

Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

City Construction Agency Waste Management Specifications

	DDC—01 74 19	NYC DDC Highway Specifications for DOT projects (08-01-15) NYC DDC Standard Sewer and Watermain Specifications for DEP projects (07-01-14)	DDC—7.14	DOT*	DEP—01 74 20	Parks	DSNY*	DCAS—01-74-19*
Applicability	Public Buildings except 1.5.C only applies where selected for a particular contract See also 01 81 13.03 (LEED v3) and 01 81 13.04 (LEED v4) See Exhibit 3 for 2003 DDC CDW Manual Principles	Infrastructure	Infrastructure (Sustainable Construction for Envision credit)	*From Bid Documents for When and Where Structural Repairs and Other Misc. Work within Five Boroughs (Contract No. HBCY105) Appendix A, Section 832, subsection 3.05 (Waste Classification, Handling and Disposal) includes Hazardous Waste for which DOT and contractor are co-generators, but also non-hazardous construction debris	Infrastructure (everything except work under NYC DDC Standard Sewer and Watermain work for DEP projects)	Parkland projects	* From Bid Documents Roof Replacement at DSNY Cioffe Repair Shop at 106-01 Avenue D, Brooklyn (Project ID 827 s136-264Y) Section 017419 Construction Waste Management and Disposal Administrative and procedural requirements for: <ul style="list-style-type: none"> Salvaging nonhazardous demolition and construction waste (D+C Waste) Recycling nonhazardous D+C Waste Disposing nonhazardous D+C Waste Definitions: <ul style="list-style-type: none"> Construction waste: Building, structure and site improvement materials and other solid waste resulting from construction, remodeling, renovation or repair operations; includes packaging Demolition waste: building, structure and site improvement materials resulting from demolition Disposal: Removal of D+C Waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities with jurisdiction, or designated spoil areas on Owner's property 	* For Project IDs 856 PW19325A/19325B/7725RF When does this spec apply to DCAS projects? Administrative and procedural requirements for: <ul style="list-style-type: none"> Salvaging nonhazardous demolition and construction waste (D+C Waste) Recycling nonhazardous D+C Waste Disposing nonhazardous D+C Waste tracks DSNY Related requirements Section 01 12 00 "Multiple Contract Summary" for coordination of responsibilities for waste management Section 02 41 16 "Structure Demolition" for disposition of waste resulting from demolition of buildings, structures and site improvements and for disposition of hazardous waste Section 04 20 00 "Unit Masonry" for disposal requirements for masonry waste Section 04 42 13.13 "Anchored Stone Masonry Veneer" for disposal requirements for excess stone and stone waste Section 04 43 13.16 "Adhered Stone Masonry Veneer" for disposal requirements for excess stone and stone waste

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							<ul style="list-style-type: none"> Recycle: Recovery of D+C Waste for subsequent processing in preparation for reuse Salvage: Recovery of D+C Waste and subsequent sale or reuse in another facility Salvage and Reuse: Recovery of D+C Waste demolition or construction waste and subsequent incorporation into the Work <p>Material ownership</p> <ul style="list-style-type: none"> Unless otherwise indicated, D+C Waste becomes Contractor's property Historic items, relics, antiques and similar objects included by not limited to cornerstone and their contents, commemorative plaques and tablets, and other items of interest or value to the Owner that may be uncovered during demolition remain Owner's property; to be carefully salvaged to prevent damage and prompt return to Owner 	<p>Section 31 10 00 "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements</p> <p>Definitions:</p> <ul style="list-style-type: none"> Construction waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation or repair operations; includes packaging Demolition waste: Building and site improvement materials resulting from demolition or selective demolition operations Disposal: Removal off-site of D+C Waste and subsequent, sale, recycling, reuse or deposit in landfill, incinerator acceptable to authorities with jurisdiction Recycle: Recovery of D+C Waste for subsequent processing in preparation for reuse Salvage: Recovery of D+C Waste and subsequent sale or reuse in another facility Salvage and Reuse: Recovery of D+C Waste demolition or construction waste and subsequent incorporation into the Work tracks DSNY spec
Design Phase	Question: Does design team focus on waste prevention strategies in design as outlined in 2003 DDC CDW Manual (Exhibit 3)?		Design team determines by final design to apply this this specification to project bid package		Determination that project requires measurable quantities and tracking documentation, including but not limited to those that may be submitted for LEED, Envision or other 3 rd party sustainability rating system	Prior to the start of construction, Parks Maintenance and Operations division is notified and they can come on site to salvage above ground items, such as benches and play equipment parts if they wish. However, salvage is not tracked.		

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					Design Sustainability Program determines the percentage goal for end-of-Project rates of salvage/recycling of construction waste as detailed in Construction Waste Estimate Report (CWER) generated by design engineer and that was included in the bid exhibit documents; CWER is expressly excluded from construction contract and is available for information purposes only Other design phase information to come from DEP	During the design stage, many of the designers do consider re-use, but this sometimes is not possible due to requirements on capital funding, which requires the item to last at least 5 years.		
Construction Phase	<p>Definition of C+D Waste refers to Solid Waste, which does not align with NYC DEC’s Beneficial Use Designations (BUD); if a BUD then no longer deemed Solid Waste under NYC DEC law</p> <p>Off-site sorting: materials combined on-site and sent to processing facility for sorting; measured weights only</p> <ul style="list-style-type: none"> Two methods: #1 diversion rate from weight of individual diverted material type divided by weight of commingled waste; #2 diversion rate from waste sorting facility average diversion rate multiplied by commingled material weight <p>On-site sorting: measured weights only for material types sorted in segregated containers or project areas as segregated diverted material type; diversion rate from weight of individual diverted material type</p> <p>Recycling does not include burning, incinerating or thermally destruction; but sending to Waste-to-Energy facilities that comply with European Standard (EN) (not US EPA standards) is possible</p>	<p>DOT Work</p> <p>Contractor to dispose all waste materials in a legal and proper manner</p> <ul style="list-style-type: none"> If contractor uses DSNY facility, provide affidavit to Commissioner indicating compliance with DSNY rules and regulations, site used, and proof of purchase or dump tickets If contractor uses a site other than a DSNY facility, provide affidavit to Commissioner indicating compliance with all laws for removal of waste material, site used and a paid receipt; NYS-based facilities must be NYS DEC registered Solid Waste Management Facilities <p>Does permits use of “gently used” plywood for protecting trees</p> <p>DEP Work</p> <p>Contractor to remove (or abandon) all sewers, water mains, drains, culverts, basins, basin connectors, structures and all portions of any</p>	<p>Purpose: to provide sustainable construction requirements, including required documentation, to permit DDC to finalize awarded Envision certification beyond the baseline Minimum Required Implementation requirements in the contract that have been evaluated and assessed to ensure planned Envision certification is met; this specification is intended to encourage sustainable construction planning as well as compensate contractor for activities beyond the baseline Minimum Required Implementation requirements in the contract; if contractor chooses to exceed baseline Minimum Required Implementation requirements, contractor may be eligible for an incentive payment per 7.14.4</p> <p>Methods</p> <ul style="list-style-type: none"> Sustainable Planning <ul style="list-style-type: none"> Collaboration: contractor must attend all meetings required to discuss and comprehend Envision framework, including but not limited to Envision 	<p>Contractor’s work under this section consists of accumulating, packaging, labeling, loading, transporting, treating and disposing of ... non-hazardous soils ... non-hazardous construction debris</p> <p>DOT declares all paint removal waste, including abrasive grit material, recyclable or otherwise, as hazardous regardless of whether sampling/analysis reveals material to be outside hazardous thresholds</p> <p>Contractor to recover all waste products generated during cleaning and painting work including but not limited to rags, tape and paint cans and manage as non-hazardous/construction waste per 3.05 H.2 <i>sic</i> unless contaminated with paint, thinners and petroleum products or if paint cans contain more than 1” of material</p> <p>Contractor’s “competent person” to inspect waste handling and storage areas on daily basis and prepare daily report/log of observations made; maintain information at project site and make available to Engineer or</p>	<p>Diversion: to remove, or have removed, from site for recycling, reuse or salvage, material that might otherwise be sent to landfill; diversion does NOT include using the material as alternative daily cover at landfill or burning, incinerating or thermal destruction</p> <p>Contractor to meet all applicable federal, state and local regulatory requirements as well as DEP EHS policies and procedures for on-site management, transportation and recycling or disposal of all construction waste materials generated during construction</p> <p>Construction Waste Management Plan (CWMP)</p> <ul style="list-style-type: none"> Contractor to develop and implement a CWMP for the project under which waste and recyclable shall be collected, sorted and deposited to be submitted for review and approval by engineer 30 days after receipt of Notice to Proceed and before any removal of construction waste from project site CWMP shall be based on the construction waste recycling percentage goal established via the Design 	<p><u>Unclassified Excavation</u></p> <p>Contractor responsible for all excavating required for grading, trenching, paving, curbs, construction and reconstruction of structures, such as buildings, subsurface structures or any other structures and disposing of all excavated materials per plans, specs and engineer directions</p> <ul style="list-style-type: none"> Disposal of excess excavated fill materials including soil or similar materials designated as contaminated non-hazardous shall be paid for separately under its own respective bid item <p>Contract can use excavation materials suitable in engineer’s opinion in making embankments and filling low areas of work and at such places engineer directs Contractor shall store all excavated materials suitable in engineer’s opinion for backfilling within the limits of the contract work where directed by engineer; after inspection and approval of masonry foundations and other work to be covered by backfill, contractor shall fill the excavated voids around masonry and other work with</p>	<p>Contractor to submit Waste Management Plan (WMP) within 30 days of Notice to Proceed</p> <ul style="list-style-type: none"> WMP developed according to section requirements consisting of waste identification, waste reduction work plan (WRWP), and cost/revenue analysis; quantities indicated by weight or volume, but same units of measure used consistently throughout WMP Waste identification: indicate anticipated types and quantities (noting estimated quantities and assumptions for estimates) of demolition, site-clearing and construction waste generated by Work; forms CWM-1 and CWM-2 for demolition waste WRWP: List each waste type and whether it will be salvaged, recycled, or disposed of in landfill of incinerator; form CWM-3 for construction waste and form CWM-4 for demolition waste; include points of waste generation, total quantity of each waste type, quantity for each means of recovery, and handling and transportation procedures: 	<p>Contractor to submit WMP within 7 days of Notice to Proceed</p> <p>Contractor to develop WMP</p> <ul style="list-style-type: none"> WMP per ASTM E 1609 and 01-74-19 spec to include: waste identification, waste reduction work plan, and cost/revenue analysis; distinguish between demolition and construction waste; indicate quantities by weight or volume but use same measure throughout WMP; indicate recycled material that includes multiple material types (e.g., concrete, sheetrock and metal) that cannot be individually quantified through visual inspection; plan for separating and measuring weight/volume of each waste stream Waste identification: indicate anticipated types/quantities of D+C Waste generated by Work; using form CWM-1 for construction waste and form CWM-2 for demolition waste; include plan estimated quantities

