



WesPac Tilbury Marine Jetty Project – to export LNG

It is likely there is a legal issue as with the Kinder Morgan pipeline in that the assessment needs to include impacts of shipping beyond the project footprint.

Kinder Morgan Decision

“... However, the Board made one critical error. The Board unjustifiably defined the scope of the Project under review not to include Project-related tanker traffic. The unjustified exclusion of marine shipping from the scope of the Project led to successive, unacceptable deficiencies in the Board’s report and recommendations. As a result, the Governor in Council could not rely on the Board’s report and recommendations when assessing the Project’s environmental effects and the overall public interest.”

The scope for the Roberts Bank Terminal 2 Project and the LNG terminal also fail to include impacts of marine shipping in the scope of the environmental assessment. Ecojustice has made submissions to the Roberts Bank Terminal 2 Project citing the failure in the scope. It appears the same is the case for the Tilbury Project and a legal opinion should be sought.

The Boundary Bay Conservation Committee published a report in 2016 – “Save the Fraser River Delta from Mega Projects”. This report explains in detail the projects that are being planned and the environmental risks that result. Read the Full report here:

Fraser River Estuary and Mega Projects April 22 2016 A.pdf

The WesPac Tilbury Marine Jetty Project is addressed on pages 36 to 45

Some excerpts are copied below. As there have been some changes to the Project, some of the information below may be out of date. However, the failed due process and risks remain.

Bottom line – failure to meet international safety standards, lack of due process, and failure to include effects of marine shipping beyond project footprint.

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CEAA Disclaimer Contravenes Due Process and Legislation

Three weeks after Stephen Harper dissolved the Canadian parliament, the Canadian Environmental Assessment Office wrote to the B.C. Environmental Assessment Office making the disclaimer that the effects of shipping associated with the WesPac Tilbury Marine Jetty Project are:

”beyond the care and control of the proponent, along with the designated shipping route within the South Arm of the Fraser River, from the Project’s marine terminal to the pilot station at Sand Heads.” (*Letter from CEAA to B.C. EAO, August 24, 2015*)

This statement defies belief. So no one is accountable for the effects of up to 122 LNG carriers and 90 LNG barges per year for 21 kilometers in the Fraser estuary and then through the narrow channels of Boundary Pass and Haro Strait out to the Pacific.

The same disclaimer was made to the environmental assessment of the Roberts Bank Terminal 2 Project. CEAA has been advised that these disclaimers contravene the *Canadian Environmental Assessment Act* and CEAA has been put on notice that should shipping effects be excluded from the cumulative effects assessment and the decision-making process, clients may be forced to take the issue to court. This intent to slip past due diligence should provide the new 2015 Liberal Government with a reason to terminate this flawed, illegal process under the *Canada Marine Act*, the *Canadian Environmental Assessment Act*, the *Species at Risk Act*, and the *Environmental Protection Act*.

Failure to Effectively Disclose the Interdependence of two LNG Projects

The proponents for the shipping terminal claim the two adjacent projects are separate. One is the FortisBC LNG massive expansion. The other is the WesPac Midstream shipping terminal required to export the LNG. So it is dishonest to treat the two projects separately as they are located side by side and their operations are interdependent. This is a classic example of project splitting to avoid full disclosure of environmental impacts. To ignore the FortisBC Tilbury LNG plant in the assessment of the shipping terminal is in contravention of the *Canadian Environmental Assessment Act*.

Also the Operation Policy Statement of CEAA requires “*the assessment of the environmental effects of accidents and malfunctions that may occur in relation to the designated project. Accordingly, the environmental effects of accidents and malfunctions must be considered in the assessment of cumulative environmental effects if they are likely to result from the designated project in combination with other physical activities that have been or will be carried out.*”

While the proponent of the shipping berth claims it is a separate Project from the FortisBC Tilbury expansion, information of the background to the WesPac Terminal Project indicates a clear understanding of the interdependence of the two projects. In a report by Natural Resources Canada, Energy Markets Fact Book 2014-2015, it is spelled out on page 51:

**“WesPac Marine Terminal/Tilbury LNG (Delta, BC) Marine terminal proposed by WestPac Midstream
Maximum capacity of 3 mtpa (0.40 bcf/d) following expansion of existing Tilbury LNG (FortisBC) facility
Targeted start date of 2016”**

Note: 3 mtpa = 3 million tonnes of LNG per annum. .40 bcf/d = 40 billion cubic feet per day
http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/files/pdf/2014/14-173EnergyMarketFacts_e.pdf

The FortisBC Tilbury LNG plant and expansion are also included in the export licence granted to WesPac Midstream Vancouver by the National Energy Board:

