



# Fort Hood Net-Zero Waste Update



**2020** "Perfect Vision, Perfect Mission"





# Net Zero Waste History



**NET ZERO HIERARCHY**

**ENERGY** **PILOT INSTALLATIONS**

The Army Net Zero approach addresses energy, water and waste at Army installations and is comprised of five interrelated steps:

- Reduction includes maximizing energy efficiency in existing facilities, implementing water conservation practices, and eliminating generation of unnecessary waste.
- Re-purpose involves diverting energy, water or waste to a secondary purpose with limited processes.
- Recycling or composting involves management of the solid waste stream, development of closed loop systems to reclaim water, or cogeneration where two forms of energy (heat and electricity) are created from one source.
- Energy recovery can occur from converting unusable waste to energy, renewable energy or geothermal water sources.
- Disposal is the final step and last resort after the last drop of water, the last bit of thermal energy and all other waste mitigation strategies have been fully exercised.

**NET ZERO ENERGY**

- Fort Bliss, TX\*
- Fort Carson, CO\*
- Fort Detrick, MD
- Fort Hunter Liggett, CA
- Kwajalein Atoll, RMI
- Parks Reserve Forces TA, CA
- Sierra Army Depot, CA
- West Point, NY

**NET ZERO WATER**

- Aberdeen Proving Ground, MD
- Camp Rilea, OR
- Fort Bliss, TX\*
- Fort Buchanan, PR
- Fort Carson, CO\*
- Fort Riley, KS
- JB Lewis-McChord, WA
- Tobyhanna Army Depot, PA

**NET ZERO WASTE**

- Fort Bliss, TX\*
- Fort Carson, CO\*
- Fort Detrick, MD
- Fort Hood, TX
- Fort Hunter Liggett, CA
- Fort Polk, LA
- JB Lewis-McChord, WA
- USAG Grafenwoehr, Germany

*\*identified as Net Zero Pilot Installations (Energy, Water and Waste)*

**Net Zero is a Force Multiplier**

Office of the Assistant Secretary of the Army  
 (Installations, Energy & Environment)  
 110 Army Pentagon Room 3E464  
 Washington, D.C. 20310-0710  
 www.asae.army.mil  
 www.army.mil

**U.S. ARMY**

- April 2011 selected as NZW Pilot
- December 2011 NZW Kickoff Workshop
- 4 Goal Leader Workgroup Monthly Meetings
- January 2013 2<sup>nd</sup> Annual Workshop
- Monthly Recycle Coordinator Meetings
- Annual NZW Training Events

**NET ZERO WASTE**

- Fort Bliss, TX\*
- Fort Carson, CO\*
- Fort Detrick, MD
- Fort Hood, TX
- Fort Hunter Liggett, CA
- Fort Polk, LA
- JB Lewis-McChord, WA
- USAG Grafenwoehr, Germany



SOLDIERS ★ FAMILIES ★ ARMY CIVILIANS

**ARMY STRONG**





# Net Zero Waste Strategy



**Goal:** Change culture at Fort Hood to achieve NZW

## Key Tasks:

- **Reduce** amount of solid waste generated
- **Re-purpose** whenever possible
- **Expand Recycle**; increase diversion rate
- **Use Waste to Energy** to eliminate remaining waste
- Identify alternative disposal methods
- Employ **aggressive strategic communications** campaign
- Utilize Net Zero Waste Workgroups and Annual Workshops



