

Naval Support Activity Monterey, CA FY 2014 CNO Environmental Awards Sustainability—Non-Industrial Installation



Introduction

Naval Support Activity (NSA) Monterey, located in Monterey, California, is host to over 4,035 military, civilian and international personnel representing 15 tenant commands, each with unique and critical mission requirements. Represented commands include the Naval Research Lab Monterey (NRL) which conducts scientific research and weather modeling, Fleet Numerical Meteorological and Oceanographic Center (FNMOC) which provides 24/7 worldwide meteorology data and support to U.S. and coalition forces, and the Naval Postgraduate School (NPS). The Naval Postgraduate School is the largest producer of advanced degrees for DoD and proudly graduates approximately 1,500 students annually from all U.S. military services as well as foreign military members from over 50 countries.

Naval Support Activity Monterey provides responsive, high quality support to enable tenant commands' mission accomplishment.

The NSA Monterey footprint is geographically diverse and consists of the Main Base, the Dunes/Research Area, Point Sur Facility, La Mesa Village family housing, Navy Annex, McMillian Air Field, Camp Roberts, and Naval Industrial Reserve Ordinance Plant facilities at Sunnyvale and Santa Cruz, CA. Combined, NSA Monterey manages over 160 buildings enclosing nearly 19 million square feet on almost 1000 acres. Included in this inventory are the Hotel Del Monte and NPS Engineering School historic districts.

NSA Monterey
Partnering for a **GREENER** Future

April 22
1030-1300
Environmental Awareness
Table @ NEX

April 22
All Day
Navy Exchange promoting
new plastic bag recycling
program - free reusable bags
@NEX

April 22
1400-1500
Tree Planting @ Tennis Court 1
in front of Herrmann Hall

April 23
0900-1100
Trash Pickup on Main Base as
part of the "War on Trash" @
Spruance Plaza (in front of
Spruance)

5th Annual Earth Day Event
April 22-23, 2013

Contact Johanna Turner for more information
Johanna.turner@navy.mil, 656-7746

Leadership Commitment to Sustainability

Installation senior leadership is fully committed to sustainability. The Environmental Management System (EMS) **Executive Steering Committee (ESC)** was established to bring together senior leadership to partner in environmental decision making through communication and collaborative efforts. This group strives to exceed the sustainability principles set forth in Department of the Navy guidance. The ESC meets quarterly and is chaired by the Installation Commanding Officer, Captain Timothy Faller. The NSA Monterey EMS program has successfully identified and managed significant environmental aspects. The effective management of environmental media reduces environmental impacts while increasing operational efficiency and sustainability.

Culture of Efficiency

NSA Monterey had an unprecedented **77% solid waste diversion rate in FY14**. This impressive diversion rate is contributed to base wide awareness training, outstanding oversight, and local partnerships. The installation has partnered with the City of Monterey Solid Waste Program to aggressively monitor what is being disposed of as waste and what is being diverted. Through this partnership, the Installation Solid Waste Program Manager has identified additional waste streams that could potentially provide revenue to the sustainable solid waste program. An example of this is the scrap metal program that has been recently reevaluated and in FY14 has resulted in a 41% increase in scrap metal diversion. In order to ensure sustainability of the program, the facility support contract staff conducts daily inspections of containers. These inspections help identify potentially incompatible items that may lead to compliance violations and increased disposal costs.

In FY14, the local Fleet Logistics Center (NAVSUP), Defense Logistics Agency (DLA), and the Monterey County Landfill Last Chance Mercantile entered into a **Greening Commodity Transfer Agreement**. As part of this agreement, furniture that DLA cannot accept and previously would have left the base as trash is now donated to Last Chance Mercantile. This organization sells used items to the community and profits are used to support landfill operations. In the seven months since this agreement was established, Fleet Logistics has diverted 206 pieces of furniture weighing 7.1 tons from the landfill.

The installations and its tenants are dedicated to **decreasing greenhouse gas emissions** due to fossil fuel consumption. The installation participates in the Federal Transportation Incentive Program (TIP), which provides free mass transit passes and vanpools to personnel, and maintains 14 electric vehicles that provide efficient, pollution free transportation within the main base. During FY13-14 the vehicles logged over 15,000 miles. Additionally, 4 hybrid and 15 flex-fuel vehicles have replaced traditional vehicles in the motor pool.

