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SUSTAINMENT

MAR 16 2020

MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF THE ARMY
(ENERGY AND SUSTAINABILITY)
DEPUTY ASSISTANT SECRETARY OF THE NAVY
(INSTALLATIONS AND FACILITIES)
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE
(ENVIRONMENT, SAFETY AND INFRASTRUCTURE)
STAFF DIRECTOR, DEFENSE LOGISTICS AGENCY
(ENVIRONMENTAL MANAGEMENT)

SUBJECT: Revision to the Department of Defense Integrated Solid Waste Management Metrics

The Department of Defense (DoD) is committed to an Integrated Solid Waste Management (ISWM) approach that effectively manages solid waste generation, reduction, diversion, and disposal while maintaining compliance with Federal and DoD requirements. The Department's ISWM approach involves examining the solid waste stream and current market opportunities to cost effectively minimize waste disposal. DoD has adopted the following environmental waste management hierarchy: 1) source reduction, 2) sustainable procurement, 3) reuse, 4) donation, 5) recycling, 6) composting, and 7) waste-to-energy before incineration or landfilling.

To demonstrate the Department's commitment to ISWM, DoD is updating existing solid waste objectives. The updated objectives continue diversion, promote reduction in waste generation, optimize cost avoidance, and minimize environmental impacts from solid waste disposal. The objectives are:

1) Divert 40 percent of non-hazardous solid waste (excluding construction and demolition (C&D) debris) from incineration and landfilling;
2) Divert 60 percent of C&D debris from incineration and landfilling; and
3) Reduce total annual waste generation by 2 percent of total waste each year through FY 2025.

DoD Components are required to continue annual Environmental Management Review reporting to include this information beginning in FY 2020 per Attachments 1 and 2.

Thank you in advance for your support. If your staffs require further information, my point of contact is Patrick Kelly at 571-372-6904 or patrick.m.kelly140.ctr@mail.mil.

Maureen Sullivan
Deputy Assistant Secretary of Defense
(Environment)

Attachments:
As stated

Attachment 1:
Integrated Solid Waste Management Metrics

A. Goal

1. Minimize environmental impacts of solid waste disposal.
2. Implement an integrated solid waste management program that reduces waste generation and increases diversion.
3. Optimize cost avoidance and economic benefit of integrated solid waste diversion.

B. Metrics/Goal

1. Per capita generation of non-hazardous solid waste (excluding construction and demolition (C&D) debris); diversion rate of non-hazardous solid waste (excluding C&D debris); diversion rate of C&D debris; total annual waste generation reduction of 2% each year through FY 2025; and economic benefit of solid waste diversion.

C. Activities That Must Report

1. All installations (including installations outside the United States per DoDI 4715.05) that generate non-hazardous solid waste. This includes government-owned, contractor-operated (GOCO) installations and stand-alone National Guard and Reserves Centers. Installations generating an average of less than one ton solid waste (SW) per day on an annual basis do not need to report. Host installations will report for tenants.

D. What to Report:

1. **Non-Hazardous Solid Waste Excluding C&D Debris:**
   a. Quantity of non-hazardous solid waste (excluding C&D debris) generated (UNIT– Tons).
   b. Quantity of non-hazardous solid waste (excluding C&D debris) diverted from a disposal facility (UNIT – Tons). Diversion methods include reuse, donation, recycling, composting, mulching and waste-to-energy (WTE).
   c. Quantity of non-hazardous solid waste (excluding C&D debris) entering a disposal facility (UNIT – Tons). Disposal facilities include landfills and incinerators.
   d. Diversion rate of non-hazardous solid waste (excluding C&D debris) (UNIT – Percent).
   e. Residential and non-residential installation population (UNIT – Number of people).
   f. Per capita generation rate of non-hazardous solid waste (excluding C&D debris) (UNIT – pounds/person/day).

2. **Non-Hazardous Solid Waste – C&D Debris:**
   a. Quantity of C&D debris generated (UNIT – Tons).
   b. Quantity of C&D debris diverted from a disposal facility (UNIT – Tons). Diversion methods include reuse, donation, recycling, composting, mulching, and WTE.
   c. Quantity of C&D debris entering a disposal facility (UNIT – Tons). Disposal facilities include landfills (both solid waste and inert) incinerators.
   d. Diversion rate of C&D debris (UNIT – Percent).

3. **Economic Benefit of Integrated Solid Waste Management Programs (UNIT – $K ($000)):**
    a. Potential Disposition Cost (PDC) if all waste (including C&D debris) were to be disposed (landfilled or incinerated) rather than diverted.
    b. Actual Disposition Cost (ADC) of integrated solid waste management.
    c. Diversion proceeds (gross).
    d. Economic benefit (PDC-ADC).

