POLLUTION PREVENTION PLAN
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

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Prepared for

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LIST OF AMENDMENTS

Amendment Number	Date of Amendment	Nature of Amendment
1	February 2003	Complete plan revision to reflect through Calendar Year 2002 information.

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Number	Title
1	Site locations.
2	Elements of Naval Station Newport's Pollution Prevention Program.
3	Pounds of hazardous waste disposed of using 1998 baseline year compared to Fiscal Years 2000, 2001, and 2002.

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Number	Title
1	Pollution Prevention Opportunity Action Plan.
2	Completed Pollution Prevention opportunities.
3	Documents and requirements relevant to Naval Station Newport's Pollution Prevention Plan.
4	Naval Station Newport Departments and Codes.
5	Annual hazardous waste generated by process code.

LIST OF ACRONYMS

AUL	Authorized Use List
CHRIMP	Consolidated Hazardous Material Reutilization and Inventory Management Program
DoD	Department of Defense
EPCRA	Emergency Planning and Community Right-to-Know
FASTT	Field Activity Support and Technology Transfer
HM	Hazardous material
HSMS	Hazardous Substance Management System
HW	Hazardous waste
NAVSTA Newport	Naval Station Newport, Newport, Rhode Island
ODS	Ozone Depleting Substances
OPNAVINST	Chief of Naval Operations Instruction
P2	Pollution prevention
TRI	Toxic Release Inventory

EXECUTIVE SUMMARY

This Pollution Prevention (P2) Plan provides an update to the previous P2 Plan for Naval Station Newport, Rhode Island (NAVSTA Newport) dated May 2000. This update has been developed in accordance with Naval Facilities Engineering Services Center Users Guide UG-2046-ENV, *Guidance Manual for the Preparation of Navy Shore Installation Pollution Prevention Plan Updates* (February 2001). Per this guidance, this update provides the following information:

- Updates to previous and new P2 opportunities identified for implementation
- Administrative P2 Plan element changes
- Progress toward meeting previously established P2 goals
- NAVSTA Newport and tenant activities department process information
- P2 opportunity documentation.

The following table provides a summary of P2 Plan update elements and corresponding sections of this report:

P2 Plan Update Elements	Corresponding Section of Report
Include reference to existing installation P2 Plan	Executive Summary
Develop a Plan of Action and Milestones for new P2 opportunities	Section 1 and Table 1
Develop a list of previously completed or ongoing P2 projects	Table 2
Update purpose statement	Section 2
Update policy statement	Section 3
Update applicability and scope	Section 3
Update installation description	Section 4
Update management and administrative elements	Section 5
Update references to media-specific plans and other installation-specific requirements	Section 2.1, Section 5.1.1.2, Section 9, Appendix I, References
Obtain Commanding Officer's Certification or Implementing Instruction	Executive Summary and Appendix G

This Plan was revised by EA Engineering, Science, and Technology under subcontract to Nobis Engineering in accordance with Project B of the Statement of Architect-Engineer Services for Various Environmental Engineering Services at the Naval Complex, Newport, Rhode Island, Contract No. N62472-00-D-6941, dated 20 August 2002. The Plan is divided into nine sections that are briefly summarized below.

Section 1, P2 Opportunity Action Plan, summarizes new and updates to previously identified P2 opportunities during the period of review. The information lists the work areas and locations where new P2 equipment or measures should be employed, the processes they will be used for, the economics involved (including cost and funding sources), the reduction in pollution (lb/yr), and estimated dates of completion.

Section 2, Administrative P2 Plan Elements, updates the major P2 Plan elements required for all P2 Plans. In particular, the update for NAVSTA Newport focuses on documenting changes made since the last P2 Plan release, as well as progress made toward reaching existing P2 goals.

Section 3, P2 Plan Applicability, Scope, and Goals, updates the scope, applicability, and goals of the P2 program. Specifically, the section incorporates current Navy P2 goals supportive of Executive Order 13148, Greening of the Government, signed in April 2000.

Section 4, Installation Information, updates NAVSTA Newport's mission statement, geographical information, nature of operations and activities, and a summary of current P2 efforts. This descriptive information provides a basis for external plan reviewers to understand installation operations, and for internal plan users to understand this Plan's relationship to ongoing initiatives and missions.

Section 5, Management and Administrative Elements, updates the management and administrative components required to implement the P2 Plan, including roles and responsibilities, P2 Plan review and revision, P2 progress measurement and reporting, hazardous material (HM) management procedures, P2 training and awareness, and provisions for information exchange.

Section 6, Planned Process – Specific Improvements and Evaluation of Alternatives, updates the process-specific options that will be used to meet the P2 goals of the NAVSTA Newport P2 program. In addition, the section summarizes the status of P2 opportunities identified in the previous P2 Plan, as well as supplemental P2 opportunity assessments completed by a Field Activity Support and Technology Transfer team review of NAVSTA Newport in October 2000. Since NAVSTA Newport does not meet or exceed the Emergency Planning and Community Right-to-Know Act Section 313 threshold reporting requirements for Toxic Release Inventory data, a detailed process-specific assessment of reduction opportunities is not required. An abbreviated summary of processes and alternatives, however, will be given in this section. Continued implementation of the HM control and management procedures is sufficient to meet P2 program goals. Future P2 program implementation initiatives and enhancements will include establishing a P2 Committee and P2 Coordinator to oversee P2 program requirements, expanding P2 awareness within tenant activities, enhancing tenant reporting processes and preparing for a planned re-Consolidated HM Reutilization and Inventory Management Program of NAVSTA Newport and tenant activities.

Section 7, P2 Opportunities, discusses opportunities that were determined to be feasible, but not yet implemented at NAVSTA Newport in the previous P2 Plan. This section also discusses new P2 opportunities.

Section 8, Potential Barriers to P2 Plan, discusses barriers to P2 Plan implementation and establishment of hazardous waste (HW) and HM control committees, to address such barriers.

Section 9, Other Requirements/Related Plans, addresses other regulatory and policy requirements, including Solid Waste Management Plan requirements, ozone depleting substances requirements, and energy and water conservation programs.

Appendix A provides a copy of NAVSTA Newport's Activity Data Sheets. Appendix B provides an Implementing Letter of Instruction from the Commanding Officer. Appendixes C through G provide detailed updates to new P2 opportunities identified since the last plan update. The information provided includes a brief summary of what and where the measure will be used, pollutant reductions, disposal reduction, an economic analysis, and supporting documentation. Appendix H contains economic benefit analyses completed during Fiscal Year 2002 for cardboard compactors, solid waste compactors, and pulpers. Appendix I provides a summary of media-specific plans that should be reviewed when updating P2 Plans.

NAVSTA Newport's mission is to enhance fleet readiness; educate, train, and motivate officer and enlisted personnel; and provide support services to Newport area commands and visitors. The installation supports over 5,500 military and civilian personnel in its mission, and is host to 37 tenant activities in the Newport and metropolitan Providence area. Tenants include the Marine Corps, Army, and Coast Guard. Waste generating process and activities include motor pools, fabrication shops, grounds and facilities maintenance, and vessel berthing and maintenance. This update includes the Armed Forces Reserve Center, Providence, Rhode Island, which was added to NAVSTA Newport in 1999.

In general, P2 activities at NAVSTA Newport have resulted in a continued decrease in waste and emissions generated since 1994 with the exception of an increase of HW generation from 2001 to 2002. Due to these efforts, NAVSTA Newport achieved its original goal of reducing waste generation levels by over 50 percent by 31 December 1988, and has continued to consolidate tenant operations, eliminating, reducing, and re-using waste materials. Early program successes focused eliminating HM/HW—more recent program achievements are focused on tenant consolidation, recycling and re-use of materials, training, and sustainability principles focused on conservation of water and energy.

From 1998 to 2001, HW generation at NAVSTA Newport was reduced by 83 percent (from 350,731 to 60,516 lb) principally through elimination, source reduction, and recycling. The most significant reduction, over 95 percent (from 258,331 lb in 1998 to 12,429 lb in 2001), are found in the fluid change-out process codes that capture HW generated as a result of spent fluid replacement such as engine lubricant change out, hydraulic oils, parts washers, and related processes. To a lesser extent, non-recurring process code HW has been reduced by over 70 percent (from 77,972 lb in 1998 to 23,863 lb in 2001). Non-recurring processes include spill cleanup, asbestos waste, and tank removal. From 2001 to 2002, HW generation at NAVSTA Newport increased by 76 percent (from 60,516 to 106,786 lb). The most significant increases were from expired shelf-life and excess materials (from 972 to 11,658 lb), facility operations (from 20,278 to 47,166 lb), non-recurring, and painting/depainting/surface finishing (from 2,864 to 5,159 lb). The increase in HW generated from NAVSTA Newport is likely the result of re-implementing the Consolidated Hazardous Material Reutilization and Inventory Management Program process currently ongoing at the base, HM centralization, and the integration of remaining departments and tenant activities.

