21. HUMAN HEALTH

This section describes and summarizes an assessment of the effects of the Project on human health. The assessment follows the general approach and concepts described in Section 5. The main steps in the assessment include:

- consideration of input from Indigenous communities, government representatives and agencies, other communities, property owners and people or groups interested in the Project during the ongoing consultation and engagement process;
- identification of information and data sources used in the assessment;
- identification and rationale for selection of criteria and indicators for human health;
- establishment of temporal and spatial boundaries for the assessment of effects on these criteria;
- description of the existing environment to gain an understanding of baseline conditions for these criteria;
- identification and screening of effect pathways that could link Project activities to changes in these criteria;
- characterization of predicted net effects (after mitigation) of the Project on criteria (if required);
- assessment and determination of significance of cumulative effects from the Project and previous, existing and RFDs on criteria (if required);
- assessment of uncertainty in the effects predictions, indicating how uncertainties are addressed; and,
- identification of proposed monitoring or follow-up to confirm predictions and address uncertainty.

As outlined in Section 5.2.1, the assessment is structured around three assessment cases:

- Base Case;
- Project Case; and,
- Cumulative Effects Case.

This assessment evaluates the change in human health that could result from a change in environmental quality (i.e., specifically from a change in contaminant concentrations), including the following:

- groundwater quality;
- surface water quality; and,
- air quality.

Project-related air emissions consist of volatile compounds; as a result, aerial deposition does not occur and subsequently, the emissions do not bioaccumulate up the food chain. For this reason changes in soil and food quality (including country foods) are not expected and have not been evaluated further for human health.

This assessment relies on the results of the Human Health Risk Assessment (HHRA) that is provided in Appendix 21-I. The HHRA follows the risk assessment framework endorsed by provincial and federal regulatory agencies (MOE 2005; Health Canada 2012). The framework provides a structured and clear approach for evaluating potential human health risks, if any, to people associated with changes in environmental quality due to contaminant releases from a project.

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The change in human health that could result from noise or exposure to electromagnetic fields (EMF) from the Project is not evaluated as part of an HHRA, which evaluates potential risks associated with chemical exposures. It is noted that the assessment of the acoustic environment (Section 11.0) found the net effect of noise emissions associated with the Project to be negligible. Exposure to EMF is discussed in Section 4.3.2.7.

21.1 Input from Consultation and Engagement

The following issues pertaining to human health were raised during consultation and engagement for the Project:

- concerns regarding EMF and potential effects on children;
- concerns regarding electrical effects on pacemakers; and,
- request that during the ongoing maintenance of the line, ground cover plants be used to maintain brush control for approximately 50 metres on either side of the road/trail to mitigate trail users or berry pickers being exposed to herbicides.

The issues raised in the first two bullets are not addressed in this section of the EA Report. There is no compelling scientific evidence that EMFs in living and school environments, regardless of distance from transmission lines, cause ill health. Health Canada (2012) states: “When you are inside your home, the magnetic fields from high voltage power lines and transformer boxes are often weaker than those from household electrical appliances”. Based on the available weight of evidence, Health Canada “does not consider that any precautionary measures are needed regarding daily exposures to EMFs at [extremely low frequencies] based on the available weight of evidence. There is no conclusive evidence of any harm caused by exposures at levels found in Canadian homes and schools, including those located just outside the boundaries of power line corridors”. Additional information about EMF is provided in Section 4.3.2.5 of the EA Report.

Use of herbicides is addressed in the vegetation and wetlands section of the EA Report (Section 12.0). A detailed consultation and engagement record is provided in Appendices 2-III and 2-IX.

21.2 Information Sources

Information incorporated into the human health assessment was obtained from the following sources:

- baseline conditions for surface water for surface quality data (Section 7.5.1);
- baseline conditions for groundwater for groundwater quality data (Section 8.5.1);
- baseline conditions for air quality data (Section 9.5.1);
- baseline conditions for traditional land and resource use for information on the communities and types of people present in the study areas and how people use the study areas (Section 17.5);
- baseline conditions for non-traditional land and resource use information for information on the communities and types of people present in the study areas and how people use the study areas (Section 19.5); and,
- the HHRA (Appendix 21-I) for calculated risk estimates (i.e., hazard quotients [HQs]).

