

Executive Summary

Island Waste Management Inc. (IWM) has been successfully operating a biomedical waste collection and disposal system for the Newfoundland and Labrador Health Boards Association (NLHBA) successfully since 1998. In addition, IWM currently manages the majority of hazardous waste generated in the Province of Newfoundland and Labrador through its hazardous waste transfer station in Foxtail, Newfoundland.

The current biomedical waste management system employed by IWM involves the collection of materials in approved containers from designated collection sites around the province and transport to an approved incineration facility located in Moncton, New Brunswick using a secure and dedicated transport vehicle.

At this time IWM is proposing to finance, construct and operate a Biomedical Waste Management Facility co-located with its existent Hazardous Waste Transfer Facility located on Incinerator Road in Foxtail, Newfoundland. In accordance with IWM's waste management philosophy and the stated policy of the Department of Environment, the company is intending to improve the overall management of biomedical waste in Newfoundland and Labrador through safe, secure and environmentally responsible on-island treatment using the best available technology.

IWM will continue to utilize its established and successful biomedical waste collection system. It will continue to employ a specially equipped refrigerated trailer unit and fleet of reusable collection and transport containers. Collection will continue to be made on a regular weekly schedule from St. John's, Carbonear, Clarenville, Gander, Grand Falls and Port aux Basques.

The company is proposing to employ an environmentally proven Canadian engineered and fabricated biomedical waste oxidizer (treatment system) equipped with an automatic charging and discharge system and wet scrubber-based air pollution control system. This system has been certified by Environment Canada's ETV (Environmental Technology Verification) program, is in use and recommended by the Department of National Defense and employed by hospitals and municipalities in Canada and the US. The air emissions from the operation of this equipment consistently meet all Canadian and US standards. It offers 100% pathogenic and cytotoxic destruction efficiency with a 90% reduction in waste volume.

Consistent with Schedule 3 of the Environmental Assessment Act, IWM is submitting for evaluation this registration document.

NAME OF THE UNDERTAKING: IWM's Biomedical Waste Management Facility

PROPOSER:

(i) **Name of the Corporate Body:** Island Waste Management Inc. (IWM)

(ii) **Address:** Head Office and Mailing
137 LeMarchant Road
St. John's, Newfoundland
A1C 2H3
Site Location
Incinerator Road
Foxtrap, Newfoundland

(iii) **Chief Executive Officer:** Paul G. Antle, B.Sc., M.Eng., CCEP
President and CEO
Address as above
Telephone: 709 726 0336
Facsimile: 709 726 7012

(iv) **Principal Contact Person for purposes of environmental assessment:** As above

THE UNDERTAKING:

(i) Nature of the Undertaking:

An Island-based system for the treatment and disposal of biomedical waste for Newfoundland and Labrador. In response to the need for maintaining a continuous biomedical waste management system in Newfoundland and Labrador IWM is proposing to finance, install and operate, in compliance with all Provincial regulations, a biomedical waste oxidizer (treatment system) equipped with an automatic charging and discharge system and wet scrubber-based air pollution control system, to be co-located with IWM's Hazardous Waste Transfer Facility, located on Incinerator Road in Foxtrap, Newfoundland.

(ii) Purpose/Rationale/Need for the Undertaking:

Since 1998 IWM has successfully operated a province-wide biomedical waste management system for the Newfoundland and Labrador Health Boards Association (NLHBA) which involves the weekly collection and treatment of all biomedical waste generated by its facilities to a licensed biomedical waste incinerator located in Moncton, New Brunswick. This solution remains an effective alternative given the lack of waste

disposal infrastructure in Newfoundland and Labrador to meet the environmental goals, financial requirements and scheduling realities of the NLHBA.

Since 1998, available technology for the treatment of biomedical waste has both improved in efficiency, cost effectiveness and environmental performance while established trends in waste volumes produced in Newfoundland and Labrador have remained static. Given our experience over the last four years and the data collected to date it is possible to establish a permanent Newfoundland and Labrador-based solution which would permit IWM to:

- continue to service its client base effectively and cost efficiently;
- provide access to safe treatment options locally;
- continue to ensure a service free from interruption;
- provide local employment opportunities in the environmental sector; and
- enhance the hazardous waste management options and expertise available in Newfoundland and Labrador.

DESCRIPTION OF THE UNDERTAKING

(i) Geographic Location

The proposed site for the Biomedical Waste Management Facility is Incinerator Road in Foxtrap co-located with IWM's existing permitted Hazardous Waste Transfer Facility (WMS02-0384B).

