

1. Introduction

Naval Supply Systems Command, Weapon Systems Support (NAVSUP WSS) provides supplies, services, and quality of life support to the Navy and Joint warfighter. It exercises centralized control of more than 375,000 different line items of repair parts, components, and assemblies providing global logistics support. NAVSUP WSS Hazardous Material Control and Management and Pollution Prevention staff serve as the Navy's lead organization with technical and management authority and accountability for all logistics support functions associated with Hazardous Material Control and Management. They perform these functions through a program called the Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP), which supports regulatory compliance including Emergency Planning Community Right-to-Know Act (EPCRA), Occupational Safety and Health Administration (OSHA) and Navy requirements through material control, tracking, and usage.

The Navy Environmental Sustainability Development to Integration (NESDI) program is the Navy's environmental research and development program and is managed by the Environmental Readiness Division (CNO N45). It seeks to provide solutions by demonstrating, validating, and integrating innovative technologies, processes, materials, and filling knowledge gaps to minimize operational environmental risks, constraints and costs while ensuring Fleet readiness. NAVSUP WSS, in support of the NESDI program, formed a multi-functional team consisting of representatives from Naval Facilities Engineering Systems Command (NAVFAC) Environmental, NAVFAC Safety, NAVFAC Engineering and Expeditionary Warfare Center (EXWC), Bureau of Medicine and Surgery (BUMED), Commander Navy Installation Command (CNIC) Safety, NAVSUP WSS and NAVSUP Fleet Logistics Centers to develop a new process approach and capability using the newly fielded WSS Hazardous Material Management Tool (HMM Tool) in order to improve and streamline the hazardous material (HM) substitution process. The project demonstrated a process that standardized procurement of consumable general use HM and tools that guided end users, supply personnel, safety, and environmental service providers in the selection of environmentally preferred products at shore based facilities.

2. Background

Navy units ashore use a variety of "general use" HM to accomplish their mission requirements. These include paints, cleaners, oils, and lubricants, among others. For most applications of general use HM, the Navy has a choice on which products to procure. These products are not specifically listed by National Stock Numbers (NSN) in a technical manual; the user can select the product of their choice. Items that have NSN, and materials that meet a weapons platform requirement or military specification are not included in general use HM. The Navy adds approximately 700 new general use locally purchased HM products each month to the supply system. The proliferation of general use HM runs counter to the Navy's pollution prevention philosophy focused on preventing, minimizing, or eliminating the introduction of HM into the Navy system or finding less hazardous substitutes. It also becomes more difficult to control costs and to meet environmental and safety regulations.

NAVSUP WSS, through a research and development project funded by NESDI program, developed the “Navy Enterprise Wide Hazardous Materials Standardization and Minimization of General Use Consumables” project and conducted a pilot to demonstrate whether US Navy installations could increase the purchase of more environmentally-friendly HM substitutions using new tools and procedures. The team developed the project process and products over the course of two years with input from local stakeholders and subject matter experts in the field of supply, environmental, safety, industrial hygiene, and information technology. It was decided to focus on cleaning products because the Navy has significant demand for these items, and comprise approximately 10 percent of locally purchased HM. The team selected Naval Air Station Oceana and Naval Base Ventura County as the pilot locations because they had a reasonable number of general use HM purchases, possessed an onsite HAZMINCEN, represented a diversity in mission sets and were located in different regions of the country. The pilot testing was conducted from 1 October 2019 to 30 March 2020.

The team identified five major tasks of the pilot in order to increase the purchase of sustainable products while decreasing newly added HM. The first task was to create a fast track ordering process using the HMM Tool to make it easy for personnel to order sustainable products. The second task was the creation of a Navy wide Green Authorized Use List (AUL) consisting of sustainable products that anybody at any Navy base can order. The third task was to create a visual flagging system to highlight sustainable items on the Green AUL in the HMM Tool so that people could easily identify the preferred sustainable products to purchase. The fourth task was a “Clean with Green” community outreach program that informed and educated personnel at the two pilot bases about the fast track ordering process and the benefits of ordering sustainable products from the Green AUL. The final task was to capture the pilot sites HM supply ordering data to determine the effectiveness of the pilot.

