Garden City Conservation Society

www.GardenCityLands.ca ◆ GCCS on Facebook

Email: gardencityconservation@gmail.com

Subject: **Stop RBT2 — to enable success.**

Dear Powers-that-Be and All of Good Will:

We've observed and analyzed Roberts Bank Terminal 2 for years, and we now see it as a train wreck on the verge of happening. Yet RBT2 can still lead to something better.

In the wreck analogy, the RBT2 train engine, pulling freight cars, has kept heading for a washed-out bridge, *heedless* of warnings and *heedless* of guidance to safer, better routes. The train could soon tumble off a bridge-to-nowhere.

There's a smaller, safer, responsive option ready to take the place of the outsized, risky, unfixable RBT2 engine. Deltaport Berth 4 (DP4) is the adequate alternative if needed—if ever Prince Rupert and Burrard Inlet expansion cannot meet the West Coast container-terminal needs.

A series of revealing topics fill out this letter. They address what RBT2 has drawn Canada into and what can resolve it. The topics are mostly illustrated, and you only need to skim and read enough of each to skip to the next topics. (It all matters, but it won't all be new to you.)

By pulling together, all who lead or help can resolve the threats that RBT2 has presented. Thank you for caring. Enjoy our topics as much as we've enjoyed composing for you!

With best wishes,
Garden City Conservation Society (GCCS)
Richmond, Fraser River Estuary, Salish Sea, BC, Canada
Serving and conserving since 2008

An SOS from a Western Sandpiper: You may have noticed one of us Sandpipers at top, flying high in the sunlight, looking and feeling energized. That's thanks to our grazing on wonder-food at Roberts Bank in the estuary, a vital stop on our flyway to Alaska. *But RBT2 puts our species at risk by messing with nature, which creates that food,* specific fatty acids in biofilm. The GCCS is so worried about it that they've organized their letter around us. Luckily, in Topic D, we see they've realized *our wonder-food can be vital for humans* too, and more so as the warming climate makes it scarcer. Biodiversity matters! Save Our Species!

Save **O**ur **S**pecies from Roberts Bank Terminal 2, **RBT2**

VFPA image of proposed RBT2 that would put Western Sandpipers at species-level risk as their large numbers fall.

Topic A: *Precautionary principle* re RBT2

The *Guide to understanding the Canadian Environmental Protection* Act (CEPA) is clear:

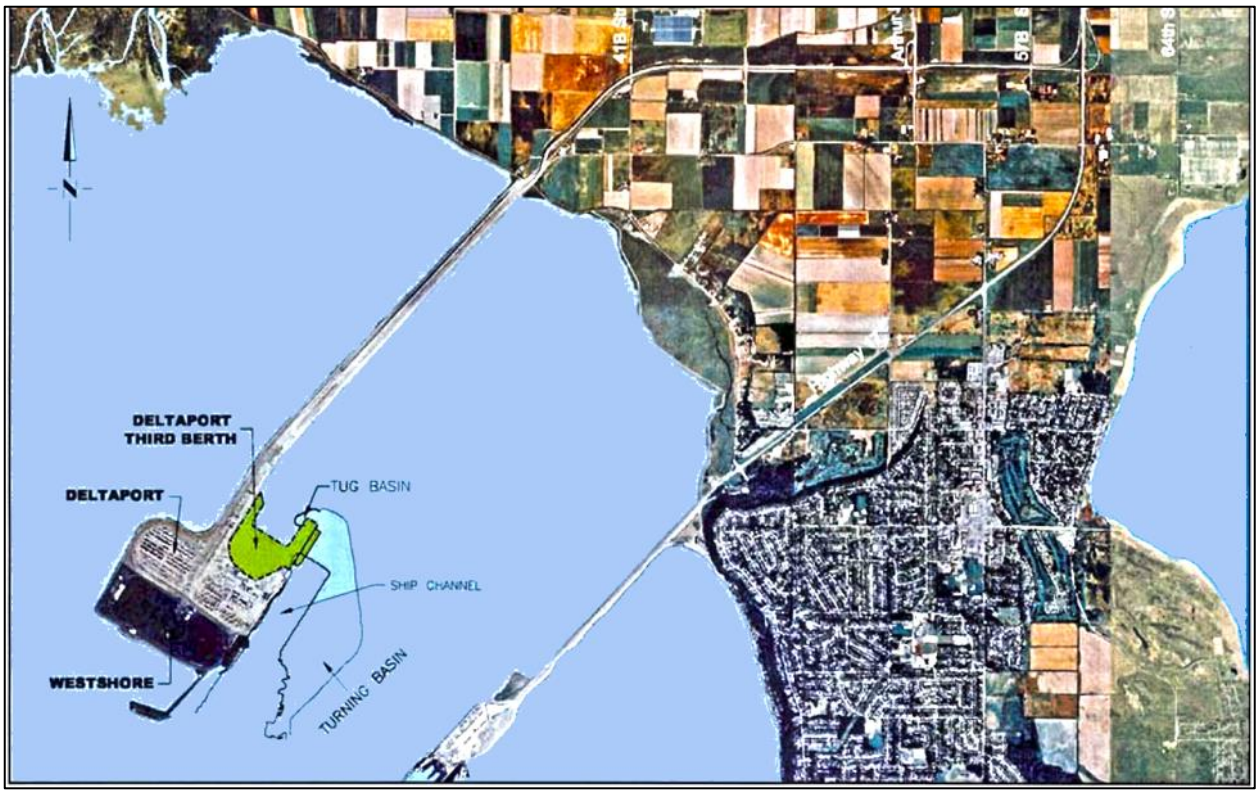
> **Precautionary principle**: The government's actions to protect the environment and health are guided by the precautionary principle, which states that "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." (Chapter 3)

Environment and Climate Change Canada (ECCC) responsibly administers and enforces RBT2-relevant federal acts, including CEPA and the Migratory Birds Convention Act. As the panel of ECCC scientists for RBT2 have made known for years, the RBT2 proposal does ***NOT*** satisfy the *precautionary principle* and other requirements. Most prominently, RBT2 still threatens serious irreversible damage to *Western Sandpipers*, Roberts Bank's annual Pacific Flyway guests.

All along, the Vancouver Fraser Port Authority (VFPA) could have known the threats would logically disqualify RBT2 from approval by the ECCC Minister and Cabinet. Responsive project planning would have generated redesign and/or a pilot project to try to foster on-site mitigation—with a working prototype, validated by ECCC's scientific panel ***before*** any RBT2 approval.

For at least 18 years, ECCC has kept red-flagging the RBT2 threats, but the RBT2 Proponent has ***NOT*** implemented or supported a suitable pilot project or redesign. It has even bypassed ECCC input that would help both the species and the RBT2 plan. As well, VFPA has acted with the RBT2 Review Panel of the Impact Assessment Agency of Canada as though VFPA is superior to the ECCC. The approach has now played out in detailed conditions about how VFPA might take action for the Western Sandpipers ***after it's too late*** *to prevent or reverse the damage*.

If that kind of thinking prevails, the Western Sandpiper *will be a tragic instance and symbol of RBT2 degradation*. But Canada can take a firm step to end the threat of irreversible damage and prevent degradation: ***stop RBT2***. That's no loss, except to the RBT2 Proponent. *The alternatives to RBT2 are friendly to (a) the environment and (b) climate change.* And good business.



RBT2 Proponent images.