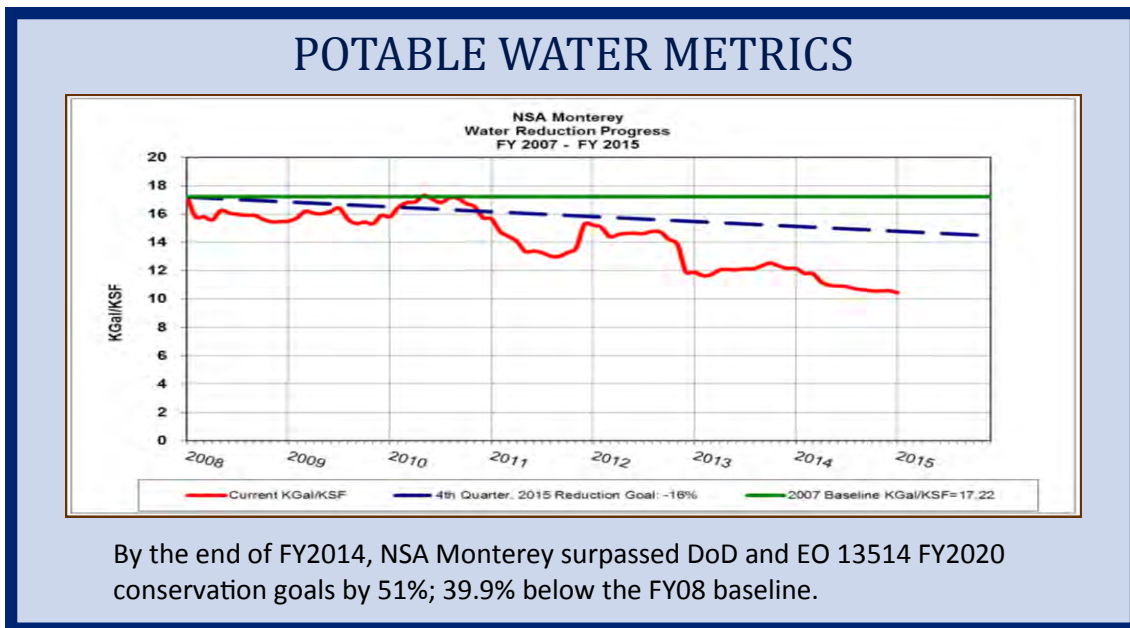
“Partnering with NSA Monterey has opened my eyes to the work and dedication that the Navy puts forth in sustaining the environment and working with the Monterey Bay community. They should be commended for successfully integrating environmental planning and decision-making into their daily operations.”

Ted Terrasas
City of Monterey
Sustainability Coordinator

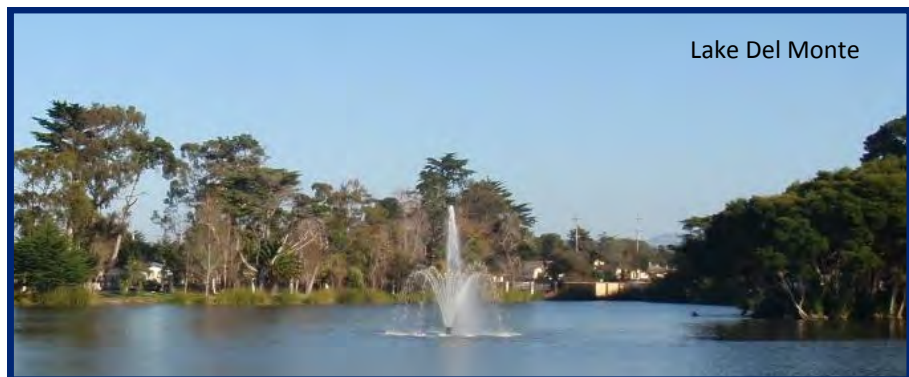
Improved Facility Efficiency

Potable Water Conservation

The California American Water Company (CalAm), in partnership with the installation, conducted a survey of the NSA Monterey Main Base and provided a report outlining water conservation practices. A similar survey was conducted by installation personnel at the Navy Annex. These studies estimated that 72% of water used on the installation is for sanitary use, including toilets, hand washing, and showers. Aerators being at that time had an average flow of ~2 gallons per minute (gpm). In 2014 the installation installed 0.5 gpm aerators in all facilities, realizing an estimated **annual savings of 1,143,000 gallons** of potable water. Additionally, 133 flush valve toilets in women's and unisex restrooms were replaced with dual flush handles. In normal use, dual flush handles use an average of 1.28 gallons per flush. This retrofit has the potential to conserve 763,000 gallons per year.



