

FORT CARSON INSTALLATION SUSTAINABILITY GOAL PLAN GOAL: ZERO WASTE (ZW)

Goal Statement:

Total weight of solid and hazardous waste disposed of is reduced to zero by 2020, and every year thereafter.

Long-Term Vision

The long-term vision for this Installation Sustainability Plan is two-fold:

1. Ensure that the total weight of solid waste disposed of is reduced to zero by 2020 and every year thereafter, in alignment with the “Army Vision of a Net Zero Installation.”
2. Reduce the total weight of hazardous waste disposed to zero by 2020. The desired end state is to eliminate or dramatically reduce the amount of waste generated and to effectively use, reuse, repurpose, recycle or recover energy from all materials.

Ownership and Involvement (Resources, Roles and Authority)

Goal Proponent: Directorate of Public Works (DPW), Director

Goal Lead & Fort Carson Partners:

DPW Chief (Lead)

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| • Operations and Maintenance | • Installation Sustainability Resource Officer | • Fort Carson Tenants |
| • DPW Recycle Operations Team Lead | • DPW Energy Coordinator | • Pollution Prevention Coordinator |
| • DPW Environmental Division (ED) Hazardous Waste Storage Facility (HWSF) Manager | • DPW ED Resource Conservation and Recovery Act (RCRA) Program Coordinator | • Directorate of Family Morale Welfare and Recreation (DFMWR) |
| • Chief, Supplies and Services | • Defense Commissary Agency (DeCA) | • Medical Department Activity (MEDDAC) |
| • Better Opportunities for Single Soldiers (BOSS) | • Vendors | • Cheyenne Shadows Golf Course |
| • Army and Air Force Exchange Service (AAFES) | • Defense Logistics Agency (DLA) Disposition Services | • Directorate of Logistics (DOL) |

Off-post Partners:

- Peterson Air Force Base (AFB)
- Schriever AFB
- Pueblo Chemical Depot
- Colorado Association for Recycling
- Recycling Coalition of Colorado Springs
- El Paso County
- Keep Colorado Springs Beautiful
- Balfour Beatty Communities
- Colorado Springs Utilities

Significant Sustainability Aspects and Impacts

The generation of non-hazardous solid waste and hazardous waste from the following activities and operations are the significant aspects and impacts for this goal:

- Solid Waste in Food Service Operations
- Solid Waste in Vehicle and Equipment Repair and Maintenance
- Solid Waste from Demolition/Construction/Renovation
- Solid Waste generated during Unit Training
- Hazardous Waste from Acquisition and Disposal of Hazardous Materials
- Hazardous Waste in Vehicle and Equipment Maintenance
- Hazardous Waste in Unit Training

Legal and Other Requirements

- Resource Conservation and Recovery Act
- 10 United States Code 2577, Disposal of Recyclable Materials
- Executive Order (EO) 13423, Strengthening Federal Environmental, Energy, and Transportation Management
- EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance
- 6 CCR 1007-2, Part 1 Regulations Pertaining to Solid Waste Sites and Facilities (Colorado State)
- AR 200-1 Environmental Protection and Enhancement
- DoD Measures of Merit
- AR-420-29 Utility Services
- DODI 4715.4 Pollution Prevention
- ACSIM Memorandum: Implementation and Maintenance of Environmental Management Systems (EMS)
- Net Zero Water, Energy and Waste Pilot Installation Requirements
- Installation Sustainability Plan - Sustainable Procurement and Air Quality
- Pikes Peak Regional Sustainability Plan

Alignment with Army Strategy

The Army Strategy for the Environment: Sustain the Mission – Secure the Future establishes a long-range vision that enables the Army to meet its mission today and into the future. The strategy commits Army leaders at all levels to certain goals and challenges them to develop innovative methods to achieve them. The Fort Carson Sustainability Program was created as a means to facilitate this mission by establishing goals and the policies, plans and procedures needed to attain those goals. The Fort Carson Sustainability Plan operationalizes the Army's strategy by providing the structure for planning, implementation, and monitoring and measuring progress.

The IMCOM Campaign Plan provides for Sustainable Installations, Energy and Water Efficiency and Security, and Assessment and Sustainment of Essential Base Operations Services in the Installation Readiness Lines of Effort (LOE). The Sustainability Objectives and Targets associated with this goal support all LOE in the IMCOM Campaign, with particular emphasis on accomplishing the Installation Readiness LOE.

