

# Glossary of Terms

## Definition of Acronyms

Acronym	Definition
AAQC .....	Ambient Air Quality Criteria
ADT .....	Average Daily Traffic
AGL .....	Above Ground Level
ANSI .....	Area of Natural and Scientific Interest
ASL.....	Above Sea Level
BMP.....	Best Management Practice
BPIP .....	Building Profile Input Program
C of A.....	Certificate of Approval
C&D.....	Construction and Demolition
CAZ .....	Contamination Attenuation Zone
CDP .....	Community Design Plan
CDR.....	Conceptual Design Report
CEAA.....	Canadian <i>Environmental Assessment Act</i>
CEPA.....	Canadian Environmental Protection Act
CH <sub>4</sub> .....	Methane
CLCLC.....	Carp Landfill Community Liaison Committee
CLI.....	Canada Lands Inventory
CLS.....	Contaminating Life Span
CO .....	Carbon monoxide
CO <sub>2</sub> .....	Carbon dioxide
CRRRC.....	Capital Region Resource Recovery Centre
CWS .....	Canada Wide Standard
D&F .....	Dioxins and Furans
D&O.....	Design & Operations
EA.....	Environmental Assessment
EAAB.....	Environmental Assessment and Approvals Branch
EASR.....	Environmental Assessment Study Report
EBR .....	Environmental Bill of Rights
ECA .....	Environmental Compliance Approval
ELC.....	Ecological Land Classification
EMP .....	Environmental Monitoring Plan
EPA .....	<i>Environmental Protection Act</i>



## Definition of Acronyms

Acronym	Definition
EPR .....	Extended Producer Responsibility
ERT .....	Environmental Review Tribunal
ESA .....	Ecologically Sensitive Area
FCR .....	Facility Characteristics Report
GHG .....	Greenhouse Gases
GNZ.....	Good Neighbour Zone
GRT .....	Government Review Team
GWP.....	Global Warming Potential
HC .....	Hydrocarbons
HELP .....	Hydrologic Evaluation of Landfill Performance
IC&I.....	Industrial Commercial and Institutional
IWMMP.....	Integrated Waste Management Master Plan
LCS.....	Leachate Collection System
LFG.....	Landfill Gas
LGTE .....	Landfill-Gas-To-Energy
MHSW .....	Municipal Hazardous and Special Waste
MOE .....	(Ontario) Ministry of the Environment
MNR .....	(Ontario) Ministry of Natural Resources
MP .....	Member of Parliament
MPP.....	Member of Provincial Parliament
MSW.....	Municipal solid waste
MTC.....	(Ontario) Ministry of Tourism, Culture and Sport
MTO.....	(Ontario) Ministry of Transportation
MVCA .....	Mississippi Valley Conservation Authority
N <sub>2</sub> O.....	Nitrous oxide
NO .....	Nitric oxide
NO <sub>2</sub> .....	Nitrogen dioxide
NO <sub>x</sub> .....	Total oxides of nitrogen
NSSGA .....	National Stone, Sand and Gravel Association
O <sub>3</sub> .....	Ozone
O.Reg. ....	Ontario Regulation
OCP.....	Odour Contingency Plan
ODWS .....	Ontario Drinking Water Standards
OEAA.....	Ontario <i>Environmental Assessment Act</i>
OH .....	Open House
OMAA .....	Ontario Ministry of Aboriginal Affairs



## Definition of Acronyms

Acronym	Definition
OMAFRA .....	Ontario Ministry of Agriculture, Food and Rural Affairs
Ottawa WMF .....	Ottawa Waste Management Facility
OWRA .....	Ontario <i>Water Resources Act</i>
PAC .....	Public Advisory Committee
PAH .....	Polycyclic aromatic hydrocarbons
PL .....	Prediction Limits
PM .....	Particulate matter
PM10 .....	Particulate Matter 10 microns (µm) in diameter or less
PM2.5 .....	Particulate Matter 2.5 microns (µm) in diameter or less
POO.....	Provincial Officer's Orders
POR.....	Points of Reception
PSW .....	Provincially Significant Wetland
PTTW .....	Permit To Take Water
PVPP .....	Property Value Protection Plan
PWL.....	Sound Power Level
PWQO .....	Provincial Water Quality Objectives
RA.....	Regulatory Authority
ROPEC .....	Robert O. Pickard Environmental Centre
ROW .....	Right-of-way
RUL .....	Reasonable Use Limits
SAR .....	Species at Risk
SBR .....	Sequencing Batch Reactor
SCFM .....	Standard Cubic Feet per Minute
SD.....	Supporting Documents
SEV .....	Statement of Environmental Values
SO 2 .....	Sulphur dioxide
SPL.....	Sound Pressure Level
SWM.....	Storm Water Management
TAGA.....	Trace Atmospheric Gas Analyser
ToR.....	Terms of Reference
TSD .....	Technical Support Document
VAP .....	Voluntary Abatement Plan
VEC .....	Valued Ecosystem Components
VOC.....	Volatile organic compounds
WCEC.....	West Carleton Environmental Centre
WEEE .....	Waste Electrical and Electronic Equipment





## Definition of Acronyms

Acronym	Definition
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WHC .....	Wildlife Habitat Council
WM .....	Waste Management of Canada Corporation
WPCP .....	Water Pollution Control Plant
WTPF .....	Waste Transfer and Processing Facility

## Definition of Units

Unit	Definition
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dB .....	decibel
dBA .....	decibel (dB) sound pressure level
g/veh/mi .....	grams of emissions per vehicle per mile traveled
ha .....	hectare
K .....	Hydraulic conductivity
kg .....	kilogram
km .....	kilometre
KW .....	kilowatt
L .....	litre
m .....	metre
m <sup>3</sup> .....	cubic metre
mASL .....	metres above sea level
MW .....	megawatt
OU .....	odour unit
ppm .....	parts per million
ppmv .....	parts per million by volume
T .....	tonnes
µg .....	microgram
µm .....	micrometre



## Glossary of Terms

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<b>AAQCs</b>	Ontario Regulation 337 Ambient Air Quality Criteria (AAQCs) defined limits for specific compounds for defined under the Ontario Regulation Point of Impingement Standards and Guidelines.
<b>Abnormal noise events</b>	Noises that are sufficiently infrequent as to be uncharacteristic of an area or that occur so close to the microphone as to dominate the measurements in an unrealistic manner. Consideration must be given to deleting occurrences of abnormal noise from the measurements to obtain a reasonably accurate representation of the sound environment. Examples of abnormal noises include a dog barking close to the microphone, a vehicle passing nearby, people talking in the vicinity of the microphone in a quiet environment, or a passing road grader.
<b>Active management</b>	A type of wildlife management, in which physical actions are undertaken such as the use of pyrotechnics and propane cannons to disperse wildlife.
<b>Advancing volume (traffic)</b>	Used for the determination of the need for a left turn lane. Total number of vehicles heading in the direction where the need for a left turn lane is being assessed.
<b>Adverse Effect</b>	Pursuant to the <i>Environmental Protection Act</i> one or more of the following: <ul style="list-style-type: none"> <li>• Impairment to the quality of the natural environment for any use that can be made of it;</li> <li>• Injury or damage to property or plant or animal life;</li> <li>• Harm or material discomfort to any person;</li> <li>• An adverse effect on the health of any person;</li> <li>• Impairment of the safety of any person;</li> <li>• Rendering any property of plant or animal life unfit for human use;</li> <li>• Loss of enjoyment or normal use of property; and</li> <li>• Interference with normal conduct of business.</li> </ul>
<b>AERMOD</b>	The AERMOD model is an advanced dispersion model that has been approved for use in Ontario by the Ministry of the Environment (MOE). AERMOD is a steady-state Gaussian model that is capable of handling multiple emission sources. Within the model, receptor grids as well as discrete receptor locations of interest can be considered. The modelling assessment was conducted in accordance with MOE's Guideline A11: "Air Dispersion Modelling Guideline for Ontario", March 2009.