This Facility was constructed in 1994 and is approved for the receipt, handling and temporary storage of all hazardous waste classes with the exception of explosives and has been operating successfully at this location since 1995.

The proposed undertaking will be constructed adjacent to the existing facility on cleared land and bordered to the North by a former septic waste treatment facility, to the South by the existing IWM facility, a decommissioned Municipal Landfill Site to the East, undeveloped land to the South and a hard surface access road to the West. The land is currently zoned for Industrial General.

A site plan and land survey is attached in Appendix A.

(ii) Physical Features

All activity associated with the Biomedical Waste Management Facility and its operation will occur inside a permanent structure (pre-fabricated building). Transport vehicles will offload secure, sealed re-useable containers inside the building within a bermed area properly sloped and equipped with a sump. All works associated with the treatment of waste will be housed within the structure. Post-treatment residuals will be removed for approved disposal in accordance with all Provincial and Municipal regulations.

The building will encompass 3,000ft² and include space allotted for the treatment system, temporary cold storage, receiving and transport container decontamination. A proposed Floor Plan is shown in Appendix B.

(iii) Construction

The building will be constructed of a concrete floor of not less than 4" thickness and equipped with a 4" concrete berm. The floor will be sloped to a sump inside the building so as to contain any potential spillage. The building structure will be constructed with sheet steel walls and peaked sheet steel roof. It will be equipped with two (2) rolling, steel loading doors of 10' 4" and 10' 3" respectively, located at the entrance to the cold storage area and the exit of the clean storage area and three (3) manual access doors located at the cold storage loading dock, office area and clean storage area.

The building will house the biomedical waste treatment system, 300ft² office space/sanitary facilities, container decontamination area and container storage area. The building will be equipped with spill kits equipped with industrial disinfectant to manage any spillage.

As the treatment system will consume fuel, as its heating source IWM will be installing an exterior, above ground 5,000-litre fuel oil tank. This tank will be of a double wall design set inside a poured concrete pad equipped with a 6" berm. Co-located with the fuel oil tank will be a 1,000-litre grey-water storage tank for containment of decontamination grey-water prior to treatment and discharge.

The treatment system will be equipped with a heat exchanger/steam generation system. This system will be designed so as to recover waste heat generated during the treatment process. This heat will be captured to generate domestic and industrial hot water for cleaning and disinfecting of the reusable containers and handling area. Additionally, this heat will be used for space heating of both the processing and administrative areas of the building. IWM believes that its operations should be designed in such a way so as to gain the most economic and environmental value through either recycling or recovery of energy and waste.

IWM is anticipating a release from the Environmental Assessment process and the issuance of a Certificate of Approval from the Pollution Prevention Division of the Department of Environment and development approval from the City of St. John's, processes which will be undertaken concurrently, prior to February 2003. With approval IWM is anticipating commencing operations August 2003 based upon the following schedule:

Building Construction/Treatment System Delivery	20 weeks
Treatment System Installation	2 weeks
Start Up, Commissioning	<u>2 weeks</u>
Total Anticipated	24 weeks

Construction will be standard in nature and no potential pollution sources beyond those consistent with commercial construction are anticipated.

IWM is not aware of, nor can does it anticipate any resource conflicts potentially associated with this project.

(iv) Operation

Description of the Operation

The current handling and collection methodology, developed and operated by IWM for the NLHBA will be adopted for this proposed management system.

NLHBA has established several collection points across the Province, St. John's, Carbonear, Clarenville, Gander, Grand Falls and Port aux Basques. IWM will continue to provide these locations with a rigid re-useable biomedical waste container system into which biomedical waste, packaged in disposable plastic bags and/or rigid sharps containers, are placed. On a regular schedule a specially designed and dedicated IWM vehicle, equipped with onboard refrigeration capable of sustaining temperatures below 5°C as required by Canadian Council of the Ministers of the Environment (CCME), will collect the containers and deliver empty ones. This refrigerated trailer is equipped with a hydraulic lift capable of loading the aforementioned containers with a minimum of manual handling. The entire load is secured with spring-loaded cargo-locks.

After collection material will be transported back to the proposed Biomedical Waste Management Facility on Incinerator Road in Foxtrap for receipt. The Refrigerated Trailer will unload its cargo into the Cold Storage Area which will be kept below 5°C at all times. No material will be kept in this area longer than 7 days. During normal operations it is anticipated that no more than 4,000 kg be stored at any one time.