“WPMV stated it intends to export LNG produced at the Tilbury plant in Delta, British Columbia, which is owned by FortisBC Energy Inc.” (Page 7 of the Letter Decision, May 7, 2015)

[https://docs.neb-one.gc.ca/11-eng/11isapi.dll/fetch/2000/90466/94153/552726/2482343/2482959/2774368/Letter Decision to WesPac Midstream - Vancouver LLC - Application for a licence to Export Natural Gas - A4L1F1.pdf?nodeid=2773609&vernum=-2](https://docs.neb-one.gc.ca/11-eng/11isapi.dll/fetch/2000/90466/94153/552726/2482343/2482959/2774368/Letter%20Decision%20to%20WesPac%20Midstream%20-%20Vancouver%20LLC%20-%20Application%20for%20a%20licence%20to%20Export%20Natural%20Gas%20-%20A4L1F1.pdf?nodeid=2773609&vernum=-2)

So to pretend that these are separate Projects is deliberately misleading the public. The FortisBC Tilbury LNG plant will not be able to transport its product without the new terminal so the public is not offered an opportunity for the project to be rejected. It is classic “cart before the horse” process which contravenes the general principles of environmental assessment: transparency, practical, purposive, inter-disciplinary, participative, efficient, relevant, integrated, credible, and it certainly isn’t rigorous.

For the Canadian Environmental Assessment Agency and the Canadian Government to accommodate this flawed process raises serious questions of the public interest and the public trust. So how did it unfold that LNG at FortisBC Tilbury is being permitted to proceed to 90 times the current production with a license for export?

Failure to require environmental assessment and public input to expanded FortisBC Tilbury LNG plant

The failure to undertake an environmental assessment for the FortisBC Tilbury LNG plant contravenes legal and ethical due process. As the plant requires transmission lines for electricity, LNG storage and processing natural gas, and a pipeline to the new dock, both a federal and provincial environmental assessment should have been required. The Blakes legal firm document, ‘*Overview of the Permitting Requirements for LNG Projects in British Columbia*’, points out in the Review Process that an environmental assessment is typical with any LNG Project so how the provincial and federal governments let this one slip through without any environmental assessment raises serious questions.

License to export LNG through narrow Lower Mainland channels granted without due process

In 2013 and 2014, the B.C. Government announced it had exempted FortisBC LNG expansion at Tilbury from a Certificate of Public Convenience and Necessity (CPCN) and a review by the B.C. Utilities Commission. Furthermore, the B.C. Government passed two Orders-in-Council to allow the LNG expansions to 56 times the current production of 5,000 gigajoules per day with full build out plans for 450,000 gigajoules per day. The public was not consulted and an environmental assessment was not included.

Surely a federal environmental assessment should have been required for the FortisBC LNG expansion approval as there are considerable risks of safety and health to the public and the fragile ecosystems on the shoreline of the Fraser River impacting fish populations, water quality and air quality.

Lack of Disclosure and Accurate Information to the Public

The Valued Component Selection Document fails to give an accurate description of the Project. Page 6 refers to up to 90 LNG vessels and up to 34 barges per year. This is not consistent with the WesPac Tilbury website which claims:

“It is estimated that up to 90 barge calls and up to 122 LNG carrier calls (of various sizes) could occur at the jetty per year.”

Such discrepancies demonstrate disregard of public interest and a huge gap in credibility. It is unclear what size the LNG ships and barges will be. From the little that can be gleaned from snippets of contradictory information, the public could witness LNG carriers of all sizes on the Fraser. Even the smallest LNG vessels are at least 33% larger than the B.C Ferries and the LNG barges will be almost as long as the ferries.

The 38.0 metres width of the beams on LNG ships exceed the 32.5 metres that are the current limit on the Fraser. Apparently, WesPac Midstream has applied to Port Metro Vancouver for exemption from the limit. So it turns out that Port Metro Vancouver has the power to grant permission for larger vessels on the Fraser River? Surely, this is classic Fox overseeing the Henhouse and the public has no assurances about the size and length of LNG vessels that could be permitted on the River.

One internet blog, Mighty-Ships.com, claims: *“Definitely the LNG Carriers are among the most dangerous ships sailing around the seas. They are carrying compressed natural gas, which is flammable and easily exploding. The gas carriers are having large requirements for their machinery, their tanks and their support.”*

License Granted to Export LNG through Graveyard of the Pacific

On May 7, 2015, Canada’s National Energy Board approved a license for the annual export of 3.5 million tonnes of LNG without an environmental or risk assessment. Two months later, federal and provincial environmental assessments were initiated with the federal government granting a substitution process to B.C.