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Term	Definition
<b>AGL</b>	Referring to an altitude Above Ground Level.
<b>Airborne Sound</b>	Sound that reaches the point of interest by propagation through air.
<b>Airspace</b>	The volume of space within a landfill site which is permitted for the disposal of waste.
<b>Alternative</b>	A well-defined and distinct course of action.
<b>Alternative Methods of Carrying out the Undertaking</b>	Feasible alternative ways of implementing or carrying out the preferred solution to the identified problem or opportunity.
<b>Alternatives to the Undertaking</b>	Functionally different ways of solving an identified problem or addressing an opportunity that is considered feasible, from which a preferred solution is identified.
<b>Ambient noise or sound</b>	All noises that exist in an area and are not related to a facility under study. Ambient noise may include sound from other existing industrial facilities, transportation sources, animals, and nature. Context for ambient noise should be defined for each project.
<b>Appeals</b>	An appeal is a formal application to the Ontario Municipal Board to initiate a tribunal hearing on a planning decision made by a municipal Council or other prescribed public body.
<b>Approval</b>	Permission granted by an authorized individual or organization for an undertaking to proceed. This may be in the form of program approval, certificate of approval or provisional certificate of approval
<b>Approval Authority</b>	In the land use and development context, this includes any public body (e.g., municipality, conservation authority, provincial agency, ministry) that has the authority to regulate and approve development projects that fall under its mandate and jurisdiction (e.g., <i>Planning Act</i> , <i>Environmental Assessment Act</i> , <i>Aggregate Resources Act</i> ).



## Glossary of Terms

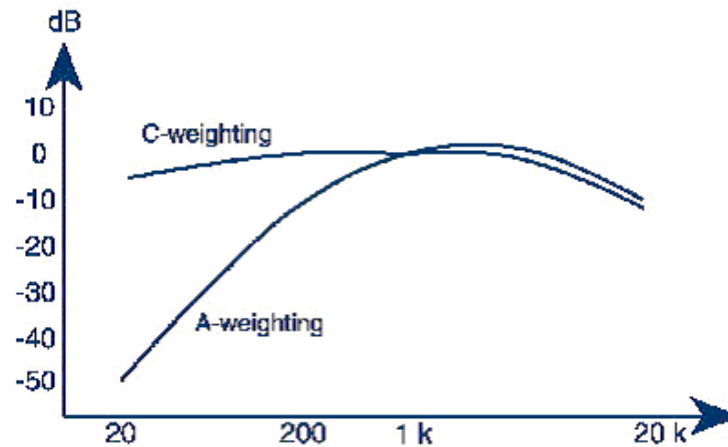
Term	Definition
<b>Aquifer</b>	A soil or rock formation, group of formations or part of a formation that contains sufficient saturated permeable material to yield economical quantities of water to wells and springs.
<b>Attenuation</b>	The reduction of sound intensity by various means (e.g., air, humidity, porous materials, etc.).
<b>Averaging Periods</b>	<p>Averaging periods used for emissions were modelled for 24-hour, 8-hour and 1-hour averaging times, to correspond with the POI Limits for the various compounds. This approach is consistent with the MOE's Schedule 3 standards. Those compounds that do not have POI Limits were modelled using a 24-hour averaging period.</p> <p>For certain compounds, the model output was scaled to produce results for the 10-minute averaging times, in order to be directly comparable to the relevant odour based criteria. The scaling factors were determined using Equation 1 below:</p> $\text{Equation 1} \quad X_s = X_1 \left( \frac{t_p}{t_s} \right)^n$ <p>Where: <math>X_s</math> = 10-minute averaging period concentration;  <math>X_p</math> = 60-minute averaging period concentration;  <math>t_l</math> = long time interval (60-minute);  <math>t_s</math> = short time interval (10-minute); and  <math>n</math> = atmospheric stability-dependant exponent (<math>n=0.28</math>).</p>
<b>Avoidance Measure</b>	Taking actions that aim to prevent the occurrence of negative effects associated with the implementation of an alternative.
<b>A-weighted sound level</b>	<p>The sound level as measured on a sound level meter using a setting that emphasizes the middle frequency components similar to the frequency response of the human ear.</p> <p>A-weighting shows that the measured sound pressure levels have been filtered using a frequency weighting network that mimics the response of the human ear.</p> <p>The resultant sound pressure level with the associated unit "dBA" is therefore a representative of the subjective response of the human ear. The</p>



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Term	Definition
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weightings are assigned in a way to reflect the higher sensitivity of human ear to sound in the mid and high frequency band as shown in the curve labelled A-weighting below:



**Background concentration** The amount of chemical in the soil, groundwater, air or sediment in the environment that would be considered representative of typical conditions in a given area or locality

**Baseline** Refers to the existing air quality surrounding the landfill before the proposed expansion. The baseline is used to determine if there will be a change in the existing environment before the proposed expansion.

**Berm** An earthen embankment or wall, erected to provide protection from the weather; to act as a landscaping screen; or to act as a mitigative measure against visual and noise impacts.

**Best Management Practices (BMP)** A technique or methodology that, through experience or research, has been proven to reliably lead to a desired result. After researching all known management methods, the selection and adaptation of the most suitable practices for achieving the desired outcome.

**Biodegradation** The lowering of the quality or value of a substance or object through the action of biological agents, usually air or water quality.





## Glossary of Terms

Term	Definition
<b>BPIP</b>	Building Profile Input Program (BPIP) is used to calculate the effects of building downwash on point sources, such as stacks.
<b>Buffer</b>	Something that reduces shock or impact or protects against other harm, usually by interception.
<b>Buffer (Land use)</b>	In a land use context, a buffer can be: <ol style="list-style-type: none"> <li>1. A space; or</li> <li>2. A feature; or</li> <li>3. A land use; or</li> <li>4. Any combination of the above, interposed between two conflicting land uses for the purpose of reducing or eliminating the adverse effects of one land use upon the other. A buffer may be open space, where distance alone is relied upon to produce the desired results, or it may be a berm, wall, fence, or other structure or plantings, or other land use different from the two conflicting ones, but compatible with both.</li> </ol>
<b>Buffer Zone</b>	In a landfill context, the area between the edge of the waste and property boundary, established to provide space for remedial measures, for the reduction or elimination of adverse environmental impact, and for monitoring.
<b>Calibration</b>	The procedure used for the adjustment of a sound level meter using a reference source of a known sound pressure level and frequency. Calibration must take place before and after the sound level measurements.
<b>Canadian Environmental Assessment Act (CEAA) 2012</b>	The purpose of the Act is to ensure that projects are considered in a careful manner before federal authorities take action in connection with them, in order that such projects do not cause significant adverse environmental effects. In addition, the Act encourages the promotion of sustainable development in federal decision making and public participation in the environmental assessment process.
<b>Carbonate rock</b>	A rock consisting chiefly of carbonate-based (CO <sub>3</sub> ) minerals, such as limestone (calcium carbonate) and dolomite (magnesium carbonate).