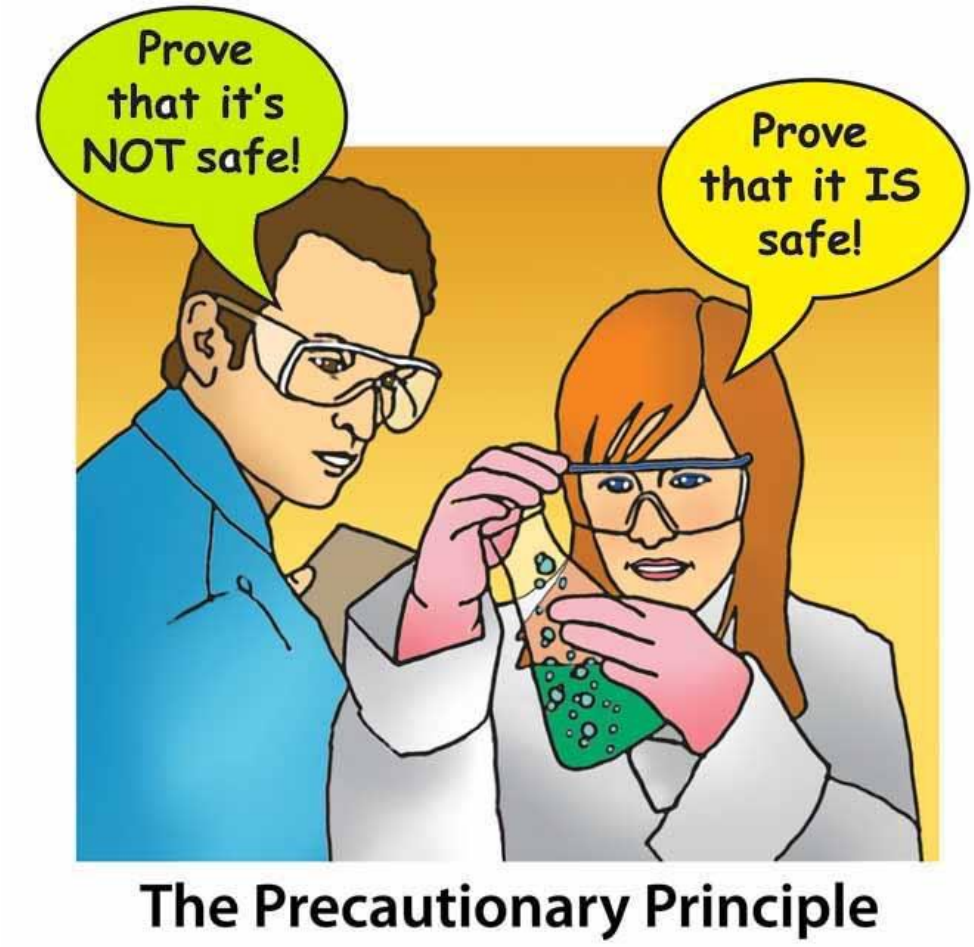
Let's get our bearings. The top image shows the Roberts Bank terminals: the Deltaport container terminal and Westshore coal terminal. It includes an artist's rendition of the proposed RBT2. In the lower image, BC Ferries' Tsawwassen terminal, north of the U.S. border, is also visible. The residential area, which is Tsawwassen, is located on a peninsula that becomes Point Roberts, WA, south of the image area. In the bottom left corner, Deltaport Berth 4 (DP4), an alternative to RBT2, could basically slot in behind the "Deltaport Third Berth" area in green.

Topic B: Contrasting RBT2 perspectives

Roberts Bank Terminal 2 (RBT2) threatens to irreversibly damage the Fraser Estuary and set back Canada's environmental responsibility, climate action and more. Here's the status quo:

- Fortunately, ECCC has responsibly, diplomatically and firmly identified dangers of RBT2, including the species-level threats to the Western Sandpipers.
- Unfortunately, RBT2 is proposed by a federal crown entity with little accountability to government.
- Unfortunately, Proponent Vancouver Fraser Port Authority (VFPA) historically gets what it wants.
- Unfortunately, there are systemic shortcomings that enable the RBT2 Proponent to resist input.
- Fortunately, we as a conservation society want to help, sharing sometimes-unique insights.
- Fortunately, we're just one of many vigilant groups and individuals contributing help.
- Fortunately, if we're heeded, informed federal action can and will conserve the future.

In these comments, we are focused on a key aspect of the Proponent's RBT2 campaign—disregard for the Western Sandpipers. In *our* perspective, they are guests we host, mainly on their northbound Pacific Flyway trip, unsuspecting of the serious RBT2 threats to their species. Many of them need to re-energize with us in order to reach their Arctic breeding grounds.



Also, RBT2 would mar Canada's integrity as a partner in the Migratory Birds Convention. RBT2 would weaken it despite the current U.S. Administration's collaborative action to bolster its strength.

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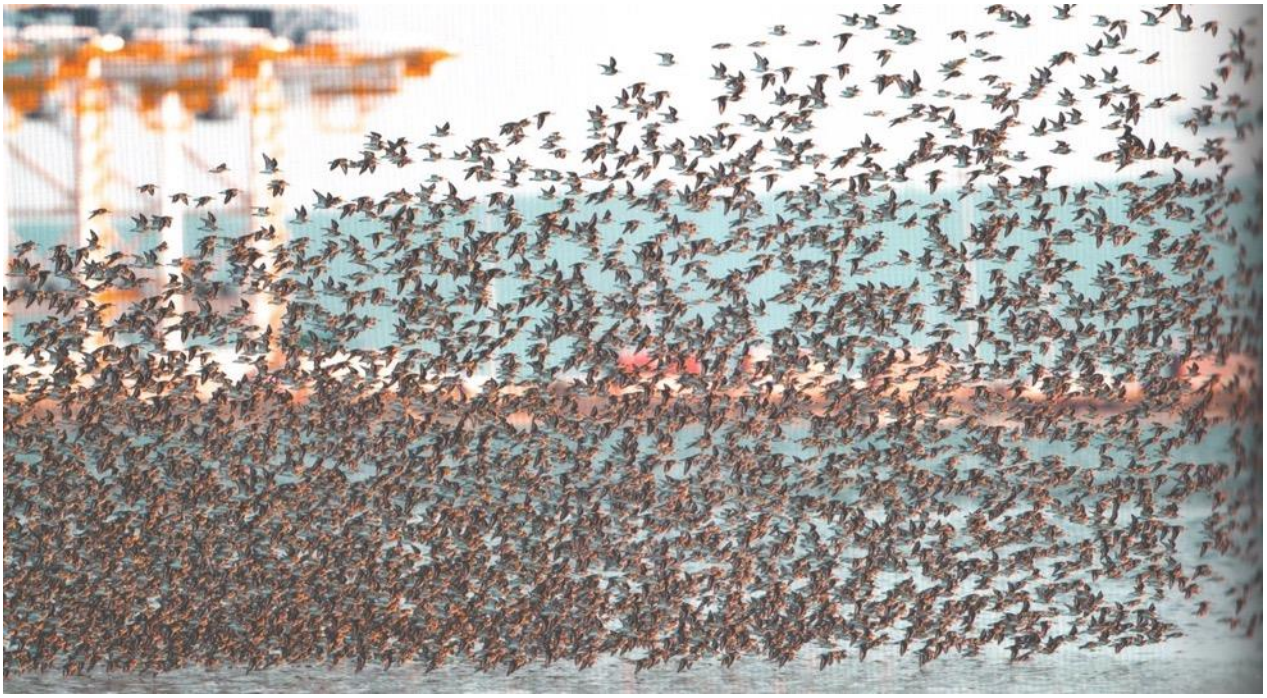
For context for the Western Sandpiper issue, our comments include related topics such as the *precautionary principle* (previous page). The ECCC scientists have insisted on respecting that standard, usually by implication. We will describe their steadfast determination.



Many constructive comments to the Impact Assessment Agency Canada (IAAC) are hopeful that port ecosystems and economics *can do well together*. Like them, these two Roberts Bank photos—from *The Salish Sea*—convey hope. At top, a flock of shorebirds rises near a container-loading platform.

