



**NDCEE**

National Defense Center for Energy and Environment



**DoD Executive Agent**

Office of the  
Assistant Secretary  
of the Army for  
Installations, Energy and  
Environment

# Material Flow Analysis Surveys and Net Zero Waste Action Plan

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Army Net Zero Workshop  
January 19, 2012

The NDCEE is operated by:  *Concurrent Technologies Corporation*

**Technology Transition – Supporting DoD Readiness, Sustainability, and the Warfighter**

# Briefing Outline

- Material Flow Analysis (MFA) Surveys
  - MFA Survey Protocol
  - Survey Approach and Implementation
- Evaluation of Small-Scale Technical Solutions
- Net Zero Waste Action Plan (Fort Polk)
- Discussion

# Material Flow Analysis Surveys

Develop and Demonstrate with  
Pilot Installations

# MFA Survey - Approach

- Develop a protocol for conducting MFA Surveys
- Assist with installation waste characterization
- Collect data and develop process flow diagrams
- Develop a MFA database
- Summarize results to support installation Net Zero initiatives



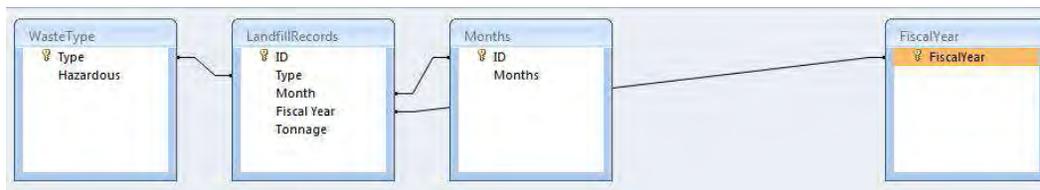
# Participating Pilot Installations (Waste)

- Fort Bliss
- Fort Carson
- Fort Hood
- Fort Hunter Liggett
- Joint Base Lewis-McChord
- Fort Polk

# Army MFA Protocol

- Master Material List
- Activity Groups List
- Initial Data Collection Assessment
- Steps for Developing a MFA Inventory
  - Estimating Material Inputs and Outputs
- MFA Relational Database

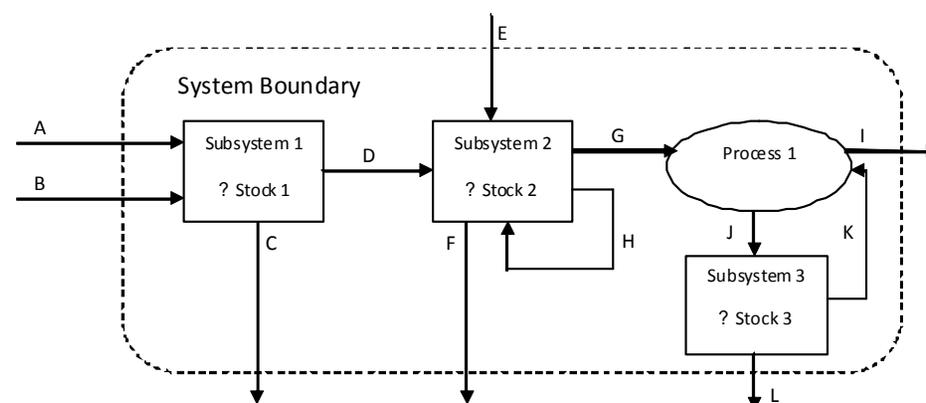
Paper
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RPCS Code	Major Installation Activities / "Groups"	Organization
1	Military Operations and Training	Military Units, DPTMS
2.1	Tactical Equipment Maintenance	Military Units, DOL, Army Materiel Command (AMC), Communications-Electronics Command (CECOM)
2.19	Facility and Grounds Maintenance	DPW, DPTMS, DFMWR, MEDCOM
3	Research, Development, Test and Evaluation	Tenants, Military Units (to small extent)
4	Supply and Warehouse - Non-tactical	DPW, AAFES, DOL, MEDCOM
4.2	Supply and Warehouse – Tactical	Military Units, DPTMS, DOL/AMC
5	Hospital and Medical	Medical Department Activity (MEDDAAC)
6	Administration	All Units, all Directorates, all Tenants
7.1	Family Housing	DPW, Residential Communities Initiative (RCI) Partner
7.2	Personnel Housing	DPW, DOL
7.22	Dining	DOL, AAFES, DeCA, DFMWR, MEDCOM
7.4	Recreation	DMWR
8	Utilities	DPW
9	Construction/Demo Sites/Other	DPW, USACE, DFMWR (NAF), DeCA, AAFES, MEDCOM
10	Retail	AAFES, DeCA

# Focus of MFA Surveys

- Solid waste managed by the Garrison
- Linking procurement practices with waste generation
- Developing a 'systems' approach for waste management
- Major waste management and recovery activities
- Major waste generating and procuring organizations
- Illustrating material flows in a relational database and process flow diagrams



# MFA Linkage: Activity Groups

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# Keys for Successful MFA Surveys

- Availability of relevant data
  - Sources used for SWAR reporting
  - Waste characterization (quantity and composition)
  - Defense Logistics Agency Disposition Services
  - Procurement
    - General Fund Enterprise Business (or predecessors)
    - Standard Army Retail Supply System
    - Mission and Installation Contracting Command
- Personnel engaged with waste processes
- Site visits to quantify and map waste process flow

# Evaluation of Small-Scale Technical Solutions

- Focused on waste streams that cannot be further reduced and repurposed
- Represent opportunities for small-scale solutions
- Extensive review of literature and recent projects
- Engage installations and other stakeholders
- List potential solutions – then evaluate for feasibility

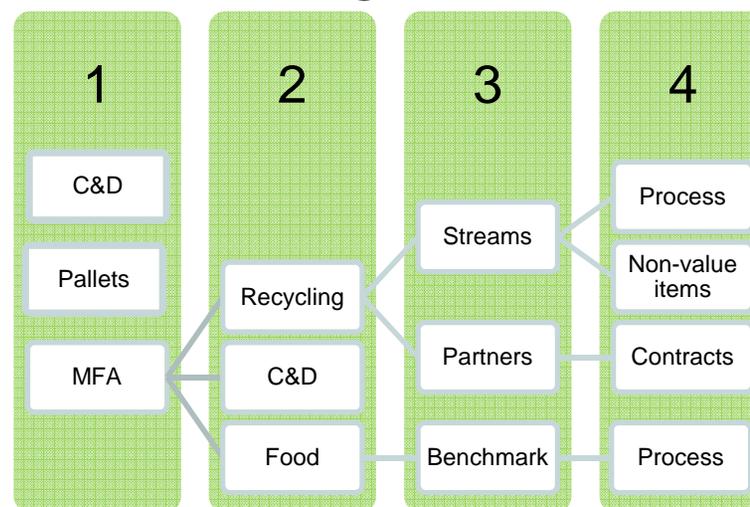


# Net Zero Waste Installation Action Plan

Fort Polk, Louisiana Pilot Project

# Overview and Key Points

- Leverage existing data and collection tools
  - “Top to Bottom” review of the installation
- Develop an executable strategy to strive toward Net Zero
  - Use Army Net Zero hierarchy as a framework
  - Clearly defined project lists as well as recommended management practices & procurement strategies
  - Review potentially applicable new technologies



# Fort Polk Action Plan Timeline

- Engage pilot installations
- Leverage MFA Survey effort
- Complete draft Action Plan spring 2012
- Distribute final Action Plan to pilot installations

