

EXECUTIVE SUMMARY

Overview

Tilbury Jetty Limited Partnership (TJLP), as represented by its general partner Tilbury Jetty GP Inc., is proposing to construct and operate the Tilbury Marine Jetty (TMJ), located on Tilbury Island (adjacent to and in the Fraser River) in the City of Delta, British Columbia (B.C.). TMJ would be a new marine jetty providing berthing and loading facilities for liquefied natural gas (LNG) carriers and bunker vessels with a carrying capacity of up to 100,000 cubic metres (m³) for a minimum of 30 years. TMJ would transfer LNG via pipeline from the adjacent FortisBC Tilbury LNG Liquefaction Plant (Tilbury LNG Plant) to third-party owned and operated carriers and bunkers berthed at the jetty. LNG carriers would ship LNG predominantly to international markets, and LNG bunkers would ship predominantly to regional coastal markets and transport LNG to fuel other vessels. TJLP would be responsible for all shore-based marine operations at TMJ and all shore-to-ship transfer operations and procedures. The partners of the TJLP are Fortis and Seaspan affiliates.

In TJLP's Application, TJLP estimated up to 137 vessels (68 LNG carriers calls and 69 bunker vessels calls) calling on the jetty, resulting in 274 trips (inbound and outbound) annually, equivalent to approximately one vessel call every three days. In November 2021, TJLP proposed a Bunker Vessel Scenario (BVS) of up to 365 LNG vessel calls per year based on recent developments in the LNG bunkering and bunker vessel markets. As such, TJLP conducted additional analysis, which is captured in the Bunker Vessel Scenario Assessment (BVSA) Report, assessing 365 vessel calls in a year, with a vessel mix of 307 bunker vessels and 58 LNG carriers. Both the Application scenario (274 trips annually) and BVS (730 trips annually) are considered in the assessment.

TMJ is subject to an Environmental Assessment (EA) under B.C.'s *Environmental Assessment Act, 2002* (the Act) by the B.C. Environmental Assessment Office (the EAO), and the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) by the Impact Assessment Agency of Canada (the Agency) (formerly the Canadian Environmental Assessment Agency). On July 20, 2015, the federal Minister of Environment and Climate Change approved the substitution of the EA process to the Province of B.C. The substituted process must meet the EA requirements of CEAA 2012. The approval was granted with the understanding that the EA would be conducted by the EAO in accordance with the *Memorandum of Understanding on Substitution of Environmental Assessments (2013)* (the MOU) entered into by the Agency and the EAO.

The EAO prepared this Assessment Report in consultation with an advisory Working Group (Working Group), comprised of federal, provincial and local government representatives with mandates and skill sets relevant to the review of TMJ, as well as representatives of Indigenous Groups potentially affected by activities at the jetty site and along the shipping route (listed on

Schedules B and D, in the Section 11 Order and subsequent Section 13 Orders¹). The Agency also provided advice to the EAO in relation to fulfilling the requirements related to CEAA 2012.

The EAO undertook public consultation activities during the EA, including holding four public comment periods. All public comments, and TJLP and the EAO's responses to these comments, were considered in completing the EA.

In conducting this EA, the EAO considered potential environmental, economic, social, heritage, and health effects, including cumulative effects of other projects or activities of TMJ for the provincial EA. For the purposes of meeting the CEAA 2012 substitution requirements, the EAO also considered effects that TMJ may have on environmental effects described in subsections 5(1) and 5(2) of CEAA 2012, as well as the *Species at Risk Act* (SARA), subsection 79(2).

Assessment of Effects

The EA focused on assessing effects on the Valued Components (VCs) and pathways of effects related to air quality, greenhouse gas (GHG) management, river processes, vessel wake, water quality, fish and fish habitat, marine fish and fish habitat, marine mammals, vegetation, wildlife and wildlife habitat, marine birds, economy, socio-community, land and marine resource use, visual quality, heritage resources, human health, and noise.

The EAO assessed the potential for TMJ to have significant adverse effects on the VCs and on the requirements of CEAA 2012, including effects of TMJ on the environment that could affect Indigenous peoples, and included an assessment of the effects TMJ could have on Aboriginal Interests. The assessment also considered how accidents and malfunctions and changes to the environment could affect the VCs and Indigenous peoples. These assessments were informed by the Application provided by TJLP as well as comments received from the Working Group, Indigenous Groups, and the public.