**End State:** Fort Hood Community has embraced NZW and is actively supporting the effort



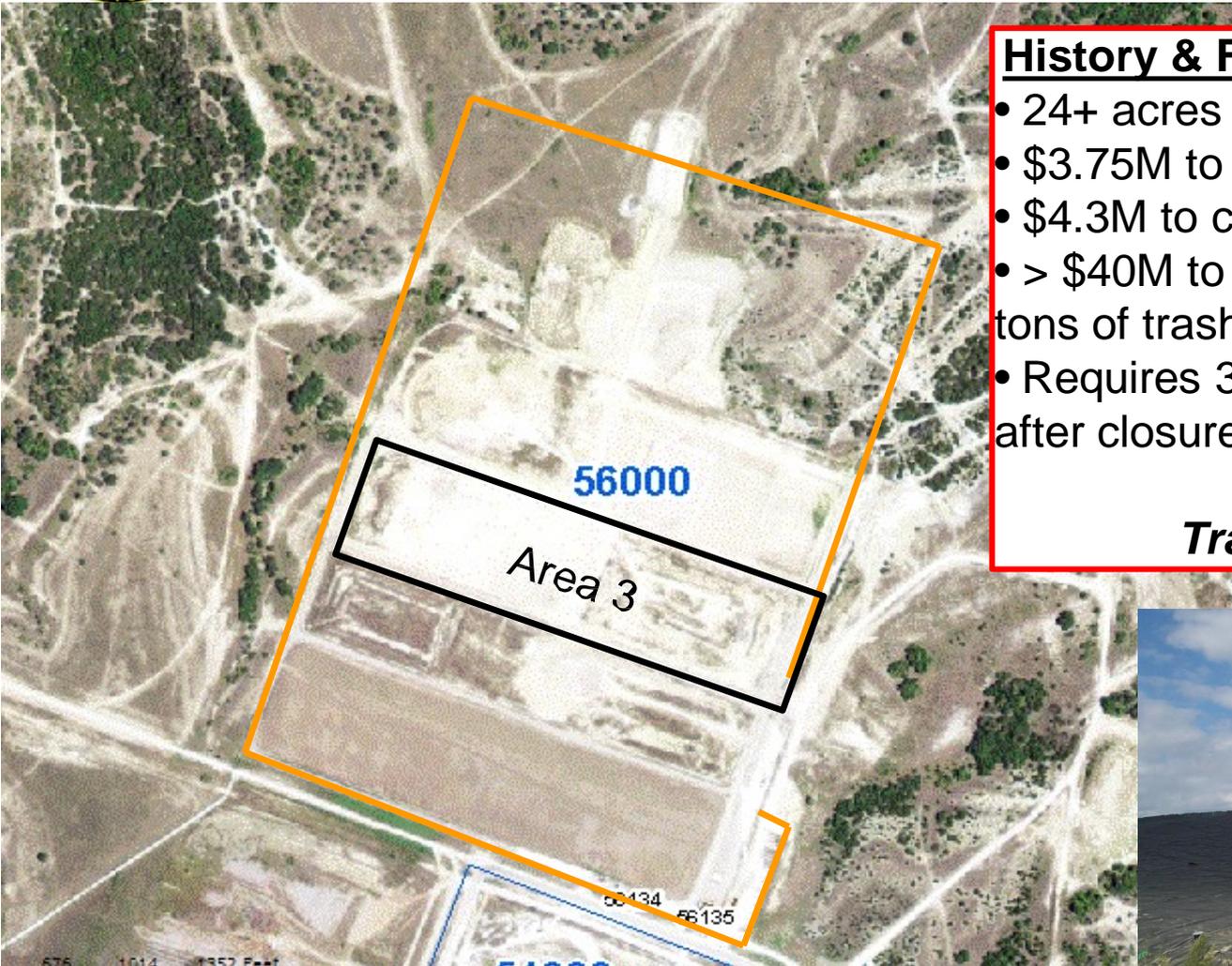
SOLDIERS ★ FAMILIES ★ ARMY CIVILIANS

**ARMY STRONG**





# Fort Hood Landfill: Area 3 Closure



## History & Facts

- 24+ acres (19 football fields)
- \$3.75M to construct (6 cells)
- \$4.3M to close (on-going)
- > \$40M to collect and dump 325K tons of trash from 2001-2013
- Requires 30 years of monitoring after closure