The biomedical waste treatment system will be capable of treating up to 1 metric tonne of biomedical waste per day. Waste containers will be offloaded as required using the on-board hydraulic lift and manually charged to the treatment unit. The primary system of the treatment unit will be loaded automatically, significantly reducing the opportunity for inadvertent human contact. Total destruction of all materials to <10% of original volume and assured 6-Log destruction of all pathogens will occur over an 8 hour cycle. At the completion of the cycle the treatment unit will automatically shut down. All treatment residuals will be removed from the unit using a vacuum system and deposited into transport containers for disposal.

IWM will install a wet scrubber system capable of removing any particulate and neutralize any hydrochloric acid (HCl) vapour produced when polyvinyl chlorides (PVC), of the type commonly found in medical waste, are treated.

Empty containers will be placed in a decontamination area where they will be washed using an high pressure hot water/disinfectant mixture, dried and stored pending return to the collection point.

All waste will be transported, received and stored in accordance with Federal and Provincial regulations. Waste will be transported under record using the Federal Waste Manifest. All documentation will be duly signed, distributed and archived.

Estimated Period of Operation

IWM is intending to make this facility permanent.

Potential Sources of Pollution

IWM's experience with the management of hazardous waste and biomedical waste in particular, in conjunction with the technologically advanced biomedical waste treatment system contemplated will ensure that this facility is state-of-the-art producing no negative environmental impact.

Three waste streams may be produced through this process:

- Air Emissions

Air emissions from the treatment system will be limited to that of the combustion of fuel oil similar to an industrial boiler consuming approximately 75L/day. As part of its low impact philosophy IWM is investigating the potential for consumption of reprocessed waste oil recovered from the local market.

Due to the anticipated existence of PVC plastic in the waste there is a potential for the production of HCl. IWM will be installing a specially designed wet scrubber to capture particulate and HCl gas that will be neutralized using a sodium hydroxide (NaOH) solution in the capture water liquid stream.

- Grey Water

Hot water, heated using recovered heat from the treatment process, will be used to decontaminate the reusable containers. This water will be collected, contained and treated with commercial disinfectant used in the decontamination process. It will then be discharged to the on site septic system.

- Solid Residual

The treatment process will reduce all waste to a non-descript, inert solid comprising 10% of the original volume. All solid residuals will comply with 6 Log sterilization removing any concern associated with pathogen release and be disposed of in accordance with Provincial environmental regulations.

Resource Conflicts

IMW has no knowledge of, nor does it anticipate, any resource conflicts associated with this project.

(v) Occupations

IWM will hire new staff and utilize our existing highly trained and experienced staff in the operation of its biomedical waste management system. These staff will include:

- 1 - Truck Driver/Environmental Technician
- 2 - Environmental Technicians/Plant Operator

All personnel are trained in Transportation of Dangerous Goods, Workplace Hazardous Materials Information System, First Aid and will undergo indoctrination related to the handling of biomedical waste materials and training in the operation of the biomedical waste treatment system.

APPROVAL OF THE UNDERTAKING

The following is a composite listing of the acts, regulations and/or permits which IWM regards as applicable and/or necessary to the approval of this undertaking:

Department of Environment

Environment Act

- Environmental Control Water and Sewer Regulations
- Air Pollution Control Regulations
- Storage and Handling of Gasoline and Associated Products Regulations
- Waste Management Act
- Waste Management Regulations