The information presented in the sources listed above was reviewed in order to understand existing environmental quality, the communities and types of people present in the study areas, how people use the study areas and existing conditions for human health. For the purposes of the EA, sufficient information was deemed to be available from the sources listed above to assess the potential effects of the Project on human health.

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21.3 Criteria, Assessment Endpoints and Indicators

Criteria are components of the environment that are considered to have economic, social, biological, conservation, aesthetic or ethic value (Section 5.1). The criterion for this assessment is human health. The health of people is important to the well-being of individuals, families and communities. Different members of communities may have different characteristics (e.g., occupancy, use of land and consumption of resources) which may result in different exposures and health risks and may potentially affect human health.

Assessment endpoints represent the key properties of a criterion that should be protected (Section 5.1). The assessment endpoint for the human health criterion is protection of human health (i.e., no change in human health from existing conditions).

Indicators represent attributes of the environment that can be used to characterize changes to criteria and the assessment endpoint in a meaningful way. Project activities can result in changes in environmental quality (i.e., surface water, groundwater and air quality, and specifically changes in contaminant concentrations in these media) as a result of the release of contaminants to the environment. People near the Project can potentially be exposed to these contaminants to an extent that it may result in health risks to people and therefore could potentially affect human health. As such, environmental quality (i.e., surface water, groundwater and air quality, and specifically changes in contaminant concentrations in these media) was selected as an indicator for the human health criterion.

The criterion, assessment endpoint and indicator selected for the assessment of Project effects on human health, and the rationale for their selection, are provided in Table 21-1.

Table 21-1: Human Health Criterion, Rationale, Assessment Endpoint and Indicator

Criteria	Rationale	Indicator	Assessment Endpoint
Human Health	■ The health of people is important to the well-being of individuals, families and communities ■ Different members of communities may have different characteristics (e.g., occupancy, use of land and consumption of resources) which may result in different exposures and health risks that may potentially affect human health	Changes in environmental quality, including surface water, groundwater and air quality, and specifically contaminant concentrations in these media that could affect human health	Protection of human health (i.e., no change in human health from existing conditions)

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21.4 Assessment Boundaries

21.4.1 Temporal Boundaries

The Project is planned to occur during two phases (Section 5.2.1):

- **construction phase:** the period from the start of construction to the start of operation (approximately two years); and,
- **operation phase:** encompasses operation and maintenance activities throughout the life of the Project, which is anticipated to be indefinite.

The assessment of Project effects on human health considers effects that occur during the construction phase as emissions are considered to be largest during this phase of the Project. These periods are sufficient to capture the effects of the Project.

21.4.2 Spatial Boundaries

Spatial boundaries for the assessment are provided in Table 21-2.

Table 21-2: Human Health Spatial Boundaries

Spatial Boundaries	Area (ha)	Description	Rationale
Project footprint	4,832	The Project footprint is the preferred route ROW, laydown yards, storage yards, construction camps, temporary construction easements and new access roads	Designed to capture the potential direct effects of the physical footprint of the Project
Human Health LSA	Representative 5 km long, 4 km wide area (2,000 ha)	Defined by a representative 5 km segment of the preferred route ROW and extends 2 km from the preferred route ROW. Equivalent to the air quality LSA.	Concentrations of contaminants within this representative 5 km segment were predicted to a distance of 2 km on either side of the preferred route centreline. This 5 km-long, 4 km-wide area is the air quality LSA. A separate air quality RSA was not considered necessary in the air quality assessment because the air quality LSA is large enough to encompass predicted changes in air quality. The air quality LSA was considered as the human health LSA because changes in air quality were determined to be the major route of exposure in the evaluation of potential changes to human health.

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21.5 Description of the Existing Environment (Base Case)

The existing environment for human health was described using an assessment of the potential human health risks (i.e., HHRA) associated with exposure to existing (i.e., baseline or background) contaminant concentrations measured in the environment (i.e., the Base Case). A detailed description of the existing environment for human health for the air quality LSA is provided in the HHRA (Appendix 21-I).