Background

Achieving a goal of zero waste by 2020 will require drastic changes in material handling with particularly tight controls over procurement of hazardous materials. A critical part of material handling is inventory management and product substitution. Additionally, reuse and repurposing of materials will need to be practiced and developed to create a closed-loop system in material handling. This means that manufacturers need to take back products to reuse in manufacturing process. In turn, the buyer (e.g., Fort Carson and tenants) needs to support a culture change in the manufacturing industry by purchasing products/services from companies with sustainable products and practices (i.e., take-back programs, leasing agreements, biodegradable or long-term use products). Therefore, success with the zero waste goal will depend on objectives and initiatives in the procurement goal that seek to reduce and ultimately eliminate waste.

Additionally, new technologies that change waste to valuable commodities will be critical to handling any waste that cannot be reduced or eliminated in the manufacturing, procurement and use stages. For example, biological and chemical processes can convert “waste” material into electricity or heat/steam.

Desired end states related to waste reduction are:

- Incentives to reuse or recycle products are in place.
- Decrease in the use of hazardous materials.
- Creation of a composting program.
- Coordination between local organizations to encourage recycling and reuse.
- Recycle or reuse of construction and demolition waste.
- More recycling options in the region.
- Cost analyses that take total environmental and social costs into consideration.
- Product life-cycle costs that are shared by user and producer.
- Better influence on what suppliers provide to increase shelf-lives and decrease hazardous content.
- Government agencies coordinating on recycling efforts.

Meetings for this goal have included primarily DoD representatives from area installations as far as Buckley AFB near Denver.

The purposes of partnering with other area installations to achieve this goal are to:

- Learn from recycling and reduction activities at other installations.
- Share information concerning purchases and disposal amounts.
- Determine money saving ways to recycle.
- Create new markets for recycling and other waste diversion technologies and practices with the volume from several installations.
- Create a healthy competition between installations.
- Combine efforts to reduce total workloads.
- Support local waste reduction businesses.

Challenges & Barriers

- Limited technologies.

- Current waste management programs that are divided between refuse/recycle and hazardous waste – and to add to the challenge, hazardous waste management that is divided into two programs under two different commands. The DPW ED manages hazardous waste and DRMO manages the hazardous waste contract.
- Equipment – more recycle containers and more drivers are needed, slowly adding sorters, weighing equipment and other capabilities are also required.
- Waste and recycle data tracking and reporting are limited. Not all wastes go through DPW Operations or the Hazardous Waste Storage Facility (HWSF).
- Inconsistencies across installations.
- Education will be required as the number of materials to be reduced or recycled is increased.
- There is a lack of control over purchases by credit cards; need better integration with and influence over procurement. Lack of or inconsistent directorate and command support – or low prioritization.
- Landfill fees are relatively low in the region, which limits the financial incentive to invest diversion alternatives.
- Upcoming rebid of existing waste haulers contract and a desire to incorporate performance-based contracting principles.

Training, Education and Outreach

- EMS Awareness
- Hazardous Waste General Awareness Training
- Environmental Protection Officer Course (modules on P2, hazardous waste, recycling, hazardous material management, etc.)
- Household Hazardous Waste and Electronics Turn-In Event(s)
- Recycling Incentive Program
- Single Stream Recycling Pilot Program for Barracks
- Composting education for dining facilities and foodservice workers
- Donor outreach for large-scale barracks furniture donations (where DRMO auctions are not appropriate)
- Public outreach and education through various specialized collection events (ie. Make A Difference Day, Earth Day, etc.)
- Training by DPW ED Environmental Compliance Assessment Team on recycling

Communication

- Coordination with PAO and align with Installation strategic communication strategies
- Annual Zero Waste Goal Garrison Commander's Breakfast, which includes agency counterparts
- Annual publication of a zero waste-related goal article in the Mountaineer
- Publication of recycle locations and commodity information in the Mountaineer, at Mayor's Meetings and various other venues throughout the year
- Hosting of educational station focusing on recycling during annual Earth Day celebrations held on-Post for Fountain-Fort Carson District 8 schools
- Support for unit recycling activities by the DPW ED Environmental Compliance Assessment Team
- Goal progress tracked and publicized in the annual Fort Carson Sustainability Report, which is distributed to internal and external audiences
- Environmental Quality Working Group (EQWG) Meetings
- Environmental Quality Control Committee (EQCC) Meetings
- Policy Memos

- Participate in Federal Green Challenge Program and send a representative to meetings