Department of Labour

Occupational Health and Safety Act

Workplace Hazardous Materials Information System Regulations

Workplace Health and Safety Compensation Act

City of St. John's

Commercial Development By-Laws

Transport Canada

Transportation of Dangerous Goods Act

SCHEDULE

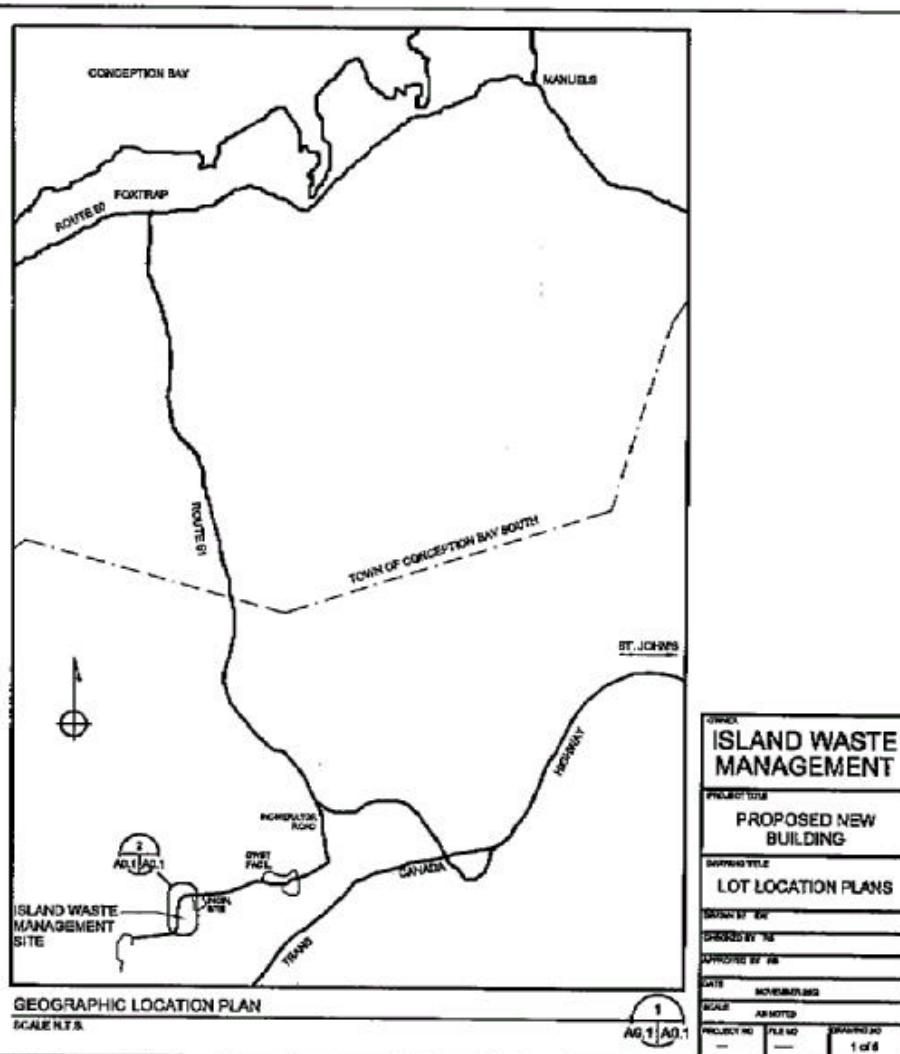
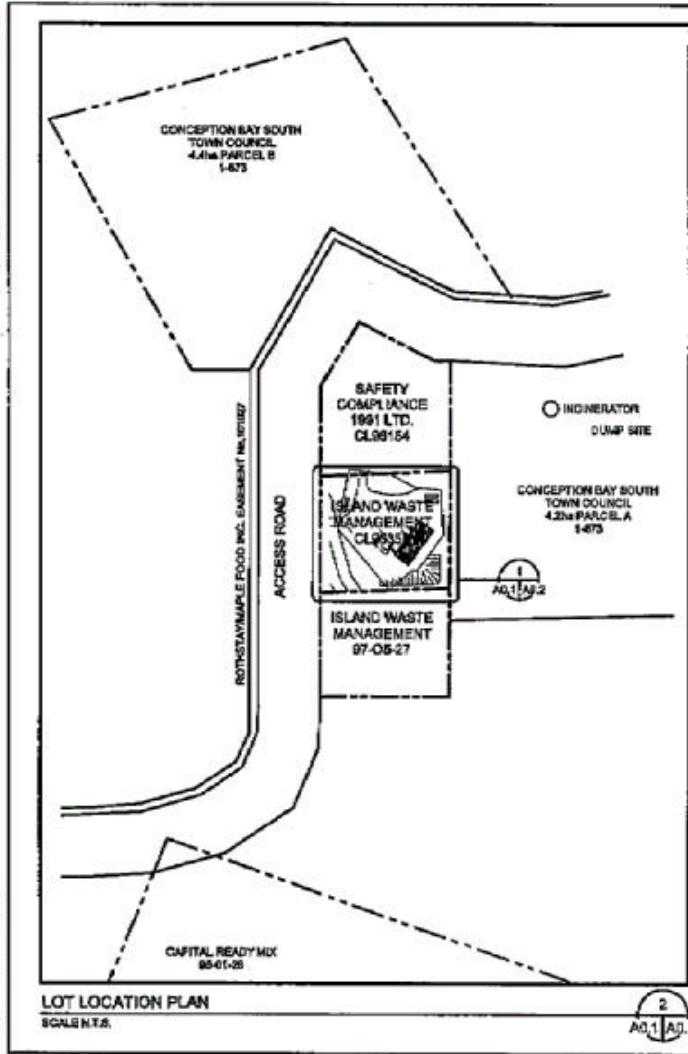
IWM is budgeting for an operational start target for its Biomedical Waste Management Facility in the 3rd Quarter of 2003.

FUNDING

This project will be internally funded and is not dependent upon funding from outside public agencies.

Date

Signature of President and CEO



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SCHEMATIC SITE PLAN

