

**PORT METRO VANCOUVER
ROBERTS BANK TERMINAL 2 PROJECT
PROJECT DEFINITION CONSULTATION**

**Multi-Stakeholder Meeting 7
October 31, 2012**

Notes from a multi-stakeholder meeting for the proposed Roberts Bank Terminal 2 Project, October 31, 9:00am – 11:00am, at the Morris J. Wosk Centre for Dialogue, Vancouver, BC.

Stakeholders:

Andrew Robinson, Environment Canada
Anne Murray, BC Nature
Chris Hasek-Watt, Smit International
Dave Bedwell, COSCO
David Grigg
Eric Aderneck, Metro Vancouver
Fred Moussette, Canadian Tire
Mike McLellan, Terminal Systems Inc.
Murray Manson, Fisheries and Oceans Canada
Rosanna Lam, Canfor
Ruth Sol, WESTAC
Shelina Sidi, Metro Vancouver
Yuji Honda, Evergreen

Port Metro Vancouver:

Chris Chok, Kirk & Co. Consulting Ltd., Facilitator
Cliff Stewart, Acting Vice-President, Infrastructure Delivery
Rhona Hunter, Acting Director, Infrastructure Development
John Parker-Jervis, Communications Advisor
Taleen Tchakedjian, Executive Assistant
Neil Turner, Senior Environmental Advisor, Container Capacity Improvement Program
Matt Skinner, Kirk & Co. Consulting Ltd., Meeting Recorder

The record notes that the meeting commenced at 9:05am

KEY THEMES:

- Some participants asked questions about Port Metro Vancouver's container forecast, wanting to ensure it accounted for changes to shipping patterns that may occur following the opening of the expanded Panama Canal.
- Some participants were skeptical of whether fish would use the marine refugia within the caissons, stating that they felt that fish would not want to enter a dark, enclosed space.
- Some participants asked about the viability of short-sea-shipping—moving containers from Roberts Bank to other facilities in Metro Vancouver via barges.
- Participants asked about constructing the proposed terminal and its impact on birds, noting that the Vancouver Airport Authority (YVR) was trying to move birds away from the airport, which would push them south towards Roberts Bank. They were concerned that if birds were not able to find habitat at Roberts Bank, it may cause them to move back towards the airport.

(Abbreviations will be used and mean – Q: Question, A: Answer, C: Comment)

1. Welcome and Introductions – Chris Chok

Chris Chok welcomed participants to the multi-stakeholder meeting and explained the format of the meeting, as well as introduced the Discussion Guide and Feedback Form. Chris informed participants that the meeting was being recorded for accuracy. Roundtable introductions followed.

2. Review of Consultation Discussion Guide – All

Cliff Stewart reviewed the introduction to the Discussion Guide, including ways to participate in the consultation, as well as the list of information items and consultation topics.

Why Do We Need More Capacity For Containerized Trade?

Cliff Stewart provided an overview on the need for container capacity, including the forecast demand and planned capacity increases on the West Coast of Canada (page 4 of the Discussion Guide).

Q: *Anne Murray:* What effect would widening the Panama Canal or the Northwest Passage have on this?

A: *Cliff Stewart:* We don't believe the Panama Canal has really any significant impact on the trade through Vancouver and the reason for that is the majority of the trade going through Vancouver goes primarily to Toronto, Montreal or Chicago and if you look at the time and cost to get to those three destinations, there's a significant rail component, even if you go through the Panama Canal and the time and cost to get there, going through the Panama Canal is still longer and more expensive than going through Vancouver.

So, yes, there are certainly destinations where the Panama Canal will have a significant impact, but the cargo that comes primarily through Vancouver and through Prince Rupert doesn't fall within that sort of area.

Q: *Anne Murray:* And what about the Northwest Passage Route if it opens up?

- A: *Cliff Stewart:* Northwest Passage is an interesting question because if it opened up to be ice free and not requiring ice-strengthened ships year round, that would certainly be a very different conversation. Within the project life of this terminal, that's not likely to be a conversation. Dave, you're in the shipping business.
- A: *Dave Bedwell:* Yeah I think if and when it ever does get sunny and warm in the north and it can go without ice-strengthened ships that it would be more prone to Asia-Europe trade link and not Asia-North America trade link. They might swap at New York but probably would head over to Europe directly.
- Q: *David Grigg:* Is there any coal being shipped through Roberts Bank, and if so, how much of that is, portion wise, roughly is coal from United States? Isn't it likely to change? So part of the question is it likely to change with capacity, and the last question, does it require an increase in the width of the rail access by Tsawwassen First Nations?
- A: *Cliff Stewart:* Yes, there is coal being shipped through Roberts Bank.
- Q: *David Grigg:* Is some of it from the States?
- A: *Cliff Stewart:* I think some of it may be from the States currently. Western Canadian demand would indicate that within the next five to ten years it's likely all to be Canadian.
- Q: *David Grigg:* Is the capacity likely to be altered or diminished as a result of the Americans increasing their capacity on the Pacific side? Has that been taken into account?
- A: *Cliff Stewart:* We have to be a little bit careful here because we're actually container folks, not coal folks, so I don't want to start speculating about the coal business.
- Q: *David Grigg:* That's fair enough. So maybe come back to the fourth question, which is are the sidings at the causeway that leads through Tsawwassen First Nations, are they likely to be expanded in width to accommodate any further increases?
- A: *Cliff Stewart:* With respect to containers, yes.
- Q: *David Grigg:* But we don't know what it means in terms of coal? I guess the issue is aggregation of bulk and container traffic. Has that been taken into account in the equation?
- A: *Cliff Stewart:* Yes, and so the widening is required for container traffic but not for bulk traffic. We talk about that in here. We'll come to that later.
- C: *Ruth Sol:* We did some work in 2008 and I know 2008 is a long time ago but west coast container demand was drawn from retailers and freight forwarders and the number was over 8 million TEU and I see that your top case there is in the 6 million TEU range. Now I don't know how things have changed in that time, but it seems like a very conservative forecast.
- A: *Cliff Stewart:* This demand is based more on economic fundamentals than on specific user targets. So the fundamental information underpinning this would be economist intelligence unit, GDP growth and GDP per capita growth. Both in the key markets in North America but importantly in the key markets in Asia because the container trade through the west coast of Canada is a two-way trade, unlike many in the world.
- Q: *Eric Adernac:* On the chart here, is there the opportunity to increase the capacity at Prince Rupert or the inner harbour beyond what's shown here to occur?