Above, the Fraser River Estuary jets out as a plume of oxygen-rich water, 2–10 m thick. It meets Juan de Fuca Strait seawater to mix into the Salish Sea as a larger estuary, a highly productive ecosystem.

One effect can be just-right conditions for our Sandpipers' grazing area, northwest of the Deltaport causeway in the Salish Sea, visible from space. To catch the spirit of the Sea, join Joseph Gaydos, PhD, co-author of the *Salish Sea* book, as he weaves his *Extraordinary Tales from the Salish Sea.* The 32-minute video flies by. The plume part, in Dr. Gaydos's entertaining explaining, is at 10:30.

What is the Salish Sea?

Sheltered from Pacific storms by Vancouver Island and the Olympic Peninsula, the Salish Sea stretches from Campbell River, BC, to Olympia, Washington. It has three great arms—the Strait of Georgia in the north, Puget Sound in the south, and the Strait of Juan de Fuca connecting them to the open Pacific Ocean. The inland sea is a single body of life, full of extraordinary wild neighbours.

Roberts Bank borders the Salish Sea. The map is from the *Our Salish Sea* website, courtesy of Bob Turner, video-diarist of the Salish Sea. He is a long-time resident and former mayor of Bowen Island, Howe Sound, Salish Sea, BC.

Topic C: Persistent ECCC clarity re risk

The ECCC scientists have been consistently clear about the species-level threats of irreversible damage to the Western Sandpipers the RBT2 Proponent could avoid by *adapting* the terminal design. As an example, we refer to ECCC's response to the RBT2 Review Panel dated February 12, 2018:

> ECCC maintains that there is insufficient science-based information to support the Proponent's finding that the Project would not adversely impact intertidal biofilm and consequently migratory shorebirds in general and the Western Sandpiper species in particular. ECCC characterizes the Project's residual adverse impacts on biofilm due to predicted changes in salinity as potentially high in magnitude, permanent, irreversible, and continuous. ECCC's confidence in the EIS's predictions is characterized as low. In particular, impacts to biofilm could potentially implicate the long-term viability of Western Sandpipers as a species. ECCC similarly characterizes impacts to Western Sandpipers as potentially high in magnitude, permanent, irreversible, and continuous. (p. 14)

That ECCC response goes on to point out that ECCC and the Department of Fisheries had long ago discussed the matter with the RBT2 Proponent, whose Environmental Impact Statement (EIS) mentions it. However, the EIS has continued to *ignore* the ECCC advice that the Proponent should have brought into its plans at an early stage, *2003–04* as we've highlighted in **turquoise**. (We've also emphasized in yellow.)

> The EIS briefly describes discussions between the Proponent, the Department of Fisheries and Oceans and ECCC, occurring in 2003 and 2004, regarding historical options for the Project. At that time, ECCC recommended geomorphological and related studies be completed to inform potential risks associated with each option on intertidal flats supporting lipid-rich biofilm. While geomorphological studies were undertaken, the Proponent has nonetheless decided upon a Project configuration that would result in permanent changes to key abiotic factors, including salinity. ECCC continues to recommend that the Proponent choose a terminal configuration that, from a geomorphological perspective, would avoid such changes on Roberts Bank given the risks that would be incurred to biofilm and to the shorebird species, in particular Western Sandpipers. (p. 14)

ECCC then *reiterates* that the Proponent needs to adapt the design of the proposed Terminal 2 to reduce or eliminate the threats to the Sandpipers and biodiversity. ECCC, as we've highlighted in yellow, was firm and collaborative. The Proponent's response, glimpsed in this selected example, could even be passive resistance, since *the Proponent has not acted to heed the ECCC advice*.

Tiny **Western Sandpipers** typically weigh less than an ounce.
Due to a sharp drop in numbers, they are a **Species of High Concern**.

Topic D: The lawful and vital ECCC roles

ECCC's clarity about its responsibility, expertise and collegial roles with RBT2 goes back years—including to June 23, 2016, when ECCC wrote to the RBT2 panel to describe its role in a concise letter with thorough appendixes. The effect is to convey that ECCC is ready to share thorough expertise that spans a range of time and fields. The letter brings in the Western Sandpipers, one of ECCC's areas of expertise, in an introductory way, including this:

> The Fraser River Estuary/Delta is a critical migratory bird stopover on the Pacific Flyway. It reflects a diversity of habitats including, for example: saline and brackish marshes; inter-tidal mudflat, sandflat, biomat, and biofilm; intertidal and subtidal eelgrass beds; floodplain forests; hedgerows; upland freshwater wetlands; and agricultural crops and old field set-asides. It is an area of international significance due to a combination of interconnected marine, estuarine, freshwater, and agricultural habitats. Unique biological, physical, and chemical processes maintain ecosystem function in and around these habitats. The importance of this estuarine-deltaic complex and the feeding and roosting opportunities it provides is well documented. The nature, extent, and import of some trophic-levels interactions between primary producers and higher taxonomic level species are only now becoming better understood through on-going scientific research.

Reading between the lines, we think ECCC was encouraging the panel to respect its expertise and responsibility so they could succeed together with mutual respect.

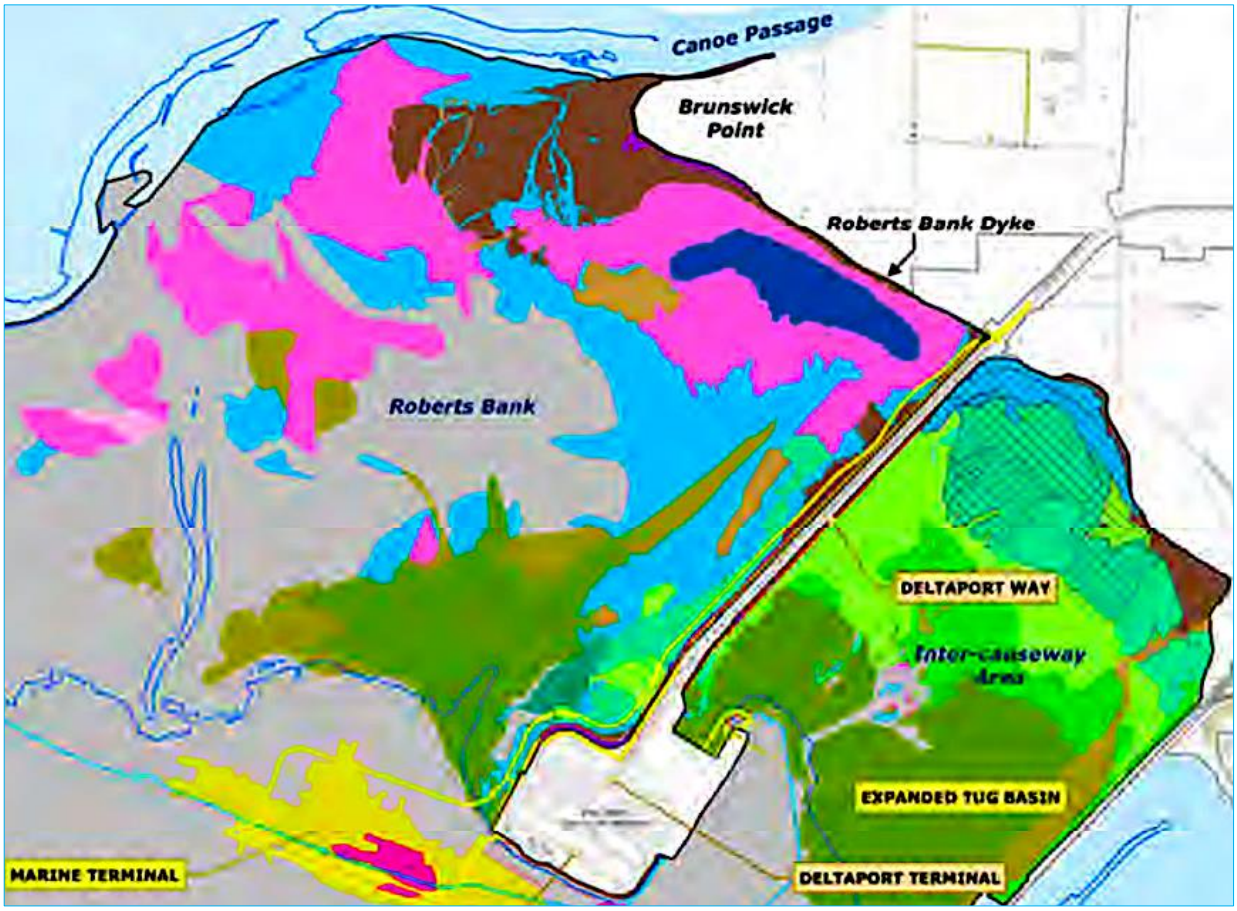
ECCC is more assertive in the "Environment and Climate Change Canada Written Submission" to the RBT2 Project Public Hearing" (April 15, with May 1, 2019 update). Early on (pages 7 and 8 of 114 pages), ECCC expresses its "Mandate, Roles and Responsibilities." They include administration and enforcement of the Canadian Environmental Protection Act, Migratory Birds Convention Act and Species at Risk Act, which are all relevant to the Western Sandpipers.