Document Control

- Pollution Prevention (P2) Plan – Hard copy located in SharePoint, P2 Manager's office, electronic copy located on network drive
- Installation Solid Waste Management Plan (ISWMP) – Maintained on DPW SharePoint
- Refuse Contract – Kept in Contracting Officer's Representative (COR) office
- Hazardous Waste Management Plan – Maintained on DPW SharePoint
- Commanding General and Garrison Commanders Mandatory Hazardous Waste Awareness Training Policy – and implementing guidance – the Training Tracking SOP - Maintained on DPW SharePoint
- Environmental Compliance Action Training (ECAT) Checklist: Maintained in DPW ED SharePoint
- Environmental Protection Officer Training Course Material: Kept on Share Drive in DPW
- Inspection Records: Maintained in DPW ED SharePoint

Operational Controls

- HWSF Operational SOPs – Guides HWSF personnel on proper operations at the facility. Maintained on DPW SharePoint
- RCRA Part B Permit – Maintained on DPW SharePoint
- Recycle Operational SOPs - Maintained on DPW SharePoint.

Monitoring & Measurement

The Biennial Reports, Annual Activity Reports and annual (fiscal and calendar) internal reports contain detailed information on waste processed through the HWSF. The RCRA Program Coordinator is responsible for these reports.

The Solid Waste Annual Report (SWAR) contains detailed information on all solid waste and recycled material managed on the Installation. The Recycle Program Manager is responsible for this report.

The 19 EPAS areas have become Aspects within the EMS. Media areas are managed by a program area via an Environmental Management Program that follows the EMS structure.

The Environmental Compliance Assessment Team assesses the operational level of compliance and conformance in the field and on the ground to determine if operational policies and procedures are effective.

Evaluation of Compliance

External EPA/CDPHE Inspections evaluate Fort Carson's compliance with applicable state, federal and permit requirements. Reports for these annual inspections are maintained by the DPW ED. Inspections that result in a Compliance Advisory or Order indicate non-compliance.

EPAS inspections are internal to the Army and check to see if Fort Carson's activities are conducted in compliance with state, federal, and Department of the Army requirements. Issuance of a finding indicates non-compliance and triggers immediate corrective action and reporting.

Environmental Compliance Assessment Team (ECAT) conducts internal inspections of all activities on the installation to provide programmatic support throughout the Garrison.

Other additional external and internal compliance inspections may be conducted as required.

Nonconformity

Nonconformities may be identified via a Compliance Advisory issued by the CDPHE or a NOV from EPAS inspectors.

Nonconformity of Solid Waste procedures would be identified through ECAT or EPAS inspections.

Nonconformity with EMS would be identified through the annual audit.

Mismanagement of solid waste is addressed through on-the-spot corrections.

Control of Records

- Construction Waste Diversion Reports – The Corps of Engineers has been asked by DPW ED to provide electronic reports to the P2 Manager for filing/use on completed construction projects. Reports are kept electronically and shared with Recycle Manager for inclusion in annual SWARS report.
- RCRA Part B Permit Operating Record - As required by Fort Carson's Part B Permit, all records pertaining to the disposal of hazardous waste are maintained in the official Operating Record located at the HWSF Administration Office.
- All records documenting solid waste and recycling activities are maintained at the DPW Operations and Maintenance Division offices.

Annual Review

The P2 Plan, Recycle and ISWMP, Hazardous Waste Management Plan, this Plan and all SOPs are reviewed annually and updated as necessary.

The CG/GC Mandatory HW Training Policy is updated by the GCs office whenever there is a change in command or significant change in procedure.

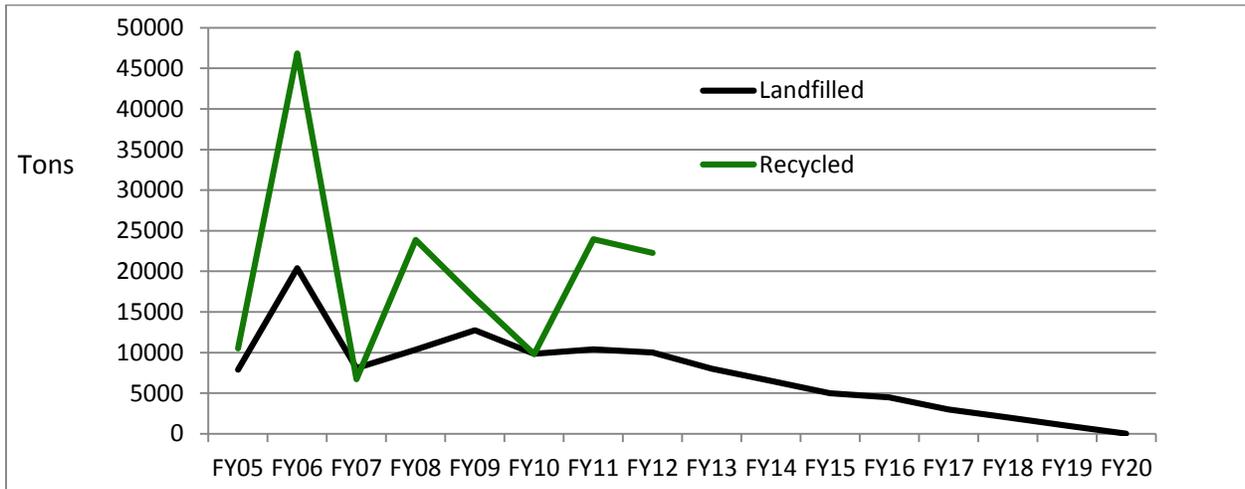
The RCRA Permit B Permit is modified several times throughout the year. The majority of modifications are initiated by CDPHE as the status of SWMUs change. Modifications initiated by Fort Carson relate to minor edits such as contact information or more significant updates such as adding waste codes or language required through recent legislation.

