

Roberts Bank Terminal 2 Impact Assessment Draft Conditions Feedback

Introduction

This document contains technical feedback, communicated via the People of the River Referrals Office (PRRO). It is based on a technical review of the proposed conditions in relation to the project description, the review panel conclusions, and the review panel recommendations. PRRO also sought advice from external experts, including wildlife biologists and Indigenous law experts.

On behalf of the STSA, we have previously submitted an integrated cultural assessment of the RBT2 project proposal. That submission remains a reference for understanding Stó:lō cultural and ecological needs, attachments, and relational connections within S'ólh Téméxw (Stó:lō territory).

This review of the draft conditions focuses on three aspects:

- 1) The limitations of the specific recommendations in terms of ecological protections.
- 2) The extent to which the draft conditions as a whole protect and affirm Stó:lō cultural rights, particularly in line with Federal and Provincial commitments to the UN Declaration on the Rights of Indigenous Peoples (UNDRIP).
- 3) The need for a shared Indigenous governance approach to major projects in one of the most complex overlapping jurisdictions in Canada, including the establishment of a First Nations Environmental Impact Assessment Council to advance a true whole of government approach.

Limitations of the specific recommendations

The “no-net-loss” (NNL) approach to mitigation is advocated by the province of British Columbia. This approach should be the foundation of IAAC and BC EAO approaches to mitigating impacts from major proposed works. The draft conditions do not meet the standards of a NNL approach, as they include ad hoc and vague statements regarding offsetting. Applying multiple offsetting strategies has been demonstrated to be an ineffective means of achieving a NNL approach.¹ Habitat acquisition is one of the only demonstrated successful strategies for supporting a no-net-

¹ zu Ermgassen, S O. S. E; Baker, J; Griffiths, R. A.; et al. (2019). The ecological outcomes of biodiversity offsets under “no net loss” policies: A global review. *Conservation Letters*, 12(6), n/a–n/a. <https://doi.org/10.1111/conl.12664>

loss approach and related projects.² For further details relating to some of the specific recommendations, please see Appendix A: RBT2 Conditions review summary – key areas of concern/with remaining questions.

The most effective and reliable way to achieve the goals of a NNL approach is through like-for-like offsets. There are few opportunities for doing this in the lower Fraser Valley. RBT2 is expected to have an impact on at least 550ha of wildlife habitat. The only place within the Fraser Valley where offsets this large could potentially be purchased and converted to something like an “Indigenous-Managed Wildlife Area” would be:

- Westham Island, which will be facing increased pressures from rising water levels and salt wedges which could make farming this area impractical in the future. Dyking the entire island would be required to protect it into the future, making the option likely unfeasible and too costly. Conversion to a managed agro-wildlife area would likely be one of the best uses of the landscape into the future but would require large budgets to implement and maintain.
- Serpentine/Mud Bay area: similar to the above, it is facing salt wedge pressures and tidal inundations. Private lands could be bought and converted/connected to existing WMA in the area.
- Sumas Lake Bed: Given it is entirely freshwater, it lacks the biofilm benefits for Western Sandpiper, but much of the LAA for RBT2 is more important to Dunlin than WESA. DUNL are more capable of freshwater habitat use and seasonal flooding of agricultural lands of Sumas Lake bed would have similar fine sediments as those found in the lower Fraser.

Habitat acquisition is really the only offset that will have value remotely comparable to a project of RBT2’s scope. An Indigenous-led management strategy for such areas would be the most progressive approach to dealing with mitigation into the future. It would also be the best approach for upholding the federal UNDRIP Action (UNDRIPA) and the BC Declaration on the Rights of Indigenous Peoples Act (BC DRIPA).

