

**FEDERAL SCREENING REPORT
SOUTH FRASER PERIMETER ROAD
June 2008**

1.0 PROJECT IDENTIFICATION

Project Title: South Fraser Perimeter Road (SFPR)
Project Location: Delta and Surrey, British Columbia
EA Starting Date: December 4, 2006
RDIMS no.: 7036-26-2-2
CEAR File no.: 06-01-24060
NOC /CEAR Date: December 11, 2006

2.0 CONTACTS

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3.0 FEDERAL INVOLVEMENT

Pursuant to Section 5(1) of the *Canadian Environmental Assessment Act* (CEAA), a federal EA of this project was required because:

- Transport Canada (TC) is proposing to fund part of the project; and
- TC and Fisheries and Oceans Canada (DFO) may issue a permit, approval or other authorization described in the *Law List Regulations* of CEAA. TC may issue an approval under paragraph 5(1)(a) of the *Navigable Waters Protection Act* and DFO may issue an authorization under subsection 35(2) of the *Fisheries Act*.

As such, TC and DFO are responsible authorities in relation to the proposed project.

In addition, Health Canada (HC) and Environment Canada (EC) participated in the EA process as members of the provincial EA working group and as expert federal authorities (FAs) providing advice, in accordance with their mandates, to the responsible authorities in accordance with section 12(3) of CEAA.

3.1 Notification of Other Jurisdictions

The proposed SFPR project was subject to a coordinated federal-provincial EA process, as required under CEAA and the *British Columbia Environmental Assessment Act*. As such, the RAs have been active participants in the EA working group established by the BC Environmental Assessment Office for the purposes of reviewing the EA documentation related to SFPR.

The federal and provincial EA processes were coordinated in accordance with the *Canada-British Columbia Agreement on Environmental Assessment Cooperation* (2004).

4.0 PROJECT DESCRIPTION

The proposed SFPR involves the construction of a new four-lane divided highway with a combination of three intersections and five interchanges, located on the south side of the Fraser River. The road will extend from northeast of the existing Highway 17/Deltaport Way intersection, through the municipalities of Delta and Surrey, along the south bank of the Fraser River. The SFPR corridor will connect the existing Highways 99, 91, 1 and 15, and terminate just west of TransLink's Golden Ears Bridge crossing of the Fraser River and will also link the provincial highway system with the Port Kells Industrial Area, CN Intermodal yard, Bridgeview Industrial Area, Surrey Fraser Docks and Tilbury Industrial Area.

Additional detail on the project can be found in section 2 of the *SFPR Project Assessment Report*.

5.0 FEDERAL EA SCOPE

CEAA gives the RAs the discretion on how they will scope the project to be assessed. This discretion is exercised reasonably, taking into consideration the details of each case based upon the decisions that trigger CEAA. For the purposes of the SFPR project, the scopes of project identified by TC and DFO are included in subsection 5.1 and 5.2 of this document.

5.1 Scope of Project for Transport Canada

The scope of the project for TC included the construction, operation, modification, and decommissioning work in relation to the project, including the highway between Deltaport Way and the Fraser River Crossing at about 184th Street, and all associated structures and infrastructure essential to construct and operate the highway. This included fabrication of associated structures, such as bridges, pilings, structural fills, works in a water body, material handling and laydown areas, fuel storage facilities, sewage disposal, construction platforms, storage sites and all equipment and machinery.

5.2 Scope of Project for Fisheries and Oceans Canada

DFO's scope of project included the components of the proposed project, or activities required for the proposed project, that have the potential to result in unavoidable harmful alteration, disruption or destruction of fish habitat associated with watercourse crossings that require authorization under subsection 35(2) of the *Fisheries Act*; and any ancillary works and/or activities that are required solely for the purpose of undertaking the components of the proposed project that require authorization under subsection 35(2) of the *Fisheries Act*.

5.3 Assessment Type

The length of the proposed SFPR alignment is 39 km, from the existing Highway 17/Deltaport Way intersection to the site of the Golden Ears Bridge. The project will also include an additional 9.8 km of ancillary works (i.e. overpasses, frontage roads, accesses, etc.). As this length of the proposed road is less than the threshold described in the *Comprehensive Study List* regulations, the responsible authorities determined that a screening-level EA process would be required.

5.4 Scope of the Assessment

The factors considered in the environmental assessment, pursuant to section 16(1) of the CEAA, included the following:

- the environmental effects¹ of the Project, including the environmental effects of malfunctions or accidents that may occur in connection with the Project and any cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out;
- the significance of the environmental effects referred to above;
- comments from the public that were received in accordance with CEAA and the regulations; and
- measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project.

The scope of factors that were considered in the environmental assessment, in relation to the scopes of project identified above, included potential effects (including cumulative effects) on the following environmental components:

- air quality and climate;
- surface water*;
- fish and fish habitat*;
- hydrogeology;
- vegetation, wildlife and wildlife habitat;
- Burns Bog;
- noise and vibration;
- contaminated sites; and,
- any effect of any change referred to on the factors listed above on: health and socio-economic conditions; physical and cultural heritage; the current use of lands and resources for traditional purposes by aboriginal persons; and any structure, site or thing that is of historical, archaeological, paleontological or architectural significance.

The environmental effects of the project on navigation are taken into consideration as part of the environmental assessment only when the effects are indirect, that is, resulting from a change in the

¹ As “environmental effects” is defined under the *Canadian Environmental Assessment Act* (CEAA)

* Denotes environmental components considered by Fisheries and Oceans Canada, in relation to the scope of project it has identified in section 5.1 of this document.

environment affecting navigation. For this environmental assessment only direct effects were identified; therefore, the effects of the project on navigation are not addressed in the environmental assessment. Any measures necessary to mitigate direct effects will be included as conditions of the *Navigable Waters Protection Act* approvals². Approvals from TC will be required prior to construction for the bridge crossings at McAdam Creek, Collings Creek, Manson Canal and Crescent Slough, as these are 'named' works within the meaning of the *Navigable Waters Protection Act*.

6.0 DESCRIPTION OF EXISTING ENVIRONMENT

Much of the proposed SFPR alignment is located in areas described as industrial and agricultural in nature, with the exception of some adjacent upland communities in Delta (Ladner and portions of north Delta where the route parallels the shoreline of the Fraser River) being residential. The BC MOT has described the area east of the Port Mann Bridge, the hillsides of Surrey above the proposed route (the neighbourhoods of Fraser Heights and Anniesville) as also residential. Within the project area, areas of natural importance also exist. These include Burns Bog and the Fraser Heights wetland area.

Detailed descriptions of the existing environment are provided in sections 8 through 19 of the *SFPR Project Assessment Report*. Additional information is also available in the Technical Appendices (2006).

7.0 ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

The potential effects of the proposed project and the mitigation measures identified to mitigate these effects are summarized in Table 7-1. Details on the potential effects and mitigation measures are provided in the *SFPR Project Assessment Report* and the following supporting documentation:

- Application for an Environmental Assessment Certificate for the South Fraser Perimeter Road Project and Technical Appendices (October 2006)
- Draft Habitat Compensation Plan (February 2007)
- SFPR Wildlife Crossing Mitigation Plan (April 2007)
- Stormwater Management Plan (July 2007)
- Zone of Influence Effects for the SFPR Corridor (August 2007)
- BC MOT response to EC (dated September 21, 2007)
- Design Overview: Lagg Pond Ecosystem Complex (LPEC) and Double Ditch System (DDS) Features Proposed for Selected Locations on the Edge of Burns Bog (November 2007)
- Burns Bog Hydrology Planning Tool (April 2008)
- Draft Burns Bog Hydrology Workplan (April 2008)
- SFPR Revised Alignment Map (April 2008)
- Modelling of Particulate Matter Deposition in Burns Bog from SFPR Emissions (May 2008)
- Draft Air Quality Management Plan (May 2008)
- Calculation of the Hydrochemical Effect of Sequential Additions of Granitic Dust to Type 1 and Type 2 Water at Burns Bog, British Columbia (June 2008)
- Objectives for Hydrology Mitigation for the SFPR Alignment Around Burns Bog (June 2008)
- Cumulative Effects Assessment (June 2008)
- Table of Commitments and Assurances (June 2008)

² Four navigable waterways have been identified along SFPR: McAdam Creek, Collings Creek, Manson Canal and Crescent Slough.