***Trash is Expensive!***



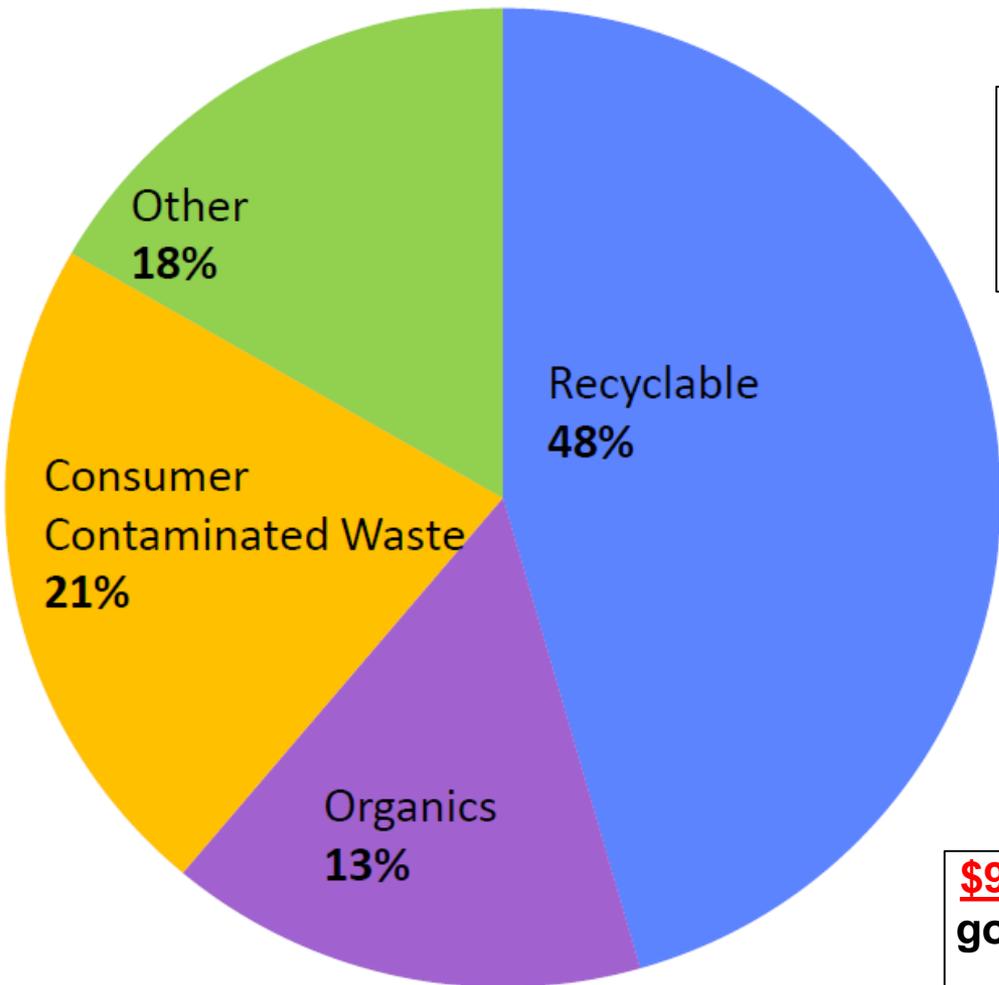
**UNCLASSIFIED**



# What goes into the landfill?



Convert food packaging and paper towels to compostable items so ~2,500 tons could be composted



In FY15, **8,390** tons of recyclables went in the landfill!



