

## ENVIRONMENTAL IMPACT STATEMENT GUIDELINES

for the

Argentia Access Road Industrial Composting Facility Project

Prepared by:

The Newfoundland and Labrador Department of Municipal Affairs and Environment

September 14, 2018

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## **PART I**

## **1.0 INTRODUCTION**

Metro Environmental Services Incorporated proposes to establish a commercial indoor composting facility to process a variety of organic waste collected from agricultural and industrial sources in Newfoundland. The organic feedstock waste will focus on agricultural and food waste, including mink farm offal, spent hens and dead birds, poultry feathers, and slaughterhouse offal from poultry, sheep, cattle, and hogs. Fish processing wastes may be included at later stages of operation. The finished product will be sold as a soil amendment for agricultural and landscaping purposes.

The proponent plans to locate the composting facility approximately 3.5km south of the intersection of the Trans-Canada Highway and Route 100, within 23 hectares of Crown land, on the west side of Route 100. The site plan includes an administrative building, two large composting buildings for receiving, mixing, and laying out windrows, and a storage building for storing and marketing the finished soil amendment. All composting operations are planned to occur inside the enclosed buildings. The composting buildings will be equipped with biofilters and will have a slight negative air pressure.

Construction of the undertaking is expected to take six months, and will employ approximately 32 people. Operation of the composting facility is anticipated to require seven full-time employment positions.

## 1.1 Purpose of the Environmental Impact Statement Guidelines

On May 17, 2018, the Minister of Municipal Affairs and Environment (MAE) informed the proponent that an environmental impact statement (EIS) is required for the proposed Argentia Access Road Industrial Composting Facility undertaking. The purpose of these guidelines is to

identify for the proponent the nature, scope, and minimum information and analysis required in preparing the EIS.

These guidelines shall not be regarded as either restrictive or exhaustive. Concerns other than those identified herein may arise during the investigations associated with the EIS and additional detail, studies, and/or examination of components may be required. The provincial government is prepared to provide advice and assistance throughout the preparation of the EIS with regard to the identification of environmental concerns and appropriate assessment methodology.

The EIS is a statement of the proponent's environmental conclusions and commitments related to the undertaking, and must be explicitly endorsed by the proponent.

For the purpose of these guidelines:

"Environment" means the components of the Earth, and includes:

- a) air, land and water, including all layers of the atmosphere;
- b) plant and animal life, including human life;
- c) the social, economic, recreational, cultural and aesthetic conditions and factors that influence the life of humans or a community;
- d) a building, structure, machine or other device or thing made by humans;
- e) a solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of humans; or
- f) a part or a combination of those things referred to in subparagraphs (a) to (f) and the interrelationships between 2 or more of them.

"Environmental effect" means a change in the present or future environment that would result from an undertaking.

"Follow-up Program" means a program for:

- (a) verifying the accuracy of the EA of the Undertaking/Undertaking; and,
- (b) determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the Undertaking/Undertaking;

"Minister" means the provincial Minister of the Department of Municipal Affairs and Environment.

"Undertaking" means an enterprise, activity, project, structure, work or proposal and a modification, abandonment, demolition, decommissioning, rehabilitation and an extension of them that may, in the opinion of the minister, have a significant environmental effect. The term undertaking refers to a project that must be registered for environmental assessment. The terms "project" and "undertaking" are used interchangeably in these guidelines.

A "proponent" may be a person, corporation or government department that owns, manages or controls a project.

## 1.2 Environmental Assessment as a Planning Tool

Environmental assessment is a planning tool used to ensure that undertakings are considered in a sustainable and precautionary manner in order to avoid or mitigate the possible adverse effects of development on the environment.

#### 1.2.1 Sustainable Development

Sustainable development means development that meets the needs of the present, without compromising the ability of future generations to meet their own needs. Environmental assessment enables the integration of environmental factors into the planning and decision-making process in a manner that promotes sustainable development and contributes to decision making that can provide net ecological, economic and social benefits to society. An undertaking that is supportive of sustainable development strives to incorporate citizen participation into decision-making. The EIS shall consider the extent to which the undertaking would meet the objective of sustainable development.

#### 1.2.2 Precautionary Approach

A purpose of environmental assessment is to ensure that proponents consider the precautionary principle. If an undertaking has the potential to cause a threat of serious or irreversible damage to the environment, the proponent must take all reasonable environmental protection measures to protect the environment, even if full scientific knowledge is lacking.

The Proponent shall indicate how the precautionary principle was considered in the design of the undertaking and demonstrate that the undertaking has been planned in a precautionary manner in order to ensure that serious or irreversible damage to the environment will not be caused.

#### **PART 2 – PREPARATION AND PRESENTATION OF THE EIS**

The EIS shall be written in terms understandable to the public, however, where the complexity of the issues addressed requires the use of technical language, a glossary defining technical words and acronyms shall be included.

A Table of Contents, providing the location of information in the final document by volume (if applicable), section, sub-section, and page number, is required. The EIS shall reference, rather than repeat, information previously presented in other sections of the document. For clarity and ease of reference, the EIS shall include a Table of Concordance that cross references the EIS guidelines so that points raised in the guidelines are easily located in the EIS.

The EIS shall provide charts, diagrams, and maps wherever useful to clarify the text, including a depiction of how the developed undertaking site will appear from both an aerial and terrestrial perspective. Where possible, maps shall use common scales to allow for comparison and overlay of mapped features and shall indicate common and accepted local place names. Geographic information shall be provided in standard Geographic Information System (GIS) mapping (digital) format (WGS84), where feasible. The EIS and all associated reports and studies shall use System International (SI) units of measure and terminology.

The proponent shall explain and justify all methods used in the preparation of the EIS, including the use of scientific, engineering, local, and other knowledge. All hypotheses and assumptions shall be clearly identified and justified. All data collection methods, models, and studies shall be documented so that the analyses are transparent and reproducible. The degree of uncertainty, reliability, and sensitivity of models used to reach conclusions shall be indicated.

Where external sources of information or data are used, they shall be referenced within the body of the EIS and listed in a bibliography at the end. Where conclusions that are critical to the assessment

of environmental effects are cited from other reports, the proponent shall provide sufficient detail of the original data and analysis to enable a critical review of that material and submit reference material as an appendix to the EIS. All conclusions regarding the receiving environment and predictions of the environmental effects shall be substantiated.