Table 7-1: Environmental Effects and Mitigation for the Construction and Operation Phases of the Project

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
AIR QUALITY AND CLIMATE		
<p>Dust and gaseous emissions associated with Project works include clearing, excavation and grading, placement of preload fill materials, operation of equipment etc.</p> <p><i>* Mitigation specific to avoiding dustfall into Burns Bog is provided in the Burns Bog section of this table</i></p> <p>Project construction and operation may cause an increase in emissions of CACs and GHGs. An increase in GHG emissions could have effects on climate.</p> <p>An increase in air emissions could cause impacts to human health.</p>	<ul style="list-style-type: none"> Construction works and operations for the Project will be conducted in compliance with environmental permits and approvals relating to air quality. The BC MOT will revise (for September 2008) and implement the Air Quality Management Plan during construction activities, including site preparation. The BC MOT will ensure that the project will have 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. 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 and will be responsible for making on-site decisions and taking on-site action to avoid/respond to potential environmental effects, including temporary stop work orders if necessary. The project will be designed and managed to ensure optimum traffic flow conditions during operation. Before construction, the BC MOT will develop an Air Quality and Dust Control Plan for the construction phase of the project and allow a minimum of 30 days for review by federal and provincial agencies prior to construction. The plan will: <ul style="list-style-type: none"> Identify all technically and economically feasible mitigation measures that will be implemented to prevent generation and transmission of dust during the pre-load and construction phases of the project. 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; Include an anti-idling policy for construction equipment; Commit to fugitive dust minimization strategies, such as wheel wash, sweeping, use of wind screens, watering and covering storage piles or unpaved surfaces and dust suppression techniques on roads; and Identify site-specific considerations, where applicable, such as proximity to sensitive environmental and human receptors. To mitigate against potential impacts of fugitive dust emission on local air quality during construction activities, best management practices³ (BMPs) will be applied including, but not limited to the following: <ul style="list-style-type: none"> Avoid double handling of fill and stockpile materials and cover loads containing fine materials. Stockpiled materials will be protected by wind screens or surfaces covered with polyethylene sheeting or geotextile, ensuring that these protective structures are firmly anchored. Alternatively, water may be applied to the stockpiles. Contain dust generated during the potential operation of a milling machine. Use water trucks equipped with spray bars and suitable control apparatus to dampen temporary and permanent unpaved access routes and staging areas at regular intervals [Note: in sensitive areas adjacent to Burns Bog, mitigation will not compromise the identified hydrology objectives]. 	NLS

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
	<ul style="list-style-type: none"> - Limit the time that unpaved surfaces are exposed. - Regularly clean roadways and remove debris. The frequency of roadway cleaning will be defined in an operational environmental management plan to be developed prior to opening of the facility. Details on how sweeping of paved roadway will be conducted to avoid re-suspension of particulate matter will be included in the revised AQMP. - Speed limits on unpaved roads will be limited to 15 km/hr, where practical. - Provide tire wash facilities to minimize tracking of road dust onto paved roads. - Cover haul/dump truckloads that are transporting fine-grained materials, particularly when moving to off-site locations. • To mitigate against potential impacts of gaseous emissions on local air quality during construction activities, BMPs, including but not limited to the following, will be used: <ul style="list-style-type: none"> - Operate equipment at optimum rated loads. - Schedule equipment that operates most efficiently and with the lowest emissions. - Follow routine equipment maintenance procedures. - Development of protocols for turning off construction related equipment and vehicles, when not in active use, in order to minimize emissions associated with idling. - Ensure that all heavy-duty diesel on-road vehicles (i.e., licensed vehicles, such as dump trucks) are in good working order while operating on the project site and the contractor can demonstrate that all vehicles meet a maximum exhaust opacity requirement of 10%, as measured by the SAE J1667 test procedure. • All heavy-duty diesel on-road vehicles and other diesel construction equipment must use ultra-low sulphur diesel fuel (maximum 15 ppm sulphur content), or use catalyzed particulate traps or a diesel oxidation catalyst. 	
SURFACE WATER QUALITY AND QUANTITY		
<p>Effects on water quality as a result of sediment and erosion and/or spills of hazardous materials during construction.</p> <p>During operation, increased areas of impervious surfaces may increase surface water quantity.</p> <p>Storm water runoff from project operation may contain</p>	<ul style="list-style-type: none"> • Construction works and operations for the Project will be conducted in compliance with environmental requirements and BMPs in order to avoid impacts to water quality. • Apply provincial water quality guidelines and objectives in evaluation of the water quality samples collected before, during and after construction. • Storm water management infrastructure will be designed, constructed and maintained to control sediment generation, act as a filter for sediment and other deleterious substances, and address concerns related to increased rates of storm water runoff. • A Surface Water Quality and Sediment Control Plan will be developed before project construction that will include procedures for monitoring water quality and for avoiding potential construction related impacts on water quality. • The following general BMPs relate to management and prevention of contaminated materials from entering surface water drainage and watercourses: <ul style="list-style-type: none"> - Prior to any equipment leaving the construction area, clean it in designated areas that are equipped to prevent contaminated water from entering a natural watercourse. - Contain and remove accidental spills of soil or other material on roadways or in gutters. 	NLS

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
<p>suspended solids, oils and grease, heavy metals and other materials associated with motorized vehicles.</p> <p>Increased surface runoff and reduced infiltration from project operation may result in increased suspended solids, nutrients, metals, and organic compounds.</p>	<ul style="list-style-type: none"> - Install impervious secondary containment for fuel or chemical storage areas. - All refuse, including inorganic and chemical products, shall be disposed of in such a way that it will not directly or indirectly pollute groundwater or any watercourse. - Keep fuelling stations, fresh concrete and concrete equipment wash water, out of stormwater systems and greater than 30m from a watercourse riparian protection area. • BMPs to be applied to reduce the risk of erosion processes occurring and sediments entering watercourses downstream of Project activities include but are not limited to the following: <ul style="list-style-type: none"> - Plan Project works to occur during periods of minimal precipitation. - Minimize disturbance of vegetation and soil (i.e., grading, benching and scarification), by marking work boundaries. - Minimize areas of exposed soil. Excavated materials will be placed as far as possible from a watercourse channel. - Use specialized mats or pads to minimize soil disturbance and erosion within wetland areas and other similar environmental sensitive areas. - Minimize the length and steepness of slopes to reduce the risk of erosion and sediment loss. - If discharging water onto land, ensure that is dissipated over a well-vegetated area, temporary riprap or other stable surface material to prevent soil erosion. - Construct stable, non-erodible ditches, inlet and outlet structures. - Immediately stabilize and seed/revegetate newly disturbed areas following the completion of specific Project activities. - Replanting of disturbed areas is to be undertaken using native plant species. - Riprap to be placed in or adjacent to watercourses or wetlands should be free of dirt and other contaminants. - Sediment control fencing (or equivalent) will be used as sediment and debris control measures around Project works. - Soil excavation stockpiles will be contained within berms and silt fences and/or covered with polyethylene to prevent water and wind erosion. - Properly stabilize site entrances with provisions to prevent tracking of mud and debris off-site. - Installed cross-slope swales, ditches and culverts, to enhance drainage and to prevent erosion of excavated materials. - Trench-less technologies (i.e., directional drilling outside the channel and floodplain and below the streambed) should be considered for pipelines and other utility crossings of watercourses. - Regularly assess the function of erosion control devices and correct any deficiencies. - Minimize vehicle activity on disturbed site surfaces during and after wet weather • To prevent the clogging of granular fill material over time, the BC MOT will consider the performance of road bed and fill materials during the development of the design of the road sediments near Burns Bog. The BC MOT will also include additional seasonal water quality data in the development of the water quality monitoring program. 	
FISH AND FISH HABITAT		
<p>Potential effects to fish and fish habitat loss or alteration of fish habitat; water</p>	<ul style="list-style-type: none"> • The BC MOT will ensure that all works and activities associated with the construction, operation and maintenance of the project is 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 	<p>NLS</p>

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
<p>quality degradation; altered drainage patterns; loss or impairment of food and nutrient supply; disruption of fish passage etc.</p> <p>Potential impacts on fish habitat due to changes in volume, rate and quality of storm water runoff.</p>	<p>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.</p> <ul style="list-style-type: none"> The BC MOT will obtain 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. The proponent will 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 DFO and in accordance with any ss. 35(2) <i>Fisheries Act</i> authorizations. All reasonable measures will be taken 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. Appropriate measures will be applied 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 for the project. Clearly show all watercourses (including rivers, streams, creeks, ditches, channels, wetlands and ponds), seasonally flooded areas, and existing vegetation within 30 metres of the edge of any watercourse on relevant construction drawings. Conduct vegetation management as necessary to maintain predominantly native component of riparian habitat compensation areas. Establish and maintain riparian setback areas from drainage channels and watercourses in accordance with regulatory requirements. <ul style="list-style-type: none"> Appropriate best management practices³ for protection of the aquatic environment will be applied to works or activities conducted in or near watercourses. Implementation and maintenance of storm water management infrastructure such that it meets the performance objectives in the Storm water Management Plan. Maintenance activities will be conducted in accordance with best management practices³ to protect the aquatic environment. 	
HYDROGEOLOGY		
<p>Construction and operation may interfere with the existing water table height, velocity of</p>	<ul style="list-style-type: none"> Ensure continuous grade on culvert pipes to prevent loss of groundwater flow into road material. Design and construction of drainage structures, as well as the development of operating and maintenance protocols, will include all reasonable measures to ensure that drainage structures do not leak and water retention at the drainage structure inlets is reduced. 	NLS