The LNG ships will be travelling through the narrow channels of the Fraser River and the Gulf Islands to the Strait of Juan de Fuca which can be extremely dangerous due to strong easterly wind, frequently reaching 60-80 miles per hour.

“Pacific Northwest ports are being increasingly used to ship oil and coal to Asia.

Unfortunately, **northwest inland and coastal waters are some of the most dangerous in the world**, with strong winds, powerful currents, rocky shores and river bars. Unstable, steep slopes threaten train traffic heading to coal/oil ports, and a huge fishery and shellfish industry is at risk if a spill occurs. With coal and oil shipping potentially increasing substantially over the next decade, the threat of major or catastrophic environmental damage is substantial.”

<http://coalexportfacts.org/2014/04/24/are-pacific-northwest-waters-too-risky-for-oil-and-coal-ships-cliff-mass-weather-blog/>

Major Safety Concerns not addressed

Safety in the production and transportation of liquefied natural gas needs to be taken very seriously. There are many lives at stake and accidents have occurred. Even the ocean traffic may not be as safe as claimed. A spill of LNG, a very cold liquid of course, is reported by some experts as a serious fire hazard. Apparently a large amount of very cold methane liquid will freeze water that comes in contact with it, and the resultant reaction may have safety considerations, even an explosion.

The WesPac Midstream LNG Terminal Project contravenes the LNG Terminal Siting Standards as outlined by the Society of International Gas Tanker and Terminal Operators (SIGTTO) of which WesPac is a member. The plans to transport LNG vessels through the South Arm of the Fraser River breach the protocol of avoiding transit fairways and populated areas.

An abbreviated Summary of LNG Terminal Siting Standards:
<http://www.quoddyloop.com/lngtss/standards.html>

1. There is no acceptable probability for a catastrophic LNG release [¹];
2. LNG ports must be located where LNG vapors from a spill or release cannot affect civilians [²];
3. LNG ship berths must be far from the ship transit fairway;
 - a. To prevent collision or allision [³] from other vessels;
 - a. To prevent surging and ranging along the LNG pier and jetty that may cause the berthed ship to break its
 - b. moorings and/or LNG connection;
 - c. Since all other vessels must be considered an ignition source;
LNG ports must be located where they do not conflict with other waterway uses [⁴] — now and into the future. [This requires long-range planning for the entire port area prior to committing to a terminal location];

Long, narrow inland waterways are to be avoided, due to greater navigation risk;
Waterways containing navigation hazards are to be avoided as LNG ports;
LNG ports must not be located on the outside curve in the waterway, since other transiting vessels would at some time during their transits be headed directly at the berthed LNG ship;

Human error potential always exists, so it must be taken into consideration when selecting and designing an LNG port.

>> Additional items exist in the standard than are summarized here. Please refer to *"Site Selection and Design for LNG Ports and Jetties."*

¹ *While risk of small LNG spills is acceptable, any risk of catastrophic LNG release is unacceptable.*

² *Sandia National Laboratories defines for the US Department of Energy three Hazard Zones (also called, "Zones of Concern") surrounding LNG carriers. The largest Zone is 2.2 miles/3,500 meters around the vessel, indicating that LNG ports must be located at least that distance from*

civilians. Some world-recognized LNG hazard experts, such as Dr. Jerry Havens (University of Arkansas; former Coast Guard LNG vapor hazard researcher), indicate that three miles or more is a more realistic Hazard Zone distance.

³ *Allision — (nautical term) Collision between a moving vessel and a stationary vessel or object*

⁴ *Conflicting waterway uses include fishing and recreational boating.*

The Standards claim LNG ports must be located where they do not conflict with other waterway uses as all other vessels must be considered as ignition sources.

<http://www.surreyleader.com/news/307170211.html>

The B.C. Wilderness Committee has created a risk map of the lower Fraser based on a U.S. Coast Guard document that outlines "zones of concern" in the event an LNG tanker accident. Zone 1, within 500 metres of a ruptured LNG tanker, is "where an LNG spill could pose severe public safety and property hazard and could damage or significantly disrupt critical infrastructure and key assets," according to the U.S. document.

Consequences would be "less severe" in a wider hazard zone band up to 1.6 kilometres away. Zone 3 would extend up to 3.5 kilometres – which according to the map would encompass all of Steveston and much of Ladner – and is considered the maximum distance a cloud of escaped LNG vapour could drift without dispersing. If it ignited, the cloud could burn back to the tanker and result in a "pool fire."

LNG Hazard Zones

Red – 500 metres Purple – 1.6 kilometres Blue – 3.5 kilometres.

