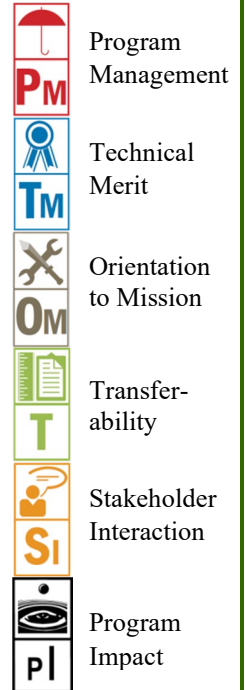


SECRETARY OF THE ARMY ENVIRONMENTAL AWARDS 2023

SOUTH DAKOTA ARMY NATIONAL GUARD SUSTAINABILITY, NON INDUSTRIAL INSTALLATION

The South Dakota Army National Guard (SDARNG) encompasses more than 3,100 soldiers across locations in 22 communities in a significantly geographically dispersed area. The SDARNG installation includes 26 armories, 7 maintenance facilities, and several leased training areas and permanent training sites; at the center of the organization is Camp Rapid, a key training resource and home to the Joint Forces Headquarters. At Camp Rapid is the Environmental staff for the SDARNG, charged with maintaining compliance and improving sustainable management throughout the state. While this team of specialists is essential, the ethic of sustainability is taking root throughout the statewide installation. Over the past two years, the managers and environmental officers at the SDARNG's shops, readiness centers and training sites have made great strides in improving waste diversion and recycling despite many logistical challenges. The Environmental staff have continued to support SDARNG facilities to meet the organization's goals for waste stream reduction, increased waste diversion, reduced energy consumption, compliance training improvement, and systems management with outstanding results statewide.



Decreased waste disposal has been a priority for the SDARNG's Adjutant General for several years, with an ambitious goal of 60% waste diversion rate by 2025. This goal is predicated on the success that the Environmental staff have achieved in just five years, moving the diversion rate statewide to 52.97% this year. Extensive communication, training, an expansion of recycling opportunities, and driven actioning at unit levels have helped to fulfill a commitment to waste diversion at all operational levels. With this dedication, the SDARNG is on track to increase diversion rates by 5% each year for the next five years. Between, FY 21 and FY 22 SDARNG saw a 9% increase in waste diversion alone.



Over FY21-22, the Environmental staff have continued to expand the installation's Qualified Recycling Program (QRP) while also continuing to empower Shop, Warehouse managers and Operations and Maintenance (O&M) staff statewide to seek out local recycling and diversion options unique to their communities. Forging partnerships with O&M, the G4 logistics community, Health & Safety Office, and other departments have helped the Environmental program to push a cultural shift of environmental awareness and stewardship. The Sustainability program's overall success with process improvement, training, and compliance is reflected in the SDARNG's recent external EPAS audit, which resulted in no significant findings or major risk concerns.



For FY22-23, the SDARNG is in the process of implementing several new waste diversion methods, which are expected to lead to another dramatic increase in waste diversion numbers, and potentially achieve the SDARNG's Adjunct General's ambitious goal two years early. Some of these processes changes are: (1) Increased efficient recycling routes with local partnerships reducing overflow materials being sent to landfills (2) A compactor for the warehouse to allow for efficient storage of recyclable packing materials, reducing frequency of overflow items being sent to the landfill (3) Acquisition of reusable aerosol cans which will lead to cost savings and reduction in material generation (4) Procurement of more trash and recycling



receptacles which will increase temporary storage reducing recyclable items overflow to trash, while also increasing receptacles identifiable, decrease frequency of accidental misplacement of recyclables.

Sustainability measurements from the Environmental Office are led by the Environmental Program Manager, the EPAS Manager, the Pollution Prevention Manager, and the Conservation Program Manager. In expanding the QRP and increasing availability of recycling, this staff was directly supported by The Warehouse operations staff, a shop chief as an M-Day Environmental Soldier, who helped conduct training on waste diversion throughout the state, and O&M staff at each facility. O&M and Supply staff are also empowered to find solutions in a state that does not have a strong recycling culture. With their fingers on the local pulse, so to speak, these operational staff are able to identify and take advantage when possible of special recycling events or partnerships with local businesses, schools, scouting troops, and more that create mutual community and SDARNG benefits.