² Gardner, T. A., Von Hase, A., Brownlie, S., et al. (2013). Biodiversity Offsets and the Challenge of Achieving No Net Loss. *Conservation Biology*, 27(6), 1254–1264. <https://doi.org/10.1111/cobi.12118>

Addressing Aboriginal rights and title in line with UNDRIPA and DRIPA

Stó:lō First Nations have inherent Aboriginal title to, and rights in respect of, S'ólh Téméxw (Stó:lō Traditional Territory). The location of the proposed Project, at the estuary of the Fraser River, falls within S'ólh Téméxw, which is defined as follows:

Stó:lō Territory; the Halq'eméylem word for “our world” or “our land”, including the lower Fraser River watershed downriver of Sailor Bar Rapids in the lower Fraser River Canyon. S'ólh Téméxw represents the world transformed by the actions of the Xexá:ls, Tel Sweyal and other ‘agents’ of Chichelh Siyá:m [the Creator]. S'ólh Téméxw is defined through the known extent of occupation and land use of the Halkomelem speaking peoples of mainland British Columbia.

The Crown has recognized the geographical location and significance of S'ólh Téméxw in several negotiated agreements with the STSA. The 2019 S'ólh Téméxw Stewardship Alliance – Canada Consultation and Engagement Protocol affirms the definition and map of S'ólh Téméxw and provides for a ‘Nation-to-Nation Framework’ for consultation with the Federal Government. Similarly, the S'ólh Téméxw Stewardship Alliance – Strategic Engagement Agreement affirms the definition of S'ólh Téméxw for consultations with the Province, and has been in force in various Agreements since 2012.

These Agreements include the Fraser River delta within S'ólh Téméxw, recognizing that the Project’s location falls within the area where Stó:lō assert Aboriginal rights and title.

The Draft Conditions distinguish between different classes of Indigenous Nations that are impacted by the Project, excluding Stó:lō from the definition of “Indigenous groups” and instead listing Stó:lō First Nations instead under the category of “Indigenous groups (Fraser River)”. This is inconsistent both with Stó:lō’s worldview and Aboriginal rights, and conflicts with the various agreements between Stó:lō and the Crown.

Stó:lō First Nations exercise numerous Indigenous rights at the estuary of the Fraser River (see the Integrated Cultural Assessment). The Fraser River - including the estuary – is arguably the most significant travel corridor for Stó:lō First Nations, and it continues to be used today for fishing, canoe journeys, etc. Stó:lō First Nations have a right to govern and manage the Fraser River in accordance with Stó:lō law. Stó:lō Nations continue to exercise this authority today through the activities of the S'ólh Téméxw Stewardship Alliance, treaty negotiations, participating in environmental assessments, etc.

Finally, fishing is directly connected to nearly every aspect of Stó:lō culture and identity. In addition to the Integrated Cultural Assessment, the Stó:lō Atlas describes the importance of salmon to the Stó:lō:

The Fraser River and its fish, especially salmon, have not only provided a source of food for the Stó:lō but have also embodied the essence of Stó:lō identity and life. Tins importance is recorded in traditional practices such as the First Salmon Ceremony; in the Halq'eméylem language, which includes 147 identified words related to methods of catching and processing fish; and in oral traditions, which affirm that “no other living creature except the sockeye salmon possesses a soul”.³

As a migratory species, salmon pass through the estuary of the Fraser River, both for migration to sea as juveniles and for return migration to the Fraser River for place-dependent spawning that is critical for species survival. For this reason, the Project’s impacts on salmon habitat at the Fraser Estuary, as well as its consequences on water quality and temperature are of critical importance to all Stó:lō First Nations’ abilities to exercise their rights to fish in a meaningful way.

Currently, the impact assessment process and the draft conditions do not adequately address Stó:lō rights, and how those rights can be protected within a complex context of overlapping Indigenous jurisdiction at the Fraser River estuary.

The impact assessment process and the need for First Nations-led processes

There are some progressive provisions in the IAA that recognize Indigenous governance: Indigenous jurisdiction over environmental assessments is recognized (with some caveats and criteria); the Minister may decide to delegate the process to Indigenous organizations; the Minister may establish a joint review panel. However, even where these measures are put into place, decision-making power ultimately rests with the Minister. Having a mechanism for recognizing Indigenous jurisdiction without any actual agreements in place pertaining to Indigenous impact assessments is a largely rhetorical form of recognition.