TJLP proposed mitigation measures to avoid or minimize the adverse effects of TMJ. In consideration of TJLP's proposed mitigation measures and the comments received during the Application review, the EAO is proposing 20 conditions, each of which includes measures to mitigate the effects of TMJ. If provincial Ministers issue an Environmental Assessment Certificate (EAC), they may establish these conditions as legally binding requirements. The EAO has also recommended Key Mitigation Measures (KMMs) under CEAA 2012, to inform federal conditions. Federal conditions are also proposed by the Agency for consideration by the federal Minister of Environment and Climate Change as legally binding conditions in a CEAA 2012 decision statement, should TMJ be approved to proceed.

The following are some of the mitigations that are included in the provincial conditions the EAO proposes to provincial ministers:

¹ <https://projects.eao.gov.bc.ca/p/58851208aaecd9001b829b58/project-details>

- An Indigenous Monitors plan that provides opportunities for the participation of Indigenous Groups in monitoring activities during construction and operations;
- Emergency response and spill prevention measures, including procedures to notify Indigenous Groups, the City of Delta (Delta), Metro Vancouver, and the City of Richmond (Richmond) of emergencies or spills;
- Light management at the TMJ site, including mitigating potential attraction of birds;
- Wildlife and wildlife habitat management and monitoring, including species-specific sensitive timing windows and setbacks, invasive species prevention, control and management, and monitoring of restored habitat;
- Water Quality Management Plan to manage potential adverse effects to water quality during in-water works, including a monitoring program for turbidity and an adaptive management framework;
- River Bed Monitoring Plan to mitigate potential adverse effects to the bed of the Fraser River caused by dredging during construction and operations;
- Cultural and Archaeological Resources Management Plan to mitigate and monitor potential adverse effects on archeological and cultural sites, including an Archaeological Impact Assessment, measures to prevent unauthorized access to sites, and developing and implementing chance find procedures with Indigenous Groups;
- Indigenous Training, Employment and Procurement Plan to provide opportunities to Indigenous Groups and their members;
- Indigenous cultural awareness, recognition and mitigation to promote cultural awareness and recognition and mitigation adverse effects on cultural resources or practices in the marine terminal area;
- Vegetation and Wetland Management and Wetland Offsetting Plan to control noxious weeds and invasive plants, incorporate Indigenous stewardship values related to vegetation and wildlife, establish plant species of cultural significance to Indigenous Groups, and compensate for the loss of wetlands, that would also provide additional habitat and habitat function for wildlife; and
- Air Quality Management Plan and Greenhouse Gas Reduction Plan with mitigations to reduce GHGs and adverse effects to air quality during construction and operations, including triggers and corrective actions to reduce air quality levels and GHG emissions.

The EAO is also recommending KMMs under CEAA 2012, intended to inform federal conditions, including the following:

- Fish Mitigations to Reduce Harm and Mortality, including conducting in-water work activities during reduced risk windows unless authorized by Fisheries and Oceans

Canada (DFO), monitoring during dredging activities, underwater noise mitigation and monitoring, fish habitat offset plan, and a follow up program for effectiveness of fish and fish habitat mitigations;

- Marine Mammal Management Plan, including measures to reduce underwater noise and monitoring at the TMJ site;
- Vessel Traffic Management Plan, including measures to reduce underwater noise of marine shipping, participation in the Vancouver Fraser Port Authority-led Enhancing Cetacean Habitat and Observation (ECHO) Program seasonal slowdown initiatives, and participation, where possible, in regional environmental management measures and cumulative effects monitoring to protect Southern Resident Killer Whale (SRKW);
- Marine Communication Plan to notify Indigenous Groups and other marine users of planned activities associated with TMJ, including anticipated traffic schedules, and procedures to provide feedback to TJLP on adverse effects related to navigation;
- Marine Access and Transportation Plan to coordinate and communicate with other marine users and regulators, including Indigenous monitoring during food, social and ceremonial (FSC) fisheries windows and measures to mitigate effects on Indigenous traditional use activities, such as LNG carrier call scheduling and synchronization of bunker vessels with other marine traffic on the Fraser River, to limit disruption to Indigenous fishers when operating under DFO fishing licences;
- Mitigation measure that in each calendar year, TMJ would receive a maximum of 365 LNG vessel calls, of which a maximum of 68 would be LNG carrier calls;
- Emergency Response Plan for the TMJ site, which would describe emergency response training, measures to mitigate adverse effects and operating procedures to prevent potential accidents and malfunctions, and a description of the integrated response planning, including roles and responsibilities, and equipment requirements between TJLP and government agencies, local government and emergency response departments;
- Marine Shipping Emergency Response Outreach Program which would describe the equipment TJLP could provide to assist with a marine shipping spill or emergency response associated with TMJ-related LNG vessels;
- Cultural Heritage mitigations, which would require TJLP to develop Nation-specific measures to address the effects on tangible and intangible cultural losses caused by TMJ, in consultation with those Indigenous Groups experiencing the effects (as described in the EAO's Assessment Report), and to consider developing or contributing to Indigenous-led programs to preserve and enhance cultural heritage.

