ATTACHMENT: April 7, 2020
Federal Authority Advice Record
Response due by April 14, 2020.
Please submit the form to: *IAAC.TilburyLNG-GNLTilbury.AEIC@canada.ca*
Tilbury Phase 2 LNG Expansion Project – FortisBC Holdings Inc.
Agency File: 005724

Department/Agency	Health Canada
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1. Is it probable that your department or agency may be required to exercise a power or perform a duty or function related to the Project to enable it to proceed?

   If yes, specify the Act of Parliament and that power, duty or function.

Not applicable

2. Is your department or agency in possession of specialist or expert information or knowledge that may be relevant to the conduct of an impact assessment of the Project?

   Specify as appropriate.

As a federal authority, Health Canada will provide specialist or expert information and knowledge in the Department's possession (expertise) to support the assessment of impacts on human health from projects considered individually and cumulatively under the *Impact Assessment Act, 2019* (*IAA, 2019*). The Department provides expertise in the areas described below; it does not play a regulatory role. How the expertise provided by Health Canada will be used in the impact assessment process will ultimately be determined by the reviewing body(ies). It should also be noted that expertise related to assessing human health that are relevant to impact assessments (IAs) may be held by other federal, provincial and municipal partners, reflecting the shared jurisdiction for environmental and human health within Canada.

To support the implementation of the IAA, Health Canada can provide expertise in the following areas:

- Air quality
- Recreational and drinking water quality
- Traditional foods (Country Foods)
- Noise
- Human Health Risk Assessment (HHRA)
- Methodological expertise in conducting Health Impact Assessment (HIA)

(cont'd next page)

- Electromagnetic fields
- Radiological emissions
- Public health emergency management of toxic exposure events

Available Health Canada guidance:

Health Canada has published the following guidance documents for evaluating human health impacts:

Guidance for Evaluating Human Health Impacts in Environmental Assessment: https://www.canada.ca/en/services/health/publications/healthy-living.html#a2.5.

- Human Health Risk Assessment
- Air Quality
- Water Quality
- Country Foods
- Noise
- Radiological Impacts

Guidance prepared by Health Canada on management of crude oil incidents is available as a PDF and in html format through the following link:

- *Guidance for the environmental public health management of crude oil incidents: a guide intended for public health and emergency management practitioners:* http://publications.gc.ca/site/eng/9.849592/publication.html

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3. Has your department or agency considered the Project; exercised a power or performed a duty or function under any Act of Parliament in relation to the Project; or taken any course of action that would allow the Project to proceed in whole or in part?

   Specify as appropriate.

No

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4. Has your department or agency had previous contact or involvement with the proponent or other party in relation to the Project? (for example, enquiry about methodology, guidance, or data; introduction to the project)

   Provide an overview of the information or advice exchanged.

No

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5. Does your department or agency have additional information or knowledge not specified, above?

   Specify as appropriate.

No

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6. From the perspective of the mandate and area(s) of expertise of your department or agency, what are the issues that should be addressed in the impact assessment of the Project, should the Agency determine that an impact assessment is required?

   For each issue discussed, provide a concise, plain-language summary that is appropriate for inclusion in the Summary of Issues and Engagement.

Based on the limited information provided in the initial Project Description (iPD) by FortisBC (the Proponent), Health Canada (HC) has identified the following key issues and information requirements that are likely to be relevant to the Tilbury Phase 2 LNG Expansion Project (the Project). These are not to be construed as an exhaustive list of requirements pertaining to human health for the Project.

Human Health Setting

Key issue: Health Canada notes that the proposed Project may cause effects to local residents, including Indigenous peoples who practise traditional activities in the Project area. The Proponent should present information on populations and activities in the area, their distances in relation to the Project, and what Project components may affect which population/activity.

The iPD identifies the nearest resident as being approximately 700 m to the southwest of the Project site, and the closest residential area as being approximately 5 km away. Additionally, there is public use of a dike to the north of the property along the Fraser River (p. 3-1). The iPD also indicates that the Cowichan Nation Alliance (CNA), representing four local Indigenous communities, have commenced legal action to reclaim the historic village site of Tl'uqtinus and other nearby areas in present-day Richmond and Delta, including the right to fish in the south arm of the Fraser River. The historic village site of Tl'uqtinus is located approximately 515 m north of the project site on the opposite side of the Fraser River (p. 11-5). Health Canada is aware from comments on the WesPac Marine Jetty environmental assessment review, that the CNA has expressed an intention to begin harvesting traditional food and resources at the Tl'uqtinus site. As such, the Proponent should pay particular attention to potential human health impacts to CNA members who may in future practise traditional activities (e.g., gathering traditional foods) in close proximity to the Project area.