The EIS shall be a stand-alone document upon which a critical review can be undertaken. The content of the EIS should be organized according to the format described in Part 3.

## **PART 3 - OUTLINE OF THE EIS**

#### **EXECUTIVE SUMMARY**

The executive summary shall contain the following information: identification of the proponent; a brief project description; alternatives to the undertaking; predicted biophysical and socio-economic environmental effects (including cumulative effects associated with the undertaking, and other existing and reasonably expected future undertakings in the vicinity of the undertaking site); mitigative measures; residual effects; follow-up and monitoring programs; public consultation; an outline of component studies; and a summary of the fundamental conclusions of the EIS. The Table of Concordance may be included in the executive summary.

## **1.0 INTRODUCTION**

## 1.1 Name of the Undertaking

The undertaking has been assigned the name "Argentia Access Road Industrial Composting Facility Undertaking."

#### 1.2 The Proponent

This section shall introduce the proponent by providing the following pertinent information:

- name of corporate body and mailing address;
- name of chief executive officer (name, address, telephone number, and e-mail);
- principle contact person for the purpose of environmental assessment (name, address, telephone number, and e-mail); and
- key personnel, contractors, and/or sub-contractors responsible for preparing the EIS.

#### 1.3 Purpose of the Environmental Impact Statement

The purpose of the EIS is to identify the important beneficial and adverse environmental effects associated with the undertaking, identify measures to mitigate against any adverse effects, determine the significance of residual environmental effects, and design a program of public consultation to identify and address public concerns associated with the undertaking.

## 2.0 THE PROPOSED UNDERTAKING

#### 2.1 Study Area

The EIS shall contain a description of the geographical setting in which the undertaking will take place. Aerial images of the proposed undertaking site shall be provided indicating the locations of land use surrounding the proposed facility.

A precise description of the boundary of the undertaking shall be presented in relation to adjacent land use within the study area, accompanied by maps of appropriate scale showing the entire undertaking area with principle structures and appurtenant works. Maps shall be of a resolution of 1:30,000 or greater. The delineation of the study areas is crucial to scope the extent of the environmental assessment. The rationale used to delineate the boundaries of the study area shall be provided. This description shall focus on those aspects of the undertaking and its setting that are important in order to understand the potential environmental effects of the undertaking, including the following information:

- a) topography of the area, including vegetation, slope, water courses and wetlands;
- b) current land use in the area including the locations of the nearest temporary and permanent dwellings; commercial, agricultural, and industrial facilities; and primary and secondary transportation routes;
- c) the environmental significance and value of the geographical setting in which the undertaking will take place, and the surrounding area;
- d) environmentally sensitive areas, e.g., the T'Railway; fishing, trapping and hunting areas; habitats of federally or provincially listed species at risk; other sensitive areas; and,
- e) a description of nearby local communities and cottage developments.

An overview map/image shall be provided clearly depicting the proximity of the study area in relation to the above-noted features.

## 2.2 Need, Purpose, and Rationale for the Undertaking

The EIS shall describe the need and purpose for the undertaking (i.e., the problem or opportunity the undertaking is intended to solve or satisfy). This section provides the fundamental justification for the undertaking and the context for the consideration of alternatives to the undertaking. If the objectives of the undertaking are related to broader private or public sector policies, plans, or programs, this information shall also be included.

The statement of the undertaking's rationale shall be presented in quantifiable economic terms, shall provide a clear description of methods, assumptions, and conclusions used in the analysis, and shall include an evaluation of the following:

- a) current and forecasted availability of organic feedstock by source, type, and volume;
- b) current and forecasted demand for soil amendment products by market type, including potential export opportunities;
- c) evaluation of the thresholds for economic viability of the undertaking, including the range of thresholds considered for the annual production and scale of the operation, and justification for the indicated thresholds;
- d) risks to the undertaking, including availability of organic feedstock and demands for soil amendment, and other risk factors relevant to the decision to proceed with the undertaking;
- e) projected environmental and economic benefits of the undertaking; and
- f) estimation of capital costs of the undertaking.

#### 2.3 Project Description

The proponent shall describe the scope of the undertaking for which the EIS is being conducted, including: the general lay-out, construction, operation, maintenance, and foreseeable modifications of all undertaking-related facilities; and the closure, decommissioning, and rehabilitation of undertaking site.

#### 2.3.1 General Layout

The EIS shall provide a written and graphic description (e.g. maps and drawings) of the following physical features of the undertaking:

- a) a site plan of the proposed facility showing the location of proposed buildings and biofilters, the distance of buildings and biofilters from the nearest water body, and the distance of buildings and biofilters from Route 100;
- b) the location and dimensions of outdoor materials-storage-areas and impermeable pads;
- c) the location and dimensions of the site access road, and sighting distances north and south of the access road along Route 100;
- d) the required 50 metre undisturbed tree screen between Route 100 and the facility; and
- e) the distance of the proposed undertaking site from the Trans-Canada Highway, Town of Whitbourne, Local Service District of Markland, T'Railway, and the Placentia Junction, Peak Pond, Reid Pond and Holiday Hill cabin areas.

#### 2.3.2 Construction

Details of construction materials, methods, and schedule shall be described in this section of the EIS, including, but not limited to, the following:

- a) duration of construction period, including site clearing, and preparation and construction of access road, buildings, and biofilters;
- b) water, sewer, and electrical infrastructure to service the facility;
- c) driveway/access road, including any required in-filling and culvert installation;
- d) erosion and sediment control, and any other measures that will be undertaken to stabilize and rehabilitate the site during construction;
- e) identification of excavation and borrow pits (if required) and planned rehabilitation;

- f) building design details identifying the location and dimensions of:
  - i. receiving and mixing area(s) for feedstock and carbon fibre;
  - ii. area for delivery trucks to enter the building, offload feedstock, and exit the building;
  - iii. areas for primary, secondary, and tertiary composting phases, including the location and dimension of windrows;
  - iv. leachate collection system layout and design;
  - v. location and dimensions of biofilters including biofilter media constituents; and
  - i. location and surface (whether impermeable) of storage areas for carbon supply and finished soil amendment;
- g) mechanical ventilation design including a description of how negative pressure will be achieved and maintained inside the composting buildings when doors are open, and how the ventilation system will control humidity and odour inside buildings;
- h) a separate, designated space for employee lunchroom, toilet and washing facilities;
- i) appropriate washing facilities available where workers may be exposed to contact with materials harmful to skin (e.g. eyewash facilities, emergency showers);
- j) storage area for hazardous materials, fuels, and lubricants;
- k) personnel requirements for each phase and component of construction, including projected workforce by month, employment equity, hiring practices, journeypersons, apprentices, students, and local preference.