B.C. environmental groups circulated this map to show how U.S. Coast Guard-defined hazard zones for LNG tankers would overlay the route from the proposed Tilbury LNG port.

The width of the Fraser River does not come close to the minimum safety requirements for LNG. The close proximity of these routes to densely populated communities is a big no-no in the eyes of global experts on LNG tanker safety.

Safety concerns in the USA, and resultant public outcry, have prevented several proposed LNG Terminals (receiving plants) from being built, especially in urban areas, i.e. East Coast and California. The US has laws preventing the movement of LNG ships in narrow waterways and close to communities. LNG production and export should not be permitted in this Tilbury Island location due to safety concerns on site and along the narrow shipping route. The Fraser River is too narrow to meet the international standards for the safe shipping of LNG.

The FortisBC Tilbury LNG plant and adjacent planned WesPac Terminal for LNG export are too close to communities, industrial activities and public areas as shown in the map below with a fuel delivery project on the opposite bank, a shipping facility, a cement plant, and a steel plant all nearby.

- The LNG operation will be a major intrusion into the Fraser River with offshore and onshore activities.
- Due to the narrow areas in the Fraser River, an appropriate safety zone around the LNG vessels and barges cannot be achieved.
- The large LNG vessels will dominate the river negatively impacting small businesses and recreational users.
- Large LNG vessels will impact the Fraser Valley Air shed contravening Metro Vancouver air quality standards and guidelines along with transboundary agreements.
- There will be impacts to the archaeological site on the opposite side of the river.
- The beams of the LNG ships are too wide for safety on the river.
- The people along the Fraser River and on the Gulf Islands will be affected by proximity to LNG ships and wave impacts.
- Vessels need to move through narrow, busy channels of the Strait of Georgia, the Gulf Islands, Boundary Pass, Haro Strait, and the Salish Sea to the Pacific Ocean.
- There are potential hazards of a large liquefied natural gas spill during marine transportation. These can cause toxic vapours, pollution and even fires or explosions.

Need for a Cumulative Effects Assessment

The WesPac Tilbury Marine Terminal will require considerable dredging impacting salmon and other fish species including the salmon, endangered White Sturgeon and fast-disappearing eulachon.

Missing is the potential effects on the health and survival of the Fraser Delta ecosystems which interact interdependently to support living organisms that have local, national and international significance. Piecemeal projects, such as this LNG Terminal, are causing degradation that is leading to the loss of clean air, endangered species at risk, salmon runs, herring, sturgeon, and millions of birds that make this area Canada's most Important Bird Area (IBA).

The document, Valued Component Selection Document for Tilbury LNG Jetty, lacks clarity and transparency. The B.C Environmental Assessment Office should not accept this document as it does not meet the requirements of either the *B.C. Assessment Act* or the *Canadian Environmental Assessment Act*. It fails to address accountability under these acts as well as *Species at Risk Act*, *Fisheries Act*, *Migratory Bird Act*, *Canada Marine Act*, *BC Environment Management Act* and other legislation along with many local and transboundary agreements.

The Scope of the Assessment should include effects of the shipping associated with the 21 kilometre route within the South Arm of the Fraser River to Sand Heads and then the route through the Strait of Georgia, the Gulf Islands, Boundary Pass, Haro Strait, and the Salish Sea to the Pacific Ocean.

The terminal site is coded RED in the Fraser River Estuary Management Plan (FREMP) habitat mapping system. This is the highest coding for habitat and is designated for protection.

Require Inclusion of Downstream and Upstream Effects

Upstream the gas well industry, whence the natural gas is obtained, has had devastating effects on the wildlife in the area, not to mention the leakage of methane into the atmosphere.

Downstream, the passage of over a hundred LNG ships per year, cumulatively with planned increase in container ships, through Strait of Georgia and Juan de Fuca Strait can only have serious detrimental effects on all the wildlife in the area, particularly orcas, humpback whales, and all the fish species including five species of salmon, sturgeon, steelhead, herring and eulachon.

Russian scientists, who have researched LNG environmental impacts on salmon and marine life, claim LNG operations on Sakhalin Island in Russia negatively impacted habitat and marine life. The nearby pink salmon runs collapsed.

http://friendsofwildsalmon.ca/news/article/russian_science_delegation_says_pacific_northwest_lng_could_collapse_skeena

Inadequate Information on Current and Long-term Dredging Requirements and Effects

Around the Wespac terminal, there needs to be a huge dredging operation before the dock is built and at frequent intervals thereafter, just to allow huge tankers enough draft to access the jetty. The environmental impact of such massive dredging is impossible to quantify, but is sufficiently worrying that this alone should disqualify the project.