

NAVAL WEAPONS STATION SEAL BEACH

Sustainability - Industrial Installation Award Nomination 2013

Introduction to NAVWPNSTA-SB



Naval Weapons Station Seal Beach (NAVWPNSTA-SB) and Detachments Fallbrook and Norco continue to make exceptional progress to achieve presidential and command sustainability goals having exceeded FY13 targets for energy reduction, water conservation, recycling, elimination of hazardous waste, and implementation of Low Impact Development. Accomplishments are part of the command's Environmental Management System (EMS) which provides a framework to engage the entire organization in the pursuit of pollution prevention and improved environmental quality. Central to the program's success are the Goal Owners, the Environmental Team, leadership support, and engagement of operators through our SMART Shop Process.

NAVWPNSTA-SB provides weapons storage, loading of ready-for-use ordnance, missile maintenance, weapons systems assessment, and support to ships of the United States Pacific Fleet and Coast Guard. The three locations, which are approximately 50 to 80 miles apart, are managed predominantly from Seal Beach. Environmental management challenges include operating within an intensely developed urban area which places high demands upon energy and water usage, creates pressure on remaining natural areas, and causes tight regulation due to air and water pollution impacts to both human health and the environment.

Seal Beach



NAVWPNSTA-SB is a key munitions supply point for the Pacific Fleet homeported in San Diego. The base is host to Navy Munitions Command CONUS West Division (NMC CWD) and a component of Naval Surface Warfare Center (NSWC) Corona, as well as several other Navy and USMC commands. Home to the Seal Beach National Wildlife Refuge.

Acres: 5,000 — Population: 750

Detachment Fallbrook

Detachment Fallbrook is home to the only West Coast air-launched missile maintenance facility. A unique component of the mission is to load amphibious assault ships with munitions via "vertical replenishment" pictured here. Fallbrook also provides support to MCB Camp Pendleton.

Acres: 8,852 — Population: 234.



Detachment Norco



Detachment Norco is home to the NSWC Corona Division. NSWC Corona Division performs weapons assessment and research work. The installation's central feature is the Lake Norconian Resort historic district, which dates back to the heydays of early Hollywood.

Acres: 247 — Population: 1,408

Management Overview

The **Environmental Management System (EMS)** is the primary method of managing environmental programs, identifying pollution prevention opportunities, and reducing environmental impacts of the installation and mission. Primary mission tenant commands and military training units aboard the installations are fully integrated into the host EMS and support achievement of sustainability goals.

Key tenants include:

- Navy Munitions Command CONUS West Division (NMC-CWD)
- Naval Surface Warfare Center Corona Division (NSWC-CD)
- USMC Reserve Training Center

A signature feature of the EMS is the SMART Shop Process which provides supervisors with SMART Binders, a simple guide to effectively support the EMS. The process is a joint effort between the environmental team and the shop personnel in which they learn how to reduce environmental impact and more effectively meet compliance and mission requirements. The shop's "Environmental Points (EPs)" are mapped and environmental aspects identified. The Binder enables more effective management of environmental impacts and provides simple, easy-to-use training materials and a monthly self-check list.



CDR Werring (XO) and Marcelle Miller (EMS Coord) issue Green E to USMC Reserves



CAPT Ver Hage, NSWC-CD Commanding Officer presents Green E.

The SMART Shop Process is dovetailed with the command zone inspection program to inspect all facilities annually. Led by the Executive Officer, the multi-program inspections include EMS, NAVOSH, fire safety, and facilities maintenance.

The **Green E** is issued once the SMART Shop is certified "EMS Conformant" by the IEPD and Executive Officer. The certificate is valid for one year, until the next annual review.



The Green E Symbol of Sustainability

Management Improvement Initiatives

Leadership	<ul style="list-style-type: none"> •Command Zone Inspections •Goal Owners
Engagement	<ul style="list-style-type: none"> •SMART Shop Process and Supervisors •Environmental Coordinators
Integration	<ul style="list-style-type: none"> •NSWC Corona Division •NMC CONUS West
System	<ul style="list-style-type: none"> •Continual Measurement and Improvement •Small Smart Sustainable Steps

Four focus areas were pursued by the installation using the EMS. "Sustaining the Program" through a fiscally challenging FY13 was the overarching goal. Dovetailing and creating synergy with other programs was a key success factor. Leadership remained consistent to engage all tenants and personnel. Goal Owners identified creative solutions so that small, smart steps toward sustainability goals could continue to be taken.

