



The graphic features a large green recycling symbol in the center. Overlaid on the symbol is the text "SOUTH DAKOTA ARMY NATIONAL GUARD" in red and white, with a small American flag. To the left of the symbol is a helicopter dropping a smoke bomb. To the right is the text "PROTECTING SOUTH DAKOTA FROM THE GROUND TO THE SKY" in green. Below the symbol is the phone number "1-800 SD Guard" and the website "SDGuard.com". To the right of the symbol are three small images: a group of people sitting on the grass, two soldiers in uniform, and a helicopter dropping a smoke bomb. The background is white with green geometric shapes on the sides.

PROTECTING SOUTH DAKOTA  
FROM THE  
GROUND TO THE SKY

SOUTH DAKOTA ARMY  
NATIONAL  
GUARD

1-800 SD Guard • SDGuard.com

Matraysia Punderson  
SDARNG ENV

# Sustainability Actions

## EO 13693 (revoked)

- ▶ Promote Building Energy Conservation
- ▶ Clean Energy Thresholds
- ▶ Renewable Electricity Thresholds
- ▶ Alternative Energy Goals
- ▶ Water Efficiency Goals
- ▶ Greenhouse Gas Emission Goals
- ▶ Green Procurement
- ▶ Waste Prevention and Pollution Prevention
- ▶ When feasible, NetZero Facilities.

# South Dakota Army National Guard Energy Conservation

Results  
Projects Implemented  
Environmental Benefits

## Results

- ▶ Results of energy conservation efforts are measured in total energy consumed per square foot (kBtu/SqFt)
- ▶ Results based on pre-energy conservation program year (FY09), as compared with FY16.
- ▶ Biggest Reduction: Ft. Meade Building 54 at 65%
- ▶ Average Reduction Statewide: 36%
- ▶ Top 15 Armories and Maintenance Shops are highlighted on the next slide

### Top 15 Energy percentage reductions

Measured in total energy consumption per square foot

Only Armories and Maintenance Shops are on this list, due to larger energy consumption

There are a multitude of Unit Maintenance Bay, Cold Storage, and Motor Vehicle Storage Buildings with over 50% reduction as well

Ft. Meade 54	65%
Mobridge Readiness Center	59%
Rapid City CSMS#2	52%
Ft. Meade 68	50%
Brookings FMS	49%
Range Road Armory	48%
CSMS#1	44%
Ft. Meade 60	42%
Pierre Armory	41%
Yankton Armory	40%
AASF Armory	40%
Sioux Falls Armory	38%
Mitchell Armory	37%
Camp Rapid All	36%
Huron Armory	33%

## Where did the energy reductions come from?

Several energy upgrades such as:

- Building Automation Control
- LED Lighting
- Various HVAC / mechanical equipment and building envelope improvements
- Passive Heating Solar Walls
- Roof mounted 78.5 kW solar PV system in Huron
- Many others not listed above

Several operational adjustments such as:

- Optimizing scheduling of heat and air conditioning
- Better temperature set-point control
- Energy conservation buy in at the leadership level and individuals engaging in energy conservation efforts
- Building automation control adjustments and changes

## Passive Solar Wall at Camp Rapid



## Utility cost savings over this time period

Greater than \$1.5 million combined in electricity, natural gas, steam, and propane

Greater than \$300,000 annual energy cost avoidance

Greater than \$600,000 additional saved by using the Camp Rapid well for watering in place of Rapid City water. This began in FY13



## Moving forward with energy conservation for a sustainable future

The Huron Armory recently received a roof mounted 78.5 kW solar PV system, which will result in approximately \$19,000 annual electricity savings. The solar PV will provide most of the facilities' electricity.

Several additional solar PV projects are planned for the future as funding becomes available.

Average Annual Environmental results from the energy conservation program:

- Carbon Dioxide Equivalent, 2521 metric tons

- 540 passenger cars driven for one year

- 2969 acres of forest saved

- 2,758,484 pounds of coal burned

## Questions?

For any additional questions, please contact Energy Mike at

[Michael.a.Haltiner.nfg@mail.mil](mailto:Michael.a.Haltiner.nfg@mail.mil)

(605) 737-6557

## Army Focus on NetZero

- ▶ *We will appropriately manage our natural resources with a net zero strategy by producing as much energy as we use, capturing or reusing water equal to the amount we use, and eliminating solid waste disposal. This approach, when implemented, will contribute to increased energy and water security at Army installations.*



## Solid Waste Diversion

### EO Driven Goals

- ▶ 50% diversion of solid wastes from landfill every year
- ▶ South Dakota set a goal of 61%
  - ▶ With greater buy-in and education raise the goal 5 percent a year.
  - ▶ By 2025 61+% annually

### Baseline

- ▶ Used baseline year FY2011.
- ▶ 11% diversion rate

## Educational Campaign

### Don't let them forget

- ▶ Daily emails on recycling tips
- ▶ Incorporated into Annual Training
- ▶ Quarterly due outs
- ▶ Periodic walk through's
- ▶ Relationship building
  - ▶ In the communities
  - ▶ Public outreach
  - ▶ Any opportunity to teach