The review and approval process laid out in the IAA fulfils the Crown’s duty to consult but does not align with UNDRIPA. While consultations regarding the proposed project may lead to Indigenous Nations offering their consent, the IAA does not in fact require Indigenous consent to

³ Smith, D. (2001) “Salmon Populations and the Stó:lō Fishery” in Carlson et al. [Eds.] *A Stó:lō-Coast Salish Historical Atlas*. Vancouver: Douglas & McIntyre. p120.

process, nor does it require the Minister to consider whether Indigenous consent has been provided. The Act only considers the Minister, or Cabinet, as the legitimate decision-makers, excluding Indigenous nations from the decision-making process. This reflects a fundamental injustice in Canadian law. Indigenous Nations are treated in Canadian law as cultural minorities with a set of rights aimed at protecting their distinctive cultures, not as nations with their own legal orders and jurisdictions that form part of Canada’s constitutional order and system of federalism.

These limitations can only be addressed if state agencies and courts “move away from the Charter-like lens of the current constitutional framework of section 35 and move toward a jurisdictional division of powers with Indigenous peoples... self-government agreements can lead to the creation of new nation-to-nation relationships in Canada, and to reconciliation”.⁴

In the case of RBT2, this means addressing the complexity of overlapping and shared Indigenous jurisdiction. There are numerous Indigenous Nations who claim Aboriginal rights and title in the Fraser River Delta, as evidenced by the lengthy list of ‘Indigenous groups’ in the draft conditions. The Project’s location is directly adjacent to Tsawwassen First Nation lands under the Tsawwassen First Nation Final Agreement. If Indigenous Nations contest each other’s asserted rights, it could lead to conflicts that are difficult to resolve in the context of the impact assessment or indeed at court. Ongoing territorial and rights claims in the Salish Sea illustrate the challenges of resolving claims regarding treaty interpretation, consultation, and Aboriginal title where overlapping territories are involved.

We advocate a shared governance approach that builds on the long history of shared use of the delta, supported by Indigenous laws relating to intergovernmental relationships. As Indigenous scholar and lawyer Mary Ellen Turpel-Lafond argues, “the solution to these complex conflicts rests in an expert mechanism drawing from First Nation Legal Orders”.⁵

We recommend that such a mechanism be drafted as an overriding condition for the RBT2 project. More importantly, such a mechanism should be established for all ongoing and future environmental impact assessment processes affecting shared Indigenous jurisdictions. This

⁴ Morales, S. & Nichols, J. (2018) *Reconciliation Beyond the Box: The UN Declaration and Plurinational Federalism in Canada*. Waterloo: Centre for International Governance Innovation.

⁵ Turpel-Lafond (Aki Kwe), M. E. (2020) “Canadian Law on Shared Territories and Overlaps, and Rebuilding Indigenous Legal Approaches in British Columbia”. BC Assembly of First Nations, available from: [https://www.bcafn.ca/sites/default/files/docs/events/Final\(2\)_METL_Canadian%20Law%20and%20Indigenous%20Law-Shared%20Territories%20and%20Overlaps.pdf](https://www.bcafn.ca/sites/default/files/docs/events/Final(2)_METL_Canadian%20Law%20and%20Indigenous%20Law-Shared%20Territories%20and%20Overlaps.pdf).

mechanism should support a First Nations Environmental Impact Assessment Council. Federal and Provincial governments should combine resources to establish such a council, and proponents should be required to provide financial and capacity support. This would help to address the numerous capacity gaps that we face in participating in multiple assessment processes with overlapping timelines and often-competing needs.

In addition to this long-term goal, for the RBT2 project in the interim, the IAAC should establish an ad hoc First Nations working group to draft First Nations specific conditions that would reflect shared governance and the application of Indigenous laws in managing the effects of the project. These would complement, not displace, any conditions drafted and implemented by IAAC itself.

