



**DILLON**  
CONSULTING

**WASTE CONNECTIONS OF CANADA (WASTE  
CONNECTIONS)**

# **Noise Work Plan (Final)**

**Ridge Landfill Expansion EA**

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## Project and Work Plan Overview

This Noise Assessment work plan has been prepared to support the environmental assessment (EA) for the Ridge Landfill expansion and is based on the commitments made in the final amended Terms of Reference (ToR) for the EA that was approved by the Ministry of the Environment and Climate Change (MOECC) in May of 2018.

Waste Connections of Canada (Waste Connections) is proposing an expansion of the Ridge Landfill in order to continue to provide long-term residual disposal capacity for the company's large IC&I customer base and as a regional and inter-regional waste management facility to serve the projected increase in population and economic growth in southern and central Ontario.

The Ridge Landfill has been in operation since 1966 and was previously expanded in 1999. Waste Connections owns 340 hectares (ha) of land at the Ridge Landfill. The existing Landfill Site Area, which is permitted by an ECA from the MOECC for waste management and environmental work purposes, is 262 ha. The area within which waste disposal is permitted, called the Waste Fill Area, is 131 ha or half of the Landfill Site Area. As of December 2017, it is estimated that the existing Waste Fill Area at the Ridge Landfill site will provide waste disposal capacity until approximately 2021 at the current fill rate.

The current approved capacity for the Ridge Landfill is 21 million cubic metres (m<sup>3</sup>). The site is approved to accept a maximum of 1,300,000 tonnes of waste per year (the MOECC approved annual waste disposal rate). The EA does not propose to increase the maximum annual fill rate (this would remain as-is); however, Waste Connections is seeking the EA to increase the life of the facility for a 20 year planning period, from 2022-2041.

The waste being landfilled is approximately 98% IC&I waste and 2% residential waste. As part of the EA approval, Waste Connections would agree to reduce their IC&I service area from all of Ontario to just southern and central Ontario, and their residential service area from Chatham-Kent and the neighbouring counties of Essex, Lambton, Middlesex and Elgin, to only the Municipality of Chatham-Kent.

This Noise Assessment work plan outlines the tasks to support the evaluation of alternative methods, and to undertake an impact assessment once the preferred alternative method is determined. The following paragraphs provide a brief summary of the scope of the Noise work, including protocols and/or standards to be adhered to for the work.

The Noise Assessment will seek to identify potential noise impacts related to the proposed landfill expansion. The objectives of the noise assessment are as follows:

- Establish the baseline noise conditions off-site and along the haul route. This will consist of traffic noise modelling and/or long-term ambient noise measurement.
- Determine the potential noise impact associated with the proposed expansion for the preferred alternative.

The existing and potential future use noise receptors in the vicinity of the landfill will be confirmed for the noise assessment purposes. For each alternative, the potential noise impact at the nearby receptors will be assessed qualitatively and the results will be summarized in a matrix. The alternatives will be ranked based on the expected noise impact and the number of receptors that would be potentially impacted.

For the preferred alternative (i.e., one final alternative design), a quantitative analysis consisting of predictive acoustic modelling will be completed. The predicted receptor noise levels will be compared against applicable noise criteria set by the Ontario Ministry of the Environment and Conservation and Parks (MOECP). If the predicted levels exceed the applicable criteria, Dillon will advise on potential noise mitigation options that can be implemented for the site.

## 2.0 Noise Assessment Scope of Work

The proposed expansion of the landfill is expected to include changes to site layout, including the locations and footprint of active areas / cells. As such, the proposed expansion has the potential to impact the noise environment at the receptors in the vicinity of the landfill (the site).

### 2.1 Study Areas

For the purposes of the Noise Scope of Work, the study areas have been defined as follows:

- Off-Site Study Area (“off-site”) – includes the properties closest to the landfill property, as these are the Points of Reception (PORs) for the noise impact assessment; and,
- Haul Route Study Area (“haul route”) – encompasses lands immediately adjacent to Communication Road, Drury Line and Erieau Road which are identified as the designated haul routes for the site.