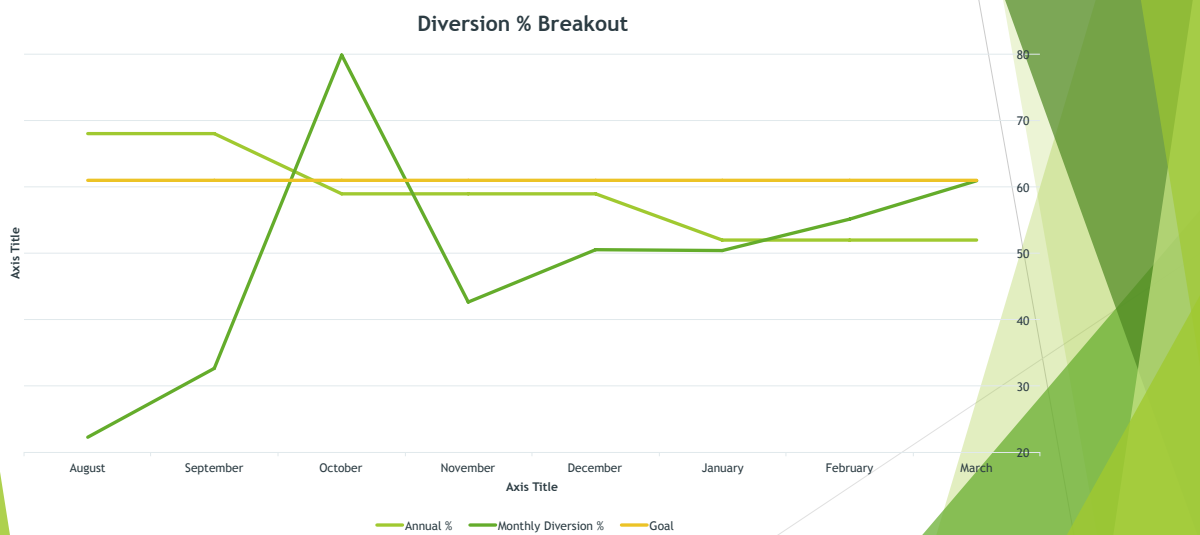
### What's in it for us

- ▶ Money savings up to \$19,000 annually.
- ▶ Money generated by recycling up to \$115,471.94
- ▶ Facilities ranked by diversion and shown to leadership quarterly:
  - ▶ Competition, the other shops are doing better than you





## Solid Waste Reduction







## Annual Training Incorporation

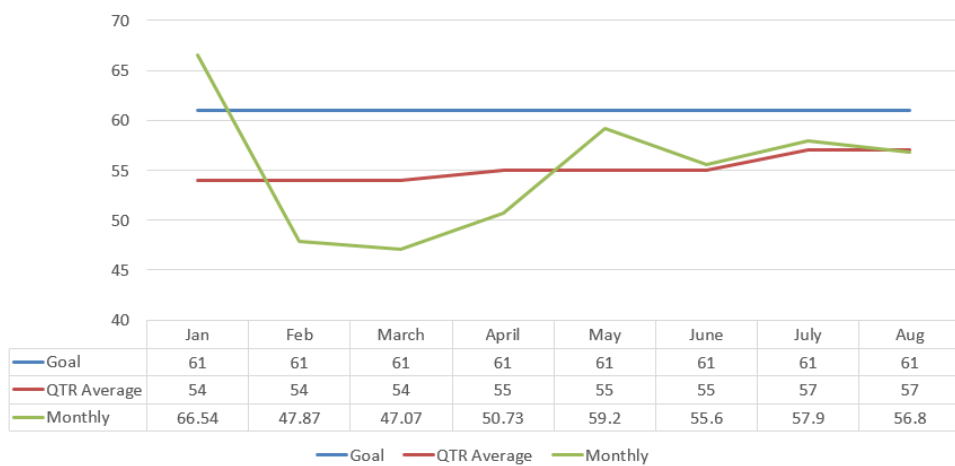
### Diversion Lessons Learned

- ▶ Cardboard Heavy Hitter
- ▶ Everyone keeps their paper
- ▶ Plastic/Cans attract bugs

### Recycling in the field

- ▶ They are going to laugh at you
- ▶ But it is worth it.
  - ▶ 45.41 tons diverted during AT

## Diversion Numbers



## Looking Forward

### Administration Goals

- ▶ New leaders, new goals
- ▶ Water? Sustainable Facilities? Pollinators?
- ▶ Be the best.

## Contact Information

### Matraysa Punderson

- ▶ [Matraysa.punderson@gmail.com](mailto:Matraysa.punderson@gmail.com)

### SDARNG Environmental

- ▶ Environmental Compliance
- ▶ Rapid City Standing Committee on Sustainability
  - ▶ Social Media
  - ▶ @RCSustainability