- A: *Cliff Stewart:* For Price Rupert, our understanding is no. They've got dibs on every bit of flat land that they have. So this reflects all the capacity out there for the foreseeable future.

Containerized Trade On The Canadian West Coast

Cliff Stewart provided information regarding existing containerized trade on the West Coast of Canada (page 5 of the Discussion Guide), as well as an overview of opportunities for creating additional container capacity (page 6 of the Discussion Guide) and related infrastructure at Roberts Bank (page 7 of the Discussion Guide).

- Q: *Anne Murray:* Yeah, a lot of people come up to this because it is more to do with the highway, but where Highway 17 currently meets Highway 99, is that junction remaining as the access through the tunnel?
- A: *Cliff Stewart:* Not for trucks. For cars I would assume so, but I don't know.
- Q: *Anne Murray:* That should be made clear to the public whether it is going to be or not, because I have asked a few places and people don't seem to know, and it is really quite an important consideration, because if we're coming from South Delta if you are going to have to go up the South Fraser Road to access Highway 99, then we are not separating the container trucks from a lot of people's travel for that southern portion of the South Fraser Perimeter Road. Whereas if we can continue up Highway 17 and then access Highway 99, then there has been a separation.
- C: *Mike McLellan:* I sit on the South Fraser Perimeter Road Committee, and Cliff is absolutely right. There will be no access to trucks other than local trucks making deliveries in that area. There will be access to private vehicles, and they are not closing that interchange.

If I am driving along from Deltaport in a truck, if I normally would go through Highway 17 and then into Vancouver, I will be forced to go out and onto 99 south of the Highway 17 interchange and then back. But if I am a local resident or say I work Deltaport and I am going to Vancouver, I would still go the existing way, or I could also go the new way.

Sustainable Development In Canada's Pacific Gateway

Cliff Stewart provided an overview of Port Metro Vancouver's initiatives and programs that further their commitment to sustainable development and operations (page 7 of the Discussion Guide).

- Q: *Eric Aderneck:* And what would be the traffic impacts on the Massey tunnel or Highway 99 going into Richmond?
- A: *Cliff Stewart:* So, that is an interesting question. And I think we've provided a copy of a traffic report to some of your colleagues. It is available on the website, but the answer is that port container truck traffic at peak travel direction is about two percent of total traffic, and even with no other changes to the Massey Tunnel, and all of this traffic coming, truck traffic coming, it peaks out at about four percent. Interestingly, we did some work to say "what if we took all of the container truck traffic off that route and said no more? What is the impact for the average resident?" And in 2025, 2030 range, barring any other changes, that would change the average commute from Tsawwassen to north of the tunnel by two minutes. So, although it is trucks on Highway 99 through the tunnel are a bugbear for the population, it is one of those perception versus reality issues in terms of how much impact container trucks actually have.

The other thing to mention about that, because, and you will know this, Eric, the majority of available industrial land for increasing container support facilities is south of Fraser, so while

today about 35 percent of Deltaport origin or destined truck traffic goes through the Massey Tunnel, by the time Terminal 2 comes along, we think that will have dropped to somewhere closer to 20 percent.

Q: *Anne Murray:* Is that two percent, four percent, based on the number of vehicles? Or the actual length of the vehicles? Because one truck is equal to something like four cars.

A: *Cliff Stewart:* It is actually not, it is actually only equal to two cars, and the reason is that cars tend to leave a car length between them, so by the time you put two cars in, each with a car length between them, you have got the same space consumed by one container truck. So, it is in throughput capacity. So in other words, it is in car equivalents.

Roberts Bank Terminal 2 Project

Cliff Stewart provided an overview of the proposed Roberts Bank Terminal 2 Project, including estimated economic impact (page 10 of the Discussion Guide).

Q: *David Grigg:* Very quickly, the artist rendition, you can see that where the rail line meets the overpass? Is that narrowing of the sidings representative of today? Or do you expect some widening in that area?

A: *Cliff Stewart:* So, under the overpass itself, there are projected to be I think there is two tracks there today, and it goes to either three or four, and the specifics of that I don't remember, but I think this rendition is actually fairly accurate in that when you are on the causeway, you are in a large number of multiple tracks. Through under the causeway, it is relatively small, it is either three or four. And then when you get back up into the area sort of west of 41B it is wider again. In fact, much of what you are seeing in that area is already proposed for construction as part of the Deltaport Terminal, Road and Rail Improvement Project. That work actually has been approved by the Agricultural Land Commission, subject only to negotiation of mitigation. So, what you are seeing in that artist rendering between the two overpasses at 41B and on the neck of the causeway, will likely be in place by about 2015. The incremental width for T2 is actually east of 41B, between 41B and Arthur Drive.

And if I can just address that quickly, the current operating rail right of way, is 100 feet, or 30 metres wide. There is a 60 metre, or 200 foot wide strip called the Option Lands, which were subdivided with Agricultural Land Commission approval in 2008 and purchased by B.C. Rail, and designated at that time as rail right of way. And it runs from the neck of the causeway east to Arthur drive. The Deltaport Terminal Road and Rail Improvement project takes about eight of those 18 hectares and converts them to rail use. And the Roberts Bank Terminal 2 Project would take the other 10, and convert those to rail use.

Q: *Ruth Sol:* Is there any impact on the Vancouver International Airport?