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Term	Definition
<b>Certificate of Approval (C of A)</b>	A Certificate of Approval is required under Part V, Section 27 of the <i>Environmental Protection Act</i> to establish a waste management system or a waste disposal site. This is the licence granted by the regulating agency which permits the operation of the landfill by the applicant or its agents. In Ontario, Certificates of Approval are granted by the Ontario Ministry of the Environment (MOE). The Certificates often specify numerous conditions which must be obeyed in order to retain approval to operate the landfill or waste processing facilities. A Certificate of Approval is required before a waste disposal management system or a waste disposal site can be used, operated, established, altered, enlarged or extended.
<b>CO</b>	Carbon monoxide; a regulated air pollutant and product of incomplete combustion.
<b>Community Design Plan</b>	Community Design Plans (or CDPs) are the City of Ottawa’s plans of action for specific areas of the City. These plans set out specific land use policies for the lands that they cover, as well as strategies for infrastructure servicing, environmental management, road improvements, visual appearance and design features. CDPs provide a framework to guide future development and address specific issues of community concern.
<b>Compatibility guidelines</b>	Compatibility guidelines are general policies to make sure that new development is made to be compatible with existing uses. In the Carp Road Corridor Community Design Plan (CDP), compatibility guidelines are designed to minimize land use conflicts between residential uses and the industrial/commercial land uses planned within the corridor.
<b>Compatible land use (adapted from MOE Guideline D-1-3)</b>	A compatible land use is an existing or planned future land use or activity that can co-exist with a neighbouring use/activity or uses/activities, without either creating or experiencing one or more off-site adverse effects, such as impairment of the natural environment; harm or material discomfort to any person; loss of enjoyment of normal use of property; or interference with the normal conduct of business.
<b>Compensation</b>	Compensation refers to measures that are designed to counterbalance the loss of use or value of a particular parcel of land.



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Term	Definition
<b>Composting</b>	The controlled microbial decomposition of organic matter, such as food and yard wastes, in the presence of oxygen, into humus, a soil-like material. Humus can be used in vegetable and flower gardens, hedges, etc
<b>Conservative</b>	Implementing a number of assumptions in an analysis that are intended to lead to a deliberate over-estimation of impacts.
<b>Construction and Demolition (C&amp;D) Waste</b>	Solid waste produced in the course of residential, commercial, industrial or institutional building construction, demolition or renovation (e.g., lumber, brick, concrete, plaster, glass, stone, drywall, etc.)
<b>Contaminant</b>	A compound, element or physical parameter usually resulting from human activity or found naturally at elevated concentrations, that have or may have a harmful effect on public health or the environment.
<b>Contaminant Attenuation Zone (CAZ)</b>	A three-dimensional area that is located on land adjacent to a landfill site; is in the subsurface or extends into the subsurface; and is used or is intended to be used to reduce contaminants from the landfill site to levels that will have not have an unacceptable impact beyond the boundary of the zone (O.Reg. 232/98).
<b>Contaminant Negligibility Assessment</b>	The MOE's method as outlined in Appendix B.1 of the Procedure for Preparing an ESDM Report, Version 3.0, March 2009, was used to determine whether a contaminant was solely emitted by the leachate management system were to be modelled. These contaminants were compared to a calculated site-specific emission threshold to evaluate whether the contaminant is significant. The Emission Threshold is calculated using a MOE conservative dispersion factor ( $\mu\text{g}/\text{m}^3$ per g/s emission) and the relevant standard or guideline under O. Reg. 419/05. For chemicals without standards or guidelines under O. Reg. 419/05, the MOE de minimus POI concentration (24-hour average basis) was used.
<b>Contaminating Life Span (CLS)</b>	The period of time during which a landfill site will produce contaminants at concentrations that could have an unacceptable impact if they were to be discharged from the site.



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Term	Definition
<b>Country lot subdivision (from the City of Ottawa Rural Review, 2011)</b>	In the City of Ottawa context, a country lot subdivision involves the creation of a number of residential lots, typically not less than 3 but no more than 40, on a parcel of land designated in the Official Plan as either General Rural Area or Rural Natural Feature. These lots are typically not less than 0.8 hectares each in size and are serviced by individual well and septic systems.
<b>Cover material</b>	Material used to cover the waste in the disposal cells during or following landfilling operations. May be daily, intermediate or final
<b>CWS</b>	The Canada Wide Standard (CWS) of 30 µg/m <sup>3</sup> has been used as the PM <sub>2.5</sub> reporting threshold throughout this document for maximum predicted PM <sub>2.5</sub> modelled results. In cases where long-term ambient background measurement data is available, the 98th percentile concentration of this standard should be used for comparison of measured values to the standard.
<b>Daily cover</b>	A temporary cap constructed daily over the exposed surface of a landfill, usually composed of soil, but sometimes also incorporating synthetic membranes. The daily cover primarily acts as a physical barrier to control odours, vermin and wind-blown litter.
<b>Daytime</b>	Defined as the hours from 07:00 to 22:00.
<b>dB (decibel)</b>	A unit of measure of sound pressure that compresses a large range of numbers into a more meaningful scale. Hearing tests indicate that the lowest audible pressure is approximately 2 x 10 <sup>-5</sup> Pa (0 dB), while the sensation of pain is approximately 2 x 10 <sup>2</sup> Pa (140 dB). Generally, an increase of 10 dB is perceived as twice as loud.
<b>dBA</b>	The decibel (dB) sound pressure level filtered through the A filtering network to approximate human hearing response at low frequencies.
<b>Deposition Routine</b>	Refers to dust particles that travel downwind in a plume, larger particles fall out of the air through gravitational settling and other factors and are not replaced. Using this deposition routine provides a simulation of this process. By doing so, a more realistic prediction of dust impacts is produced.



## Glossary of Terms

Term	Definition
<b>Design and operations (D&amp;O) plan</b>	A document required for obtaining a Certificate of Approval, which describes in detail the function, elements or features of the landfill site/facility, and how a landfill site/facility would function including its monitoring and control/management systems
<b>Design capacity (Total Disposal Volume)</b>	The maximum total volume of air space available for disposal of waste at a landfill site for a particular design (typically in m <sup>3</sup> ) includes both waste and daily cover materials, but excludes the final cover
<b>Design speed</b>	The speed used to select geometric design components for a roadway, typically 10 to 20 km/h above the posted speed.
<b>Development activity / development applications</b>	Development activity (and/or development applications) means major development applications that are featured in the City of Ottawa's Development Application search function. These applications are limited to Official Plan Amendments and Zoning By-law Amendments, and applications for Plan of Subdivision, Site Plan Control, Cash in Lieu of Parking, Demolition Control and Plan of Condominium.
<b>Disadvantage</b>	A relative term used to indicate that a particular condition is deemed to be unfavourable or of an inferior condition when compared to another condition.
<b>Discussion North</b>	All descriptions and directions identified in this document are conveyed relative to the alignment of Carp Road running north-south.
<b>Dispersal techniques</b>	Active wildlife management that drives birds and animals away from a location.
<b>Dissolved phase transport</b>	Movement of dissolved solids in the soil moisture or groundwater.
<b>Dwelling</b>	Any permanently or seasonally occupied residence with the exception of an employee or worker residence, dormitory, or construction camp located within an industrial plant boundary. Trailer parks and campgrounds may qualify as a dwelling unit if it can be demonstrated that they are in regular and consistent use during the applicable season.