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
<p>groundwater flow, seasonal variations and relationships with surface water conditions.</p> <p><i>* Mitigation specific to avoiding hydrology impacts within Burns Bog is provided in the Burns Bog section of this table</i></p> <p>Potential impact to drinking water wells.</p>	<ul style="list-style-type: none"> Develop and implement a Surface Water Quality and Sediment Control plan to identify procedures for protecting groundwater quality in the study area (mitigation specific to hydrogeology in Burns Bog is stated in a separate section). Install vertical flow barriers in the road fill, and berms in the shallow roadside depressions, to help maintain groundwater flow patterns and levels. To mitigate potential impacts on the Fraser Heights Wetland habitats, an elevated bridge structure will be constructed over wetland areas. During the design phase, BC MOT will conduct a study to assess the effect of pile driving on the overall hydraulic conductivity of saturated sediments for the bridge work over the Fraser Heights Wetland. Storm water management infrastructure will be designed, constructed and maintained to control sediment generation and act as a filter for other deleterious substances that could otherwise adversely affect groundwater resources, particularly in wetland areas. Objectives for hydrology mitigation around Burns Bog are provided separately, under the “Burns Bog” heading of this table. Implement best management practices³ to avoid potential effects on water wells that could effect water quality and/or water supply . Sample water from potentially impacted drinking water wells to monitor potential adverse effects to water quality during construction and operation phases of the project. Well water quality data will be provided to the local health authority for review. In the unlikely event that impacts to a water well during construction or operation of the project cannot be avoided, BC MOT will take steps, in consultation with the property owner, to address the impact and ensure access to potable water. 	
VEGETATION, WILDLIFE AND WILDLIFE HABITAT		
<p>Potential impacts to wildlife and wildlife habitat, including values related to SARA species, migratory birds and wetlands.</p>	<ul style="list-style-type: none"> Ensure that the construction works and operations for the Project are conducted in compliance with environmental requirements, including the requirements of the <i>Species at Risk Act</i> and <i>Migratory Birds Convention Act</i>. Throughout the design and construction phases of the project, the BC MOT will ensure that 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 taken in a manner that is consistent with applicable recovery strategy and actions plans. During the design phase, the BC MOT will finalize its determination of the type and location of sound barriers to be constructed along the perimeter of Burns Bog. For the southwestern alignment (along Crescent Slough), this design will 	NLS

³ In accordance with the requirements of ss. 79(1) of the *Species at Risk Act*, TC provided written notification to EC on November 2, 2007, of the project’s potential to affect a listed these wildlife species or their critical habitat.

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
<p>The following listed wildlife species or their critical habitat may be affected by proposed project: Barn Owl (<i>Tyto alba</i>, western population); Western Screech Owl (<i>Megascops kennicottii kennicottii</i>, western population); Red-legged Frog (<i>Rana aurora</i>); Western Toad (<i>Bufo boreas</i>); Pacific Water Shrew (<i>Sorex bendirii</i>); and, Streambank Lupine (<i>Lupinus rivularis</i>)³.</p> <p>Potential impacts to wildlife, during construction and/or operation, include habitat loss/alteration, changes in wildlife movement patterns, and wildlife mortality due to vehicle collisions.</p> <p>Impacts to vegetation will include vegetation loss during construction and a potential for exotic species to be introduced after</p>	<p>include the construction of a solid sound barrier, or a barrier that will provide equivalent mitigation. BC MOT will ensure on-going consultation with TC, EC, BC MOE, and other IAERC members as appropriate, during design regarding the proposed type and location of sound barriers to be installed around Burns Bog.</p> <ul style="list-style-type: none"> • The design, construction, and operation of the project will avoid, where practical and technically feasible, impacts to vegetation and wildlife. • To avoid and, where necessary, mitigate potential impacts to vegetation, wildlife and wildlife habitat, the BC MOT will prepare and implement a Wildlife and Habitat Management Plan, Habitat Compensation Plan, Mitigation and Monitoring Plan, Zones of Influence report, and Wildlife Crossing Plan. • Mitigation measures to avoid and minimize impacts to wildlife during construction and operation, as will be identified in the Wildlife and Habitat Management Plan, will be implemented. This will include planting buffer zones alongside native species in disturbed areas associated with road construction to minimize impact on plants and communities and minimize the likelihood of edge effects and infestation of invasive plant species. • Work with MOE to develop and implement Mitigation Monitoring Plans for other wildlife and vegetation including but not limited to: small mammals, raptors, red and blue listed plants and amphibians and reptiles. • Develop and implement an Invasive Species Management Plan to address potential effects of the project related to the introduction of exotic plant and animal species to the project corridor. • Minimize potential impacts to native vegetation communities by implementing BMPs for weed species management. • Use data from the BC MOT administered Wildlife Accident Reporting System, or an equivalent system, to identify areas of increased wildlife collisions and to monitor direct effects on wildlife. • Consult with the Canadian Wildlife Service (of EC) 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: species habitat requirements; existing conditions in the project area; potential project related effects and mitigation; core indicators for assessing the effectiveness of mitigation; proposed study methodology and data interpretation and reporting protocols. • Additional mitigation measures to be instituted during Project activities to minimize adverse environmental impacts to vegetation, wildlife and wildlife habitat will include, but are not limited to the following: <ul style="list-style-type: none"> - During detail design, footprint impacts on vegetation and wildlife ESAs will be minimized, including impacts to red and blue-listed plant communities, critical habitat areas for Pacific water shrew, known nest locations and wetlands. - Management of highway ROW and shoulder to limit the presence of raptor prey species, and therefore, reduce the risk of collisions between raptors and vehicles. - Undertake rare plants surveys, prior to any potential impact from the commencement of construction activities, to assist in minimizing impacts to rare plant species present within the Project area and identify construction exclusion zones to avoid impacts to such areas. 	

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
construction.	<ul style="list-style-type: none"> - Conduct nest surveys immediately prior to Project works during the breeding season to determine the presence of nests within the Project area and assist in avoiding impacts to nests and/or identifying timing windows for construction and/or setbacks/buffers. - Conduct wildlife salvage operations, to avoid incidental mortality, for sensitive species potentially present in identified areas prior to being altered by Project activities. These include areas, such as the Fraser Heights Wetland, where there is the potential for protected species (red-legged frog and Pacific water shrew) to be present. - Habitat clearing around sensitive features such as eagle/raptor nests, provincially-listed plant communities, or riparian areas, will be restricted in spatial extent or timing - Keep temporary works, staging and storage areas to a minimum and at an appropriate distance from watercourses and environmentally sensitive areas. - Identify vegetative habitat and ESAs on design drawings and delineated in the field by marked flagging tape or fencing. - The clearing of vegetation will be restricted during the critical bird breeding period, typically between March 15 and July 31. The Vegetation and Wildlife Habitat Management Plan will have site-specific timing windows, as each timing window varies on the species present. - Construction activities will be carried out as quickly as possible to minimize the visual or noise disturbance to wildlife. - Areas where wildlife may be present will be off-limits to Project personnel and equipment, to the extent possible, to avoid sensory disturbances to wildlife. - Temporary fencing will be installed to limit access to sensitive habitats and to prevent wildlife from entering Project works areas. <ul style="list-style-type: none"> • Undertake measures to minimize impacts to wildlife associated with lighting required for potential night time construction including: using directional lighting in order to limit light spill into sensitive areas and using only the amount of lighting necessary. <ul style="list-style-type: none"> - Re-vegetation adjacent to the Project Right-of-Way will not include plant species preferred by black-tailed deer and barn owl to limit the attractiveness of roadside vegetation to wildlife and their potential for collisions with vehicles. • Construct approximately 80 wildlife crossings along the corridor that will include a 450 m bridge structure over a wetland area in Surrey, bridges over watercourses through North Delta, and the construction of low-elevation bridges and small mammal structures. The number and location of wildlife crossings will be identified in the final Wildlife Mitigation Crossing Plan. • For residual effects on wildlife and wildlife habitat that cannot be avoided (as identified in the draft Habitat Compensation Plan) and that are not demonstrated to be effectively mitigated, through the Wildlife and Vegetation Mitigation Monitoring Plan, the BC MOT will consult with relevant provincial and federal agencies to develop appropriate compensation measures where compensation is required. Compensation measures may include a combination of land acquisition, support for conservation programs, and habitat restoration. 	

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
BURNS BOG		
<p>Potential effects to ecological values associated with Burns Bog related to loss of habitat, air emissions and hydrology impacts.</p>	<ul style="list-style-type: none"> • BC MOT will revise the draft of a Hydrology Work Plan to include (among other recommendations) roles and responsibilities for data collection, management, and analysis in relation to the monitoring program. It will also confirm who will maintain the hydrology mitigation following the monitoring and follow-up period. This document will be finalized prior to commencement of pre-load activities around Burns Bog, taking into consideration comments received from members of the Inter-agency Environmental Review Committee (IAERC), which will be chaired by the BC MOT and comprised of members of the EA working group (including TC and EC). • The design, construction and operation of the proposed project will be advanced in ways that 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). • Develop, for review and comment by federal and provincial agencies, 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. • The hydrology monitoring program, to be documented in the final Hydrology Work Plan, will identify the number of observation locations (and their construction methods) to be monitored and the frequency and duration of the sampling that will be conducted. • Consult with Metro Vancouver, Corporation of Delta, Environment Canada, the Burns Bog Management Planning Committee, and Scientific Advisory Panel to ensure design, construction, and operation of the project complements long-term management objectives established for the Burns Bog Ecological Conservation Area. • The BC MOT has committed to on-going consultation with EC during the design of hydrology mitigation, to ensure the design meets the objectives identified in the EA documentation. Early in the design process, this consultation will begin with an interactive workshop to be coordinated by TC to facilitate design discussions between EC and the BC MOT. • Hydrology mitigation infrastructure will be designed, constructed, and operated to mitigate potential effects of the project on the hydrology of Burns Bog in a way that meets the following performance objectives. In further designing this mitigation, additional consultation will take place with TC and EC: <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 	<p>NLS</p>

