.	Pre-construction	Contractor
14.7	Use information obtained through the Mitigation Monitoring Plan to support detailed planning of mitigation to address potential noise, visual and collision effects of the project on barn owl. Undertake long term monitoring of the effectiveness of such mitigation as part of the implementation of the Mitigation Monitoring Plan.	All phases	Contractor
14.8	Use information obtained through the Mitigation Monitoring Plan to support detailed planning of mitigation, including pre-construction salvage where appropriate, to address potential effects of the project, including those related to collision and changes in hydrology, on red-legged frog and western toad. Undertake long term monitoring of the effectiveness of such mitigation as part of the implementation of the Mitigation Monitoring Plan.	All phases	Contractor
14.9	Consult with MOE to plan and undertake at least one pre-construction, one construction and two operational inventories of at-risk aquatic insects in habitat known to or suspected of supporting such species and potentially affected by the project, including but not necessarily limited to the Fraser Heights Wetland, to confirm the findings of the environmental assessment and to monitor potential impacts of the project on aquatic insects.	All phases	Contractor

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Ref	Objective Commitments and Assurances	Timing	Delivered By
14.10	<p>Consult with the Canadian Wildlife Service to develop and implement a Mitigation Monitoring Plan to monitor and assess the effectiveness of measures proposed to avoid or mitigate potential effects on Sandhill Crane. The Plan will identify:</p> <ul style="list-style-type: none"> • species habitat requirements; • existing conditions in the project area; • potential project related effects and mitigation; • core indicators for assessing the effectiveness of mitigation; and • proposed study methodology and data interpretation and reporting protocols. 	Pre-construction, Construction	MOT
15.0	Burns Bog		
15.1	Avoid potentially significant impacts to hydrological and ecological values associated with Burns Bog (i.e., alignment refinements to avoid ecological and hydrological values, development of hydrological mitigation that meet the hydrologic objectives identified).	All phases	MOT/Contractor
15.2	Consult with the MV, CoD, MoE, EC, and the Burns Bog Management Planning Committee (BBMPC) and Scientific Advisory Panel (SAP) to ensure design, construction and operation of the Project complements long term management objectives established for the Burns Bog Ecological Conservation Area.	All phases	Contractor
15.3	Consult with the reviewing agencies to finalize construction and post-construction monitoring requirements related to Burns Bog including, but not limited to, those identified in the Vegetation and Wildlife Mitigation Monitoring Strategy (April 2007). Monitoring requirements with respect to Burns Bog will include but not be limited to those relating to: air quality, water quality, water levels, red-listed plant communities, and wildlife.	Construction, Operation	Contractor
15.4	Share environmental data from Burns Bog collected as part of the development of the SFPR project, with agencies responsible for the management of the Burns Bog Ecological Conservancy Area in order to support the implementation of the long term management plan for the Bog.	All phases	Contractor

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Ref	Objective Commitments and Assurances	Timing	Delivered By
15.5	<p>Design, construct and operate hydrology mitigation infrastructure, to mitigate potential effects of the project on the hydrology of Burns Bog, in a way that meets the following performance objectives:</p> <ul style="list-style-type: none"> • Site specific solutions – The design, construction and operation of hydrology mitigation will be based on, and take into account, site specific conditions. • Compatibility between highway water management and bog water management – Providing for active water level controls in the Bog that are independent of SFPR-related water management. • Prevention of mineral migration into the Bog. – Where indicated, providing a low permeability barrier between the SFPR highway ditch and the lagg ponds/ditches by: using material to construct the berm that supports appropriate vegetation on the berm and prevents the introduction of mineral material into the Bog; and maintaining hydraulic gradients so that Type 1 bog waters flow toward the highway at all times. • Resilience – Providing a design that is sufficiently robust to maintain and actively manage water levels under average and extreme conditions and if Bog conditions change. • Highway and mitigation construction does not preclude future restoration of Burns Bog – Providing flexibility of design that allows, for example, for future water control structures that allow for raising of water level as part of future bog restoration. • Holistic design – Hydrology mitigation concepts are designed in way that ensure they will be compatible with, and help achieve multiple, mitigation requirements. <p>As the design of hydrology mitigation is advanced, it will be documented in a Hydrology Work Plan. This document will be finalized prior to commencement of pre-load activities around Burns Bog.</p>	All phases	MoT
15.6	<p>Pre-load activities around Burns Bog, including areas north of the Highway 99 interchange and west of Nordel Way, will not commence until TC (and other decision-making authorities as required) has reviewed and is satisfied with the final Hydrology Work Plan and the status of the hydrology mitigation design.</p>	Pre-construction	MoT