The Environmental staff are an integral part of the eMS program and Environmental Quality Control Committee (EQCC), helping to identify improvement targets, and implement strategies to achieve those goals. Waste diversion is a key aspect for the SDARNG's eMS, which has helped to communicate the importance of best practices at the unit and facility levels. Environmental staff also conduct inspections and training in support of EPAS, and the face-to-face contacts they establish with SDARNG units have instilled new levels of compliance accountability. This also allows for the EPAS manager to identify any opportunities for improvement. The EPAS manager has coordinated their site visits in conjunction with the Health & Safety office; this structure minimizes the interruption at the SDARNG facility being visited while also helping Health, Safety, and Environmental to align their guidance and oversight.



The SDARNG has implemented a full range of planning documents, to include Spill Control and Countermeasures Plans; a Hazardous Materials Plan in conjunction with a Sharepoint-driven inventory system. An Integrated Solid Waste Management Plan was developed in FY21; this plan incorporates the hazardous material plan along with recycling programs to create a comprehensive guide for the SDARNG. Adherence to these plans helps the SDARNG to maintain its outstanding compliance record. The Environmental staff coordinates regularly with oversight agencies including the South Dakota Department of Agriculture and Natural Resources (SDDANR) and the South Dakota Hazardous Waste Program (SDHWP). Staff have also encouraged the wider community to expand recycling and environmental awareness, with staff previously serving on the Rapid City Sustainability Committee, a consortium of public and private organizations and businesses committed to sustainable management practices.



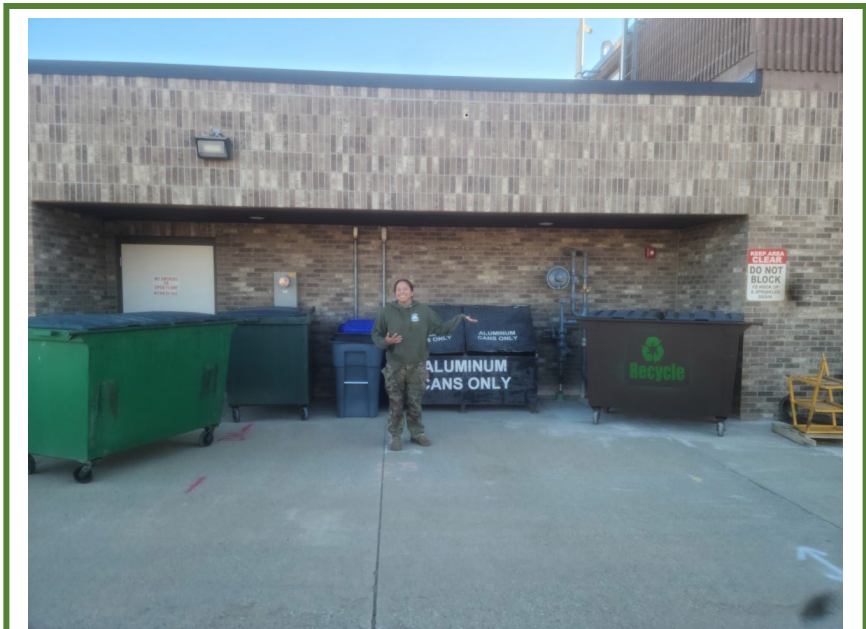
With continued efforts for energy reduction at facilities across the state, the Planning and Programming (P&P) Branch through the energy manager achieved an energy consumption reduction of 4.7% in FY21, exceeding annual reduction goals to meet an overall reduction of 30% by 2025. Numerous projects at facilities to retrofit or replace with more efficient units has continued and expanded. New facilities are designed to meet or exceed Army guidance and utilize solar and geothermal energy generation and smart technologies to reduce the energy demand or costs at facilities throughout the state.



Since 2016, solid waste diversion has been a significant aspect for the SDARNG's eMS, and the EQCC has supported a reduction of waste at the source as well as diversion. The Environmental office has in turn emphasized education about recycling throughout the installation. Recognizing the challenges of dispersed, often remote and rural locations with no access to recycling, the Environmental Office has emphasized connectivity across directorates to achieve diversion goals. Personnel from warehouse operations have been linked with operations and maintenance staff, for instance they are developing and implemented new paper recycling options and establish the vendors needed at different locations. Recycling efforts have also been tied into drill days and weekend events, with M-Day soldiers trained and equipped to enact these programs. The Environmental staff work closely with units and facilities staff to find collection solutions that work for a site's particular situation, creating a mix of centralized recycling at Camp Rapid and local vendor networks throughout the state. The eMS is focused on waste diversion, the entire installation has a consistency of messaging about the importance of recycling, and the Environmental staff continuously works with the Public Affairs Office and TAG to create additional messaging pieces for the coming year, emphasizing not only diversion, but also purchase reductions and green procurement.