Summary of key points

- A. The specific conditions do not adequately address ecological concerns, as offsetting is proven *not* to lead to a no-net-loss outcome. The conditions are too segregated and ad hoc; an over-riding condition should be implemented that requires the proponent to acquire habitat to support a like-for-like offset to be managed by or in partnership with a collective of affected First Nations.
- B. As reflected in the definition and geographical extent of S'ólh Téméxw, Stó:lō First Nations have inherent rights in the Fraser River estuary, particularly relating to sacred salmon populations. These rights are shared and overlap with those of other First Nations.
- C. Despite some progressive provisions, the Impact Assessment Act does not adequately uphold the principle of free, prior, and informed consent, which Canada has endorsed in the United Nations Declaration on the Rights of Indigenous Peoples Act (“UNDRIPA”).
- D. The IAAC and BC EAO (and other Federal and Provincial agencies engaged in impact and environmental assessments) should move towards a genuine whole of government approach. This means establishing a First Nations Environmental Impact Assessment Council, enabling a three-way relationship between that Council, IAAC, and the BC EAO. The council should be Federally, Provincially, and proponent funded.
- E. In the interim, for the RBT2 project, IAAC should require the establishment of an ad hoc joint First Nations management group, which will outline shared concerns and conditions in line with Indigenous laws, and which should complement those implemented by IAAC.

Appendix A. RBT2 Conditions review summary – key areas of concern/with remaining questions

The discussion in this table addresses themes that have the potential for "significant adverse effects" or for which "the effects cannot be determined".

Panel conclusions	Panel recommendations	Conditions (Canada Environmental Assessment Act, 2012)	PRRO/STSA Discussion (concerns, gaps, amendments, etc.)
Theme: Current Use of Lands and Resources for Traditional Purposes			
Shipping has residual and cumulative effects on important lands and resources for Indigenous Nations, but the significance of impact cannot be determined.	38: Address safety of traditional harvesting 39: Cumulative effects monitoring & mitigation 40: Plans for safe harvesting & build vessel monitoring among affected Nations	12.1-12.5: Maintaining Indigenous access through consultation; collaboration with First Nations in managing the area in relation to works; mitigation; follow-up programs; develop and support regional initiatives.	<ul style="list-style-type: none"> Is the “follow up program” a management approach? Or just a rhetorical commitment to monitoring without any requirement to act on the results?
Theme: Physical & cultural heritage resources			
Residual and cumulative effects on cultural heritage for Tsawwassen, Musqueam, and Tsleil-Waututh Nations in particular, as well as other Indigenous groups who use the shipping area for cultural practices	41: Excavate for archaeological potential; inventory fish traps 42: Monitor erosion of historic tidal channel/Canoe Passage; manage chance finds 43: Ministry monitoring program, with baselines, documentation, protection measures	14.1-14.9: co-develop fish trap inventory; annual monitoring of construction & impact on archaeological potential; Physical Heritage Resources Management Plan; pre-construction surveys and mitigation measured; support Indigenous monitors; develop collaborative nation-specific measures;	<ul style="list-style-type: none"> This includes any First Nation in and around the Salish Sea. It is a huge impact that is not given full attention.

Panel conclusions	Panel recommendations	Conditions (Canada Environmental Assessment Act, 2012)	PRRO/STSA Discussion (concerns, gaps, amendments, etc.)
	44: Cultural & community mitigation plan for residual effects, safe marine access. 45: Co-developed cultural heritage protection plan 46: Monitoring of overlapping Indigenous and shipping use, with impacts on safety and traditional use.	follow-up program with affected Nations.	
Theme: Greenhouse gas emissions			
Additional greenhouse gas emissions in the Metro Vancouver area even after the application of mitigation measures; significant adverse cumulative effect.	3: greenhouse gas emissions inventories, reduction plan, alignment with BC & Metro Vancouver reduction strategies.	1-6: Electric power provision; GHG management plans for construction, taking regulations into account; follow-up program assessing effectiveness of mitigation; mitigation of effects of emissions;	<ul style="list-style-type: none"> • This is vague with no real commitments to limit greenhouse gas emissions. • There are multiple points throughout the document where the terms “if economically feasible” or “to the extent feasible” are used without precise definition. There are more than 30 occurrences of these phrases. What mechanisms will be implemented to hold the proponent to account if it unilaterally determines recommendations are not “feasible?”
Theme: Environmental offsetting			
The proposed offsetting plan, totaling 29 hectares, is not sufficient to compensate for the reduction in productivity associated with the habitat loss of 177 hectares at Roberts Bank.	18: Require offsetting strategy & monitor offset habitats.	7.11-7.13; 9.1, 9.2, 9.4; 10.7: habitat offsetting plans for fish habitat addressing losses, offsets required, benefits of offsetting, ecological changes, compensating for impacts on fish; mitigation measures; site-specific monitoring of invasive species; wetland	<ul style="list-style-type: none"> • 29 hectares is insufficient to offset the losses of 177 hectares of Roberts Bank. Given the paucity of available lands for conversion into wildlife habitat in the area (see below point), any real opportunity for offsetting is likely to be off-site and Westham Island, Sumas Lake, Matsqui Flats, Nicomen Slough and other areas in the mid-Fraser might be the most meaningful locations to look at habitat acquisitions and offsets. This would also be more valuable for Stó:lō communities and the STSA.