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
	<p>gradients so that Type 1 bog waters flow toward the highway at all times.</p> <ul style="list-style-type: none"> - 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 levels 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. <ul style="list-style-type: none"> • BC MOT will not commence pre-load activities around Burns Bog, including areas north of the Highway 99 interchange and west of Nordel Way, 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. • BC MOT will develop a drainage model/water balance model for Burns Bog to support the planning of infrastructure to mitigate potential impacts on hydrology and support implementation of the Burns Bog Ecological Conservancy Area Management Plan. • Develop and implement a Burns Bog Air Quality Management Plan that describes how potential effects from the deposition of particulate matter to Burns will be mitigated and monitored during all stages of design, construction and operation of the road on Burns Bog. This plan will include, specific to areas around Burns Bog: <ul style="list-style-type: none"> - All technically and economically feasible mitigation measures that will be implemented to prevent generation and transmission of dust during the pre-load and construction phases of the project. - Best management practices that take into consideration measures identified in the EC guidance document, <i>Best Practices for the Reduction of Air Emissions From Construction and Demolition Activities</i> (March 2005). - Include an air quality monitoring program with thresholds, which if exceeded, will trigger the implementation of additional mitigation and corrective measures that may include temporary stop work orders; - Identify the roles and responsibilities for the on-site environmental monitors; - Commit to fugitive dust minimization strategies, such as wheel wash, sweeping, use of wind screens, watering and covering storage piles or unpaved surfaces and dust suppression techniques on roads; and - Identify site-specific considerations, where applicable, such as proximity to sensitive environmental and human receptors. • A minimum of 4 months of baseline data collection (particulate/water chemistry around Burns Bog), will be collected between June and September 2008, prior to the commencement of pre-loading activities around Burns Bog (i.e., north of the Highway 99 interchange and west of Nordel Way). Following the collection of this information, The BC MOT will meet with TC and EC to discuss the baseline monitoring information collected and the approach for continued baseline data collection (if required). 	

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
NOISE AND VIBRATION		
<p>Noise and vibration generated by construction related activities.</p> <p>Vehicle noise will be generated during operation.</p>	<ul style="list-style-type: none"> • Specific mitigation practices and locations for mitigation measures to address potential effects of construction related noise will be identified in the Noise and Vibration Management Plan, to be developed prior to construction and provided for review and comment to the Corporation of Delta, City of Surrey, Health Canada, TC, and other interested stakeholders. Mitigation measures will include an appropriate combination of quiet pavement, coordination of traffic control signals, noise barrier walls, and tree planting/replacement. • BC MOT will construct a roadside noise barrier to reduce noise levels at the location of the Iqra School. • Best management practicesⁱⁱⁱ to mitigate against construction related noise and vibration impacts, to be identified in the Noise and Vibration Management Plan, in areas with sensitive receptors such as residential development, include the following. <ul style="list-style-type: none"> - Whenever possible, construction activities will be carried out within the hours normally permitted by the noise bylaws of the municipalities involved. - Orient stationary equipment emitting elevated noise levels, towards existing noise, natural terrain or other large objects. - Minimize the use of back-up beepers, particularly during the evening, as long as compliance with regulatory requirements is maintained. - Turn off idling equipment when not in use. - Turn off heavy equipment when inactive for more than 30 minutes. - Implement tree planting and landscaping to mitigate potential visual, noise and air quality impacts. - Select equipment or processes that have had additional noise control features, such as better mufflers and enclosures on diesel or gas powered equipment, exhaust silencers on air tools etc. - If pile-driving activities are proposed, use longer duration, quieter methods (e.g., drop hammers) rather than shorter duration louder methods (e.g., diesel hammers) to minimize noise. For extreme noise impacts, consider a close fitting or enclosure shroud to contain the noise emission from the pile and hammer. - Use the quietest piece of equipment that is available to conduct a task. - If only one piece of equipment can conduct the task, and it has high noise emissions, limit its use as much as possible. - Install approved noise fences where needed to reduce noise reaching sensitive residences and facilities. The need for noise mitigation will be determined through consideration of predicted noise from highway operations against the BC MOT noise policy (1993)⁴. Additional details regarding the type and location of noise mitigation to be implemented will be identified in the Noise and Vibration Management Plan - Ensure machinery is in good condition prior to construction and that contractors do not utilize excessively noisy equipment. Carry out regular maintenance on all equipment, including lubrication and replacement of worn parts, especially exhaust systems. 	NLS

⁴ MoT, 1993. Revised policy for mitigating the effects of traffic noise from freeways and expressways. Developed by Wakefield Acoustics Ltd. for the BC Ministry of Transportation.

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
	<ul style="list-style-type: none"> BC MOT will conduct noise monitoring at the baseline sites during the first year of operation, to assess the effectiveness of mitigation measures with a commitment to further mitigation, consistent with the MoT noise policy (1993), if necessary. BC MOT will perform pre-construction surveys to document the existing state of buildings and facilities in the vicinity of SFPR construction activities against which post-construction condition surveys will be carried out to assess any vibration impacts to buildings and facilities as a result of SFPR construction. Information collected from these surveys will assess the magnitude of impacts potentially resulting from construction related vibration and guide any repairs and/or compensation that may be required. BC MOT will monitor ground vibrations, as per standard geotechnical BMPs, adjacent to buildings to confirm that vibration levels are within a range that is expected to avoid construction related vibration impacts to adjacent buildings. 	
CONTAMINATED SITES		
Potential impacts to human health and the environment related to the management of both known contaminated sites as well as those that may be identified during project development.	<ul style="list-style-type: none"> Potential site contamination will be investigated and managed in compliance with the Contaminated Sites Regulation (<i>Environmental Management Act</i>) during all stages of project development including property acquisition, design and construction. Should contaminated groundwater be identified along the route, measures to control/mitigate the potential for impacts to surface water will be integrated into future storm water design. Contaminated site investigations will be performed on sites where pile driving is proposed. The potential impact of pile driving on vertical contaminant migration will be assessed by reviewing site characteristics, including vertical hydraulic gradients, the level and nature of contamination (if present), and the type of soils that the piles will be driven through. As required, mitigation measures may include; avoidance, contaminated soil removal and treatment and/or groundwater collection and monitoring. 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. During the design phase, BC MOT will prepare a construction health and safety plan that includes provisions for the removal of residential USTs and disposal of any tanks and contaminated soils. 	NE
ARCHAEOLOGY ^{iv}		
<p>Potential environmental effects to areas with known archaeological resources in the project corridor.</p> <p>Potential for known</p>	<ul style="list-style-type: none"> BC MOT will 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. Mitigation will include the use of an overpass at St. Mungo/Glenrose site and micro-siting of piers associated with this structure to minimize impacts to archaeological resources, and site capping to reduce impacts to midden. Sites with known archaeological features will follow mitigation measures in compliance with the provincial <i>Environmental Management Act</i> and the <i>Heritage Conservation Act</i> to minimize or prohibit the occurrence of adverse effects on 	NLS

Potential Effects	Mitigation Measures ⁱ	Residual Effects ⁱⁱ
archaeological sites to be impacted by changes in groundwater flow patterns.	<p>archaeological features within the project area.</p> <ul style="list-style-type: none"> BC MOT identified the impact on local groundwater flow patterns at known archaeological sites was low. No specific mitigation was identified additional to the mitigation identified for potential changes in hydrology. 	
CURRENT USE OF LANDS/RESOURCES FOR TRADITIONAL PURPOSES		
Potential impact to access to fisheries and wildlife resources in project corridor.	<ul style="list-style-type: none"> BC MOT will work with the Tsawwassen First Nation (TFN) to maintain appropriate access for TFN members to Burns Bog to facilitate TFN's harvesting rights pursuant to the Tsawwassen Final Agreement. Provide opportunities for mutually agreeable opportunities to assist in advancing the fisheries interests of the Musqueam Indian Band. Participating First Nations will be provided an opportunity to provide input into post-EA documentation including the Fisheries Habitat Mitigation and Compensation Plan and Wildlife and Habitat Management Plan. As members of the IAERC, other post-EA documents will also be available for input. Provide final designs for storm water management infrastructure to relevant First Nations for review and comment in order to verify that the proposed infrastructure achieves agreed upon performance measures for the storm water management infrastructure. 	NLS

NOTES:

ⁱ As the proponent, the BC MOT is responsible for the implementation of mitigation measures identified in Table 7-1. On a monthly basis, TC will be provided with reports on the status of the implementation of mitigation.

ⁱⁱ Residual impacts have been identified as either "NLS" (not likely significant) or "NE" (no likely effect). This determination was made taking into consideration the implementation of mitigation and the information provided on the likely magnitude of the residual effects provided in the *SFPR Assessment Report* and its supporting EA documentation.

ⁱⁱⁱ Best Management Practices referred to in this table are documented in the Design build standard specifications for highway construction. Section 165 Protection of the Environment (BC MOT, 2006) or Best management practices for highway maintenance activities (BC MOT, 2004). All project work will be carried out in accordance with these documents.