A: *Cliff Stewart:* No. Well, I am saying no based on the fact that it is not on flight path, and it is a fairly significant distance from the airport.

Q: *Murray Manson:* Yeah, I am interested to know what the depth of this area is? Are you going to need to dredge for the berths to access them?

A: *Cliff Stewart:* So, if you look at where the ship is, the red ship, which is part of the Westshore complex, that is in natural deep water at about 18 metres or so. So, the terminal is very close to the deep water. There is a minimal amount of dredging required to get an 18-metre berth pocket from the existing contour. The face of the berth is sitting in water that current is about

10 metres deep, at lowest low tide, and it needs to be dredged down to about 18 metres, so there is some dredging in front of the terminal, but very limited.

Q: *Murray Manson:* So, what do you intend to do with that material?

A: *Cliff Stewart:* For the current design as it is proposed here, there are two types of onsite dredging that are required. One is to get the berth pocket from the deep water to the face of the berth, the other is for the berth itself. And if you look on page 13, the right-hand picture which is a cut-away side view of the caisson structure, the area underneath that needs to be dredged to a depth of about 30 metres below the current seabed, because the material in there is what they call 'geotechnically incompetent'. It is a polite way of saying that is kind of muck.

So all of that material, both the stuff that is dredged for purposes of accessing, and also for the purposing of building the berth structure, the intention is that would be dredged and deposited within the island footprint.

So the way that the thing would be constructed as currently designed is you can start by building a perimeter dyke around the entire island. Then the other materials would be dredged and placed in the footprint of the island. As I mentioned, they are geotechnically incompetent, but by putting them at the bottom of the island, spread out across the entire footprint, and then covering them with Fraser River Sand, clean sand, the engineers have determined that the fact that that material is problematic can be dealt with. So essentially, all the material dredged on the site gets put within the island. In contaminated sites parlance, if this were a contaminated site, it is confined in cap disposal.

Q: *Murray Manson:* Have you guys done the testing on the sediments for contamination?

A: *Cliff Stewart:* We have done some limited testing on it, we haven't done Environment Canada standard. So the answer is essentially no, but if there is a problem, it is addressed.

Q: *Murray Manson:* And then will you need to maintain the dredged area?

A: *Cliff Stewart:* We don't believe so. The coastal geomorphologists tell us that it is likely to be self-cleaning.

Q: *Anne Murray:* More comment on what Ruth was saying, she asked if there was any impact on the airport, and I thought that was an interesting thing because one of the current ways of maintaining safety at the airport is to try and drive birds south of the banks off the airport, particularly birds like the snow geese, which are in very large flocks -- there's now probably 50,000-60,000 out there on the banks. All of their efforts are to keep the geese away from the airport, and away from the planes. Also other birds like shorebirds and so on, so they are driving them down into Delta, and organizations like the Delta Farmland and Wildlife Trust are working with landowners to provide feeding grounds on the uplands, but of course this area of Roberts Bank is also used extensively by migratory birds such as the geese and the swans and the shorebirds. So, anything that were to drive the birds away from this area, could potentially drive them back into the other areas, which is back towards the airport, so I would imagine that it should be looked at whether there is an impact on the airport, and that it can't quite so easily be dismissed as no there is no impact, because everything that went -- seeing in terms of the successful almost hazing of the birds to get them to be down this end, could be affected by activities in this end.

- A: *Cliff Stewart*: So, one of the things to point out, and you can't see it obviously in this drawing, but the zero tide line is inshore of the terminal, so the terminal is all built in what is currently sub-tidal area. So, in fact, the project increases the length of shoreline. Because now you have additional shoreline length along the back and side of the island itself, so from the perspective of creating shore and intertidal area, that actually is increased by this. And certainly the proclivity of the birds to inhabit that area today with industrial activity would tend to indicate that they are not significantly disturbed by that. But again, that is an important part of this study work that needs to be done.
- C: *Anne Murray*: Yes, I think so, because we are looking at a different configuration that is becoming an enclosed bay. So, I am not saying necessarily will have an impact, but it certainly might. I don't think it can be dismissed.

Marine Terminal

Cliff Stewart provided information regarding the terminal orientation and structure options (page 12 & 13 of the Discussion Guide).

- Q: *David Grigg*: The concrete caissons are precast somewhere else, towed in, and then filled in the center?
- A: *Cliff Stewart*: That is the expectation.
- Q: *David Grigg*: So this can be very deep structures. 100 feet deep?
- A: *Cliff Stewart*: They are in range of 30 metres. You dredge the material below it, down about 30 metres below the existing sea bed, and then you fill that back with clean competent material, and then you set the caisson structure on top of that and fill it with rock. As to where they would be built, whether that would be nearby, offsite, or somewhere, you know, else, somewhere else in the world, that is yet to be determined.
- Q: *Murray Manson*: The material that you dredge down for the footing of the caisson, goes in the caisson?
- A: *Cliff Stewart*: That is the current design, yes.
- Q: *Murray Manson*: Also, I am looking at these fish refugia, like little portholes in the caisson?
- A: *Cliff Stewart*: Yeah, that is the standard sort of design that is developed for caissons in this area over the past 20, 35 years.
- Q: *Murray Manson*: Have you done monitoring to show fish actually going in there?
- A: *Neil Turner*: The understanding is this is based somewhat on what was provided in DP3. I don't know if it exactly the same design, but this is certainly the conceptual design have similar properties to what occurred during DP3.
- A: *Cliff Stewart*: I believe the answer is yes, but we will get that answer for you whether there's been monitoring.
- Q: *Murray Manson*: I haven't seen monitoring from Deltaport, but from Canada Place, the fish don't go under these structures, salmonids in particular. So, I'd be pretty surprised if any fish is going to swim through a porthole to exist in a pitch black cavity within a caisson. I am pretty skeptical of that particular design.

A: *Cliff Stewart:* The Deltaport Third Berth project has what is called an Adaptive Management Strategy which I think is an annual review for five years on the various aspects of habitat that were developed. That is one of them.