In addition to the requirement for an EAC, TJLP also requires various permits, approvals and authorizations which relate primarily to disturbance of land, water, fish and fish habitat, and disruption to marine navigation. Prior to the start of construction, TMJ must obtain provincial permits under the *Oil and Gas Activities Act*; *Land Act*, *Water Sustainability Act*; *Heritage Conservation Act* (HCA); and the *Environmental Management Act*. TMJ is also subject to a variety of federal legislations, and in some cases must obtain authorizations under these Acts, including CEAA 2012, *Canada Marine Act*, *Fisheries Act*, *Canadian Navigable Waters Act*, and *Canadian Environmental Protection Act*.

In consideration of the mitigation measures that would be required of TMJ, either in an EAC or federal decision statement should TMJ be approved, or in subsequent regulatory processes, the EAO concludes that TMJ would result in residual adverse effects that include:

- Changes to ambient air quality and increased GHG emissions during operations, primarily from an increase in combustion exhaust from LNG carriers and bunker vessels, and associated vessels such as tugs and security vessels;
- Change in sediment processes, river currents and local geomorphology from dredging and propellor wash during construction and operations at the TMJ site;
- Increase suspended sediment due to dredging during construction and operations at the TMJ site;
- Fish habitat loss and alteration at the TMJ site from piles, dredging, vibro densification and the scour protection placed in the dredge pocket;
- Potential harm to fish, including change in fish behaviour due to underwater noise during in-water works at the TMJ site and injury or mortality to sturgeon due to vessel strikes at the TMJ site and in the lower Fraser River;
- Behavioural changes and physical injury to marine mammals, including SRKW, due to underwater noise at the TMJ site and TMJ-related vessels in transit, and vessel strikes;
- Loss or alteration of wetland and riparian ecosystems at the TMJ site;
- Loss or alteration of wildlife habitat and sensory disturbance from noise and light at the TMJ site, and increased risk of wildlife mortality at the TMJ site and due to collisions with vessels and disorientation from vessel lighting for TMJ-related vessels in transit;
- Increase in potential human health effects associated with exposure to airborne contaminants via inhalation during operations;
- Increase in noise levels during construction and decommissioning at the TMJ site;
- Interference to commercial and non-commercial marine users from the TMJ site to Sand Heads; and

- Reduced visual quality due to increase in daytime visibility of the TMJ site and TMJ-related vessels and increase in nighttime visibility of the TMJ site.

In addition to the effects listed above, the EAO concluded that TMJ would result in residual adverse effects to the following CEAA 2012 factors:

- Effects on Current Use of Lands and Resources for Traditional Purposes (CEAA 5(1)(c)(iii) through effects to fish, access to fishing areas and the experience of fishing;
- Effects on Current Use for other Traditional and Cultural Uses [CEAA 5(1)(c)(ii)] and Cultural Heritage [CEAA 5(1)(c)(ii)] through access, quality of experience and, in the case of cultural interests in SRKW, through the resource itself; and
- Effects to the Health and Socio-economic Conditions of Indigenous Peoples (CEAA 5(1)(c)(i) in consideration of the views of Indigenous Groups on the potential risk of accident or malfunction, real and/ or perceived health risks associated with air, noise, visual disturbance and consumption of country foods, knowledge transmission, cultural continuity, and cultural health.