^{iv} Effects related to human health, socio-economy, archaeology, and the current use of lands and resources for traditional purposes have been assessed in this document taking into consideration the federal scope of assessment and the definition of "environmental effect" under the *Canadian Environmental Assessment Act*. Further consideration of these factors is provided in the *SFPR Project Assessment Report*.

^v Human health effects and mitigation have been incorporated into the sections on air quality, noise, and water wells/ groundwater quality and quantity

7.1 Environmental Effects of Accidents and Malfunctions.

The proponent considered the potential adverse environmental effects of accidents and malfunctions during the EA process. Details of the analysis can be found in section 21 of the *SFPR Project Assessment Report*. The following summarizes the potential accidents and malfunctions that were identified during the assessment:

- Fire as a result of construction activities or vehicle accidents (during construction or operation);
- Accidental release of concrete (un-cured and dry concrete) during construction, which may increase pH levels to potentially toxic levels, affecting salmonids, forage fish and food;
- Accidental spills of toxic/hazardous materials into watercourses from construction or vehicle accidents during construction or operation, which may be acutely or chronically toxic to salmonids, forage fish species and food resources;
- Release of sediment into nearby waterways, which may degrade water quality and affect the ability of fish to find prey, clog fish gills, reduce fish growth rates and decrease resistance to disease (particularly for juvenile salmonids);
- Accidental damage to utilities (e.g. buried natural gas pipes and telecommunications cables), which may constitute a safety hazard and cause disruption to residential, commercial and industrial services;
- Vehicle accidents during construction and operation may occur, resulting in personal injury, as well as potential spills of toxic/hazardous materials;
- Accidents and/or malfunctions associated with the inappropriate operation of machinery or equipment may cause disturbances to environmentally sensitive habitat or lead to accidental mortality of animals;
- Structural failure in a culvert, ditch or detention pond may result in localized flooding, erosion, sedimentation and/or discharge of deleterious materials

Mitigation to minimize the potential for, and the potential severity of, the environmental effects of accidents and malfunctions are included in Table 7-1 and are listed in section 21.3 of the *SFPR Project Assessment Report*. These include mitigation measures for unanticipated spills, sediment discharges, damages to utilities, and vehicle accidents. With the implementation of these mitigation measures, the RAs have concluded that significant adverse effects of accidents and malfunctions are not likely to occur.

7.2 Effects of the Environment on the Project

The proponent submitted a revised assessment of the effects of the environment on the project section of the Application in March 2007. As required by CEAA, this document considers the potential for environmental conditions to impact the proposed Projects, and the predicted effects of those environmental conditions. The environmental conditions that were considered in the assessment included: seismic activity and slope stability (ground failure) hazards, implications of climate (including sea level) changes, erosion, and flooding. Measures to mitigate against potential effects of these environmental conditions, should they occur, will be integrated into the design of the project. The project will be designed to meet the appropriate performance specifications (e.g. seismic design criteria) and storm water management infrastructure will be constructed to accommodate severe weather conditions.

Mitigation measures to minimize the potential for, and the potential severity of, the environmental effects of the environment on the project are included in section 20.3 of the *SFPR Project Assessment Report*. These measures include adherence to design standards and the preparation and implementation of an Emergency Management Plan. With the implementation of these mitigation measures, the RAs have concluded that the potential effects of the environment on the project are not likely to be significant.

8.0 CUMULATIVE ENVIRONMENTAL EFFECTS

The BC MOT revised and re-submitted the cumulative effects assessment for the SFPR in June 2008. As required by the *Canadian Environmental Assessment Act*, the cumulative effects assessment considered the potential residual environmental effects from the proposed SFPR project in combination with other past and foreseeable future projects that have been or may be carried out.

Past and existing projects/activities considered in the cumulative effects assessment included: development in Burns Bog; dyking of Fraser foreshore; development of railway (BCSF, CN, Sky Train); municipal development (farming, ports, housing, industrial parks); and transportation infrastructure (highways, major and minor roads, bridges).

Future projects/activities considered in the cumulative effects assessment included: the Border Infrastructure Projects; the Pitt River Bridge Project; the North Fraser Perimeter Road; the Port Mann Hwy. 1 Project; the Golden Ears Bridge; the BC Transmission Corporation transmission line; Deltaport Third Berth; and, Terminal 2.

The assessment identified potential cumulative environmental effects on: wildlife and wildlife habitat (habitat loss, changes in wildlife patterns, mortality from collisions); bog hydrogeochemistry; air quality; and, noise levels. The predicted extent, magnitude, duration, reversibility, ecological context, and probability of occurrence of the cumulative on these environmental components are summarized in Table 8-1.

Table 8-1: Summary of Cumulative Effects Assessment

Based on Table 10.3-7 in the BC MOT's revised Cumulative Effects Assessment, June 2008

Potential Cumulative Effect	E	M	D	R	EC	P
Habitat Loss - Bog habitat	L	Low	Long	No	WD	Low
Habitat Loss - Cultivated fields	L	Low	Long	Yes	D	Low
Habitat Loss - Upland Forest	R	Low	Long	No	WD	Low
Habitat Loss - Riparian Forest	L	Low	Long	No	D	Low
Habitat Loss - Wetland	R	Low	Long	No	D	Low
Fragmentation - Riparian forest	R	Low	Long	No	D	Low
Fragmentation - Upland forest	R	Low	Long	No	D	Low
Wildlife patterns (indirect habitat impact)	L	Mod	Long	Yes	WD	Mod
Wildlife mortality (collisions)	L	Low	Long	Yes	D	Low
Aquatic Impacts - Fish habitat	R	Low	Med	No	WD	Low
Air quality - CAC emissions	L	Low	Long	Yes	WD	Low
Air Quality - GHG emissions	L	Low	Long	Yes	WD	Low
Air Quality - PM input to Burns Bog	L	Low	Long	Yes	UD	Low
Change in noise after mitigation	L	Low-Mod	Long	Yes	WD	Low

E=Extent M=Magnitude D=Duration R=Reversibility EC=Ecological Context P=Probability
 L=Local R=Regional Med=Medium UD=Undeveloped D=Developed WD=Well-developed

Mitigation measures to minimize the potential for cumulative environmental effects are integrated into Table 7-1 and are further summarized in section 22.3 of the *SFPR Project Assessment Report*. Based on the information contained in the Cumulative Effects Assessment (April 2008) and taking into consideration the mitigation measures identified, the RAs have concluded that the SFPR project is not likely to cause significant cumulative adverse environmental effects.

9.0 PUBLIC PARTICIPATION

The responsible authorities did not make an 18(3) decision to consult, on the basis that opportunities for public input were provided as a component of coordinated BC-Canada EA process.

9.1 Consultation Opportunities Offered by the Provincial EA Process

Following the BC MOT's submission of its EA Application, the BC Environmental Assessment Office (EAO) coordinated the following opportunities for public input to the EA process:

- October 19 to December 17, 2006, the public was invited to comment on the SFPR Environmental Assessment Certificate Application. This included five open houses and Q&A sessions.
- April 20 to May 19, 2007, the public was invited to comment on SFPR Discussion Papers on specific issues raised during the EA process. These papers were focused on Burns Bog, Agriculture, Noise, Air Quality and Socio-Community.
- July 10 to July 31, 2007, the public was invited to comment on a revised version of the Cumulative Effects Assessment and Refinements to the Air Quality Assessments

A summary of the public consultation process and the comments received by the BC EAO from the public is provided in section 6 of the *SFPR Project Assessment Report*.

During the coordinated EA process, the BC EAO also established and chaired a biophysical and socio-economic working group comprised of federal, provincial, municipal, and local First Nations representatives. The BC EAO chaired several meetings of the working group in 2007-2008 to review the EA information submitted by the BC MOT and provided the working group with two opportunities to review the *SFPR Project Assessment Report*.

9.2 Public Registries

A Notice of Commencement posted on the Canadian Environmental Assessment Registry (CEAR) shortly after the federal EA process formally commenced in December 2006. The CEAR Reference number for the proposed SFPR project is 06-01-24060.

The project was also posted on the BC Environmental Assessment Office's Internet-based Project Information Centre (e-PIC). In accordance with the requirements of its legislation, the BC Environmental Assessment Office has posted EA documents on this site, throughout the EA process, to facilitate public access.

9.3 Community and Aboriginal Knowledge

Section 12 of the Project Application and Technical Volume 17 discuss community and Aboriginal knowledge in relation to the proposed SFPR project. Prior to the commencement of the federal EA process, the province had identified that the study area was within the asserted traditional territories of the Tsawwassen, Musqueam, Katzie, Kwantlen, Kwikwetlem, Qayqayt, and Semiahmoo First Nations. As a component of the coordinated EA process, these First Nations were invited to participate in the biophysical and socio-economic EA working groups.

A summary of the involvement of the participating First Nations in the coordinated EA process is provided in section 7.4 of the *SFPR Project Assessment Report*. The Assessment Report concludes that minor and temporary potential impacts from the Project on the asserted or assumed Aboriginal rights of First Nations will be appropriately mitigated through commitments agreed to by MoT in the *Owner's Table of Commitments and Assurances*, so that these impacts will not significantly impact First Nations' current uses of land or resources for traditional purposes.