Using QRP funds, the SDARNG is purchasing a new compactor this year to process cardboard, paper, cellophane, and metal; the compactor is housed in the SDARNG's central warehouse facility to maximize the efficiency of collecting recyclable materials. The QRP account continues to be funded with recycling revenues, particularly from scrap metal collected throughout the state. At present, the QRP account holds approximately \$114,000 after the purchase of \$11,000 in recycling support equipment in the first half of FY22. This fund will also cover the \$30,000 compactor purchase and an additional \$25,000 investment in recycling equipment throughout the installation.

Beyond the QRP, the SDARNG has taken a mosaic approach to recycling, recognizing the limitations of local recycling options and the costs in terms of time and resources to reach recycling points. The Environmental office has negotiated several contracts with vendors to collect recyclables from multiple sites; the SDARNG does in some cases sell these materials for QRP value, but it also avoids paying to dispose of them. In other cases, readiness centers will develop their own agreements with local vendors. The result has been steadily improving rates of waste diversion across the installation. To further improve recycling rates, the Environmental



An SDARNG shop employee showcases recyclable materials storage area. Shops across the state are vital to the waste reduction efforts we are achieving. The majority of recyclable metals for QRP funds come from these recycling efforts.



Office is developing a uniform recycling list that will apply to every facility, with additional item categories pursued where vendors permit.

FY22 Diversion Rates			
Location	Solid Waste (tons)	Recycled (tons)	Waste Diversion (%)
Sioux Falls	319.8	103.8	32.4
Mobridge	2.3	0	14.3
Sturgis	37.5	9.7	25.8
Huron	40.1	12	29.9
Pierre	15.8	8.9	56.1
Brookings	50.2	32	63.7
Rapid City	348	293.4	84.3
Mitchell	117.36	80.2	68.3
Yankton	5.2	0	0
Aberdeen	16.2	5.4	33.3
Webster	15.2	0.4	2.5
Vermillion	21.6	0	0
Watertown	50.4	7.2	14.3
Chamberlain	4	0	0
Total	1043.5	552.8	52.97



Hazardous Materials Management: The installation’s Hazardous Materials Plan is implemented in tandem with a material inventory system managed through the environmental office. Before items are wasted out and disposed, they are tracked, and other potential users are notified if they could reuse or repurpose the material drastically reducing hazardous waste. The pharmacy aspect of the system empowers units to share materials rather than dispose of them or purchase new materials. If a shop maintains more than the basic load of materials required for their function, the surplus is established as available for other units to draw upon. The materials continue to be maintained in their proper storage in their respective facilities until requested, thereby minimizing the need for transport or stockpiling at any centralized location. Following the recent EPAS inspection, the Environmental Office has begun collaborating with federal contracting personnel to develop effective auditing protocols to ensure that green procurement goals are being met, with a particular emphasis on American-made products.



Renewable Energy, Energy Conservation, and Water Conservation: Over FY21, the SDARNG installation achieved an energy consumption reduction of 4.7%, exceeding annual reduction goals to meet an overall reduction of 30% by 2025. At the same time, the SDARNG has pursued integrating renewable and alternative energy sources. Passive Heating Solar Walls at five locations produced an estimated 215 million BTU in FY21. This heat production is equivalent to the electricity used in two homes over the course of a year and represents an avoided annual greenhouse gas equivalent of 11 metric tons of carbon dioxide. At the Huron Readiness Center, where live metering and reporting is in place, solar photovoltaic panels produced 73,066 kWh in FY21, equivalent to the energy consumed by ten homes in a year or 52 metric tons of carbon dioxide. Geothermal ground source heat pumps have also been installed at several sites, resulting in approximately 30% energy savings over conventional HVAC systems. These savings are



critical, not only in terms of energy use, but also in avoided utility costs as prices continue to rise precipitously. Ground source heat pumps are now in place at key facilities on Camp Rapid and the JFHQ building, as well as at the SDARNG's new Aviation Readiness Center, Watertown Readiness Center, and Mobridge Readiness Center. Over the course of FY21, these systems saved an estimated 1810 metric million BTU. The installation continues to target water consumption as well, working from a baseline set in

FY07. As of FY21, water used had been slashed nearly 41% from that baseline through the use of more efficient water devices and utilization of private wells for irrigation. The new aviation facility has a permanent stormwater pollution prevention plan, and the Environmental Office is working closely with contractors to ensure that projects requiring stormwater plans are enacted with appropriate erosion control and sediment discharge measures.