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<p>Reuse is only permitted on Project Site generating C+D Waste (DNSY 1994 interpretive memo; not aligned with NYS DEC BUD regs) Alternative ACD: material other than earthen material placed on surface of active face of municipal solid Waste landfill at end of each work day to control vectors, fires, odors, blowing litter and scavenging Waste: extra material(s) that has reached the end of its useful life in its intended use; includes Salvageable, Returnable, Recyclable and Reusable material Waste Management Plan (WMP): a project-related plan for the collection, transportation and disposal of Waste generated at the construction site with the purpose of ultimately reducing amount of material going to landfills NYC establishes (via LL 32/2016 (amending LL 86/2005) and Charter sec. 224.1) the subject project (LEED v3 or LEED v4) must generate the least amount of Waste possible and use processes that ensure generation of as little Waste possible under LEED standards to obtain a LEED certification for the project Diversion:</p> <ul style="list-style-type: none"> • Generally, a minimum of 5 material types, both structural and non-structural, are to be identified in project WMP for diversion • with exception of LEED v4 projects with demolition ADC Waste, minimum of 75 % of total project C+D Waste (by weight) must be diverted from landfill for at 	<p>watercourse in, through or across any street or easement rendered unnecessary by the construction work as indicated on project plans or as specified or directed</p> <ul style="list-style-type: none"> • Cost of removal and abandonment of items above, including breaking down and filling in inlets, basins, manholes, valve chambers and other appurtenant structures are at contractor's expense and deemed included in bid prices for all items of work • With the exception of Metropolitan Valves (6"-20"), which the Contractor shall salvage and deliver to DEP (with no additional payment), contractor shall not return any salvageable material to DEP regardless of condition, which material shall become contractor's property for removal and disposal from the site • Contractor shall not dispose of any excavated or other material, except as otherwise specified (see below) within the limits of existing or projected public street or road, or excavate and remove such material without Commissioner's written permission; contractor shall not store construction material or equipment on public property without all required permits and engineer permission • All approved excavated suitable fill material within the project limits 	<p>construction kick-off meeting and regular sustainability check-ins for execution of each provision and a Sustainable Construction Work Plan (SCWP)</p> <ul style="list-style-type: none"> ○ Initial documentation: within 30 days of Notice of Award, Contractor must submit SCWP to engineer for approval; contractor must assign a point of contact for tracking and submitting all necessary materials and documentation including but not limited to meeting minutes, reports, plans, data compilations, delivery tickets, calculations, manuals, policies estimates; Minimum Required Implementation is approved standard sustainable construction pending documents tracker and no incentive for this scope ○ Planning and subsequent documentation: within 60 days of Notice of Award, contractor must submit SCWP Sustainable Construction 	<p>environmental consultant for review at any time Waste management plan (3.05 L)</p> <ul style="list-style-type: none"> • Waste handling, storage and disposal—contractor to provide: <ul style="list-style-type: none"> ○ procedures followed for collection of random and representative samples of waste for sampling and testing, and analysis procedures used to characterize waste before shipping ○ procedures for site handling, storage, container inspection, packaging, labeling, manifesting, transporting and disposal of waste ○ copy of weekly waste storage inspection form [hazardous waste requirement not included] ○ detailed contingency plan addressing worker training and notification, containment, cleanup and reporting that will be undertaken in event of spill during jobsite handling and 	<p>Sustainability Program as the percentage goal for end-of-Project rates of salvage/recycling of construction waste as detailed in Construction Waste Estimate Report (CWER) generated by design engineer and that was included in the bid exhibit documents(CWER is expressly excluded from construction contract and is available to contractor for information purposes only)</p> <ul style="list-style-type: none"> • CWMP to contain: <ul style="list-style-type: none"> ○ Construction and Demolition Diversion: estimate of total proposed construction and demolition (C+D) waste to be generated and the percentage of C+D waste to be diverted from landfill by types and quantities during prosecution of the work; identify at least 5 C+D materials (both structural and non-structural) targeted for diversion; approximate a percentage of overall project waste that these materials represent; this diversion shall be developed based on the estimates included in the CWER; formula for diversion from landfill percentage = (total estimated waste diverted 	<p>clean excavated material with no direct payment for re-handling excavated materials for such backfilling as considered included in bid price Material disposal plan (MDP) for excess excavated material in excess of 10 CYs</p> <ul style="list-style-type: none"> • Submitted to engineer for approval 21 day before trucking operations commence and includes at minimum <ul style="list-style-type: none"> ○ List of all anticipated materials proposed for disposal/recycling and respective anticipated quantities ○ Proposed list of disposal/recycling facilities and copies of relevant permits ○ Proposed list of transporters and copies of relevant permits ○ A copy of the waste tracking document to be uses to record all disposal activities (NYS DEC Part 360 Waste Tracking Document (for BUDs) included as sample example) • Contractor to submit completed copies of waste tracking documents recording all disposal activities after all disposal activity is completed • MDP intended to document that all material will be disposed per applicable NYC, NYS and federal regulations 	<p>Salvaged materials for reuse: describe methods for preparing salvaged materials before incorporation into the Work per Section 024116 "Structure Demolition"</p> <ul style="list-style-type: none"> ○ Salvaged materials for sale to individuals and organizations: include list of names, addresses and telephone numbers ○ Salvaged materials for donation to individuals and organizations: include list of names, addresses and telephone numbers ○ Recycled materials: include list of local receivers and processors and recycled material type each will accept; include list of names, addresses and telephone numbers ○ Disposed materials: indicate how and where materials will be disposed; include list of name, address and telephone number of each landfill and incinerator facility ○ Handling and transportation procedures: include method that will be used for separating recyclable waste including container sizes and labeling and designated locations for performance of materials separation 	<p>and assumptions for estimates</p> <ul style="list-style-type: none"> • Work Reduction Work Plan: list each waste type and whether it will be salvaged, recycled or disposed in landfill/incinerator; include points of waster generation, total quantity of each waste type, quantity for each means of recovery, and handling/transportation procedures <ul style="list-style-type: none"> ○ Salvaged materials for reuse: for materials that will be salvaged and reused in Project, describe methods for preparing salvaged materials before incorporation into the Work ○ Salvaged materials for sale: for materials that will be sold to individuals and organizations, include list of names, addresses and telephone numbers ○ Salvaged materials for donation: for materials that will be donated to individuals and organizations, include list of names, addresses and telephone numbers ○ Recycled materials: include list of local receivers and
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<p>least 4 listed material types (see Exhibit 2)</p> <ul style="list-style-type: none"> LEED v4 projects with demolition ADC Waste, minimum of 50 % of total project C+D Waste (by weight) must be diverted from landfill for at least 3 listed material types (see Exhibit 2) and ACD material does not qualify as material diverted from disposal <p>Recycling on the job, subject to Commissioner approval, is encouraged on project site, such as crushing and reuse of removed sound concrete and stone</p> <p>Land-clearing debris is not considered construction, demolition or renovation Waste and is not to be included as contribution to Waste Diversion; NYS DEC BUDs include land clearing waste (excavated soil), so this does not align with NYC DEC's BUDs .</p> <p>Contractor is responsible for development and implementation of a project WMP; contractor's subcontractors must assist in WMP development and collect and deposit their Waste and Recyclable materials in accordance with approved WMP</p> <ul style="list-style-type: none"> <u>Draft WMP</u> Within the earlier of 15 days of Notice to Proceed or any Waste removal, contractor must submit to Commissioner a <u>draft WMP</u>, which demonstrates how contractor will meet performance goals and contain: <ul style="list-style-type: none"> List of material types targeted for Reuse, Salvage or Recycling and estimated amounts for each material type in tons and percentage 	<p>shall be utilized for backfill per subsection 40-06-2(c); approved earth, free of bricks, blocks, excavated pavement materials and debris, stumps, roots, and other organic matter, as well as ashes, oil and other perishable or foreign matter, with particles no larger than ¼ inch in diameter; all excavated material meeting above parameters with fine content equal to or less than 20 % and equal to or less than 30 % (portion of material passing a No. 200 sieve) shall be reused</p> <ul style="list-style-type: none"> If approved in writing by engineer, excavated material determined to be unsuitable may be processed (screened, blended and/or crushed) to produce select granular fill material or clean fill material (subsections 26.01.2(b), 26.01.2(D)); no separate or additional payment made for all costs necessary/required to perform processing work 	<p>Implementation Worksheet to engineer for approval; contractor must conduct at least 1 Sustainable Construction Planning Review before construction begins to review, analyze and select strategies listed in provisions; calculations may be necessary to ensure awarded Envision verification level is upheld; Minimum Required Implementation is approved Sustainable Construction Implementation Worksheet</p> <ul style="list-style-type: none"> 9 other major scopes of sustainable construction listed below exceed the baseline Minimum Required Implementation requirements that are already in the initial SCWP <ul style="list-style-type: none"> <u>Construction Energy Conservation</u> includes 7 strategies and <u>Minimum Required Implementation</u> includes 2-3 of the 7 strategies <u>Construction Water Consumption</u> includes 8 strategies and <u>Minimum Required Implementation</u> 	<p>waste transportation and disposal information</p> <ul style="list-style-type: none"> Non-hazardous waste <ul style="list-style-type: none"> provide name, address, license/permit number, qualifications and contact person of each proposed hauler on non-hazardous waste submit name, address, license/permit number, qualifications and contact person of each permitted waste landfill that will accept non-hazardous (construction) waste and waste that passes TCLP,* but contains toxic metals provide letter of intent from proposed legally permitted landfill operator agreeing to accept waste that passes TCLP but contains toxic metals <p>TCLP Toxicity Characteristic Leaching Procedure 40 CFR 261, Appendix II, Method 1311</p> <p>Accumulation, packaging, storage, transportation and disposal of non-hazardous waste (e.g., construction debris) is not measured for</p>	<p>from landfill/total estimated waste produced by project) x 100; estimates calculated by weight (tons); list of C+D waste shall be specific to project site and may include but not limited to materials on list in Exhibit 5</p> <ul style="list-style-type: none"> Soil Diversion: estimate of total proposed excavated soil to be generated and the percentage of this soil to be diverted from landfill via onsite and/or offsite reuse (including types and quantities); soil diversion may be achieved through onsite or offsite reuse and wherever possible reuse of excess excavated soils on site should be prioritized over offsite reuse (refer to 02 24-20 – Soil Sampling and Analysis for sampling and regulatory requirements; formula for soil diversion = (total estimated soil diverted from landfill / total estimated soil produced by project) x 100 Materials handling procedures: 	<ul style="list-style-type: none"> Contractor must dispose of excess excavated material in compliance with NYC DEC regulations, including NYS DEC requirements for soil or similar materials or material classified by NYS DEC as "fill", such as testing results and approval letter from disposal facility receiving the material Bid price for quantity of unclassified excavation is by CY of material measured in original position, excavated and disposed of per engineer directions; rock excavation, removal of steel bar reinforced concrete, average concrete, and curbs (including those with steel reinforcement) to be paid under respective contract terms <p><u>Disposal of Contaminated, Non-hazardous Materials and Waste</u></p> <ul style="list-style-type: none"> For handling, transporting and disposing material deemed unsuitable for reuse (beyond base cost under Unclassified Excavation above), defined to be soil and fill materials (in excess of what a project requires) having chemical constituents in excess of the Restricted Residential Soil Cleanup Objectives in Title 6 NYCRR Part 375 Soil Cleanup Objectives (SCOs) and that require approved recycling or disposal at a regulated facility Activities include handling, loading including temporary stockpile, characterization including testing, management including characterization for treatment and/or disposal, compliance with 	<ul style="list-style-type: none"> Cost/revenue analysis: indicate total cost of waste disposal as if there were no WMP and net additional costs or net savings resulting from implementing WMP; form CWM-1 for construction waste and form CMW-2 for demolition waste including: total waste quantity; estimated disposal cost (cost/unit) including transportation and tipping fees and costs of collection containers and handling for each waste type; total disposal costs with no WMP; revenue from salvaged materials; revenue from recycled materials; savings in transportation and tipping fees by donating materials; savings in transportation and tipping fees that are avoided; handling and transportation explicitly includes collection container costs for each material type; net additional cost or net savings from WMP Plan implementation: Contractor to <ul style="list-style-type: none"> Implement approved WMP; provide handling, containers, storage, signage, transportation and other items to implement WMP during Contract duration Engage Waste Management Coordinator to be present on Site full time during Project duration and responsible for implementing, monitoring, and reporting on status of waste 	<p>processors and recycled material type each will accept; include list of names, addresses and telephone numbers</p> <ul style="list-style-type: none"> Disposed materials: indicate how and where materials will be disposed; include list of name, address and telephone number of each landfill and incinerator facility Handling and transportation procedures: include method that will be used for separating recyclable waste including container sizes and labeling and designated locations for performance of materials separation <ul style="list-style-type: none"> Cost/revenue analysis: indicate total cost of waste disposal as if there were no WMP and net additional costs or net savings resulting from implementing WMP; form CWM-5 for construction waste and form CMW-6 for demolition waste including: total waste quantity; estimated disposal cost (cost/unit) including hauling and tipping fees and costs of collection containers for each waste type; total disposal costs with no
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<p>of overall construction waste of each material stream; contact information of receiving facilities/companies that will purchase/accept each material</p> <ul style="list-style-type: none"> Estimates of percentage of overall C+D waste to be sent to landfills Description of On-site methods and/or Off-site sorting methods (Method 1 or Method 2) for all materials to be removed from site <ul style="list-style-type: none"> If mixed C+D waste to be sorted Off-site, provide letter from processor stating the average percentage of mixed C+D waste (exclusive of ADC for LEED v4 projects) they recycle Landfill information including names of landfills where non-recyclable/reusable/salvageable waste will be disposed and tipping fee lists Material handling procedures: specify whether materials will be separated or commingled with planned diversion strategies; expected amount of each material type; where materials will be taken and how recycling 		<p>includes 3-4 of the 8 strategies</p> <ul style="list-style-type: none"> <i>Constructing with Recycled Materials</i> requires contractor to source materials from manufacturers and suppliers that implement sustainable practices and maximize the qualifying materials that are to be permanent materials incorporated into the work, excluding plants, soil, rock, land clearing debris; <u>Minimum Required Implementation</u> requires 5-14% of materials of recycled origin <i>Sustainable Procurement of Construction Materials</i> requires contractor to outline process and criteria for selecting and calculating materials, supplies and equipment to maximize the amount of materials procured in sustainable manner measured by project's total cost, weight or volume; listed strategies include ISO 14001, 14025, 14044; 3rd party verified sustainability labels; 3rd party verified corporate 	<p>payment; cost is considered incidental)3.08 D. 2)</p>	<p>description of means by which any waste materials will be protected from contamination via segregation and description of means employed in recycling materials consistent with requirements by recycling processors to be utilized and DSNY.</p> <ul style="list-style-type: none"> List of waste transporters, transfer stations, beneficial use facilities, disposal facilities and recyclers that contractor intends to use during project with info including permits; CWMP should list where both recyclable and non-recyclable materials will be recycled, reused or disposed and how those materials will be transported The proposer method of removal of non-hazardous waste and requirement that transporter must hold current NYS Part 364 permit to transport waste to TSDF that accepts non-hazardous waste (does this operate as requirement to transport within NYS boundaries?) 	<p>regulations, specifications etc.</p> <ul style="list-style-type: none"> Documentation more involved than above an includes resident engineer signature of all waste manifests and bills of lading for waste transportation for either re-use, treatment, recycling, or disposal to an agency-approved facility Work to be performed by OSHA certified workers, experienced in dealing with this type of material; storage and handling areas shall have impoundment systems or placed on impervious surfaces not directly on the ground and covered with impervious compatible materials to prevent exposure to wind and precipitation; plus more Generally: (1) whenever and wherever possible direct-load all excavated contaminated material and waste onto vehicles for off-site transportation for re-use, treatment, recycling and/or disposal and (2) whenever and wherever possible re-use excavated materials as on-site backfill in areas that are suitable for fill Temporary stockpile criteria (not detailed here) Excess material and waste disposal plan within 21 days after Order-to-Work and before mobilization for contaminated non-hazardous materials and waste <ul style="list-style-type: none"> For each proposed disposal facility, submit similar information to above MDP but 	<p>management work plan</p> <ul style="list-style-type: none"> Training of workers, subcontractors, and suppliers on proper waste management practices appropriate for Work; distribute WMP to Construction Manager, Resident Engineer, other concerned project stakeholders, within 3 days of submittal return; distribute WMP to entities when they first work on site and review plan procedures and locations established for salvage, recycling and disposal Submittals <ul style="list-style-type: none"> Waste reduction progress reports: concurrent with each Application for Payment question: is payment contingent on submission of report? Contractor to submit CWM-7 for construction waste and CWM-8 for demolition waste including: material category; generation point of waste; total waste quantity in tons; salvaged waste salvaged, both estimated and actual in tons; recycled waste, both estimated and actual in tons; total quantity of waste recovered (salvaged plus recycled) in tons; total quantity of waste recovered (salvaged plus 	<p>WMP; revenue from salvaged materials; revenue from recycled materials; savings in hauling and tipping fees by donating materials; savings in hauling and tipping fees that are avoided; handling and transportation explicitly includes collection container costs for each material type; net additional cost or net savings from WMP tracks DSNY</p> <ul style="list-style-type: none"> Plan implementation: Contractor to <ul style="list-style-type: none"> Implement approved WMP; provide handling, containers, storage, signage, transportation and other items to implement WMP during Contract duration; comply with operation, termination and removal requirements in Section 015000 "Temporary Facilities and Controls"; provide separate container for every recycled material through means other than visual inspection Engage Waste Management Coordinator responsible for implementing, monitoring, and reporting status of waste management
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<p>facility will process the material; description of means by which any recyclable/reusable/salvageable material will be protected from contamination and collected in a manner to meet designated recycling processor acceptance requirements; description of means of transportation and destination of recycled materials</p> <ul style="list-style-type: none"> Contractor to describe spread sheet and documentation for regular meetings to be held monthly (or as directed by Commissioner) on WMP issues and how it will submit monthly meeting reports Final WMP Contractor to submit final WMP within 15 days of Commissioner’s approval of draft WMP Implementation of Final WMP <ul style="list-style-type: none"> Before demolition and construction start, Contractor must implement WMP, coordinate WMP with all affected trades and designate one person as the Construction Waste Management Representative <ul style="list-style-type: none"> Construction Waste Management Representative will be responsible for communicating the progress of the WMP with the Commissioner (see below) on a 		<p>sustainability manufacturers/suppliers per GRI; flexibility is permitted to develop additional practices that are equivalent to or exceed above but contractor must justify them and submit alternative practices to engineer for approval; <u>Minimum Required Implementation</u> requires 5-14% of materials procured with sustainable practices</p> <ul style="list-style-type: none"> <i>Construction Waste Management</i> requires contractor to submit, to engineer for approval, Construction Waste Management Planning Worksheet as part of SCWP within 60 days of Notice to Proceed to maximize the waste diverted from landfills in order to minimize negative impacts to the environment due to waste production from construction activities; <u>Minimum Required Implementation</u> requires Construction Waste Management 		<ul style="list-style-type: none"> Coordination of product deliveries to designated prepared areas to minimize site storage time and potential damage to stored materials and return of packing materials where economically feasible CWMP implementation: <ul style="list-style-type: none"> Contractor responsible for implementation of approved CWMP including provision of containers and removal of all waste, non-returned surplus materials and debris from site per CWMP, in compliance with all federal, state and local regulations, including DEP EHS Policies and Procedures Monies received for recycling and/or salvaged materials remain with Contractor except for items specifically identified in contract documents Contractor to use construction and demolition methods and processes to ensure generation of as little waste as possible due to error, poor planning, 	<p>also federal and state disposal facility identification number and permit expiration date and copies of currently value permits with much more information related to those permits and a listing of number and types of analytical testing required for materials for each proposed disposal facility</p> <ul style="list-style-type: none"> Provide a sampling plan For each proposed transporter, submit copies of currently valid permits that indicate permit presently in effect, for Part 364 permits the proposed disposal facility identified on permit, and for other states traversed non-NYS state issued vehicle and hauling permits <ul style="list-style-type: none"> Testing results and disposal facility approval at least 14 calendar days before beginning of soil disposal Bills of lading, truck manifests and scale tickets Waste disposal log Price for disposal of contaminated non-hazardous materials and waste shall be the number of tons of material per truck manifest and scale tickets disposed per engineer 	<p>recycled) as percentage of total waste</p> <ul style="list-style-type: none"> Waste reduction calculations: before request for Substantial Completion question: is payment contingent on submission of these calculations? Contractor submits calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by Work Records of donations, sales (including tax-exemption status if applicable, recycling and processing facilities; landfill and incinerator disposal (similar to others) Qualification data for waste management coordinator and refrigerant recovery technician Statement of refrigerant recovery per EPA regs <ul style="list-style-type: none"> Quality Assurance <ul style="list-style-type: none"> Waste management coordinator qualifications experienced firm or individual employed/assigned by General Contractor with record of successful waste management coordination of projects with similar requirements; may 	<p>work plan to be present at Project site full time for Project duration</p> <ul style="list-style-type: none"> Training of workers, subcontractors, and suppliers on proper waste management practices appropriate for Work; distribute WMP to everyone concerned within 3 days of submittal return; distribute WMP to entities when they first work on site and review plan procedures and locations established for salvage, recycling and disposal With respect to Site access and temporary controls, conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways and other adjacent occupied and used facilities; designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated and sold; comply with Section 015000 “Temporary
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