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Ref	Objective Commitments and Assurances	Timing	Delivered By
15.7	Provide opportunities for the active involvement of agencies responsible for the management of the Burns Bog Ecological Conservancy Area, and the Scientific Advisory Panel (SAP), in the design, construction and operation of project related works adjacent to Burns Bog including but not limited to those proposed as mitigation for potential project related effects.	All phases	MoT, Contractor
15.8	Consult with MV, CoD, EC and MoE on the development of a water balance model and a drainage model to support the design, construction and operation of hydrology mitigation infrastructure adjacent to Burns Bog and support implementation of the Burns Bog Ecological Conservancy Area Management Plan.	Pre-construction	Contractor
15.9	Finalize an Air Quality Management Plan, in consultation with TC, EC and other IAERC members as appropriate, prior to commencing pre-loading activities around Burns Bog. This document will identify all technically and economically feasible mitigation measures to be implemented to prevent generation and transmission of dust during the pre-load and construction phases of the project.	Pre-construction	MoT, Contractor
15.10	Collect a minimum of 4 months of baseline dust fall monitoring between June and September 2008. Following the collection of this information, the MOT will meet with TC and EC to discuss the baseline monitoring information collected and the approach for continued data collection, prior to the commencement of pre-loading activities around Burns Bog (i.e., north of the Highway 99 interchange and west of Nordel Way).	Pre-construction	MoT
15.11	Work co-operatively with the Tsawwassen First Nation to maintain appropriate access for TFN members to Burns Bog to facilitate TFN's harvesting rights pursuant to the Tsawwassen Final Agreement	All phases	MoT, Contractor
15.12	Ensure that the development and operation of stormwater management infrastructure does not compromise the ability to achieve hydrology mitigation objectives adjacent to Burns Bog	All phases	MoT, Contractor
15.13	Implement the monitoring and follow-up activities identified in the Screening document, for a period of five years after the project has commenced operation, to ensure the effectiveness of mitigation measures related to aerial deposition, hydrology, and Sandhill crane in the vicinity of Burns Bog.	Operation	Contractor, MoT

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Ref	Objective Commitments and Assurances	Timing	Delivered By
16.0 Archaeology			
16.1	Ensure that the design, construction and operation of the Project is advanced in a way that avoids, or minimizes potential impacts to known archaeological sites, including the Nottingham Farm, St. Mungo and the Glenrose Cannery sites, as well as other sites that may be encountered during project planning and development.	All phases	Contractor
16.2	Work with participating First Nations who have identified related interests within the context of the ongoing environmental review process and the BC Archaeology Branch regarding investigation of unsurveyed areas within the Project area assessed as having archaeological potential at an appropriate level for an archaeological impact assessment and develop mitigation measures consistent with the BC Archaeological Impact Assessment Guidelines.	Pre-construction	MoT, Contractor
16.3	Obtain a valid <i>Heritage Conservation Act</i> Section 14 Heritage Inspection Permit with adequate provisions to address requirements for investigations and potential impacts to previously unrecorded archaeological sites should they arise. Immediately report previously undocumented archaeological sites that come to light during the construction phase of the Project to the BC Archaeology Branch and participating First Nations.	Pre-construction, Construction	MoT, Contractor
16.4	Include required edits and revisions to the Application in the final <i>Heritage Conservation Act</i> Permit report.	Pre-construction	MoT
16.5	<p>Work with the Musqueam Indian Band and other interested First Nations in developing a mutually acceptable Site Management Plan (SMP) for the Glenrose / St. Mungo area, to encourage the preservation of archaeological deposits through the protection and management of archaeological and heritage resources during planning, design, construction and operation phases of the SFPR project.</p> <p>The Plan will include, but not be limited to:</p> <ul style="list-style-type: none"> • a summary of existing information (archaeology and oral history); • summary of existing site conditions; • site management objectives (short, medium and long term); and • site management strategies (preconstruction, construction, post-construction phases). 	Pre-construction	MoT