Installation Score Card

SUSTAINABILITY GOALS and progress to achieve the EMS Objective & Targets are reviewed regularly by the Environmental Top Management Council (ETMC) which is chaired by the Commanding Officer.

EMS Objective and Targets	Goal Owner	Baseline	FY13 Target	FY13	Result
Energy Intensity (utility provided) is reduced annually by 3% leading to 30% by FY15 compared to a FY03 baseline. (MBtu/KSF) - Seal Beach and Det. Fallbrook.	NAVFAC	44.24	33.62	28.37	-36%
Energy Intensity (utility provided) is reduced annually by 3% leading to 30% by FY15 compared to a FY03 baseline. (MBtu/KSF) - Det Norco	NAVSEA	122.94	93.43	126.3	3%
Renewable Energy will account for at least 7.5% in FY13 and thereafter. Seal Beach, Det. Fallbrook & Det. Norco.	NAVFAC	0.00	7.5%	6.3%	8%
Water Intensity (utility provided) is reduced by 2% per yr, and 26% by 2020 from a 2007 baseline. (KGal/KSF)	NAVFAC	67.01	58.97	53.27	-21%
Well water use at the Golf Course is reduced by 3% annually in 2012 (Acre-Ft).	MWR	652.7	574.38	394.81	-39.5%
Solid waste diversion rate (does not include construction and demolition waste) is increased by 6% annually over FY 08 baseline to a 50% diversion rate by 2015.	NAVFAC / NSWC / NMC	22.78%	46%	65%	60%
Construction and Demolition waste diversion rate to exceed 60% by 2015	NAVFAC	72.62%	56%	87%	97%
Hazardous Waste: FY13 goal is to reduce HW generation 10% below FY12 values.	NAVFAC- ENV	78,422 lbs	70,580 lbs	25,016 lbs	-32%
Storm Water: Design and install Low Impact Development (LID) projects wherever feasible to minimize storm water runoff.	NAVFAC- ENV	0	100%	5 projects	100%

GOAL OWNERS – At the core of the Sustainability Program are the Goal Owners who drive continual improvement through their energetic leadership. Assigned by command’s ETMC, the Goal Owners champion the planning and achievement of the “S-Goals.” Since significant sustainability achievements were made prior to 2012, realizing additional gains has been more challenging especially since high return projects have already been completed. Budgetary restrictions have also added hurdles. The Goal Owners pursued a strategy to develop creative, no- or low-cost projects, and further engaged all tenants and practice owners to create a stronger sustainability culture.



NOTABLE GOAL OWNER ACCOMPLISHMENTS

- ✓ Hazardous Waste
- ✓ Water
- ✓ Low Impact Development
- ✓ Energy
- ✓ Solid Waste
- ✓ Community Involvement

Shown at Left : Sustainability Goal Owners (left to right) Jeff McGovern (HW), Matt Duke (Energy/Water), Marilou Kaya-byab (Sustainable Solid Waste), and Julian Ibarra (Storm Water/LID)

Hazardous Waste (HW)

Opportunity Assessment Results in Significant Reductions – 32% HW Reduction

An opportunity assessment was performed in conjunction with the SMART Shop initiative in order to achieve the 10% reduction goal. In FY13 HW generated was reduced from 78,422 in FY12 to 53,406 lbs. across all three installations.

The HW Team and SMART Shop Approach

The HW team is comprised of 3 personnel that work collectively in 39 operational areas with 52 HW points across the three installations. The HW Team struck out in FY12 to streamline HW management and achieve a 10% reduction in HW. The approach entailed improved sampling and classification of HW, taking advantage of regulatory exemptions, and more effective involvement of shop practice owners.

Improved HW Sampling Program

We revised our sampling protocol to resample routinely generated waste. The finding:

- Over half of the submitted RCRA and non-RCRA samples were identified as non-hazardous
- One half of RCRA waste could be re characterized as non-RCRA waste.

Maximizing Regulatory Exemptions

The second difference maker was maximizing hazardous waste exemptions and working with innovative services and technologies that support our goals.

Batteries. We work with Call2Recycle to accept small rechargeable batteries. Since January 2012, the Navy

has saved \$4,166 diverting 1500 lbs. to recycling.

Used oil. NAVFAC added Black Gold Industries (BGI) to a service contract to pump and recycle used oil. This change, plus the cost avoidance of purchasing and disposing of 55-gallon drums., achieved thousands of dollars of benefit.

Aerosol can recycling was added by purchasing a simple aerosol can puncturing device which safely captures residual paint.

Considered a Universal Waste in California, aerosol cans previously added to our HW generation, but empty cans are now recycled and HW virtually eliminated.