Goal Objectives and Targets

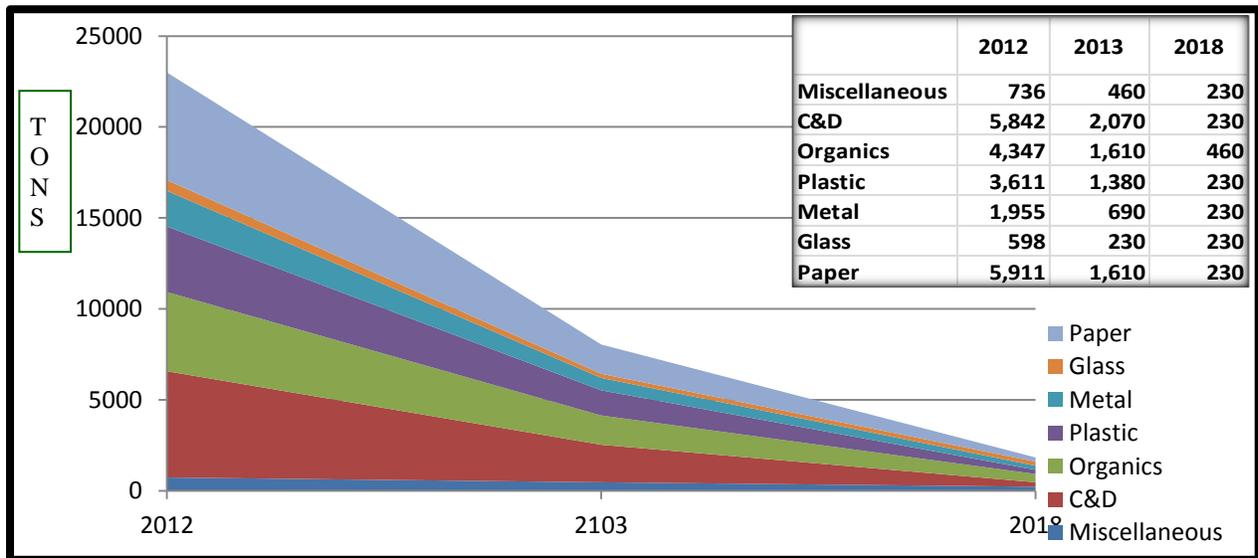
Objective ZW1: Reduce solid waste disposal through sustainable procurement practices, reduction in material use, reuse and recycling to zero by 2020.

Target by FY13:
Weight of solid waste disposed of equals 8,000 tons.

Target by FY18:
Weight of waste disposed of equals 2,000 tons.



Graphically, these reductions might look like the following:



Details on Objective Target Graph ZW2

Measure: Tons of waste disposed of annually (1 ton, short, US = 2000 lbs)

Scope: All non-regulated, solid waste (non-C&D) sent for disposal and all wastes recycled

Source: SWARs report

Baseline: The FY05 baseline is 10.5k tons (21,000,000 lbs)

Limitations: Not all solid waste and recycling activity is captured due to DRMO or subcontractors not reporting to DPW OPs

Verification & Validation: Data verified by the Refuse and Recycling Manager via contractor-submitted reports and validated by the Contracting Officers Technical Representative.

Comments: Prior Zero Waste Plans reported solid waste disposal in terms of “per capita” or pounds per person. However, it was decided that reporting just annual weights was more in-line with the goal as the goal does not tie “zero” to any certain number. The goal is zero waste on Fort Carson by 2020 regardless of population size.