Panel conclusions	Panel recommendations	Conditions (Canada Environmental Assessment Act, 2012)	PRRO/STSA Discussion (concerns, gaps, amendments, etc.)
		compensation plan; follow-up program; heron-specific considerations.	<ul style="list-style-type: none"> There is mounting evidence of bird use shifting eastward into the valley as resource opportunities at the mouth of the Fraser are lost to wildlife due to ongoing conversion of traditional farmlands. These considerations are largely absent.
Theme: Wetlands and biodiversity protection			
Significant adverse and cumulative effects, including on red-listed marsh communities.	21: Include in offsetting plans: marsh habitats; areas of recent bulrush recession. 22: Follow-up program for marsh offsets: monitoring red and blue-listed communities, tidal marsh communities; detecting and reporting invasive species.	9.2-9.4: Wetland compensation plan; salvage and transplant native species, including blue and red-listed; follow-up program for effectiveness of wetland compensation plan, including performance measures, monitoring, mitigation	<ul style="list-style-type: none"> The notion of salvage is interesting, but it requires suitable and protected areas for the transfer of species. This also requires that transplant work will not create undue disturbances within those existing areas and the species contained therein. The precise location of these planned offset areas is not entirely clear. The only offset measure with significant value would be for the VFPA to purchase private lands and subsequently revert them to provincial, federal, or Indigenous ownership to be incorporated into a wildlife management area. From the STSA's perspective, the latter is the preferred option, supported by co-management agreements. The IAAC should consider implementing such a condition, to be supported with a co-management agreement among First Nations and with the support of provincial and federal governments.
Theme: Bivalve shellfish			
Due to the habitat loss associated with the 177-hectare terminal footprint and reductions in productivity, and in the absence of adequate	23: refine crab offsetting; develop a follow-up program for monitoring.	7.3; 7.6; 7.7; 11.1; 12.1; 12.4; 13.4-13.6: avoidance and mitigation measures; Dungeness crab salvage program; follow-up program for Dungeness	<ul style="list-style-type: none"> Have there been any toxicology studies looking at potential bioaccumulation of contaminants in bottom feeders? A relatively recent study in Puget Sound found "Of the POPs, PCBs were detected most frequently in Dungeness crab and spot prawn and were highest in specimens taken from urban areas. DDTs and PAHs in

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mitigation measures, the Project would result in a significant adverse and cumulative effects on Dungeness crab.		crab; communication plan for Indigenous groups and marine users; allow Indigenous harvesting access to enclosure area(s); follow-up program in consultation with Indigenous regarding traditional use; mitigation of adverse effects on commercial & recreational crab fishing; include marine users in collaborative meetings; analyse crab harvesting data to inform marine users.	<p>both species, and PBDEs in crab, were detected frequently at lower concentrations, with highest levels in samples from urban areas”.⁶</p> <ul style="list-style-type: none"> • Similar studies are required in the Salish see and Fraser River estuary to understand baselines of crab and prawn ecological health. Without such studies, follow-up monitoring is meaningless.
Theme: Orange sea pen			
Residual adverse effect of the Project on the orange sea pen colony in the Local Assessment Area, even after proposed mitigation, would be significant; inconclusive findings on cumulative effects.	24: transplant program; annual monitoring.	7.8-7.9: transplant \geq 10% of orange sea pen colony; follow-up program on effectiveness of transplants.	<ul style="list-style-type: none"> • We have concerns about demonstrated efficacies of colony transplant and about any potential recourse (e.g. additional offsetting measures) if transplants are unsuccessful and the colony is lost due to the impacts of the RBT2 project. • We recommend that the IAAC add contingencies to this condition: transplanting must be monitored and assessed,