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Term	Definition
<b>Energy equivalent sound level (Leq)</b>	The Leq is the average A-weighted sound level over a specified period of time. It is a single-number representation of the cumulative acoustical energy measured over a time interval. If a sound level is constant over the measurement period, the Leq will equal the constant sound level where $f$ is the fraction of time the constant level $L$ is present.
<b>Engineered Soil</b>	Soil which has been subjected to mechanical or chemical processes to achieve desired characteristics such as the degree of compaction or moisture content.
<b>Enhance</b>	Means as applied to the natural heritage/environment, strengthening the components of a natural area through management measures to increase stability, biodiversity and long term viability and in other respects to complement or strengthen the character of the area or site or structure.
<b>Enhancement Measure</b>	Implementing strategies and taking actions that augment or increase to some degree the positive environmental effects associated with the implementation of an alternative.
<b>Environment</b>	As defined by the <i>Environmental Assessment Act</i> , environment means: <ul style="list-style-type: none"> <li>(a) air, land or water,</li> <li>(b) plant and animal life, including human life,</li> <li>(c) the social, economic and cultural conditions that influence the life of humans or a community,</li> <li>(d) any building, structure, machine or other device or thing made by humans,</li> <li>(e) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or</li> <li>(f) any part or combination of the foregoing and the interrelationships between any two or more of them (ecosystem approach)</li> </ul>
<b>Environmental Assessment</b>	A systematic planning process that is conducted in accordance with applicable laws or regulations aimed at assessing the effects of a proposed undertaking on the environment
<b>Environmental Effect</b>	Any change, whether positive or negative, that an undertaking (project) may cause in the environment.



## Glossary of Terms

Term	Definition
<b>Environmental Impact Statement (EIS)</b>	An Environmental Impact Statement is a document required by the National <i>Environmental Policy Act</i> (NEPA) for certain actions "significantly affecting the quality of the human environment". An EIS is a tool for decision making. It describes the positive and negative environmental effects of a proposed action, and it usually also lists one or more alternative actions that may be chosen instead of the action described in the EIS.
<b>Environmental Management Plan (EMP)</b>	An Environmental Management Plan (EMP) can be defined as "an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced". EMPs are tools for ensuring that the management actions arising from Environmental Impact Assessment (EIA) processes are clearly defined and implemented through all phases of the project life-cycle.
<b>Environmental Protection Act (CEPA)</b>	The Canadian <i>Environmental Protection Act</i> (CEPA) is an Act respecting pollution prevention and the protection of the environment and human health in order to contribute to sustainable development.
<b>Environmental Protection Agency (USEPA)</b>	The U.S. Environmental Protection Agency (EPA or sometimes USEPA) is an agency of the federal government of the United States charged with protecting human health and the environment, by writing and enforcing regulations based on laws passed by Congress.
<b>Evaluation criteria</b>	Evaluation criteria are considerations or factors taken into account in assessing the advantages and disadvantages of various alternatives being considered
<b>Evaluation Method</b>	The process followed that was established by the project team in order to assess and establish an order of preference among alternatives.
<b>Existing land uses</b>	In the context of the Environmental Assessment process, existing land uses refer in broad terms to the ways in which lands in the study area are currently being used or occupied. This information is compiled through mapping produced by the City of Ottawa and verified through field surveys.



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Term	Definition
<b>Far Field</b>	Describes a region in free space where the sound pressure level from a source obeys the inverse-square law (the sound pressure level decreases 6 dB with each doubling of distance from the source). Also, in this region the sound particle velocity is in phase with the sound pressure. Closer to the source where these two conditions do not hold constitutes the “near field” region.
<b>Fault</b>	A fracture in bedrock along which there has been displacement of the sides relative to one another parallel to the fracture.
<b>Final Cover</b>	A cap constructed over the completed surface of a landfill, usually composed of soil, but sometimes also incorporating synthetic membranes. The cover serves several purposes including: a physical barrier to prevent contact with buried wastes, reducing the infiltration of rain into the waste (to limit the production of leachate) and controlling the escape of any gasses into the atmosphere. Another aspect in designing the final cover is to make it compatible with the ultimate end-use of the site.
<b>Flux Chamber</b>	Is a stainless steel vessel of volume 0.5 m <sup>2</sup> . It is used to measure minute emissions from near passive sources that do not have any mechanical fans to discharge the contaminants of interest.
<b>Fossiliferous limestone</b>	Refers to limestone bedrock containing fossils.
<b>Frequency</b>	The number of times per second that the sine wave of sound or of a vibrating object repeats itself. The unit is expressed in hertz (Hz), formerly in cycles per second (cps).
<b>Future planned land uses</b>	In the context of the Environmental Assessment process, future planned land uses refer in broad terms to the ways in which lands in the study area are expected to be used in the foreseeable future. This information is compiled through reference to planning documents such as the Official Plan, Zoning By-law, and Community Design Plans that state the desired and/or permitted future uses of the lands.
<b>Gas Collection System</b>	An engineered system to contain and collect landfill gas for safe dissipation, and/or energy recovery. It is commonly constructed of a combination of coarse gravel layers, wells, pipes and/or pumps.





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Term	Definition
<b>Gas Flare</b>	<p>A gas flare, alternatively known as a flare stack, is used to eliminate waste gas which is otherwise not feasible to use or transport. They also act as safety systems protecting gas processing equipment from being overpressured. There are many different types of gas flares including: ground flares, elevated flares, air assist flares, and can either be open or enclosed.</p>
<b>Generic II – Double Liner System</b>	<p>A generic double liner system as specified in Ontario Regulation 232/98 for landfilling sites, consisting of (from top down):</p> <ul style="list-style-type: none"> <li>• 0.3 m thick granular/perforated pipe primary leachate collection system;</li> <li>• 0.75 m thick geomembrane/engineered clay primary liner;</li> <li>• 0.3 m thick granular/perforated pipe secondary leachate collection system;</li> <li>• 0.75 m thick geomembrane/engineered clay secondary liner; and</li> <li>• 1 m thick natural or constructed soil attenuation layer.</li> </ul>
<b>Geosynthetic</b>	<p>A planar product manufactured from polymeric material used with soil, rock, earth, or other geotechnical engineering related material as an integral part of a human-made project, structure, or system. Geotextiles consist of synthetic fibers made into flexible, porous fabrics used for separation, reinforcement, filtration, and/or drainage. Geomembranes consist of relatively thin, impervious sheets of polymeric material used as a liquid or vapour barrier or both.</p>
<b>GIS</b>	<p>GIS is an acronym for Geographic Information System. A GIS is a system of hardware and software used for storage, retrieval, mapping, and analysis of geographic data. GIS can be used for scientific investigations, resource management, and development planning.</p>
<b>Groundwater</b>	<p>The mass of water in the ground below the unsaturated zone, occupying the total pore space in the soil or rock.</p>