Facility-wide air emissions have increased. Using Calendar Year 1998 information as a baseline, air emissions from various sources were compared to Calendar Years 2000 and 2001 data. The emissions sources evaluated included boilers, emergency generators and fire pumps, tanks, fuel dispensing, tank truck loading, painting operations, fire fighting training facility, and refrigeration units. Overall facility-wide emissions levels increased between Calendar Year 1998 and 2001 by approximately 60 percent (from approximately 314,820 lb in 1998 to 481,985 lb in Fiscal Year 2000, and then 464,765 lb in Fiscal Year 2001). Factors contributing to the reduction in air emissions from NAVSTA Newport include the reduction of oil-fired boilers (from 7 in 2000 to 5 in 2001) and the increased use of natural gas-fired boilers (from 3 in 2000 to 6 in 2001). A reduction in the number of boilers that can burn either oil or natural gas was also achieved (from 6 in 2000 to 3 in 2001) which shows that NAVSTA Newport is making efforts to utilize cleaner burning fuels. Air emission data for 2002 were not available during the time that this Plan was completed.

Facility-wide use of diesel fuel, natural gas, and propane have decreased when comparing usage data from Calendar Years 2000 and 2001, while use of No. 4 and No. 2 fuel have increased. Diesel fuel usage dropped from 8,758 gal in 2000 to 7,018 gal in 2001, resulting in a 20 percent decrease. Natural gas usage dropped from 178 mmcf in 2000 to 114 mmcf in 2001, resulting in a 36 percent decrease. Propane usage dropped from 12,127 gal in 2000 to 9,959 gal in 2001, resulting in an 18 percent decrease. No. 4 fuel usage rose from 2,397,582 gal in 2000 to 2,534,629 gal in 2001, resulting in a 5 percent increase. No. 2 fuel rose from 667,445 gal in 2000 to 1,326,068 gal in 2001, resulting in a 50 percent increase. Fuel usage data for 2002 were not available during the time that this Plan was completed.

Overall reductions in solid waste are also occurring. Comparison of 2000-2002 Calendar Year solid waste totals reflects an 0.1 percent reduction in overall solid waste produced at NAVSTA Newport (from 5,264 tons in 2000 to 5,258 tons in 2002). Of the processes that generate solid waste in 2002, approximately 40 percent of the material is recycled. Detailed information on solid waste and recycling efforts is provided in the Solid Waste Management Plan (formerly prepared by GZA Environmental, Inc. [2000]) prepared by Nobis Engineering.

On 15 May 1998, the Department of Defense issued a Measure of Merit, stating that "by the end of Fiscal Year 2005, facilities should ensure the diversion rate for non-hazardous solid waste is greater than 40 percent while ensuring integrated non-hazardous solid waste management programs provide an economic benefit when compared with disposal using landfilling and incineration alone." NAVSTA Newport is continuing its P2 efforts and has already met this goal, diverting 38 percent in 2000, 56 percent in 2001, and 0.190 in 2002 through increased recycling. Actions undertaken during this review period include the update of the Solid Waste Management Plan and re-negotiation of the solid waste collection and disposal contract. The Solid Waste Management Plan outlines various solid waste and procurement procedures in place at NAVSTA Newport to effectively manage and reduce the amount of solid waste generated at the facility. Development of these programs and continued P2 efforts should continue to show further reductions in waste generation levels.

During the period of review, NAVSTA Newport completed a number of P2 initiatives aimed at further eliminating HM usage and HW generated, as well as promoting sustainability and resource conservation. Several of major P2 projects completed include:

- Significant reduction of the vehicle maintenance function. Through a General Services Administration contract, a majority of vehicle fleet operation and maintenance functions are completed offsite. The resulting reduction in fluid change-out is estimated to be over 200,000 lb of waste oil that is recycled offsite by a qualified vendor. Only a small number of vehicles (44) are maintained onsite versus last year's fleet of over 600 vehicles. NAVSTA Newport also has a small number of electrical vehicles.

- Since 1995, NAVSTA Newport has operated an HM Minimization Center at Building 1166CC that utilizes the Hazardous Substance Management System to track HM usage within NAVSTA Newport and tenant activities. Not all tenant activities are currently utilizing the resources, however, great strides have been made in continuing to expand the awareness and use. The HM Minimization Center establishes complete life-cycle management of HM from procurement through disposal. Benefits include personnel safety; environmental protection; savings in material purchase, excess, and waste; and savings in personnel and facility costs without degradation of operational readiness. The HM Minimization Center is under the direction of the NAVSTA Newport Supply Department so that procurement of HM within the Command can be fully integrated with the HM Minimization Center. The HM Minimization Center uses a bar code system for tracking and inventory of HM used in the day-to-day operation of the base. Version 2.4 of the software was used; Version 2.4.1 is currently being used.

- NAVSTA Newport is emphasizing sustainability principles to recycle food waste from food services (the Commissary) to local farmers where it is used to feed livestock. Prior to November 2002, consumable materials (i.e., breads, vegetables, and fruits) were disposed of as solid waste. Waste food material accumulated from the Commissary is currently picked up weekly and transported offsite by local farmers for use. NAVSTA Newport anticipates saving over $2,891.901 annually through this program.

- NAVSTA Newport is emphasizing sustainable landscaping principles though its landscaping contracts through mulching and use of woody debris at a local composting facility in Bristol, Rhode Island. Sustainable landscaping practices are anticipated to save over $16,859.78 in labor annually.

- NAVSTA Newport has "centralized" janitorial and cleaning supplies through a facility-wide contract with EcoLab®. These products are environmentally friendly and centrally managed at the HM Minimization Center.

Continued program enhancements will focus on training and awareness and support to tenant activities, and identification of conservation measures associated with energy and water use. Planned P2 expenditures are related to energy and water conservation.

1. P2 OPPORTUNITY ACTION PLAN

The Pollution Prevention (P2) Opportunity Action Plan provided as Table 1, briefly summarizes newly identified P2 technologies that Naval Station Newport (NAVSTA Newport) should consider implementing. The Opportunity Action Plan identifies departments and locations where new P2 equipment or processes could be used, the process it will be used for, the economics involved (including cost and funding sources), the reduction in pollution, and estimated dates of completion. During the period of review (2000-2002), five new opportunities were identified. Four of 5 opportunities have already been implemented, but were not documented since the last P2 Plan update. The newly identified opportunities include:

- P2-02-OP03—Feasibility of recycling boiler condensate
- P2-02-OP04—Utilizing beneficial landscaping through mulching/composting
- P2-02-OP05—Recycling food waste from food services
- P2-02-OP06—Replacement of solvent-based aqueous parts washer with water-based aqueous parts washer at Armed Forces Reserve Center, Providence, Rhode Island
- P2-02-OP07—Increase P2 awareness through training at the Armed Forces Reserve Center, Providence, Rhode Island.

More detailed information about these opportunities and associated process analyses are provided in Appendixes C through G.

In October 2000, a Field Activity Support and Technology Transfer (FASTT) site survey was conducted. This survey identified and evaluated 22 P2 opportunities for consideration. The previous P2 Plan identified 38 P2 opportunities for consideration. Nine of 22 FASTT opportunities were identified as "export as appropriate," not feasible, or were rejected following economic analyses. A total of 48 P2 opportunities (13 FASTT, 33 previously identified, plus an additional 2 opportunities for the Armed Forces Reserve Center) were reviewed during this P2 update. All 48 of these opportunities are presented in Table 2 (Completed P2 Opportunities). Additional information, including feasibility and economic benefits for each of the opportunities, can be found in the FASTT Report. Additional information, including feasibility and economic analyses for the cardboard compactors, solid waste compactors, and the pulper, are provided in Appendix H.