Relevantly too, ECCC systematically reviews "Biofilm and Shorebirds" (pp. 29–39). ECCC:

1. Begins with extensive context.
2. Explains the high importance in the environmental assessment.
3. Analyzes the RBT2 Proponent's deficient conclusions.
4. Provides ECCC conclusions that often contrast with the Proponent's.
5. Continues to provide expert information that needs to be heeded.
6. Evaluates the Proponent's "mitigation measures," predicting how ineffective they would be.
7. Dismisses the Proponent's "follow-up" programs" (useless for what's ***not*** *mitigable*).
8. Advises again that *only a project redesign could avoid unmitigable harm*.
9. Summarizes the criteria in a clear table.
10. Documents its input, including with 37 references.

The ECCC scientists—engaged in their lawful roles—provide a vital service. Besides being fair to the scientists, supporting their science would help rescue the Fraser River Estuary and help save Earth.

As our 2016 ECCC blockquote on the previous page conveys, the **Roberts Bank** area that's of greatest concern for Western Sandpipers includes a diversity of habitats. In the following RBT2 proposal map, the biofilm is in **hot magenta** and the intertidal marsh is in **milk chocolate**.



When Western Sandpipers graze on biofilm, fatty acids known as DHA and EPA are crucial nutrients that improve migration efficiency and reproduction. As climate warms, nature's production of the fatty acids falls. At the current rate of warming, it would be cut in half by the end of the century. It's a sort of hidden factor ECCC guarded against, as a precaution, when advising the RBT2 Panel:

> ECCC was of the view that in addition to the direct loss of 2.5 ha of biofilm habitat from the widening of the causeway, indirect effects would affect up to 558 ha of biofilm habitat.
>
> ECCC was of the opinion that offsetting high quality biofilm habitat was not feasible.
>
> ECCC advised that only a project redesign would avoid adverse effects on shorebirds as a result of changes in biofilm fatty acid production. (*RBT2 Panel Report*, p. 148)

The long-chain polyunsaturated fatty acid production at Roberts Bank depends on diatoms in biofilm. Patricia Baird, PhD, of SFU has brilliantly informed IAAC of the vital effects for the entire food web. Mammals need the fatty acids too but synthesize them indirectly, usually by eating fish. Since it enables mammal brains to develop, DHA has special value at the human fetal and infant stages.

Underlying science for our discussion of fatty acids appears in a revealing 2019 research paper, "Projected declines in global DHA availability for human consumption as a result of global warming." It concludes that solutions are needed "to slow the rate of DHA loss for future human generations and ecosystems." One part of the solutions is to stop RBT2.

Topic E: RBT2 Proponent's ploy with ECCC science

After the May 1, 2019 closing date for comments, the RBT2 panel explained it had received a "Response to Biofilm and Shorebirds" document from the RBT2 Proponent on May 8, and "The Proponent stated that their intent in providing this response is to support further dialogue at the public hearing," After obtaining that special treatment, the Proponent "respectfully" wrote:

> As stated in the introduction, the VFPA respectfully disagrees with numerous aspects of ECCC's recent submission and finds their numerous mischaracterisations, errors, selective and mis-citation of relevant literature, as well as inconsistencies, concerning. [*Sic*]*
> The VFPA hopes the above clarification provides the Panel with a clear understanding of the current science and potential Project effects on biofilm and shorebirds. (p. 13)

In the same document, the Proponent also clarified its confidence in "a negligible non-measurable residual effect to western sandpiper and other shorebird populations with the Project in place." It then referred to two new Proponent-proposed studies in CEAR Document #1683, Appendixes C14 and C15, which we found on PDF pages 64 and 65. The methods feature "before" and "after" samples to determine whether prey distribution (in effect, biofilm nutrition) and salinity would be as good after RBT2 construction as before it. Of course, no one is likely to do the redundant "after" part if RBT2 gets *irreversibly* built. The findings would just ***pointlessly*** show who was right.

It would be as useful as medieval theologians' debates about how many angels can dance on the head of a pin. If those debates really happened, common-sense medievals would have felt like screaming "Who the hell cares? It's SOS time, you pedantic pinheads!" (Note: The SOS in the graphic stands for **S**ave **O**ur **S**pecies, not Souls, but the principle is timelessly relevant.)

Some "experts" make a living composing evidence for predetermined conclusions. Whether or not that applies to this situation, the ridiculous aspect of it is **NOT** the ECCC science. *After deriding scientists who had done well, the Proponent demonstrated its own rebuttal's lack of substance.*

* Re the [*Sic*]: We have ***NOT*** accidentally left out the end of a sentence. The Proponent's "clarification" about ECCC "errors" *does* awkwardly end with "concerning." The awkward writing could be overlooked if it were not also disparaging and condescending, in contrast to the professional tone of ECCC's scientific panel.

Topic F: ECCC's professional response

For its Closing Remarks for Roberts Bank Terminal 2 Project (August 26, 2019, pp. 15–18), ECCC teamed with Transport Canada (TC), Fisheries and Oceans Canada (DFO) and the Canadian Coast Guard (CCG), "collectively the Federal Authorities." Since they have overlapping and adjoining responsibilities, that appeared to strengthen ECCC's authority even further. After an introduction, ECCC addressed the RBT2 Proponent's late input as follows:

Absence of mitigation options for Roberts Bank

Based on ECCC's review of the current scientific literature, including the studies undertaken by the Proponent, ECCC remains concerned that there are no practical mitigation measures available to address the potential large-scale impacts of changes to biofilm at Roberts Bank. There are no alternate sites for the construction of a large mudflat on the Fraser River estuary. All alternate sites of an equivalent size within the Fraser River estuary and delta (Sturgeon Banks and Boundary Bay) have sandier substrates and/or different hydrological regimes, and as such are not likely to be able to provide alternative sources of nutrients that could compensate for the loss or degradation of biofilm at Roberts Bank.