## Glossary of Terms

Term	Definition
<b>Groundwater head</b>	A measurement in elevation of water pressure above a geodetic datum (e.g., metres above sea level); hydraulic head.
<b>Groundwater Purge Well</b>	A groundwater purge well typically consists of a perforated pipe installed within a drilled borehole. Clean coarse sand is packed within the borehole in the zone where the pipe is perforated, to minimize the entry of soil particles into the pipe. Groundwater enters the well through the perforations and the flow is transported to the surface by means of a pump. The borehole above the perforated zone is typically sealed with low-permeability material to prevent surface water flowing into the borehole.
<b>Habitat Management</b>	The manipulation and management of habitat features which attract wildlife to an area for the purpose of making them less attractive to wildlife.
<b>Habituation</b>	The tendency for wildlife species to become accustomed to sounds or things which pose no real threat to their safety.
<b>Hazard</b>	A condition (e.g., the presence of gulls) with the potential to cause injury to personnel or damage to equipment or structures.
<b>Haul route</b>	Private and/or public roadway(s) used by vehicles transporting waste to and from a landfill site Hazardous waste
<b>HC</b>	Hydrocarbons; generally defined in terms of volatile organic compounds (VOC's) and semi-volatile compounds (SVOC's)
<b>HELP Model</b>	The HELP (Hydrologic Evaluation of Landfill Performance) model is a computer program used for predicting landfill hydrologic processes and testing the effectiveness of landfill designs, especially cover designs. The model accepts weather, soil, and design data and uses solution techniques that account for the effects of surface storage, snowmelt, frozen soil, runoff, infiltration, evapotranspiration, vegetative growth, soil moisture storage, lateral subsurface drainage, leachate recirculation, unsaturated vertical drainage, and leakage through soil, geomembrane, or composite liners. HELP is also effective in assessment of groundwater recharge rates.



## Glossary of Terms

Term	Definition										
<b>Human Perception of Sound</b>	<p>The human perception of noise impact is an important consideration in qualifying the noise effects caused by projects. The following table presents a general guideline.</p> <table border="1"> <thead> <tr> <th>Increase in Noise Level (dBA)</th> <th>Perception</th> </tr> </thead> <tbody> <tr> <td>1 to 3</td> <td>Imperceptible to possibly perceptible</td> </tr> <tr> <td>4 to 5</td> <td>just-noticeable difference</td> </tr> <tr> <td>6 to 9</td> <td>marginally significant</td> </tr> <tr> <td>10 or more</td> <td>significant, perceived as a doubling of sound level</td> </tr> </tbody> </table>	Increase in Noise Level (dBA)	Perception	1 to 3	Imperceptible to possibly perceptible	4 to 5	just-noticeable difference	6 to 9	marginally significant	10 or more	significant, perceived as a doubling of sound level
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4 to 5	just-noticeable difference										
6 to 9	marginally significant										
10 or more	significant, perceived as a doubling of sound level										
<b>Hydraulic capture</b>	Pumping of groundwater from wells or a waterbody to lower the groundwater head at that location, as a means of inducing water to flow toward the pumping zone, thereby creating a capture system.										
<b>Hydraulic Conductivity (K)</b>	Hydraulic conductivity, symbolically represented as K, is a constant which describes the rate of movement of water through pore spaces or fractures in soil or rock. For example, the lower the hydraulic conductivity, the lower the amount of water that will be conducted. Hydraulic conductivity depends on the intrinsic permeability and the degree of saturation of a material. Saturated hydraulic conductivity describes water movement through saturated media.										
<b>Hydraulic gradient</b>	The rate of change in total hydraulic head per unit of distance of flow in a given direction.										
<b>Hydrostratigraphic units</b>	A formation, part of a formation, or group of formations of significant lateral extent that compose a unit of reasonably distinct hydrogeologic parameters and responses.										
<b>Impact</b>	A change brought about by a cause or agent.										
<b>Impacted soils</b>	Impacted soils are soils that contain more than background concentrations of contaminants, but not at levels that classifies them as hazardous										
<b>Impulsive Noise</b>	Single or multiple sound pressure peak(s) (with either a rise time less than 200 milliseconds or total duration less than 200 milliseconds) spaced at least by 500 millisecond pauses. A sharp sound pressure peak occurring in a short interval of time.										



## Glossary of Terms

Term	Definition
<b>Indicators</b>	Indicators are specific characteristics of the evaluation criteria that can be measured or determined in some way, as opposed to the actual criteria, which are fairly general
<b>Individual Environmental Assessment (IEA)</b>	An environmental assessment requiring the submission of the Terms of Reference and Environmental Assessment for approval by the Minister of the Environment, pursuant to subsections 6(1) and 6(2) of the <i>EA Act</i> and which is not exempt from the <i>EA Act</i> .
<b>Industrial, commercial and institutional (IC&amp;I) wastes</b>	Wastes originating from the industrial, commercial and institutional sectors
<b>Infiltration</b>	The flow of water downward from the land surface into and through the upper soil layers.
<b>Integrated Gull Management Plan</b>	The development of a plan to manage gulls combining both active and passive techniques. The application of different techniques and approaches helps to create an effective plan and reduce the likelihood of habituation.
<b>Interbedded</b>	Layers of rock (beds) of a particular rock-type (lithology) that lie between or alternate with beds of a different lithology.
<b>Interim Area</b>	Is typically defined as an area within the landfill site that is not actively being filled and would be covered with initial cover material to be used again in the near future for active filling.
<b>Land use designations / land use categories</b>	A land use designation in an Official Plan or Community Design Plan describes an area of land within which a specific set of policies applies. The policies identify the main objective of the designation and provide a framework for making land use decisions in the area that is covered by the designation.
<b>Landfill gas (LFG)</b>	Although consisting mainly of methane and carbon dioxide, contains trace amounts of VOCs and reduced sulphur compounds. Although these contaminants account for less than 1% by volume of landfill gas escaping from the landfill, their concentrations must be assessed because they can potentially result in health impacts at residences or businesses that surround the landfill site. The type and concentration of compounds within the landfill gas can vary greatly, depending on the composition of the decomposing waste from which the landfill gas is created.



## Glossary of Terms

Term	Definition
<b>Landfill site</b>	An approved engineered site/facility used for the final disposal of waste
<b>Landfill Standards Guideline</b>	The Ontario Ministry of the Environment Landfill Standards Guideline describes the regulatory and approval requirements for the design, operation, closure and post-closure care of new or expanding municipal (i.e. non-hazardous) waste landfilling sites. Regulatory requirements are contained in Ontario Regulation 232/98 made under the <i>Environmental Protection Act</i> .
<b>LANDGEM Model</b>	The U.S. EPA Landfill Gas Emissions Model (LandGEM) is an automated estimation tool used to estimate emission rates for total landfill gas, methane, carbon dioxide, non-methane organic compounds, and individual air pollutants from municipal solid waste landfills.
<b>Landmark</b>	A prominent structure or geographic feature that identifies a location and serves as a guide to finding it.
<b>Leachate</b>	Liquid that drains from solid waste in a landfill and which contains dissolved, suspended and/or microbial contaminants from the breakdown of this waste
<b>Leachate Collection System</b>	An engineered system to control and collect leachate within a landfill. It is usually constructed of a combination of wells, coarse drainage layers, pipes and/or pumps.
<b>Leachate indicator</b>	The dissolved solids found in liquid that has percolated through solid waste (i.e., leachate), which tend to characterize the source of the liquid.
<b>Leachate Recirculation</b>	A leachate management practice sometimes used at landfill sites to temporarily store the leachate within the wastes. It involves collecting leachate that flows out of wastes and conveying it back into the waste mass. Leachate recirculation generally cannot be carried on for long periods of time since the quantity of leachate being handled continually increases due to conversion of infiltration to leachate.
<b>Leachate Treatment System</b>	An engineered system to improve the quality of leachate or leachate-impacted waters by physical and chemical processes. Pre-treatment refers to partial improvement in quality prior to some other form of treatment or disposal.



