

# **Sustainable Materials Management – Solid Waste Diversion**

Environment, Energy & Sustainability  
Symposium & Exhibition

Edmund D. Miller

Office of Deputy Under Secretary of  
Defense (Installations & Environment)

May 4, 2009

# Report Documentation Page

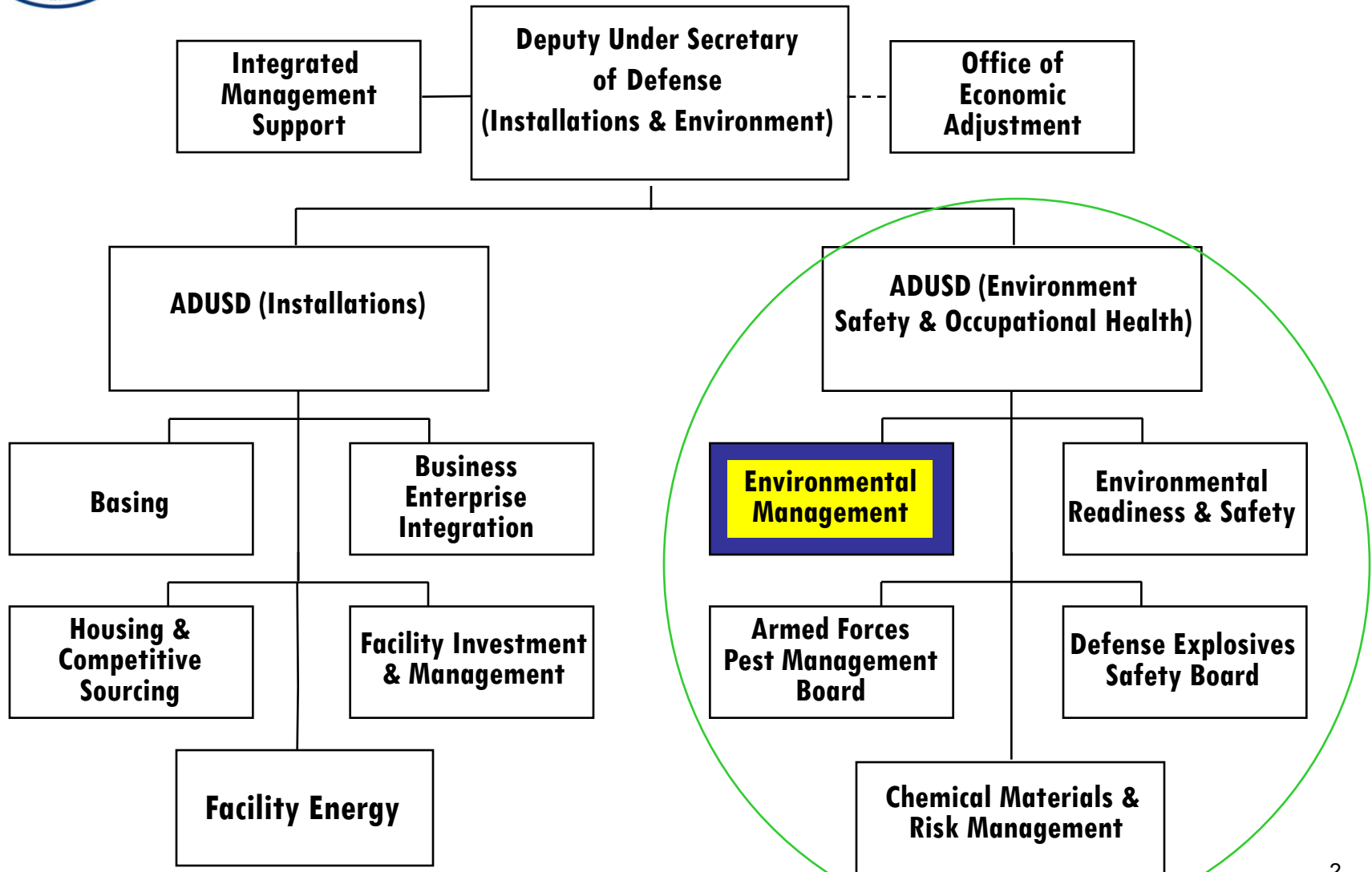
Form Approved  
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE <b>04 MAY 2009</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2009 to 00-00-2009</b>	
4. TITLE AND SUBTITLE <b>Sustainable Materials Management - Solid Waste Diversion</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Office of Deputy Under Secretary of Defense (Installations &amp; Environment), 3400 Defense Pentagon, Room 3B856A, Washington, DC, 20301-3400</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>Presented at the NDIA Environment, Energy Security &amp; Sustainability (E2S2) Symposium &amp; Exhibition held 4-7 May 2009 in Denver, CO.</b>					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>16</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