Jeff McGovern, HW Media Manager

Engaging the Practice Owners through the SMART Shop Process

All practice owners are empowered with training and information, in a SMART Binder, to stay in compliance. Our staff engages regularly with our SMART shops to continually educate and identify pollution prevention.

The reduction of HW generated not only reduced pollution and costs, but also enabled a change in designation for Dets. Fallbrook and Norco from Large Quantity Generator to Small Quantity Generator (SQG). As a SQG, disposal time frames are extended and some compliance requirements eased – freeing more time for improving the EMS and compliance programs.

Water Conservation

Innovative yet simple ideas achieved remarkable reduction to water usage at Detachment Norco, which is the former site of the Lake Norconian Resort, a property on the National Registry of Historic Places.

The historic landscape status requires the Navy to keep the resort's "reflecting ponds" full and flowing into Lake Norconian although they support no beneficial or mission need. Fresh water was continuously fed into the cascading ponds from a 1 inch water line. To eliminate the need for this water usage a recirculating pump was installed in the adjacent Lake Norconian to resupply the ponds.

- 22.5 million gallons of potable water per year eliminated (19% water usage reduction)
- \$62,600 saved



Historic Lake Norconian Resort at Det. Norco

Energy Conservation

Significant progress in energy conservation yielded a major reduction in energy intensity over the past two years despite lack of funded energy projects. The NAVFAC PWD Resource Energy Manager (REM) focused to implement energy conservation measures with low or no implementation costs that could still yield high savings. His challenge was to influence tenant personnel to be more open to alternatives and to agree to change their energy usage behaviors.

Success Story

The REM teamed with mission tenant NMC to reduce energy usage by 58% at the Navy Munition Command CONUS West HQ Building which was ranked as the 2nd largest administrative energy consumer at Seal Beach. The REM identified the opportunity to save a large amount of gas by eliminating the reheat boiler during the summer, which was designed to optimize comfort. This action would therefore cause a loss of personal climate control



Matt Duke, REM

within each office and potentially result in less comfortable work conditions. The real challenge was to convince personnel to support the change, a seemingly insurmountable challenge and therefore previously overlooked.

The fact that the implementation was successful is a testament to the **overall culture change achieved** in regarding energy usage and environmental impacts.

This culture was developed through:

- Consistent leadership support
- Hands-on training for Building Monitors / Environmental Coordinators, and

This energy conservation measure had **no cost** to implement and reduced the annual natural gas utility cost from about \$35,000 to \$10,000. The total energy consumption of the facility was reduced by a remarkable 58%.

Sustainable Solid Waste

The Sustainable Solid Waste (SSW) Program has consistently exceeded DoD waste diversion goals since FY10. During the past 2 years, over 1,300 tons of waste (excluding construction and demolition debris) have been diverted to achieve diversion rates of 61% in FY12 and 56% in FY13. The program success is attributed to the involvement and support of all personnel and integration with the EMS and PWD.

Program Highlights:

- Recycling Binders are provided for each organization and includes instructions, list of what can be recycled, location of bulk recycling bins (scrap metal, wood), and how to manage electronic waste.
- Integration of SSW program requirements into all construction projects through the EMS. Environmental Aspect Review process. Through the PWD pre-construction briefing process, contractors receive project-specific guidance on solid waste diversion and reporting.

Noteworthy Achievements:

- The construction and demolition program diverted 4,491 tons in FY13 and, with an economic benefit of saving \$288,737, for a total program diversion rate of 97%.

- The Property Reuse Program recycled 5,355 lbs. with a total cost avoidance of \$31,438.
- America Recycles Day annual events collected 21K lbs. of electronic waste for recycling.
- A dumpster utilization study at Det. Fallbrook was performed to reduce number of refuse containers which is saving over \$9,000 per year (8% of refuse cost).



SSW Team



SSW Program Recycles a Metal Shed

Low Impact Development (LID)

