



PORT HOPE AREA INITIATIVE (PHAI)

NOISE IMPACT ASSESSMENT IN SUPPORT OF THE ENVIRONMENTAL ASSESSMENT FOR THE PORT HOPE PROJECT

Prepared for:



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Executive Summary

The Port Hope Area Initiative (PHAI) represents the Government of Canada's commitment to respond to the community-recommended solutions for the cleanup and local, long-term, safe management of the historic low-level radioactive waste in Port Hope and Port Granby. A federal Environmental Assessment (EA) for the Port Hope Project was completed in 2005, which included an assessment of potential noise impacts from the Project. The assessment was based on a "maximum" or "bounding" principle that was intended to determine the greatest potential impacts of the Project on residential locations or other sensitive land uses. This approach allowed for the maximum amount of flexibility so that outcomes of the EA were not impacted by minor changes in the project description. The previous Noise Impact Assessment included a number of highly conservative assumptions that have led, in some cases, to over predictions of the likely noise impacts from the Project. The effect of shielding/reflection of buildings and other structures and changes in topography were not considered in the previous study. The use of more advanced noise modelling techniques has allowed for the inclusion of these items and has resulted in a more accurate representation of noise related impacts.

To assess the incremental changes in noise levels associated with the Port Hope Project, a comprehensive program of noise monitoring and predictive modelling was initiated. Baseline sound levels were measured along the recommended transportation routes and the general Study Area during the summer and fall of 2010 and summer of 2012 to establish current conditions and provide a means to validate the noise propagation model that was used to predict changes in noise levels. The noise propagation model was based on a series of assessment scenarios that considered changes in local road and rail traffic over the course of the Project, the influence of future, or changes to existing, major industrial sources and construction equipment sound levels from each major remediation activity area. Individual remediation project activities and combinations (cumulative effects) of project activities that were expected to occur at the same time within the Study Area were considered.

The noise impact assessment evaluated the likely incremental changes in noise exposures based on a comparison of future noise exposures with and without the Project in place to determine a maximum zone of influence. These incremental changes were compared to a set of generally accepted quantitative criteria that were used to assess noise impacts. Noise levels that exceeded background sound levels by less than 3 dBA were deemed to have marginal impact and were generally not considered to be perceptible to humans. An incremental change of less than 6 dBA was considered noticeable but was considered a low overall impact. Incremental changes between 6 and 10 dBA and >11 dBA were considered moderate to high impacts and would be clearly audible by residents.

With the exception of three (3) Highland Drive Landfill scenarios and one (1) Port Hope Harbour - Centre Pier scenario all other scenarios had maximum zones of influence to a moderate impact (i.e., distance where an incremental increase due to the Project or greater than 6 dBA is no longer predicted to occur) that were substantially less than previously predicted. The aforementioned scenarios all had maximum zones of influence to a moderate impact in one or more cardinal directions that were greater than previously predicted. The cumulative effects scenarios predicted that the individual remediation site activities were far enough apart that the incremental increases in noise would not be compounded by their simultaneous operation.