⁶ Andrea J. Carey, Niewolny, L. A., Lanksbury, J. A., & West, J. E. (2014). Toxic Contaminants in Dungeness crab (*Metacarcinus magister*) and Spot Prawn (*Pandalus platyceros*) from Puget Sound, Washington, USA. Washington Department of Fish and Wildlife. Available from: <https://wdfw.wa.gov/sites/default/files/publications/01608/wdfw01608.pdf>

Panel conclusions	Panel recommendations	Conditions (Canada Environmental Assessment Act, 2012)	PRRO/STSA Discussion (concerns, gaps, amendments, etc.)
			and where under-performing or failing additional measures must be implemented.
Theme: Fish & fish habitat			
		7.11-7.11.5 Creation of comprehensive offsetting plan; anticipated losses, amount and type of offsets; projected benefits; potential eutrophication, anoxia, changes in water drainage; compensation measures 7.13 Creation of follow-up program	<ul style="list-style-type: none"> There is a poor evidence base for no-net-loss approaches, but it has been demonstrated that offsets are not an effective means of achieving no-net-loss biodiversity or habitat outcomes.⁷ Habitat acquisition is one of the only demonstrated successful strategies to support no-net-loss related projects.⁸
Theme: Pacific salmon			
<p>Insignificant residual adverse effect and adverse cumulative effect juvenile chum salmon;</p> <p>Significant residual adverse effect and adverse cumulative effects on ocean-type juvenile Chinook salmon.</p>	25: Statistically defensible sampling program; evaluation of existing and future migration disturbance; additional offsets; plan to support hatchery initiatives	5.2-7.2.2 Follow-up program to verify accuracy of assessment and effectiveness of mitigation 7.3-7.3.4 Qualified professional hired to develop avoidance and mitigation measures 7.5. Underwater noise monitoring	<ul style="list-style-type: none"> Enhancement hatcheries are currently struggling with capacities and capturing brood stock for dwindling salmon populations is becoming increasingly difficult. They cannot be relied upon to bolster dwindling salmon populations alone. The estuarine habitats must be maintained if we expect juvenile salmon survival to be good enough to lead to population recovery. Stochastic events such as the Big Bar slide cannot be predicted nor easily mitigated. Only robust populations

⁷ zu Ermgassen, Sophus O. S. E, Baker, Julia, Griffiths, Richard A, Strange, Niels, Struebig, Matthew J, & Bull, Joseph W. (2019). The ecological outcomes of biodiversity offsets under “no net loss” policies: A global review. *Conservation Letters*, 12(6), n/a–n/a. <https://doi.org/10.1111/conl.12664>

⁸ Gardner, Toby A., Von Hase, Amrei, Brownlie, Susie, Ekstrom, Jonathan M. M., Pilgrim, John D., Savy, CONRAD E., Stephens, R. T. Theo, Treweek, Jo, Ussher, Graham T., Ward, Gerri, & Ten Kate, Kerry. (2013). Biodiversity Offsets and the Challenge of Achieving No Net Loss. *Conservation Biology*, 27(6), 1254–1264. <https://doi.org/10.1111/cobi.12118>