21.5.1 Baseline Data Collection Methods

Baseline data have been collected for indicators (i.e., surface water, groundwater and air quality) based on their known potential to contribute to changes in human health, and the possibility that the Project may affect these environmental components known to contribute to a change in human health. The rationale for the inclusion of these human health indicators is presented below:

- **Air quality:** Changes in air quality can affect human health (Government of Ontario 2016). Section 9.5 presents the baseline conditions for air quality in the air quality LSA; and,
- **Groundwater and surface water quality:** Deterioration of surface and groundwater quality can affect the availability of safe drinking water for human consumption, and the health of fish and other aquatic organisms subsequently consumed by people (Environment Canada 2010;2015). Sections 7.5 and 8.5 present the baseline surface water quality and groundwater quality data in the surface water and groundwater LSAs, respectively.

Existing conditions for human health as it relates to air quality were specifically evaluated as changes to air quality was determined to be the major source of exposure from the Project (Appendix 21-I). Air quality in the human health LSA was evaluated based on existing contaminant concentrations in air and calculated risk estimates (i.e., HQs) presented in the HHRA (Appendix 21-I). The HQ is the ratio of the contaminant exposure likely to be incurred by people under existing conditions (e.g., background air concentrations) and the amount of contaminant exposure that is considered to be safe (i.e., toxicity reference value [TRVs]). HQs of less than one are associated with negligible human health risks. HQs of greater than one indicate the potential for human health risks. Hazard quotients greater than one but less than 10 are generally associated with low risk because of the conservative nature of the TRVs used to calculate HQs. For example, human health TRVs are generally based on the most sensitive endpoints, with the application of uncertainty factors to account for deficiencies in the key study or dataset or to protect sensitive subpopulations (Appendix 21-1).

Typically in an assessment of potential human health risks consideration is given to both non-carcinogenic and carcinogenic effects; however, emissions to air from the Project are expected to only occur during the construction phase of the Project. The construction phase is expected to take approximately two years. People at a particular location would therefore be expected to be exposed to contaminants emitted from the Project for a maximum of approximately two years. However, construction activities affecting air quality are expected to be sequentially staggered. This duration is a small fraction of a person's expected lifespan and exposure to emissions for this brief period of time would be unlikely to appreciably affect the risk of developing cancer over a lifetime. Therefore, only non-carcinogenic health effects were assessed and incremental lifetime cancer risks (ILCRs), which measure the incremental increase in lifetime cancer risk, were not calculated.

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21.5.2 Baseline Conditions

A detailed description of existing conditions for surface water quality is provided in Section 7.5.1 and summarized in this section. Surface water quality in the human health LSA was compared to PWQOs based on available data from the MOECC and LRCA. PWQOs represent a desirable level of water quality that the MOECC strives to maintain in surface waters in the Province. Surface water quality in the human health LSA generally meets relevant guideline values (PWQOs), with the exception in a number of cases for some metals (i.e., aluminium, cadmium, and iron), phosphorus, TSS, and turbidity.

A detailed description of existing conditions for groundwater quality is provided in Section 8.5 and summarized in this section. Based on available data from the MOECC, existing conditions for groundwater quality are available for a limited number of parameters, including nitrate, sodium, chloride, iron, manganese and hardness. Groundwater quality often exceeds ODWS for these parameters; however, this groundwater quality is considered typical for the geology of the area.

A detailed description of existing conditions for air quality is provided in Section 9.5 and summarized in this section. Overall, monitoring data indicate that background air quality surrounding the Project is below the relevant provincial and federal ambient air quality guidelines, criteria and standards.

A detailed description of existing conditions for human health as it relates to air quality is provided in the HHRA (Appendix 21-I), and is summarized below:

- Potential human health risks from contaminants of potential concern (COPCs) in air with available background concentrations were considered to be negligible (i.e., HQs were less than one; HQ = 0.17 for NO_x [as NO_2] for the 1-hour averaging period, HQ = 0.28 for PM_{10} for the 24-hour averaging period).
- For diesel particulate matter (DPM) for the annual averaging period, potential human health risks could not be determined because background air concentrations were not available.