<p>regular basis and for assembling the required LEED documentation (see below)</p> <ul style="list-style-type: none"> Contractor is responsible for oversight and documentation of WMP results and providing containers and removing all waste, non-returnable surplus materials and rubbish from site per WMP removal <ul style="list-style-type: none"> Monies received for Salvaged materials remain with Contractor, except for monies for items specifically identified as belonging to others in specifications or as indicated in Contract Drawings Contractor must distribute copies of WMP to each subcontractor, resident engineer, construction manager and Commissioner <ul style="list-style-type: none"> Subcontractors are responsible for collecting their waste, non-returnable surplus materials and rubbish per WMP Contractor must provide on-site instruction of proper waste management procedures to be used by all parties at appropriate project stages Contractor to conduct waste management operations to ensure minimum interference with site vegetation, roads, streets, walkways and other adjacent, occupied and 		<p>Planning Worksheet and 25-49% of waste diverted from landfill; the Construction Waste Management Planning Worksheet must:</p> <ul style="list-style-type: none"> Estimate total generated demolition and construction waste to be diverted from disposal Maintain detailed records of all recycled materials, including legible copies of on-site logs, weight tickets and receipts Employ <u>strategies</u> including but not limited to: identifying licensed haulers; transfer stations, processors of recyclables and transportation procedure 		<p>breakage, mishandling, contamination and other factors</p> <ul style="list-style-type: none"> When encountered in work, contractor to dispose of construction waste by recycling methods per LL 19/1989, LL 87/192, and NYC's Commercial Recycling Regulations-Rules Governing the Recycling of Private Carter Collected Waste (09/93); contractor to separate all recyclable material from normal refuse per DSNY rules; dispose of material not required to be recycled as specified per all applicable federal, state and local regulations and DEP EHS Policies and Procedures When encountered as part of work for sites outside NYC, contractor to dispose of construction waste per all applicable federal, state and local regulations and DEP EHS Policies and Procedures <ul style="list-style-type: none"> Monthly submittals: contractor to track monthly waste and soil generation/diversion/disposal data per 01 35 27 – Environmental Health and Safety Requirements, para. 	<p>plans, specs and directions; unit price/ton disposed and shall include cost of all labor, material, equipment and incidental expenses necessary per above; payment will not include demurrage for vehicles or loads rejected by the facility for any reason</p> <p><u>Earth Moving Operations</u> works in conjunction with <u>Unclassified Excavation</u> above</p> <p><u>Strip, Store and Spread Existing Topsoil</u></p> <p>Involves removal of existing vegetation by flush cutting to max. height of 2" and rototilling or rotovating the area and removing roots and top growth of woody plants from stockpile before spreading; stripping topsoil to depth of 5" from all field areas and removing stones greater than 2" diameter and other leaves, roots, and other objectionable materials and move/store separately in compliance with tree protection plan (i.e., not under trees) and covered with heavy-duty black tarps to kill weeds and prevent regrowth (failure to comply will result in contractor having to purchase at own expense topsoil in equivalent amount at own expense); prior to spreading contractor to remove any remaining clumps of undecomposed sod, roots or other herbaceous material larger than 2" diameter</p> <p><u>Remove Carpet and Infill</u></p> <ul style="list-style-type: none"> Contractor to send elements of synthetic turf (including 95% of infill material both on top and below carpet and vacuumed rubber infill prior to carpet removal) to recycler for new products (list of known recyclers 	<p>not be Project Superintendent</p> <ul style="list-style-type: none"> Refrigerant recovery technician certified by EPA-approved certification program Compliance with transportation and disposal regulations of authorities having jurisdiction Waste management conferences: Contractor to conduct conference(s) per Section 013100 "Project Management and Coordination" to review methods and procedures related to waste management including but not limited to: review and discussion of WMP including responsibilities of each contractor and waste management coordinator; review requirements for documenting quantities of each waste type and disposition; review and finalize procedures for materials separation and verify availability of containers and bids needed to avoid delay; review procedures for periodic waste collection and transportation to recycling and disposal facilities review waste management 	<p>Facilities and Control" for controlling dust and dirt, environmental protection and noise control</p> <ul style="list-style-type: none"> With respect to waste management in Historic Zones or Areas, use hauling equipment and other materials in sizes that clear surfaces within historic spaces, areas, rooms and openings by at least 12 inches <p>Submittals</p> <ul style="list-style-type: none"> Waste reduction progress reports: concurrent with each Application for Payment question: is payment contingent on submission of report? Contractor to submit CWM-7 for construction waste and CWM-8 for demolition waste including: material category; generation point of waste; total waste quantity in tons; quantity of waste salvaged, both estimated and actual in tons; quantity of recycled waste, both estimated and actual in tons; total quantity of waste recovered (salvaged plus recycled) in tons; total quantity of waste recovered (salvaged plus recycled) as percentage of total waste; method used to quantify salvaged and recycled materials Waste reduction calculations: before
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