For noise impact, the assessment of compliance and mitigation requirements are conducted for the closest Points of Reception (PORs) to dominant noise sources. For this project, the closest PORs are expected to experience the maximum noise impact. For the haul route (between Highway 401 and the landfill site), the study area will be limited to the PORs adjacent to / fronting onto the haul route.

## 3.0 Existing Noise Environment

The landfill is located in a rural setting and based on previous acoustic assessment completed by Dillon for this site, the expected background noise levels are in the low to mid 40’s dBA. Dillon will undertake a baseline ambient noise study to establish receptor noise environments along the haul route as well as in the vicinity of the landfill site. The baseline noise study will consist of traffic noise modelling and/or long-term (i.e., 48 hours) ambient noise measurement program.

## 4.0 Future Noise Environment

For determining the potential noise impact associated with the proposed expansion, and specifically for the preferred alternative design, Dillon will complete the following tasks:

- The existing and potential future noise receptors in the vicinity of the landfill site will be confirmed for use in the acoustic assessment. For the acoustic assessment, receptor mapping (existing and potential future ones) prepared/confirmed by other Dillon disciplines will be used. For each of the alternatives, proposed changes to the site operations and/or layout will be reviewed in the context of noise impact. For each alternative, the potential noise impact at the nearby receptors will be assessed qualitatively and the results will be summarized in a matrix. For a qualitative assessment, the expected change in noise impact will be classified as marginal, low, medium or high. This will be determined based on number of noise sources, vehicle traffic numbers, operating modes, and noise source – receptor distances. The alternatives will be ranked based on the expected noise impact and the number of receptors that would be potentially impacted.
- For the preferred alternative (i.e., one final alternative design), a quantitative analysis consisting of predictive acoustic modelling will be completed. Up to three (3) reasonable worst-case operating scenarios at the site will be determined and the associated noise sources will be modelled using CADNA/A. The noise propagation software will take into account, site layout, topography, ground and atmospheric absorption to predicted receptor noise impact associated with the site. The noise data for the onsite noise sources will be gathered from Dillon’s in-house noise database and/or from equipment manufacturers. For each of the three (3) reasonable worst-case scenarios that are foreseen for the site, up to two (2) modelling iterations have been included in this proposal to account for any changes to the site layout / equipment for the selected alternative. For additional modelling, Dillon will advise the client of the level of effort prior to undertaking the work.
- The predicted receptor noise levels will be compared against applicable noise criteria set by the Ontario Ministry of the Environment and Climate Change (MOECC). If the predicted levels exceed the applicable criteria, Dillon will advise on potential noise mitigation options that can be implemented for the site. In collaboration with the client, Dillon will assist in developing operationally feasible noise mitigation plan(s) for up to three (3) reasonable worst-case operating scenarios at the site. For the purposes of this proposal, Dillon has considered up to six (6) modelling iterations to develop and optimize potential noise mitigation measures. If additional effort is required, Dillon will advise the client prior to undertaking the work.
- A stand-alone noise impact study will be prepared which will include all the assumptions and considerations used in the assessment as well as modelling results and findings of the study. If required, the report will also include a noise mitigation section that will provide the details of the proposed noise mitigation plan for the site. The report will be submitted to the client for review prior to finalizing. A

summary of the acoustic assessment for the landfill expansion will be prepared for inclusion in the main EA document.

#### 4.1 Assumptions

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- Work plan above does not account for public consultation events and responding to stakeholder questions
- Work plan does not account for attendance at meetings with regulator and/or client
- For the construction phase of the project, the activities will be reviewed against MOECC's publications NPC-115 (Construction Equipment), NPC-118 (Motorized Conveyances) and NPC-207 (Impulsive Vibration in Residential Buildings) and if required, qualitative assessments will be prepared.

Site specific information, including specifics of onsite operations, equipment and schedules, as well as noise data for dominant onsite noise sources (if not available from Dillon's in-house noise database) are to be provided by the client. Dillon's in-house noise database includes noise data for typical landfill equipment, including those used in the previous Ridge Landfill EA for increase fill rate (e.g., Bulldozer, Compactor, Excavator, Articulated Dump Truck, Grader, 3-axle Truck, Backhoe, Loader).