
5 Pollution Prevention

The Department of Defense (DoD) created the Pollution Prevention Program to reduce or eliminate the generation of waste, loss of natural resources, and process emissions. DoD also implements energy, water, and fuel efficiency measures that further reduce pollution and better utilize existing resources. The Program is built upon a flexible framework that helps the Department prioritize cost-effective initiatives while it maintains safe, uninterrupted operations and sustains military readiness. DoD uses the Pollution Prevention Program as the cornerstone for compliance with several environmental regulations.

The Pollution Prevention Program's goals and objectives help the Department:

- Comply with existing requirements
- Prevent future contamination at existing sites
- Reduce future environmental liabilities and operational costs
- Reduce life cycle costs in operations and maintenance

The Program also helps to ensure that DoD Components:

- Comply with environmental laws, regulations, and standards
- Accomplish specific environmental objectives associated with an array of pollution prevention activities

In the future, the Department will report the Pollution Prevention Program as part of the Department's Strategic Sustainability Performance Plan, as required by Executive Order 13514.

Pollution Prevention at a Glance:

Fiscal year (FY) 2010 funding: **\$91.2 million**, an **18 percent** decrease from FY09

Program Accomplishments

- Diverted **43 percent** of non-hazardous municipal solid waste in FY10
- Reduced hazardous waste disposal by over **6,300 tons** in calendar year (CY) 2009
- Saved **\$180.9 million** using integrated solid waste management practices
- Decreased releases of aluminum (fume or dust) by **40 percent** in CY09

Requirements

The Department of Defense (DoD) Pollution Prevention Program includes, but is not limited to, projects implemented to comply with these regulations:

- 10 United States Code §2577
- 2002 Farm Security and Rural Investment Act
- Emergency Planning and Community Right-to-Know Act (EPCRA)
- Federal Acquisition Regulation
- Pollution Prevention Act of 1990
- Resource Conservation and Recovery Act §6002
- Executive Order (E.O.) 13423, "Strengthening Federal Environmental, Energy, and Transportation Management"
- E.O. 13514, "Federal Leadership in Environmental, Energy, and Economic Performance"
- 40 Code of Federal Regulations §261.2
- DoD Instruction (DoDI) 4715.4, "Pollution Prevention"
- DoDI 4715.6, "Environmental Compliance"
- DoD Green Procurement Program Strategy
- DoD Integrated Solid Waste Management (ISWM) Policy
- DoD Strategic Sustainability Performance Plan (SSPP)
- DoD Toxic and Hazardous Chemicals Reduction Plan

Overview

DoD established its Pollution Prevention Program in 1985 under this hierarchy:

- Source reduction
- Reuse
- Recycling
- Composting/mulching
- Waste-to-energy/incineration
- Other forms of volume reduction
- Landfilling

The Department also designed and implemented other initiatives to incorporate pollution prevention into the organization's culture. Some of these activities include the formation of working groups and steering committees, and the development of strategic policies, plans, and training programs. Because of these initiatives, pollution prevention practices are now part of the military's day-to-day activities and operations.

Solid Waste

From FY09 to FY10, DoD diverted:

- **43 percent** of non-hazardous municipal solid waste, 3 percentage points over the established goal
- **73 percent** of construction and demolition (C&D) debris, 23 percentage points over the established goal
- **62 percent** of combined non-hazardous municipal solid waste and C&D debris

Overview

DoD activities generate residential and commercial waste, non-hazardous industrial waste, non-hazardous process waste, C&D debris, yard waste, and logistics waste such as packaging. DoD Components use ISWM techniques to determine the most cost effective, energy-efficient, and environmentally protective methods to manage these solid waste streams.

Many installations establish Qualified Recycling Programs (QRPs) to recover revenue for material diverted from waste, in addition to avoiding disposal costs. QRP managers identify opportunities to sell recyclable material and develop the diversion program based on recycling costs, sales proceeds, and cost avoidance.

Improved management and promotion of additional recycling opportunities support DoD waste reduction goals and lessen future disposal costs. Additionally, installations are better equipped to make good business decisions that reduce waste volume, maximize diversion, and realize potential cost savings.