Initiatives in support of Objective ZW1 (FY12/13)

Initiative ZW1.1: Waste to Energy (WTE) - Fort Carson, along with five other Army Installations, is participating in a WTE feasibility analysis with the Army Environmental Center (AEC) and National Renewable Energy Laboratories (NREL). Waste data, cost data and other aspects are being provided for review to determine if a cost effective solution can be pursued. At this time, the installation has deployed a BioMax woody biomass boiler as a precursor to a full-fledge WTE test.

Participants involved: DPW Operations and Environmental Divisions, five other installations, AEC, and NREL.

Initiative ZW1.2: Barracks Recycling – DPW ED and BOSS should establish a partnership to enhance recycling in barracks, including incentive programs, additional recycle bins in rooms, hallways and common areas, and comprehensive awareness programs.

Participants involved: DPW ED and BOSS

Initiative ZW1.3: Compost Investigation – Yard waste from around Fort Carson continues to be composted at the Midway landfill, but dedicated collection (akin to recycling or MSW pick-up) and other composting options have yet to be aggressively pursued. This initiative will look for ways to expand diversion of compostable material at Midway, explore the viability of separate collection and removal of yard and food waste from the installation, and explore the viability of onsite composting solutions for dining facilities and elimination of plastic by using biodegradable/compostable materials instead.

Participants involved: DPW Operations and Environmental Divisions, DOL food service operations, MEDDAC Food Service, DeCA, AAFES, Event Vendors, Golf Course

Initiative ZW1.4: Regional Recycling Consortium – This is a potential initiative that would involve coordinating with other local military Installations (Peterson AFB, Schriever AFB, etc.) to potentially develop an expanded recycling center on Fort Carson which would allow for greater flexibility to the DoD to store construction waste and other recyclables.

Participants involved: DPW Operations and Environmental Divisions

Initiative ZW1.5: Expanded Household Waste, Electronics and Other Recycling Partnerships – Ongoing initiatives to maintain collaborative partnerships with the El Paso

County Household Hazardous Waste Facility and others to expand existing recycling and safe disposal efforts for household electronics, eWaste (CDs, DVDs, etc.), paints and other hazardous chemicals.

Participants involved: DPW Operations, El Paso County Household Hazardous Waste Facility, other collection companies, private and public

Initiative ZW1.6: The Federal Green Challenge - The Federal Green Challenge is a national effort under the EPA's Sustainable Materials Management Program challenging EPA and other federal agencies throughout the country to lead by example in reducing the federal government's environmental impact. Fort Carson is a participant in the Federal Green Challenge.

Participants involved: DPW Operations, ISRO, various Pikes Peak area municipalities, Region VII Environmental Protection Agency (EPA), Colorado Federal Agencies

Initiative ZW1.7: Recycle Cooking Oil – Cooking oil from Fort Carson's five DFACs can be recycled into a number of reusable products, including biodiesel, animal feed, dust suppression, soaps, detergents, and cosmetics. Front Range Grease picks up their barrels of used grease at the Installation, cleans them, and returns them for reuse. They also clean grease traps according to their web site at <http://frontrangegrease.com/grease-pick-up-drop-off-colorado.htm>.

Participants involved: DOL Operations, DFACs, Front Range Grease at 5 E. Bijou Street, #185, Colorado Springs, CO 80903, 719-447-0256

Initiative ZW1.8: Regional Single-Stream Recycling Facility – Bestway Disposal has opened the region's first Materials Recovery Facility (MRF) designed to accommodate and sort single-stream recyclables in Colorado Springs. Beyond its immediate benefits for the refuse hauler, the locally situated Materials Recovery Facility (MRF) provides a communitywide incentive for single stream recycling, and given its existing infrastructure, Fort Carson is in a unique position to complement the MRF with an expanded single-stream municipal recycling facility on post. This initiative will explore the viability of such an endeavor, and investigate what new barriers, if any, exist to move the installation to single-stream recycling as the MRF becomes fully operational.

Participants involved: DPW Operations, IRSO, BestWay and various Pikes Peak area municipalities, 4th Infantry Division (ID)

Initiative ZW1.9: Expanded Porcelain Recycling Partnerships – Colorado Springs Utilities has recently begun porcelain toilet (and other fixture) collection as a diversion option for the waste, grinding the material into roadway base in cooperation with the City of Colorado Springs. Fort Carson currently provides an onsite collection point for the materials, and has also explored similar roadway base reuse options for items like asphalt shingles. This initiative is two-fold: to continue to promote the existing collection point for CSU's efforts, and to reengage builders on the installation to both similarly divert roadway-capable materials and expand their testing of this material for wider use in the installation's roadways, sidewalks, parking lots and other areas where applicable.