2. ADMINISTRATIVE P2 PLAN ELEMENTS

This document represents an update to the May 2000 P2 Plan for NAVSTA Newport, Rhode Island. This update is required pursuant to Chief of Naval Operations Instruction (OPNAVINST) 5090.1B, Chapter 3.0 and has been developed in accordance with Naval Facilities Engineering Services Center Users Guide UG-2046-ENV, *Guidance Manual for the Preparation of Navy Shore Installation Pollution Prevention Plan Updates (February 2001)*. The Plan has also been developed emphasizing the Navy's fundamental environmental strategy called AIMM to SCORE – Assess, Implement, Manage, and Measure to Achieve Sustained Compliance and Operational Readiness resulting in Environmental Excellence. Current Chief of Naval Operations policy requires installations to update their P2 Plans every 3 years and to conduct P2 Plan reviews annually. The primary purpose of P2 is to prevent pollution at its source. Specifically, this Plan:

- Sets the policy for P2 at NAVSTA Newport
- Identifies the actions, measures, and procedures used to meet Executive Order 13148, Department of Defense (DoD), and Navy directives
- Identifies the major processes or activities which use and/or release toxic chemicals, toxic pollutants, hazardous materials (HM), and hazardous wastes (HW)
- Develops and evaluates technically feasible opportunities for reducing the generation of toxic chemicals and/or HM and HW.

The purpose of this Plan update is to identify measures and procedures to address DoD, U.S. Department of the Navy, federal and state directives, standards, and regulations regarding P2, to identify major installation processes that use toxic chemicals or generate HW, and to present technically and economically feasible options for reducing the transfer of toxic chemicals and HW offsite. Standards, memoranda, regulations, and documents relevant to this P2 Plan are summarized in Table 3.

Because this Plan is an update to the previous Plan dated May 2000, the general format and outline of the previous Plan were maintained. For consistency, available requirements of Navy guidance were integrated.

Through NAVSTA Newport/LOCAL AREA Rhode Island Coordinating Instruction 5090.11A, this Plan supercedes the previous Coordinating Instruction 5090.11. The implementing letter of instruction for this Plan is provided in Appendix B.

3. P2 PLAN APPLICABILITY, SCOPE, AND GOALS

This Plan addresses P2 as defined by the Pollution Prevention Act of 1990 and subsequent strategy and policy statements issued by the U.S. Environmental Protection Agency, Navy, DoD, and the President. P2 involves source reduction and other practices that reduce or eliminate the creation of pollutants to the maximum extent feasible. Examples of P2 techniques include:

- Input substitution
- Product reformulation
- Process modification
- Use of pollution control equipment
- Improved operation and maintenance
- Integrated recycling or re-use of materials.

P2 includes a multimedia, life-cycle approach to reduce HM use and HW generation and can include techniques that reduce solid waste generation and pollution through: (1) increased efficiency in the use of materials, energy, water, or resources; or (2) protection of natural resources by conservation. The applicability and scope of the NAVSTA Newport P2 Plan and the Plan's goals are discussed below.

3.1 APPLICABILITY AND SCOPE

NAVSTA Newport activities are subject to ongoing environmental management, HW minimization, and P2 requirements and programs. P2 actions necessary to implement this Plan will be incorporated into normal, routine technical, administrative, management, and all other ongoing functions and procedures at all organizational levels. NAVSTA Newport will implement P2 concepts and procedures through training, and technology transfer to support P2 implementation for all NAVSTA Newport activities described in this P2 Plan. This P2 Plan applies to NAVSTA Newport departments and all tenant activities, and to onsite contractors and their personnel.

In the past, NAVSTA Newport has not been subject to the reporting requirements of the Emergency Planning and Community Right-to-Know Act (EPCRA) Section 313, however, if NAVSTA Newport should exceed Toxic Release Inventory (TRI) threshold limits in the future, NAVSTA Newport and its tenant activities will report pollutant emission data as one entity in accordance with fenceline reporting requirements. The activities considered in the development of this P2 Plan update were:

- Commanding Officer, NAVSTA Newport and Departments
- Tenant Activities (see Section 4.5 for complete listing)

3.2 P2 GOALS

This P2 Plan builds on the installation's ongoing environmental protection, HW minimization, and P2 efforts and establishes a comprehensive framework for achieving P2 goals established by Executive Order 13148. Executive Order 13148, signed by the President on 22 April 2000, takes a holistic approach to Federal government agency environmental management and compliance by requiring: (1) top level commitment and endorsement, (2) development and implementation of management systems for environmental programs, (3) requiring environmental budget development and submittal through the annual budget submission process, (4) requiring P2 and life-cycle management as the way to operate/function, and (5) achieving certain pollution reduction goals.

The Executive Order has seven goals:

1. **Environmental Management**—Ensure that environmental management systems and strategies are established to support environmental leadership programs, policies, and procedures, and that agency senior level management explicitly and actively endorse the systems and strategies.

2. **Environmental Compliance**—Comply with environmental regulations by establishing and implementing environmental compliance audit programs and policies which emphasize P2 as a means to both achieve and maintain environmental compliance.

3. **Right-to-Know and P2**—Comply with all sections of EPCRA and reduce releases to the environment by preventing pollution or through source reduction wherever feasible.

4. **Release Reduction**—Reduce reported TRI releases and offsite transfers by 10 percent annually or 40 percent by 31 December 2006.

5. **Use Reduction – Toxic Chemicals, Hazardous Substances and Other Pollutants**—Reduce the use of selected toxic chemicals, hazardous substances, and pollutants or the generation of HW types by 50 percent by 31 December 2006.

6. **Reductions in Ozone Depleting Substances (ODS)**—Phase out the procurement of Class I ODS for all non-excepted uses by 31 December 2010.

7. **Environmental and Economically Beneficial Landscaping**—Implement cost effective, environmentally sound landscaping practices and programs to reduce adverse impacts to the natural environment.

This P2 Plan describes existing and planned components of the NAVSTA Newport P2 program. The program includes management and administrative elements, and process-related improvements. Updates to previous versions of the Plan are emphasized.

The NAVSTA Newport command and tenant activities have various systems in place to ensure that HM and HW are managed properly and in accordance with local, state, and federal permits, regulations, and goals.

3.3 POLICY

NAVSTA Newport and its tenant activities will take action to prevent pollution by reducing HM use and decreasing the release of pollutants into the environment to the minimum amounts achievable. This will be accomplished by fully implementing the methods and procedures contained in the P2 Plan and subsequent P2 Plan updates, and complying with the policies contained in OPNAVINST 5090.1B. Actions to implement this Plan will be incorporated into routine technical, administrative, management, and all other ongoing functions and procedures at all organizational levels.

Command and tenant activities at NAVSTA Newport are committed to implement the national policy of P2 to the maximum extent technical and economically feasible without compromising NAVSTA Newport's primary national defense mission. This policy is implemented by undertaking the following:

- NAVSTA Newport will comply with all applicable federal, state, and local laws, and with DoD and Navy instruction and directives with respect to implementing a P2 program and this P2 Plan.

- NAVSTA Newport will effectively promote the national policy of P2 through education, training and awareness programs, acquisition practices, facilities management, energy conservation, and the use of innovative P2 technologies.

- NAVSTA Newport will assess installation operations for P2 opportunities annually and implement feasible techniques and technologies to reduce pollutant emissions and offsite transfers of HW to meet installation-specific P2 goals.

- NAVSTA Newport will review and revise the Policy Statement above as necessary as part of the periodic P2 Plan update. Revisions will be made as necessary to ensure that P2 progress is maintained and that P2 goals discussed in this Plan are achieved.

4. INSTALLATION INFORMATION

This section includes the following installation information: NAVSTA Newport's mission statement, geographical information, nature of operations and activities, and a summary of current P2 efforts. This descriptive information provides a basis for external Plan reviewers to understand the installation and for internal Plan users to understand this Plan's relationship to ongoing initiatives and missions.

4.1 NAVSTA NEWPORT MISSION

NAVSTA Newport's mission statement is:

> *To enhance fleet readiness, we educate, train, and motivate officer and enlisted personnel, and provide support services to Newport area commands and visitors.*

Over the years, this mission has evolved to include environmental protection efforts as required by federal, state, and local environmental regulations and directives. NAVSTA Newport has integrated environmental protection into all activities conducted as part of this installation's naval support mission.