TC and DFO as the RAs for the federal EA process, also sent letters to the participating First Nations on December 15, 2007 and April 20, 2007. No responses were received.

10.0 MONITORING AND FOLLOW-UP

10.1 Roles and Responsibilities for Monitoring and Follow-up

TC and DFO⁵ have overall responsibility to ensure that the mitigation measures they have taken into account in the determination of the significance of effects are implemented for their respective projects as scoped. The BC MOT is responsible for the implementation of mitigation measures, monitoring programs, and the conduct of required monitoring and follow-up, as required by the EA documentation and:

- Where federal regulatory processes exist for a specific environmental component, the mitigation measures and monitoring requirements will be specified in the terms and conditions of the federal regulatory instruments (i.e. *Fisheries Act* authorizations and *Navigable Waters Protection Act* permits).
- The federal funding contribution agreement between TC and the proponent will complement the federal regulatory instruments to ensure the implementation of mitigation measures, monitoring, the conduct of the follow-up program and any necessary adaptive management measures identified during follow-up activities.

TC will be responsible for the follow-up program and for arranging for the review of the results submitted by the proponent on the follow-up program. As reports are submitted, TC will determine if:

- the follow-up program as implemented is meeting the stated objectives;
- the effects are occurring as predicted in the EA report;
- the follow-up program requires amendment to adapt to changes in the project or differences in the observed environmental effects; and,
- the proponent is required to implement additional adaptive management measures to achieve acceptable environmental effects

In conducting this review, TC may request expertise from expert federal authorities. Both EC and HC have agreed to participate in the review of monitoring and follow-up reports, related to their mandates, as requested.

⁵ As effects, mitigation and monitoring activities relate to the RAs' scope of project for the EA

10.2 Monitoring

Mitigation monitoring programs that have been identified for the project include the following:

- environmental monitoring programs to ensure the effective implementation of typical project related mitigation and best management practices (i.e., water quality, air quality, hazardous waste management, etc.); and
- monitoring programs, identified in the Mitigation Monitoring Plan (BC MOT, 2008), that assess the effectiveness of mitigation proposed to address potential effects on specific vegetation and wildlife values including: red and blue-listed plants and plant communities; amphibians and reptiles; raptors (e.g., Barn Owl); water-associated birds (e.g., Sandhill crane); breeding birds; and small mammals (e.g., Pacific water shrew).

Work plans and/or draft documents for these monitoring programs were prepared during the harmonized EA process, however, specific details of the monitoring programs will be defined during the pre-construction period of project design. BC MOT will consult with Environment Canada and the BC Ministry of Environment in the preparation of the monitoring programs.

Monitoring program details relevant to the federal EA scope will be submitted to TC for review and approval before project construction. Monitoring programs to be managed by the province, including the monitoring of red and blue-listed plants and plant communities, amphibians and reptiles, raptors, and small mammals, will be submitted to TC once approved by the appropriate provincial jurisdictions.

The BC MOT will also be required to submit a report recording the status of the implementation of the mitigation measures outlined in Table 7-1 on monthly basis. This can be done using the TC template, or in another format acceptable to TC.

10.3 Follow-up

The *Canadian Environmental Assessment Act* (CEAA) defines follow-up as, “a program for verifying the accuracy of the EA of a project, and determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the project.”

In addition to the monitoring programs identified during the harmonized EA process, TC will require the proponent to implement follow-up measures focused on the aspects of the EA related to Burns Bog, specifically:

- aerial deposition of particulate matter from road construction and operation;
- hydrological effects; and
- effects on sandhill crane.

The follow-up program for these aspects of the EA has been established by TC to:

- verify the prediction of environmental effects identified;
- determine the effectiveness of mitigation measures in order to modify or implement new measures where required;
- support the implementation of adaptive management measures to address previously unanticipated adverse environmental effects; and,
- provide information on environmental effects and mitigation that can be used to improve and/or support future EAs, including cumulative effects assessments.

In addition, DFO will require the proponent to implement the following follow-up monitoring:

- environmental monitoring of construction activities to ensure that mitigation measures to protect fish and fish habitat are properly incorporated into project construction activities and
- effectiveness monitoring of fish habitat replacement (compensation) works to determine if these are functioning as intended. If the fish habitat replacement works are found to not be functioning then these will either be repaired/modified or other habitat replacement works will be implemented in order to ensure that no net loss of fish habitat is achieved.

10.4 Duration of the Follow-up Program

The proponent, the BC MOT, is responsible for implementing the follow-up program requirements and reporting the results to TC during construction and for a period of five years after the project has commenced operation. TC will determine at that time, whether the duration of the formal follow-up program needs to be extended.

The BC MOT will work with Metro Vancouver and the Corporation of Delta to develop and implement an agreement that would provide for the ongoing management of hydrology mitigation, following the conclusion of the formal follow-up program. It is anticipated that this on-going maintenance would become a component of the overall management of Burns Bog Ecological Conservancy Area (BBECA) and implementation of the long-term management plan for the area.

10.5 Follow-up Measures for Aerial Deposition

During the harmonized EA process, concerns were raised about the potential deposition of airborne particulates into Burns Bog, which could cause changes in the bog's hydrogeochemistry. To better understand the likelihood and potential magnitude of this effect, the BC MOT completed additional studies related to the rates of anticipated particulate deposition and the potential for resulting changes in bog hydrogeochemistry. Based on the results of these studies, additional mitigation was identified to ensure the project is not likely to have a significant adverse environmental effect on Burns Bog as a result of particulate deposition.

The objectives of the follow-up program for aerial deposition are as follows:

- To monitor the accuracy of predicted rates of particulate deposition to Burns Bog, identified during the assessment.
- To monitor the effectiveness of the proposed mitigation in minimizing the deposition of airborne particulates into Burns Bog.
- To obtain data that can be used, if required, to support the design of adaptive management measures to address any unanticipated effects of aerial deposition.

The description of the follow-up measures described in this section are provided at a general level of detail. Specific details related to monitoring and follow-up activities will be documented in the final AQMP. This document will be finalized, following review by appropriate reviewing agencies, before the commencement of pre-loading activities.

10.5.1 Methods for Measuring Effects

The proponent will collect aerial deposition information, to meet the above noted objectives, by implementing the methods to be described in the final Air Quality Management Plan (AQMP) for the Burns Bog segment of SFPR. The general methods described in this document include:

- The establishment of baseline (pre-construction) dust fall rates and will be undertaken as follows:
 - Deployment of a continuous particulate monitor with meteorological station at 25 metres from the edge of road;
 - Deployment of dustfall canisters at varying distances from the alignment (i.e., 25, 50, 100, and 200 metres);
 - The location of the line of dustfall canisters will be located perpendicular to the potential road alignment between transects 2 and 3 as defined in *Modelling of Particulate Matter Deposition in Burns Bog from SFPR Emissions* (Levelton, 2008);
 - Final locations will be determined after a field survey based on accessibility to proposed sites and proximity to areas where traffic related PM emissions may be expected to occur;
 - One continuous PM monitor will be located at the first dustfall canister, about 25 m from the SFPR alignment.
 - Another continuous PM monitor will be located near the centre of the bog and will act as the control site; and
 - The monitoring system will be installed before pre-load work.

Initial baseline data collection will commence in June 2008 and continue until September 2008. This will provide a minimum of four months of data from the driest (dustiest) season and will provide a good understanding of worst-case fugitive dust deposition and ambient concentrations⁶. BC MOT will then augment the four months of baseline dustfall data with regional Metro Vancouver dust fall data for the remaining months of the year, to propose an annual dustfall baseline. The baseline data and proposed (augmented) annual baseline will be submitted to TC for discussion, before pre-loading activities around Burns Bog commence.

It is anticipated that dust fall and PM concentration data will continue to be collected to provide a full year of data around Burns Bog. At a minimum, a target of no less than 75% data collection has been established for continuous monitoring. Once complete, the full year of monitoring data to be collected by the project team will be reviewed, compared with the augmented annual baseline data, and any necessary adjustments will be made to air quality monitoring program in consultation with TC and EC.

The transect that will be used for collecting baseline data and for monitoring and follow-up will be perpendicular to the north edge of Burns Bog and run into the Bog. This is the area where the highest estimated particulate deposition would be expected and is closest to Type 1 water.

For the duration of the follow-up program, dust fall and ambient particulate matter monitoring results will be compared to the established pre-construction baseline.

In order to complement particulate deposition monitoring data and to determine the impact of project-related changes in deposition on the Bog, monitoring of bog vegetation (i.e., *Sphagnum*) will also be undertaken. TC and EC (as well as other key stakeholders) will be consulted with respect to the planning of the monitoring program, including but not limited to, the location of environmental monitoring locations to ensure that linkages between trends in data describing different biophysical values may be drawn.

Details regarding bog vegetation (*Sphagnum*) monitoring will be advanced concurrently with the design of the hydrology mitigation and the environmental monitoring plan for SFPR in areas adjacent to Burns Bog. Final details related to the bog vegetation monitoring program will be provided to TC for review and approval, prior to project construction.

⁶ The BC MOT will meet with TC (and other reviewing agencies as appropriate) following the collection of the first 4 months of baseline data and before the commencement of pre-loading activities.

