

## **PART 1 - GENERAL**

### **1.0 SUMMARY**

- .1 This Section includes requirements for management of construction waste and disposal, which forms the Contractor's commitment to reduce and divert waste materials from landfill and includes the following:
  - .1 Preparation of a Draft Construction Waste Management Plan that will be used to track the success of the Construction Waste Management Plan against actual waste diversion from landfill.
  - .2 Preparation of a Construction Waste Management Plan that provides guidance on a logical progression of tasks and procedures to be followed in a pollution prevention program to reduce or eliminate the generation of waste, the loss of natural resources, and process emissions through source reduction, reuse, recycling, and reclamation.
  - .3 Preparation of monthly progress reports indicating cumulative totals representing progress towards achieving diversion and reduction goals of waste materials away from landfill and identifying any special programs, landfill options or alternatives to landfill used during construction.
  - .4 Preparation of a Construction Waste Management Report containing detailed information indicating total waste produced by the project, types of waste material and quantity of each material, and total waste diverted and diversion rates indicated as a percentage of the total waste produced.
- .2 Departmental Representative has established that this project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors be employed by the Contractor.

### **2.0 REFERENCE STANDARDS**

- .1 ASTM International (ASTM)
  - .1 ASTM E 1609 01, Standard Guide for Development and Implementation of a Pollution Prevention Program
- .2 Canada Green Building Council (CaGBC)
  - .1 LEED Reference Guide for Building Design and Construction, Version 4
- .3 Recycling Certification Institute (RCI):
  - .1 RCI Certification Construction and Demolition Materials Recycling

### **3.0 DEFINITIONS**

- .1 Clean Waste: Untreated and unpainted; not contaminated with oils, solvents, sealants or similar materials.
- .2 Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, re modeling, repair and demolition operations.
- .3 Hazardous: Exhibiting the characteristics of hazardous substances including properties such as ignitability, corrosiveness, toxicity or reactivity.
- .4 Non hazardous: Exhibiting none of the characteristics of hazardous substances, including properties such as ignitability, corrosiveness, toxicity, or reactivity.
- .5 Non toxic: Not poisonous to humans either immediately or after a long period of exposure.

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- .6 Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- .7 Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- .8 Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form; recycling does not include burning, incinerating, or thermally destroying waste.
- .9 Return: To give back reusable items or unused products to vendors for credit.
- .10 Reuse: To reuse a construction waste material in some manner on the project site.
- .11 Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- .12 Sediment: Soil and other debris that has been eroded and transported by storm or well production run off water.
- .13 Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- .14 Toxic: Poisonous to humans either immediately or after a long period of exposure.
- .15 Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- .16 Volatile Organic Compounds (VOC's): Chemical compounds common in and emitted by many building products over time through outgassing:
  - .1 Solvents in paints and other coatings;
  - .2 Wood preservatives; strippers and household cleaners;
  - .3 Adhesives in particleboard, fiberboard, and some plywood; and foam insulation.
  - .4 When released, VOC's can contribute to the formation of smog and can cause respiratory tract problems, headaches, eye irritations, nausea, damage to the liver, kidneys, and central nervous system, and possibly cancer.
- .17 Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.
- .18 Construction Waste Management Plan: A project related plan for the collection, transportation, and disposal of the waste generated at the construction site; the purpose of the plan is to ultimately reduce the amount of material being landfilled.

#### **4.0 ADMINISTRATIVE REQUIREMENTS**

- .1 Coordination: Coordinate waste management requirements with all Divisions of the Work for the project, and ensure that requirements of the Construction Waste Management Plan are followed.
- .2 Preconstruction Meeting: Arrange a pre-construction meeting before starting any Work of the Contract attended by the Departmental Representative to discuss the Contractor's Construction Waste Management Plan and to develop mutual understanding of the requirements for a consistent policy towards waste reduction and recycling.