Participants involved: DPW Operations, Colorado Springs Utilities

Initiative ZW1.10: Conduct Annual Waste Stream Assessment – Understanding solid waste streams types by amounts and percentages is key to targeting reduction. Currently, recycling amounts by type are understood and hazardous waste streams are known, but solid waste is not well understood and requires analysis of contents of trash cans. Performing this analysis on an annual basis supports an understanding of which types of disposables may be best targeted for better procurement, recycling, reuse, or otherwise diverting materials from the landfill.

Participants involved: DPW ED

Initiative ZW1.11: Ban Styrofoam® from the Installation – Using a policy letter and broad awareness program including the ECAT program, ban Styrofoam® from Fort Carson. Disallow its use in administrative kitchen areas, AAFES, DFACs, events and anywhere else food and drinks are served. Styrofoam® is simply a habit, as it is not less expensive or more available or useful than other products for the same purpose.

Participants involved: DPW ED, Command

Initiative ZW1.12: Recycle Mattresses – Mattresses add a large amount of volume and weight to the landfill from Fort Carson. Nearly every aspect of a mattress can be recycled by a local recycler with only a small amount of coordination. Western Scrap Processing (3315 Drennan Industrial Loop, 719-390-7986) charges \$5 per mattress for recycling.

Participants involved: DPW ED, Recycle Center

Initiative ZW1.13: Add a Fee for all Plastic Bags at all Shopping Locations – Because the seller has to purchase plastic bags, they can pass that cost along directly to the consumer instead of indirectly through raising the price of their goods. Further, the installation pays for the cost of disposal of the bag. In this manner, if reusable bags are forgotten, or the consumer uses plastic bags to clean pet waste or other purposes, the bags are still available.

Participants involved: DeCA, AAFES, Command

Initiative ZW1.14: Develop an Educational Program on Environmentally Friendly Diapers
Cloth and disposable diapers affect the environment negatively. New diapers are available that use less material and are biodegradable. Several brands are:

[gDiapers](#)

[Earth Baby](#)

[Elimination Communication](#)

[Parents Discussion Website](#)

Participants involved: AAFES, DPW, Child Development Center, Vendors

Initiative ZW1.15: Use Contracting Mechanisms to Eliminate Construction and Demolition (C&D) Waste – C&D waste results from construction, remodeling, repair, and demolition operations on houses, commercial buildings and other structures, and pavements, and often has the potential for resource recovery. It may include materials such as brick, timber, concrete, and steel. Zero waste goals will not be accomplished without more aggressive contracting requirements to eliminate C&D waste, including:

- Allowing items such as wood, doors or other deconstructed materials to be reused/repurposed
- Requirements to segregate and classify of all waste streams
- Prohibition of the use of installation dumpsters
- Allowances to take certain items to the installation recycle center
- Installation support such as supplying a list of recycling companies
- Requirement of monthly reporting of the type and amount of material recycled, and
- Requirement of justification for items not recycled

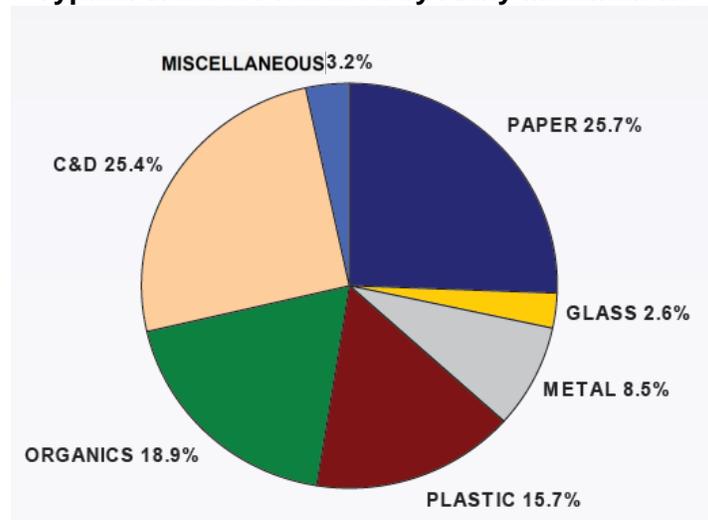
These contractual requirements have been in effect at Fort Lee, which obtained a C&D recycling rate of 98% in the years of highest construction at that Installation. C&D companies found that they saved money on disposal costs and also made a little money recycling; thus did not need to charge the Installation more for these contract provisions.