#### 2.3.3 Operation and Maintenance

Aspects of the operation and maintenance of the undertaking shall be described in detail in this section of the EIS, including but not limited to, the following:

- a) weigh-in/weigh-out of material received and removed on-site;
- b) screening, mixing, and windrowing of compost material;
- c) compost operating procedures and equipment, including the duration of each phase of composting, including but not limited to the following:
  - i. primary phase of composting to achieve pathogen kill;
  - ii. secondary phase of composting for curing;
  - iii. tertiary phase of composting for maturing and testing of final, marketable compost product;
  - iv. final stage of composting for screening and distributing finished compost;

- v. tracking the movement of material during the composting process;
- vi. monitoring of moisture and temperature throughout the composting process;
- d) estimated volume of produced compost from the facility during the first year of operation, the incremental increase in feedstock volumes from the start-up of operations to full capacity production, and any restrictions imposed by government authorities on increasing annual volumes of produced compost;
- e) a list of specified risk material and prohibited material that place restriction on the end use of compost product, in accordance with the Fertilizers Act and the Health of Animals Regulations, under the authority of the Canadian Food Inspection Agency;
- f) labeling information for the soil amendment and/or information to be provided on the Bill of Sale at the time of sale, in accordance with the provisions of the Fertilizers Act;
- g) operation and maintenance of the leachate collection system;
- h) composition, operation, and maintenance of biofilters, including inflow rate of odourous air and resident time in biofilter; methods of maintaining and monitoring constant air flow, moisture content and temperature of biofilter; rate of recharge, and operational challenges during cold winter months;
- procedures and scheduling for cleaning, disinfecting, and/or maintaining equipment and infrastructure associated with the composting facility, including feedstock delivery vehicles; heavy equipment associated with composting operations; facility floors and surfaces, and monitoring, sampling and testing equipment;
- j) the frequency of testing of the final compost product to be conducted and reported to the Department of Municipal Affairs and Environment, and to ensure compliance with CCME Compost Quality Guidelines, including testing procedures and parameters, and accredited laboratories available to conduct the testing;
- k) recording and managing of laboratory analysis results and availability of those results to government inspectors.
- procedures for recording the content, volume, source and date of each shipment of feedstock received at the facility and making the information available to federal and provincial government agencies;
- m) the purpose of a premise identification number (PIN) and a commitment to register the composting facility with the Department of Fisheries and Land Resources, Agrifoods Branch, for participation in the PIN program;
- n) level of training that will be required of on-site staff and/or the operator(s) of this facility, whereby at least one employee/operator on-site will be trained in the operation of an

industrial composting facility, with training certified by the Composting Council of Canada, Solid Waste Association of North America, or equivalent;

- a commitment to contract the services of an experienced industrial composting operator, on a part time basis at a minimum, to oversee the operation of the facility in the first couple of years;
- p) measures that will be undertaken to ensure activities associated with the industrial composting operation will be conducted in compliance with the Occupational Health and Safety Act and its Regulations, including the responsibility to ensure that contractors hired to perform work also comply with this legislation;
- q) a risk assessment where workers are assigned to work alone or in isolation, where the assessment identifies a hazard, describes appropriate controls that shall be implemented to eliminate, or minimize the risk, includes a written procedure for checking the well-being of a worker assigned to work alone or in isolation; and
- r) personnel requirements for the operation of the composting facility, including projected workforce by month, employment equity, hiring practices, journeypersons, apprentices, student and, local preference;

#### 2.3.4 Decommissioning and Rehabilitation

The EIS shall present an approach for undertaking decommissioning, and set out a commitment to address site clean-up, repair, and rehabilitation, and removal or securing of infrastructure, equipment, compost material, and access to the site in the event of closure of the industrial composting facility. The plan may be included in the body of the EIS or may be attached as a separate Appendix.

## 2.3.5 Regulatory Framework and Government Oversight

The proponent shall provide a comprehensive list of permits and regulatory approvals required for the undertaking. The list shall include the following details:

- activity requiring regulatory approval;
- name of permit, license or regulatory approval;
- name of legislation applicable in each case; and
- regulatory agency responsible for each permit, license, and approval.

The EIS shall identify:

- a) government policies, resource management plans, and planning or study initiatives pertinent to the undertaking and/or the environmental assessment;
- b) any relevant land use plans, land zoning, or community plans; and
- c) regional, provincial, and/or national objectives, standards, codes and/or guidelines that have been used by the proponent to assist in the development of the EIS.

#### **3.0 ALTERNATIVES**

The EIS shall include a detailed analysis of the advantages and disadvantages to the environment of the undertaking as proposed, and shall identify and consider the environmental effects of alternative methods of carrying out the undertaking that satisfy the need for the undertaking. The level of detail for this analysis must be sufficient to allow the reader to understand the alternatives and how they compare to the undertaking, and the reasons for selecting the preferred alternative and alternative methods, and for rejecting others. The EIS shall demonstrate how the preferred alternative contributes to sustainable development and how the precautionary approach has been applied in project planning.

#### 3.1 Alternatives to the Undertaking

This section shall include a comparative analysis of the environmental effects and technical and economic feasibility of alternatives that led to the selected project alternative. The proponent shall consider describing:

- a) alternative sites for the undertaking that were considered;
- b) environmental, economic, and technical costs and benefits of the alternatives;
- c) market conditions, regulatory changes, and other factors that may have influenced the selection of the preferred alternative; and
- d) justification of the preferred alternatives to the undertaking based on the relative consideration of the environmental, economic and technical costs and benefits.

## 3.2 Alternative Methods of Carrying Out the Undertaking

The EIS shall analyze and compare the design alternatives for the undertaking in relation to their environmental and social costs and benefits, including those alternatives which cost more to build and/or operate but which cause less harmful environmental effects.

The proponent shall provide the rationale for selecting undertaking components and shall discuss the state of the art technologies being proposed. The proponent shall indicate known experience with, and effectiveness and reliability of the equipment, techniques, procedures, and policies, for each alternative, particularly under cold winter climate conditions in Canada, and their relation to best practices in Newfoundland and Labrador.