The Proponent's response to ECCC's written submission (CEAR 1705) cited the presence of biofilm at restored sites in Japan and California. However, the examples outlined by the Proponent do not provide evidence of the creation of new mudflats with equivalent functional values to Roberts Bank, particularly with respect to the biofilm community. None of the studies cited by the Proponent in California or Japan assessed the ability of restored habitats to provide the fatty acids (particularly polyunsaturated fatty acids) necessary for the northward migration of the Western Sandpipers and other shorebirds. For example, Kelly and Condeso (2017)[1] explicitly state that they 'did not investigate this possible factor [biofilm] in shorebird responses to tidal restoration', although this study was cited by the Proponent as evidence of biofilm use at restored sites. In addition, Hsu et al. (2011)[2] mapped chlorophyll-a (a surrogate measure of biofilm biomass) following a large-scale restoration of salt ponds in South San Francisco Bay. However, that study found that the high-density biofilm was primarily located in undisturbed sloughs and channels adjacent to the restored ponds, and not in 'restored' habitat.

As previously discussed in ECCC's written submission (CEAR 1637), ECCC is of the view that it is not currently possible to recreate a mudflat with similar sediment characteristics and biofilm fatty acid productivity as the Roberts Bank area.

ECCC continues to conclude that predicted Project-induced changes to Roberts Bank constitute an unmitigable species-level risk to Western Sandpipers, and shorebirds more generally, and that therefore the only way to be confident of avoiding the impacts on biofilm and shorebirds from these predicted geomorphological processes is with a Project redesign.

[1] Kelly, J. P., & Condeso, T. E. (2017). Tidal marsh restoration stimulates the growth of winter shorebird populations in a temperate estuary. *Restoration Ecology*, 25(4), 640-649.
[2] Hsu, W. C., Kuss, A., Ketron, T., Nguyen, A., Remar, A., Newcomer, M., & Angela Detweiler, M. S. (2011). Hyperspectral biofilm classification analysis for carrying capacity of migratory birds in the South Bay salt ponds. http://www.asprs.org/pecora18/proceedings/Hsu.pdf

As one can see, ECCC, along with the other Federal Authorities, maintained its professional tone while reiterating what ECCC had explained to VFPA since 2003–04. In the second paragraph above, ECCC delineated how *VFPA had mistakenly based its conclusions on irrelevant evidence*. Especially in view of the ***precautionary principle***, the only way for VFPA to continue RBT2 without serious species-level risk to the Western Sandpipers was with project redesign. (Note: The excerpts are from pp. 17–18 of the source, an access-to-information release.)

Topic G: Feds withheld final comments?

Environment Canada warned port expansion puts shorebirds at risk, but feds withheld final comments from review panel

By Natasha Bulowski | News, Politics, Ottawa Insider | February 1st 2022

A damning document from Environment Canada that warned of disastrous environmental impacts was withheld from a key stage of an environmental assessment for a proposed Metro Vancouver shipping terminal.

Scientists who authored the report say the project threatens local wildlife, particularly the western sandpiper — a species of shorebird unique to the West Coast of North America that feeds in the nutrient-rich Fraser Delta during migration.

During the environmental assessment, Environment Canada scientists concluded: "Project-induced changes to Roberts Bank constitute an unmitigable species-level risk to western sandpipers, and shorebirds more generally," and the only way to avoid the impacts "is with a project redesign."

In a signed letter, Wilkinson responded that Environment and Climate Change Canada "explored the option" of submitting closing remarks, but: "Upon review, it was determined that the expert input already tabled with the review panel stood for itself, and that closing remarks would not alter or add value to the Department's analyses, conclusions and recommendations already on the record."

A western sandpiper feeds on biofilm at Roberts Bank, B.C.
Photo by Jason Puddifoot.

Thanks to the *National Observer*, we know that the letter from the ECCC scientists and/or the group of federal authorities did NOT reach the RBT2 Review Panel.

Whoever the "feds" may be, the ECCC final input got diverted on its way to the panel. After years of RBT2 Review in seeming good faith, someone(s) with power had hindered the process. Such a loss in so many ways!

To learn more about it, see the full *National Observer* article that is abridged at left. The Wilkinson cited is Jonathan Wilkinson, who was federal Minister of Environment and Climate Change. Since then, he has been replaced as minister for ECCC by the Honourable Steven Guilbeault.

Much credit for the eventual transparency is due to *Roger Emsley*. The article introduces him: "Roger Emsley, executive director of Against Port Expansion, got his hands on Environment Canada's closing remarks through an access-to-information request that took roughly 18 months to be answered. He has since posted it to the Impact Assessment Agency's public comment section."

We hope the RBT2 Review Panel's successors will read it and act on it.

Topic H: Heeding the credible scientists

Unfortunately, Minister Jonathan Wilkinson had told the *National Observer* this:

> "Upon review, it was determined that the expert input already tabled with the review panel stood for itself, and that closing remarks would not alter or add value to the Department's analyses, conclusions and recommendations already on the record."

Was he steering the process to favour VFPA? If not, in view of the VFPA challenge to ECCC science, it was crucial that ECCC—*via its Aug. 26th 2019 letter*—be allowed to guide the RBT2 panel like this:

1. Firmly NOT seem to tacitly agree with the content of VFPA's post-deadline onslaught.
2. Restate why the VFPA mitigation ideas are NOT doable.
3. Explain how VFPA's irrelevant examples MISTOOK what the related studies actually studied.

Unfortunately, too, the RBT2 panel seemed to give little attention to the wealth of insight in the public comments, including from environmental groups. They (a) show less trust in VFPA than in ECCC and (b) show confidence in ECCC science. Also, the independent experts are typically congruent with the ECCC scientists. For example, Professor Peter G. Beninger was clear to the *National Observer*:

a. That VFPA's downplaying of biofilm impacts is NOT scientific evidence.
b. That VFPA has been making basic errors.
c. That "any truly knowledgeable scientist" would agree.

Unfortunately, as well, the RBT2 panel's valuing of VFPA's self-affirming science and devaluing of ECCC's independent science spread to the *RBT2 Panel Report*. Its analysis even gives credence like this: "The Proponent predicted that, with mitigation, the Project would result in a negligible adverse effect on Western sandpiper and Pacific dunlin." But *the Proponent has failed to demonstrate effective mitigation*! And they've had *since 2003* to act! The Proponent, VFPA, has given ECCC no reason to update its warning about the risks of RBT2 (our Topic C). Judging from the way the panel's analysis ends (on page 243), this is their key factor:

> There exists considerable uncertainty around the possibility that loss of productive biofilm habitat could be mitigated by the large-scale re-creation of biofilm habitat capable of supporting shorebirds, including appropriate bottom sediment characteristics and salinity conditions. [That factor should trigger the *precautionary principle* (Topic A).]

Fortunately, the RBT2 Review Panel also states that "The protected status of the Western sandpiper under the Migratory Birds Convention Act, 1994, in the context of an apparent steep population decline mandates a highly precautionary approach in relation to the Project" (p. 242). Yes! In that statement, **the panel actually mandates that the *precautionary principle* be applied.**

The panel doesn't *explicitly* repeat it, but ECCC has reiterated a specific aspect of its RBT2-related precautionary approach since 2004: that the RBT2 Proponent use a terminal configuration that avoids the causes of risk. It's feasible to implement very well, even at lower cost, as Global Container Terminals (GCT) has shown in its Deltaport Berth 4 design. We ask the Minister of Environment and Climate Change and/or Cabinet to apply the mandate: stop or suspend obsolete RBT2—in favour of DP4 (if it's needed), subject to a valid DP4 approval process. *Note: Topics that follow fill this out.*

Topic I: Are RBT2's severely effects justified?

On the RBT2 Public Notice webpage, IAAC informs the public about a final step:
"If the Minister decides the Project is likely to cause significant adverse environmental effects, the decision on whether the effects are justified will be referred to the Governor General in Council."

To reach its decision, we imagine Cabinet might ask questions like these:

1. Would West Coast ports still meet container-shipping demand if RBT2 is not built?
2. Can RBT2 be rethought to pre-empt unmitigable irreversible risk to the Western Sandpipers?
3. Is RBT2 the best option for the Canadian commitment to positive climate action?