**\$984,986** could have gone back to Soldier Unit funds

~2,300 tons per year of potential organics could be composted



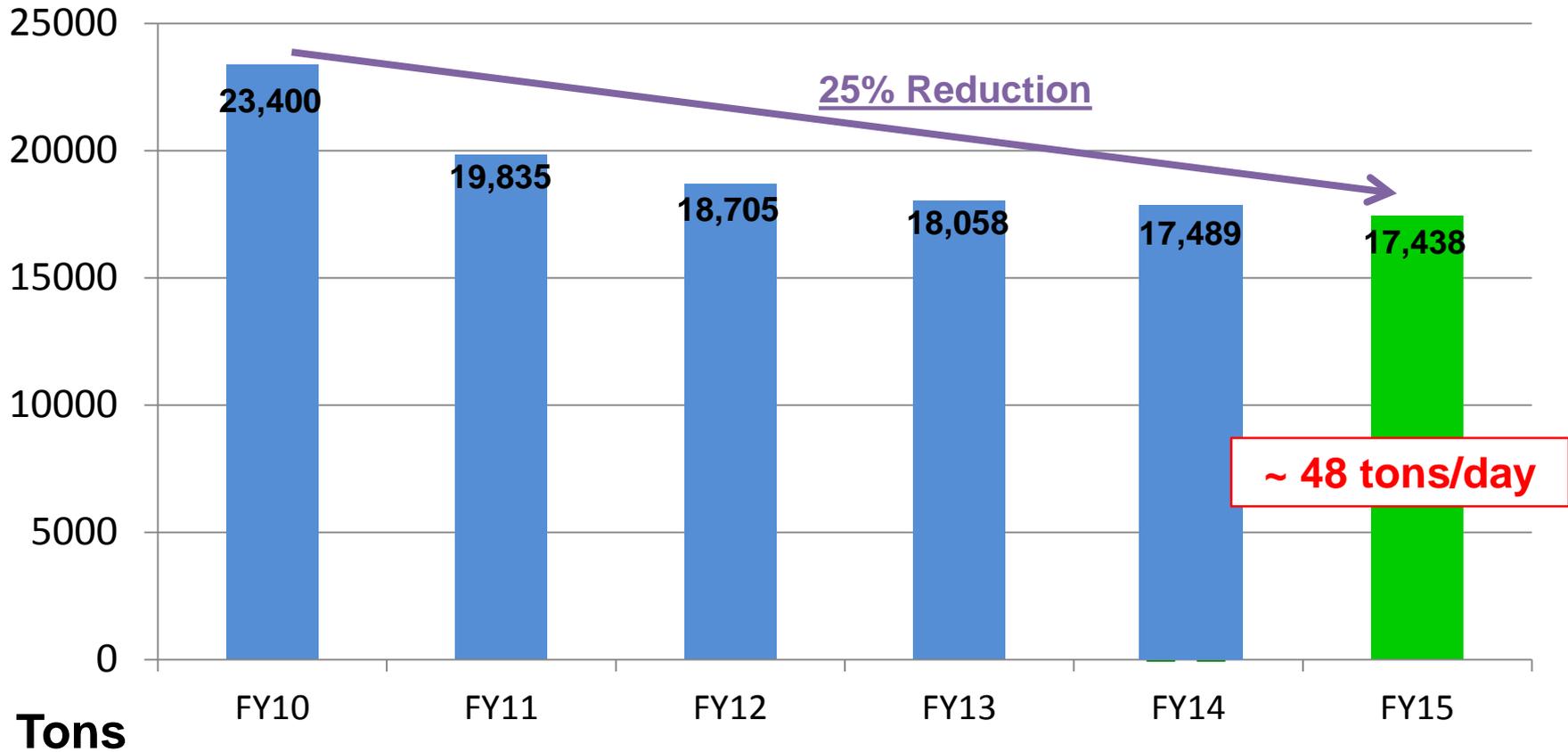
SOLDIERS ★ FAMILIES ★ ARMY CIVILIANS

**ARMY STRONG**™





# MSW to the Fort Hood Landfill



Does not include C&D

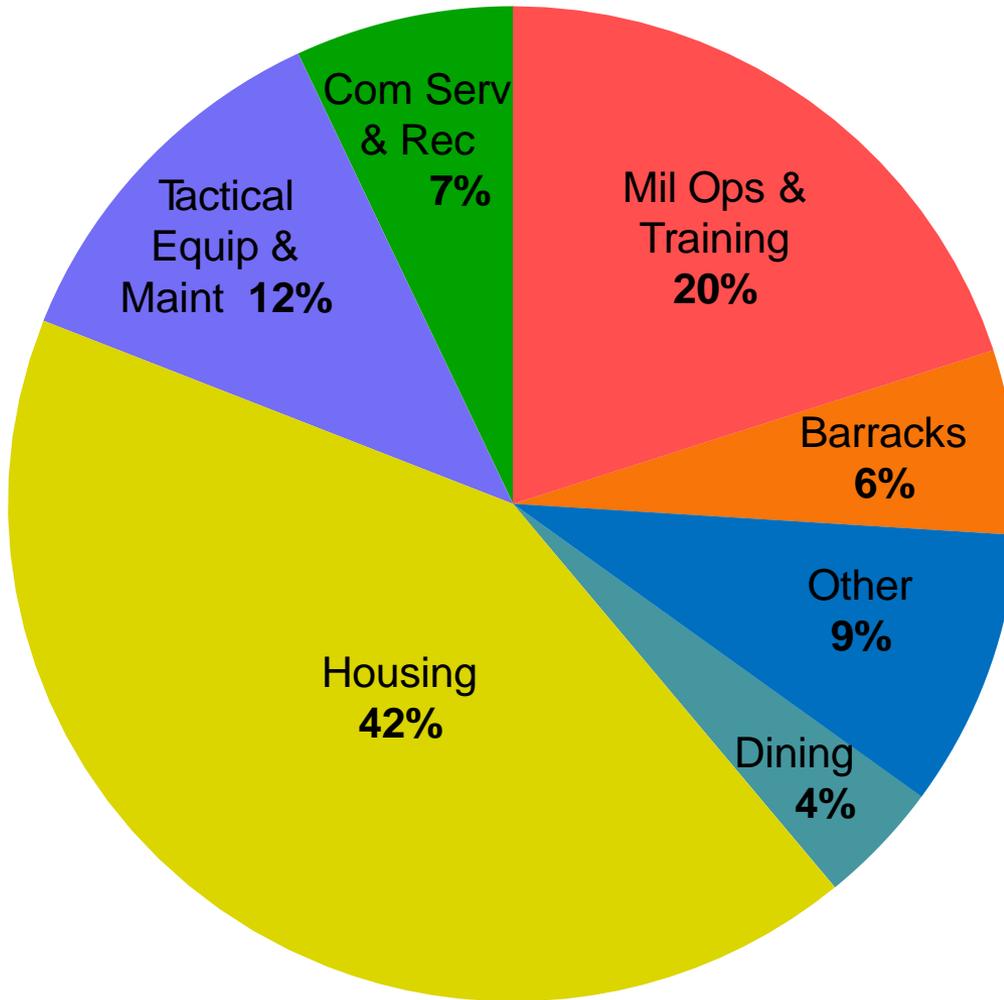


SOLDIERS ★ FAMILIES ★ ARMY CIVILIANS

**ARMY STRONG**



# Where does our Waste Come From?



- Mil Ops & Training - 3741 tons
- Barracks - 1122 tons
- Other - 1684 tons (Retail, Admin, Hospital)
- Dining - 748 tons
- Housing - 7856 tons
- Tactical Equip & Maint - 2245 tons
- Com Services & Rec - 1309 tons



