



**DILLON**  
CONSULTING

WASTE CONNECTIONS OF CANADA (WASTE  
CONNECTIONS)

# **Transportation Scope of Work Description (Final)**

Ridge Landfill Expansion EA

# Table of Contents

---

<b>1.0</b>	<b>Project and Work Plan Overview</b>	<b>1</b>
<b>2.0</b>	<b>Study Purpose and Objectives</b>	<b>3</b>
<b>3.0</b>	<b>Study Area</b>	<b>4</b>
<b>4.0</b>	<b>Work Plan</b>	<b>4</b>
4.1.	Initiate Traffic Assessment Task.....	4
4.2.	Data Collection.....	4
4.3.	Existing Environment .....	5
4.4.	Future Environment .....	5
4.5.	Identify and Quantify Alternative Site and Service Conditions.....	5
4.6.	Assessment of Effects and Development of Mitigation.....	6
4.7.	Documentation .....	7
<b>5.0</b>	<b>Schedule</b>	<b>8</b>

## Project and Work Plan Overview

This Transportation 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.

Transportation analysis will be undertaken to assess the ability of the existing roads to accommodate the traffic generated by the expansion and continued operation of the landfill site. The analysis will assess the traffic operation and safety requirements of both off-site (adjacent roadway and haul routes) and on-site (operations for trucks, auto vehicles and potential conflicts with pedestrians and general operating equipment at the site access to Erieau Road) conditions. The assessment will focus on quantifying the impacts and needs of the preferred site development alternative method, and two resource recovery options (centralized processing at Ridge for all of Ontario, or centralized processing at Ridge for Chatham-Kent and surrounding 4 counties).

A summary of additional commitments for the Transportation assessment is provided below.

<b>Commitment</b>	<b>Reference to applicable section in EA or supporting document</b>
The transportation impact assessment of the undertaking will consider anticipated traffic associated with any additional diversion occurring at the site confirmed through the EA process.	Transportation work plan Section 4.0. This will also be incorporated into the EA (Section TBD).
Baseline collision data will be considered and analyzed as part of the overall safety assessment during the EA.	Transportation work plan Section 4.0. This will also be incorporated into the EA (Section TBD).
Waste Connections will consult with the Ministry of Transportation on the preparation of a traffic impact study that considers the impacts of the existing waste haul route, as defined in the Terms of Reference, on the Highway 401/Highway 40 interchange.	Transportation work plan Section 4.0. This will also be incorporated into the EA (Section TBD).

## Study Purpose and Objectives

The purpose of the study is to complete a transportation impact assessment for the Ridge Landfill Expansion Environmental Assessment (EA) proposed by Waste Connections of Canada (Waste Connections).

In accordance with the Environmental Assessment Act, the objectives of the study are as follows:

- i) Describe the environment potentially affected by the proposed undertaking, including both the existing environment as well as the environment that would otherwise be likely to exist in the future without the proposed undertaking.
- ii) Carry out an evaluation of the transportation effects of the proposed undertaking, using the transportation assessment criteria and studies that have been established through the development of the Terms of Reference (ToR).
- iii) Undertake an evaluation of any additional actions that may be necessary to prevent, change or mitigate transportation effects.

The transportation assessment will be undertaken in accordance with the amended ToR (May 2018), including the additional commitments made by Waste Connections throughout the stakeholder consultation process.

The analysis will be structured as follows:

- Initiate Traffic Assessment
- Data Collection
- Existing Environment
- Future Environment
- Identify and Quantify Alternative Site Conditions
- Assessment of Effects and Development of Mitigation
- Management and Documentation

The following describes the specific tasks required to address this scope of work.

## 3.0 Study Area

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

- On-Site Study Area (“on-site”) – includes the property on which the current Ridge Landfill and proposed expansion is situated; 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.

The On-Site Study Area will consider the potential for increased traffic due to potential diversion activities that could take place at the site (as committed to in the approved amended Terms of Reference). The haul route includes all of the intersections and access points that will need to be assessed, including road sections along Communication Road, Drury Line and Erieau Road, including ramp interchanges with Highway 401.

## 4.0 Work Plan

### 4.1. Initiate Traffic Assessment Task

- Confirm details of development proposal (hours of operation, types of vehicles, number of employees on site throughout hours of operation, general activity to/from site throughout hours of operation).
- Confirm analysis conditions (time periods of interest, horizon years).
- Confirm key intersections/ network elements for analysis.
- Consult with Ministry of Transportation to confirm approach to, and foundations for transportation assessment.
- Prepare final schedule, including identification of field work and transportation deliverables.

### 4.2. Data Collection

- Review available background documentation.
- Prepare inventory of existing geometric conditions on the study area road network. A site visit will be required to take inventory of study area infrastructure and equipment (lane arrangements, speed zones, traffic control, and site specific design characteristics/issues [sight distance, obstructions to visibility]).
- Collect existing intersection turning movement counts at key study area intersections, including Highway 401 interchange ramp terminals. Available counts will be obtained from municipality and province and supplemented as required (fill gaps, update older counts) with in-field counts

for a.m., midday, and p.m. peak periods (8 hours in total). Our work program assumes that data will need to be collected for a maximum of 7 key intersections along the haul route. Data collection would occur over a 2-week period.