# ODUSD(I&E) Organizational Chart





# OSD Solid Waste/Recycling Program

---

- I. DoD Instruction 4715.4, “Pollution Prevention,” June 18, 1996
  - A. Established environmental hierarchy for managing wastes:
    1. Source reduction/elimination
    2. Reuse/recycle
    3. Treatment
    4. Disposal
  - B. Required establishment of cost-effective waste prevention and recycling programs to reduce non-hazardous solid waste



# OSD Solid Waste/Recycling Program

---

- C. Defined recyclable materials to include paper, newspaper, cardboard, plastic, metal cans, glass, used oil, batteries, and tires.
- D. Defined “Excluded Materials” from recycling to include precious metals, hazardous waste, fuels, material required to be demilitarized or mutilated, scrap from demilitarization, Munitions List items, and Commerce Control items.



# OSD Solid Waste/Recycling Program

---

- II. Executive Order 13423, “Strengthening Federal Environmental, Energy, and Transportation Management,” January 24, 2007
  - A. Establish solid waste diversion goals to be achieved by 2010
  - B. Maintain waste prevention and recycling programs in most cost-effective manner
  - C. DUSD(I&E) memo dated February 1, 2008 established goals and new integrated solid waste management policy



# OSD Program Oversight

---

## I. Solid Waste Metrics

### A. ADUSD(ESOH) Memo dated 10/12/04

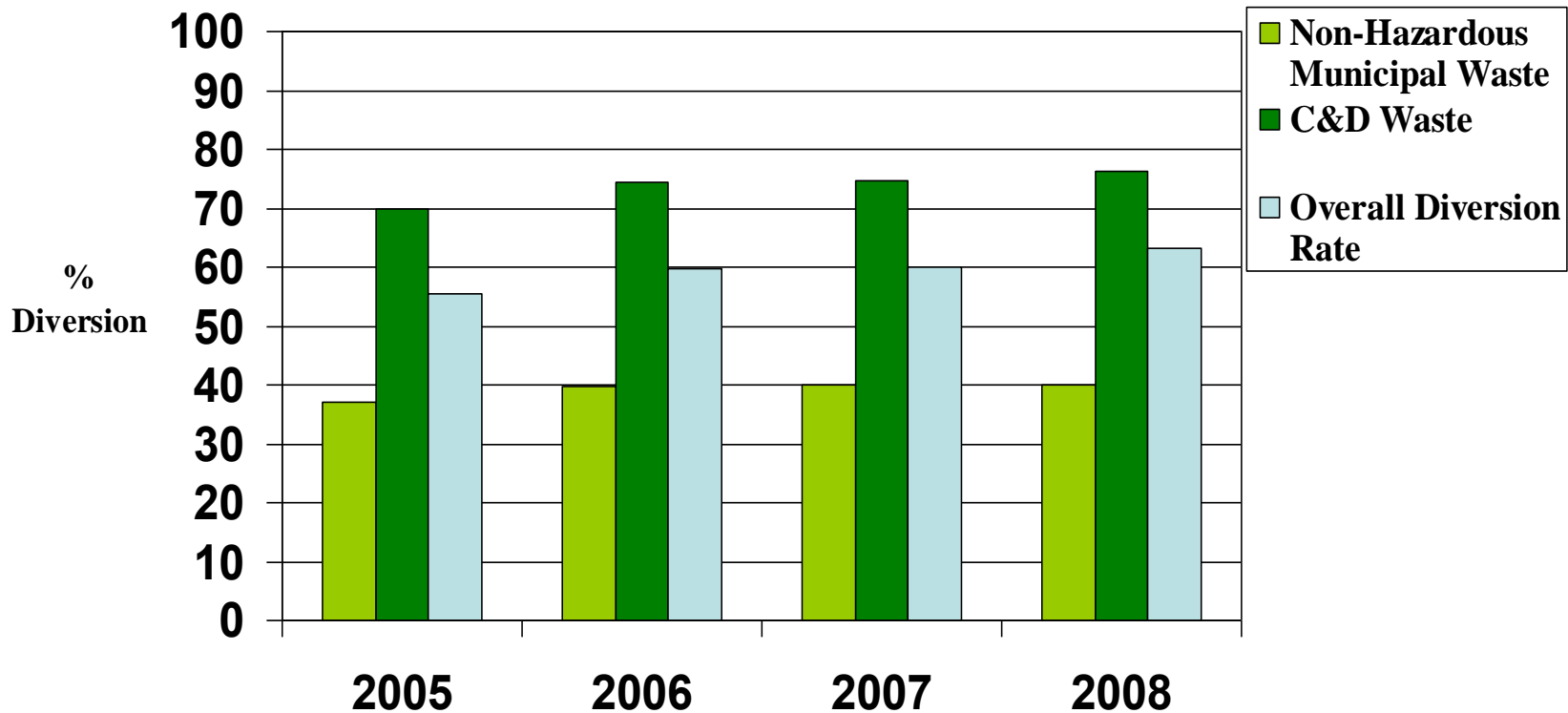
1. Per capita generation non-hazardous solid waste
2. Diversion rate of non-hazardous solid waste with and without construction & demolition (C&D) debris
3. Economic benefit
4. Goal – continuous improvement