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## 5.0 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide required information in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Action Submittals: Provide the following submittals before starting any work of this Section:
  - .1 Draft Construction Waste Management Plan (Draft CWM Plan): Submit to Departmental Representative a preliminary analysis of anticipated site generated waste by listing a minimum of five (5) construction or demolition waste streams that have potential to generate the most volume of material indicating methods that will be used to divert construction waste from landfill and source reduction strategies; Departmental Representative will provide commentary before development of Contractor's Construction Waste Management Plan.
  - .2 Construction Waste Management Plan (CWM Plan): Submit a CWM Plan for this project prior to any waste removal from site and that includes the following information:
    - .1 Material Streams: Analysis of the proposed jobsite waste being generated, including material types and quantities forming a part of identified material streams in the Draft CWM Plan; materials removed from site destined for alternative daily cover at landfill sites and land clearing debris cannot be considered as contributing to waste diversion and will be included as a component of the total waste generated for the site.
    - .2 Recycling Haulers and Markets: Investigate local haulers and markets for recyclable materials, and incorporate into CWM Plan.
    - .3 Alternative Waste Disposal: Prepare a listing of each material proposed to be salvaged, reused, recycled or composted during the course of the project, and the proposed local market for each material.
    - .4 Landfill Materials: Identify materials that cannot be recycled, reused or composted and provide explanation or justification.
    - .5 Landfill Options: The name of the landfill where trash will be disposed of; landfill materials will form a part of the total waste generated by the project.
    - .6 Materials Handling Procedures: A description of the means by which any recycled waste materials will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.
    - .7 Transportation: A description of the means of transportation of the recyclable materials, whether materials will be site separated and self hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site, and destination of materials.

## 6.0 PROJECT CLOSEOUT SUBMISSIONS

- .1 Record Documentation: Submit as constructed information in accordance with Section 01 78 00 - Closeout Submittals as follows:
  - .1 Construction Waste Management Report (CWM Report): Submit a CWM Report for this project in a format acceptable to Departmental Representative that includes the following information:
    - .1 Accounting: Submit information indicating total waste produced by the project.
    - .2 Composition: Submit information indicating types of waste material and quantity of each material.
    - .3 Diversion Rate: Submit information indicating total waste diverted from landfill as a percentage of the total waste produced by the project.
    - .4 Transportation Documentation: Submit copies of transportation documents or shipping manifests indicating weights of materials, and other evidence of disposal indicating final location of waste diverted from landfill and waste sent to landfill.
    - .5 Alternative Daily Cover (ADC): Submit quantities of material that were used as ADC at

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- landfill sites, and that form a part of the total waste generated by the project.
- .6 Multiple Waste Hauling: Compile all information into a single CWM Report where multiple waste hauling and diversion strategies were used for the project.
- .7 Photographs: Submit photographs of waste diversion facilities documenting location and signage describing usage of waste separation containers.

## **7.0 QUALITY ASSURANCE**

- .1 Resources for Development of Construction Waste Management Report (CWM Report): The following sources may be useful in developing the Draft Construction Waste Management Plan:
  - .1 Recycling Haulers and Markets: Investigate local haulers and markets for recyclable materials, and incorporate into CWM Plan.
  - .2 Waste-to-Energy Systems: Investigate local waste-to-energy incentives where systems for diverting materials from landfill for reuse or recycling are not available.
- .2 Certifications: Provide proof of the following during the course of the Work:
  - .1 Compliance Certification: Provide proof that recycling center is third party verified and is listed as a Certified Facility through the registration and certification requirements of the Recycling Certification Institute.

## **8.0 DELIVERY, STORAGE AND HANDLING**

- .1 Storage Requirements: Implement a recycling/reuse program that includes separate collection of waste materials as appropriate to the project waste and the available recycling and reuse programs in the project area.
- .2 Handling Requirements: Clean materials that are contaminated before placing in collection containers and ensure that waste destined for landfill does not get mixed in with recycled materials:
  - .1 Deliver materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to recycling process.
  - .2 Arrange for collection by or delivery to the appropriate recycling or reuse facility.
- .3 Hazardous Waste and Hazardous Materials: Handle in accordance with applicable regulations.

## **2.0 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **3.0 EXECUTION**

### **3.1 (CWM PLAN) IMPLEMENTATION**

- .1 Manager: Contractor is responsible for designating an on site party or parties responsible for instructing workers and overseeing and documenting results of the CWM Plan for the project.
- .2 Distribution: Distribute copies of the CWM Plan to the job site foreman, each Subcontractor, the Departmental Representative and other site personnel as required to maintain CWM Plan.
- .3 Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse,

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composting and return methods being used for the project to Subcontractor's at appropriate stages of the project.