Q: *David Grigg:* What fish want is a place to mate and feed, none of which exist in this caisson. It is a bit of a stretch.

Q: *Andrew Robinson:* Could you perhaps give a little bit more around the considerations and tradeoffs on the engineering side between the W1 and W2? I can appreciate the dredging but I am guessing it is more technical considerations that were considered.

I am not an engineer but a couple things that come to my mind is that certainly for W2 you have more infrastructure built. Pardon me, for W1, you have all the causeway, you are in deep water, which versus a tidal environment might be trickier engineering-wise. This is tradeoffs and I'm just curious to understand and appreciate what some of those might be?

A: *Cliff Stewart:* Well, if you ignored environmental impacts for a moment, and if the material at Roberts Bank in this area was good construction material, then you might look at W2 as being a good option, because you need to dredge a ship channel, which you could then use to build the island. But from an engineering perspective, that material is not good construction material, so you would find yourself in a situation where you were dredging a large amount of material which you would need to dispose elsewhere, and then import the fill material. So, from an engineering perspective, in fact, given what actually exists out there, W2 isn't preferred.

The other aspect of W2 which is problematic, is because of the predominant storm wind directions, although it would appear as though the ships would be more protected on W2, in fact it is more problematic for ships in big storms, because of the wind loading on the ships in a south east wind. So there are a number of things that were certainly counter intuitive to me. But it was a very interesting process to go through, because the teams were working independently, coming towards what we call the tradeoff process, and there was no tradeoff. And the engineer stood up and said, "This is what we think," and the environmental team stood up and said, "This is what we think," and kind of looked at each other and said, "Oh, okay," and that was it.

The other thing about W2 from an environmental perspective is that dredge cut would intersect the zero tide line, and the best advice that we are getting from the coastal geomorphologist, is you really don't want to have a dredge cut intersect the zero tide line if you can avoid it, because that can cause unpredictable geomorphological impacts.

So yeah, it was a very interesting process to go through because of -- and one of the things we did very early on, because when I first started working on this project about three years ago, and I was reading all of the old studies, and they all said you really should do some deep geotechnical work, because nobody quite knows if the whole thing is going to slide into the abyss when the big one hits. And so one of the first things we did was go out and do that work, because that was pretty fundamental. And the good news was, not only would the new terminal not slide in, but nor would the existing terminals, so that was nice.

And then the next thing we did was go out and do a very significant drilling program to see what the nature of the material was out there, because that was critical from an engineering perspective to how you built it. The engineers all said, "Gee, it would sure be nice if that was nice clean sand and we could just do a cut and fill balance and stick it inside the rock wall and you're done." Unfortunately that is not what is out there. It has got a lot of silt, so that is where

this sort of process of saying, 'well, what do we do with this stuff we have to dredge that really isn't very good material?' and that is where this idea of putting that material on the bottom and then capping it. So, the average depth of the terminal is about 18 metres, and so on average, there will be about 6 metres of local material capped with about 12 meters of the river sand.

And so this project actually over the period of its construction, as designed, would consume material that is currently disposed at sea, surplus to construction demands in the Lower Mainland, and Fraser River freshet dredge material. That is where most of this will come from.

Q: *David Grigg:* Did they find, from that that the soils had been subjected to glacial sublimation?

A: *Cliff Stewart:* Are you talking about the tills?

Q: *David Grigg:* Yes. Oh, there are tills down there?

A: *Cliff Stewart:* There are tills down there, but they are very little. Everything above the tills is appeared in the last 9,000 years.

Q: *David Grigg:* Right, and that is going to be taken out, basically?

A: *Cliff Stewart:* Well, underneath the caissons it is taken out, I think it is about 30 plus metres of material taken out.

Q: *David Grigg:* So are we down to till level?

A: *Cliff Stewart:* Sorry, let me back up, we are not removing the 30 metres, we are removing a significant amount, but we are densifying the material below what is being removed. Not all the way down to till, but far enough down to prevent liquefaction, as well as lateral movement as a result of liquefaction.

Marine Terminal

Cliff Stewart provided information regarding the terminal layout and elements (page 14 of the Discussion Guide).

Q: *Eric Aderneck:* What proportion of goods are coming and going through the Roberts Bank now on train versus truck, and is that going to change in the future?

A: *Cliff Stewart:* Currently it is 65 to 70 percent direct to rail on the terminal for imports. It depends, it is a little higher Roberts Bank, a little lower at the inner harbour terminals, but that is the direction we see this growing. For the cargo, for the 30 to 35 percent which leaves by truck, about five to ten percent leaves the region by truck. The other 20 to 30 percent goes to some form of value added handling in the region, and then direct to rail, usually within 72 hours. And there two types of value-added handling, called 'transloading'. The first is where you take three existing marine containers, with sort of three types of commodity, and you transload them into three other marine containers where you do a mix of each of the three. So you take a container full of beach umbrellas, a container full of bathing suits, and a container full of beer coolers, and you transload them into three containers for three different destinations in each of which have beach umbrellas, bathing suits and beer containers. So that is one type of transloading.

The other type of transloading is the one where you take three marine containers, and you transload them into two 53-foot domestic rail containers. The bulk of the containers that leave

the terminal by truck are going to go through some form of transload. So that is the import question.

The export question, of those 70 boxes that went east by rail, plus the other 20 to 25 that got loaded to rail after being handled locally that come back to the marine terminal, about a third of them have export goods in them. The other two thirds come off as empties on the marine terminal. Of that, the majority then go back out the gate on a truck, empty, to be stuffed with an export commodity whether it be pulp, or lumber, or panel products, agricultural products in the local gateway, and then they come back by truck again, and they leave by vessel. The balance is about 52 percent imports, to 48 percent exports. The imports are almost all loaded, and the exports are, probably depending on which shipping line you are talking to, somewhere between 75 and 85 percent loaded. And the limitation on that tends to be that import boxes weigh about 14 tonnes, and export boxes weigh about 24 tonnes, so the ships tend to gross out before they cube out. So they put as many paying containers on as they can, and then fill up the rest with empties.