Overall, Health Canada recommends that the locations of all potential human receptor locations be identified, including residences, cabins and other temporary/seasonal traditional use sites such as hunting, fishing, trapping, berry picking, and ceremonial and other uses (e.g. recreational) within the Project area. Sensitive human receptor locations, such as schools, hospitals, retirement complexes or assisted care homes, should also be included. As well, the distances between human receptor locations and the key components of the Project that may have potential impacts on these receptors should be identified.

Air Quality

Key Issue: **Health Canada notes that the proposed Project, and associated activities, may release a variety of contaminants into the air during all project phases. Therefore, the Proponent should provide a comprehensive inventory of all potential air contaminants that may be released. The health effects of these contaminants should be assessed against federal and provincial standards (lower of the two), and should consider all project phases, including abnormal operating scenarios.**

With respect to Project-related emissions, the Proponent anticipates the release of the following air emissions during the various Project phases (including one-time venting): carbon dioxide (CO_2), methane (CH_4), nitric oxide (NO), and other hydrocarbons and particulate matter (p. 6-1). However, Health Canada notes that approximately 25 (diesel- or LNG-powered) vessel/barge deliveries (50 vessel movements) along the Fraser River are expected over a 2- to 3-year construction period (p. 6-3). The use of portable generator systems or temporary construction power may also be required to supply remote power/lighting (p. 2-3). As well, during operations, if BC Hydro-supplied power is not available to operate electrical compressor drives, the Proponent may consider self generation and/or gas combustion compressor drives as alternatives (p. 2-5). Health Canada notes that all or some of these activities may lead to increased levels of fine particulate matter ($PM_{2.5}$), diesel particulate matter (DPM), and other fuel combustion by-products (nitrogen dioxide [NO_2], sulphur dioxide [SO_2], carbon monoxide [CO], polycyclic aromatic hydrocarbons [PAHs] and volatile organic compounds [VOCs]). As such, the health effects of these pollutants, including the carcinogenic and non-carcinogenic effects of DPM (separate from $PM_{2.5}$), should also be assessed. Health Canada also suggests that the Proponent provide a full inventory of all potential air pollutants including any refrigerants, solvents or other process chemicals (and their by-products) that may be vented, combusted or accidently released into the atmosphere as a result of Project activities.

Additionally, Health Canada is of the opinion that the most stringent Canadian Ambient Air Quality Standards[1] or BC Ambient Air Quality Objectives[2] should be used to undertake an assessment of existing (baseline) and predicted future (project, project + baseline, accidents and malfunctions, cumulative) air quality (e.g., for NO_2, SO_2, $PM_{2.5}$). In addition, ozone presents challenges in IAs, requiring complex modelling efforts on a scale that may not be entirely feasible for an individual project to achieve. While Health Canada prefers a quantitative assessment of ozone, a qualitative approach may be acceptable in evaluating the impact of precursor emissions (e.g., nitrogen oxides [NO_x] and VOCs) on the formation of ozone; taking into account the processes and activities specific to the region. Health Canada notes that

[1] The Canadian Ambient Air Quality Standards (CAAQS) consider nitrogen dioxide, fine particulates and ozone to be "non-threshold" air pollutants; meaning that health effects may occur at any level of exposure to these air pollutants.

[2] The BC Ambient Air Quality Objectives (BC AAQOs) were last updated in February 28, 2020, and provide more stringent requirements for $PM_{2.5}$ (24-hour and annual). The BC AAQOs are available at: https://www2.gov.bc.ca/assets/gov/environment/air-land-water/air/reports-pub/prov_aqo_fact_sheet.pdf.

there are a number of developments that are being proposed in the area, and an expected increase in water- and land-based transportation in the region that may impact air quality.