21.6 Project-Environment Interactions and Pathway Analysis

The linkages between Project components and activities and potential effects to human health are identified and assessed through a pathway analysis (Section 5.4). Potential pathways for effects to human health are presented in Table 21-3. The purpose of this assessment was to evaluate the change in human health that could result from a change in environmental quality, specifically from a change in contaminant concentrations in surface water, groundwater and air. The potential pathways for human health were aligned with the potential pathways identified by the Project components that predict or evaluate potential Project-related changes to environmental quality (i.e., surface water, groundwater and air quality). A summary of the information provided in those sections as it relates to changes in environmental quality and as a result, human health is provided in Table 21-3. Detailed descriptions are provided in the following sections.

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Table 21-3: Potential Effect Pathways for Effects to Human Health

Project Component or Activity	Effect Pathway	Pathway Duration	Mitigation	Pathway Type
Project activities during the construction phase, including: ■ land clearing activities; ■ material handling and hauling; ■ vehicular exhaust; and, ■ reclamation of temporary access roads and staging areas.	CAC and fugitive dust emissions from construction activities can result in changes in air quality (i.e., ambient air concentrations) that may affect human health	Temporary, with effects limited to construction	Implement the air quality and dust control mitigation measures presented in Section 9.6	Secondary
Project activities during the construction phase: ■ hauling materials; ■ solid and liquid waste management; and, ■ fuel storage and hazardous waste handling.	Changes to groundwater quality from spills of fuel or other materials may affect human health	Ongoing (extending into operation), with no measurable effects	Implement the groundwater quality mitigation measures presented in Section 8.6	No pathway
Project activities during the operation phase: ■ transportation of personnel, materials, and equipment.				
Project activities during the construction phase: ■ excavation of foundations; and, ■ foundation dewatering activities.	Changes to groundwater quality from excavations for foundations and dewatering excavations may affect human health	Temporary, with effects commencing during construction and potentially extending into the operation phase in the event low permeability materials are present	Implement the groundwater quality mitigation measures presented in Section 8.6.	No pathway
Project activities during the construction phase: ■ construction of access roads and widening of access trails, clearing of the ROW and installation of foundations.	Changes to groundwater quality from hardening of surfaces may disturb shallow soils with pre-existing contamination. Such movement of contaminated soils may lead to contamination of groundwater and may affect human health	Temporary, with effects limited to construction	Implement the groundwater quality mitigation measures presented in Section 8.6	No pathway

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Table 21-3: Potential Effect Pathways for Effects to Human Health

Project Component or Activity	Effect Pathway	Pathway Duration	Mitigation	Pathway Type
Project activities during the construction phase: ■ use of explosives to create level areas for transmission structures and for foundation excavations and new permanent access roads	Changes to groundwater quality from blasting may affect human health	Temporary, with measurable effects limited to construction	Implement the groundwater quality mitigation measures presented in Section 8.6	No pathway
Project activities during the construction phase: ■ discharges of wastewater from construction, vehicle and equipment wash, and domestic activities.	Local increases in suspended solids concentrations and changes in the chemical constituents in receiving water due to discharges of wastewater may affect human health	Temporary (limited to construction), with no measurable effects	Implement the surface water quality mitigation measures presented in Section 7.6	No pathway
Project activities during the construction phase: ■ site preparation; ■ stockpiling of soil; ■ earthworks associated with construction and reclamation; ■ mining of aggregates; ■ concrete mixing on-site or in batch plants; ■ operation of vehicles and equipment; and, ■ transportation of personnel, materials and equipment Project activities during the operation phase: ■ transportation of personnel, materials, and equipment.	Local increases in the incidence of particulate matter from disturbed areas, concrete mixing, and vehicle/equipment exhausts with consequent changes in concentrations of suspended solids and chemical constituents in receiving water bodies may affect human health	Ongoing (extending into operation), with no measurable effects	Implement the surface water quality mitigation measures presented in Section 7.6	No pathway
Project activities during the construction phase: ■ operation of solid waste handling and storage facilities.	Contamination of surface water with floating debris and chemical constituents as a result of the washoff of trash and leachate to nearby water bodies may affect human health	Temporary (limited to construction), with no measurable effects	Implement the surface water quality mitigation measures presented in Section 7.6	No pathway