4. **Total quantity of composted material (UNIT – Tons).**

5. **Quantity of various recyclable commodity groups (UNIT – Tons) including:**
    a. Expended small arms cartridge cases (ESACC) recycled through an installation Qualified Recycling Program (QRP).
    b. ESACC recycled through Defense Logistics Agency (DLA) Disposition Services.
    c. All other scrap metal (excluding C&D).

6. **Quantity of non-hazardous solid waste (excluding C&D debris) sent to WTE (UNIT – Tons).**

7. **Quantity of non-hazardous solid waste (excluding C&D Debris and WTE facilities) incinerated (UNIT – Tons).**

8. **Total quantity of non-hazardous solid waste (including C&D debris) landfilled (UNIT – Tons).**

9. **Qualified Recycling Program (FY Basis, UNIT – $K ($000)):**
    a. Gross sales proceeds from direct sales.
    b. Net proceeds (amount after QRP expenses paid).
    c. Total sales proceeds expended this fiscal year for pollution abatement; energy conservation; occupational safety and health activities; and morale, welfare, and recreation projects.

E. Reporting Period: Fiscal Year

Integrated Solid Waste Management Metrics Definitions

Activity. An independent command performing a specific mission. Each activity has a unique Unit Identification Code (UIC).

Actual Disposition Cost (ADC). The cost to perform integrated solid waste management. ADC = collection and transportation costs + disposal cost + diversion cost - diversion proceeds.

Collection and Transportation Costs. The cost to collect and transport wastes and materials that are destined for either disposal or diversion. The collection and transportation costs include labor, maintenance, and other operational expenses associated with collection and transportation of all waste/material.

Composting. A controlled biological decomposition process for managing the degradation of plant and organic wastes to produce a useful product such as a mulch or soil conditioner**.**

Construction and Demolition (C&D) Debris. Waste derived during the construction, renovation, demolition or deconstruction of residential and commercial buildings and their infrastructure. C&D waste typically includes concrete, wood, metals, gypsum wallboard, asphalt, and roofing material.

Disposal Cost. The cost to dispose of wastes at a landfill, incinerator, or other disposal facility. Disposal cost includes labor, maintenance, tipping fees (e.g., transportation, landfill, fuel surcharges, and other fees associated with disposal), and other operational expenses at the waste disposal facility. Disposal cost excludes cost for collection and transportation to a disposal facility.

Diversion. An activity that redirects materials that might otherwise be placed in the solid waste stream, including diversion to WTE facilities. Diversion also includes reuse, donation, recycling, composting, or mulching.

Diversion Cost. The cost to divert materials from disposal facilities. Diversion cost is solely attributable to the processing and marketing of material destined for diversion and excludes collection and transportation costs to manage materials destined for diversion. Diversion cost includes labor, maintenance, and other operational expenses for diversion.

Diversion Proceeds. The income/earnings from the sale of diverted material.

Economic Benefit of Integrated Solid Waste Management Program. The cost avoided by diverting materials rather than disposing of them. Economic benefit equals Potential Disposition Cost minus Actual Disposition Cost. When the collection and transportation costs for the diverted material are about the same whether or not they are diverted, the Economic Benefit equals (diverted quantity x disposal tipping fee) - diversion cost + diversion proceeds. A positive economic benefit means that the cost to dispose of the diverted material is greater than the cost to divert the material.

Expended Small Arms Cartridge Casings (ESACC). Cartridge cases from small arms ammunition (i.e., ammunition without projectiles that contain explosives, other than tracers), that is .50 caliber (12.7 mm) or smaller, or for shotguns used in live-fire training or testing and collected after use during operations. ESACC are sometimes referred to as "brass cartridges" or "fired cartridge cases."

Incineration. Burning under controlled conditions, converting organic materials to carbon dioxide and water.

Incinerator. A device that burns solid waste under controlled conditions, ideally converting organics to carbon dioxide and water.

Installation (or Host). A base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the Secretary of a military department or the Department of Defense (DoD). This includes any leased facility where a military department or DoD activity has real property maintenance requirements, Government-owned, Contractor-operated (GOCO) installations, and stand-alone National Guard and Reserve Centers. Such term does not include any facility used primarily for civil works, rivers, and harbors, projects, or flood control projects. Installations outside the United States are defined in DoDI 4715.05. Installations outside the United States do NOT include temporary, contingency operation, or deployment support facilities. Military departments or DoD activities that are located within the confines of another are considered to be tenants. Tenants on installations should report through their host installation.

Installation Population. The number of military and civilian personnel, including their families, living or working at an installation as defined by the installation public affairs office. It should include contractors. Privatized Military Family Housing (MFH) generated recyclables are QRP eligible, but not mandatory. The QRP manager should review contract between privatized MFH management and the DoD Component for options to include reporting privatized MFH. If QRP is processing privatized MFH recyclables and including them as an installation diversion, both disposal and diverted tonnages must be reported.

Integrated solid waste management (ISWM). A comprehensive approach to managing materials and non-hazardous solid waste (including C&D debris waste) that encompasses waste prevention, diversion, composting, and methods of disposal. ISWM determines the most cost-effective, energy-efficient, and least polluting ways to deal with the various segments of, and the items typically found in, an installation or facility solid waste stream.