We say #1 "Yes," #2 "Yes" and #3 "No way!" Details: #1 below and Topic J; #2 Topic L,; #3 Topic N.

The status quo: Ninety percent of the container volume reaching Deltaport is headed beyond the Lower Mainland, as VFPA's Cliff Stewart conveyed (p. 6). Container business is increasing much more slowly in Vancouver than in ***Prince Rupert***, with its location that enables goods to travel efficiently from Asia to most of the USA and Canada. The Boundary Bay Conservation Committee (BBCC) shows in its IAAC RBT2 letters of September 2018 and January 2022 that "Even the lowest-case forecasts of container growth at the Port of Vancouver are not being realized" (2022, p. 51).

Meanwhile, capacity is growing, with many millions of *new* or *proposed* TEUs (1 container = 2 TEUs):

- At Prince Rupert, the Fairview Expansion is adding 1.8 million TEUs. As well, DP World has announced a new terminal for another 2 million TEUs or more "to address Canada's trade capacity needs over the next decade while reducing the risk of future supply disruptions."
- At Port Alberni, the collaborative Port Alberni Transhipment Hub (PATH) envisions a phased-in 5 million TEUs, with feeder barge service to end-users' West Coast locations.
- At Burrard Inlet, the Centerm Expansion is adding 0.6 million TEUs, while the Vanterm Expansion will add 0.2 million TEUs of capability by upgrading equipment.
- At Roberts Bank, GCT has similarly increased its Deltaport capacity—by 0.6 million TEUs. GCT has also applied to add 2 million TEUs there via DP4 (Deltaport Berth 4).
- *The total is at least **12.2** million TEUs as alternatives for the 2.4 million TEUs of RBT2.*

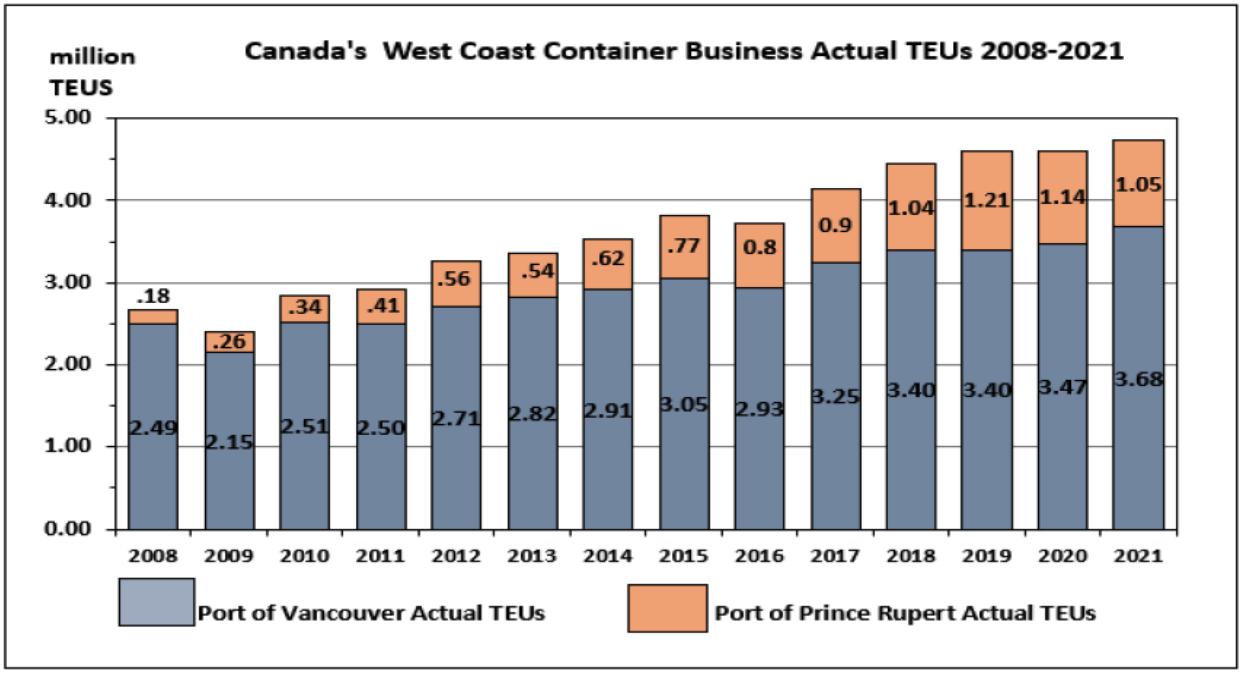
In November 2018, after the Transport Minister sought input to the Ports Modernization Review, Richmond Council responded: "Create a Western Canada Port Agency to amalgamate the Vancouver Fraser Port Authority and the Prince Rupert Port Authority, to collaborate and develop a Western Canada Strategy that utilizes marine and inland ports"(Minutes, pp. 3–8). WCPA is like the Pacific Gateway vision, from an expert report to then-Minister David Emerson. It would have evaluated RBT2 in a West Coast context, and it still makes sense.

Later topics will delve into Prince Rupert expansion and Deltaport Berth 4 (DP4). Please see our April 2019 letter to the RBT2 panel for our analysis of PATH and the Western Canada Port Agency. Coincidentally, we found that the Port Alberni Port Authority (PAPA) had advocated the "Pacific Port Authority" (PPA)—essentially WCPA and David Emerson's Pacific Gateway and Corridor Initiative.

Notes: 1. Ex- MP *Joe Peschisolido* (Liberal Ports Caucus Chair) conceived WCPA with Richmond and us. 2. Transport Canada's 2019-on West Coast Supply Chain Visibility Program is WCPA-like, a start.

Topic J: Divining the West Coast TEU-capacity needs

From this chart in the Boundary Bay Conservation Committee's recent RBT2 comments to IAAC (January 31, 2022, p. 52), we see the average annual growth in container business works out to Vancouver **2**.83% and Prince Rupert **13.**425%. Prince Rupert grew *much* faster than Vancouver!



Roger Emsley, Executive Director of the Against Port Expansion Community Group recently sent out an update linked to a news release from the Prince Rupert Port Authority. Mr. Emsley wrote:

> Prince Rupert Port Authority has now formally announced its second container terminal in Prince Rupert. With the Fairview Terminal capacity of 1.8 mill TEUs by 2024 and now a further 2 mill TEU capacity at its second terminal, PR will have a total capacity of 3.8 mill TEU. Add this to the Vancouver area capacity of 5.4 mill TEUs and West Coast Canada will have 9.2 mill total capacity. That is sufficient for Canada's trading needs for many decades to come without either RBT2 or DP4.

A recent Canadian Chamber of Commerce comment to the IAAC's DP4 panel (January 7, 2022, p. 2) endorses DP4 and provides the RBT2 Proponent's current forecast. It's copied-and-pasted below:

> Container demand on Canada's west coast is expected to grow at a rate of 2.3 per cent per annum until 2035, with continued growth of 1.1 per cent per annum after 2035, based on the latest forecasts commissioned by the port authority. It is critical that Canada take a long-term approach to planning to ensure that our ports are equipped to accommodate future growth.

The 2021 total for the West Coast ports—Vancouver and Prince Rupert—was 4.73 million TEUs (3.68 + 1.05 in the chart's 2021 column). At the stated average of 2.3% annual growth, the total would reach 6.5 million TEUs in 2035. At the stated 1.1% annually after that, the total would reach 9.2 million TEUs in 2067. *So the VFPA forecast indicates the current and announced container capacity is enough.*

Still, there are stated intentions to add West Coast container capacity (not including RBT2). In topics K–M, we will consider how such expansion can happen relatively well when needed.