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Table 21-3: Potential Effect Pathways for Effects to Human Health

Project Component or Activity	Effect Pathway	Pathway Duration	Mitigation	Pathway Type
Project activities during the construction phase: ■ operation of fuel and hazardous materials handling and storage facilities; ■ re-fuelling, service and maintenance of vehicles and equipment; ■ operation of construction equipment and generators; and, ■ transportation of personnel, materials, and equipment. Project activities during the operation phase: ■ transportation of personnel, materials, and equipment.	Contamination of surface water with chemical constituents through the washoff of spills and leaks to nearby water bodies may affect human health	Ongoing (extending into operation), with no measurable effects	Implement the surface water quality mitigation measures presented in Section 7.6	No pathway
Project activities during the construction phase: ■ Blasting for the construction of tower foundations and new permanent access roads	Contamination of surface water with chemical constituents through the washoff of explosives spills and residues to nearby water bodies	Temporary (limited to construction), with no measurable effects	Implement the surface water quality mitigation measures presented in Section 7.6	No pathway
Project activities during the construction phase: ■ upgrade of existing water body crossings, and construction of new water body crossings	Local changes in streamflows and water levels as part of short-term water diversions during construction Local increases in rates of erosion of water body banks and beds due to local changes in streamflows and water levels Local increases in sediment loads consequent to local increases in rates of erosion of water body banks and beds	Temporary (limited to construction), with measurable effects	Implement the surface water quality mitigation measures presented in Section 7.6	Secondary

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Table 21-3: Potential Effect Pathways for Effects to Human Health

Project Component or Activity	Effect Pathway	Pathway Duration	Mitigation	Pathway Type
Project activities during the construction phase: ■ upgrade of existing water body crossings, and construction of new water body crossings	Contamination of surface water through washoff of organic debris and chemical constituents into nearby water bodies may affect human health	Temporary (limited to construction), with measurable effects	Implement the surface water quality mitigation measures presented in Section 7.6	No pathway

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21.6.1 Pathway Screening

21.6.1.1 No Pathway

A pathway was assessed as having "no pathway" if the activity would not occur (e.g., no release of sediment), or if the pathway would be removed by mitigation such that the Project would result in no measurable environmental change in, and no expected net effect to, environmental quality and by extension no change to human health. The Project is not anticipated to have an effect on the overall function of groundwater resources as they currently exist. Therefore, this pathway is not expected to result in a measurable change relative to the Base Case and would have no net effect on human health.

For this reason, these pathways were classified as having "no pathway" for human health.

21.6.1.2 Secondary Pathways

In some cases both a Project component or activity (i.e., source) and an effect pathway may exist, but the Project is assessed as resulting in minor environmental change with a negligible net effect on environmental quality and by extension a negligible effect on human health relative to baseline values, resulting in a predicted secondary pathway. This pathway, described in the following bullet, was assessed as secondary and a screening assessment was completed to assess the potential effect of changes in air quality on human health.

- **CAC and fugitive dust emissions from construction activities can result in changes in ambient concentrations that may affect human health**

The assessment of the potential change in human health that could result from a change in air quality from CAC and fugitive dust emissions to air from construction activities is based on predicted contaminant concentrations in air and calculated risk estimates (i.e., HQs) presented in the HHRA (Appendix 21-I).

As described in Appendix 21-I, the HHRA follows the risk assessment framework endorsed by provincial and federal regulatory agencies (MOE 2005; Health Canada 2012). The framework provides a structured and clear approach for evaluating potential human health risks, if any, to people associated with changes in environmental quality due to chemical releases from a project. For there to be a potential health risk, the following three conditions must be met (Figure 21-1):

- a receptor (i.e., people) must be present;
- there must be a way by which the receptor can come into contact with the chemical (i.e., an exposure pathway); and,
- a contaminant must be present at concentrations that could be harmful (i.e., a contaminant of potential concern [COPC]).