For more Solid Waste information, go to <http://www.denix.osd.mil/swr>

Evaluation Criteria

DoD’s ISWM Policy Memorandum sets two goals for non-hazardous solid waste:

- 40 percent diversion of non-hazardous municipal solid waste (without C&D debris) by the end of FY10
- 50 percent diversion of C&D debris solid waste by the end of FY10

DoD uses solid waste and recycling metrics to monitor performance against the FY10 diversion goals. These metrics calculate the rate at which installations prevent

non-hazardous solid waste from entering a disposal facility. Each year, the percentage of solid waste diverted varies depending on the amount, location, and types of solid waste generated. C&D debris is dependent on the schedule for construction, demolition, and renovation projects at an installation.

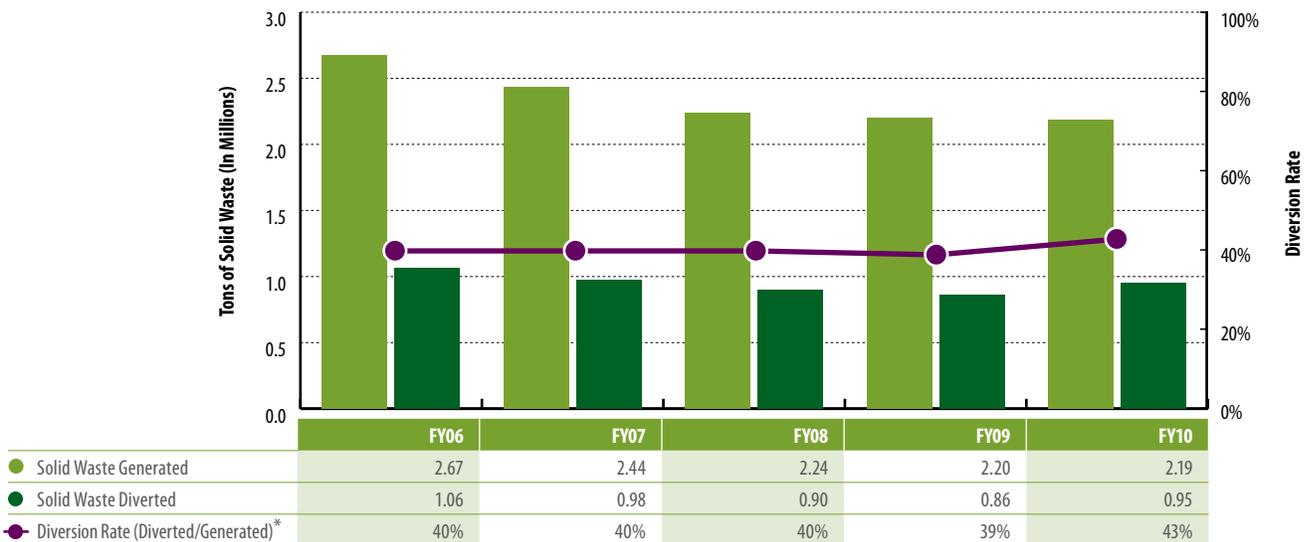
The DoD SSPP will increase diversion goals for non-hazardous municipal solid waste to 50 percent and C&D debris to 60 percent by FY15.

Performance Summary

DoD exceeded agency performance goals for C&D debris diversion. Additionally, the overall implementation of ISWM practices resulted in cost-avoidance of \$180.9 million in FY10. This amount represents the associated costs incurred for the disposal and treatment of solid waste and C&D debris.