### B. E.O. 13423 (2007)

1. Specific diversion goals by 2010
2. 2008 DoD Integrated Solid Waste Management Policy established 40% non-hazardous solid waste and 50% for C&D debris



# DoD Solid Waste Diversion Rate

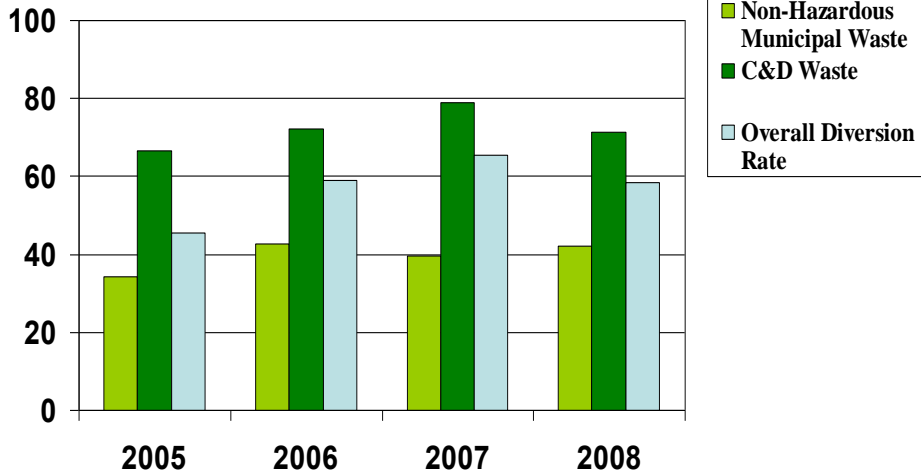




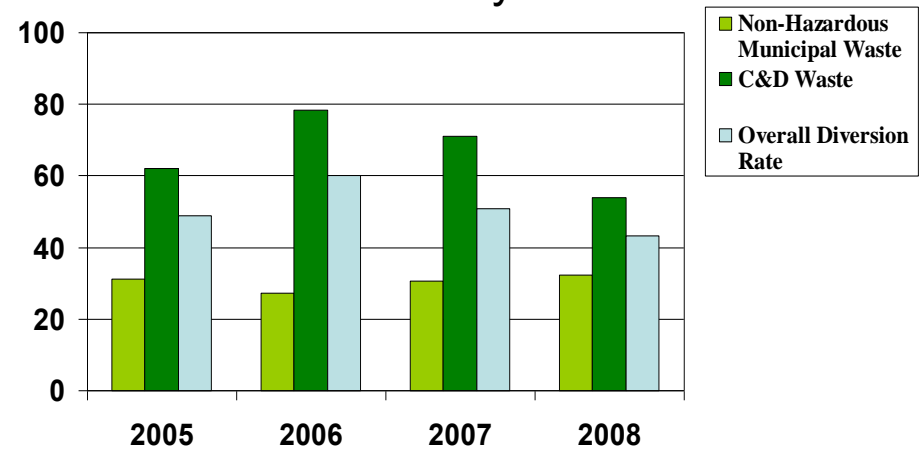


# Solid Waste Diversion Rates (%)

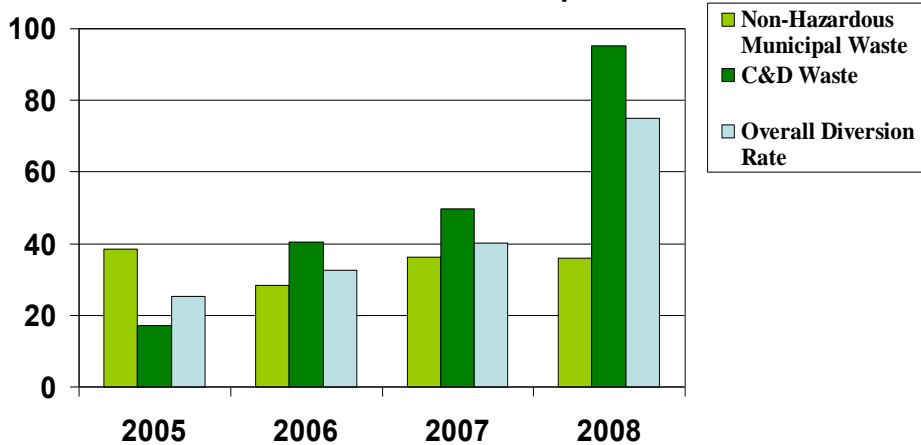
## Army



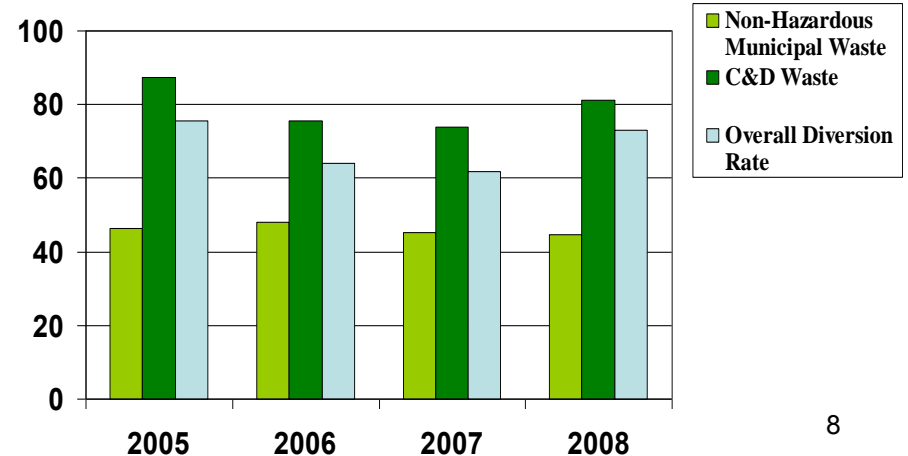
## Navy



## Marine Corps



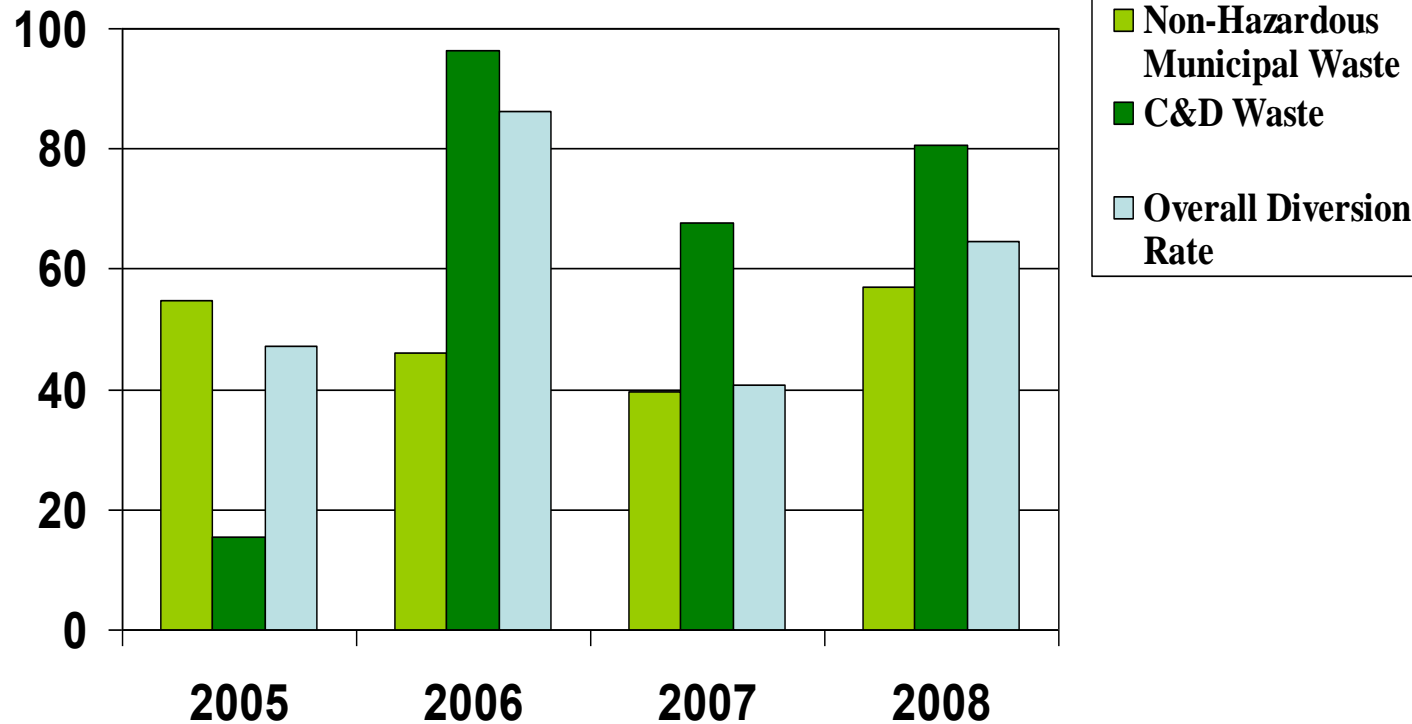
## Air Force





# Solid Waste Diversion Rates (%)

## Defense Logistics Agency





# DoD Integrated Solid Waste Management (ISWM) Policy

---

## Background

- I. What makes recycling programs successful?
- II. Business case analysis of 10 successful DoD recycling programs