<p>used facilities—operations include but not limited to:</p> <ul style="list-style-type: none"> Collect commingled waste and/or separate all recycled waste per WMP with specific designated project site areas and clearly marked containers and bins as acceptable and unacceptable materials Inspect containers and bins for contamination and remove contaminated materials if found Comply with specific general condition provisions for controlling dust and dirt, environmental protection and noise control Except for items or material to be salvaged, recycled or otherwise removed, remove waste material from project site and legally dispose of them in a manner acceptable to authorities with jurisdiction, including: not allowing waste materials to be disposed accumulate on site and removing and transporting debris in a manner to prevent spillage on adjacent surfaces and areas; not burning waste materials; transporting waste materials off project site and legally disposing them Additional demolition and salvage requirements: demolition and salvage of additional items indicated in other sections of the project specifications 		<p>s; designating specific neat, clean and clearly marked area to facilitate separation and non-contamination of materials for potential salvage, recycling and waste; providing on-site instruction covering separation, handling and recycling, salvage, reuse, and return methods to be employed by all parties at appropriate project stages; sending waste material towards recycling or reclamation facilities; sending waste to manufact</p>		<p>1.07.C. Monthly Contractor EHS Report</p> <ul style="list-style-type: none"> Final submittal: contractor to submit a Construction Waste Management Final Summary Report upon Substantial Completion that tabulates total waste material, quantities diverted from landfill and means by which it is diverted Project meetings: CWMP and implementation shall be discussed at pre-construction meeting and regular monthly progress meetings Delivery, storage and handling: contractor shall <ul style="list-style-type: none"> designate separate receiving/storage areas for delivered materials and equipment to minimize waste due to excessive materials mishandling, misapplication, weather and other damage promptly inspect shipments to assure products comply with requirements, quantities are correct and products are undamaged; promptly return damaged shipments or incorrect orders to manufacturer use special care in removal, storage and reinstallation of materials/equipment to be 	<p>provided) and cannot send them to landfill; must certify that material has been recycled into new products; contractor to provide documented reuse of infill; documents include bill of landing with documentation of adaptive reuse</p> <ul style="list-style-type: none"> Construction waste management plan (CWMP): contractor to submit CWMP prior to work start of application for engineer approval and at minimum should identify material diversion goals, all materials to be removed, how materials will be sorted on-site, identify recycling locations, implementation protocols and parties responsible for implementing CWMP; contractor responsible for reviewing all recycling requirements with all subcontractors, continuously tracking removed materials to ensure CWMP implementation; contractor to submit means and methods of operations along with equipment to satisfaction of engineer; contractor to obtain, retain and submit all verification records including hauling receipt, waste management reports, certification that materials were diverted from incineration and recycled into new products at required percentage, including the list of products, and bill of lading from recycler along with adaptive reuse in new products documentation; contractor to remove 	<p>requirements for each trade</p> <ul style="list-style-type: none"> Performance requirements <ul style="list-style-type: none"> Achieve end-of-Project rates for salvage/recycling of 75% by weight of total nonhazardous solid waste generated by Work. diversion rate, but refers to solid waste which is not consistent with BUD i.e., BUD materials not solid waste; practice efficient waste management in use of materials in the course of the work minimization of waste from efficient material use; use all reasonable means to divert construction and demolition waste from landfills and incinerators policy statement and means and methods; facilitate recycling and salvage of materials including the following: <ul style="list-style-type: none"> Demolition waste: asphalt paving; concrete; concrete reinforcing steel; brick; concrete masonry units; wood studs and joists; plywood and oriented strand board; wood 	<p>request for Substantial Completion question: is payment contingent on submission of these calculations? Contractor submits calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by Work</p> <ul style="list-style-type: none"> Records of donations including receipt and acceptance of salvageable waste donated to individuals and organizations with tax-exempt status if applicable Records of sales including receipt and acceptance of salvageable waste sold to individuals and organizations with tax-exempt status if applicable Records of recycling and processing facilities including receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them with manifests, weight tickets, receipts and invoices Records of landfill and incinerator disposal including receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them with manifests, weight tickets, receipts and invoices Qualification data for waste management coordinator and refrigerant recovery technician Statement of refrigerant recovery per EPA regs track DSNY specs <p>Quality Assurance</p>
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

	<p>require special attention as part of the overall 75% diversion from landfills— see other sections of project specifications</p> <ul style="list-style-type: none"> Monthly WMP progress reports submitted by Contractor with the following information: <ul style="list-style-type: none"> Project title, name of company completing report, and period covered by report Report on disposal of all project site waste using the DDC C+D Waste Management log form for each shipment of material removed from site including: date and ticket number of removal; material hauler identity; material type; waste sorting method; total waste quantity (T//CY—either acceptable by must be consistent for all shipments and all materials for project duration or will be returned for revision and resubmission) by type; quantity of waste salvaged, recycled and/or reused by type; total quantity of waste diverted from landfill (recycled, salvaged or reused) as percentage of total waste; recipient of each material type Monthly and cumulative project totals of waste, quantity diverted and percentage diverted Legible copies of on-site logs, weight tickets 		<p>urers for use as post-consumer recycled content; sending waste to composting facility; composting on site; reuse or recycle materials on site; if appropriate, reusing waste material as infill; exploring opportunities to sell or donate salvaged materials that have been protected from contamination; stockpiling and reusing non-contaminated non-hazardous excavated materials with beneficial reuse of soil to be given priority; creating purchase agreements requestin</p>		<p>reused/salvaged to insure proper function in completed work</p> <ul style="list-style-type: none"> periodically inspect stored products to assure they are undamaged and are maintained under required conditions train employees in handling and storing waste materials per DEP EHS Policies and Procedures 	<p>materials so that existing recycled plastic lumber edge, shock pad and existing concrete are not damaged for use in new installation, if designated to remain (with repair and replacement due to failure as part of bid price) and take extreme care to prevent disturbance of base aggregate compaction and planarity (with repair of areas deemed disturbed by engineer the responsibility of the contractor)</p>	<p>paneling plus MORE to go in Exhibit 6</p> <ul style="list-style-type: none"> Construction waste: masonry and CMU; lumber plus MORE to go in Exhibit 6 Specific handling procedures for <ul style="list-style-type: none"> Salvaged Items for Reuse in the Work: clean; pack or crate items, identifying contents of containers with label indicating elements, removal date, quantity and location where removed; storage in secure location until installation; protection from damage during transport and storage; items to comply with installation requirements for new materials and equipment, providing connections, supports and miscellaneous materials necessary to make items functional for indicated use Salvaged Items for Sale and Donation— not permitted on Project site Salvaged Items for Owner’s Use: clean; pack or crate as above; store items in secure area until delivery to Owner; 	<ul style="list-style-type: none"> Waste management coordinator qualifications experienced firm with record of successful waste management coordination of projects with similar requirements Refrigerant recovery technician certified by EPA-approved certification program Compliance with hauling and disposal regulations of authorities having jurisdiction Waste management conferences: Contractor to conduct conference per Section 013100 “Project Management and Coordination” to review methods and procedures related to waste management including but not limited to: review and discussion of WMP including responsibilities of waste management coordinator; review requirements for documenting quantities of each waste type and disposition; review and finalize procedures for materials separation and verify availability of containers and bids needed to avoid delay; review procedures for periodic waste collection and transportation to recycling and disposal facilities review waste management requirements for each trade tracks DNSY <p>Performance requirements: Achieve end-of-Project rate for salvage/recycling of 75% by weight of total non-hazardous</p>
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