Participants involved: DPW, DPW Recycling, Command, MICC

Initiative ZW1.16: Create an Awareness Team – Even though many or most items on the Installation can be recycled, America Recycles Day proved that over 23,000 pounds of items required a special day for some items to be brought to a level of awareness for recycling. Even at that level of awareness, only 200 of Fort Carson’s 28,000 personnel showed up to turn in items. A greater level of awareness is required to ensure that items are not simply placed into the trash. Using the chart of Typical Wastes Produced by Army Installations, it is clear that much of the waste thrown away may be recycled, including paper, glass, metal, and plastics. C&D waste is addressed in ZW1.15, and much of the miscellaneous waste, such as diapers, Styrofoam®, plastic bags, and porcelain are addressed in other Initiatives in this Sustainability Plan. Organics might be addressed through waste-to-energy (ZW1.1) or composting initiatives (ZW1.3), along with the cooking oil recycling initiative (ZW1.7).

Participants involved: DPW, DPW Recycling, Command, PAO

Typical Wastes Produced by Army Installations

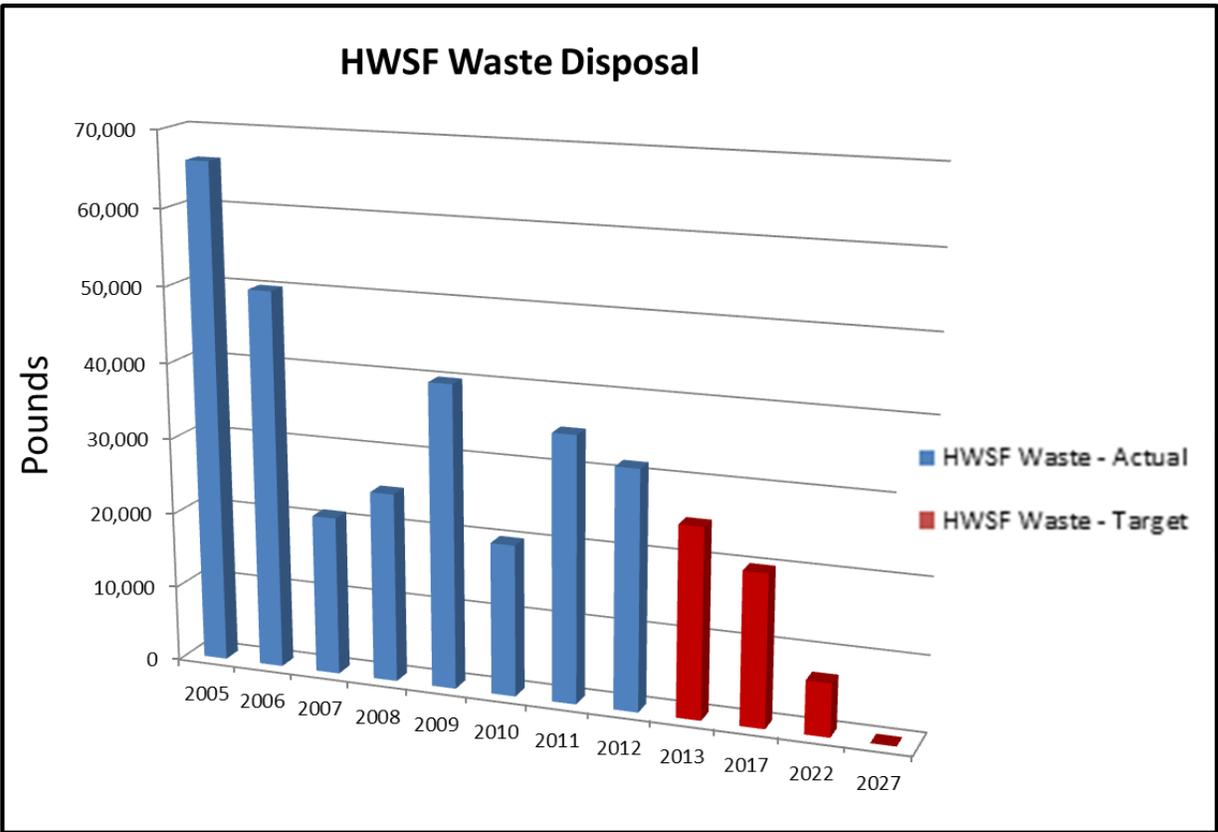


Source: [Proceedings of the First Army Installation Waste to Energy Workshop](#)

Objective ZW2: Waste disposed of through the HWSF is reduced to zero through sustainable procurement practices, reduction in material use, reuse and recycling

Target by FY13: Total weight of HWSF waste disposed of is 25k lbs (62% reduction using 2005 baseline of 66k)

Target by FY17: Total weight of HWSF waste disposed of is 20k lbs (70% reduction using 2005 baseline of 66k)



Details on Objective Target Graph ZW2

Measure: Pounds of waste disposed of through the HWSF annually.