Combined, NAVSTA Newport and tenants employ approximately 5,500 personnel. Thirty-seven tenants are located on the Newport Naval Complex, with the exception of the Armed Forces Reserve Center located in Providence, Rhode Island. The Armed Forces Reserve Center is a 20-acre complex that transferred ownership to NAVSTA Newport in October 1999.

4.2 GEOGRAPHIC INFORMATION

NAVSTA Newport's history dates back to 1658 when Benedict Arnold and John Green bought Coasters Harbor Island, Goat Island, and Dyer's Island from the Aquidneck Indians. The first recorded use of Coasters Harbor Island was as a quarantine station for immigrants in 1721. Since then, the installation has gone through many changes both physically and mission-related. In 1994, the Navy discontinued the stationing of ships in Newport. The last of the Navy ships left in July 1994, and today the activity is mainly a training command comprised of NAVSTA Newport and 37 tenant activities. Combined, NAVSTA Newport and tenants employ approximately 5,500 personnel, making it one of largest employers in the State of Rhode Island. The facility has berthing facilities that are used by three Coast Guard cutters, as well as serving as homeport for retired aircraft carriers *Saratoga* and *Forestal*.

NAVSTA Newport is located in Newport County, Rhode Island, on the southwest side of Aquidneck Island. The installation extends from the northern side of the Newport Bridge, northward along the coast through the Town of Middletown to Melville in the Town of Portsmouth. The installation is bordered on the west by the Western Passage of Narragansett

Bay, and to the east by the Towns of Newport, Middletown, and Portsmouth. Aquidneck Island can be accessed by land using one of three bridges: the Newport Bridge, the Mt. Hope Bridge, or the Sakonnet Bridge.

NAVSTA Newport is a secure facility that can be accessed from Newport or Middletown using various guarded gates. Access from the water can be attained from Narragansett Bay. Land use on and around NAVSTA Newport is residential, commercial, industrial, and Navy-related. The City of Newport and the Towns of Middletown and Portsmouth contain residential neighborhoods, as well as waterfront business districts, tourist attractions, hotels and yacht clubs, marinas, and commercial boatyards. Figure 1 provides a site location map for NAVSTA Newport and the Armed Forces Reserve Center. The Armed Forces Reserve Center is located in Providence, Rhode Island. The site sits on 30 waterfront acres on the southern-most portion of the fields point area in upper Narragansett Bay. The site is bounded by residential uses to the west and commercial/industrial uses to the north, east, and south.

4.3 NAVSTA NEWPORT DEPARTMENTS

NAVSTA Newport is a shore activity in fully operational status headed by the Commanding Officer. NAVSTA Newport's Major Claimant is U.S. Atlantic Fleet under Regional Commander, Naval Region Northeast. NAVSTA Newport, for the purpose of this Plan update, is considered the real property record holder for several Class I real estate properties within the Newport area, and is responsible not only for meeting the mission of the installation, but also for meeting EPCRA reporting requirements and preparing this P2 Plan.

As the "host" command, NAVSTA Newport performs the following core functions:

- Grounds and facility maintenance
- Utilities
- Housing
- Personnel support
- Fire protection
- Security
- Safety
- Environmental
- Berthing operations.

Many of these operations require the use of HM and generate HW.

4.4 NAVSTA NEWPORT OPERATIONS AND ACTIVITIES

In support of it mission, NAVSTA Newport provides a range of logistics, administrative, and maintenance support functions. As part of its activities, NAVSTA Newport is responsible for receiving, storing, controlling, distributing, and accounting for food, fuel, and consumable supplies necessary to support shore activities and tenants. Additionally, the Public Works

Department is responsible for managing all facilities and utilities at the Newport Naval Complex. Public Works facilities include boilers, utilities, and maintenance facilities and shops. Departments under the command of NAVSTA Newport are defined in Table 4.

4.5 NAVSTA NEWPORT TENANTS

NAVSTA Newport includes 37 tenant activities located on the Newport Naval Complex, with the exception of the Armed Forces Reserve Center located in Providence, Rhode Island:

- Command Leadership School
- Document Automation and Production Service
- Defense Commissary Agency
- Defense Security Service
- Explosive Ordnance Disposal Mobile Unit Two Detachment Newport
- General Support Motor Transport Company, 6th Motor Transport Battalion (Providence, Rhode Island)
- Human Resources Office Site Newport
- Marine Corps Detachment
- Mobile Inshore Undersea Warfare Unit
- Naval Academy Preparatory School
- Naval Ambulatory Care Center
- Naval and Marine Corps Reserve Center (Providence, Rhode Island)
- Naval Criminal Investigative Service, Northeast Field Office
- Naval Dental Center Northeast
- Naval Education and Training Center
- Naval Health Care New England
- Naval Justice School
- Naval Reserve Readiness Command Northeast
- Naval Station Newport
- Naval Training Meteorology and Oceanography Detachment
- Naval Undersea Warfare Center
- Naval Undersea Warfare Center Division Newport
- Naval War College
- Navy Warfare Development Command
- Navy Band Northeast
- Office of Naval Intelligence Detachment, Naval War Collage
- Officer Indoctrination School
- Personnel Support Activity Detachment
- Senior Enlisted Academy
- Space and Warfare Command
- Naval Computer and Telecommunications Area Master Station, Atlantic Detachment
- Surface Warfare Officers School Command
- U.S. Coast Guard Maintenance Facility
- First Coast Guard District

- U.S. Coast Guard Cutter Juniper (WLB-201)
- U.S. Coast Guard Cutter Willow (WLB-202)
- U.S. Coast Guard Cutter Ida Lewis (WLM-551).

Source: Commanding Officer/Executive Officer Listing, Newport Area Command (8 November 2002).

Several tenant activities and NAVSTA Newport departments included in this P2 Plan conduct various operations such as vehicle maintenance, metal working, spray coating, electronic equipment maintenance, and vessel maintenance. These activities generate various hazardous (some extremely hazardous) waste streams and emissions and require the use of energy and water. Previous P2 assessments have been conducted to review various operations performed at NAVSTA Newport for P2 opportunities (i.e., previous P2 plans, FASTT report, etc.).

Tenant activities and departments listed in Table 4 that can potentially use, release, or were found to contain activities that used or released toxic chemicals or pollutants based on the 2001 P2 Annual Data Summary Report, and that were not administrative, include the following (listed by generating UIC):

- **N32411 – Naval Station Newport**—NAVSTA Newport's Public Works Department includes Engineering Division, Work Control Support, Civil/Architectural Branch, Electrical/Mechanical Branch, Base Operations Division, Shop Technical Support, Transportation Branch, Equipment Operations Section, Equipment Maintenance Section, Emergency Service & PM Branch, Pest Control Shop, Utilities Branch, Steam Plant Section, Distribution System Section, and Electrical Operations Section. The HM Minimization Center (HM Center) is managed by NAVSTA Newport. A wide range of HM/HW is generated including fluid change-outs, paints, and pesticides.

- **N66604 – Naval Undersea Warfare Center Division Newport**—The Naval Undersea Warfare Center Division Newport is the Navy's premier undersea weapons research and development center and occupies approximately 180 acres of the installation. Naval Undersea Warfare Center Division Newport processes include research and development, fabrication, and testing facilities. Naval Undersea Warfare Center Division Newport has a separate P2 Plan addressing its operations and is not covered in this Plan. Naval Undersea Warfare Center Division Newport will be included in the next P2 Plan update.

- **N00025 – Northern Division**—NAVSTA Newport provides a homeport for several inactive ships, including the carrier *Saratoga*. HW generated from ship operations include oily wastewater, water-contaminated fuel, bilge tank cleaning, expired shelf-life, and decommissioning.

- **N00000 – U.S. Coast Guard**—Through the Maintenance Augmentation Team, the U.S. Coast Guard performs vessel maintenance operations for three cutters at the pier. Activities include fluid change-outs, wire rope lubricating and cleaning, heat exchanger

cleaning, and oily bilge water clean-out. Limited maintenance painting is also completed.

- **N62661 – Naval Education and Training Command**—The Naval Education and Training Command provides various technical training programs as follows: Code 30-Seaman to Admiral Twenty One (STA-21), Code 40-Officers Indoctination School, Code 50-Chapliain's School, Code 60-Communications School, Code 70-Damage Control School, and Code 80-Officer Instructor Training School. Other schoolhouses include the Command Leadership School and Senior Enlisted Academy. HM/HW is principally generated as part of training operations.