Panel conclusions	Panel recommendations	Conditions (Canada Environmental Assessment Act, 2012)	PRRO/STSA Discussion (concerns, gaps, amendments, etc.)
		7.4 Dredging only within timing window of least risk to juveniles 7.14-7.14.2 Follow-up program to determine accuracy of the environmental assessment regarding changes to productivity of juvenile salmon	can handle such unpredictable events, which can have substantial short term impacts on recruitment. <ul style="list-style-type: none"> The re-establishment of the Fraser River Estuary Management Program (FREMP) would be a significant step to addressing the limits of ad hoc initiatives based on EA processes and outcomes. The Program previously helped to oversee the various projects around the region and considered the cumulative impacts of combined projects.
Theme: Southern Resident Killer Whale			
Significant adverse effect on the Southern Resident Killer Whale. Significant adverse cumulative effect on the Southern Resident Killer Whale.	28: Marine Mammal Management Plan; buffer zones; decision protocol; marine mammal observers; limit (seasonal) timing of impact pile; hydrophones 29: Enhancing Cetacean Habitat and Observation Program; Species at Risk Act Section 11 Conservation Agreement to Support the Recovery of the Southern Resident Killer Whale; mitigation measures to reduce threats due to shipping activities; annual public report	6.8 present samples of fill material; cannot use if causes marine pollution unless additional mitigation measures 6.9 – 6.9.2 cannot use material dredged from upper 0.5 meters as fill for land development; unless prevents discharge of supernatant, polychlorinated biphenyl levels do not exceed concentrations for Southern Resident Killer Whale and its critical habitat 8.1 - 8.1.8 mitigation of underwater noise; soft start procedures; vibratory	<ul style="list-style-type: none"> A coherent regional approach to underwater noise is required, including connected monitoring of noise and its effects. This approach extends beyond the conditions for one project, but it should be the foundation and any proponent should be expected to contribute to underwater noise issues. It should be ongoing, and not just ad hoc. The proponent must do more than participate in regional initiatives; the initiatives should be formalized in to provincially and federally supported and ratified projects, which proponents of large projects should be legally obliged to uphold. Appropriate measures of re A similarly coherent regional protection plan should be developed for SRKW. This would include an ongoing multi-species and aquatic habitat approach to prevent further impacts on this species and risk, and to restore aquatic environments for SRKW. This might include restrictions on shipping. It should therefore be developed before any major projects in the Salish Sea are approved.

Panel conclusions	Panel recommendations	Conditions (Canada Environmental Assessment Act, 2012)	PRRO/STSA Discussion (concerns, gaps, amendments, etc.)
	<p>30: the 'Species at Risk Act Section 11 Conservation Agreement to Support the Recovery of the Southern Resident Killer Whale' for an additional five-year term</p> <p>31: Net overall decrease in underwater noise; report annually; identify marine shipping overlaps</p> <p>32: proponent and public-accessible acoustic impacts analysis</p>	<p>pile-driving; sequence in-water work activities; sound attenuation; vibratory hammer and impact driving during daytime; applicable management measures; avoid intense work between June 1 to Sept 30; limit dredging equipment and tug and barge movements</p> <p>8.2 – 8.2.9 marine mammal detection and response plan; behavioural disturbance thresholds; identify activities that generate impulse and continuous underwater noise; minimum exclusion zone(s); injury threshold exclusion zone(s); expanding exclusion zones; monitoring buffer zone; monitoring applicable marine mammals within exclusion zones; non-visual monitoring; stop work procedures; modify/stop</p>	

Panel conclusions	Panel recommendations	Conditions (Canada Environmental Assessment Act, 2012)	PRRO/STSA Discussion (concerns, gaps, amendments, etc.)
		<p>work if marine mammal in distress</p> <p>8.3 – 8.3.2 reduce effects of container vessels; report underwater noise levels; evaluate effectiveness of container vessel participation</p> <p>8.4 – 8.4.4 plan to address effects due to underwater noise from marine terminal; budget creation; monitor and analyze underwater noise levels; speed reductions; offsets for underwater noise</p> <p>8.6 procedures to delay daytime departures; communication protocols; safety and regulatory requirements</p> <p>8.7 Distribution of the marine mammal awareness pamphlet to marine pilots</p> <p>8.8 documenting Indigenous knowledge and respect Indigenous knowledge protocols</p> <p>8.9-8.9.3 develop follow-up program for</p>	