Q: *Eric Aderneck*: So when the new ships come here, are they at capacity in terms of the number of units they can weight or carry?

A: *Cliff Stewart*: Yeah, they tend to be, but not by weight, but cube. So, in other words, every slot is full, with a loaded container, and when they leave, every slot is full, and they weigh just as much as they did when they came in.

Q: *Eric Aderneck*: Because we export stuff that is heavy?

A: *Cliff Stewart*: Exactly. There is about a 10 tonne differential in the gross weight of the container for a loaded import, to a loaded import. So you bring in a container full of running shoes, and you are sending out a container full of lumber.

Q: *David Grigg*: The latest projection for climate change effect on wave structures, is that the height will increase roughly 0.7 - 1 metre including wave effect. So, has that been taken into account on the causeway?

A: *Cliff Stewart*: Yes. Not on the causeway, because we are not rebuilding the causeway.

Q: *David Grigg*: The direct offset from that is what happens in terms -- I presume we are talking about double stacked containers on train yards.

A: *Cliff Stewart*: Yes.

Q: *David Grigg*: The clearing between the double stacking and the underside of the overpasses, are we going to lose the ability in time to -- or do we have to change the infrastructure?

A: *Cliff Stewart*: No, there isn't an expectation of increasing the height of the causeway, because the majority of the impact is a wave impact, and the causeway, the part that we are building, tends to be on what I will call the protected side. So, we've looked at that. The terminal itself is being built with that in function, so it will be slightly higher than Deltaport, but the causeway itself, there isn't an intention to do a general increase in height of the causeway.

Marine Terminal

Cliff Stewart provided information regarding the tradeoffs between potential locations of the terminal intermodal yard (page 15 of the Discussion Guide).

- Q: *Eric Aderneck*: How many acres is all of T2?
- A: *Cliff Stewart*: If you look on page 17, top right, there is about 210 hectares of which about 190 is direct impact. I think the terminal itself is about 150 hectares, and the causeway I think is about 40 give or take. And then the coastal geomorphologists have said that there is probably another 20 hectares of indirect effect, so that is something that would result from coastal processes.
- Q: *Murray Manson*: So that is Alternative 1A, right? 210 hectares?
- A: *Cliff Stewart*: Yeah, 1A and 1B aren't significantly different.
- Q: *Murray Manson*: Okay, and then what about Alternative 2?
- A: *Cliff Stewart*: We haven't done a lot of work on it, but it is probably about, I think it is 80 to 90 hectares in total. So where alternative 1A would impact about 10 hectares give or take of uplands in addition to works already proposed for other projects. For Alternative 2, we haven't designed it, so we don't know for sure, but in theory it would be about another 80 hectares uplands, and an equivalent reduction in the marine environment.
- C: *Murray Manson*: In terms of looking at marine environment impacts, it seems pretty attractive to me to try and minimize that. Assuming that no net loss policy continues with Fisheries and Oceans, there is significant cost to the compensation requirements for 130 extra hectares by building it in the marine area.
- C: *Cliff Stewart*: It is interesting. We actually did that as a 'thought exercise', because the assumption is that it is cheap to do it upland and expensive to do it in the water. And when you look at the combination of acquiring the land, uplands, doing all the fill and geotechnical work that is required, because really what is currently farmland upland is floodplain, and you can't build on a floodplain, so the cost of acquiring land, the cost of essentially improving the land uplands, doing the agricultural mitigation because there is agricultural mitigation upland, just like there is habitat mitigation in the water, it is more costly to build in the marine environment once you figure in the mitigation, but it is only a factor of about a third to a half more. So it costs about -- for every 67 cents that it costs you to build the land uplands, it costs you a dollar to build in the marine environment. So it is not a cost driver, particularly. Certainly that is not an insignificant difference, but there are other considerations, and that is why we are asking the question, because certainly from someone who is in your line of work, that would be obvious. For people who are very interested in farmland, their answer might be obvious, and we just want to get feedback from the community at large. We think we know what the answer is, but we are interested to know what everyone thinks.
- Q: *Murray Manson*: Do you have any other avenues to reduce the size of that terminal area, even with alternate 1A? I mean, I notice you have got parking out there. I don't know how significant the area designated parking would be?
- A: *Cliff Stewart*: The driver for the footprint tends to be the length of the berth and the depth required for the container yard and the rail facility. You know, there certainly could be nibbles here and there, but you are not going to have a significant impact on the overall footprint.
- Q: *Murray Manson*: So that the artist's rendition, that big picture, and there is two -- it looks like the road on the north sort of splits the two areas, it seems to be little tiny dots, what are those?
- A: *Cliff Stewart*: Those are rail tracks with container trains on them.

- Q: *Anne Murray:* I just need a bit more clarification too. On the artist rendition, is the part in the middle then is that part of the intermodal yard?
- A: *Cliff Stewart:* No, this part in the middle, this area here is what is called the container yard. So that is the place the containers go to rest between modes. So, if they are coming off the ship, they land there. If they are coming off truck or rail they land there, and then they move in the opposite direction, either to the ship or from the ship.
- Q: *Anne Murray:* So that is not the part you are talking about putting upland?
- A: *Cliff Stewart:* No, the part we are talking about possibly putting upland is this area in the back, so these two parallel lines here. But you don't give up all of that land, because if you are going to put the rail upland, then you still have to have somewhere to load the whatever vehicles are moving the containers from the terminal to the upland, and it is definitely a tradeoff, as between land operating costs, greenhouse gasses – there is a whole range of tradeoffs that have to be considered for that. But in general, it is about 80 hectares that could move, not only from there, but also from the causeway, if you were to put an uplands facility.
- Q: *Anne Murray:* So, have you got studies ongoing on the impact of the different alternatives?
- A: *Cliff Stewart:* No, because at this point we aren't proposing alternatives. All we are proposing is this, but we are asking whether there is an interest in us pursuing that further.
- Q: *Anne Murray:* Okay, so you are adopting alternative 1A unless you hear otherwise? That is your favorite one, is 1A, which is have you have shown there?
- A: *Cliff Stewart:* Yes.