	2005	2006	2007	2008	2009	2010	2011	2012
Pounds	66,000	50,000	21,000	25,000	40,000	20,000	35,000	31,500

Scope: The scope of Objective ZW2 includes all regulated (hazardous and universal) and non-regulated (e.g., N001 grease) solid waste that is processed, stored and shipped from the hazardous waste storage facility. Tracking of Investigation Derived Waste weights and data began in late FY08, and accounts for the significant increase in waste disposal in FY09.

Source: Enviance Database

Baseline: The FY05 baseline is 66,000lbs.

Limitations: Not all waste disposed of is reported to the DPW.

Verification & Validation: Hazardous waste data is continually generated as required through various external regulatory reports and internal costing or waste minimization measuring.

Comments: Prior Zero Waste Plans reported hazardous waste disposal in terms of “per capita” or pounds per person. However, it was decided that reporting total annual weights was more in-line with the goal as the goal does not tie “zero” to a per capita statistic. The goal is zero waste on Fort Carson by 2020 whether the population swells to over 300,000 or is reduced to 500.

General categories of Hazardous Waste are as follows:

Waste	Amount Generated (pounds)
Solvents	16,054
Waste Paint and Related Material	11,167
Diesel, Fuel Mixture	1,628
Cleaning Products	720
Miscellaneous	699
Pesticides	273
Bleach	120
Mercury	108
Waste Medicine	70

Initiatives in support of Objective ZW2 (FY12/FY13)

Initiative ZW2.1: Solvent Distillers – Currently, two distillers are used to recycle solvent from part washers on Post and have done so since 2004. The distillers recycle about 80% of the solvent (20% waste) for reuse. The distillers are old and not as efficient as newer models. Funding has been requested to replace these distillers.

Participants involved: DPW Operations and Environmental Division

Initiative ZW2.2: Product Substitutions for Solvents – New, environmentally friendly products are available, although certain products must be approved by TACOM before use. However, many hazardous solvents are only recommendations and thus might be replaced by products that are not considered as hazardous waste once used. Examples are [SSPENVIRO](#) products and [Bio-Solve](#). Pilot studies might be done to determine the most effective solvent for use. Once a substitute product is found, determinations will need to be made to ensure that the materials cleaned using the products do not contribute to the hazardous waste stream, rendering the solvent used hazardous despite its environmentally friendly properties.

Initiative ZW2.3: Waste-to-Energy Incineration for Paint Waste – Nearly every residue resulting from painting operations, from spent solvents to paint solids, are candidates for cement kiln incineration for fuel, thus the blast residue and media may be perfect for use as fuel instead of disposal. Cement kilns that burn hazardous waste for energy are one of the most highly regulated industries in the world, have developed detailed site-specific risk assessments, and have conducted extensive emissions tests to comply with regulations. The extremely high temperatures and oxidizing conditions necessary for cement production are ideal for destruction of hazardous waste, and cement kilns have the added benefit of incorporating the ash from the fuel into the cement product.

Initiative ZW2.3: Motorpool Recycling – Funds have been requested to buy equipment such as oil-drain systems, dry sweep dispensing carts, rag cans (to support shop towel laundering), fuel/used oil blending machines, oil filter crushing machines, and aerosol can puncturing systems to support soldier needs and reduce waste.

Participants involved: DPW Operations and Environmental Division

Initiative ZW2.4: Hazardous Material Control Center (HMCC) Committee – A subcommittee was formed under the Environmental Quality Control Council (EQCC) to review and address hazardous material issues on Fort Carson. These issues included overstocking of materials, ordering materials outside of the HMCC supply chain and developing better review procedures. The subcommittee has not met in over one year and should be reconvened to discuss any issues, as the HMCC is a difficult activity to maintain at a large installation like Fort Carson.

Participants involved: DOL and DPW Environmental Division

Initiative ZW2.5: Research Additional Recycling Opportunities – While a significant amount of hazardous wastes have either been eliminated or have had recycling programs started over the last five years (heptane recycling, bead blast media leasing, paint thinner recycling, antifreeze recycling, latex paint recycling, etc.), additional hazardous and solid wastes that are a challenge need to be investigated for P2 opportunities to include industrial grease, residential electronics, mattresses, Styrofoam, used methanol (hospital), used fixer (hospital) and enamel paints.

Participants involved: P2, RCRA, HWSF, Recycle

Related material from DOD Strategic Sustainability Performance Plan: