TERMS OF REFERENCE / SCOPE OF WORK
FOR THE ENVIRONMENTAL IMPACT ASSESSMENT
TO BE CONDUCTED FOR A CEMETERY DEVELOPMENT
AT LOT 48 BURNT GROUND, HANOVER BY DALE DELAPENHA

Introduction

The overall objective of this study is to establish whether the proposed cemetery development at lot 48 Burnt Ground, Hanover by Dale Delapenha constitutes a threat to the environment or is an acceptable development for this location based on scientific and technical data compiled in the form of an EIA.

Environmental Impact Assessment should:

1) Provide a complete description of the existing site proposed for the development. Detail the elements of the development, highlighting areas to be reserved for construction and the areas which are to be preserved in their existing state.
2) Outline the Legislation and Regulations relevant to the project identifying the pertinent sections.
3) Identify significant environmental and public health issues through the presentation of baseline data which should include historical, social, cultural, heritage and economical considerations.
4) Assess public perception of the proposed development.
5) Predict the likely impacts of the development on the described environment, including direct, indirect and cumulative impacts, and indicate their relative importance to the design of the development's facilities.
6) Identify mitigation action to be taken to minimise adverse impacts and quantify associated costs.
7) Design a Monitoring Plan which should ensure that the mitigation plan is adhered to.
8) Describe the alternatives to the project that could be considered at that site as well as alternative site(s).

All Findings as well as references must be presented in the EIA report. The EIA must reflect the headings in the body of the TORs. Ten hard copies and an electronic copy of the report should be submitted. The report should include an appendix with items discussed in the EIA such as maps, site plans, the study team, photographs, cross sections, borehole record, sample data and any other relevant information. All features mentioned in the reports natural or man-made must be presented and labelled on a map of a suitable scale. All data relevant to the project in the possession of NEPA will be made available at no cost to the consultant.

To ensure that a thorough Environmental Impact Assessment is carried out, it is expected that the following tasks be undertaken:

Task #1. Description of the Project

Provide a comprehensive description of the project, noting areas to be reserved for development, areas to be preserved in their existing state as well as activities and features which will introduce risks or generate impact (negative and positive) on the environment. The Consultant will be provided with, and is expected to examine, maps, site plans, aerial photographs, spatial modelling, images, and any other graphic aids as deemed appropriate, as submitted by the Applicant. The project description should include information on location, general layout and size, as well as pre-construction, construction, and post construction plans. A detailed description, including a graphical layout of the facility's design and layout of the cemetery should be included. If the project is to be done on a phased basis it is expected that the potential environmental impacts of all the phases be clearly defined.

Task #2 - Legislative and Regulatory Considerations

Outline the pertinent regulations and standards as well as sections governing environmental quality, safety and health, protection of sensitive/protected areas, protection of flora and fauna, siting and land use control at the national and local levels. The examination of the legislation should include at minimum, legislation such as the NRCA Act, the Public Health Act, Public Cemetery Management Act, Burial Within Town Limit

Act, The Public Health (Nuisance) Regulations, Parish Councils Building Act and the appropriate international convention/protocol/treaty where applicable.

Task #3. Description of the Environment: Baseline Data Collection & Interpretation

This task involves the generation of baseline data which is used to describe the study area as follows:

A) physical environment

B) biological environment

C) socio-economic, historical and cultural considerations

Methodologies employed to obtain baseline and other data must be clearly detailed.

(A) Physical Environment

i) A detailed description of the existing **hydrology, geology and hydrogeology.** This should include but not be limited to:

- Identification, description and locations of all water resources (well, springs, streams etc.) in and around the site.
- Assessment of their potential to be affected by the development of the site.
- Identification, description and locations aquifer(s) and their characteristics including the perched water tables and variability over the rainy/dry seasons
- Characteristics of the soil layer(s) underlying the site, the depth to bedrock, soil type and texture, and permeability
- Determination of the hydrogeologic strata beneath the site-alluvium
- hydraulic conductivity, gradients and transmissivity of underlying aquifers
- Proximity to major faults/fault zones and groundwater recharge areas.
- Proximity to coastal/marine environment

Cross-sections should be used as needed to explain the 3 dimensional relationships between the site and the surrounding water resources.

The hydrology of the site must be described in detail including ephemeral drainage systems. Special emphasis should be placed on storm water run-off and the

potential impact of the run-off on groundwater and surface water on settlements down stream from the cemetery. Flood risk of the facilities and the cemetery must be evaluated as well as the potential impact in case of extreme rainfall event on the surrounding areas. Any stability issues that could arise should be thoroughly explored.

ii) Existing Sources of pollution and extent of contamination. Water quality of any existing ground water resources including wells and surface water resources including rivers, ponds, and streams waters in the vicinity of the development. Sampling of **water quality** should include sampling points which reflect background conditions and points downstream of the site. Water Quality Indicators should include but not necessarily be limited to nitrates, phosphates, faecal coliform, suspended solids, formaldehyde, pathogens and other forms of chemicals from burial facilities.

iii) Climatic conditions and air quality in the area of influence including particulate emissions from stationary or mobile sources, NO_x, SO_x, wind speed and direction, precipitation, relative humidity and ambient temperatures

iv) Noise levels of undeveloped site and the ambient noise in the area of influence.

(B) Biological

Present a general description of the flora and fauna (terrestrial and aquatic) of the area, with special emphasis on rare, endemic, protected or endangered species, migratory species and wild food plant crops. There may be the need to incorporate micro-organisms to obtain an accurate baseline assessment. Generally, species dependence, niche specificity, community structure and diversity ought to be considered.

(C) Socio-economic & Cultural

Present and proposed land use of the site and the surrounding areas; land use history; relevance/needs for the cemetery; planned development activities in the area (competing

and supporting and their relationship), traffic impact, present and projected population community structure, employment, distribution of income, goods and services; public health and safety; cultural peculiarities, aspirations and attitudes should be explored. The historical importance of the area should also be examined.

Task #4 – Public Perception

While this analysis is being conducted an assessment of public perception and attitude towards the proposed development be also be done. This assessment should include at least three public meetings. A questionnaire should also be developed and administered in the survey and must be included in the appendix.

The assessment need to consider possible perception difference between people owning property or living next to cemetery and those that are further away.

Task #5 - Identification of Potential Impacts

Identify the major environmental and public health issues of concern and indicate their relative importance to the development project during the construction and operational phases. The potential impacts to be identified should include but not be limited to the following:

- change in drainage pattern
- flooding potential
- landscape impacts of excavation and construction
- natural features, habitats and species by construction and operation
- pollution of surface and ground water
- Air pollution and emissions from the incinerator
- risk of vermin/pest infestations
- capacity and design parameters of the facility.
- socio-economic and cultural impacts.
- natural hazard assessment
- noise

- odour

Consult with Regional Health Authority/Medical Officer (Health) Hanover Health Department to investigate present and potential public health risks associated with the development and the long-term impact on community health status. Describe the types and characteristics of embalming and other chemicals and their impact on public health and the environment.

Clearly distinguish between significant positive and negative impacts, direct and indirect, long term and immediate impacts. Identify avoidable as well as irreversible impacts, including description of the types and characteristics of embalming and other chemicals, and the impact on public health and the environment. Characterise the extent and quality of the available data, explaining significant information deficiencies and any uncertainties associated with the predictions of impacts. There should be a determination as to whether the negative impacts significantly outweigh the positive. The project activities and impacts should be represented in matrix form with separate matrices for pre and post mitigation scenarios.

Task #6 Mitigation

Prepare guidelines for avoiding, as far as possible, any adverse impacts due to proposed usage of the site and utilising of existing environmental attributes for optimum development. Quantify and assign financial and economic values to mitigating methods.

Task #7 - Management and Monitoring

Design a plan to monitor implementation of mitigatory or compensatory measures and project impacts pre, during, and post construction. The Consultant should examine the Environmental Management Plan for the long term operations of the facility prepared by the Applicant.

A monitoring programme should be included in the EIA. At the minimum the monitoring

programme and report should include:

- Introduction, outlining the need for a monitoring programme
- The activity being monitored and the parameters chosen to effectively carry out the exercise.
- The methodology to be employed and the frequency of monitoring.
- The sites/locations that need to be monitored including control sites where no impact from the development is expected.
- Frequency of reporting to NEPA

Task #8 - Project Alternatives

Examine alternatives to the project including the no-action alternative. This examination of project alternatives should incorporate the use history of the overall area in which the site is located and previous uses of the site itself.

Task #9 – Public Participation/consultation

Conduct a public presentation on the findings of the EIA to inform, solicit and discuss comments from the public on the proposed development.

- Document the public participation programme for the project.
- Describe the public participation methods, timing, type of information to be provided to the public, and stakeholder target groups.
- Summarise the issues identified during the public participation process
- Discuss public input that has been incorporated into the proposed project design; and environmental management systems