10.5.2 Reporting

During any month that an exceedance is measured, TC will be notified within a timely manner and the monthly report to TC will indicate what further management measures were taken and when they began. Otherwise, information collected and the interpretation and conclusion of potential trends will be reported to TC on a monthly basis. These monthly reports will include individual monthly values for each canister and sampler, and will be submitted for review within two months of data collection.

On an annual basis, a summary of the results of air quality monitoring around Burns Bog will be provided to government agencies with an interest in potential effects of air quality on Burns Bog.

These monthly and annual reports will be provided through written reports that will be submitted to TC. In addition, for the first year of project construction, BC MOT will meet every 6 months with TC and other federal departments as determined to be necessary to discuss the results of the monitoring program and the effectiveness of mitigation in addressing potential effects. The need for the continuation of regular meetings will be determined at that time.

10.5.3 Adaptive Management Measures

Adaptive management measures related to potential aerial deposition effects on Burns Bog, were identified in the draft AQMP prepared for the Burns Bog segment of SFPR. This document will be finalized as project design progresses, and submitted for TC review and approval.

The AQMP for Burns Bog identifies best management practices that will be implemented in order to avoid or minimize particulate deposition from construction and operation of the project. These will include dust control measures such as regular watering, use of vegetation, use of wind fences, and curtailment or stoppage of activities that are disturbing the surface. Vehicle speeds will also be limited to 15 km/hr on unpaved work areas, where feasible. During operation, mitigation that will be implemented will include planting of additional roadside vegetation to intercept dust, cleaning the road surface or increasing the intensity of road cleaning; and minimizing the application of salt or abrasives during winter.

Where it is determined that rates of particulate deposition have exceeded an established threshold, additional mitigation measures will be implemented. The BC MOT has proposed that the BC dust fall objective of 1.75 mg/dm²/day (5.3 g/m²/month) be used as the threshold that, if exceeded by any of the monitors, will trigger the requirement for additional mitigation to address construction related emission of dust. TC will meet with the BC MOT following the collection of baseline monitoring information, and before pre-loading activities, to confirm the proposed threshold value.

These measures will be implemented during times and in locations where it is deemed necessary due to the exceedance of identified thresholds for particulate matter deposition.

10.6 Follow-up Measures for Hydrology

The description of the follow-up measures described here provide a general description of the methods to be used for measuring changes in hydrology and for determining the need for adaptive management measures. Specific details will be developed and described in a hydrological monitoring plan for Burns Bog that will be prepared in parallel to site specific hydrology mitigation infrastructure. The details regarding the design and construction of proposed hydrology mitigation, as well as associated hydrology monitoring programs will be documented in a final Hydrology Work Plan to be approved by TC. This document will be finalized prior to commencement of pre-load activities around Burns Bog and will take into consideration comments received from members of the BC MOT's Inter-agency Environmental Review Committee (including EC).

The objectives of the follow-up program for hydrology are as follows:

- To monitor the effectiveness of the mitigation proposed to avoid impacts⁷ to the hydrology of the bog adjacent to SFPR.
- To obtain data that can be used, if required, to support the development of additional mitigation or refinement of existing mitigation, to protect hydrological values (i.e., water levels and water chemistry).

10.6.1 Methods for Measuring Effects

A monitoring program⁸ to assess the effectiveness of hydrological mitigation measures in managing water levels at the interface of Burns Bog and SFPR, will be developed in concert with the development of detailed design for hydrology mitigation and associated construction plans. As the hydrology monitoring program is further defined, the details of the program will be documented in a final Hydrology Work Plan that will be provided to TC for review and approval prior to the commencement of pre-loading activities.

The frequency of data collection to be used for the purposes of the monitoring and follow-up program will continue as follows: water level data will be collected continuously using transducers; and, water quality data will be collected twice a year (i.e., a wet and dry period).

The current and planned monitoring occurs in January (wet season) and September (dry season). The schedule for monitoring water levels in the Bog has been established based on field observations that indicate that the Bog saturates quickly with the on set of the rains in November and appear to be fairly consistent from November to March. January is considered an appropriate month for sampling since it follows the wettest months of the winter in the Vancouver area (November and December) and in dry years water levels may begin to decline in March.

The method for monitoring the effectiveness of hydrological mitigation measures in avoiding changes to hydrochemical conditions in Burns Bog will include continued monitoring of groundwater monitoring wells in and around Burns Bog and comparison of results to pre-construction baseline conditions. Monitoring of hydrochemical conditions will focus on the constituents that were considered during pre-construction baseline monitoring including pH as well as other measures of water chemistry (e.g., calcium, metals, road related organics etc.) as described in Table 1.

Table 10-1 Groundwater Quality Parameters for Monitoring Hydrological Mitigation

Location	Sampling Rationale	Analytes
Within Burns Bog	Assessing bog health	Field parameters (including pH, specific conductivity, redox and dissolved oxygen) and dissolved calcium
Along the alignment	Monitoring for potential changes to water quality	Field parameters (including pH, specific conductivity, redox and dissolved oxygen), dissolved metals, anions, Gran alkalinity, ammonia, total dissolved solids, total suspended sediment, tannin and lignin, total organic carbon, BETX, and light and heavy extractable petroleum hydrocarbons (includes a silica gel clean up to remove naturally occurring organics)

⁷ Impacts to avoid include: not precluding increased water levels associated with bog restoration works being undertaken by the agencies responsible for managing the Burns Bog Ecological Conservancy Area as well as preventing adverse changes in water chemistry adjacent to Burns Bog.

⁸ In the event that other hydrology mitigation concepts are identified during design discussions, BC MOT will consult with TC to determine the potential implications for follow up and monitoring activities.

In further developing the scope of the hydrology monitoring program, BC MOT will seek advice from EC on the suite of water chemistry parameters associated with granitic dust that will be monitored, methodologies for data collection, and specialist advice that may be required to guide the development and implementation of the monitoring program. BC MOT will also seek advice from EC regarding the criteria to be used in evaluating and interpreting the results.

In addition to contributing to an assessment of the hydrological mitigation, the monitoring of hydrochemical conditions adjacent to hydrology mitigation (e.g. the proposed LPECs) will provide a mechanism for determining the extent to which oxidized catotelmic peat (used to build berms) may be impacting water quality.

As previously noted, the monitoring and follow-up program for hydrology will be further defined during the early stages of the detail design phase (prior to pre-loading activities). As the monitoring program is further developed, it will:

- identify the number of observation locations (and their construction methods) to be monitored and the frequency and duration of sampling to be conducted;
- include the collection of the same information with respect to water quality and water level data collected to support the environmental impact assessment and will take into consideration input provided by EC; and,
- identify metrics to be measured, methods for data collection and performance thresholds.

Based on advice received from EC during the EA process, the following recommendations will also be further considered during the design of the monitoring program:

- New acrotelm depth samplers (piezometers) could be installed to allow for sampling of the acrotelm water.
- Timing of sampling should capture seasonal changes, conditioned by changes in the water table. Sampling may need to be more frequent at times of rapid change in water level and also in critical periods when water levels are low.
- The following sensitive parameters should be included in the water chemistry: pH, conductivity, gran alkalinity, major ions, DOC, and any species that are associated with "granitic dust".
- Sampling sites should be established along a transect perpendicular to the road, co-located with the *Sphagnum* monitoring sites.
- Vegetation monitoring, at sites along the same transect perpendicular to the road, could involve establishing permanent sampling plots (quadrants) both inside and outside the area of predicted maximum atmospheric deposition. The sampling methodology and frequency should be based on the existing vegetation monitoring program being done for the SAP.
- Vegetation monitoring sites should also be collocated with sites used for air quality monitoring (e.g. atmospheric samplers for wet/dry deposition, meteorological parameters, particulate samplers) to allow for correlation with the air quality follow-up monitoring results.

10.6.2 Reporting

The reporting protocol, including the reporting intervals, will be identified during the development of the workplan for advancing hydrology mitigation as noted above. It is anticipated that reporting will occur a minimum of every 6 months during pre-loading work and during the first year of construction. The frequency of reporting will be revisited at that time, in consultation with TC.

In addition, for the first year of project construction, BC MOT will meet every 6 months with TC, and other federal departments as determined to be necessary, to discuss the results of the monitoring program and the effectiveness of mitigation in addressing potential effects. The need for the continuation of regular meetings will be determined at that time.

10.6.3 Adaptive Management Measures

Adaptive management measures, to be implemented in the event that hydrological mitigation causes unintended adverse effects, could include:

- Adding additional hydrology mitigation infrastructure to include additional areas adjacent to the alignment;
- Modifying the structure and/or function of mitigation infrastructure (e.g., raising the level of berms, changing infrastructure regulating water flows etc.);
- Changing the size of the structures;
- Changing the management or maintenance processes associated with operation of the hydrology mitigation; and
- Maintenance measures to address oxidized catotelmic peat used to construct hydrology mitigation including, but not limited to, replacement of catotelmic peat used in such structures.

As the intent of the hydrology mitigation is to avoid impacts to existing conditions in Burns Bog and not preclude future opportunities for restoration, the effectiveness of the hydrological mitigation will be defined by the extent to which it facilitates progress towards broad management objectives, identified in the long-term management plan for the Burns Bog Ecological Conservation Area. The metrics for assessing progress towards conservation and restoration objectives will be ecological information collected as part of the environmental monitoring program that is undertaken in concert with the construction and operation of hydrology mitigation including: water levels; water chemistry, and bog vegetation.