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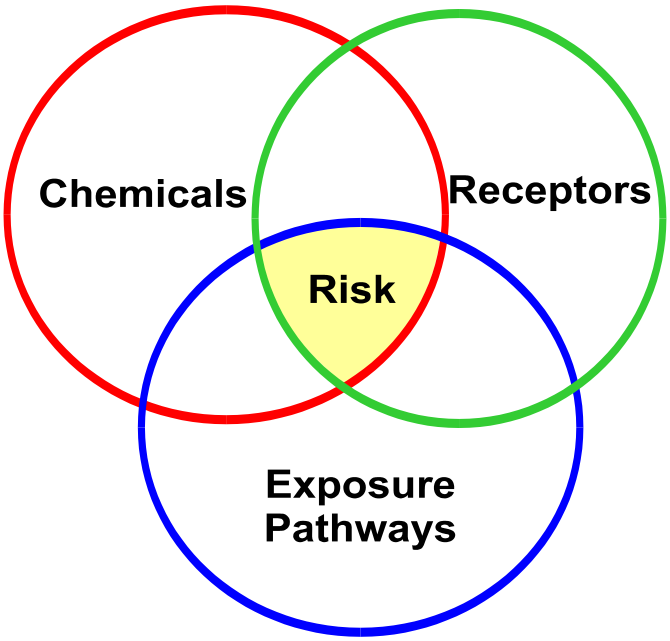

Figure 21-1: Three Conditions for Potential Health Risk

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If any of these three conditions are not present, there would be no potential for health risks. For example, if a receptor and a COPC are present but there is no way for the receptor to come into contact with the COPC (i.e., an exposure pathway is not present), there would be no potential health risk.

For the Project, the potential change in human health that could result from a change in air quality from CACs and fugitive dust emissions to air during construction was assessed for potential receptors in the air quality LSA that could be directly exposed to CACs and fugitive dust in air via inhalation. Human health receptors may include people living in (e.g., residents), working in or visiting (e.g., recreational users) the area that may be exposed to COPCs in the air quality LSA. These receptors include people of all ages, including those at sensitive life stages such as infants, children and the elderly. A resident was selected as the main human health receptor for evaluation given that people may reside in the air quality LSA. Workers were not identified as human health receptors for the assessment because the potential change in health of workers is protected through compliance with appropriate workplace practices following requirements defined in the Ontario *Occupational Health and Safety Act* and other applicable regulatory instruments.

Taking into consideration the implementation of mitigation measures and using a number of conservative assumptions, the air quality assessment predicted air concentrations of NO_x (as NO_2), CO, SO_2, TSP, PM_{10}, $PM_{2.5}$ and DPM at approximately 100 m intervals from the centreline of the preferred route to the outer boundary of the air quality LSA (to a distance of approximately 2 km on either side of the preferred route centreline) over a representative 5 km segment of Project construction using a screening dispersion model. Air concentrations were predicted based on a 1-hour averaging period and converted to a 24-hour averaging period using conversion factors. Annual air concentrations were also predicted. The predicted air concentrations were used as input to the HHRA to evaluate potential health risks associated with short-term or acute (1-hour and 24-hour) and long-term or chronic (annual) exposures by people.

Potential health risks were evaluated through comparison of predicted air concentrations against 1) air quality thresholds available from regulatory agencies and 2) through the calculation of risk estimates (i.e., HQs). Comparison to air quality thresholds was considered to represent a conservative evaluation of the potential for the predicted concentrations to result in adverse effects; consequently, contaminants with concentrations less than air quality thresholds were considered to pose a negligible risk to human health. Contaminants with concentrations greater than air quality thresholds were identified as COPCs and were evaluated further through the calculation of HQs.