In describing alternative methods of carrying out the undertaking, the proponent shall discuss the environmental and social advantages and disadvantages of the following:

- active aerobic and passive aerobic composting, and in-vessel anaerobic digestion;
- options for biofilter media;
- negative air pressure inside composting buildings; and
- green house gas production and management for each alternative noted above.

## 4.0 ENVIRONMENT

#### 4.1 Key Issues

To better focus the EIS, the proponent shall identify the key issues related to the project. The issues can be revised and adjusted in relation to the information acquired in the field and during consultations held by the proponent in the preparation of the EIS.

The selection of key issues shall include, but not be limited to, consideration of the following factors:

- the effects of odour and vectors from the project on the quality of life of people who live, make a living, visit and partake in recreational activities in the vicinity of the project;
- the risk of fire from the facility spreading into nearby communities and cabin areas;

- the marketability of the soil amendment end-product intended for agricultural and landscaping use; and
- health risks associated with the dispersal of particulate matter from the composting facility.

The ensuing sections focus on the components relevant to the key issues and effects of the project.

## 4.2 Existing Environment

The EIS shall describe relevant aspects of the existing environment prior to implementation of the project, which constitute the reference state of the environment. This section shall include a description of the existing biophysical and socio-economic environment that will be affected or might reasonably be expected to be affected, directly or indirectly, by the undertaking, with emphasis on the valued ecosystem components (VECs). If the information available from government or other agencies is insufficient or no longer representative, the proponent shall complete the description of the environment by conducting original surveys and research according to generally accepted practices. The EIS shall provide all of the information required to understand or interpret collected data (e.g. methods, survey dates and times, etc.).

A description of the existing environment shall be developed for the following environmental components:

- atmospheric environment;
- aquatic environment;
- terrestrial environment;
- land and resource use;
- heritage resources;
- communities; and
- economy, employment, and business.

VECs for each environmental component shall be described.

#### 4.2.1 Atmospheric Environment

The proponent shall describe the relevant components of the atmospheric environment within the study area of the VECs, including the following:

- a) climate and meteorology, including monthly and annual minimum, maximum and mean values for precipitation, temperature and wind speed, prevailing wind direction, and storm events;
- b) indications of recent climate change observations and trends;
- c) existing sources of greenhouse gas emissions near the proposed project area; and
- d) existing ambient noise level.

#### 4.2.2 Aquatic Environment

The proponent shall describe the relevant components of the aquatic environment within the study area of the VECs, including the following:

- a) hydrological features such as the location of streams, ponds, and rivers;
- b) biological diversity and composition of freshwater aquatic species; and
- c) species of special interest or conservation concern and their habitat, with an emphasis on rare, vulnerable, or threatened species, including species listed in the Endangered Species Act, the Species at Risk Act, and species that have been assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Species Status Advisory Committee (SSAC) as endangered, threatened or special concern/vulnerable.

#### 4.2.3 Terrestrial Environment

The proponent shall describe the relevant components of wetlands and the terrestrial environment within the study area of the VECs, including the following:

- a) characterization of wetlands and the location and extent of wetlands likely to be affected by project activities, according to their size and type (class and form), a description of their function, and species composition;
- b) surface-water flow, groundwater movement, and aquifer recharge zones;
- c) terrestrial fauna, including mammals, migratory avifauna, waterfowl and gulls;
- d) terrestrial flora, including ecological land classifications;

- e) species and areas of conservation concern (e.g. Endangered Species Act, Species at Risk Act, COSEWIC, and SSAC); and
- f) human-wildlife interaction.

## 4.2.4 Land and Resource Use

The proponent shall describe relevant land and resource use within the study area of the VECs, including the following:

- a) current land use in the area and the relationship of the project with any existing or future land use including traditional, private and crown lands;
- b) description of the nearest potentially sensitive human receptors such as residences, cabins, commercial, industrial and tourist establishments, farms, and institutions that may be affected by project activities;
- c) unique sites or special features, environmentally sensitive areas, reserves, and/or protected areas;
- d) tourism operators, outfitters camps, and recreational activities; and
- e) landscapes, including effects of the project on aesthetics.

#### 4.2.5 Heritage Resources

The proponent shall describe relevant cultural heritage resources in the study areas of the VECs, including the following:

- a) historic and archaeological resources;
- b) paleontological resources;
- c) architectural resources; and
- d) burial, cultural, spiritual, and heritage sites.

#### 4.2.6 Communities

The proponent shall describe relevant community elements in the study areas of the VECs, including the following:

- a) communities, industries, and population demographics;
- b) health services and social programs;

- c) family life, recreation, and culture;
- d) education and training facilities and associated programs; and
- e) housing, accommodations, and property values.

#### 4.2.7 Economy, Employment, and Business

The proponent shall describe relevant economy, employment, and business elements in the study areas of the VECs, including the following:

- a) economy of the region;
- b) employment in the region;
- c) availability of skilled and unskilled labour in the region;
- d) employment equity and diversity including under-represented groups; and
- e) business capacity and opportunities relative to composting organic materials in the province.

## 4.3 Component Study

Component Studies shall address baseline data requirements to support the evaluation of environmental effects and/or to develop mitigation measures and follow-up monitoring programs. Component Studies shall be prepared for the following VECs:

#### 4.3.1 The State of Knowledge of Organic Composting in Canada

The proponent shall conduct and report on a literature review of organic composting in Canada, focused on commercial/industrial composting facilities that compost agricultural and food waste such as animal and poultry slaughterhouse offal, and fish offal, and those facilities that market the finished soil amendment for agricultural and landscaping uses. The information provided in this study shall include, but not be limited to, a description of:

 a) industrial composting facilities that co-exist with adjacent land use; sources of feedstock; annual quantity of feedstock received; annual tonnage of produced compost; and separation distances from nearby human receptors;

- b) history of public complaints regarding odour and vectors including frequency, nature and management of public complaints, from the operator's perspective and from the perspective of the Ministry of Environment for that province;
- c) structural design components and operational best management practices that optimize odour and vector management;
- composition, operation, and maintenance of biofilters at composting facilities, including: inflow rate of odourous air and resident time in biofilter; methods of maintaining and monitoring constant air flow, moisture content and temperature of biofilter; and operational challenges during cold winter months; and
- e) history of fire at the composting facility, including source of fire, fire protection equipment, and fire response.