Habitat Replacement

Cliff Stewart provided information regarding environmental impacts and habitat replacement (page 17 of the Discussion Guide).

- Q: *Murray Manson:* I think an additional component of this is the *Species At Risk Act*, which is relevant because of the critical habitat for the southern residents.
- A: *Cliff Stewart:* Right.
- Q: *Murray Manson:* The preconditions for issuing a SARA permit, for impacting critical habitat, would require a few questions be answered. And one of them I think that is important is have you considered all alternatives, all reasonable alternatives to the proposal. So, you know, that is going to be a significant component of DFO issuing a SARA permit is to how well we can answer those questions. You know, in some cases, you know, where SARA is not relevant, because there isn't critical habitat, there may not be as close attention to those issues, but that is something that needs to be considered here.
- A: *Cliff Stewart:* Absolutely.
- Yeah, and just a reminder for everybody, this consultation is very early in the process. At the earliest we wouldn't expect to be commencing the formal EA process until sort of the middle of next year, sort of late spring, early summer. And so a lot of the things that Murray is talking about will need to be addressed during the EA process which we expect will take probably about four to five years. And certainly species at risk is one of the critical issues, is inextricably linked to habitat for their food sources, and obviously that is an issue here at Roberts Bank, as well as

coastal and migratory birds and bird species at risk. So, what I would like to do is maybe move in to that conversation a little more.

Q: *Dave Bedwell:* On the railroad and rail traffic considerations, we say we are doing 1,850 trips in and out today?

A: *Cliff Stewart:* No, that is what we expect to be doing by the time DTRRIP is in place. So today it is about 1,500. By the time DTRRIP is built, we expect it will be about 1,850 and then T2 would add another 1,850 trips.

Q: *Dave Bedwell:* So my question is: has short-sea shipping been considered, with an underutilized terminal in Fraser Surrey Docks?

A: *Cliff Stewart:* Yes.

Q: *Dave Bedwell:* Today, we are running at 80 percent capacity of the terminal space. And terminals today have more or less reached their capacity. We have a huge issue with trucks today. We have got Fraser Surrey Docks which is underutilized. Has the port considered the potential to work with the terminal operators to move empties off the dock by a barge, out to terminals that are underutilized? Bring exports back to those off docks, Fraser Surrey, Coast 2000? Bring those barges back to the terminal? Reducing the green impact, reducing the number of trucks?

A: *Cliff Stewart:* What we've done with respect to Terminal 2 is we've designed it to allow for. It doesn't show on the artist's rendering but on the left-hand side of the terminal as you are facing it from the ocean, the north end if you will, it is designed to allow for the implementation of a short-sea shipping barge facility.

I know the federal government just announced yesterday additional funding to incent short-sea shipping. Until the market believes that there are fundamentals that make that work, or until the right combination of road and rail and facilities comes to pass -- Fraser Surrey is a good example, it is a good alternative.

C: *Dave Bedwell:* It is a good alternative. You know, your timeline here is 2020 - 2024.

C: *Cliff Stewart:* Yeah, so the facility is designed to allow that, if that makes sense in five years, but at this point, if you take those boxes up by barge, and you still have to load them on a truck and drive them somewhere else, the economics kind of don't work.

Q: *Dave Bedwell:* Yeah, see I think that is something that has to be challenged. Because you know the truck rates are relatively expensive going to and from, so the more truck moves versus the number of cans you can put on a barge, there might be some logistics there?

A: *Cliff Stewart:* The numbers that we have here for traffic are worst case. They are assuming no change from current behaviors. Fifty percent of trucks are running empty, so you can get a significant increase in container movement without adding any more truck trips, simply by having each truck go out to the terminal with a box on, and come back from the terminal with a box on.

There is a whole separate initiative that the port is undertaking and it talks about it on page 19. I am not the right guy to talk about it because there is a team whose full time life that is. But if people are interested, we are happy to set something up that is looking to deal with exactly that problem: How do we make better use of the truck trips that are out there today. If we were to

increase to 80 percent utilization of the existing trucks today, we could do the DTRIP project for example, not with an increase in traffic, but with a reduction in traffic.

And I mentioned earlier, a decade ago there were 4,000 trucks doing all this work. Today we are doing it with 2,000 trucks and doing a lot more of it. So there is lots of additional work to be done there. To a certain extent, although we are showing worst case numbers here, our expectations is that we will have solved that problem, or we will have wrung all of the efficiencies out of the trucking system and if short sea-shipping is an answer, that answer will have come to pass long before T2 comes along. And the design allows for it, so if it makes sense, it can simply be essentially bolted on as part of what gets built.

Compensation for Loss of Agricultural Productivity

Cliff Stewart provided information regarding compensation for loss of agricultural productivity (page 19 of the Discussion Guide).

Q: *David Grigg:* The upland area is or was in the Agricultural Land Reserve?

A: *Cliff Stewart:* It is.

Q: *David Grigg:* Is it not correct to say that that's within the Tsawwassen First Nations land and therefore not subject to the ALR regulations?

A: *Cliff Stewart:* No. That's a whole separate conversation. There are lands within the Tsawwassen First Nation which are industrial lands. Previously agricultural but now industrial. There is an opportunity, again we've assumed that all the traffic that is needed to support T2 goes driving right by those lands to somewhere else. Obviously if those lands come into industrial use in support of container traffic for container works, that significantly reduces traffic impact. We haven't made that assumption.

Again we've taken the most conservative case which is current practices, trucks are going somewhere else, North Delta or Surrey or Richmond, and so there are lots of opportunities to reduce or mitigate from that base. But with respect to agricultural land being converted to industrial use, it is strictly -- for the purposes of this design it's strictly those rail lands within what's called the option lands that are owned by BC Rail. And some very minor other bits.