- **NDAPS – Defense Automated Printing Service**—Provides high volume printing and photographic services. Activities include fluid change-outs of specialty photographic equipment and printmaking equipment.

- **NNIS – Naval Intelligence Service**—Excess and expired shelf-life materials such as paints and cleaning materials.

- **N63190 – Surface Warfare Officers School**— Surface Warfare Officers School is where officers are trained in Naval Ship Operations. HM/HW is principally generated as part of training operations.

- **N00124 – Naval War College**—The Naval War College is a Graduate School for Naval, Airforce, Marine, Army, and Foreign Military personnel. Generates waste, but not included in the 2001 P2 Annual Data Summary Report.

- **N68086 – Naval Ambulatory Care Center**—The Naval Hospital operates as an outpatient medical clinic that provides routine physical examinations. This facility has the capability to provide x-rays services also, however, serious illnesses and medical situations that require surgery are sent to the Newport, Rhode Island Hospital. Waste generating processes include maintenance.

- **Armed Forces Reserve Center, Providence, Rhode Island**—This facility is an Armed Forces Reserve Center located at the end of Narragansett Street in Providence, Rhode Island. The Center, which is owned by the Navy, serves as a reserve activity for Navy, Marine Corps, and Army units. The area includes mixed commercial/industrial properties to the north and south, a residential area to the west of the facility, and the Providence River abuts the facility to the east. The site is flat and consists of a main building supporting supply, classroom and administrative offices, and medical rooms; a vehicle maintenance facility; and military and civilian parking, with a total land area of approximately 20 acres. The main building is a 2-story brick structure encompassing over 39,000 ft^2 including 45 offices, 7 classrooms, 3 storage rooms, a drill hall, arms vaults, a kitchen, medical examination area, and a 2-bay garage. The vehicle maintenance facility is a single-story, concrete block structure containing five motor bays, 3 of which are operated by the USMC, and 2 by the Army. Both facilities were

constructed in 1976. Civilian parking areas are paved, and military parking areas are fenced in. Current occupants of the facility are a Navy Reserve Unit who is the lead unit for the facility reporting to NAVSTA Newport, a USMC Reserve Transport Company, and the 455 Field Hospital of the Army Reserves. There are approximately 38 permanently stationed Navy and Marine Corps personnel, and no permanently assigned Army personnel. Daily site occupancy is generally active duty administrative and support functions; once a month, the facility provides reserve training. Marine activities at the site include office and administrative functions, a small weapons armory, and a motor pool (2 bays) for the maintenance of tactical vehicles. The motor pool supports a fleet of 35 tactical vehicles ranging in weight from 1.25 to 22.5 tons. Generally, a limited number of waste generating processes occur at the site including janitorial and custodial activities and vehicle maintenance. The center is not subject to EPCRA Section 313 reporting requirements since the Armed Forces Reserve Center does not generate threshold quantities of any Section 313 chemicals. The facility has a P2 Plan that was last updated in 1995. In this Plan, HW generation data specific to the facility was reviewed since 1994 where 45 lb of HW was generated. HW generation has declined to a reported 20 lb per year since.

One tenant activity did not report waste in the 2002 P2 Annual Data Summary Report (Naval Undersea Warfare Center). This tenant will be included in the 2003 submission.

4.6 SUMMARY OF POLLUTION PREVENTION EFFORTS

The following section provides a summary of NAVSTA Newport's P2 efforts to date.

- Significant reduction of the vehicle maintenance function since 2000. Through a General Services Administration contract, a majority of vehicle fleet operation and maintenance functions are completed offsite. The resulting reduction in fluid change-out is estimated to be over 200,000 lb of waste oil that is recycled offsite by a qualified vendor. Currently, NAVSTA Newport has approximately 44 vehicles (down from approximately 600) consisting of heavy trucks, trailers, fork lifts, and mobile cranes in addition to a few tenant vehicles which are maintained. Waste oil generated onsite is recycled by the Defense Reutilization and Marketing Office.

- Since 1995, NAVSTA Newport has operated an HM Center at Building 1166CC which utilizes the Hazardous Substance Management System (HSMS) to track HM usage within NAVSTA Newport and tenant activities. Not all tenant activities are currently utilizing the resources, however, great strides have been made in continuing to expand the awareness and use. The HM Center establishes complete life-cycle management of HM from procurement through disposal. Benefits include personnel safety; environmental protection; savings in material purchase, excess, and waste; and savings in personnel and facility costs without degradation of operational readiness. The HM Center is under the direction of the NAVSTA Newport Supply Department so that procurement of HM within the Command can be fully integrated with the HM Center. The HM Center uses a bar code system for tracking and inventory of HM used in the day-to-day operation of the

base. Version 2.4 of the software was used; Version 2.4.1 is now used. Through this program, NAVSTA Newport attempts to extend the shelf life of chemicals past their expiration date wherever possible. Note that NAVSTA Newport had all tenants implement the Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) in 2000; however, due to software issues with the upgrade, all tenant activities are currently in the process of re-implementing the CHRIMP.

- NAVSTA Newport is emphasizing sustainability principles to recycle food waste from food services (Commissary) to local farmers where it is used to feed livestock. Prior to November 2002, consumable materials (i.e., breads, vegetables, and fruits) were disposed of as solid waste. Waste food material accumulated from the Commissary is currently picked up weekly by local farmers and transported offsite by local farmers for use. NAVSTA Newport anticipates saving over $2,891.90 annually through this program.

- NAVSTA Newport is emphasizing sustainable landscaping principles though its landscaping contracts through mulching and use of woody debris at a local composting facility in Bristol, Rhode Island. Sustainable landscaping practices are anticipated to save the over $16,859.78 annually in labor.

- NAVSTA Newport has "centralized" janitorial and cleaning supplies through a facility-wide contract with EcoLab®. These products are environmentally friendly and centrally managed at the HM Center.

- Boiler centralization and conversion to natural gas. Over the past several years, NAVSTA Newport has reduced the number of petroleum-fired boilers onsite (from 7 in 2000 to 5 in 2001) and increased the number of natural gas-fired boilers (from 3 in 2000 to 6 in 2001), which shows that NAVSTA Newport is making efforts to utilize cleaner burning fuels.

- NAVSTA Newport has integrated P2 awareness and training as part of it HM Communication Program and HW Management Plan requirements. Training has increased awareness of P2 concepts.

- NAVSTA Newport established a re-use and recycling program for non-hazardous solid waste since 1989 (Solid Waste Management Plan, October 1989). Additional information on recycling and re-use is included in NAVSTA Newport's current Solid Waste Management Plan.

- NAVSTA Newport tests and implements innovative technologies for waste minimization and P2. Examples include implementing mechanical stripping to replace solvent stripping and replacing solvents with aqueous-based cleaners, where feasible.

5. MANAGEMENT AND ADMINISTRATIVE ELEMENTS

This section discusses the management and administrative components required to implement the P2 Plan, including roles and responsibilities, P2 Plan review and revision, P2 progress measurement and reporting, HM management procedures, P2 training and awareness, and provisions for information exchange.

5.1 ROLES AND RESPONSIBILITIES

5.1.1 Supporting Organizational Framework

NAVSTA Newport reports to Commander Navy Region Northeast effective 1 October 1999. Under this arrangement, NAVSTA Newport (as a subordinate command to Commander Navy Region Northeast) is responsible for the programming and funding of environmental requirements and environmental compliance oversight.

NAVSTA Newport level P2 organizations are described below.

5.1.1.1 P2 Program Organization

Clearly defined roles and responsibilities are necessary to ensure that this P2 Plan is implemented and P2 goals are achieved. To implement the program at the tenant activity and department levels, the P2 Committee will be accountable to ensure P2 objectives are met. This committee will control the P2 program and to ensure P2 program goals are achieved, and will consist of representatives of the following departments:

- Commanding Officer (or designee)
- NAVSTA Newport Environmental Protection Division (N8)
  - Division Head (D. Dorocz)
  - P2 Program Coordinator (D. Moore)
  - HW Coordinator (M. Reily)
- Public Works Department representative (NX)
- Supply Department representative (NX)
- Tenant Activities, as requested.

The P2 Committee will be chaired by the Head of the Environmental Protection Division, or P2 Program Coordinator. Selection of the P2 Committee will be annually and will be endorsed by a Command Notice.