NAVWPNSTA Seal Beach Achieves 100% LID Implementation

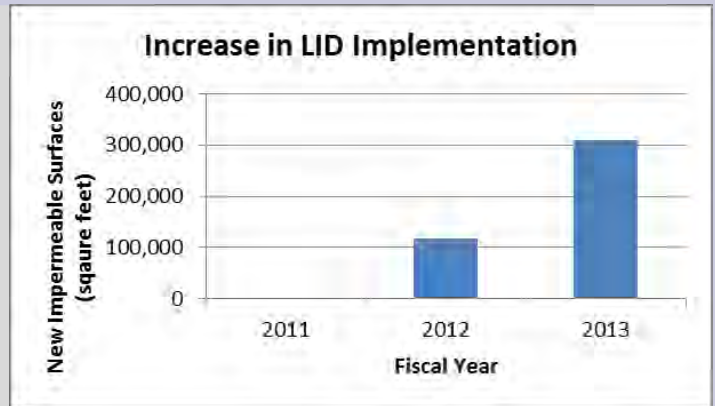
Low Impact Development (LID) for storm water management became an Energy Independence and Security Act requirement in FY11 for all projects over 5,000 square feet to mitigate the impacts of storm water runoff and nonpoint source pollution. The importance of this objective is of special interest in semi-arid southern California and in particular to Seal Beach which is home to the 1000 acre Seal Beach National Wildlife Refuge.

In FY12 and FY13 there were approximately 10 acres of new impermeable surfaces constructed. Projects were identified through the Environmental Aspects and Requirements Review process (EARR), and an initial review of the project is conducted to verify whether the project triggers LID.

IN-HOUSE LID Analysis and Design performed by PWD engineers reduced project time and cost. Design engineers were trained by the base Storm Water Manager to use the California State Water Resources Control Board's Post-Construction Water Balance Calculator as a LID tool. Projects were analyzed to identify the complexity of LID measures need. Projects with simple measures, such as grading to direct runoff to permeable surfaces or swales, had the full LID analysis performed in house, reducing contract cost.

LID Successes

- Sustained storm water quality and quantity based



- on visual observations and sampling
- LID landscape decreased use of irrigation and improved base appearance



Left to Right: Glenn Ellis, FEAD Engineer, Eric Keyes, Construction Manager, and Julian Ibarra, Storm Water Media Manager showcase the use of native plants at the USMC complex

Projects that Included LID FY12-FY13

Fiscal Year	Project	New Impermeable Area (SF)	LID Analysis	
			In House	Contracted
FY 13	Parking Lot (DLA)	12,000	✓	
FY12	Canopy (NWSSB)	12,000	✓	
FY13	RV Storage Lot (MWR)	204,516		✓
FY13	Tactical Vehicle Lot (CORIVRON 11)	92,000		✓
FY12	MILCON-New Building, POV Lot and Tactical Vehicle Lot (5th Bat. 14th Mar)	107,920		✓

Implemented LID Measures

- Grade to permeable surfaces
- Bioretention
- Filter/Buffer Strip
- Swales: Grass, Infiltration
- Infiltration Trench
- Native Plant Landscaping

Stakeholder and Community Involvement



America Recycles Day
Sustainable Solid Waste Program

The Installation SSW Coordinator and Recycling Team partnered with Environmental staff to promote waste diversion and recycling throughout the two year period, events such as 5K runs and Earth Day. The America Recycles Day event focuses on a e-waste recycling round-up, and was successful at diverting 21K lbs. in FY12 and FY13 combined.



Area Plan Spill Response

The Environmental staff participates with equipment deployments to support the Area Plan for oil and hazardous substance releases. The base provides boom storage and anchoring for federal and state spill response organizations. Pictured here: equipment deployment exercise involving Marine Spill Response Corp, Coast Guard, and State Fish and Game.



National Public Lands Day

The station, along with Seal Beach National Wildlife Refuge, hosts an annual event with the objective of restoring native vegetation to several acres of salt marsh and upland habitat. NPLD proved once again to be an ideal opportunity to involve the community. Volunteers included station personnel, Boy Scout and Girl Scout troops and students from local schools.



Det Fallbrook's INRMP Climate Change Adaptation Project

The Integrated Natural Resources Management Plan (INRMP) Climate Change Adaptation Project focuses on Detachment Fallbrook as a case study to use the best available scientific data, subject matter experts, and regional stakeholders to assess the potential impacts of climate change on natural resources and identify methods for incorporating climate change adaptation planning into DoD INRMPs. A key element of the climate change adaptation project culminated in a two-day workshop that was held at Detachment Fallbrook in August 2013 with key collaborators and regional participants.



Sea Water Intrusion Partnership

The Environmental Office has been partnering with the Orange County Water District (OCWD) in combating seawater intrusion issues in the coastal zone of northern Orange County. Coordination efforts by the Seal Beach Environmental Office ensures all of the critical OCWD work at the station complies with explosives safety and security standards and protects natural and cultural resources. Currently, additional clustered groundwater monitoring wells are being planned at six locations. This ensures that OCWD can obtain adequate data to plan the remedies necessary to preserve valuable water resources for the local communities.