Q: *David Grigg:* So it's difficult for me to understand who owns what here. So those optional lands are not in the TFN?

A: *Cliff Stewart:* No. They're owned by BC Rail. They are within the Agricultural Land Reserve but they actually have been designated as a rail right-of-way by the Agricultural Land Commission and then there would need to be an approval to actually construct the rail on them.

And it's an important distinction but transportation is an improved use of agricultural land but the construction of it is subject to approval by the Land Commission and part of the quid pro quo for that approval is some form of mitigation and so the purpose of that question is what do you think is in? And I'll give you some examples.

Irrigation is a problem in Delta. The majority of irrigation water comes into those irrigation ditches from low down the Fraser River. There's solidity issues so there's a program in Delta now, in Ladner, to develop a better quality -- it's a deep, deep-drilled water wells. So one of the things that people are talking about today is if we could extend that system to Westham Island, we can improve agriculture in Westham Island. So that is the type of mitigation that some

people are proposing. Put money into deep wells, which gets good irrigation water to Westham Island so you take an existing agricultural footprint and you increase the productivity of it by increasing irrigation.

So for those who are in the know on agricultural issues, what do you think is the best way to increase agricultural productivity?

- C: *David Grigg*: You're probably aware of that report by UBC that suggests that that area of Delta, in time, will become inundated by saline water. It's going to be a problem.
- C: *Cliff Stewart*: And that's what the program is designed to do, is to actually improve the quality of the irrigation water, because what's happening today is it's being irrigated with slightly brackish water. So if you start irrigating with clear water, you stop that problem and over time you begin to clean it up.

Environmental Assessment Process

Rhona Hunter and Cliff Stewart provided an overview of the environmental assessment process (page 20 of the Discussion Guide).

- Q: *Anne Murray*: Has there ever been any consideration of a feasibility study on opening the causeway to allow tidal flushing?
- A: *Cliff Stewart*: You're talking about breaching the causeway? I know there's been conversations about it. I don't know what the results of those are.
- A: *Neil Turner*: I don't know if there's a specific feasibility study that are being created and conclusions reached but I know the question has been raised. It hasn't advanced any further than discussion at this point that we're at.
- C: *Cliff Stewart*: We can certainly get the answer for that.
- Q: *David Grigg*: I guess it's kind of somewhat the same question. It's likely that there'd be a greater amount of siltation between the new terminal and the shore. I'm not saying it's definite that that's been what happened in Phase 1. So what that does, I guess, is reduce the opportunities for small fish to be protected from the sun and you know, there aren't more opportunities for the birds there to feed on the fish. There is no requirement to directly protect that area for small fish to rest before migration. How are you going to adjudicate the net benefits there? I mean I'm sure that the birds will get an increase in biofilm opportunity feeding habitat but for the fish, it seems like a bit of a negative. How are you going to mitigate that?
- A: *Rhona Hunter*: So we are in early stages of the process and we're establishing baseline. So we're not at a place now where we're establishing mitigation or even impact at this point. So it's premature to speculate what the potential mitigation or in fact what the impact would be as a result of the baseline but considerations to coastal geomorphology, considerations to fish, fish habitat are all part of that assessment and will be address and proposed as part of our environmental assessment process.
- A: *Cliff Stewart*: And the coastal geomorphologists have identified about 20 hectares of what you've just described. These are areas that would likely change as a result of this construction, over and above the construction itself.

And certainly not withstanding what you said about C-38 not requiring specific protection of the habitat, the fishery itself, you may not have to protect their habitat, you have to protect them. So it effectively nets out to the same result.

Q: *David Grigg*: Yeah and I was really thinking in terms of the resident cutthroat in the salt marshes areas. They're not really considered a commercial species of direct consequence to people required to live to live on them. So they have perhaps less protection than say chum or coho. So I'm just wondering how the heck you can do that.

A: *Cliff Stewart*: Well, that would be a great feedback comment from you for us to recognize and then we would respond to that as part of the consideration memo.

C: *Murray Manson*: A little clarification. The new act, I mean it's a change as to how fish habitat is protected but it still contains the same definition of habitat. It still has provisions for protection of fish habitat.

Q: *David Grigg*: Even though they may not be commercial or economic value?

A: *Murray Manson*: Commercial, recreational and aboriginal. So coastal cutthroat, they are still a recreational fishery. It remains to be seen how well the new wording in the act is going to protect fish like coastal cutthroat. But I mean they're still intended to be protected. I think we're not going to know the extent to which they're protected until cases go to court and then there's case law which is where the ultimate test is going to be.

Q: *David Grigg*: And it's a species at risk to some extent, is it not?

A: *Murray Manson*: Not federally, no.

Community Legacy Benefits

Cliff Stewart provided an overview of the community legacy benefits consultation topic (page 20 of the Discussion Guide), as well as information regarding the timing of future consultation phases (page 20 of the Discussion Guide).

Q: *Eric Aderneck*: Obviously there's growth in trade but there's also the trend for more container use. So on this chart, how much of this is because of the trend towards more container use versus more trade coming in, and what about the other terminals that are non-containers?

A: *Cliff Stewart*: It is all built in there. The kind of trade you are talking about that converts from primarily what is called break bulk. And break bulk tends to be on the export side, and be things like packaged lumber, pulp, ingot metals, what is called project cargoes. So if somebody is building a manufacturing plant, equipment comes in, it is palletized. That is the type of thing that has tended to convert in recent years. Most of things that 30 or 40 years ago was what I would call 'goods movement', that is pretty much already in containers. So although there is some scope for transition to containerization, most of the growth in the next two decades is expected to be simply from growth and trade. Although there is some conversion left, there is not much more.

Q: *Eric Aderneck*: And then for the capacity for T1 at Roberts Bank, is there potential to have more throughput there with increases to the road, infrastructure, other equipment?