## Glossary of Terms

Term	Definition
<b>Leq</b>	See <b>Energy equivalent sound level</b> .
<b>Loafing</b>	The act of resting or stopping at a particular spot for purposes other than feeding or roosting.
<b>Measure</b>	A basis or standard for comparison. An expression of the potential effects associated with an indicator for a criterion in qualitative and/or quantitative terms.
<b>Meteorological Data</b>	Five years of local meteorological data (2006-2010) were used in the AERMOD model. The meteorological data set was developed by the MOE's Environmental Monitoring and Reporting Branch (EMRB) for the WCEC. The data set was based on meteorological data collected from Environment Canada's Ottawa International Airport station and local land use information. The Ottawa Airport, which is located approximately 25 kilometers away from the landfill, is the nearest weather station providing the desired meteorological parameters on an hourly basis. The data set provided by the EMBR was used directly in the model, with no changes or alterations conducted by RWDI.
<b>Methane gas</b>	A colourless, odourless highly combustible gas often produced by the decomposition of decomposable waste at a landfill site. Methane is explosive in concentrations between 5% and 15% volume in air
<b>Mitigation</b>	Mitigation refers to the measures that are designed to reduce or eliminate the degree of impact on an adjacent land use.
<b>Mitigation Measure</b>	Action(s) that remove or alleviate to some degree the negative effects associated with the implementation of an alternative.
<b>MOBILE6.2</b>	The emissions from the tailpipe of a motor vehicle depend on a large number of factors, including the type, age, and weight of the vehicle, the mode of operation, the weather conditions, and the maintenance condition of the vehicle and of the road. The standard approach for estimating vehicular emissions is to use computer simulation techniques that are based on extensive previous testing of a wide range of vehicles. The most widely used software for this purpose was developed by the U.S. Environmental Protection Agency, and the latest version of the software is known as MOBILE6.2.



## Glossary of Terms

Term	Definition
<b>National Building Code of Canada</b>	The National Building Code of Canada is the model building code of Canada issued by the Institute for Research In Construction (IRC). The intent of the Building Code is to detail the minimum provisions acceptable to maintain the safety of buildings, with specific regard to public health, fire protection, accessibility and structural sufficiency.
<b>Natural Resources Canada</b>	The Department of Natural Resources, operating under the Federal Identity Program's applied title Natural Resources Canada, is the ministry of the government of Canada responsible for natural resources, energy, minerals and metals, forests, earth sciences, mapping and remote sensing. Natural Resources Canada works to ensure the responsible development of Canada's natural resources, including energy, forests, minerals and metals.
<b>Net Effect</b>	The remaining negative or positive effect of an alternative after the application of avoidance/mitigation/compensation/enhancement measures.
<b>Net Effects Analysis</b>	The process of determining and documenting the net effects associated with each indicator for each alternative being considered.
<b>Net Gain</b>	An increase in the productive capacity of habitats for selected fisheries brought about by determined government and public efforts to conserve, restore and develop habitats.
<b>Night-time</b>	Defined as the hours from 22:00 to 07:00.
<b>NO</b>	Nitric oxide; an air pollutant and constituent of NO <sub>x</sub> generated by combustion
<b>NO<sub>2</sub></b>	Nitrogen dioxide; an air pollutant and regulated constituent of NO <sub>x</sub> generated by chemical or photochemical reactions generally involving NO
<b>NO<sub>x</sub></b>	Total oxides of nitrogen; a generic air pollutant category that includes the sum of all NO and NO <sub>2</sub> concentrations
<b>No Net Loss</b>	A working principle by which Ministries such as DFO and MNR attempt to balance unavoidable habitat losses with habitat replacement on a project-by-project basis so that further reductions to resources due to habitat loss or damage may be prevented.



## Glossary of Terms

Term	Definition
<b>Noise</b>	Generally defined as the unwanted portion of sound.
<b>Noise Level</b>	This is the same as sound level except that it is applied to unwanted sounds, general the sound level at a point of reception.
<b>Non-hazardous waste</b>	Non-hazardous wastes includes all solid waste that does not meet the definition of hazardous waste and includes designated wastes such as asbestos waste
<b>Non-sensitive land uses</b>	Non-sensitive land uses would generally not experience adverse effect(s) from contaminant discharges generated by a nearby facility. Non-sensitive land uses are contrasted with sensitive land uses as otherwise defined in this glossary.
<b>NSSGA</b>	National Stone, Sand and Gravel Association (NSSGA) “Modeling Fugitive Dust Sources”, 2004,
<b>Odour</b>	An odour is deemed as a nuisance if it is detected and considered to be unpleasant. When odour levels are elevated and occur frequently, they can be construed as having an adverse effect.
<b>Odour Unit</b>	An odour unit is defined as the quantity of odourous substance that, when dispersed in 1 m <sup>3</sup> of odour free air, becomes just detectable by a “normal” human observer whose sensitivity to the odourant represents the mean of the population. The average odour detection threshold is 1 OU/m <sup>3</sup> , although odours at this level are not necessarily a nuisance. Odour concentrations that may cause a complaint due to their ability to annoy typically range from 3 to 5 OU/m <sup>3</sup> . Through RWDI’s experience with other landfills in Southern Ontario, the objectionable level for odour was considered to be generally in the range of 3 to 5 OU/m <sup>3</sup> . These levels are more closely related to public complaints. For the purposes of this assessment, the site-wide odours from the WCEC operations were compared to both the 1 OU/m <sup>3</sup> detection threshold and the 3 OU/m <sup>3</sup> annoyance threshold.
<b>Official Plan</b>	An Official Plan is a statutory document adopted by a municipality, which contains the goals, objectives and policies established primarily to manage and direct physical change and the effects on the social, economic and natural environment of the municipality. An Official Plan consists of text and a series of corresponding maps.





## Glossary of Terms

Term	Definition
<b>On-Site Receptors</b>	The lands owned or optioned by WM and required for the Preferred Alternative Landfill Footprint. The Site is bounded by Highway 417, Carp Road and Richardson Side Road.
<b>Ontario <i>Environmental Assessment Act</i> (R.S.O 1990)</b>	Legislation that defines a decision-making process used to promote good environmental planning by assessing the potential effects of certain activities on the environment. The purpose of the <i>EA Act</i> is to provide for the: <ol style="list-style-type: none"> <li>a) protection;</li> <li>b) conservation; and,</li> <li>c) wise management of Ontario's environment.</li> </ol>
<b>Ontario Municipal Board (OMB)</b>	The Ontario Municipal Board (OMB) is an independent tribunal established through provincial legislation. The Board plays a critical role in Ontario's land-use planning process by providing an independent public forum to hear land-use disputes.
<b>Ontario Regulation 232/98</b>	Ontario Regulation 232/98 under the Canadian <i>Environmental Protection Act</i> sets out standards, procedures, and requirements for landfilling sites in Ontario. The Regulation applies to every landfilling site that comes into existence, or landfilling site that is altered, enlarged or extended, and is intended to have a total waste volume of more than 40,000 cubic metres and to accept only municipal waste for disposal.
<b>Ontario Regulation 419/05</b>	The Province of Ontario has a regulation under the <i>Environmental Protection Act</i> that deals with local air quality (O.Reg. 419/05). This regulation sets out standards for various contaminants and procedures for assessing and reporting whether or not a proposed emission source is expected to meet the standards or cause them to be exceeded. However, O.Reg. 419/05 does not apply to discharges of contaminants from motor vehicles and, as such, is not applicable to this air quality assessment.
<b>Open House</b>	Events to provide an opportunity for the public to learn about, and provide comments on, the project. Project Team members are in attendance at all Open House sessions to facilitate discussions and answer questions.
<b>Opposing volume (traffic)</b>	Used for the determination of the need for a left turn lane. Total number of vehicles that are approaching an intersection/access point in the opposite direction from direction where the need for a left turn lane is being assessed.