- .4 Separation Facilities: Lay out and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, composting and return:
  - .1 Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.
  - .2 Hazardous wastes shall be separated, stored, and disposed of in accordance with local regulations.
- .5 Progressive Documentation: Submit a monthly summary of waste generated by the project to ensure that waste diversion goals are on track with project requirements:
  - .1 Submission of waste summary can coincide with application for progress payment, or similar milestone event as agreed upon between the Contractor and Departmental Representative.
  - .2 Monthly waste summary shall contain the following information:
    - .1 The amount in tonnes or m<sup>3</sup> and location of material landfilled,
    - .2 The amount in tonnes or m<sup>3</sup> and location of materials diverted from landfill, and
    - .3 Indication of progress based on total waste generated by the project with materials diverted from landfill as a percentage.

### **3.2 SUBCONTRACTOR'S RESPONSIBILITY**

- .1 Subcontractor's shall cooperate fully with the Contractor to implement the CWM Plan.
- .2 Failure to cooperate may result in the Owner not achieving their environmental goals, and may result in penalties being assessed by the Contractor to the responsible Subcontractor's.

### **3.3 WASTE RECOVERY**

- .1 The Government of Canada is committed to taking action on climate change. Response to climate change requires action to both reduce greenhouse gas (GHG) emissions and to increase the resilience of assets, services and operations by adapting to a changing climate. Through the Federal Sustainability Act, Federal Sustainable Development Strategy (FSDS) and Greening Government Strategy (GGS), Canada has committed to reducing its national greenhouse gas emissions and to showing leadership in reducing emissions from government buildings and fleets, to set reduction targets for government operations and to scale up green procurement. Greening government operations will support Canada's sustainability goals already established under the Paris Agreement on climate change, the Pan-Canadian Framework on Clean Growth and Climate Change and commitments under the Convention on Biological Diversity. The Greening Government Strategy is consistent with the United Nations' 2030 Agenda for Sustainable Development and the Federal Sustainable Development Strategy. The Government of Canada will transition to net-zero carbon and climate-resilient operations, while also reducing environmental impacts beyond carbon, including waste, water and biodiversity. Led by the Centre for Greening Government of the Treasury Board of Canada Secretariat, the Government of Canada will ensure that Canada is a global leader in government operations that are net-zero, resilient and green. The Centre for Greening Government's mandate includes the tracking and disclosing of governmental performance information, including the diversion of construction and demolition waste from landfills. The Greening Government Strategy is a set of government-approved commitments that apply to all core government departments and agencies. Crown corporations with significant real property, fleet and procurement are encouraged to adopt the Greening Government Strategy or an equivalent set of commitments, including the commitment to net-zero emissions by 2050.
- .2 Green Government Strategy Commitments applicable to this project. In this regard, the Contractor is required to reduce the environmental impact of waste by diverting at least 75% by weight of

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non-hazardous operational waste from landfills; diverting at least 75% by weight of plastic waste from landfills; diverting at least 90% by weight of all construction and demolition waste from landfills; and achieving 100% tracking and disclosing its waste diversion carried out under this project. Note that out-of-province transportation of waste is to be expected to meet these targets set under this project. Departmental Representative will provide further guidance during the pre-tender site visit on the requirements for waste recovery.

- .3 Perform the work in accordance with the WRP. Waste that is not reused / repurposed, recycled or recovered must be handled in accordance with relevant regulations and codes. Based on the following list, sort waste materials from the general waste stream and put them in separate piles or containers, with the authorization of the Departmental Representative, in accordance with relevant fire safety regulations.
  - .1 Identify containers or stockpiling areas.
  - .2 Provide instructions on disposal practices.
  - .3 Demolition waste

Type of waste material	Recommended recovery percentage	Actual recovery percentage
Concrete products	100	
Dry materials	85	
Metals	75	
Other		

.4 Construction Waste

Type of waste material	Recommended recovery percentage	Actual recovery percentage
Plastic items	90	
Warped pallets	100	
Plastic packaging	90	
Cardboard packaging	100	
Window and door materials	50	
Glass	100	
Wood items	100	
Metal items	100	
Gypsum	100	
Other	100	

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**END OF SECTION**