SOLDIERS ★ FAMILIES ★ ARMY CIVILIANS

**ARMY STRONG**<sup>SM</sup>

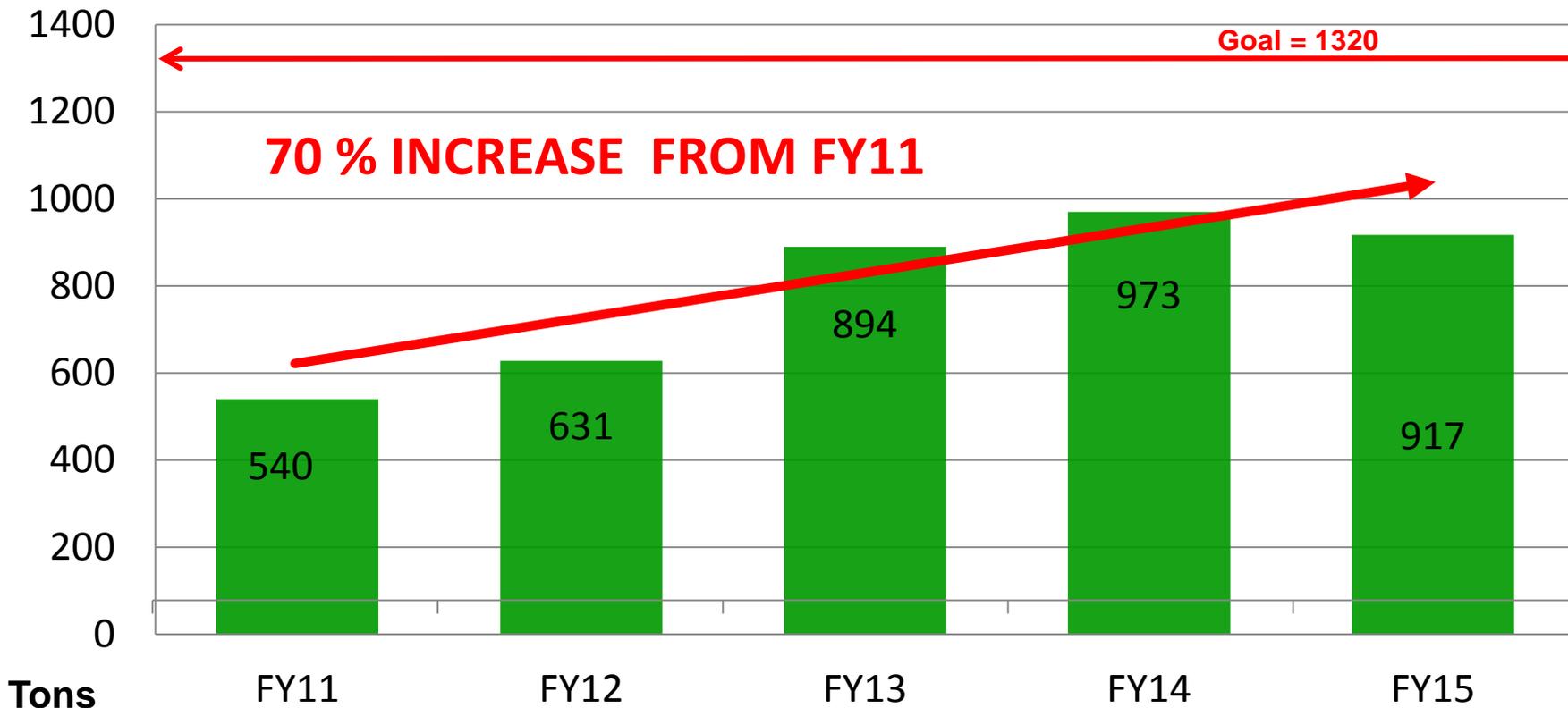




# FY15 Housing Recycle



## FY Totals



SOLDIERS ★ FAMILIES ★ ARMY CIVILIANS

**ARMY STRONG**<sup>SM</sup>

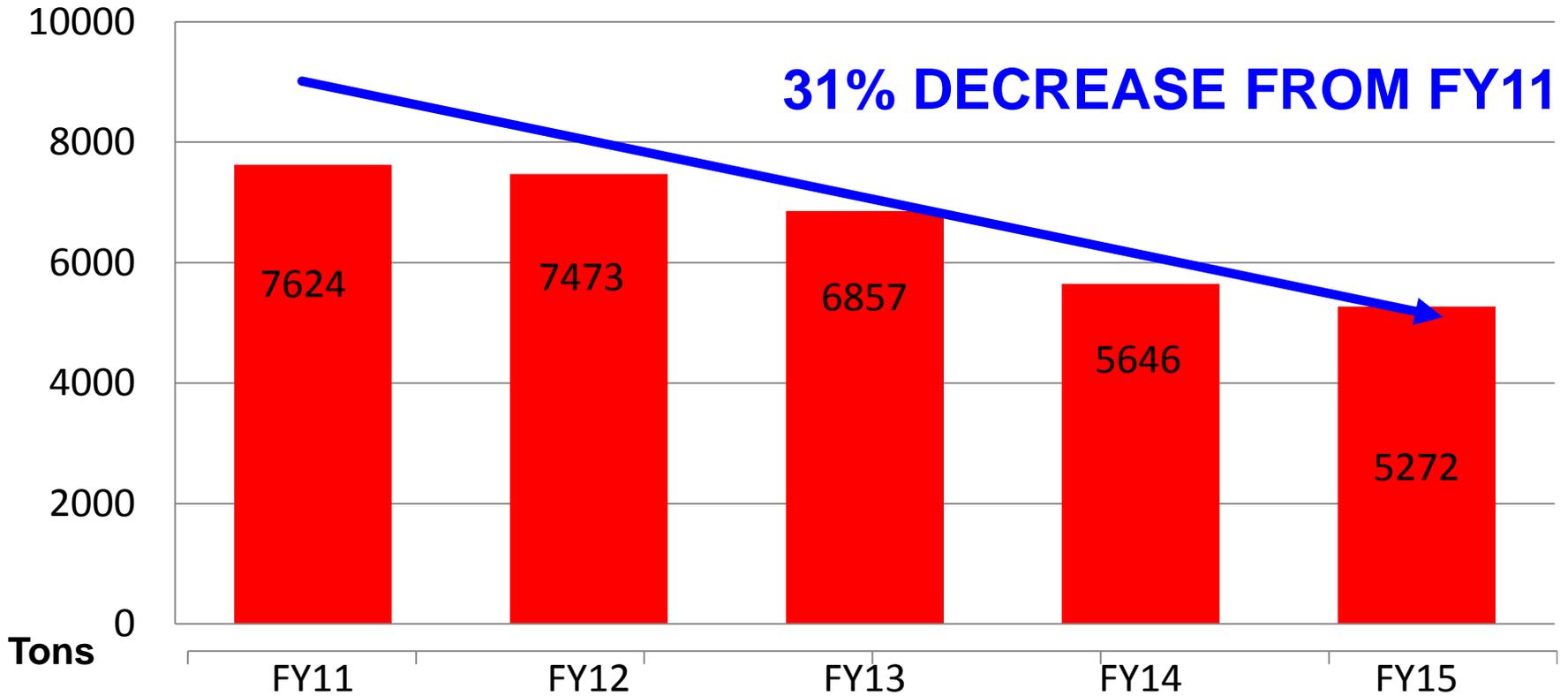




# FY15 Housing Refuse



FY Totals



SOLDIERS ★ FAMILIES ★ ARMY CIVILIANS

**ARMY STRONG**





# NZW Accomplishments



- 96 gallon single stream recycling in housing areas
- Scales on recycle trucks to measure progress
- Monthly progress reports for all housing villages
- Food Waste Composting Pilot Project
- Spring and Fall Installation-wide Yard Sales
- Increased types of materials that can be recycled:
  - Glass, e-waste, tires, hard drives, Christmas lights, styrofoam & bags
- Commissary food waste donations to local pig farmers
- Furniture donations to local charities
- Commander desk side briefs with Recycle Coordinators
- Zero Boot Print Challenge for Soldiers
- Installation-wide NZW Communication Campaign