10.7 Follow-up Measures for Sandhill Crane

The description of follow-up measures described here is provided at a general level of detail regarding the methods of measuring effects and the potential need for adaptive management. Specific details are included in the Sandhill Crane Mitigation Monitoring Workplan, as referenced.

The objectives of the follow-up program for Sandhill Crane are as follows:

- To assess the effectiveness of mitigation proposed to avoid indirect (i.e., visual and noise related disturbance) effects on Sandhill Cranes foraging in habitat adjacent to Crescent Slough.
- To collect data to guide the development and implementation of additional mitigation if required.
- To assess the importance of foraging habitat adjacent to the alignment and in the Crescent Slough area to regional (Lower mainland) and migratory populations of Sandhill Crane.

10.7.1 Methods for Measuring Effects

The methods for measuring the effectiveness of mitigation of effects on Sandhill Crane are described in the Sandhill Crane mitigation monitoring workplan that is part of the overall Mitigation Monitoring Plan for the project. General methods for monitoring the effectiveness of mitigation include:

- Observations of presence, abundance, and location during spring and fall staging and migratory periods;
- Observations of regional and local movements of Sandhill Crane;
- Observations, via satellite telemetry, of movements of Sandhill Crane during spring and fall; and

- Distribution and description of the attributes of preferred Sandhill Crane foraging habitat.

10.7.2 Reporting

As described in the Sandhill Crane mitigation monitoring workplan, an annual report on monitoring results will be prepared and provided to TC and the Canadian Wildlife Service at EC. A subsequent annual meeting will also be arranged to review report results and discuss potential changes that may be required to future monitoring plans and mitigation efforts. As per other aspects of the monitoring and follow up program, monitoring and follow up activities focusing on Sandhill Crane, in the project corridor, will continue for 5 years after the operation of the road has commenced.

10.7.3 Adaptive Management Measures

Adaptive management measures, to be implemented in the event that potential effects to Sandhill Crane are not addressed through the application of proposed mitigation (i.e., vegetated buffer to avoid visual effects), could include the following. Such measures would be implemented if, through consultation with TC and the Canadian Wildlife Service, it was determined that use of fields adjacent to Crescent Slough experienced reductions in use of fall foraging habitat by local Sandhill Crane populations as a result of the project.

- Construction of solid noise walls to further reduce visual effects and associated road noise; and
- Working with landowners to encourage stewardship/management of agricultural fields adjacent to the alignment and/or in other potentially suitable areas in order to encourage habitat conditions associated with preferred habitat (i.e., crop type, timing of harvest, leaving some crop fields for foraging etc.).

10.8 Follow-up Measures for Cumulative Effects

The EA identified a potential for residual effects on the components included in this follow-up program. While none of the residual effects identified were determined to likely be significant in combination with the effects of past, present or future project and activities, the monitoring and follow-up measures identified in sections 10.4 to 10.6 have taken the potential for cumulative effects into consideration. Additional monitoring and/or follow-up measures may be developed, as required, once the follow-up program has been implemented.

10.9 Conclusions

Based on the commitments included in this follow-up program, and taking into consideration the measures described in the *Owner's Table of Commitments and Assurances*, the federal RAs⁹ are satisfied that the mitigation monitoring measures and follow-up programs developed will be sufficient to verify the EA predictions, determine the effectiveness of mitigation measures, support the implementation of adaptive management measures, and provide information on environmental effects and mitigation that can be used to improve and support future EA processes.

11.0 COMMITMENTS FOR FURTHER WORK

Throughout the *SFPR Project Assessment Report* and *Federal Screening Decision Document*, references are made to a number of plans and programs that will be further developed during the design phase of the project. These commitments are specifically outlined in the Owners Table of Commitments and Assurances, which becomes legally binding if the proposed project receives an EA certificate from the BC EAO.

⁹ As effects, mitigation and monitoring activities relate to the RAs' scope of project for the EA

The following commitments for further work are specifically mentioned in this document. TC will review these documents to ensure the federal EA commitments are met, prior to their finalization.

- Air Quality and Dust Control Plan
- Air Quality Management Plan for Burns Bog
- Contaminated Sites Management Plan
- Emergency Management Plan
- Environmental Management Plan
- Fish Habitat Mitigation and Compensation Plan (* to be submitted to DFO for review and approval)
- Habitat Compensation Plan
- Hazardous Waste Management and Spills Plan
- Hydrological Monitoring Plan
- Hydrology Work Plan for Burns Bog
- Invasive Species Management Plan
- Noise and Vibration Management Plan
- Stormwater Quality and Sediment Erosion Control Plan
- Vegetation and Wildlife Habitat Management Plan
- Water Quality Monitoring Program

A minimum of 4 to 6 weeks should be provided to facilitate federal review of these documents. To ensure adequate time is provided for review and approval, it is recommended that the proponent provide TC with a workplan outlining when each of these documents will be prepared and circulated for review.

While EC and HC will be members of the BC MOT's Inter-agency Environmental Review Committee, which will be provided with opportunities to review post-EA documentation, they have also agreed to provide advice related to their mandates to TC, if requested.

Approvals will be required prior to construction for the bridge crossings at McAdam Creek, Collings Creek, Manson Canal and Crescent Slough, as these are 'named' works within the meaning of the *Navigable Waters Protection Act*. The proponent will also be required to obtain authorization under subsection 35(2) of the *Fisheries Act* for any unavoidable harmful alteration, disruption or destruction of fish habitat prior to relevant construction works or activities.

12.0 CEAA CONCLUSIONS

Taking into consideration the application of the mitigation measures identified in the EA documentation and in accordance with subsection 20.(1) of the *Canadian Environmental Assessment Act*, TC and DFO have determined that the project, as scoped by the responsible authorities in sections 5.1 and 5.2 of this document, is not likely to cause significant adverse environmental effects.

CEAA Screening Cover Document prepared by:

_____ Date: _____

Title: **Cathy Hainsworth**
EA Project Manager, Surface Programs
Transport Canada

The above has prepared this environmental screening report to the best of her/his ability or knowledge.

13.0 TRANSPORT CANADA EA DECISION

The scope of the project for Transport Canada included all aspects of the construction, operation, modification, and decommissioning work in relation to the project, including the highway, between Deltaport Way and the Fraser River Crossing at about 184th Street, and all associated structures and infrastructure essential to construct and operate the highway. This included fabrication of associated structures, such as bridges, pilings, structural fills, works in a water body, material handling and laydown areas, fuel storage facilities, sewage disposal, construction platforms, storage sites and all equipment and machinery.

Based on this project scope and in accordance with subsection 20(1) of the CEAA, Transport Canada has determined that the project is not likely to cause significant adverse environmental effects with the application of the mitigation measures specified in the EA documentation and all relevant construction specifications and Best Management Practices.

As noted throughout the document, the proponent (or its representatives) is responsible for the implementation of the mitigation measures, monitoring programs, and follow-up measures identified in the EA documentation for the SFPR project.

MITIGATION MEASURES ACCEPTED BY:

_____ Date: _____

Title: **Frank Blasetti**

Assistant Deputy Minister, Partnerships Department
B.C. Ministry of Transportation

The proponent has read and understood this environmental screening report and accepts responsibility for the implementation of the mitigation measures and related monitoring and follow-up programs identified. The above will provide written confirmation to Transport Canada

ENVIRONMENTAL SCREENING APPROVED BY:

_____ Date: _____

Title: **Jim Lothrop**

A/Senior Director, Highways and Borders
Transport Canada

The above has reviewed the environmental screening report and approves the CEAA Decision.

14.0 FISHERIES AND OCEANS CANADA EA DECISION

DFO's scope of project is the components of the proposed project, or activities required for the proposed project, that have the potential to result in unavoidable harmful alteration, disruption or destruction of fish habitat associated with watercourse crossings that require authorization under subsection 35(2) of the *Fisheries Act*; and any ancillary works and/or activities that are required solely for the purpose of undertaking the components of the proposed project that require authorization under subsection 35(2) of the *Fisheries Act*.

Based on this project scope and in accordance with subsection 20(1) of the CEAA, DFO has determined that the project is not likely to cause significant adverse environmental effects with the application of the mitigation measures specified in the EA documentation.

As noted throughout the document, the proponent (or its representatives) is responsible for the implementation of the mitigation measures and monitoring programs measures identified in the EA documentation for the SFPR project.

MITIGATION MEASURES ACCEPTED BY:

Date: _____

Title: **Frank Blasetti**

Assistant Deputy Minister, Partnerships Department
B.C. Ministry of Transportation

The proponent has read and understood this environmental screening report and accepts responsibility for the implementation of the mitigation measures and related monitoring and follow-up programs identified. The above will provide written confirmation to Transport Canada

ENVIRONMENTAL SCREENING APPROVED BY:

Date: _____

Title: **Adam Silverstein**

Manager, Environmental Assessment and Major Projects
Fisheries and Oceans Canada

The above has reviewed the environmental screening report and approves the CEAA Decision. In addition, the above Federal Department/Agency provides Transport Canada with assurance that mitigation measures identified under their responsibility will be implemented.