- Collect daily traffic volumes on boundary roads (historical Annual Average Daily Traffic [AADT]). Our work program assumes in-field data will need to be collected for a maximum 3 stations (Erieau Road, Drury Line West of Middle Line and Drury Line East of Middle Line). Remaining area AADT's would be provided by respective governing agencies. Data collection would occur over a 2 week period, corresponding with data collection for the intersections.

#### 4.3. Existing Environment

- Generate profile of existing transportation conditions.
- Prepare base mapping for significant transportation features and characteristics (i.e., volumes, lane geometry, haul routes, etc.).
- Assess performance of road network under existing conditions and verify traffic operations assumptions.

#### 4.4. Future Environment

- Identify area developments that would contribute traffic to study area roads.
- Identify reasonable general background growth rate for study area roads.
- Identify planned changes to the study area road network for inclusion in the future baseline assessment. This will include the planned improvements to the Highway 401/Highway 40 interchange.
- Forecast background traffic conditions on study area roads without expanded site development.
- Assess performance of road network under future background (without expanded site development) conditions.

#### 4.5. Identify and Quantify Alternative Site and Service Conditions

- Identify a trip generation rate for subject site operations and development.
- Forecast site trips.
- Develop trip distribution for site trips and assign trips to future road network.
- Forecast post-development traffic volumes (add site traffic and future background traffic forecasts) at study area intersections.
- The above tasks will be undertaken using a spreadsheet model to facilitate calculations related to trip generation, trip distribution, and assignment. This will be undertaken for a maximum of 3 options: 1 on-site concept (the preferred site development concept) and 2 resource recovery system alternatives (centralized processing at Ridge for all of Ontario, or centralized processing at Ridge for Chatham-Kent and surrounding 4 counties).

#### 4.6. Assessment of Effects and Development of Mitigation

- Assess performance (level of service and safety) of study area road network with expanded site operations (off-site) for the peak hour of the design day (p.m. peak hour).
- Identify mitigation measures required to ensure network performance.
- Assess performance (level of service and safety) of on-site activity.
- A high level traffic safety review will be undertaken to confirm intersection and roadway link collisions rates, based on historical experience in the area.
- Assess on-site traffic circulation and storage issues as it relates to the operation of the Erieau Road accesses (main site and parking entrances).
- Identify mitigation measures required to insure network performance.
- Confirm feasibility of design elements for required modifications to road network and or site operations.
- For the purpose of costing, it has been assumed only the preferred site designs will be considered.
- Criteria will be defined for the transportation service evaluation. These criteria will include, but not necessarily be limited to, those identified below.



Criteria Group	Description / Rationale	Indicators	Data Sources
Transportation Service	Performance of the network along the haul route  Levels of service and other performance metrics will provide the opportunity to assess and compare impacts of alternative traffic activity levels on- and off-site	<ul style="list-style-type: none"> <li>Level of Service – Volume to Capacity</li> <li>Assessment of in mid-block links and intersections</li> <li>% truck traffic</li> <li>Travel times</li> <li>Collision Rates</li> </ul>	<ul style="list-style-type: none"> <li>Observed traffic data</li> <li>Calculations in spreadsheet models</li> </ul>
(Input to) Air Quality	Level of Greenhouse Gas Emissions along haul route  The greater the volume and the greater the delay for travel along the haul route, the more vehicle emissions will be realized.	<ul style="list-style-type: none"> <li>Vehicle kilometers of travel</li> <li>Average vehicle speed along haul route</li> <li>Vehicle hours of delay</li> </ul>	<ul style="list-style-type: none"> <li>Observed traffic data</li> <li>Calculations in spreadsheet models</li> </ul>
(Input to) Noise	Exposure of receptors to volume.  Increased volume and the truck component of that volume, will result in increased noise levels. Depending on the location of sensitive receptors, this may or may not be a significant differentiator.	<ul style="list-style-type: none"> <li>Peak hour and AADT estimates along haul route sections</li> </ul>	<ul style="list-style-type: none"> <li>Observed traffic data</li> <li>Calculations in spreadsheet models</li> </ul>

- Transportation performance output will be used to inform other discipline assessments (i.e., on-site and off-site operations and maintenance costs, air quality, and noise, etc.)

#### 4.7. Documentation

- Draft Transportation Appendix.
- Final Transportation Appendix.
- Conceptual / Functional Design Drawings for site and roadway modifications.
- Summarize transportation analysis and findings for input to the E.A.

## Schedule

It is anticipated that the transportation assessment can be delivered within 10 weeks of the execution of the study initiation tasks (to draft report). This timeline is dependent on the timely provision of traffic data from public agencies and the finalization of on-site development alternatives to be assessed.

Elapsed Time from execution of Study Initiation:

- Data Collection – 3 weeks
- Existing Environment – 1 week
- Future Environment – 1 week
- Identify and Quantify Alternative Site Conditions – 1 week
- Assessment of Effects and Development of Mitigation – 3 weeks
- Documentation – Draft Report – 1 week