NSA Monterey realizes significant potable water savings by capturing storm water to be used for irrigation. The installation lies at the lowest end of an 1100-acre watershed that encompasses portions of the Monterey community and several golf courses. Stormwater moves from city culverts onto the installation where it is collected in Lake Del Monte on the main grounds. This arrangement provides more than 8 million gallons of water for irrigation on the Main Base and Navy's Monterey Pines Golf Course, providing nearly 100% of the Main Base irrigation.



Improved Facility Efficiency

Energy Conservation

The Energy Policy Act (EPA), Executive Order 13423, and the Energy Independence and Security Act (EISA) direct federal agencies to reduce energy consumption. The primary method being used by NSA Monterey to reach these milestones is energy efficiency, including: lighting retrofits, steam system upgrades, building air-handling optimization, and integration of the installation's energy management control system (EMCS).

The NSA Monterey Energy Working Group is an in-house team that manages a proactive energy conservation program. This group includes the Installation Energy Manager (IEM), Utilities and Energy Manager (UEM), and subject matter experts from Public Works Shops, Facility Management Division, and Engineering Division. They ensure every project meets the **highest standards for energy efficiency** and that conservation and renewable energy projects make financial and operational sense. This integrated approach is key to the remarkable strides that NSA Monterey has made toward sustainable operations.

Following a third-party audit, NSA Monterey's Energy Working Group created a plan of action to improve energy efficiency on the installation; this plan rests on four pillars.

Lighting Efficiency

- Re-lamped interior lighting with LED technology leading to a reduction of labor disposal costs due to extended bulb life as well as reduced energy use.
- Utilized Public Works offices as testing platform for new cutting-edge lighting technology in partnership with the DoD Energy Security Technology Certification Program (ESTCP).

Building Efficiency

- Optimizing building mechanical systems for energy efficiency and occupant comfort in accordance with the DoD-mandated Guiding Principles.
- Instrumental in the Navy Technology Validation Program (TVP) proof of concept initiative for Integrated HVAC and Lighting Control System, and Advanced Building Energy Software.



Photovoltaic panels provide energy to buildings in the historic NPS Engineering School District during the day, when demand is highest.

- **Developed in-house capability** to perform commissioning activities and incorporated these efforts as a part of regular maintenance activities conducted by Shops personnel.
- Incorporated web-based EMCS technology into daily operations, allowing for immediate identification and correction of deficiencies, avoiding costly system failures.

Improved Facility Efficiency

Boiler Plant Upgrades

- In FY13 NSA Monterey replaced one old and inefficient boiler with two smaller high efficiency boilers. These replacements allow the installation to reduce energy consumption during low demand periods equating to an **annual savings of \$117,583**.
- Steam distribution system monitoring upgrade provides early warning of steam trap failure, preventing loss of heat and water in the system and reducing maintenance costs.

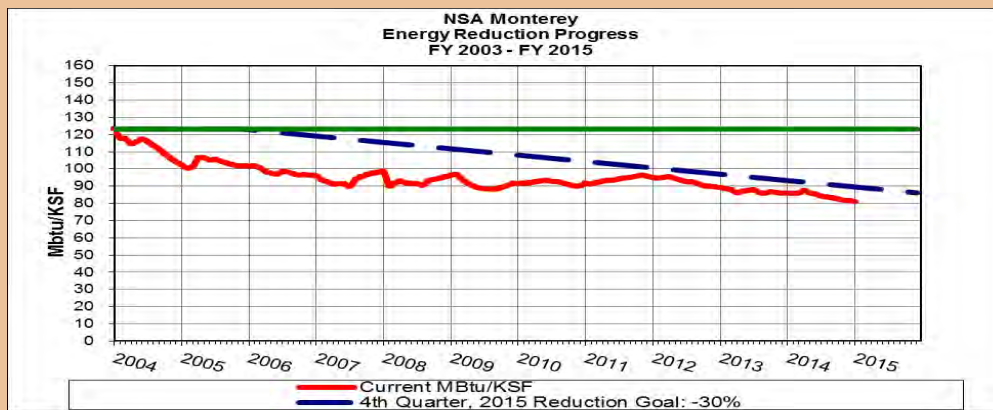


Installation Energy Manager inspecting high-efficiency boiler monitoring system.