	<p>and receipts; receipts must be from charitable organizations, recycling and/or disposal site operators that can legally accept the materials for reuse, recycling or disposal purposes; to be kept for 7 years after project completion</p> <ul style="list-style-type: none"> Contractor to submit signed final LEED construction waste report tabulating total waste material, quantities diverted and diversion means and state that requirements for applicable LEED credit have been met including: at least 4 material streams for diversion, documentation of recycling rates for commingled facilities, and documentation for a waste-to-energy strategy compliance with EN standards and justification for the strategy Refrigerant recovery (detail not included) 		<p>g vendor deliveries that reduce the amount of packaging, use packaging made of recyclable materials and/or vendor to take back discarded packaging for own reuse/recycling</p> <ul style="list-style-type: none"> <i>Enhanced Construction Health and Safety</i> includes 8 strategies and <u>Minimum Required Implementation</u> includes 3-5 of the 8 strategies <i>Stakeholder Relations during Construction</i> includes addressing noise, safety and wayfinding for the public, access and mobility for the public and minimizing intrusive lighting in order to minimize or eliminate temporary inconveniences associated with construction and <u>Minimum Required Implementation</u> includes of 3 of the 4 listed mitigation impacts 				<p>transport items to Owner's storage area off-site</p> <ul style="list-style-type: none"> Doors and hardware: brace open end of door frames; except for removing door closers, leave door hardware attached to doors Equipment: drain tanks, piping and fixtures; seal openings with caps or plugs; protect equipment from exposure to weather Plumbing fixtures: separate by type and size Lighting fixtures: separate lamps by type and protect from breakage Electrical devices: separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers and other devices by type <ul style="list-style-type: none"> Specific provisions for recycling D+C Waste: Contractor to: <ul style="list-style-type: none"> Recycle paper and beverage containers used by on-site workers Retain as its own, revenues, savings, rebates, tax credits and other incentives received for recycling waste materials Prepare and maintain recyclable waste materials per recycling or reuse facility requirements, including keeping them free of dirt, 	<p>solid waste generated by Work; practice efficient waste management in use of materials in course of Work; use all reasonable means to divert CDW from landfills and incinerators; facilitate recycling and salvage of materials— Demolition Waste and Construction Waste-see Exhibit 7.</p> <p>Specific handling procedures for</p> <ul style="list-style-type: none"> Salvaged Items for Reuse in the Work: clean; pack or crate items, identifying contents with label indicating elements, removal date, quantity and location where removed; storage in secure location until installation; protection from damage during transport and storage; items to comply with installation requirements for new materials and equipment, providing connections, supports and miscellaneous materials necessary to make items functional for indicated use Salvaged Items for Sale and Donation—permitted on Project site cf DSNY Salvaged Items for Owner's Use: clean; pack or crate as above; store items in secure area until delivery to Owner; transport items to Owner's storage area off-site; protect items from damage during transport and storage Doors and hardware: brace open end of door frames; except for removing door closers,
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

			<ul style="list-style-type: none"> ○ <i>Balanced Earthworks during Construction</i> requires contractor to use any of the 5 listed strategies to reduce environmental impacts of moving soils and other excavated materials; contractor must endeavor to reuse all soil, eliminating borrow fill, or source all necessary fill and excavated materials as close as possible to project site using the 5 strategies; <u>Minimum Required Implementation</u> includes 30% reuse of excavated soils OR source the borrow fill from within 25 miles of project site; <u>strategies</u> include identifying opportunities to minimize grading and retain soil on site to reduce total site soil handling; eliminating need for transporting additional soil; beneficially reusing excavated material from project site on nearby sites or from nearby sites as fill for project site; looking for options close to project site to send or source these materials; recording 				<p>adhesives, solvents, petroleum contamination and other substances deleterious to recycling process</p> <p>Separate recyclable waste from other waste materials, trash and debris; separate recyclable waste by type at Project site to maximum extent practical per approved WMP including:</p> <ul style="list-style-type: none"> ▪ providing appropriately marked containers/bins for controlling recyclable waste until removal from Project site; provide list of acceptable/unacceptable materials at each container/bin; inspect containers/bins for contamination and remove contaminated materials ▪ stockpiling processed materials on-site without intermixing with other materials by placing, grading, and shaping stockpiles to drain surface water; covering to prevent windblown dust ▪ stockpiling materials away from 	<p>leave door hardware attached to doors</p> <ul style="list-style-type: none"> • Equipment: drain tanks, piping and fixtures; seal openings with caps or plugs; protect equipment from exposure to weather • Plumbing fixtures: separate by type and size • Lighting fixtures: separate lamps by type and protect from breakage • Electrical devices: separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers and other devices by type <p>Specific provisions for recycling D+C Waste: Contractor to:</p> <ul style="list-style-type: none"> • Recycle paper and beverage containers used by on-site workers • Owner (not Contractor) keeps revenues, savings, rebates, tax credits and other incentives received for recycling waste materials cf DSNY/ how does that work with cost/benefit analysis • Prepare and maintain recyclable waste materials per recycling or reuse facility requirements, including keeping them free of dirt, adhesives, solvents, petroleum contamination and other substances deleterious to recycling process • Separate recyclable waste from other waste materials, trash and debris; separate recyclable waste by type at Project site to maximum extent practical per approved construction WMP including:
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

			<p>source/destination of any materials transported on- or off-site and proximity to project site (hazardous excavated materials excluded from total calculations)</p> <ul style="list-style-type: none"> ○ <i>Enhanced Surface and Groundwater Quality during Construction</i> includes 7 strategies and <u>Minimum Required Implementation</u> includes Surface and Groundwater Quality Planning Worksheet and 2 of 7 strategies. <p>Incentive percent values in lump sum breakdown for 7.14 to support contractor going beyond Minimum Required Implementation levels</p>				<p>construction area and not storing within drip line of remaining trees</p> <ul style="list-style-type: none"> ▪ storing components off the ground and protecting from weather ▪ removing recyclable waste from Owner's property and transporting to recycling receiver or processor as often as required to prevent overfilling bins <ul style="list-style-type: none"> • Specific provisions for recycling demolition waste: <ul style="list-style-type: none"> ○ Concrete: remove reinforcement and other materials to be sorted with other metals and pulverize to max 1-1/2-inch size ○ Masonry: remove metal reinforcement, anchors and ties and sort with other metals and pulverize to max 1-1/2-inch size ○ Wood materials: sort and stack members per size, type and length; separate lumber, engineered wood products, panel projects and treated wood materials ○ Metals: separate metals by type; stack structural steel members according to size, type and length; remove/dispose 	<ul style="list-style-type: none"> ▪ providing appropriately marked containers/bins for controlling recyclable waste until removal from Project site; provide list of acceptable/unacceptable materials at each container/bin; inspect containers/bins for contamination and remove contaminated materials ▪ stockpiling processed materials on-site without intermixing with other materials by placing, grading, and shaping stockpiles to drain surface water; covering to prevent windblown dust ▪ stockpiling materials away from construction area and not storing within drip line of remaining trees ▪ storing components off the ground and
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

bolts, nuts, washer and other rough hardware

- Asphalt shingle roofing: separate organic and glass-fiber asphalt shingles and felts; remove/dispose nails, staple, accessories
- Gypsum: stack large clean pieces on wood pallets or in container and store in dry location; remove edge trim and sort with other metals; remove/dispose fasteners
- Acoustical ceiling panels/tile; stack large clean pieces on wood pallets or in container and store in dry location
- Metal suspension system: separate metal members, including trim and other metals and sort with other metals
- Carpet and pad: roll large pieces tightly after removing debris, trash, adhesive and tack strips; store clean, dry carpet and pad in closed container/trailer provide by carpet reclaimator/recycler
- Carpet tile: remove debris, trash and adhesive; stack on pallet and store clean, dry tiles in closed container/trailer provide by carpet reclaimator/recycler

- protecting from weather
 - removing recyclable waste from Owner's property and transporting to recycling receive or processor cf DNSY reference to overfilled bins
 - Specific provisions for recycling demolition waste:
 - Asphalt paving: grind asphalt to max 1-1.2 inch size; crush asphaltic concrete paving and screen to comply with requirements of Section 31 20 00 "Earth Moving" for use as general fill; break up and transport paving to asphalt - recycling facility Cf DSNY, not in DSNY; consistent with BUD
 - Concrete: remove reinforcement and other materials to be sorted with other metals; pulverize to max 1-1/2-inch size; and crush and screen to comply with requirements of Section 31 20 00 "Earth Moving" for use as satisfactory soil

Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

							<ul style="list-style-type: none"> ○ Piping: reduce piping to straight lengths and store by material and size; separate supports, hangers, valves, sprinklers and other components by material/size ○ Conduit: reduce conduit to straight lengths and store by material/size ○ Lamps: separate lamps by type and store per 40 CFR 273 • Specific provisions for recycling construction waste <ul style="list-style-type: none"> ○ Packaging by various types ○ Wood materials by various types including sawdust that comply with requires in Section 329300 "Plants" for use as organic mulch ○ Gypsum board clean gypsum large size and grind scrap using small mobile chipper/hammer mill; screen out paper after grinding and comply with requires in Section 329300 "Plants" for use as organic mulch ○ Paint seal containers and store by type • Specific provisions for waste disposal <ul style="list-style-type: none"> ○ Except for salvaged/recycled materials, remove waste materials from Project site and legally dispose in landfill/incinerator; unless otherwise specified, Contractor not to allow waste materials to 	<ul style="list-style-type: none"> for fill and subbase consistent with BUD and cf DSNY ○ Masonry: remove metal reinforcement, anchors and ties and sort with other metals and pulverize to max 3/4-inch size cf DSNY; clean and stack undamaged whole masonry units on wood pallets cf DSNY ○ Wood materials: sort and stack members per size, type and length; separate lumber, engineered wood products, panel projects and treated wood materials ○ Metals: separate metals by type; stack structural steel members according to size, type and length; remove/dispose bolts, nuts, washer and other rough hardware ○ Asphalt shingle roofing: separate organic and glass-fiber asphalt shingles and felts; remove/dispose nails, staple, accessories ○ Gypsum: stack large clean pieces on wood pallets or in container and store in dry location; remove edge trim and sort with other
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

							<p>accumulate on-site and to remove/transport in manner to prevent spillage on adjacent surfaces/areas</p> <ul style="list-style-type: none"> ○ Except for salvaged/recycled materials, remove waste materials and legally dispose of at designated spoil areas on Owner's property ??? ○ Burning: do not burn waste materials unless in designated areas on Owner's property provided obtain required permits and full time monitoring until extinguished 	<p>metals; remove/dispose fasteners</p> <ul style="list-style-type: none"> ○ Acoustical ceiling panels/tile; stack large clean pieces on wood pallets or in container and store in dry location ○ Metal suspension system: separate metal members, including trim and other metals and sort with other metals ○ Carpet and pad: roll large pieces tightly after removing debris, trash, adhesive and tack strips; store clean, dry carpet and pad in closed container/trailer provide by carpet reclamator/recycler ○ Carpet tile: remove debris, trash and adhesive; stack on pallet and store clean, dry tiles in closed container/trailer provide by carpet reclamator/recycler ○ Piping: reduce piping to straight lengths and store by material and size; separate supports, hangers, valves, sprinklers and other components by material/size
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

								<ul style="list-style-type: none"> ○ Conduit: reduce conduit to straight lengths and store by material/size cf DSNY lamps excluded • Specific provisions for recycling construction waste <ul style="list-style-type: none"> ○ Packaging by various types ○ Wood materials by various types including sawdust that comply with requires in Section 329300 "Plants" for use as organic mulch ○ Gypsum board clean gypsum large size and grind scrap using small mobile chipper/hammer mill; screen out paper after grinding and comply with requires in Section 329300 "Plants" for use as organic mulch cf DSNY paint excluded • Specific provisions for waste disposal <ul style="list-style-type: none"> ○ Except for salvaged/recycled materials/otherwise reused materials cf DSNY , remove waste materials from Project site and legally dispose in landfill/incinerator; unless otherwise specified,
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