#### 4.3.2 Air Quality in the Vicinity of an Industrial Composting Facility

In accordance with the Plume Dispersion Modeling Guidance Document prepared by the Department of Municipal Affairs and Environment, the proponent shall complete a Plume Dispersion Study to demonstrate the dispersion of odours and bioaerosols from the composting facility. The Plume Dispersion Study shall describe for both normal and worst case operating scenarios, the following:

- a) discussion and graphical presentation of the CALMET inputs including: meteorological data, topography, and land use;
- b) discussion and derivation of the site specific CALPUFF inputs including: building dimensions, biofilter specifications, and emission rates and associated parameters;
- c) identification of human receptors, including residential, cabin, commercial, institutional, and recreational properties, the distance of the receptors from the project site, and the predicted odour concentrations at each receptor; and
- d) graphical presentation demonstrating the frequency and duration of odours at the detection threshold and the complaint threshold for the receptors identified in 4.3.2 (c).

Component studies generally have the following format: i) Rationale/Objectives, ii) Study Area, iii) Methodology, and iv) Study Outputs.

#### i. Rationale/Objectives

In general terms, the rationale for a component study is based on the need to obtain additional data to determine the potential for significant effects on a VEC due to the proposed undertaking, and to provide the necessary baseline information for monitoring programs.

ii. Study Area

The boundaries of the study area shall be defined depending on the characteristics of the VEC being investigated.

#### iii. Methodology

Methodology shall be proposed by the proponent, in consultation with resource agencies, as appropriate. The methodologies for each component study shall be summarized in the EIS.

iv. Study Outputs

Study outputs shall be proposed by the proponent. Information and data generated shall be sufficient to adequately predict the effects of the undertaking on the VEC. Where new information becomes available as a result of baseline studies, additional component studies may be required. Component studies may be submitted as stand–alone documents, or as separate appendices to the EIS.

## 5.0 DATA GAPS

Information gaps from a lack of previous research or practice shall be described indicating baseline information which is not available or existing data which cannot accurately represent the information requirements of the EIS guidelines. Where data and/or information gaps remain, the proponent shall describe efforts to resolve the gaps, including any direct consultation with groups, individuals and others.

#### 6.0 ENVIRONMENTAL EFFECTS

# 6.1 Predicted Future Condition of the Environment if the Undertaking Does Not Proceed

The EIS shall describe the predicted future condition of the environment with respect to the key issues, if the project did not proceed. The predicted future condition of the environment shall help to distinguish project-related effects from environmental change due to natural processes. The analysis shall consider the current capacity for composting organics and producing a marketable soil amendment and the likely trends in the area in the absence of the project, given available information about other planned major projects or social, economic, or institutional changes within the time frame of the project.

## 6.2 Predicted Environmental Effects of the Undertaking

The EIS shall contain a comprehensive analysis of the predicted environmental effects of the undertaking. If the effects are attributable to a particular phase (construction, operation, maintenance), or to a particular component (receiving feedstock, active composting, windrow turning, maturation, storage of final product) then they should be designated as such. Predicted environmental effects (positive and negative, direct and indirect, and short- and long-term) shall be defined quantitatively where possible, and semi-quantitatively or qualitatively where more precise tools are not available, for each VEC. Environmental-effects predictions shall be explicitly stated and the theory or rationale upon which they are based shall be presented in terms of the following:

- nature;
- magnitude (qualitative and quantitative);
- geographic (spatial) extent;
- timing, duration and frequency;
- degree to which effects are reversible or mitigable;
- ecological context;
- level of knowledge;
- the capacity of renewable resources that are likely to be significantly affected by the project, to meet the needs of present and future generations;

- the extent to which biological diversity is affected by the project; and
- the application of the precautionary principle, where applicable.

Potential benefits and adverse effects of the undertaking on the surrounding biophysical and socioeconomic environment shall be described.

The proponent shall describe the potential socio-economic and biophysical effects of the project on the surrounding environment including the local area, the Avalon Peninsula, and the province with a focus on, but not limited to the following:

- a) business development opportunities from construction/ operations:
  - value added processing,
  - o development of local business networks,
  - acquisition of goods and services, and
  - o employment.
- b) potential effects of the project on:
  - aesthetics and viewscapes along Route 100;
  - o topography, including soil erosion, surface drainage, and wetlands;
  - o flora and fauna, including migratory birds and their nests and habitat; and
  - human receptors, including the potential effects of the dispersal of odour and bioaerosols, and pest infestations on human health, quality of life, agricultural farm produce and wild berries, market value of nearby properties, future adjacent land use, and visitors to nearby business establishments and tourist attractions.

## 6.3 Accidents and Malfunctions

The proponent will identify and describe the potential accidents and malfunctions related to the project, including an explanation of how those events will be identified, potential consequences (including the potential environmental effects), the worst case scenarios as well as emergency scenarios that can reasonably be expected to occur, and the effects of these scenarios. The proponent will explain the quantity, mechanism, concentration, rate, form, and characteristics of deposits and other materials likely to be released into the environment during malfunction and accident events. Potential accidents and malfunctions may include, but not be limited to, the following:

- a) failure of biofilters due to an extreme climate event or physical damage;
- b) failure of ventilation system;
- c) failure of water supply for washing surfaces inside composting buildings and feedstock delivery trucks, for wetting compost windrows if needed; and for employee use;
- d) spill of feedstock outside composting facility due to driver or other error;
- e) anaerobic conditions in compost windrows;
- f) pump failure for leachate collection system;
- g) mechanical failure of mixing, turning, transporting equipment; and
- h) other project components or systems that have the potential, through accident or malfunction, to adversely affect the natural environment.

The proponent shall assess the likelihood of occurrence and consequence severity of the accidents and malfunctions.

## 6.4 Cumulative Environmental Effects

The proponent shall identify and assess the project's cumulative environmental effects. Cumulative effects are defined as changes to the environment combined with the effects of past, present, and planned projects and/or activities. The proponent shall consider the cumulative environmental effects of the project where there is overlap with other projects and activities within or near the study area, and shall:

- a) identify and justify the environmental components that will constitute the focus of the cumulative effects assessment, including but not limited to, other commercial and industrial operations, farms, and proposed developments. The proponent's assessment should emphasize the cumulative effects on the main VECs that could potentially be most affected by the project. Consideration should be given, but not limited to, human receptors, as defined in 4.2.4 (b);
- b) present a justification for the geographic and temporal boundaries of the cumulative effects assessment;
- c) describe and justify the choice of projects and selected activities for the cumulative effects assessment; and
- d) describe the mitigation measures and determine the significance of the residual cumulative effects.