Culture of Sustainability

- Encouraging staff to participate in decision-making process and provide critical feedback as part on-going testing of promising technologies.
- Photo voltaic panels on six buildings generate 364 megawatt hours per year.
- In FY14, a design concept was developed in-house to replace the need for traditional air conditioning by introducing cool outside air into the building's ventilation system. This modification, now installed and operational, allows for a **95% reduction in chiller use for a major data center** that used to be the second largest consumer of energy in the Southwest Region. This scalable and reproducible concept is being considered for all air conditioned buildings throughout the installation.

ENERGY CONSUMPTION METRICS



NSA Monterey leveraged innovative technology and occupant participation to realize a 34% reduction in energy consumption (electricity and natural gas).

Sustainable Landscape

Through a **collaborative in-house effort**, a plan and design for removing lawn areas was developed to provide for a more sustainable landscape in compliance with E.O. 13514 and the 2009 Sustainable Sites Initiative (SITES).

A 2.5 acre parcel located in the academic quad is being improved with a simple, low maintenance landscaping. The new landscape will decrease labor and green waste and require less irrigation and pesticides, while increasing natural resource benefit.

The new design maintains the historic characteristics of the location by using the same species of trees and hardscape materials used in both the historic Hotel Del Monte and NPS Engineering School designs. Over 50 trees are featured in the landscape plan, which includes native plants, locally sourced materials, and locations for installation staff and students to meet or sit quietly in nature.



Construction begins on sustainable landscaping project. Mature trees are to be protected and the area made more usable for installation personnel.

Existing landscapes are managed for ecosystem health and human use, including walking trails, interpretive signage, and sitting areas. All green waste is sent to a centralized composting facility and pesticide use is kept to the absolute minimum.

Outreach

The NSA Monterey Environmental Division expanded Earth Day 2014 into a five-day event. Booths were set up each day at lunch time in a variety of locations and two of the installation's most significant conservation issues were highlighted: potable water conservation and solid waste disposal. Thanks to the installation's strong relationship with California American Water, the water purveyor for both the installation and most local housing, water conserving gadgets were provided free of charge. Shower heads, toilet test kits, hose nozzles, and a variety of other useful items were distributed during this event that allowed for interaction between the private water utility, installation environmental staff, and installation personnel.

Using EMS as a conduit, the installation has developed and implemented a well received internal process for **mission-specific environmental training** where site specific training modules are created for tenants and commands. This method allows for better understanding on how the installation complies with environmental regulations and the role everyone plays.

EMS Success Story

The NSA Monterey Environmental Division has successfully applied EMS to identify, correct, and prevent future incidents of environmental non-compliance. One incident stands out as an excellent example of the innovative methods being used to foster a culture of sustainability across the installation.

When Environmental Division personnel discovered a large quantity of Hazardous Waste (HW) in an installation dumpster. The HW was removed from the dumpster and the responsible parties were identified. It was determined that knowledge of the HW disposal process was insufficient. Within ten days, an outreach scheme was developed to correct the deficiency by clearly communicating management requirements to personnel.



Hazardous waste was found in a dumpster following a large laboratory being shut down and cleaned out. Environmental Division personnel removed the waste for proper disposal and determined the root cause of the problem: a lack of awareness regarding hazardous waste disposal.

Proactive outreach campaigns consist of mission-specific training and distribution of guidance documents. More importantly, installation personnel meet the environmental staff and are able to communicate mission requirements and cooperate on ways to meet them sustainably.



Summary

Sustainability is woven into the cultural fabric of NSA Monterey. Through staff interaction, adoption of cutting edge technology, forward-looking engineering, and solid leadership, NSA Monterey is setting the standard for sustainability within the Navy and the Department of Defense. Future efforts are planned to build on the many successes this committed team have already brought to fruition.