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Ref	Objective Commitments and Assurances	Timing	Delivered By
16.6	Develop and implement an archaeological mitigation program focused on intact archaeological deposits that includes systematic data recovery (excavation) and archaeological monitoring for the St. Mungo and Glenrose Cannery Sites. Develop methodology and sample size with input from the Archaeology Branch and First Nations. Obtain Heritage Conservation Act Section 14 Heritage Investigation Permits and Section 12 Alteration Permits prior to mitigation and/or alteration of known archaeological sites.	Pre-construction, Construction	Contractor
16.7	Work with the Musqueam Indian Band and other interested First Nations in establishing a final design for the SFPR segment in the Glenrose / St. Mungo area focused on minimizing potential project related impacts on identified archaeological resources.	Pre-construction	MoT, Contractor
16.8	Work with the Musqueam Indian Band and other interested First Nations to further explore options/opportunities to establish appropriate First Nation recognition and/or interpretation measures in relation to the Glenrose / St. Mungo sites.	All phases	MoT
16.9	Undertake appropriate archaeological site impact mitigation measures, including construction monitoring and systematic data recovery (i.e., an archaeological excavation), at the St. Mungo and Glenrose Cannery archaeological sites and support these measures with field programs that involve the Musqueam Indian Band and other interested First Nations as appropriate. The proposed mitigation strategy will be based on an archaeological site management plan for the St. Mungo, Wet Site and Glenrose Cannery archaeological sites currently under development in conjunction with representatives of the Musqueam Indian Band.	All phases	MoT, Contractor
16.10	Report the discovery of previously undocumented archaeological sites that may come to light during the construction phase of the SFPR project to the British Columbia Archaeology Branch and interested First Nations. Engage an archaeologist to investigate and assess such sites under the terms and conditions of a Heritage Conservation Act permit.	All phases	Contractor
16.11	Provide opportunities for members of the Musqueam Indian Band and other interested First Nations to participate in field programs supporting the implementation of archaeological site mitigation measures.	All phases	MoT, Contractor

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Ref	Objective Commitments and Assurances	Timing	Delivered By
16.12	Notify and invite First Nations to participate in specified archaeological work that is to occur at identified archaeological sites within their respective asserted traditional territories.		
17.0 Heritage			
17.1	Ensure that the design, construction and operation of the proposed project is advanced in a way that avoids, or minimizes potential impacts to heritage buildings	All phases	Contractor, MoT
17.2	Consult with the Delta Heritage Advisory Commission and the Surrey Heritage Committee to define heritage interests and work with the Delta Museum and Archive to develop a photo record and inventory of potentially affected heritage houses.	Pre-Construction, Construction	MoT, Contractor
17.3	Prior to construction undertake pre-condition surveys with respect to heritage buildings, as further described in commitment 9.7.	Pre-construction	Contractor
17.4	Avoid, where practical and technically feasible, direct impacts to heritage buildings.	All phases	Contractor
18.0 Navigable Waters			
18.1	Obtain regulatory approval related to crossings of designated Navigable Waters pursuant to the Navigable Waters Protection Act (NWPA), including but not necessarily limited to, McAdam Creek, Collings Creek, Manson Canal, and Crescent Slough, prior to commencement of works.	Pre-Construction	MoT, Contractor
19.0 Socio-Economic			
19.1	Mitigate potential Project-related visual/lighting impacts through use of screening, fencing and landscaping in consultation with local government. Use dark-sky compliant lighting for the Project.	Pre-construction, Construction	Contractor
19.2	Manage potential impacts to emergency response services by: <ul style="list-style-type: none"> • Ensuring emergency response plans (including a Spill Response Management and Emergency Response Plan) are in place during the construction phase of the Project, and updated annually, at a minimum; • Consulting first responders in Traffic Management Plan development; and • Consulting with local fire departments to ensure adequate access. 	Pre-construction, Construction	Contractor

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20.0 Rail			
20.1	Avoid or minimize potential impacts from Project works and activities to rail corridors.	All phases	Contractor
20.2	Notify Transport Canada of project works as required under the <i>Notice of Railway Works Regulations</i> . Notify the public and affected stakeholders in accordance with the <i>Railway Safety Act</i> .	All phases	Contractor
20.3	Comply with Canadian transportation standards and regulations as well as the design specifications of the respective railway with regard to vertical and horizontal railroad clearance of new or upgraded infrastructure.	Pre-construction	Contractor
20.4	Minimize railroad closures during construction.	Construction	Contractor

Abbreviations and Acronyms

ALC	Agricultural Land Commission	EC	Environment Canada
ALR	Agricultural Land Reserve	EMP	Environmental Management Plan
Application	Environmental Assessment Application	ERP	Emergency Response Plan
BBMPC	Burns Bog Management Planning Committee	MV	Metro Vancouver
BMP	Best Management Practices	HC	Health Canada
CoD	Corporation of Delta	MAL	Ministry of Agriculture and Lands
CoS	City of Surrey	MoE	Ministry of Environment
CWS	Canadian Wildlife Service of Environment Canada	MoT	Ministry of Transportation
DFI	Delta Farmers' Institute	PM	Particulate Matter
DFO	Fisheries and Oceans Canada	ROW	Right-Of-Way
EAC	Environmental Assessment Certificate	SAP	Scientific Advisory Panel (of the BBMPC)