Landfill. A discrete area of land or an excavation, on or off an installation, that receives waste and that is not a land application unit, surface impoundment, injection well, or waste pile. A solid waste landfill also may receive other types of waste, such as commercial solid waste or industrial waste.

Non-Hazardous Solid Waste. Solid waste that does not meet the definition of hazardous waste. Refuse, garbage, scrap, sludge, and discarded waste that is routinely landfilled or

incinerated. The waste is generally non-hazardous but may contain household hazardous waste, both hazardous and non-hazardous construction and demolition waste, lead acid batteries, ethylene glycol based antifreeze, and used motor oil.

Potential Disposition Cost (PDC). The estimated cost for disposal of all wastes/materials in the absence of diversion. PDC = collection and transportation costs + disposal cost + diverted material disposal cost. The collection and transportation costs are the actual costs to collect and transport the wastes for disposal plus the estimated costs to collect and transport the diverted materials for disposal. The diverted material disposal cost equals the diverted quantity times the disposal tipping fee.

Qualified Recycling Program (QRP). Pursuant to 10 U.S.C. 2577, an organized operation that requires concerted efforts to divert or recover scrap or waste, as well as identify efforts to identify, segregate, and maintain the integrity of the recyclable materials in order to maintain or enhance their marketability. If the program is administered by a DoD Component, a QRP includes adherence to a control process providing accountability for all materials processed through the program operations.

QRP Fiscal Year Costs. The expenses paid for the QRP operation. These expenses should include all costs for QRP labor, transportation, and maintenance.

QRP Gross Sales Proceeds. Annual revenues that are generated by the QRP operation from direct sales and turn-ins from DLA. This does not include recycling revenues that do not go to the QRP, such as DEMIL material that does not qualify for the QRP.

QRP Net Proceeds. Revenue after QRP expenses are paid. This would be gross proceeds minus the costs on an annual basis.

Recycling. The series of activities, including collection, separation, and processing, by which products or other materials are diverted from the solid waste stream for use in the form of raw materials in the manufacture of new products sold or distributed in commerce, or the reuse of such materials as substitutes for goods made of virgin materials, other than fuel.

Reuse. The use of a product or material again for the same purpose, in its original form or with little enhancement or change.

Solid Waste. Garbage, refuse, sludge, and other waste materials not excluded by federal law or regulations, as defined in Section 6903 of Title 42 U.S.C. and Section 261.2 of Title 10 CFR. Solid waste does not include materials that are hazardous waste.

Unit. The standard of measurement (e.g., tons, percent).

Waste-to-energy (WTE). Conversion of waste materials into usable heat, electricity, or fuel through a variety of processes.

WTE incineration. A disposition (or diversion) method where solid waste is burned to generate steam or electricity.

Attachment 2:
Integrated Solid Waste Management Metric Data Format

Data Elements	**FY 2020**
Solid Waste (w/o C&D) Diverted (R) includes Waste-to-Energy (WTE) (Tons)	
Solid Waste (w/o C&D) Disposed (L) does not include WTE (Tons)	
Total Solid Waste (w/o C&D) Generated (R+L) (Tons)	
Solid Waste (w/o C&D) Diversion Rate = [R/(R+L)]x100	
Solid Waste Tons to Pounds Conversion (SWp) = (R+L)x2000	
Installations Population (P)	
Per Capita Generation SW w/o C&D = (SWp/P)/365 (lbs/person/day)	
C&D Debris Diverted (CDR) (Tons)	
C&D Debris Disposed (CDL) (Tons)	
Total C&D Debris Generated (CDR+CDL)	
C&D Diversion Rate [CDR/(CDR+CDL)]x100	
Expended Small Arms Cartridge Cases (ESACCS) recycled by QRP (Tons)	
ESACCS recycled through DLA Disposition Services (Tons)	
Other scrap metal recycled (Tons) (excluding C&D)	
Composted materials (Tons)	
Total Solid Waste (excluding C&D) sent to WTE facilities (Tons)	
Total Solid Waste (excluding C&D and WTE) incinerated (I) (Tons)	
Total Solid Waste landfilled (L-I) (Tons)	
Total Generated SW and C&D	
Total tons diverted SW and C&D	
Overall Diversion Rate, SW and C&D [(R+CDR)/(R+L+CDR+CDL)]x100	
Potential **Disposition** Cost (P**D**C) $K*	
Actual **Disposition** Cost (A**D**C) $K*	
Diversion proceeds (gross) $K	
Economic Benefit of SW Diversion (PDC-ADC) $K*	
QRP gross sales proceeds (FY, $K)	
QRP net proceeds (FY, $K)	
QRP total sales proceeds expended for pollution abatement; energy conservation; occupational safety and health; and morale, welfare, and recreation projects (FY, $K)	