Fast Track Ordering Process. Units can only purchase HM from their AUL. Every product on the AUL needs approved by the base’s industrial hygiene, safety, environmental, and supply officer, which normally takes 3-5 days. Units use the HMM Tool, which is a user friendly web-based interface with the Navy’s supply system, to order and manage their HM and AUL. The team created a new fast track ordering process, using the HMM Tool, that automatically approved the purchase of sustainable products from the Green AUL. The team also published new standard operating procedures and technical guides which provided instructions on how to fast track order products.

Green AUL. The NESDI team selected the US Environmental Protection Agency's (EPA) Safer Choice certification cleaners as the project's sustainable product listed on the Green AUL. The Department of Defense Instruction 4105.72, Procurement of Sustainable Goods and Services recognizes the EPA Safer Choice program, and Safer Choice cleaners are widely available, to include purchases through General Services Administration. The Safer Choice program incorporates a number of key criteria including an independent certification model, products that are safer for humans and the environment, product availability, and other benefits such as sustainable packaging. Each of the 118 Safer Choice cleaners added to the Green AUL were thoroughly reviewed by the NESDI team's industrial hygienist, safety, and environmental representative and approved for Navy-wide use. The team conducted market research and published a list of local vendors that carried specific Safer Choice items and created a cleaner category/Safer Choice crosswalk quick reference guide to let users know what Safer Choice cleaners were available for their needs and where to purchase them.

Green Leaf Logo. The team created a new green leaf logo and tagged each item on the Green AUL in the HMM Tool. The green leaf logo highlights all sustainable items which allows users to easily identify preferred sustainable products. Seventy-one percent of survey respondents stated that the Green Leaf influenced them to purchase Safer Choice cleaners.

Clean with Green Community Outreach. The project's community outreach program potentially impacted over 34,000 military members, their families, and civilians on the two pilot sites. WSS and the NESDI team briefed commanders and senior leadership at both pilot sites to solicit their support for the pilot. The team met with unit supply, safety, and environmental representatives at each installation to promote the benefits of choosing and using Safer Choice products along with the new fast track ordering process. The team distributed "Clean with Green" flyers throughout the pilot sites. NAVSUP WSS broadcast the pilot and benefits of Safer Choice products to a national and international audience as well by briefing at the Navy Ashore Hazardous Material Managers Annual Meeting in November 2019 and the Department of Defense Joint Safety and Environmental Professional Development Symposium in April 2020. These two briefings reached an audience of over 150 active duty and Navy civilians in the hazardous materials community.

Capturing Supply Ordering Data. Operational testing was executed from 1 October 2019 to 31 March 2020. The team captured and analyzed AUL request and purchase data through the HMM Tool at the end of each month. The team identified any new cleaners that were requested to add to the AUL and if those cleaners were new to the Navy inventory or just to the base. Only material new to the Navy supply system was considered for this pilot. The team also identified cleaners purchased, if the cleaners were Safer Choice or not, and if the cleaners were locally purchased, ordered through the supply system, ordered through Third Party Logistics (3PL), or were free issued. If an item was locally purchased, it was then determined if it was to meet MILSPEC requirements or if it was a discretionary cleaner. Cleaners that were purchased through the supply system or needed to meet MILSPEC requirements were out of scope. The data from the pilot dates were compared to the data from the same time period during the previous fiscal year from 1 October 2018 to 31 March 2019 in order to identify the change. The team baselined the AUL prior to the start of the pilot. The new Safer Choice cleaners added to the Green AUL were considered part of the pilot baseline.

