Part 1 General

1.1 WASTE MANAGEMENT GOALS

.1 Prior to start of Work conduct meeting with Departmental Representative to review and discuss PWGSC's waste management goal and Contractor's proposed Waste Reduction Workplan for Construction, Renovation and/or Demolition (CRD) waste.

.2 PWGSC's waste management goal: to divert a minimum 95 percent of total Project Waste from landfill sites. Prior to project completion provide Departmental Representative documentation certifying that waste management, recycling, reuse of recyclable and reusable materials have been extensively practiced. The overall waste diversion goal for this project is 95%.

.3 Specific material target percentages for reuse or recycling:

.1 Masonry and pavement: 100%.
.2 Ceilings, walls and partitions: 95%.
.3 Metals: 100%.
.4 Mechanical - HVAC: 20%.
.5 Mechanical - plumbing piping: 100%.
.6 Mechanical - fixtures: 20%
.7 Mechanical - other: 0%.
.8 Doors and windows: 50% (including frames).
.9 Wood: 100%.
.10 Finish carpentry and millwork: 100%.
.11 Flooring: 100 %.
.12 Electrical - wiring/conduits/boxes: 50%.
.13 Electrical - lighting: 0%.
.14 Electrical - other: 0%.
.15 Roofing: 50% (excluding hazardous or contaminated materials).
.16 Miscellaneous - furnishing/specialized equipment: 0%.
.17 Packaging: 100%.

.4 All calculations to be made by weight, in metric tons.

.5 Target percentage goals are achievable for waste diversion. Contractor to review confirm Departmental Representative Waste Audit acceptable values.

.6 Minimize amount of non-hazardous solid waste generated by project and accomplish maximum source reduction, reuse and recycling of solid waste produced by CRD activities.

.7 Protect environment and prevent environmental pollution damage.

1.2 REFERENCES

.1 Definitions:

.1 Approved/Authorized recycling facility: waste recycler approved by applicable provincial authority or other users of material for recycling approved by the Departmental Representative.

.2 Class III: non-hazardous waste - construction renovation and demolition waste.

.3 Construction, Renovation and/or Demolition (CRD) Waste: Class III solid, nonhazardous waste materials generated during construction, demolition, or renovation activities.

.4 Cost/Revenue Analysis Workplan (CRAW): based on information from Waste Reduction Workplan, and intended as financial tracking tool for determining economic status of waste management practices (Schedule E).

.5 Inert Fill: inert waste - exclusively asphalt and concrete.

.6 Waste Source Separation Program (WSSP): implementation and co-ordination of ongoing activities to ensure designated waste materials will be sorted into predefined categories and sent for recycling and reuse, maximizing diversion and potential to reduce disposal costs.

.7 Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.

.8 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.

.9 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

.10 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:

.1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.

.2 Returning reusable items including pallets or unused products to vendors.

.11 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.

.12 Separate Condition: refers to waste sorted into individual types.

.13 Source Separation: act of keeping different types of waste materials separate beginning from the point they became waste.

.14 Waste Audit (WA): detailed inventory of estimated quantities of waste materials that will be generated during construction, demolition, deconstruction and/or renovation. Involves quantifying by volume/weight amounts of materials and wastes that will be reused, recycled or landfilled. Refer to Schedule A.

.15 Waste Diversion Report: detailed report of final results, quantifying cumulative weights and percentages of waste materials reused, recycled and landfilled over course of project. Measures success against Waste Reduction Workplan (WRW) goals and identifies lessons learned.

.16 Waste Management Co-ordinator (WMC): contractor representative responsible for supervising waste management activities as well as co-ordinating required submittal and reporting requirements.

.17 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials generated by project. Specifies diversion goals, implementation and reporting procedures, anticipated results and responsibilities. Waste Reduction Workplan (Schedule B) information acquired from Waste Audit.

.2 Reference Standards:

.1 Canadian Construction Association (CCA)

.1 CCA 81-2001: A Best Practices Guide to Solid Waste Reduction.

.2 Public Works and Government Services Canada (PWGSC)

.1 2002 National Construction, Renovation and Demolition Non-Hazardous Solid Waste Management Protocol.

.2 CRD Waste Management Market Research Report (available from PWGSC's Environmental Services).

.3 Sustainable Development Strategy 2007-2009: Target 2.1 Environmentally Sustainable Use of Natural Resources.

1.3 DOCUMENTS

.1 Post and maintain in visible and accessible area at job site, one copy of following documents:

.1 Waste Audit (Schedule A).

.2 Waste Reduction Workplan (Schedule B).

.3 Waste Source Separation Program..

.4 Schedules A and B completed for project.

1.4 SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Prepare and submit following prior to project start-up.

.1 1 copy and 1 electronic copy of completed Waste Audit (WA): Schedule A.

.2 1 copy and 1 electronic copy of completed Waste Reduction Workplan (WRW): Schedule B.

.3 1 copy and 1 electronic copy of Cost/Revenue Analysis Workplan (CRAW): Schedule E.

.4 1 copy and 1 electronic copy of Waste Source Separation Program (WSSP).

.3 Prepare and submit on monthly basis, throughout project or at intervals agreed to by Departmental Representative the following:

.1 Receipts, scale tickets, waybills, and/or waste disposal receipts that show quantities and types of materials reused, recycled, or disposed of.

.2 Updated Waste Materials Tracking form (Schedule D).

.3 Written monthly summary report detailing cumulative amounts of waste materials reused, recycled and landfilled, and brief status of ongoing waste management activities.

.4 Submit prior to final payment the following:

.1 Waste Diversion Report, indicating final quantities in tones by material types salvaged for reuse, recycling or disposal in landfill and recycling centres, re-use depots, landfills and other waste processors that received waste materials (See Schedule C).

.2 Provide receipts, scale tickets, waybills, waste disposal receipts that confirm quantities and types of materials reused, recycled or disposed of and destination.

1.5 WASTE AUDIT (WA)

.1 Departmental Representative will prepare WA prior to project start-up. WA will be provided with bid documentation (see Schedule A).

.2 WA provides detailed inventory, estimated quantities and types of waste materials that will be generated as well as their potential to be reused and/or recycled and project's waste diversion goals and objectives.

.3 After award of contract, contractor to review WA and confirm that anticipated quantities of waste generated are accurate and goals achievable.

.4 If after review, contractor determines that indicated quantities or opportunities in WA are not accurate or achievable, contractor to provide written details of discrepancies and revised quantities for areas of concern. Contractor to meet with Departmental Representative to review and justify revisions.

.5 Post on-site WA where contractor and sub-contractors are able to review content.

1.6 WASTE REDUCTION WORKPLAN (WRW)

.1 Prepare and submit WRW (Schedule B) at least 10 days prior to project start-up.

.2 WRW identifies strategies to optimize diversion through reduction, reuse, and recycling of materials and comply with applicable regulations, based on information acquired from WA.

.3 WRW should include but not limited to:

.1 Applicable regulations.

.2 Specific goals for waste reduction, identify existing barriers and develop strategies to overcome them.

.3 Destination of materials identified.

.4 Deconstruction/disassembly techniques and schedules.

.5 Methods to collect, separate, and reduce generated wastes.

.6 Location of waste bins on-site.

.7 Security of on-site stock piles and waste bins.

.8 Protection of personnel, sub-contractors.

.9 Clear labelling of storage areas.

.10 Training plan for contractor and sub-contractors.

.11 Methods to track and report results reliably (Schedule D).

.12 Details on materials handling and removal procedures.

.13 Recycler and reclaimer requirements.

.14 Quantities of materials to be salvaged for reuse or recycled and materials sent to landfill.

.15 Requirements for monitoring on-site wastes management activities.

.4 Structure WRW to prioritize actions and follow 3R's hierarchy, with Reduction as first priority, followed by Reuse, then Recycle.

.5 Post WRW or summary where workers at site are able to review content.

.6 Monitor and report on waste reduction by documenting total volume (in metric tons) and cost of actual waste removed from project (Schedule D).

1.7 COST/REVENUE ANALYSIS WORKPLAN (CRAW)

.1 Prepare CRAW (see Schedule E) and include the following:

.1 Cost of current waste management practices.

.2 Implementation cost of waste diversion program.

.3 Savings and benefits resulting from waste diversion program.

1.8 WASTE SOURCE SEPARATION PROGRAM (WSSP)

.1 As part of Waste Reduction Workplan, prepare WSSP prior to project start-up.

.2 WSSP will detail methodology and planned on-site activities for separation of reusable and recyclable materials from waste intended for landfill.

.3 Provide list and drawings of locations that will be made available for sorting, collection, handling and storage of anticipated quantities of reusable and recyclable materials.

.4 Provide sufficient on-site facilities and containers for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.

.5 Locate containers to facilitate deposit of materials without hindering daily operations.

.6 Provide training for the contractor in handling and separation of materials for reuse or recycling.

.7 Locate separated materials in areas which minimizes material damage.

.8 Clearly and securely label containers to identify types/conditions of materials accepted and assist the contractor in separating materials accordingly.

.9 Monitor on-site waste management activities by conducting periodic site inspections to verify: state of signage, contamination levels, bin locations and condition, personnel participation, use of waste tracking forms and collection of waybills, receipts and invoices.

.10 On-site sale of salvaged materials is not permitted.

1.9 USE OF SITE AND FACILITIES

.1 Execute Work with minimal interference and disturbance to normal use of premises.

.2 Maintain security measures established by facility provide temporary security measures approved by Departmental Representative.

1.10 WASTE PROCESSING SITES

.1 Contractor is responsible to research and locate waste diversion resources and service providers. Salvaged materials are to be transported off site to approved or authorized recycling facilities or to users of material for recycling.

.2 Submit to the Departmental Representative the complete name and address of the leading waste managers for the Work according to their phases, for example, the demolisher, the land clearer, the waste manager during construction as well as those of their own facilities and those of each reclamation streams.

1.11 QUALITY ASSURANCE

.1 After award of Contract, a mandatory site examination will be held for this contract for Contractor.

.1 Date, time and location will be arranged by Departmental Representative.

.2 Waste Management Meeting: Waste Management Co-ordinator is to provide an update on status of waste diversion and management activities at each meeting. Written monthly Waste Diversion Report summary to be provided by Waste Management Coordinator (refer to the Waste Diversion Report form in Schedule C and Waste Materials Tracking form in Schedule D).

1.12 STORAGE, HANDLING AND PROTECTION

.1 Store, materials to be reused, recycled and salvaged in locations as directed by Departmental Representative..

.2 Unless specified otherwise, materials for removal become Contractor's property.

.3 Protect, stockpile, store and catalogue salvaged items.

.4 Separate non-salvageable materials from salvaged items. Transport and deliver nonsalvageable items to licensed disposal facility.

.5 Protect structural components not removed and salvaged materials from movement or damage.

.6 Support affected structures. If safety of building is endangered, cease operations and immediately notify by Departmental Representative.

.7 Protect surface drainage, mechanical and electrical from damage and blockage.

.8 Provide on-site facilities and containers for collection and storage of reusable and recyclable materials.

.9 Separate and store materials produced during project (Work) in designated areas.

.10 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated processing facilities.

.1 On-site source separation is recommended.

.2 Remove co-mingled materials to off site processing facility for separation.

.3 Obtain waybills, receipts or scale tickets for separated materials removed from site.

.4 Materials reused on-site are considered to be diverted from landfill and as such are to be included in all reporting.

1.13 DISPOSAL OF WASTES

.1 Do not bury rubbish or waste materials.

.2 Do not dispose of waste volatile materials, mineral spirit, oil, paint thinner into waterways, storm, or sanitary sewers.

.3 Keep records of construction waste including :

.1 Number and size of bins.

.2 Waste type of each bin.

.3 Total tonnage generated.

.4 Tonnage reused or recycled.

.5 Reused or recycled waste destination.

.4 Remove materials on-site as Work progresses.

.5 Prepare a waste management summary to verify destination and quantities on a materialby-material basis as identified in the waste audit.

1.14 SCHEDULING

.1 Co-ordinate Work with other activities at site to ensure timely and orderly progress of Work.

1.15 APPLICATION

.1 Do Work in compliance with WRW and WSSP.

.2 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

1.16 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

1.17 DIVERSION OF MATERIALS

.1 From following list, separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by Departmental Representative, and consistent with applicable fire regulations.

.1 Mark containers or stockpile areas.

.2 Provide instruction on disposal practices.

1.18 WASTE DIVERSION REPORT

.1 At completion of Project (Work), prepare written Waste Diversion Report indicating quantities of materials reused, recycled or disposed of as well as the following:

.1 Identify final diversion results and measure success against goals from Waste Reduction Workplan.

.2 Compare final quantities/percentages diverted with initial projections in Waste Audit and Waste Reduction Workplan and explain variances.

.1 Supporting documentation.

.2 Waybills and tracking forms.

.3 Description of issues, resolutions and lessons learned.

Part 2 Products

2.1 NOT APPLICABLE

.1 Not applicable.

Part 3 Execution

3.1 NOT APPLICABLE

.1 Not applicable.

END OF SECTION