With respect to scoping, the Proponent states that, as a regulated public utility, it has an obligation to meet current and future natural gas requirements. The iPD indicates that local marine operators including BC Ferries and Seaspan Ferries currently operate LNG fueled vessels and are planning to expand their fleets. The Proponent is also providing LNG and compressed natural gas as fuel for on road transportation customers including trucking fleets, waste haulers, and bus fleets helping them transition to a lower emission fuel (p. 1-6). Given this scenario, it not clear to what extent water- or land-based transportation (necessary for bringing materials to the Project site), or during operation (for bringing LNG to local markets), is being scoped into the air quality assessment. Health Canada is of the opinion that all transportation-based emissions that are directly the result of this Project (with the exception of those emissions being assessed under other project reviews) should be included in air quality modelling undertaken by the Proponent.

Finally, the iPD indicates that electric drives and air cooling will be used for liquefaction (which reduces overall emissions), and therefore, the main sources of emissions during operations are anticipated from thermal oxidizers, gas flare and fired heaters (p. 6-3). The iPD further indicates that LNG storage tanks are designed to be closed loop systems with no normal venting or emissions other than the initial cool-down and fill during the construction phase. Also, pressure safety relief venting from the LNG tank is possible but is not considered normal operations. Health Canada is of the opinion that along with an assessment of Project construction, operation (various scenarios), and decommissioning, the Proponent should undertake a reasonable worst-case assessment of one or more abnormal operating scenarios; for example, when emergency venting or flaring is required, or other accidents and malfunctions may occur.

Traditional Foods Quality

Key Issue: Health Canada notes that Project activities may cause changes to the environment that could result in traditional foods accumulating higher levels of contaminants. Should this be the case, Health Canada supports the need for a human health risk assessment.

The iPD indicates that local Indigenous communities (such as the CNA) have, or assert claims of, rights and title to the lands, water, and resources within their traditional territories. This includes an ability to undertake fishing, hunting, trapping, and gathering activities for food, materials, trade, medicines, and traditional ceremonies (p. 11-4). The iPD further identifies that an existing jetty on the Fraser River (to be upgraded to provide berthing and loading facilities for LNG carriers as part of the proposed WesPac Jetty project), will also be used by the Proponent for construction purposes. However, the Project may require additional upgrades to this jetty for barge unloading of equipment modules to accommodate the weight or size of Project modules (p. 2-4), and it is not known whether these upgrades could result in sediment disturbance. As such, Health Canada is of the opinion that if contaminants are present in Fraser River sediments near the Project area, and significant sediment disturbance is anticipated during this or any Project phase, the Proponent should identify the contaminants of potential concern (COPCs) and assess the potential uptake of these COPCs in traditional foods consumed by locals. Health Canada suggests that impacts to traditional foods be assessed for any food that is hunted, fished or collected in the potentially impacted area including freshwater and marine fish, crabs, mussels etc. Additionally, if Project activities are anticipated to emit any contaminants into the air that may deposit onto foods (e.g., plants, berries) consumed by people, this potential influence on traditional food quality should also be considered. Health Canada guidance supports the need for a human health risk assessment (HHRA) when elevated levels of COPCs are identified in environmental media, and there are possible exposure pathways to humans (i.e. through the consumption of traditional foods, drinking water, etc.).

Noise

Key Issue: Health Canada notes that Project construction and operations will create noise that may cause disturbance to the location population. The Proponent should conduct a noise assessment of the area, taking into account populations that may be more sensitive to noise.

The iPD indicates that Project construction noise will be generated through various activities and may increase daytime ambient sound levels from vehicles and equipment. During operations, potential sources of noise include air coolers, cooling towers, compressors, pumps, and vehicle traffic. (p. 6-3). Given that the Project is located across the Fraser River from the CNA's historic village site of Tl'uqtinus, and adjacent to a recreational use area (Fraser River dike), a detailed noise assessment will be required in accordance with Health Canada guidance. The noise assessment should identify and describe human receptors that may have a heightened sensitivity to noise exposure (e.g. Indigenous peoples, schools, child care centres, places of worship, etc.).

<original signed by>

Chantal Roberge

Name of Departmental / Agency Responder

Director,
Environmental Health and
Internationally Protected Persons
Programs

Title of Responder

April 7, 2020

Date