3. Summary of Accomplishments

The Navy Enterprise-Wide HM Standardization and Minimization of General Use Consumables project demonstrated that the Navy can increase the purchase of sustainable products and decrease the amount of new HM added to the AUL through the use of web-based tools. The overall benefits of the pilot were improved health, safety, and environmental stewardship by increasing the use of sustainable products and the time saved by fast tracking Green AUL order requests. A significant benefit of creating a green leaf logo and highlighting Green AUL products with it in the HMM Tool is the visibility of sustainable products pre-approved for purchase. Specific accomplishments of the pilot are:

- The EPA awarded NAVSUP WSS their Safer Choice Partner of the Year for its accomplishments during this project of advancing the use of safer chemicals.
- The pilot sites increased the purchase of discretionary sustainable cleaners by 1,500% from the previous fiscal year.
- Nine percent (14 out of 115) of the discretionary cleaners locally purchased by the pilot sites were Safer Choice cleaners compared to zero percent (0 out of 42) for the previous fiscal year.
- WSS identified existing Safer Choice products in the Navy supply system and added 118 more, increasing the number of Safer Choice products available for purchase by 347 percent.
- The pilot sites decreased the number of newly added discretionary cleaners to their AUL by 25% or from four new cleaners last fiscal year to only three new cleaners this fiscal year.
- The new Green Leaf Logo influenced 71% of end of pilot survey respondents on their purchase of a sustainable cleaner.
- One hundred percent of end of pilot survey respondents said that the fast track ordering system was more efficient than the normal ordering process.
- The Clean with Green community outreach program, which informed people about the benefits of purchasing safer choice cleaners, potentially reached 34,000 service members, their families, and civilian workers.
- The two pilot sites selected to keep their Green AUL based on their increase of sustainable product purchased.

The HM standardization and minimization pilot is just one of many NAVSUP WSS environmental sustainability initiatives. The “free issue” program redistributes unused HM to units that need it which saves about \$10-\$12 million by eliminating additional material

procurement and avoiding material disposal costs. NAVSUP WSS airs solid waste management commercials aboard Navy ships to highlight waste segregation, plastic waste minimization, and best practices such as using reusable beverage bottles. The commercials have aired over 10,428 times. NAVSUP WSS has maintained the Plastics Removal In the Marine Environment (PRIME) and the Waste Reduction Afloat Protects the Seas (WRAPS) programs for over two decades to minimize plastic packaging and avoid discharging Navy ships' plastic trash into the world's oceans. The programs strive to evaluate supply initiatives to reduce and/or eliminate solid waste on Navy ships and submarines. A major part of the program is the General Service Administration contract clause which prohibits plastic packaging for many general consumable items such as paper cups, toilet paper, etc.

4. Cost Analysis and Comparison

The Green AUL created in this pilot is approved to use Navy wide. The estimated labor cost to build the Green AUL was \$22,934. There is a potential cost avoidance of over \$1.7 million if all bases implement a Green AUL using the Green AUL created in this pilot instead of trying to build their own.

5. Transferability

The project demonstrated the feasibility of a green AUL to increase the purchase of sustainable products and that it is transferable to installations across the Navy. NAVSUP WSS created a template for implementation across the Navy and is currently coordinating the needed resources. Every installation uses the HMM Tool to manage their HM and AUL so NAVSUP WSS can build a green AUL for every base. Safer Choice products are available at most national retail stores so every base has access to those products. NAVSUP WSS can leverage technology to provide community outreach and training to bases via webinars and other web-based collaborative tools.

NAVSUP WSS continues to measure the instances of purchase, amounts or relative volume, and costs of Safer Choice cleaners or other sustainable products purchased. There are nearly 6,000 users of the HMM Tool across the Naval enterprise. NAVSUP WSS is exploring additional ways to promote Safer Choice and other sustainable products such as USDA Bio Preferred products.

6. Conclusion

Installations increased the purchase of sustainable cleaners by 1,500% from the previous fiscal year with 9% of locally purchased cleaners being Safer Choice certified. Installations decreased the amount of newly added hazardous cleaners to their AUL by 25%. These results can be attributed to the development of a sustainable Green AUL combined with the creation of a green leaf logo to highlight sustainable products in the web-based Hazardous Materials Management Tool and a community outreach program that emphasized the positives of Safer Choice products.