The Port of **Prince Rupert** is North America's **closest port to Asia by up to three days sailing**. It's 36 hours closer to Shanghai than Vancouver and over 68 hours closer than Los Angeles. So says the Prince Rupert Port Authority (PRPA).

Topic K: Prince Rupert—*part of* a set of solutions

A tale of three cities:

- In Topic I, we mentioned Richmond's 2018 call for a Western Canada Port Agency, with a reduced role for the Vancouver Fraser Port Authority (VFPA). In Richmond council minutes, the description of VFPA's difficult behaviour is extensive (pages 5–8). It includes VFPA buying a sizable fertile Richmond farm to use it as industrial land for port expansion, despite it being in the Agricultural Land Reserve (ALR). That's not in keeping with Richmond values.
- In Delta in February 2022, Delta Council unanimously asked Mr. Trudeau to deny RBT2 approval.
- Prince Rupert is proud of its port, including the rapid growth in its container business. That's part of its vision of "Becoming a Global Community." Since the Prince Rupert Port Authority (PRPA) has foresight, its container capacity keeps growing, with 4 million TEUs in sight and potential for more. And the rail route to Winnipeg (and centres before and beyond) beats Vancouver's.

We like the PRPA values too, so we'll share some here (below and next page, from the PRPA website).

INNOVATION

Finding new solutions to old problems has always been what sets us apart. We are committed to continuous improvement in the pursuit of excellence through creativity and ingenuity, and effectively manage the risk that may come with innovation.

TEAMWORK

Our individual talents allow us to reach great heights when we join forces with our coworkers, customers, and community to effectively solve some of the most pressing opportunities and challenges facing international trade together, building a better Canada by growing trade.

PRPA works ***with*** its terminal operator. PRPA states:

> Current expansion and logistics projects are positioning the existing Fairview Terminal as a fully integrated intermodal system that will provide unparalleled speed, efficiency, and competitiveness for Canadian shippers.
>
> Adding significant new capacity through a second terminal will increase industry access to faster service, wider reach, and the consistent reliability of the Port of Prince Rupert.
>
> The projects' development will maximize the value of strategic Prince Rupert attributes such as the shortest marine link to key markets, direct, safe, uncongested marine approaches and harbour, available industrial land with room to expand critical logistics, transloading and warehousing activities, and North American access via CN's Class 1 northern mainline, which has significant capacity to grow.

Safe Access to Shipping Lanes

Major marine risks are greatly mitigated by the ideal natural features of our harbour. The Port of Prince Rupert has the deepest harbour in North America, is ice-free year round, and is able to accommodate the largest vessels in the shipping trade.

That fits with Transport Canada's submission to the RBT2 Panel (February 9, 2022). It states:

> To meet expected future demand, the Vancouver Fraser Port Authority has approved several expansions to existing terminals, including additional capacity at the existing Vanterm and Centerm terminals that will be completed in 2022. However, further expansion is reaching natural limits due to shortages of industrial land in the Vancouver region. (p. 8, highlighting added)

The reality: Delta, Richmond and Transport Canada say VFPA and RBT2 have problems.

The city, port and terminals of Prince Rupert say, "We'd love to be part of the solutions!"

Topic L: How Deltaport expansion got redesigned with DP4

Since 2003–04, as we've shown since Topic C, the scientists of Environment Canada (now ECCC) have repeatedly urged the RBT2 Proponent to redesign RBT2. Their key criterion for the Proponent, the Vancouver Fraser Port Authority (VFPA), was that the design pre-empt the unmitigable, irreversible and unacceptable severe threat that RBT2 posed for the Western Sandpipers.

There is a design that would do that. The proponent has known about it for years but has kept resisting it.

To us, it seems natural. It looks as though a slot has been waiting for an addition to be slotted-in, much as a Berth 3 addition was slotted into the original two-berth terminal. At right, the photo looks into the waiting slot.

And here's how an addition fits there:

Global Container Terminals (GCT), who operate the three-berth Deltaport terminal, came up with the design that enables the expansion/upgrade DP4 Project. It is mostly on the other side of the Deltaport causeway to almost all the biofilm and the Western Sandpipers' foraging area. Unlike an RBT2-size mass of fill, the compact DP4 can be located as shown with less severe effects. We would like it to be entirely (not just mostly) away from the foraging side of the causeway.

In the image, the berth face is on the upper side of the terminal. In DP4, the face would be extended by 540 m to best serve Ultra Large Container Vessels (ULCVs), which shippers increasingly prefer. GCT would even build DP4 at their own expense. *By making the whole terminal more efficient* (on top of adding a berth), DP4 would increase capacity by 2 million TEUs. With the 0.6 TEUs from GCT's recent improvements to the terminal, GCT's Deltaport expansion would exceed the proposed RBT2's 2.4 million TEUs. (Like the illustrations, the details are from a GCT proposal.)

Topic M: More DP4 grounds for guarded promise

For context: At its growth rate charted in Topic K, Prince Rupert's container business could expand from just over a million TEUs in 2021 to well over 4 million TEUs a decade from now. The Prince Rupert team is ready to handle the bulk of West Coast container growth.

Still, a tenth of the containers arriving at Deltaport stay in the Vancouver area (says VFPA). And, no doubt, a far larger portion than that will keep preferring Vancouver terminals if VFPA works with GCT to keep making Deltaport versatile, such as with DP4 and short sea shipping (video 1:53).

In that context, it's fitting that GCT would add capacity in DP4 phases that match demand—if and when needed. (In comparison, all the fill for RBT2 would get dumped into the estuary at a single early stage. And RBT2's footprint would be 1.2 km^2 larger than DP4's.)

Although the DP4 design pre-empts RBT2's unmitigable and irreversible species-level threat to the Western Sandpipers (among other ecological and climate benefits), DP4 doesn't yet promise a net-positive effect on the Fraser River Estuary ecosystem. But maybe it could! By displacing RBT2, DP4 would stop $3.5 billion from being wasted on RBT2. That's a game changer if the powers-that-be apply the windfall to a new enhanced Fraser River Estuary Management Program (FREMP).

ECCC could then act on the Delta Council request for "a regional environmental assessment of Fraser River Estuary and Salish Sea" and "a long-term environmental plan for the region" (p. 2). For an overview of challenges that FREMP participants would be empowered to face, we recommend Let the Fraser Live, which we helped write a few years ago.

With DP4 (a) proving the folly of RBT2 and (b) blending economy and ecology with FREMP, the UN might eventually designate the Fraser River Estuary as a UNESCO Biosphere Reserve. (See Topic N.) That said, our regard for DP4 potential still depends on the sort of thorough valid environmental assessment that RBT2 should have had.

Topic N: The climate emergency factor

We see that awareness of *climate-change effects* on the natural world—life as we know it—is growing. Our grassroots action includes daily awareness-sharing as the Garden City Conservation Society, especially through our Facebook presence. We highlight what Nature bestows, including in the Fraser River Estuary and the river and sea that meet there. *Saving that is a motive for climate action*.

However, educating about biodiversity in peril from climate change becomes less credible if the powers-that-be allow powerful interests like the autocratic RBT2 Proponent to risk species-level damage *instead of* designing projects like Deltaport expansion in ways that preclude the risk.

As well, the Proponent and other RBT2 enablers do *not* demonstrate awareness of the high cost *in greenhouse gas emissions* to build RBT2. For obvious reasons, its construction would far exceed the toll in GHG emissions (per million TEUs) of the DP4 and Prince Rupert alternatives. That alone should rule out RBT2, since Canada is committed to climate action.

"Spawn," at left, is by Di, Howe Sound artist-environmentalist. Di's painting reflects Howe Sound Biosphere Reserve thinking that melds Conservation with Climate Action and Sustainable Development. "Spawn" shows salmon in literally the big picture of spawning. Anyone can look at "Spawn" and intuitively want to conserve the wonder of the nature-designed ecosystem it celebrates.