## Glossary of Terms

Term	Definition
<b>Optioned Lands</b>	Optioned lands involve properties that are subject to an agreement between a proponent and the land owner giving the proponent the exclusive right to buy the property at a later date.
<b>Overburden</b>	The loose soil, such as silt, sand, gravel or other unconsolidated material overlying bedrock either transported or formed in place.
<b>Overburden-bedrock interface</b>	The zone of contact between loose soil or other unconsolidated material overlying bedrock.
<b>PAHs</b>	Polycyclic aromatic hydrocarbons; a class of airborne contaminants that exist with both solids and gaseous fractions; individual species include fluoranthene and benzo(a)pyrene
<b>Passive Management</b>	Wildlife management activities which involve techniques such as habitat manipulation or changes to the natural features that are employed to deter wildlife from a site.
<b>ppm, ppmv</b>	Parts per million by volume; unit of concentration; mixing ratio
<b>PM<sub>10</sub></b>	Inhalable particulate matter; airborne particles of aerodynamic diameter less than 10 microns
<b>PM<sub>2.5</sub></b>	Respirable particulate matter; airborne particles of aerodynamic diameter less than 2.5 microns
<b>POI</b>	The term POI is taken to be in the natural environment outside the boundaries of the property.
<b>POLLUTE Model</b>	The POLLUTE model is a computer program that implements a one and a half dimensional solution to the advection-dispersion equation to analyze contaminant migration and is widely used in landfill design and remediation.
<b>Post-glacial</b>	Existing or happening after the disappearance of glaciers from a specific area.
<b>Potable</b>	When referring to water, means drinkable. Potable water can be consumed safely by humans.



## Glossary of Terms

Term	Definition
<b>Potential Effect</b>	Any change, whether positive or negative, that an undertaking (project) may cause in the environment that is deemed possible to result from the implementation of a particular alternative.
<b>Proponent</b>	A person who: <ul style="list-style-type: none"> <li>(a) carries out or proposes to carry out an undertaking, or</li> <li>(b) is the owner or person having charge, management or control of an undertaking</li> </ul>
<b>Public</b>	Means the general public, individual members and special interest groups who may be affected by or have an interest in a project.
<b>Purge wells</b>	Water wells that are constructed and operated for the purpose of removing contaminated groundwater as part of a remedial action program.
<b>Pyrotechnics</b>	Various combustible projectiles launched from a shotgun, pistol or other device to frighten wildlife by producing combinations of noise, light or smoke.
<b>Ranking</b>	To assign a level of importance to each of the alternatives assessed as part of the EA.
<b>Rationale</b>	Explanation of the logical reasons or principles employed in consciously arriving at a decision or estimate.
<b>Reasonable Use Policy</b>	The Reasonable Use Policy is aimed at ensuring that a proponent's undertaking does not impair the 'reasonable use' of ground water on neighbouring properties. It sets limits to the level of ground water impact that can occur at the proponent's site property boundaries.
<b>Reasoned Argument / Trade-off Method</b>	A comparative evaluation method based on net effects / advantages and disadvantages and explained in narrative terms (rationale). The process of examining the net effects and key trade-offs of each alternative in order to provide a clear rationale for the preferred alternative.
<b>Regional Receptors</b>	The lands within approximately 3 to 5 kilometres of the Site and the Preferred Alternative Landfill Footprint for those disciplines that require a larger analysis area (i.e. socio-economic, odour, etc.).



## Glossary of Terms

Term	Definition
<b>Residual effect</b>	The remaining negative or positive effect of an alternative after the application of avoidance/ mitigation/ compensation/ enhancement measures.
<b>Risk</b>	Likelihood of injury or loss occurring, which is a function of exposure to hazards as well as the likelihood and the magnitude of the event.
<b>Roadway Capacity and Level of service</b>	The capacity of a road network to accommodate traffic is often described in terms of a level of service (LOS) for both intersections and roadway sections. A level of service is determined based on the average delay that a vehicle experiences in passing through an intersection or along a section of road. LOS "A" designates an excellent level of service with little delay, while LOS "F" indicates a poor level of service and significant delay. The acceptable length of delay at a stop-controlled intersection is less than the acceptable length of delay at an intersection controlled by traffic signals because vehicles at a stop sign must wait until they find a suitable gap in traffic to enter the main roadway where traffic signals will eventually provide a dedicated phase for drivers to proceed. The lower acceptable delays at stop controlled intersections reflect the fact that long delays at stop signs can cause driver frustration and can lead to aggressive driving behaviour and an increased collision risk. The average vehicle delay time and the corresponding level of service are shown below.

### Level of Service Criteria

LOS	Control Delay Per Vehicle (seconds)	
	Signalized Intersections	Stop Controlled Intersections
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

<b>Roosting</b>	The act of settling for sleep. Roosting areas are safe areas in which birds congregate and sleep sometimes in large numbers.
<b>Runoff</b>	That part of precipitation flowing to surface streams, as opposed to the amount that seeps into the ground.
<b>Sedimentation</b>	The settlement of suspended solid particles from a fluid by gravity.



## Glossary of Terms

Term	Definition
<b>Sensitive land uses (from MOE Guideline D-1-3)</b>	<p>Sensitive land uses are defined as a building, amenity area or outdoor space where routine or normal activities occurring at reasonably expected times would experience one or more adverse effect(s) from contaminant discharges generated by a nearby facility. The sensitive land use may be a part of the natural or built environment. Depending upon the particular facility involved, a sensitive land use and associated activities may include one or a combination of:</p> <ul style="list-style-type: none"> <li>(i) Residences or facilities where people sleep (e.g. single and multi-unit dwellings, nursing homes, hospitals, trailer parks, camping grounds, etc.). These uses are considered to be sensitive 24 hours/day.</li> <li>(ii) A permanent structure for non-facility related use, particularly of an institutional nature (e.g. schools, churches, community centres, day care centres).</li> <li>(iii) Certain outdoor recreational uses deemed by a municipality or other level of government to be sensitive (e.g. trailer park, picnic area, etc.).</li> <li>(iv) Certain agricultural operations (e.g. cattle raising, mink farming, cash crops and orchards).</li> <li>(v) Bird/wildlife habitats or sanctuaries.</li> </ul>
<b>Service life</b>	<p>The period of time during which the components of a properly designed and maintained engineered facility will function and perform as designed</p>
<b>Sequencing Batch Reactor (SBR)</b>	<p>Sequencing Batch Reactors (SBRs) are industrial processing tanks used in the treatment of wastewater, or leachate in a landfill context. The reactors treat waste water in batches through the addition of oxygen to encourage the multiplication of bacteria which consume the nutrients and settle into a sludge. The sludge is removed for further processing and the treated water is discharge into sewers or used on land.</p> <p>A SBR system is a leachate pre-treatment system proposed for the landfill site. The tanks associated with the SBR system operation include the raw leachate equalization tank, the SBR tank, the effluent equalization tank, and the sludge tank. Raw leachate from the leachate collection wells will be pumped to an equalization tank for storage. From the equalization tank, raw leachate will be pumped using leachate transfer pumps to the SBR tank. There will be two duty and one standby raw leachate transfer pumps.</p>