#### 6.5 Effects of the Environment on the Project

Environmental changes and hazards that may occur and may affect the project shall be described (e.g. severe wind and precipitation, snowstorms, extended periods of extreme cold and or heat). The EIS shall take into account the potential influence of climate change scenarios (e.g. increased severity and frequency of storms, and flooding), as well as local knowledge. The influence that these environmental changes and hazards may have on the project shall be predicted and described. The environmental effects that may occur as a result of the environment acting on the project shall be assessed.

## 7.0 ENVIRONMENTAL PROTECTION

#### 7.1 Mitigation

The EIS shall identify and discuss proposed measures that will be implemented to mitigate the adverse effects and enhance beneficial effects of the project. The rationale for and effectiveness of the proposed mitigation and enhancement measures should be discussed and evaluated. The proponent, where possible, should refer to similar situations where the proposed mitigation has proven to be successful. Mitigation failure should be discussed with respect to risk and severity of consequence.

The proponent shall identify who is responsible for implementing the mitigative measures and the system of accountability, including the obligations of contractors and subcontractors. Mitigation measures shall be described for construction, operation, maintenance, modification, and decommissioning activities associated with the composting facility, and shall include, but not be limited to, the following:

- a) procedures to ensure worker protection in an environment where noise, mechanical equipment and contaminated air may pose health and safety risks to workers;
- b) procedures to minimize the effects of the project on aesthetics and viewscapes;
- c) procedures to minimize the dispersal of odours and bioaerosols from the facility;
- d) procedures to monitor the effectiveness of biofilters during operations, including frequency of monitoring;

- e) procedures to ensure an adequate supply of carbon fibre of suitable quality for mixing with organic feedstock, is constantly available at the facility;
- f) procedures to ensure the finished compost meets the CCME Guidelines for Compost Quality based on the following four criteria for product safety and quality: (i)foreign matter; (ii) maturity; (iii) pathogens; and (iv) trace elements;
- g) procedures to minimize the dispersal of odour from feedstock delivery trucks;
- i) procedures to manage leachate;
- h) procedures to minimize erosion, surface run-off, and exposed soil during construction;
- procedures to conserve wetlands (i.e. avoiding development on wetlands, maintaining a 30 metre undisturbed buffer around wetlands and watercourses and diverting surface runoff from construction and operations away from wetlands);
- j) procedures to manage the storage and use of hazardous liquids in a manner that minimizes potential effects of the hazardous liquids on the surrounding environment;
- k) procedures to reduce habitat disturbance on wildlife, including migratory birds, by undertaking vegetative clearing and excessive noise activities outside of the nesting, breeding and brood rearing period (April 15 to August 15 in this region). Where vegetation clearing is not avoidable and a nest is found:
  - the nest and neighbouring vegetation should be left undisturbed until nesting is completed;
  - construction activities should be minimized in the immediate area until nesting is complete;
  - for guidance on how to avoid the incidental take of migratory birds nests and eggs, please refer to the Avoidance Guidelines (Website: http://www.ec.gc.ca/paomitmb/default.asp?lang=En&n=AB36A082-1);
- procedures to deter birds from stockpiles/compost without the need for a permit, e.g. using flags, streamer tape, scarecrows or human-like dummies, and electronic noisemaking devices;
- m) procedures to reduce the attraction of migratory birds to on-site lighting, such as: using LED lights instead of other types of lights where possible; shielding lights needed for the safety of employees to shine down and only to where it is needed; and installing the fewest number of site-illuminating lights needed for safety, at the lowest intensity and smallest number of flashes per minute allowable by Transport Canada;

- n) procedures to ensure that litter, food scraps, feedstock and any other waste shall be made inaccessible to birds, mammals and other vectors so as not to artificially enhance populations of predators of eggs and chicks;
- o) procedures to ensure that the soil created from the composting operation is not seeded with invasive species such as Purple Loosestrife;
- p) procedures to diminish the risk of introducing invasive species, such as regular cleaning and inspection of mechanical equipment (including ventilation equipment) to ensure that no vegetative matter is attached to the machinery; and
- q) procedures to minimize project-related greenhouse gas emissions.

Other mitigation measures that were considered may be identified, and the rationale for rejecting these measures explained. The best available technology and best management practices shall be considered. Avoidance of environmental effects through implementation of scheduling and siting constraints and pollution prevention opportunities shall be considered. Trade-offs between costs and predicted effectiveness of the mitigation measures shall be justified.

## 7.2 Environmental Emergency Contingency Plan

The EIS shall include an Environmental Emergency Contingency Plan providing information on the location of on-site emergency response equipment, and outlining procedures to respond to accidents, malfunctions, and emergencies, including but not limited to:

- a) accidental spills and/or releases of hazardous materials including gasoline and associated products;
- b) accidental spills of organic feedstock and/or leachate outside the facility;
- c) failure of electrical and/or water supply;
- d) anaerobic conditions in compost windrows;
- e) failure of leachate collection system;
- f) mechanical failure of mixing, turning, transporting equipment;
- g) an approved alternate site for compost in the event of an on-site emergency;
- h) delivery of potentially hazardous material, e.g. sewage sludge or other hazardous material; and
- i) other project components or systems that have the potential, through accident or malfunction, to adversely affect the natural environment.

In developing a contingency plan, it is recommended that the Canadian Standards Association publication <u>Emergency Planning for Industry</u> CAN/CSA-Z731-03, be consulted as a reference. The Environmental Emergency Contingency Plan may be included as a separate appendix.

#### 7.3 Personnel Emergency Response Plan

Provide an emergency response plan describing measures to be taken to effectively respond to any foreseeable mishap involving personnel that may occur as a result of the undertaking. The following minimum items should be considered when developing such a plan: a proper first-aid kit, communication devices, a list of emergency names and numbers appropriately placed; and an action plan including the roles and responsibilities of workers.

The Personnel Emergency Response Plan may be included as a separate appendix.

#### 7.4 Odour Management Plan

The EIS shall include an Odour Management Plan specific to the proposed project that will be implemented at the facility over its operational lifetime. The Odour Management Plan shall include a description of building design features and operational procedures that will be implemented to minimize odours, and procedures for recording and responding to public complaints.