5.1.1.2 NAVSTA Newport P2 Program Management

The primary responsibility of the P2 Committee is to develop, implement, and maintain the NAVSTA Newport P2 Plan, as well as associated plans which are described in Appendix I.

Figure 2 illustrates the elements of NAVSTA Newport's P2 program.

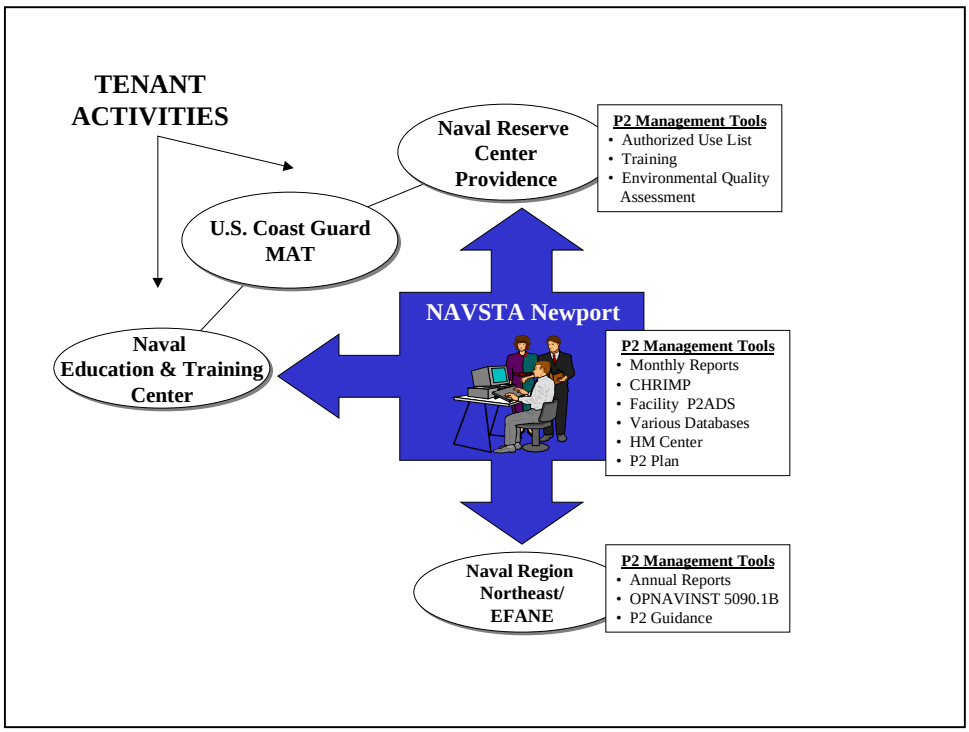


Figure 2. Elements of NAVSTA Newport P2 Program.

Duties of the P2 Committee with respect to the P2 program include:

- **Program Budgeting**—Responsible for ensuring that the P2 Plan elements are included in all installation plans of action and in the Program Objective Memorandum process to ensure that funding requirements are submitted for each fiscal year.

- **Regulatory Contact**—Responsible for maintaining contact with local and state coordinators to identify and anticipate state implementation plan requirements and make recommendations for any necessary P2 Plan modifications. Responsible for identifying potential regulatory barriers or issues associated with implementing P2 options and for working closely with NAVSTA Newport regulatory leads for the air, water, and solid waste programs.

- **P2 Organization Leadership**—Responsible for developing and maintaining the P2 program at NAVSTA Newport; the P2 organization will include public works, supply, and environmental personnel and will provide a vehicle for identifying training needs and promoting P2 awareness.

- **P2 Training and Awareness Coordination**—Responsible for identifying and fulfilling training needs for NAVSTA Newport staff and tenants at levels appropriate to their P2 responsibilities; will also serve as the lead for developing programs to recognize

installation activities or individuals that contribute significantly to achieving the installation's P2 goals.

- **Technology Transfer Direction**—Responsible for onsite technology transfer within and across organizational units and activities.

- **Naval Facilities Engineering Services Center Coordination**—Responsible for working with the Naval Facilities Engineering Service Center to promote P2 technology transfer.

- **Documentation Coordination**—Responsible for obtaining P2 results from tenant activities and documenting NAVSTA Newport P2 results to demonstrate progress; also responsible for accessing necessary files and databases to ensure that P2 program results are supported and documented.

- **Facilities Coordination**—Responsible for coordinating all P2 options requiring facilities modifications with the base facilities planning and maintenance personnel.

5.1.2 General Roles and Responsibilities

This subsection assigns the tasks by code required to implement this P2 Plan and to measure progress. Codes are presented in ascending order.

The ***Commanding Officer (Code N01)*** will be responsible for:

- Implementing a facility P2 program that incorporates the HM Control and Management requirements

- Committing to reducing pollution from all sources and to all media to meet P2 goals

- Identifying funding for all projects, which have a payback period of less than 3 years, as feasible

- Providing incentives or recognition in the form of monetary or non-monetary rewards or recognition for personnel who have provided outstanding contributions toward reduction of HW, toxic chemicals, or solid wastes

- Limiting open-market purchases of HM to purchases for which a stock numbered product is unavailable from the supply system and for which there is a valid controlling document (e.g., maintenance requirement card, maintenance requirement plan, technical manual, technical order, maintenance manual, or similar document)

- Establishing and implementing a local shelf-life control and management program.

The ***Public Works (Code N3)*** will:

- Ensure that P2 considerations are included in every specification written for contractual work. This includes, but is not limited to, provisions for the contractor to conserve and protect natural and cultural resources, comply with the recycling program, install P2 equipment where necessary, and provide feedback of implementation upon completion.
- Perform cost analyses for all P2 equipment installations.
- Meet environmental goals set by this Plan by aiding in environmental and natural resource protection.
- Provide a representative for the P2 committee.
- Assist P2 Program Coordinator in identifying, evaluating, and implementing P2 opportunities.

The ***Director for Supply (Code N4)*** will:

- Monitor procurement of HM to ensure that all requisitions have been approved as being authorized for use at NAVSTA Newport by the requesting department/division
- Assist in managing an effective shelf-life extension and expiration program
- Maintain records and inventories of all HM purchased, received, and issued
- Ensure the CHRIMP utilizes the HSMS software program, and that all HMs are controlled through the HM Center
- Provide adequate resources to operate an effective HM Center to support NAVSTA Newport and tenant activities
- Evaluate and modify HM Center operations, as needed, to meet the needs of NAVSTA Newport and tenant activities
- Screen all supply requisition forms to ensure only materials listed on the appropriate Authorized Use Lists (AULs) are procured
- Ensure all deliveries of HM are received at Building 1166CC (the HM Center)
- Ensure all empty containers are returned to the HM Center
- Provide adequate resources to operate an effective scrap metal reclamation yard.

The ***Environmental Protection Department (Code N8)*** will:

- Serve as the P2 Program Coordinator for NAVSTA Newport's P2 program and technical advisor on all issues regarding P2
- Manage the P2 program; this includes measuring progress each year for each process or activity identified in the Plan, and providing training to new personnel as needed to ensure individuals understand their role in preventing pollution, reporting progress, and assisting with implementation of procedures and/or equipment to prevent pollution
- Conduct oversight inspections of all department, division, and tenant activity operations to ensure that P2 policies are implemented
- Develop and implement training and awareness programs
- Direct program coordinators for environmental programs to implement initiatives set forth in the P2 Plan
- Develop projects related to P2, using activity Operations and Maintenance, Navy and Other Procurement, Navy funds, or central Environmental Compliance accounts
- Maintain a current list of HW, recycling, and HM coordinators for NAVSTA Newport and each tenant activity
- Coordinate and/or manage all updates to the P2 Plan as a result of facility changes
- Review and update materials in the AUL to ensure all HM is minimized to the extent practicable in the installation
- Support the Supply Department in implementing HM Control and Management requirements—this includes support to maintain the AUL as well as technical support for implementation of HM control and shelf-life management programs
- Participate and support various external P2 assessments to assess technology transfer and applicability.

The ***Safety Manager (Code N9)*** will:

- Provide HM and HW safety and health guidance to NAVSTA Newport and serve as technical advisor to the installation regarding personnel safety and health in HM and HW management and personal protective equipment items used by spill response personnel and individuals handling HM/HW

- Assist with implementation of P2 opportunities within operating areas with regard to safety-related matters, such as product toxicity and physical characteristics or general safety hazards, that may be present while working with new equipment.