Although the Fraser River Estuary is more industrialized than Howe Sound, there are ways Howe Sound too was in woeful shape before its shift to recovery.

For the Estuary, a turn-around will take a new FREMP, cooperatively goal-oriented like the original FREMP, plus further heeding of the Richmond and Delta advice we've cited. As we've suggested before, if there must be Deltaport expansion, DP4 could become a model of best practices.

As our Sandpiper guests show us when they fly back to northern Alaska, a lot can happen with collective action—in tune with nature—for a common goal.

Image courtesy of Art by Di.

Topic O: The "potential conditions"— in case this topic is still useful

Potential conditions under the *Canadian Environmental Assessment Act, 2012*

The Impact Assessment Agency of Canada is contemplating the following potential conditions in relation to the Roberts Bank Terminal 2 Project (the Designated Project) located in British Columbia for recommendation to the Minister of Environment and Climate Change (the Minister) for inclusion in a Decision Statement issued under the *Canadian Environmental Assessment Act, 2012*.

10.1 The Proponent shall carry out the Designated Project in a manner that protects migratory birds and avoids injuring, killing or disturbing migratory birds, destroying or disturbing their nests or eggs, or taking them. In this regard, the Proponent shall take into account Environment and Climate Change Canada's *Avoidance Guidelines* to reduce the risk to migratory birds. The Proponent's actions when carrying out the Designated Project shall be in compliance with the *Migratory Birds Convention Act, 1994*, the *Migratory Birds Regulations* and with the *Species at Risk Act*.

10.2 The Proponent shall document, prior to construction and in consultation with internationally recognized and published experts on biofilm ecology, Indigenous groups, and Environment and Climate Change Canada, methods and best practices to create biofilm habitat, including details about the production of lipids, with specific reference to fatty acids in the Fraser river estuary. The Proponent shall publish a document compiling the results of its research on its website and shall provide it to the Agency prior to construction. The Proponent shall incorporate current knowledge peer-reviewed science in the document and shall update the document at years 2, 5, and 10 following the end of construction based on emerging knowledge and science, including science developed as part of condition 10.14.

If the federal ECCC Minister and Cabinet approve RBT2, there will be pre-set conditions. In the 48 pages of potential RBT2 *conditions*, only the above two conditions are re Western Sandpipers.

They hardly even hint that "the unmitigable species-level risk to Western Sandpipers" exists. In brief:

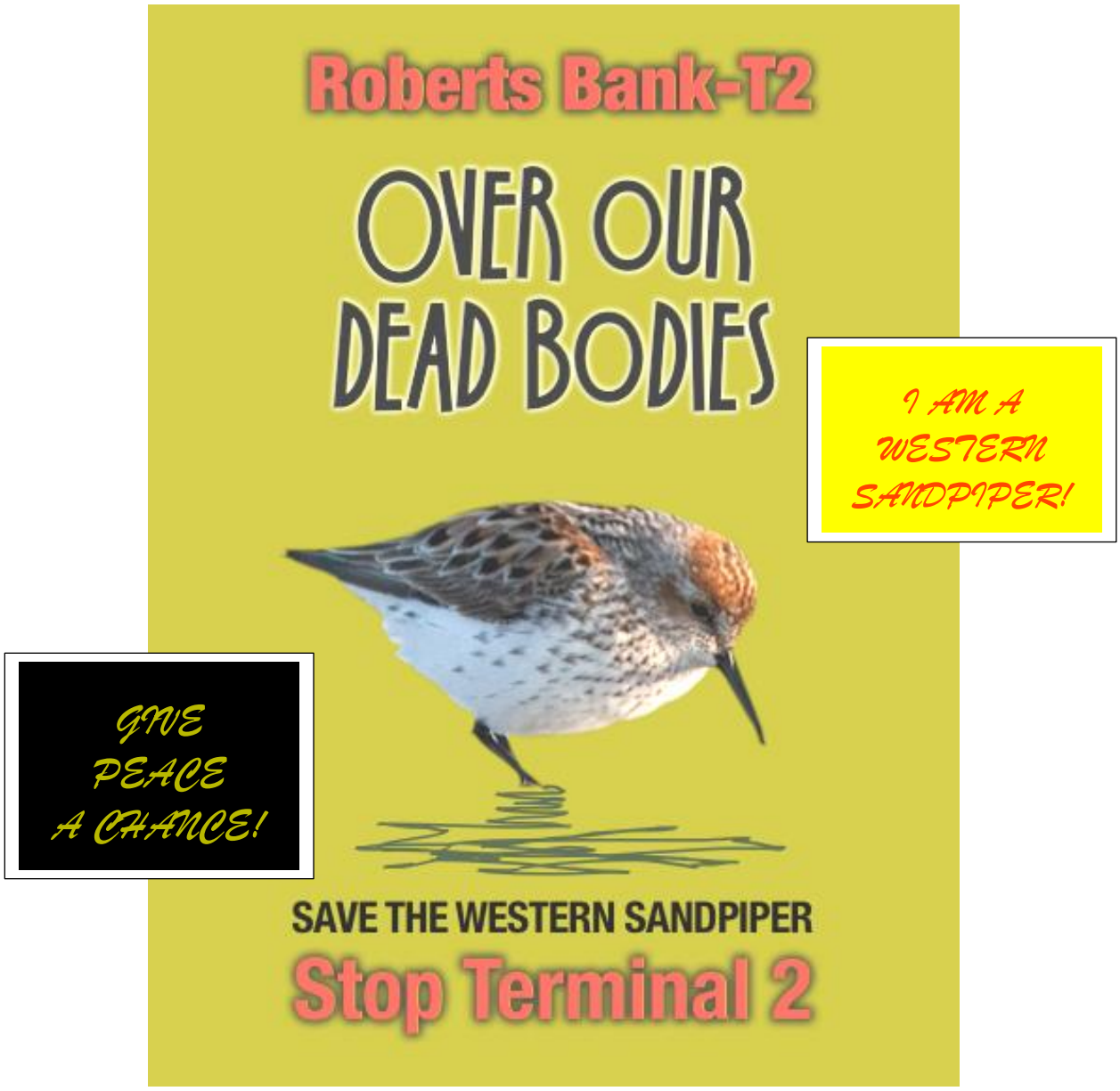
- 10.1 is a condition that the RBT2 Proponent follow Canadian law (as Canadians do anyway).
- 10.2 is a condition to publish, on a VFPA website, current research about biofilm habitat, etc.

*That adds up to **nothing** useful.* In contrast, useful conditions would require measured achievement of a set of standards. In other words, they would require *proven steps and demonstrated results*. Together they would end the serious unmitigable species-level risk to Western Sandpipers. For example, they might require, prior to approval, (a) completion of an ECCC-approved prototype of the set of methods and (b) a bond that's sufficient to ensure the set of methods get implemented well.

Or someone could redesign so the habitat isn't lost, as ECCC has pointed out for at least 18 years and as GCT has meanwhile *done* (via DP4), though with the Proponent opposing instead of heeding.

The weak "potential conditions" re Western Sandpipers epitomize the surreal dearth of validity in the RBT2 assessment. DP4 could offer a new path to validity if DP4 is needed.

Topic P: Final words from our guests



Three last thoughts, with thanks to our scribes, Birds Canada:

- We Western Sandpipers don't all need to stop at Roberts Bank on each trip north, but most of us need to stop here sometime in our lives.
- No one managed to replicate our biofilm grazing area when they had reason to show they could, so we're pretty sure they won't ever do it.
- The headlines feature us, but please also care about Pacific Dunlins and other birds, fish and mammals in our biofilm-related guild. (Even humans.)