A: *Cliff Stewart*: Yeah, so that is a project called the Deltaport Terminal, Road and Rail Improvement Project. And we are working with TSI – and Mike is here from TSI – and BC Rail,

and the operating railways as partners to develop that project. It is shown on this graph as DTRRIP. We expect to deliver about a 33 percent increase in the capacity that is there today.

We have about a million and a half TEUs running through Deltaport last year and this year. There is some work that can be done in advance of DTRRIP, we think that the capacity of that terminal is about 1.8 million TEUs. So there is about another 300,000 TEUs of growth that can happen between now and 2015 if the demand is there. DTRRIP then takes that from 1.8 million, up to 2.4 million TEUs.

We think today, and for the foreseeable future, that 800,000 per berth is about the capacity of a three-berth terminal. That is what these guys have is a three-berth terminal. So when you unpick the other bottlenecks, you can get up to about 2.4 million, and then the next place you need to go is to build a new terminal. Unfortunately, while it would be a good idea, particularly for existing operators to build those terminals one berth at a time, it is very difficult to operate a one-berth terminal, because shipping lines want the flexibility to come in when they are supposed to come in, or some other time, so you need at least two berths. So, we are assuming that the second terminal would be delivered as a three-berth terminal in 2024. It is possible it would open slightly earlier as a two-berth terminal, as there is flexibility there.

Q: *Shelina Sidi*: I have a question related to the use of shore power for vessels while they are at anchor. If there is any consideration as part of the design to have that --

A: *Cliff Stewart*: Yes, the Terminal 2 has been designed with shore power as an integral part of the facility. Our assumption is that sometime between now and then, shore power will become a reality here. There will be some form of retrofit. When the third berth was built at Deltaport, it was built to accommodate shore power.

There are a number of hurdles that need to be cleared before shore power becomes a reality. The irony of, I mentioned earlier, the Emissions Control Area, which reduces sulfur content. So, ECA from an emissions perspective reduces the need for shore power, but because it makes the fuel so much more expensive, it makes it more attractive to a shipping line operator.

Q: *Shelina Sidi*: Yes, but there are also other contaminants that are of concern, like nitrogen oxides as well, so can kind of take care of that if you had shore power available.

A: *Cliff Stewart*: Yeah, and frankly, noise is a big, big issue. And shore power addresses the noise issue. So we expect that shore power for existing facilities will be a reality in the timeframe of developing this facility, and this facility is designed with shore power in mind.

Q: *Shelina Sidi*: In terms of the studies, we already have a lot of activity going on at Deltaport, so are you going to be looking at the cumulative impacts of all the activities going on there?

A: *Neil Turner*: Yes, this is formally part of the EA process, is to consider the cumulative effects.

Q: *David Bedwell*: Who is funding the project?

A: *Cliff Stewart*: Well, I can tell you who is not funding it. Taxpayers are not funding it.

Q: *David Bedwell*: Okay. And my second question is: What is the forecast percentage of funding from each of those people who are going to be proposed funders, i.e. federal, provincial, port metro, stakeholder, railroads etcetera?

A: *Cliff Stewart:* Federal: zero, Provincial: zero. Railroads need to provide their own infrastructure to the gate, and the actual facility plus mitigation of the facility will be some combination of Port Metro and private investors, but it is effectively private.

Q: *David Bedwell:* So you are going to build a brand new terminal?

A: *Cliff Stewart:* Well no, we are not going to build a brand new terminal until somebody says they want to fund that brand new terminal.

Q: *David Bedwell:* Right, okay, but the groundwork of making an island that is ready to have gantries and be paved -- what is your completion, before you put it out to Maersk or, you know, APM or somebody like that?

A: *Cliff Stewart:* The port's commitment is to take it through the environmental permitting process. What we would invest in during that time, independent of that process, we are investing in a habitat bank. But beyond that, the third-party commercial financing needs to be there.

And that is a really good question, because I know there are a lot of folks who think that the fix is in, and this is going to be built no matter what. This will only be built if the market demand satisfies private investors that there is a return on that investment.

Q: *Eric Aderneck:* So that party would own the facility, not the port?

A: *Cliff Stewart:* It is expected that the port would ultimately own it, but the business model in this port tends to be long-term leases, so in essence, it would be in return for some combination of partners who would build and operate the facility, they would get a long-term tenure to do that.

Q: *David Grigg:* My question relates to the causeway, particularly the rail traffic. The access is through the BC Rail right-of-way, is that correct? Now how does that work with CN or CPR? Do they have the right to use that corridor without any kind of levy or a tax or freight payment charge?

A: *Cliff Stewart:* So that was two questions, let me answer those first. Any railroad that signs an agreement has a right to use that corridor, and they pay to use it.

Q: *David Grigg:* So, you know, the change with CPR in that direction, and the competitiveness with CN, and is there a possibility at a future date that CPR will say, "We'd like to build our own rail corridor to the terminal?"

A: *Cliff Stewart:* I couldn't speculate on what they might want to do. I am not sure why they would want to do that, given that there is a rail corridor that they can use for the price of paying to use it.

I personally can't foresee a situation where someone could put a new rail corridor through the communities of Delta, Surrey, and Langley. I may lack vision, but I can't see how it would happen, or frankly why it would happen, because there is enough capacity on the existing corridor for anything anybody has ever envisaged. I mean it is a single track today. There is sufficient width in that corridor to double track it, but nothing that is being proposed here would drive a requirement to double track it. So that would be likely to happen long before anyone would build another corridor.

Q: *David Grigg:* Only if BCR decided to hike up the rates, they'd basically have the monopoly to the terminal?

A: *Cliff Stewart:* The nature of BC Rail, as a government entity is designed exactly to protect against that. It is designed to provide open access essentially at the cost of providing it.

Cliff Stewart wrapped up the meeting and encouraged participants to complete the feedback form and encourage their friends and others to participate.

The meeting ended at 10:50am.