  - A. Had 1 or more commodities with high return which was applied to other recyclables
  - B. Performed direct sales and aware of the markets
  - C. Their diversions were above the DoD goals
  - D. Recognized avoided costs



# What is ISWM?

---

## Definition

A comprehensive approach to managing non-hazardous solid waste that encompasses waste prevention, recycling, composting, and disposal programs.



# What is ISWM?

---

- I. Cost effective, energy efficient, and least polluting
- II. Requires upper management support
- III. Optimizes reduction of the volume of solid waste disposed and overall cost of solid waste management
- IV. Understanding of waste streams
- V. Knowledge of market opportunities



# ISWM Hierarchy Approach

---

- I. Source reduction
- II. Reuse
- III. Donation
- IV. Recycling
- V. Composting/Mulching
- VI. Incineration or Volume reduction with Energy Recovery
- VII. Other forms of volume reduction
- VIII. Landfilling



# Guidelines for Implementing ISWM

---

- I. Focus on:
  - A. Reducing waste generation
  - B. Maximizing diversion from landfill
  - C. Expanding and improving recycling program
- II. Periodic overall program evaluations
- III. Economic Analysis/Market Research



# Summary

---

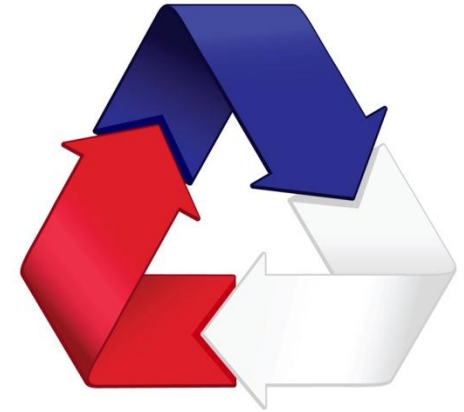
- I. ISWM implements solid waste and recycling requirements in a sustainable and cost-effective manner
- II. ISWM requires an analysis and decision process to be effective
- III. Requires installation support





# Questions ?

---



Edmund Miller

ADUSD (ESOH) Environmental Management

[edmund.miller@osd.mil](mailto:edmund.miller@osd.mil)