A passive heating solar wall. Energy projects from Energy manager and Planning and Programming efforts are identified through the Operations and Maintenance staff that manage each facility, then depending on cost are completed by that maintenance team for that facility or are passed to the Design and Project Management branch to manage as a typical project.



The sort of empowerment to address environmental sustainability demonstrated by the Shop Chiefs, Warehouse managers, Maintenance Manager, the Preventative Maintenance Manager, and the Operations and Maintenance Staff reflects the shared ethic of environmental stewardship that has grown across the installation. Environmental staff are leaders in rolling out these sustainability projects, but their success depends on the engagement of the entire organization. Particularly in recycling and waste diversion, without the collaboration of O&M, the Warehouse, and G4 staff, the Environmental office would not have been able to make headway alone. In meeting the challenge of an aggressive recycling goal, the Environmental staff has contributed to sustained culture change among SDARNG soldiers and staff, which is key to the continuity of these commitments. In support of the QRP, the Environmental staff teamed up with M-Day Environmental Officers/Shop Chiefs to provide training and awareness about the benefits of that program to every SDARNG facility. In particular, the SDARNG has emphasized how better waste diversion can conserve a given facility's resources by avoiding unnecessary purchase and disposal costs. The SDARNG is in the midst of developing a new Master Plan for the statewide installation with a greater emphasis on water and energy independence/sustainability, a focus





Camp Rapid wash rack sediment retention pond. Pond reuses water for washing vehicles. Algae and mosquitoes would be an issue and the addition of some floating plants, an aerator, and local minnow species keeps the use of chemicals to zero.

that seeks to preserve operations and control costs in the coming years. Other measures newly adopted to this plan link mission, environment, and community concerns such as dust issues. Dust issues had become a problem when vehicles left the full-time training area at West Camp Rapid onto city streets. Last fall, the Planning and Programming Office along with the O&M branch initiated a project to renew a track-out pathway and reopen a bypass that will minimize dust and traffic issues until a new entrance for the training site can be completed in October 2022.

Environmental staff participate in government purchase card (GPC) training to encourage green procurement and conduct annual auditing to ensure due diligence on GPC activities. As the leaders for EPAS and eMS, the Environmental staff have also been able to give a face to the policy through site assistance visits, which in turn encourages units, and employees to reach out for help and to share good ideas that can be applied elsewhere. Rather than focusing on a checklist of inspection points alone, the Environmental staff emphasizes communication with SDARNG units to learn about any upcoming operational changes. Developing rapport with the facilities in turn leads to trust, increased transparency, and coordination when issues arise. As a result of this cooperative stance, the SDARNG is now better able to track recycling rates, costs, and revenues thus identify trends or points for improvement. Better data capture, helps to validate the effectiveness of these efforts.

The SDARNG's championing of waste diversion and energy use reduction has the potential to shift perspectives in communities across the state. In areas where recycling vendors are rare or very small, the demand generated by the SDARNG could make the difference in supporting or enabling local

businesses to meet those needs. The SDARNG installation is essentially creating a market for those recycling vendors. At Camp Rapid, the SDARNG's sustainability projects are particularly visible for the community. Environmental and Energy staff members have been invited to speak at community events and local commerce meetings about how their programs could be enacted in the private sector, with more developments continuing. As a partner with the Rapid City Sustainability Committee, the SDARNG has provided guidance in areas ranging from green roof installation to lighting retrofits.

Beyond partnership with the Sustainability Committee, the SDARNG's staff have hosted Earth Day Expo Children's Programs for Rapid City and park cleanups with local schools. SDARNG soldiers regularly coordinate with Environmental staff on outreach opportunities in more rural locations. Staff have made presentations to youth and school groups on topics ranging from recycling to pollinator habitat, and they are regularly invited to participate in community fairs and events, this partnership is likely to continue in the future. As Camp Rapid embarks on a





300-acre forest restoration effort following a wildfire event in April 2021, the Environmental Office is partnering with the State of South Dakota's Wildland Fire Division to more effectively manage forest health and reduce future forest fire potential. The Environmental Office has integrated removal, thinning plans, and creation of firewood piles for local Native American reservation. The SDARNG has long been waste diversion pillar to the towns and cities where it operates. Its Sustainability programs help to promote the SDARNG ethics of environmental accountability and sustainability practices well beyond armory and training site management.