The ***NAVSTA Newport departments and tenant activities*** will:

- Comply with policies and activities identified in this Plan
- Provide adequate resources to expedite the implementation of P2 options that the P2 Committee determines to be necessary
- Review work practices to identify potential changes in operations, methods, procedures, or materials that may be used to reduce the volume of pollutants generated
- Implement HW minimization processes and procedures
- Designate a P2 Program Coordinator who will be the command's point-of-contact on matters involving HM/HW reduction; due to the complex regulations and the importance of this position, these individuals should be assigned to this function for no less than 6 months and be a minimum rank of E-6 for military personnel or GS-9 for civilians
- Provide input to the P2 Committee on methods which may minimize pollution within NAVSTA Newport and tenant activities
- Cooperate with NAVSTA Newport P2 Program Coordinator on implementation of this P2 Plan.

The ***P2 Committee*** will:

- Meet annually, or as directed by the Chair, to review and discuss current and future P2 options for effectiveness and feasibility
- Make recommendations as to whether or not to implement feasible P2 options at one or more commands, based on economic, operational, and benefit analysis
- Assist the P2 Program Coordinator in reviewing and updating the P2 Plan, as necessary.

P2 Coordinators for each NAVSTA Newport department or division, and tenant activities will:

- Investigate, evaluate, recommend, and track the proper handling and reduction of HM in accordance with the P2 program and requirements for safety

- Perform other appropriate actions relative to P2 program implementation and management including the purchase, installation, and operation of any new equipment used to prevent pollution

- Inform and/or instruct individuals within respective departments of their roles or responsibilities for preventing pollution.

The ***Comptroller*** will:

- Coordinate funding and establish appropriate job orders

- Maintain financial records of installation disposal funds and handling services

- Plan, program, and budget for routine, recurring environmental compliance costs related to the management of HM and HW.

5.2 PROVISIONS FOR UPDATING THE PLAN

The P2 Program Coordinator will see to it that the P2 Plan is reviewed on at least an annual basis to accurately reflect changes made at the installation and tenant activities that would affect the P2 program. The Plan should be revised whenever there are significant changes such as:

- New regulations that impact the P2 program
- Organizational changes that impact the P2 program
- Changes to work area operations that impact the P2 program
- Addition or termination of waste generating processes
- Identification of new P2 technologies that may benefit NAVSTA Newport.

This P2 Plan will be updated every 3 years as required by OPNAVINST 5090.1B, Chapter 3.0. Updating the Plan will involve reviewing work practices to identify changes in operations, methods, procedures, or materials to reduce the volume of HW generated.

In addition, NAVSTA will review the P2 Plan annually with respect to the status of implementation and progress toward reaching P2 Plan goals.

5.3 ADMINISTRATIVE CHANGES HAZARDOUS MATERIALS MANAGEMENT

NAVSTA Newport began implementing the CHRIMP in 1995. The CHRIMP philosophy is implemented by using the HM Center in Building 1166CC operated by the Supply Center (N4112). The facility centrally issues all types of HM used throughout NAVSTA Newport and accepts unused portions for reissue at no cost. Currently, all departments and a majority of the NAVSTA tenants utilize the HM Center for all of their HM needs, but awareness is growing. CHRIMP implementation at most of the tenant activities was completed in Fiscal Year 2000 and NAVSTA Newport was in the process of bringing the last tenant activity (Naval War College) into the HM Center. However, at the same time, a Regional decision was made to upgrade the

HSMS software to a new version that made the current database obsolete. Consequently, the CHRIMP process needs to be re-performed on all NAVSTA Newport departments and tenants. NAVSTA Newport anticipates that a complete re-CHRIMP at NAVSTA Newport and all of the tenant activities will be accomplished by Fiscal Year 2004.

The HM Center uses the HSMS computer tracking system to manage and track HM usage throughout the Newport Naval Complex. HSMS has been in use since March 1998. Data from HSMS was used to identify HM usage for NAVSTA Newport departments and tenants in this Plan and develop P2 Annual Data Summary reports. The HW management portion of HSMS is not used at NAVSTA Newport (this is common in HSMS throughout the Navy). The projected date for implementation of the HW management portion of the HSMS has yet to be determined. A separate computer tracking method is used for HW at NAVSTA Newport. A newer version of HSMS (Version 2.4.1) is supposed to be available that reportedly includes the proper HW functionality for usage, however, NAVSTA Newport does not currently have the personnel available to implement this database.

Operational characteristics of the CHRIMP/HM program are as follows:

- HM can be obtained by walking into the HM Center or it can be delivered to the department/tenant.

- In general, a 7-day supply of any HM will be issued to the user. The empty container or any unused material must be returned by that time. A limited number of materials that are consumed at a slow rate are allowed to remain "in use" at the work location for longer periods of time.

- Supply Operations (N4112) purchases all of the HM issued by the HM Center. Commands that use the center (including NAVSTA Newport) transfer funds to Supply Operations at the beginning of each fiscal year to cover these costs. HM purchases are approved through AULs.

- The costs charged to each command are based on the amount of new material issued to them. Material that is reissued (i.e., a partially full container was returned to the center and then reissued) is free to the user's command.

- NAVSTA Newport supports the Supply Operations HM Center by providing five civilians and one enlisted military person to partially staff the operation.

- Based on data collected to date, issues of "reissue" HM items outnumber issues of "new" HM items approximately 2:1. This demonstrates that NAVSTA Newport tenant activities and departments are contributing to P2 by helping to ensure that excess HM is not generated.

The following actions concerning HM management are recommended:

- Develop and implement a Plan of Action and Milestones (to be provided by the Regional Command) to re-implement the CHRIMP at all of the NAVSTA Newport tenants and departments.

- Work with all tenant activities to re-implement the CHRIMP.

- Employ an additional individual who is dedicated to implementing the HW portion of the HSMS. By using the full functionality of HSMS, NAVSTA Newport will have access to a powerful array of data concerning its operations. This will provide true "cradle to grave" tracking of HM, and will provide the accurate data needed to effectively implement pollution prevention measures.

- Code processes that are exempt from EPCRA reporting in the HSMS. This will simplify EPCRA reporting (if required) throughout the Newport Naval Complex.

- Update all tenant and department names and organizational codes in the HSMS as various reorganizations and the regionalization effort have changed them.

5.4 PROVISIONS FOR MEASURING AND REPORTING PROGRESS

In conjunction with the Environmental Quality Assessment process, the staff civil engineer/P2 Program Coordinator, or designee, will report progress in achieving P2 goals to the Commanding Officer at NAVSTA Newport each year. This report will include:

- Identification of HW and solid waste quantities generated at NAVSTA Newport
- Progress in meeting P2 goals contained in the Plan
- Status of ongoing P2 efforts
- Future resource requirements needed to achieve P2 goals
- Changes recommended to the P2 Plan.

Table 1 (Pollution Prevention Opportunity Action Plan) will be updated and used to report progress.

5.4.1 P2 Management Tools

P2 Plan baseline goals were established in May 1995. But, for all practical purposes, data for determining baselines were not shop-specific and/or were non-existent at that time. Good faith estimates were made to fulfill requirements in previous P2 Plan efforts, but it is still difficult to measure (for comparison purposes) something that is not being tracked. For this reason, current P2 program enhancements and efforts are being made to formalize a tenant reporting process linking HM and toxic chemical usage information generated from CHRIMP.

The P2 Program Coordinator employs the use of several database tools to track HM use and reporting for the P2 Annual Data Summary Report. Future attempts to link HM usage with HW generation through specific processes are planned in conjunction with continued training and awareness. Once fully implemented, the HSMS database would enable NAVSTA Newport to accurately track progress toward reaching its P2 goals, as well as to update the P2 Plan with minimal effort. For each activity and department that uses HM and generates HW, appropriate processes have to be identified. For each process identified, HM and HW information would be gathered and entered into the HSMS database. The HSMS database is supposed to be constructed so the user can store and manipulate data to get the desired information/data reports, however, as with any new database, it must first be provided with the appropriate data/information. At this time, the HSMS database is used only for HM (as previously mentioned in Section 5.3) due to a lack of available personnel (recommend employment of an individual dedicated to implementing the HW portion of the HSMS). To date, some work area process information and material safety data sheets have been stored. As indicated previously, full implementation of the HSMS database will enable NAVSTA Newport to track HM and HW through HSMS with a greater degree of ease and confidence. NAVSTA Newport is currently awaiting direction from the region concerning a re-CHRIMP and HSMS software upgrade.