## Glossary of Terms

Term	Definition
<b>Severance</b>	A severance is a division of an existing lot into two parcels. A severance is granted through a Consent Application adjudicated by the City's Committee of Adjustment. To create a larger number of lots from one parcel of land, another form of land division approval such as Subdivision or Part-lot Control By-law is generally more appropriate.
<b>Site Plan Control</b>	Site Plan Control is the municipal process that is used to control or regulate the various features on the site of an actual development including building location, landscaping, drainage, parking, and access by pedestrians and vehicles. The City of Ottawa's Site Plan Control By-law states the classes of development that require Site Plan Control, as well as those classes which are exempt.
<b>Site-Vicinity Receptors</b>	The lands in the vicinity of the site including the Preferred Alternative Landfill Footprint, extending about 500 metres in all directions.
<b>SO<sub>2</sub></b>	Sulphur dioxide; an air pollutant usually associated with the combustion of sulphur-laden fuel.
<b>Sound</b>	A dynamic (fluctuating) pressure.
<b>Sound level meter</b>	An instrument designed and calibrated to respond to sound and to give objective, reproducible measurements of sound pressure level. It normally has several features that would enable its frequency response and averaging times to be changed to make it suitable to simulate the response of the human ear.
<b>Sound Pressure Level (SPL)</b>	The logarithmic ratio of the RMS sound pressure to the sound pressure at the threshold of hearing. The sound pressure level is defined by equation (1) where P is the RMS pressure due to a sound and P <sub>0</sub> is the reference pressure. P <sub>0</sub> is usually taken as 2.0 × 10 <sup>-5</sup> Pascals.  (1) $SPL (dB) = 20 \log(P_{RMS}/P_0)$
<b>Sound Power Level (PWL)</b>	The logarithmic ratio of the instantaneous sound power (energy) of a noise source to that of an international standard reference power. The sound power level is defined by equation (2) where W is the sound power of the source in watts, and W <sub>0</sub> is the reference power of 10 <sup>-12</sup> watts.  (2) $PWL (dB) = 10 \log(W/W_0)$  Interrelationships between sound pressure level (SPL) and sound power level (PWL) depend on the location and type of source.



## Glossary of Terms

Term	Definition
<b>Spectrum</b>	The description of a sound wave's resolution into its components of frequency and amplitude.
<b>Speed of Sound in Air</b>	344 m/s at 70°F (21°C) in air at sea level.
<b>Stratified drift</b>	Sediments deposited by meltwater from glaciers that are sorted and layered.
<b>Subaqueous</b>	Occurring, appearing, formed, or used under water.
<b>Surface water</b>	Water in streams, rivers, lakes, wetlands and reservoirs.
<b>Terms of Reference (ToR)</b>	The first step in an application for approval to proceed with a project or undertaking under the <i>Environmental Assessment Act</i> (EAA) is the submission of a Terms of Reference (ToR). Public and agency consultation is required on the preparation and submission of the ToR to the Ministry of the Environment. Approval is required by the Minister of the Environment. If approved, the ToR provides a work plan for the EA.
<b>Tedlar Bags</b>	A bag used to collect air samples that is comprised of a skin is made from inert materials like Teflon to minimize any chemical reactions that may compromise the sample.
<b>Tonal Components</b>	Most industrial facilities typically exhibit a tonal component. Examples of tonal components are transformer hum, sirens, and piping noise. The EUB ID 99-8 specifies that the test for the presence of tonal components consists of two parts. The first part must demonstrate that the sound pressure level of any one of the slow-response, A-weighted, 1/3-octave bands between 20 and 16000Hz is 10 dBA or more than the sound pressure level of at least one of the adjacent bands within two 1/3-octave bandwidths. In addition, there must be a minimum of a 5 dBA drop from the band containing the tone within 2 bandwidths on the opposite side. The second part is that the tonal component must be a pronounced peak clearly obvious within the spectrum.
<b>Towering</b>	To sail or hover in the air often at a great height. Often involves riding rising thermals of warmer air.
<b>Trade-offs</b>	A balancing of attributes, all of which are not attainable at the same time. Giving up of one thing in return for another.



## Glossary of Terms

Term	Definition
<b>Unconsolidated deposits</b>	Soil; loose sediment that has no mineral cement or matrix binding its grains together.
<b>Undertaking</b>	An enterprise or activity, or a proposal, plan or program that has potential environmental effects and is carried out in accordance with the requirements of the <i>EA Act</i> .
<b>United States <i>Clean Air Act</i> (CAA)</b>	The United States <i>Clean Air Act</i> is the law enacted by the U.S. Congress that defines the Environmental Protection Agency's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer.
<b>Urban Boundary</b>	The Urban Boundary is the line established on the maps of the City of Ottawa Official Plan that distinguishes between the City's rural and urban development areas.
<b>Vector</b>	In epidemiology, a vector is any agent (person, animal or microorganism) that carries and transmits an infectious pathogen into another living organism. The most common vectors in a landfill context are rats and flies.
<b>Viewpoint</b>	A place or position from which people can look at something.
<b>Vista</b>	A scenic or panoramic view.
<b>Watershed</b>	The area of land drained by a single stream or river.
<b>Wildlife Attractants</b>	Any land use practice, geographic feature or structure which can attract or sustain wildlife. These attractants can include: architectural features, landscaping, waste disposal sites, stormwater ponds, agricultural or aquacultural activities, surface mining, and wetlands.
<b>Workshop</b>	Provide an additional avenue for consultation with local residents, businesses, agencies and interested stakeholders. Workshops are intended to be more interactive than the Open House events, offering participants the opportunity to present their questions and comments regarding the project.





## Glossary of Terms

Term	Definition
<b>Zoned</b>	Zoned means lands which have been assigned a particular zone in the City of Ottawa Zoning By-law, where defined land uses may be carried out according to the associated zoning provisions.
<b>Zoning By-law</b>	A Zoning By-law is a statutory document that is adopted by a municipality to implement the goals, objectives and policies of the Official Plan. A Zoning By-law may either permit or prohibit the use of land within specific zones in a municipality, as well as regulate the key aspects of construction, building placement, and lot configuration (e.g. height, bulk, location, size, floor area, spacing, character and use of buildings or structures, the minimum frontage and depth of land parcels, and the proportion of the lot area that any building or structure may occupy).
<b>Zoning By-law amendment</b>	A Zoning By-law amendment is a change to the text and/or maps of the Zoning By-law. There is a specific process that a Council must follow to amend its Zoning By-law, including public consultation and formal adoption of the amendment by Council.





## RELATIONSHIPS BETWEEN EVERYDAY SOUNDS

### Sources of Noise