# Net Zero Waste Diversion Glide Path



## Diversion Goal

40%    42%    45%    50%    55%    60%    65%    70%    75%    80%    85%

## Actual Diversion

42%    39%    44%    48%    49%    **53%**

## Diversion efforts include

### Recycling

### Composting

### Reuse

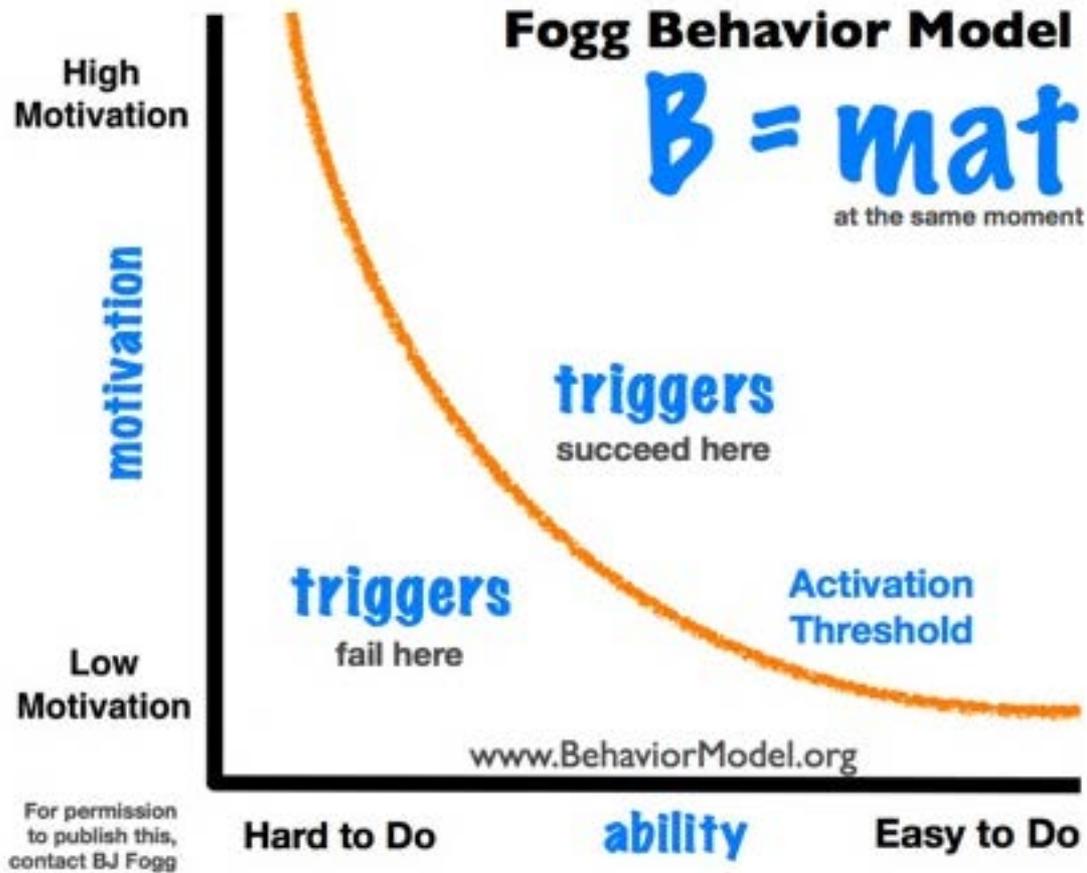


SOLDIERS ★ FAMILIES ★ ARMY CIVILIANS

# ARMY STRONG<sup>SM</sup>



# Behavior Change



SOLDIERS ★ FAMILIES ★ ARMY CIVILIANS

**ARMY STRONG**<sup>BM</sup>



# Questions?



## Before

## After

**Behavior Change Elements**  
motivation, ability, trigger

**Core Motivators**  
pleasure/pain, hope/fear, social acceptance/rejection

**Simplicity Factors**  
time, money, physical effort, brain cycles, social deviance, non-routine

**Triggers**  
facilitator, spark, signal

© 2008 BJ Fogg  
[www.BehaviorModel.org](http://www.BehaviorModel.org)

Jennifer Rawlings 254.535.8557



SOLDIERS ★ FAMILIES ★ ARMY CIVILIANS

ARMY STRONG<sup>BM</sup>