For the Project Case, HQs of less than one are associated with negligible human health risks; conversely, HQs greater than one indicate the potential for human health risks. Typically in an assessment of potential human health risks consideration is given to both non-carcinogenic and carcinogenic effects; however, emissions to air from the Project are expected to occur during the construction phase of the Project. The construction phase is expected to take approximately two years. People at a particular location would therefore be expected to be exposed to contaminants emitted from the Project for a maximum of approximately two years. However, construction activities affecting air quality will be sequentially staggered. This duration is a small fraction of a person's expected lifespan and exposure to emissions for this brief period of time would be unlikely to appreciably affect the risk of developing cancer over a lifetime; therefore, only the potential for non-carcinogenic health effects were assessed and ILCRs were not calculated.

The following summary of potential human health risks from construction activities is based on the results of the HHRA:

- Potential human health risks from short-term or acute (i.e., 1-hour) exposure to NO_x (as NO_2) were identified based on predicted concentrations from Project construction activities and from predicted concentrations from Project construction activities in combination with background air concentrations at distances of approximately 100, 200 and 300 m from the ROW centreline (maximum calculated HQs of 1.9 and 2.1, respectively).
- Potential human health risks from other contaminants over the averaging times (1-hour, 24-hour and annual) were considered to be negligible.

Potential health risks from NO_x were identified in the HHRA; however, the following is noted:

- Exposures and health risks to people were determined based on predicted maximum concentrations of NO_x in air. The maximum concentrations may occur anywhere along a representative 5 km segment of Project construction and are not necessarily representative of concentrations at a specific location (e.g., residences or commercial/industrial buildings).
- A person must be present at the exact location and time that the predicted maximum concentration is occurring.

Predicted concentrations from Project activities are therefore expected to be negligible and have no non-negligible net effect on air quality and by extension, there is no non-negligible net effect to human health.

21.6.1.3 Primary Pathways

No primary effect pathways were identified for human health. Subsequently, there is no further assessment or characterization of net effects, including determination of significance (Section 5.4.3).

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21.7 Project Effects Assessment (Project Case)

No primary effect pathways were identified for human health as a result of the Project (refer to Section 21.6.1). No further assessment or characterization of net effects, including determination of significance, is required.

21.8 Cumulative Effects Assessment (Cumulative Effects Case)

No primary effect pathways were identified for human health as a result of the Project (refer to Section 21.6.1). Consequently, the human health criterion is not carried forward for assessment of cumulative effects.

21.9 Prediction Confidence in the Assessment

The confidence in the effects assessment for human health is high, considering that the mitigation described in the EPP (Appendix 4-II) is based on accepted and proven best management practices that are well-understood and have been applied to transmission line projects throughout North America. Uncertainty in the assessment has been further reduced by making conservative assumptions as detailed in the HHRA (Appendix 21-I), and summarized below:

- Human health TRVs that are used to characterize potential risks to people are generally considered to be conservative. As such, use of the TRVs may overestimate toxicity and potential health risks.
- The TRV used to characterize potential risks to human health from short-term or acute exposure to NO_2 is the most stringent of the available TRVs for this COPC, and lower than the available TRVs from the CCME and Ontario MOECC, the relevant federal and provincial jurisdictions for the Project.
- Exposures and health risks to people were determined based on predicted maximum concentrations of chemicals in air. Statistics on the predictions, which would provide a reasonable maximum estimate of exposures taking into account the variability in concentrations across a site, would result in lower exposures and health risks to people.
- The assessment relied on predicted air concentrations provided by the air quality discipline. A number of conservative assumptions were used in the air quality modelling such that predicted concentrations have likely been overestimated. For a summary of the conservative assumptions used in the air quality modelling, refer to Section 9.9.
- Uncertainty in the assessment has been further reduced by planning adaptive management measures to address unforeseen circumstances should they arise.

Given the conservative approach of the assessment described above, the results of the assessment are unlikely to underestimate the effects of the Project on human health.

21.10 Follow-up, Inspection and Monitoring Programs

No follow-up, inspection or monitoring programs are proposed or required for human health.

21.11 Information Passed on to Other Components

Results of the human health assessment were not passed on to other components of the EA.

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