The Odour Management Plan may be included as a separate appendix.

#### 7.5 Vector Management Plan

The EIS shall include a Vector Management Plan specific to the proposed project that will be implemented at the facility over its operational lifetime. The Vector Management Plan shall include a separate Fly Management Plan and procedures for recording and responding to public complaints.

The Vector Management Plan may be included as a separate appendix.

#### 7.6 Fire and Emergency Protection Plan

The EIS shall include a Fire and Emergency Protection Plan specific to the project, including identification of an on-site water supply and fire protection features. The plan must be developed in consultation with, and approved by, Fire and Emergency Services-NL.

The Fire and Emergency Protection Plan may be included as a separate appendix.

#### 7.7 Waste Management Plan

The EIS shall include a Waste Management Plan specific to the project including, but not limited to, a description of the following:

- a) management of on-site waste, including domestic and sanitary waste, and waste from the screening of feedstock and finished soil amendment, during facility operations, e.g., suitable refuse containers will be provided for the collection and weekly removal of waste to an approved facility;
- b) retention and disposal of excess leachate at an approved facility; and
- c) retention and disposal of waste oils and used lubricating oil in an approved manner;

The Waste Management Plan may be included as a separate appendix.

#### 7.8 Environmental Effects Monitoring and Follow-up Program (EEMP)

The EIS shall describe the environmental and socio-economic monitoring and follow-up programs to be incorporated into construction, operation, and maintenance activities. The purpose of the follow-up program is to verify the accuracy of the predictions made in the assessment of the effects, as well as the effectiveness of the mitigation measures. The duration of the follow-up program shall be as long as is needed to evaluate the effectiveness of the mitigation measures. If the EEMP identifies unforeseen adverse environmental effects, the proponent shall commit to adjusting existing mitigation measures, or if necessary, develop new mitigation measures. The proposed approach for monitoring shall be described and shall include:

- i. the objectives of the monitoring program and a schedule for collection of the monitoring data required to meet these objectives;
- ii. the sampling design, methodology, selection of the subjects and indicators to be monitored, and their selection criteria;
- iii. the frequency, duration and geographic extent of monitoring, including justification/rationale;
- iv. reporting and response mechanisms, including criteria for initiating a response and procedures;
- v. the approaches and methods for monitoring cumulative effects of the project with existing and future developments in the project area;
- vi. procedures to assess the effectiveness of monitoring and follow-up programs, mitigation measures; and
- vii. a communications plan to describe the results of monitoring to interested parties.

The EIS shall describe monitoring plans including, but not limited to the following:

- a) performance of the biofilters and the extent of odour dispersion from the facility;
- b) incidence of vectors and vector management at and near the facility;
- c) level of public concern regarding odours and vectors from the facility;
- d) condition of feedstock delivery vehicles and incidence of public complaints regarding feedstock delivery vehicles; and
- e) quality and grading of the soil amendment; and
- f) procedures for checking the well-being of a worker(s) assigned to work alone or in isolation.

The proponent shall prepare and submit the EEMP subsequent to the completion of the EIS, but before the initiation of project construction.

#### 8.0 RESIDUAL EFFECTS AND DETERMINATION OF SIGNIFICANCE

Residual effects are those adverse environmental effects which cannot be avoided or fully mitigated through the application of environmental control technologies and best management practices. The EIS shall list and contain a detailed discussion and evaluation of residual effects, which shall be defined in terms of the parameters outlined in section 6.2.

The EIS shall contain a concise statement and rationale for the overall conclusion relating to the significance of the residual adverse environmental effects. The EIS will, for ease of review, include a matrix of the environmental effects, proposed mitigations, and residual adverse effects.

#### 9.0 ASSESSMENT SUMMARY AND CONCLUSIONS

The EIS shall summarize the overall findings of the environmental assessment, with emphasis on the key environmental issues identified.

#### **10.0 PUBLIC PARTICIPATION**

The EIS shall describe a planned program of public participation and consultation, including, but not limited to the following:

- a) an opportunity for interested members of the public to meet with the proponent at a place adjacent to or within the geographical area of the undertaking, or as the minister may determine, in order to:
  - i. provide information concerning the undertaking to the people whose environment may be affected by the undertaking;
  - ii. describe odour management, vector management and fire protection plans for the facility to address public concerns;
  - iii. record and respond to the concerns of the local community raised during the public meeting regarding the environmental effects of the undertaking, and to describe those concerns and the proponent's response to those concerns in a separate section of the EIS; and
  - iv. conduct the meeting in compliance with the legislation and with divisional policy included in Appendix B.
- b) the formation and regular meeting of a Liaison Committee comprised of representatives of Metro Environmental Limited, Government of Newfoundland and Labrador, and independent members of the general population from Whitbourne and Placentia. The committee shall be formed by the proponent during construction of the facility. The Department is to be consulted regarding committee representation. Regular meetings of the

liaison committee will provide a clear conduit of communication between concerned citizens and Metro Environmental. The meetings should be held on a bi-monthly basis.

#### **11.0 ENVIRONMENTAL PROTECTION PLAN (EPP)**

The proponent shall prepare an EPP for construction and operation of the composting facility project, for approval by the Minister of Municipal Affairs and Environment, prior to commencing construction. The EPP shall be a stand-alone document that targets the site foreperson, the proponent's occupational health and safety staff, the proponent's environmental staff and any government environmental surveillance staff. The EPP shall address construction, operation and maintenance activities associated with the project. A proposed Table of Contents and an annotated outline for the EPP is to be presented in the EIS which shall address the major

construction and operational activities, permit requirements, mitigation measures and contingency plans, as follows:

- proponent's environmental policies;
- environmental compliance monitoring;
- environmental protection measures;
- mitigation measures;
- permit application and approval planning;
- contingency planning for accidental and unplanned events;
- statutory requirements; and
- revision procedures and contact lists.

The proponent shall prepare and submit the EPP for approval subsequent to the completion of the EIS, and prior to the initiation of project construction.

## **12.0 REFERENCES**

The proponent shall prepare a complete and detailed bibliography of all studies used to prepare the EIS. Supporting documentation shall be referenced in the EIS and submitted in separate volumes or attached as an appendix to the EIS.