								<p>Contractor not to allow waste materials to accumulate on-site and to remove/transport in manner to prevent spillage on adjacent surfaces/areas</p> <ul style="list-style-type: none"> ○ Except for salvaged/recycled materials, remove waste materials and legally dispose of at designated spoil areas on Owner's property ??? ○ Burning: do not burn waste materials unless in designated areas on Owner's property provided obtain required permits and full time monitoring until extinguished ○ Disposal: remove waste and dispose of at designated spoil areas on Owner's property cf DSNY found elsewhere and remove waste materials from Owner's property and legally dispose of them
<p>Important Features</p>	<ul style="list-style-type: none"> • Definition of C+D Waste refers to Solid Waste, which does not align with NYC DEC's Beneficial Use Designations (BUD); if a BUD then no longer deemed Solid Waste under NYC DEC law 	<ul style="list-style-type: none"> • With limited DEP exceptions, no mention of reuse • No mention of diversion from landfills • NYS DEC EDL, 02-12-21 (now codified), and 1995 DSNY interpretive memo attached to DEP specs, 	<ul style="list-style-type: none"> • Aligns with NYS DEC BUDs 	<ul style="list-style-type: none"> • DOT declares all paint removal waste, including abrasive grit material, recyclable or otherwise as hazardous regardless of whether sampling/analysis reveals material to be outside hazardous thresholds 	<ul style="list-style-type: none"> • Relation of CWMP to design team estimates in CWER • Diversion percentage formula = (total estimated waste diverted from landfill/total estimated waste produced by project) x 100 	<ul style="list-style-type: none"> • SCOs under <u>Disposal of Contaminated, Non-hazardous Materials and Waste</u> are not aligned with NYS DEC BUD reuses, resulting in less than optimum recovery and reuse of excavated soil 	<ul style="list-style-type: none"> • Disposal: includes removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in designated spoil areas on Owner's property ?? • Recycle: Recovery of demolition or construction waste for subsequent 	<ul style="list-style-type: none"> • Closely aligned with DSNY spec with differences noted above • Recycling revenues etc stay with Owner and don't go to Contractor

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<ul style="list-style-type: none"> Excavated soil excluded as permitted by NYS DEC BUDs Land-clearing debris is not considered construction, demolition or renovation Waste and is not to be included as contribution to Waste Diversion; NYS DEC BUDs include land clearing waste (excavated soil), so this does not align with NYC DEC's BUDs . Only on-site reuse permitted (i.e., transfer to another city capital project for direct reuse not allowed for diversion purposes); possibly due to 1995 DSNY interpretive memo of its transfer station rules, attached to DEP Infrastructure specification, aimed at prohibiting stockpiling on city streets for off-site uses 	<p>may be supporting an informal circular CDW economy based on these specs with no explicit waste management planning requirements (suggesting value in these materials)</p>		<ul style="list-style-type: none"> Costs related to non-hazardous construction debris is not measured for payment, and construction debris handling and disposal is considered incidental 	<ul style="list-style-type: none"> Items for diversion include land clearing debris; soil diversion may be achieved through onsite or offsite reuse and wherever possible reuse of excess excavated soils on site should be prioritized over offsite reuse (refer to 02 24-20 – Soil Sampling and Analysis for sampling and regulatory requirements (aligned with BUDs) Soil diversion percentage formula = (total estimated soil diverted from landfill / total estimated soil produced by project) x 100 Monies received for recycling and/or salvaged materials remain with Contractor except for items specifically identified in contract documents 	<ul style="list-style-type: none"> Reuse generally is limited due to application of requirements on capital funding, which requires the item to last at least 5 years, which does not seem to apply to reuse in other agency WMPs. A copy of the waste tracking document to be used to record all disposal activities (NYS DEC Part 360 Waste Tracking Document (for BUDs) included as sample example) Salvage missing from specifications and limited salvage is conducted by Parks Maintenance and Operations division to salvage above-ground items, such as benches and play equipment parts. 	<p>processing in preparation for reuse note: gets at interim processing facilities</p> <ul style="list-style-type: none"> Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility note: gets at BUD uses Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work note: also gets at BUD uses <p>Three definitions refer to recovery</p> <p>Waste reduction progress reports: concurrent with each Application for Payment question: is payment contingent on submission of report? Contractor to submit CWM-7 for construction waste and CWM-8 for demolition waste including: material category; generation point of waste; total waste quantity in tons; salvaged waste salvaged, both estimated and actual in tons; recycled waste, both estimated and actual in tons; total quantity of waste recovered (salvaged plus recycled) in tons; total quantity of waste recovered (salvaged plus recycled) as percentage of total waste also focus on recovered materials and relation to BUD uses</p> <p>Waste reduction calculations: before request for Substantial Completion question: is payment contingent on submission of these calculations? Contractor submits calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by Work</p> <p>Material ownership</p> <ul style="list-style-type: none"> Unless otherwise indicated, demolition and construction waste becomes Contractor's property 	
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- Historic items, relics, antiques and similar objects included by not limited to cornerstone and their contents, commemorative plaques and tablets, and other items of interest or value to the Owner that may be uncovered during demolition remain Owner's property; to be carefully salvaged to prevent damage and prompt return to Owner
- WRWP has some important provisions
 - Salvaged materials for reuse: describe methods for preparing salvaged materials before incorporation into the Work per Section 024116 "Structure Demolition" [links with BUD uses above](#)
 - Salvaged materials for sale to individuals and organizations: include list of names, addresses and telephone numbers [links with BUD uses above](#)
 - Salvaged materials for donation to individuals and organizations: include list of names, addresses and telephone numbers [links with BUD uses above](#)
 - Recycled materials: include list of [local](#) [question re non-local receivers as in whether this is intended to mandate local entities receivers and processors interim processor issue](#) and recycled material

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type each will accept; include list of names, addresses and telephone numbers
links with BUD uses above

- Disposed materials: indicate how and where materials will be disposed; include list of name, address and telephone number of each landfill and incinerator facility
- Handling and transportation procedures: include method that will be used for separating recyclable waste including container sizes and labeling and designated locations for performance of materials separation
this is where waste management practice mentioned elsewhere in other specs is located

Distinction between construction waste and demolition waste throughout via forms CWM-1, CWM-3, CMW-7 for construction waste and form CMW-2, CMW-4, CMW-8 for demolition waste

WMP includes cost/revenue analysis:

Cost/revenue analysis: indicate total cost of waste disposal as if there were no WMP and net additional costs or net savings resulting from implementing WMP; form CWM-1 for construction waste and form CMW-2 for demolition waste including: total waste quantity; estimated disposal cost (cost/unit) including transportation and

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tipping fees and costs of collection containers and handling for each waste type; total disposal costs with no WMP; revenue from salvaged materials; revenue from recycled materials; savings in transportation and tipping fees by donating materials; savings in transportation and tipping fees that are avoided; handling and transportation explicitly includes collection container costs for each material type; net additional cost or net savings from WMP

Quality Assurance
 Waste management conferences: Contractor to conduct conference(s) per Section 013100 "Project Management and Coordination" to review methods and procedures related to waste management including but not limited to: *** review and finalize procedures for materials separation and verify availability of containers and bids needed to avoid delay; review procedures for periodic waste collection and transportation to recycling and disposal facilities review waste management requirements for each trade

Training
 Training of workers, subcontractors, and suppliers on proper waste management practices appropriate for Work; distribute WMP to Construction Manager, Resident Engineer, other concerned project stakeholders, within 3 days of submittal return; distribute WMP to entities when they first work on site and review plan procedures and locations established for salvage, recycling and disposal

Specific handling procedures for Salvaged Items for various purposes; specific provisions for recycling D+C Waste with

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							Contractor guidance; specific provisions for recycling demolition waste by material involving contractor responsibilities that increase chances of interim processing; specific provisions for recycling construction waste involving contractor responsibilities; specific provisions for waste disposal with Contractor guidance specifically consistent with BUD reuse	
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Non-City Agency Waste Management Specifications				
	PANYNJ	SCA—Section S01524	NYCHA—Section 01-74-19	HPD—Section 017419
Applicability	PANYNJ facilities similar to NYC roadway infrastructure projects	All projects Originally for Green Schools Guide so we could meet the LEED credit requirement, but for non-Green Schools Guide SCA not running calculations of the percentages Green Schools Guide is based on LEED, since SCA needs to be equivalent or more stringent; GSG Credits on Waste Management, the credits of which are based on the LEED V4 credits “Construction and Demolition Waste Management Planning” and “Construction and Demolition Waste Management”	Maintenance and repair of NYCHA developments and offices ??? Asset & Capital Management projects NYCHA has established that project subject to specification will generate least amount of waste possible and that processes that ensure generation of as little waste as possible will be in place during entire contract duration.	Applies to salvaging, recycling and disposing of non-hazardous [demolition] [and] [construction] waste Works in conjunction with Section 024119 Selective Structure Demolition (= partial demolition); Section 040120 Maintenance of Unit Masonry; Section 040140 Maintenance of Stone Assemblies; and Section 042000 Unit Masonry Applies to General Contractors awarded projects by HPD, which do not an Architect and/or Engineer of Record; if Architect and/or Engineer of Record on the project, there will be a customized project-specific specification
Design Phase	<ul style="list-style-type: none"> • Perform material balance to identify material that will be disposed of and brought on site <ul style="list-style-type: none"> ○ material estimates from Construction Waste Estimate by in house or consultants ○ use CY as measure to support space planning and tonnage for disposal costs ○ space planning is necessary for stockpiling needs and to inform scheduling ○ including items that are reused directly in estimate through net cost may result in better bid ○ more opportunities to reuse a material stream, the greater the financial savings due to upfront cost of processing equipment • Identify on-site reuse opportunities <ul style="list-style-type: none"> ○ list of known opportunities to reuse materials ○ soil reuse is ideally considered in construction phasing and staging to take advantage of opportunities ○ concrete crushed on site can become RCA to be used in lieu of Aggregate Base Course (ABC) and Fines can be used for fill above water table to avoid interfering with groundwater pH; RCA can be used in lieu of ABC for temporary construction of roadways ○ Asphalt Millings can be used as sub-base in locations with lower performance requirements (less loading) • Challenges 			