The EAO concludes that TMJ, combined with existing significant cumulative effects and future foreseeable projects and activities, would result in:

- Significant adverse cumulative effects on SRKW due to underwater noise;
- Significant adverse cumulative effects on Current Use of Lands and Resources for Traditional Purposes for fishing (CEAA 2012, Section 5(1)(c)(iii)) for Indigenous Groups that preferentially fish near the TMJ site or in the shipping lanes; and
- Significant adverse cumulative effects on Cultural Heritage (CEAA 2012, Section 5(1)(c)(ii) for all Indigenous Groups who have a cultural interest in SRKW, for Tsleil-Waututh Nation related to cultural and spiritual practices, for Musqueam related to cultural continuity and sense of place and identity, for Tsawwassen First Nation related to cultural well-being and stewardship aspirations under Tsawwassen First Nation's Treaty, and for Pacheedaht First Nation and Ditidaht First Nation related to cultural practices, language and knowledge transmission.

The EAO appreciates that there is a high level of public, government and Indigenous concern regarding public safety risks associated with LNG activities. While the consequences for public safety due the loss of containment of LNG and ignition could reach substantial distances and be very high, after mitigation, the EAO notes that the likelihood of such an event is very rare, based on TJLP's definitions used in the quantitative risk analysis. The risk analyses conducted

during the TMJ EA show the individual and societal risk fall into the “Broadly Acceptable” or “Tolerable” if as low as reasonably possible ranges. There is potential for extremely rare likelihood but very high severity of consequences of accidents and malfunctions causing a SRKW fatality or irreversible damage to heritage resources, for which the residual risk is moderate, based on TJLP’s definitions in the risk matrix. For potential effects of accidents and malfunctions on other environmental VCs, no significant effects are predicted effects and the residual risk level is low to moderate. Should an EAC be issued, the EAO understands that public safety risk from activities at the jetty site would be discussed further during the BC Oil and Gas Commission (BC OGC) permitting process. For the marine navigation component, Transport Canada (TC) noted that the assessment of probability and proposed mitigation measures in the Application and supplemental information were reasonable for the marine transit risk, considering the redundant layers of safety that make up Canada’s marine safety system.

Indigenous Consultation

Potential effects from TMJ, including vessel berthing, loading and de-berthing within the marine terminal area during operations, and increased levels of vessel traffic due to TMJ-related vessels transiting the navigational channel of the lower Fraser River to Sand Heads would occur in the asserted traditional territories of the Schedule B Indigenous Groups (as identified in the EAO’s Section 11 Order), and downstream of the traditional territories of Katzie First Nation and the Indigenous communities represented by Stó:lō Nation, Stó:lō Tribal Council, and People of the River Referrals Office. Potential effects from TMJ-related vessel traffic along the shipping route through the Salish Sea, from Sand Heads out to 12 nautical miles (that is, approximately 22 kilometres [km] off the west coast of Vancouver Island), would occur in the asserted traditional territories of Schedule B and Schedule D Indigenous Groups (as identified in the EAO’s Section 11 and 13 Orders). The EAO consulted these groups throughout the EA and assessed the potential adverse effects of TMJ on their Aboriginal Interests. Métis Nation BC (MNBC) asserts rights and traditional uses over the entire province of BC and has indicated an Aboriginal Interests associated with the proposed TMJ site. The EAO notified MNBC of key milestones during the EA to meet federal consultation agreements consistent with the MOU.

The EAO concludes that TMJ has the potential to affect Aboriginal Interests related to fishing, hunting, trapping, gathering, use of travel ways, other cultural or traditional use of marine areas or SRKW, intergenerational knowledge transfer, and archaeological and heritage resources and sites. While the area of the development for TMJ is crown land (submerged) and the upland portion of the TMJ site is located on fee simple private land that are used for industrial purposes, the EAO still assessed for potential impacts to Aboriginal title claims for some Indigenous Groups (as required). In the context of potential effects on Aboriginal

Interests the EAO also considered: the importance of TMJ to the local, regional, and provincial economy; the resources or values that may no longer be available for future generations; and the benefits of TMJ to Indigenous Groups.

Conclusions

The EAO concludes that, considering the analysis and implementation of the proposed provincial conditions and recommended KMMs under CEAA 2012, TMJ would not result in significant residual adverse effects. In terms of cumulative effects, the EAO concludes that the predicted residual effects from TMJ, interacting with existing significant cumulative effects, existing projects and other reasonably foreseeable future projects, would contribute to significant adverse cumulative effects to SRKW, current use of lands and resources for traditional purposes for fishing in the lower Fraser River and at Swiftsure Bank, and to cultural heritage for some Indigenous Groups.