#### **13.0 PERSONNEL**

The names and qualifications of all key professionals responsible for preparing the EIS and supporting documentation shall be included. A description of the qualifications of scientists conducting surveys and scientific studies associated with the undertaking shall be provided.

#### **14.0 COMMITMENTS MADE IN THE EIS**

The EIS is a statement of the proponent's environmental conclusions and commitments related to the project, and must be explicitly endorsed by the proponent. The EIS shall provide a list of all commitments made regarding environmental mitigation, monitoring, and follow-up. Each commitment must be cross-referenced to the section of the EIS where it has been made.

## **15.0 COPIES OF REPORTS**

The EIS should be prepared in accordance with these guidelines and, once completed, the proponent shall submit printed and electronic copies of the EIS to the Department of Municipal Affairs and Environment, as specified below:

- 12 electronic copies (USB drives)
- 12 paper copies

Stand-alone studies associated with the EIS, including component studies, EPPs, and EEMPs shall be submitted to the Department of Municipal Affairs and Environment in the manner specified above. In addition, the proponent shall make a printed copy of the EIS and the associated standalone studies available at a public viewing center in the project vicinity, and in any additional communities to be designated by the Department of Municipal Affairs and Environment.

## REFERENCES

Newfoundland and Labrador Environmental Protection Act. http://www.assembly.nl.ca/legislation/sr/statutes/e14-2.htm

Newfoundland and Labrador Guideline for Plume Dispersion Modeling, 2012, GD-PPD-019.2. http://www.mae.gov.nl.ca/env\_protection/science/gd\_ppd\_019\_2.pdf

Newfoundland and Labrador Environmental Standards for Municipal Solid Waste Compost Facilities, 2010, GD-PPD-048.2.

http://www.mae.gov.nl.ca/env\_protection/waste/composting\_facility\_april.pdf

Newfoundland and Labrador Guidelines for an Environmental Preview Report for the Argentia Access Road Industrial Composting Facility, 2016.

http://www.mae.gov.nl.ca/env\_assessment/projects/Y2016/1838/1838\_epr\_guidelines\_16sept201 6.pdf

## **APPENDIX A**

#### **Environmental Protection Act, 2002**

#### Section 57 - Environmental Impact Statement

57. An environmental impact statement shall be prepared in accordance with

the guidelines, and shall include,

- a) a description of the undertaking;
- b) the rationale for the undertaking;
- c) the alternative methods of carrying out the undertaking and alternatives to the undertaking;
- d) a description of the
  - i. present environment that will be affected or that might reasonably be expected to be affected, directly or indirectly, by the undertaking, and
  - ii. predicted future condition of the environment that might reasonably be expected to occur within the expected life span of the undertaking, if the undertaking was not approved;
- e) a description of the
  - i. effects that would be caused, or that might reasonably be expected to be caused, to the environment by the undertaking with respect to the descriptions provided under paragraph (d), and
  - actions necessary, or that may reasonably be expected to be necessary, to prevent, change, mitigate or remedy the effects upon or the effects that might reasonably be expected upon the environment by the undertaking;
- f) an evaluation of the advantages and disadvantages to the environment of the undertaking, the alternative methods of carrying out the undertaking and the alternatives to the undertaking;
- g) a proposed set of control or remedial measures designed to minimize any or all significant harmful effects identified under paragraph (e);
- h) a proposed program of study designed to monitor all substances and harmful effects that would be produced by the undertaking; and
- i) a proposed program of public information.

#### **APPENDIX B**

## Department of Municipal Affairs and Environment Environmental Assessment Division

#### **REQUIREMENTS FOR PUBLIC MEETINGS/INFORMATION SESSIONS**

**Purpose:** To clarify for proponents and the public, the format, scheduling, number, notification requirements, etc. for public consultations in relation to undertakings required under the *Environmental Protection Act, SNL 2002 cE-14.2*, (Section 58) to prepare an Environmental Impact Statement (EIS).

- The proponent is required to conduct a public meeting/information session under an EIS
  process as specified in the legislation. This requirement shall be specified in the project
  EIS guidelines.
- 2. A public meeting shall normally be held in the largest local population centre within the project area. This shall be the minimum requirement. In addition, when demonstrated public interest or concern warrants, additional meetings may be required. This may take the form of additional meetings to be held in major regional or provincial population centres, or possibly additional meetings within the original community. Such requirements are at the discretion of the Minister based on consensus advice from the environmental assessment committee (EAC) chairperson, and based upon public interest as evidenced by public submissions received.
- 3. The format of the public meeting may be flexible, and the proponent may propose a suitable format for approval by the EAC. The format may range from formal public meetings chaired by the proponent or representative with presentations followed by questions and answers, to a less formal open house forum where the public may discuss the proposal with the proponent or representative. Other formats may be considered by the EAC and must meet the following objectives: 1) the provision of information concerning the proposed undertaking to those who may be affected, and 2) to recording of concerns of the local community regarding the undertaking.
- 4. The proponent must ensure that each public meeting is advertised in accordance with the following specified public notification requirements, which shall form part of the project guidelines when appropriate (proponent to substitute appropriate information for italicised items):

#### **PUBLIC NOTICE**

Public Information Session on the Proposed

Name of undertaking Location of undertaking

> shall be held at Date and Time Location

This session shall be conducted by the Proponent, *Proponent name and contact phone number,* as part of the environmental assessment for this Project.

The purpose of this session is to describe all aspects of the proposed project, to describe the activities associated with it, and to provide an opportunity for all interested persons to request information or state their concerns.

#### ALL ARE WELCOME

- Minimum newspaper ad size: 2 columns wide.
- Minimum posted ad size: 10 cm x 12 cm.
- Minimum newspaper ad frequency (to be run in newspaper(s) locally distributed within each meeting area or newspaper(s) with the closest local distribution area):
  - for dailies, the weekend between 2 and 3 weeks prior to each session and the two consecutive days prior to each session, OR
  - for weeklies, in each of the two weeks prior to the week in which the session is to be held.
- Minimum posted ad coverage: In the local Town or City Hall or office, to be posted continually for not less than 15 days prior to each session. The proponent is advised to request that the ad and/or notice of the meeting be placed on the community web site, for each community within/adjacent to the project study area, and for each community in which a public meeting will be held, posted continually for not less than 15 days prior to each session.
- Any deviation from these requirements for any reason must receive the prior written approval of the Minister.
- The proponent must provide the chairperson of the EAC with copies of advertisements and public notices.