Panel conclusions	Panel recommendations	Conditions (Canada Environmental Assessment Act, 2012)	PRRO/STSA Discussion (concerns, gaps, amendments, etc.)
		underwater noise; hydrophones; monitor technologies 8.10 proponent to sign on to <i>Risk Act Section 11 Conservation Agreement to Support the recovery of the Southern Resident Killer Whale</i> 8.11 Proponent to participate in regional initiatives in effective management and recovery of Southern Resident Killer Whales 8.12 Proponent to participate in regional initiatives in managing underwater noise 8.13 Proponent to participate in regional initiatives in identifying portions of the Salish Sea where marine shipping overlaps with the Southern Resident Killer Whales	
Theme: Barn Owls (<i>Tyto alba</i>) and Other Raptors			
Residual adverse effects and an adverse cumulative effect on diving birds. Insignificant.	35: design and install physical barriers to reduce road mortality. Must not attract	10.3 Install physical barriers to mitigate mortality risk for barn	<ul style="list-style-type: none"> Physical barriers may not be a realistic solution to reducing truck impacts. Planting hedges might be of equal or greater value from that standpoint, however nesting

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<p>Increased vehicle traffic and increased human population and urbanization would have significant adverse cumulative effect on barn owls.</p>	<p>other avian species. Must conserve roadside grass verge hunting habitat. Develop barn owl conservation plan. Nest boxes. Annual reporting. 36: Include solutions pertaining specifically to Great blue herons 37: Include SARA-listed or COSEWIC designated bird species and contingency/adaptive management measures in the management plan.</p>	<p>owls. Must not attract other avian species 10.4 identify number and location of artificial nest structures 10.5 contribute to third party programs to maintain foraging habitat 10.15 creation of follow-up program to determine effectiveness of mitigation measures regarding artificial nests 10.16-10.16.1 creation of follow-up program to determine effectiveness of mitigation measures of barn owl mortality</p>	<p>substrate supplementation or purchasing of lands to allow for old field habitats would likely be a better way to invest mitigation funds than building a wall, which could act as a movement barrier to other species.</p> <ul style="list-style-type: none"> • It is important to ensure that rodenticides are not used on site which could result in secondary poisonings. The IAAC should include specific requirements in this context. • There are other listed raptor species within the immediate project area such as Peregrine Falcon, Short-eared Owl and Western Screech Owl. Why are there not mitigation measures in place for these species? Why is there no proposed monitoring efforts to determine impacts on these SARA-listed species? • The Lower Fraser is home to the world’s largest concentration of wintering Bald Eagles and highest densities of breeding Bald Eagles anywhere in the species range. Given that this population relies heavily on foraging within the Roberts Bank area, there appears to be no demonstrated efforts to determine terrestrial impacts on any raptors beyond Barn Owl.
<p>Theme: Birds Species with Listed Conservation Status</p>			
<p>Residual adverse effects on the Great blue heron and barn swallow</p>	<p>36: solutions specifically on the Great blue heron to compensate for loss of productivity in foraging habitat 37: SARA-listed or COSEWIC designated birds should be included in management plan. Include contingency or</p>	<p>10.7 determine extent of offset to foraging habitat 10.12 develop follow-up program to determine accuracy of environmental assessment and effectiveness of mitigation measures in foraging habitats</p>	<ul style="list-style-type: none"> • 69 species of birds are known within the area and designated as globally, continentally, or nationally important species, as identified by the Important Bird and Biodiversity Areas Program, Species at Risk under the federal Species at Risk Act, or on the provincial Red or Blue Lists. What is being done to determine impacts and potential mitigation? What proposed partnerships are being considered with various stakeholders to consider this project’s impacts on these species?

Panel conclusions	Panel recommendations	Conditions (Canada Environmental Assessment Act, 2012)	PRRO/STSA Discussion (concerns, gaps, amendments, etc.)
	adaptive management measures	10.16 – 10.16.1 develop follow-up plan to determine accuracy of environmental assessment and mitigation measures regarding barn owls. Physical barriers. 10.19 develop follow up program to determine accuracy of environmental assessment and mitigation measures regarding barn swallows.	