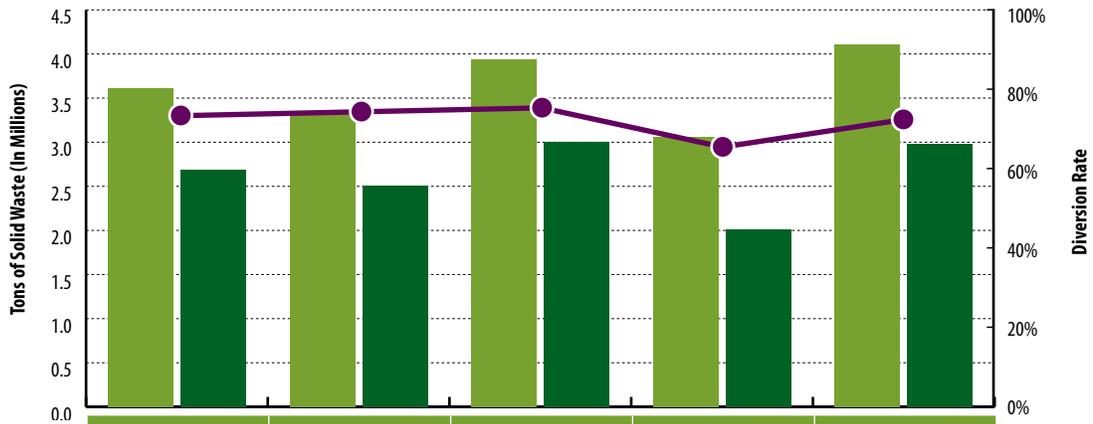
Since FY06, solid waste generated (excluding C&D debris) decreased by 18 percent. In FY10, DoD generated a total of approximately 6.3 million tons of solid waste, consisting of nearly 2.2 million tons of non-hazardous municipal solid waste (over 15,500 tons less than FY09) and 4.1 million tons of C&D debris. The generation of municipal solid waste equates to 2.9 pounds per DoD person each day. DoD diverted 43 percent of its non-hazardous municipal solid waste, which is the highest diversion rate since FY05 (Figure 5-1). In FY10, DoD’s C&D debris diversion rate

Figure 5-1 DoD Non-Hazardous Solid Waste Progress, Excluding C&D Debris (Millions of Tons) (U.S. and Territories & Overseas)



*Diversion rates are calculated from exact numbers.

Figure 5-2 DoD C&D Debris Solid Waste Progress (Millions of Tons) (U.S. and Territories & Overseas)



	FY06	FY07	FY08	FY09	FY10
● C&D Debris Generated	3.62	3.35	3.94	3.06	4.11
● C&D Debris Diverted	2.69	2.51	3.01	2.01	2.98
● Diversion Rate (Diverted/Generated)*	74%	75%	76%	66%	73%

*Diversion rates are calculated from exact numbers.

was 73 percent (Figure 5-2), well above the 50 percent diversion goal for C&D debris.

Appendix D, Section 5 contains solid waste diversion data by DoD Component.

Hazardous Waste

During CY09, DoD reduced:

- Hazardous waste disposal by **8 percent** since CY08
- Hazardous waste disposal by **10 percent** since CY05

Overview

DoD’s goal is to efficiently manage hazardous waste. Hazardous waste is a subset of solid waste that is potentially harmful to human health or the environment. The Department is successfully implementing major pollution prevention efforts to reduce hazardous waste disposal. In January 2008, DoD deployed the agency-level Toxic and Hazardous Chemicals Reduction Plan. The Plan outlines the programs, initiatives, and actions necessary to meet E.O. 13423 reduction requirements for toxic and hazardous chemicals. The Plan follows three principles:

- Identify the major DoD programs and initiatives relevant to toxic and hazardous chemicals

- Build upon existing DoD programs and initiatives relevant to toxic and hazardous chemicals
- Use the DoD environmental management system (EMS) framework as a tool for achieving continual improvement in toxic and hazardous chemical management in DoD

Evaluation Criteria

DoD calculates the hazardous waste reduction rate on a calendar year basis and includes hazardous waste treated on-site and shipped off-site in the United States, its territories, and overseas. In 2005, DoD revised the hazardous waste metric to include hazardous waste treated on-site among certain waste categories targeted for reduction. Before CY05, the metric included mainly hazardous waste shipped off-site (both treated and disposed).

Performance Summary

In CY09, DoD disposed of almost 70,000 tons of hazardous waste, 8 percent less than CY08 (Figure 5-3), and 10 percent less than CY05. This decrease was largely because DoD generated less hazardous waste.

Appendix D, Section 5 contains hazardous waste performance data by DoD Component.