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	<ul style="list-style-type: none"> ○ on site processing—ensuring space on site for crusher may result in a better bid price; contractors like having an on-site crusher for concrete as they may get a better price for RCA and steel separately ○ allocating space on or adjacent to project site, requires buy-in on incorporating best waste management practices as necessary cost ○ earthwork movement synergies must be identified early in master planning process ○ design staff lack of awareness that best waste management practices require planning and consideration 			
<p>Construction Phase</p>	<p><u>Contractor</u> General requirements to remove and divert C+D Waste</p> <ul style="list-style-type: none"> ● ensure the contract work employs processes that generate the least amount of waste possible due to all causes including error, inaccurate planning, breakage, mishandling, contamination and other factors, and by practicing efficient C+D materials (def = includes building materials, packaging and debris from construction, renovation, repair and demolition operations) management to minimize waste disposal by landfilling, incinerating or thermally destroying ● remove PANYNJ property all C+D Materials generated from the performance of the contract work, unless the material is deemed acceptable by the Engineer and approved for reuse on a PANYNJ construction site in accordance with the requirements of the contract or approved by the Engineer for stockpiling for future use by PANYNJ per contract requirements ● prepare supporting documentation for removal tickets in the form of an EDD (Electronic Data Deliverable = an electronic file populated for the purpose of transmitting and reporting data that can readily be imported into a data management system (e.g., CSV file format with certain requirements), which shall be an aggregated files for all removal tickets ● designate a C+D Material Management Coordinator to: <ul style="list-style-type: none"> ○ oversee, implement, monitor, track, prepare EEDs, and report on the status of the Contractor’s MMP ○ train subcontractors, material suppliers and workers on waste management procedures consistent with the approved MMP 	<p>Covers (1) recycling of non-hazardous demolition and construction waste and (2) disposal of non-hazardous demolition and construction waste Contractor responsible for recycling a minimum of 75% non-hazardous demolition and construction waste with a goal of reaching 95%</p> <p>Definitions</p> <ul style="list-style-type: none"> ● Construction waste: building and site improvement materials and other solid waste resulting from construction, remodeling, renovation or repair operations; includes packaging ● Demolition waste: building and site improvement materials resulting from demolition or selective demolition operations ● Disposal: removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities with jurisdiction ● Recycle: recovery of demolition or construction waste for subsequent processing in preparation for reuse ● Salvage: recovery of demolition or construction waste and subsequent sale or reuse in another facility <p>Performance Requirements (note—all documents, 3 copies)</p> <ul style="list-style-type: none"> ● Salvage/recycle requirements: SCA goal is to salvage and recycle as much non-hazardous demolition and construction waste as possible including materials listed on Exhibit 4 <p><u>Waste Management Plan (WMP):</u> Contractor to submit WMP within 14 days of Notice to Proceed</p> <ul style="list-style-type: none"> ● General: WMP to consist of waste identification, waste reduction work plan, and cost/revenue analysis; separate sections for demolition and 	<p><u>Contractor and Subcontractors</u> Contractor responsible for development and implementation of a Waste Management Plan (WMP) for project; all subcontractors will assist in development of WMP and collect, sort and deposit their waste and recyclable materials per WMP Contractor to submit WMP along with bid proposal WMP to contain:</p> <ul style="list-style-type: none"> ● Estimate of total proposed jobsite waste to be generated, including types and quantities ● Proposed alternatives to landfilling with a list of each materials proposed to be salvages, reused or recycled during project, proposed destination for each material, and projected amount (by weight or cubic yard) ● Materials handling procedures with descriptions of means by which waste materials identified in bullet above will be protected from contamination and description of mans to be employed in recycling materials in bullet above consistent with requirements for recycling processors ● List of documents to be provided in progress reports <p>Contractor to discuss WMP and implementation at pre-demolition meeting, pre-construction meeting, regular jobsite meetings and contractor toolbox meetings Contractor to submit, to administering Program Unit and to NYCHA’s Waste Management Coordinator, two (2) waste management reports in form of attachment (see Exhibit 4) to spec (which includes diversion rates per 1.03 E), (1) first at demolition completion and (2) second at project completion containing</p> <ul style="list-style-type: none"> ● For each recycled material <ul style="list-style-type: none"> ● Amount (in tons or cubic yards) ● Dates removed from job site ● Receiving party ● For each reused or salvaged material 	<p>Includes Enterprise Green Communities Criteria</p> <ul style="list-style-type: none"> ● Mandatory requirements (Criteria 6.3)—divert a minimum of 25% nonhazardous project construction, demolition, and site operations waste from landfills; calculated by weight or volume ● Project requirement required for certification points (Criteria 6.4)—divert range [35%, 45%, 55%, 65% 75%] of total nonhazardous project construction, demolition, and site operations waste from landfills; calculated by weight or volume <p>Definitions</p> <ul style="list-style-type: none"> ● Construction waste—building and site improvement materials and other solid waste resulting from construction, remodeling, renovation or repair operations and includes packaging ● Demolition waste—building and site improvement materials resulting from demolition or selective demolition operations ● Disposal—remove off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfills or incinerator acceptable to authorities with jurisdiction ● Recycle—recovery of demolition or construction waste for subsequent processing in preparation for reuse ● Salvage—recovery of demolition or construction waste and subsequent sale or reuse in another facility ● Salvage and reuse—recovery of demolition or construction waste and subsequent incorporation into the Work <p>Performance requirements</p> <ul style="list-style-type: none"> ● General—achieve end-of-project rates for salvage/recycling of [50] [75] [insert number] percent by weight of non-hazardous solid waste generated by Work ● With list of materials to be recycled or salvaged Contractor to submit <u>Waste Management Plan (WMP)</u> according to ASTM E 1609 within [7] [30] [insert number]

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<ul style="list-style-type: none"> • achieve a C+D material landfill diversion rate of 90% by weight of each of the following C+D material streams generated by the Work <ul style="list-style-type: none"> ○ asphalt ○ concrete ○ steel ○ aggregate base course ○ soil • achieve a C+D material landfill diversity rate of 75% by weight of the remaining C+D material streams not indicated above <p>Contractor to deliver C+D Material Management Plan (MMP) within 7 days of issuance of Work Order and prior to Work commencement identifying</p> <ul style="list-style-type: none"> • C+D Material Management Coordinator • material streams and estimated quantities anticipated to be generated by the work • means and methods of storing and/or segregating material streams on site, handling and packaging materials for off-site transportation, intended disposition methods, intended receiving facilities and transporters for each C+D material stream submitted to Engineer for approval per contract (with Engineer approval of facilities) • contractor’s calculations showing that based on estimated quantities above the landfill diversion rates will be achieved • approval of a MMP does not relieve Contractor of responsibility for compliance, which require separate submission of information related/included in MPP and with applicable environmental regulations • MPP at minimum to include: <ul style="list-style-type: none"> ○ C+D Material Management Coordinator information ○ C+D Material Stream Identification, Quantification and Receiving Facilities information ○ C+D Material Management Means and Methods ○ C+D Material Documentation and Tracking Procedures ○ C+D Material Management Implementation and Monitoring • Contractor to submit monthly C+D Material Management Submittals in EDD format concurrent with each monthly payment request; failure to submit EDDs on monthly basis may result in withholding any payment per Engineer discretion <ul style="list-style-type: none"> ○ C+D Material Management Summary Progress Reports (detail not included) <p>EDDs for Removed Materials (detail not included)</p>	<p>construction waste, indicating quantities by weight or volume, using same units of measure throughout WMP</p> <ul style="list-style-type: none"> ○ <i>Default is that all money received by contractor to remain with contractor; if any money to go to SCA specification must revised to provide for that</i> <ul style="list-style-type: none"> • Waste Identification to indicate anticipated types and quantities of demolition, site-clearing and construction waste generated by work, including estimated quantities and assumption for estimates • Waste Reduction Work Plan to list each type of waste and whether it will be salvaged, recycled or disposed of in landfill or incinerator; include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures <ul style="list-style-type: none"> ○ For recycled materials include list of local receivers and processors and type of material they will accept plus contact information ○ For disposed materials indicate how and where materials will be disposed of plus contact information ○ For handling and transportation procedure include method of separating recyclable waste including sizes of containers, container labelling, and project site designated location for materials separation • Cost/revenue analysis indicates total cost of waste disposal as if there were no WMP and net additional cost or net savings resulting from implementing WMP including: total waste quantity; estimated cost of disposal per unit and including hauling and tipping fees and cost of collection containers for each waste type; total cost of disposal with no waste management; revenue from recycled materials; savings in hauling and tipping fees that are avoided; handling and transportation costs, including cost of collection containers for each waste type; net additional cost or net savings from WMP <p><u>Waste Reduction Progress Reports:</u> Concurrent with each application for payment, contractor to submit report with following information: material category; generation point of waste; total quantity of waste in tons or by volume; total quantity of waste recovered (salvaged plus recycled), both estimated and actual in</p>	<ul style="list-style-type: none"> • Amount estimated (in tons or cubic yards) • Description of intended or actual use • For each landfilled material <ul style="list-style-type: none"> • Amount (in tons or cubic yards) of material landfilled from project • Dates removed from jobsite • Identity of transfer station or landfill • Documentation to include legible copies of on-site logs, weight tickets and receipts; receipts to be from recycling and/or disposal site operators that can legally accept the materials for purpose of reuse, recycling or disposal; if mixed C+D sorted off-site documentation from processor to include average percentage of mixed C+D waste recycled; documentation to be NYS DEC Part 360 report (for BUDs) or letter containing same information if NYS DEC Part 360 report not available; if Contractor fails to submit documentation related to WMP or as required by law, NYCHA may withhold finds under the contract, default the Contractor and report as failure to comply with contract to Mayor’s Office of Contract Services; Contractor to retain original documents for project life plus 7 years • Contractor to notify Project administrator as soon as possible when Contractor knows it cannot fulfill diversion rate estimated in WMP and provide documentation showing good faith effort to achieve diversion rate including record of contacts with C+D recycling businesses including date and time of contracts, name and telephone of business and contract; and results of contact <p>Contractor responsible for providing containers and removal of all waste, non-returned surplus materials, and site rubbish per WMP; overseeing and documenting WMP results</p> <p>Subcontractors responsible for collecting, sorting, and depositing their waste, non-returned surplus materials, and site rubbish per WMP</p>	<p>days from date of [commencement of Work] [Notice to Proceed] [Notice of Award] consisting of:</p> <ul style="list-style-type: none"> • Waste identification, waste reduction work plan, and cost/revenue analysis; to distinguish between demolition and construction waste; can use weight of volume measurements so long as consistent throughout WMP • Waste identification to include anticipated types and quantities of [demolition] [site clearing] and [construction] waste generated by the Work with estimated quantities and assumptions for estimates • Waste reduction work plan to list each type of waste and indicate whether salvaged, recycled or disposed of in landfill or incinerator; includes points of waste generation, total quantity of each type of waste; quantity for each means of recovery; handling and transportation procedures <ul style="list-style-type: none"> • For salvaged materials for reuse in Project, describe methods for preparing salvaged materials before incorporation into Work • For salvaged materials for sale, list names, addresses and phone numbers • For salvaged materials for donation, list names, addresses and phone numbers • For recycled materials, list <i>local</i> receivers and processors and type of recycled material each will accept plus names, addresses and phone numbers • For disposed materials, indicate how and where materials will be disposed of plus names, addresses and phone numbers of each landfill and incinerator facility • For handling and transportation procedures, include method to be used for separating recyclable waste including container sizes, labelling and designated location where material separation will be performed • Additionally elsewhere in spec <ul style="list-style-type: none"> • Analysis of estimated jobsite waste to be generated by types and quantities of <i>compostable</i>, recyclable and salvageable materials • Means and methods to achieve 25 {35, 45, 55, 65, 75} % diversion for <i>compostable</i>, recyclable and salvageable materials, including those that may be donated to charitable organizations • Identification of carpet product’s composition (polymer, nylon or polypropylene) • Identification of recycling contractors and haulers proposed for use in the project and locations accepting construction waste materials or entities providing related services • Carpet reclamation plan per Carpet Reclamation Program
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		<p>tons or by volume; total quantity of waste recovered (salvaged plus recycled) as percentage of total waste</p> <p><u>Waste Reduction Calculations</u>: Before Substantial Completion request, submit calculated end-of-project rates for salvage, recycling and disposal as percentage of total waste generated by work on form available on SCA website</p> <p><u>Recycling and Processing Facility Records</u> in form of manifests and weight tickets for receipt and acceptance of recyclable waste by facilities licensed to accept them</p> <p><u>Landfill and Incinerator Disposal Records</u> in form of manifests and weight tickets for receipt and acceptance of waste by facilities licensed to accept them</p> <p><u>Sustainability Submittal</u>: Contractor to submit signed Construction Waste Certification Form (available on SCA website) tabulating total waste material, quantities diverted, and means by which diverted</p> <p><u>Statement of Refrigerant Recovery</u> (not detailed)</p> <p><u>Implementation of WMP</u></p> <ul style="list-style-type: none"> • General: Contractor to implement WMP as approved by SCA; provide handling, containers, storage, signage, transportation and other items as required to implement WMP during contract duration; comply with Section S01500 Temporary Facilities and Controls for operation, termination and removal requirements • Waste Management Coordinator: Contractor to designate site staff person(s) as waste management coordinator, who shall be present at project site full time for project duration, to be responsible for implementing, monitoring and reporting WMP status • Training: Contractor to train workers, subcontractors and suppliers on proper waste management procedures as appropriate for work on project site; distribute WMP to everyone concerned within 3 days for submittal return (approved WMP?); distribute WMP to entities when they first begin work on-site and review WMP procedures and locations established for salvage, recycling and disposal • Site Access and Temporary Controls: Contractor to conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways and other adjacent occupied and used facilities; designate and label specific project site areas necessary for separating materials to be salvaged, recycled, reused, donated and sold; comply with Section S01500 Temporary Facilities 		<p>Waste Management Conference at Project site to comply with Section 013100 Project Management and Coordination Construction WMP (CWM Plan) Implementation</p> <ul style="list-style-type: none"> • General—Contractor to implement approved WMP, including providing handling, containers, storage, signage, transportation and other items required to implement WMP during Contract duration • Waste management coordinator—Contractor to engage a waste management coordinator responsible for implementing, monitoring, and reporting waste management work plan status; [shall be present at Project site full-time for Project duration] • Contractor to provide training and coordination—provide copies of approved CWM Plan to all on-site supervisors, each subcontractor, owner and architect; contractors, subcontractors, and other entities responsible for implementing the CWM Plan must return a signed agreement stating they will comply; provide on-site instruction of appropriate separation, handling, recycling, salvage, reuse and return methods to be used by all entities at appropriate Project stages; include CWM on agenda of all required regularly scheduled construction meetings • Contractor to provide designated facilities of commingling or separation and storage of materials per approved CWM Plan for use by all contractors and installers with signage and graphics, barriers and enclosures; adequate space. convenient to subcontractors, for pick up and delivery; keeping areas neat and clean to prevent contamination; comply with Section 015000 Temporary Facilities and Controls for dust, dirt, environmental protection and noise <p>Specific and detailed requirements for <u>salvaging demolition waste</u>, including optional provisions permitting/not permitting sale and donation and instructions for salvaged items for owner's use; <u>recycling procedures</u> including provision that revenues, savings, rebates, tax credits and other incentives received for recycling waste materials accrue to Contractor; <u>disposal of waste</u> requirements that include prohibited methods for meeting Enterprise Green Communities Criteria including burning or incinerating on or off project site (incineration facilities are permitted elsewhere in spec), burial on project site except for fill; disposal other than in an official landfill</p> <p>Concurrent with each Application for Payment, Contractor to submit report (Waste Management Progress Report?) with material category; generation point of waste; total quantity of waste in tons; quantity of waste salvaged and recycled both estimated and actual in tons; total quantity of waste recovered (salvaged and recycled) in tons; total quantity of waste recovered (salvaged and recycled) in tons as a percentage of total waste</p>
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

		<p>and Controls for controlling dust and dirt, environmental protection and noise control</p> <p><u>Quality Assurance:</u> refrigerant recovery technician qualifications; contractor to comply with hauling and disposal regulations of authorities having jurisdiction; contract to conduct Waste Management Conference at project site</p> <ul style="list-style-type: none"> Waste Management Conference to review methods and procedures related to waste management including but not limited to: review and discussion of WMP including responsibilities of Waste Management Coordinator; review of requirements for documenting quantities of each type of waste and its disposition; review and finalizing procedures for materials separation and verification of container and bin availability needed to avoid delay; review procedures for periodic waste collection and transportation to recycling and disposal facilities; review waste management requirements for each trade <p><u>Reuse of recycled concrete and/or masonry permitted</u> in work in conjunction with Section 20260; such reuse is permitted as acceptable, at SCA option, for use in backfilling building demolition that will subsequently be removed as part of project or future project</p> <p><u>Recycling Demolition and Construction Waste- General:</u> recycle paper and beverage containers used by on-site workers; recycling incentives, such as revenues, savings, rebates, tax credits and other incentives received for recycling waste material shall accrue to contractor; procedures include separating recyclable waste from other waste materials, trash and debris and separating recyclable waste by type at site to maximum extent practical by providing appropriately marked containers/bins for controlling recyclable waste until removed from site and including list of acceptable and unacceptable materials at each container/bin; stockpiling processed materials on site away from construction area and not within drip line of remaining trees, without intermixing with other materials by placing, grading, and shaping stockpiles to drain surface water and covering to prevent windblown dust; storing components off the ground and protecting from weather; removing recyclable waste off SCA property and transport to recycling receiver or processor</p> <p><u>Recycling Demolition Waste</u></p> <ul style="list-style-type: none"> Concrete: remove reinforcement and other metals from concrete and sort with other metals; pulverize to maximum of 4" size; crush concrete and screen to comply with requirements of Section 02060 Building Demolition 		<p>Before request for Substantial Completion, Contractor to submit calculated end-of-Project rates for salvage, recycling and disposal as percentage of total waste generated by Work</p> <p>Other records</p> <ul style="list-style-type: none"> Records of donations indicating receipt and acceptance of salvageable waste donated to individuals and organizations noting tax exemption status Records of sales indicating receipt and acceptance of salvageable waste donated to individuals and organizations noting tax exemption status Recycling and processing facility records indicating receipt and acceptance of recyclable waste by licensed facilities including manifests, weight tickets, receipts and invoices Landfill and incinerator disposal records by licensed facilities including manifests, weight tickets, receipts and invoices Contractor's waste management coordinator's qualifications <p>At construction completion and before contract close-out, contractor to send Final Waste Management Report, in electronic format, with all information required in Waste Management Progress Reports; legible copies of on-site logs, manifests, weight tickets and receipts; final calculations including total amount of diverted construction and demolition waste and the total amount of land-filled (but not incinerated) waste</p>
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Comparative Waste Management Practices to Support Increased CDW Recovery and Reuse (Hazardous Waste Provisions Excluded)

		<ul style="list-style-type: none"> • Masonry: remove metal reinforcement, anchors and ties from masonry and sort with other metals; pulverize to maximum of 4" size; crush masonry and screen to comply with requirements of Section 02060 Building Demolition • Asphaltic concrete: crush to size required by recycling facility; separate concrete debris from asphalt • Wood materials: sort and stack members according to size, type and length; separate lumber, engineered wood products, panel products and treated wood materials • Metals: separate metals by type; stack structural steel members according to size, type of member and length; remove and dispose bolts, nuts, washers, and other rough hardware • Asphalt shingle roofing: separate organic and glass-fiber asphalt shingles and felts; remove and dispose nails, staples and accessories • Gypsum board: stack large clean pieces on wood pallets stored in dry location; remove and dispose fasteners • Acoustical ceiling panels and tile: stack large clean pieces on wood pallets stored in dry location; separate suspension system, trim and other metals from panels and tile and sort with other metals • Carpet: roll large pieces tightly after removing debris, trash, adhesive and tack strips; store clean, dry carpet in closed container or trailer provide by Carpet Reclamation Agency or carpet recycler • Plumbing fixtures: separate by type and size • Piping: reduce piping to straight lengths and store by type and size; separate supports, hangers, valves, sprinklers and other components by type and size • Lighting fixtures: separate lamps by type and protect from breakage • Electrical devices: separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers and other devices by type • Conduit: reduce conduit to straight lengths and store by type and size <p><u>Recycling Construction Waste</u></p> <ul style="list-style-type: none"> • Packaging: for cardboard and boxes, break down packaging into flat sheets and bundle and store in dry location; for polystyrene, separate and bag materials; for pallets, as much as possible require deliveries using pallets to remove pallets from project site and for those that remain on-site break down into component wood pieces and 		
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		<p>comply with wood recycling requirements; for crates, break down into component wood pieces and comply with wood recycling requirements</p> <ul style="list-style-type: none"> • Wood materials: for clean cut-offs of lumber, grind or chip into small pieces; for clean sawdust, bag sawdust that does not contain painted or treated wood • Gypsum: stack large clean pieces on wood pallets and store in dry location; grind pieces of clean gypsum board using small mobile chipper or hammer mill; screen out paper after grinding <p><u>Disposal of Waste</u></p> <ul style="list-style-type: none"> • General: except for items or materials to be salvaged, recycled, or otherwise reused, contractor to remove waste from project site and legally dispose them in landfill or incinerator acceptable to authorities having jurisdiction; except as otherwise specified contractor not to allow waste materials that are to be disposed accumulate on-site; contractor to remove and transport debris in manner to prevent spillage on adjacent surfaces and areas • Burning waste materials prohibited • Contractor to transport waste materials off SCA property and legal dispose them <p>Procedures describe “source separated” method for handling recycled waste; if space at project site is limited, SCA can revise this specification to allow “co-mingled” method, which takes less space because it permits all recyclable waste to be place in a single container separated later at recycling facility</p> <p>For projects involving work in an existing occupied building (such as related to an Addition project), contractor shall coordinate with SCA Industrial and Environmental Hygiene Department on requirements for storage, testing and disposal or recycling of demolition waste</p>		
<p>Important Features</p>	<ul style="list-style-type: none"> • 90% diversion for enumerated items and 75% for rest • EDDs for monthly C+D Material Management Submittals (removal tickets) • Monthly EEDs with payment requests and ability of Engineer to withhold payment if not submitted with payment request 	<ul style="list-style-type: none"> • Contractor responsible for recycling a minimum of 75% non-hazardous demolition and construction waste with a goal of reaching 95% • Waste management conference gets at means and methods details on site; special section on training in implementation • Submission of Waste Reduction Project Reports is concurrent with each application for payment • Implementation of WMP especially good with detail that reflects how a project works; see detail in Recycling Demolition and Construction Waste-General, Recycling Demolition Waste and Recycling Construction Waste • Cost/revenue analysis with net additional cost or net savings from WMP 	<ul style="list-style-type: none"> • Specifically includes subcontractors in WMP development and implementation • Specifically includes reused or salvaged materials • Refers specifically to NYS DEC Part 360 form (for BUDs) • Retention period of documents 7 years after project completion • Provides for notice of anticipated diversion rate failure with documentation showing good faith efforts • Failure of Contractor to submit documentation related to WMP or as required by law may lead NYCHA to withhold finds under the contract, default the Contractor and report as failure to 	<ul style="list-style-type: none"> • Waste Management Plan (WMP) according to ASTM E 1609; includes cost/revenue analysis • Specifically includes reuse; salvage; and salvage and reuse, which is for and subsequent incorporation into the Work • Mandatory requirements (Criteria 6.3)—divert a minimum of 25% nonhazardous project construction, demolition, and site operations waste from landfills; calculated by weight or volume • Project requirement required for certification points (Criteria 6.4)—divert range [35%, 45%, 55%, 65% 75%] of total nonhazardous project construction, demolition, and site operations waste from landfills; calculated by weight or volume

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		<ul style="list-style-type: none"> • Incineration permitted and not limited to facilities complying with European standards as compared to DDC spec for public buildings • Default assumptions that can be changed at SCA option : payments to contractor stay with contractor; “source separated” method 	<p>comply with contract to Mayor’s Office of Contract Services</p>	<ul style="list-style-type: none"> • Means and methods to achieve 25 {35, 45, 55, 65, 75} % diversion for <i>compostable</i>, recyclable and salvageable materials, including those that may be donated to charitable organizations • WMP for recycled materials, list <i>local</i> receivers and processors—unclear if <i>local</i> is a limiting factor • <i>Compostable</i> added to recyclable and salvageable materials in text • Specifically counts donations to charitable organizations • Contractor to send reports on current waste metrics above with each Application for Payment; no mention of what happens if reports not sent with Application for Payment • At construction completion and before contract close-out, contractor to send Final Waste Management Report, <i>in electronic format</i> • Construction WMP (CWM Plan) Implementation procedures very detailed and includes waste management coordinator, training and coordinator, facilities management; also includes specific procedures and requirements for salvaging, recycling and disposal • Recycling procedures include provision that revenues, savings, rebates, tax credits and other incentives received for recycling waste materials accrue to Contractor
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