5.5 P2 PROGRESS MEASUREMENT AND REPORTING

As of Calendar Year 1994, all federal agencies were required to comply with provisions in Sections 301 through 304 and 311 through 313 of EPCRA, as required by Executive Order 12856. Section 313 of EPCRA requires facilities that use Section 313 chemicals at levels above established threshold levels to report chemical use and emissions. NAVSTA Newport does not meet threshold reporting requirements for TRI data (often termed the Form R report) under Section 313 of EPCRA. If NAVSTA Newport should exceed the threshold reporting requirements for TRI data, in the future, it will submit Section 313 data as the host command for all tenant activities within the facility fenceline, in accordance with EPCRA requirements.

Currently, the Air Program Coordinator prepares annual EPCRA Section 313 submissions and annual RIDEM Air Pollution Inventory Forms, which demonstrate P2 progress for all facility activities and processes. In addition, the P2 Committee will annually review and document projects that reduce HM use or HW generation, or increase energy, raw material, and water use efficiency. Although P2 in resource conservation areas will not be documented through the Section 313 EPCRA requirements, these projects constitute P2 under the P2 Act of 1990, recent Executive Order 13148, and will help achieve other P2 goals discussed in Section 3.

5.6 HAZARDOUS MATERIALS MANAGEMENT PROCEDURES

A key element of a successful P2 program is developing an HM use and waste generation baseline and procedures for measuring HM and waste generation P2 progress. NAVSTA Newport has established procedures and systems for tracking/documenting HM use and HW generation and will use these systems to provide data for documenting current conditions and P2 progress. NAVSTA Newport's AULs provide a tool for evaluating HM use and identifying HM substitutions. The CHRIMP is also used to document and manage HM use and reutilization.

Since 1995, NAVSTA Newport has operated a HM Center in Building 1166CC. The facility establishes complete life-cycle management of HM from procurement through disposal. Benefits include personnel safety; environmental protection; savings in material purchase, excess, and waste; and savings in personnel and facility costs without degradation of operational readiness. The HM Center is under the direction of the NAVSTA Newport Supply Department so that procurement of HM within the Command can be fully integrated with the HM Center.

The main function of the HM Center is to control and track HM usage throughout NAVSTA Newport. It accomplishes this through the use of a bar code system for tracking and inventorying HM used in the day-to-day operation of the base and by providing HM to work areas on an as-needed basis. Specific request forms and control procedures have been incorporated to ensure excess HM are returned to the HM Center when specific tasks are completed. The specific request and tracking procedures followed by the HM Center and NAVSTA Newport work areas are described in Section 5.3.

Annual HW reports are used to track HW reductions for the P2 program. These reports are prepared by the NAVSTA Newport Environmental Division. NAVSTA Newport is continuing to develop procedures and databases for tracking and managing HM and HW. These reports are used by the P2 Program Coordinator to develop the P2 Annual Data Summary report.

5.7 P2 TRAINING AND AWARENESS PROGRAMS

Personnel training and awareness are critical to achieving P2 program success. P2 coordinators are trained annually in conjunction with EPCRA and HW training efforts. The goal of the training is to increase knowledge and awareness with respect to P2 responsibilities. Training is provided by the P2 Program Coordinator.

5.8 PROVISIONS FOR INFORMATION EXCHANGE

P2 information exchange will be an ongoing and evolving component of the P2 program at NAVSTA Newport. Current mechanisms for information exchange include general environmental training and awareness workshops and programs, various reporting, and periodic major claimant reviews and assessment such as the FASTT. The Navy and other DoD agencies maintain a clearinghouse of P2 information on sites such as DENIX. These mechanisms will transfer P2 information within and across installation activities.

6. PLANNED PROCESS – SPECIFIC IMPROVEMENTS AND EVALUATION OF ALTERNATIVES

6.1 INTRODUCTION

This section summarizes the process-specific options that will be used to meet the P2 goals of the NAVSTA Newport P2 program. Since NAVSTA Newport does not meet or exceed the EPCRA Section 313 threshold reporting requirements for TRI data, a detailed process-specific assessment of P2 opportunities is not required. An abbreviated summary of processes and alternatives is provided in this section. Instead, implementation of the HM management procedures will be sufficient to meet P2 program goals. Part of this implementation will include implementing AULs and CHRIMP for NAVSTA Newport and tenant activities.

6.2 CONSOLIDATED HAZARDOUS MATERIAL REUTILIZATION AND INVENTORY MANAGEMENT PROGRAM

NAVSTA Newport established the HM Center in April 1995, which initially used the Hazardous Inventory Control System, but changed to the HSMS to track HM usage within NAVSTA Newport and tenant activities. The HM Center establishes complete life-cycle management of HM from procurement through disposal. Benefits include personnel safety; environmental protection; savings in material purchase, excess, and waste; and savings in personnel and facility costs without degradation of operational readiness. The HM Center is under the direction of the NAVSTA Newport Supply Department so that procurement of HM within the Command can be fully integrated with the HM Center. The HM Center uses a bar code system for tracking and inventory of HM used in the day-to-day operation of the base.

NAVSTA Newport is in the process of re-implementing the CHRIMP. All departments within NAVSTA Newport and all tenant activities purchase and receive HM from Building 1166. Work areas are authorized to keep only a 7-day supply of HM on hand. As additional HM is needed, the procurement requests are processed by the HM Center to ensure that the work area is authorized to use the HM (by review of the work area's AUL) and to see if the HM is available for re-issue. Upon delivery, the HM will be received by the HM Center where it is inventoried, bar-coded, and issued to the customer. When the task is completed, the customer returns any unused portion of the HM and the original container to the HM Center.

NAVSTA Newport uses a monthly "Outstanding Container Report" to ensure empty containers are returned to the HM Center. This report is sent to all NAVSTA Newport department and tenant activities that have materials or containers that have not been returned within 30 days. If the material is not returned, the person who drew the material out cannot receive any additional material from the HM Center.

6.3 AUTHORIZED USE LISTS

NAVSTA Newport has implemented a HM Control and Management program that uses AULs within all NAVSTA Newport and tenant activities. The AUL is a P2 management tool which ensures that a work area is limited to using only the HM listed on its Work Area's AUL and the NAVSTA Newport list of general use items. The list of general use items and the Work Area AUL are described below.

6.3.1 General Use Items

The P2 Committee has developed a list of general use items composed of the most common, least hazardous HM used at NAVSTA Newport and has added these items to each work area AUL. All NAVSTA Newport work areas are automatically authorized to use any material on the list of general use items.

1. The list of general use items includes cleaners, waxes/polishes, adhesives, batteries, interior latex paint, and a limited number of other commonly used materials. Cleaner and janitorial supplies are handled centrally by a base-wide contract with EcoLab®.

2. The P2 Committee will continually strive to identify less hazardous or substitute materials for the above applications. NAVSTA Newport personnel are encouraged to provide suggestions to improve the content of the list of general use items.

3. Office and administrative work areas are encouraged to limit their HM to those found on the list of general use items.

6.3.2 Work Area Authorized Use List

Each work area that uses HM has developed a unique AUL that establishes the exact types and quantities of HM it is authorized to use, in addition to those identified on the list of general use items. Additionally, the quantities of HM required in each work area could differ depending on the manufacturer of the HM.

1. Great emphasis has been placed on developing AULs that minimizes the variety, quantity, and degree of hazard of HM authorized for use. To determine the degree of hazard, material safety data sheets have been obtained and reviewed, and placed on file for all HM before being placed on the AUL.

2. A brief justification of need has been provided for each HM on the work area AUL.

3. Work area AULs have been forwarded for review to the NAVSTA Newport Environmental Protection Division and the NAVSTA Newport Safety Office.

4. Requests for material or quantity changes to a work area AUL must be approved by the HM Coordinator and then forwarded for review by the NAVSTA Newport Environmental Protection Division via the NAVSTA Newport Safety Office. A request must clearly justify the need for change. Material may be deleted from an AUL at any time. Material safety data sheets must be attached to the addition to the AUL form.

5. The P2 Committee will periodically review work area AULs and, if necessary, recommend additions, deletions, substitutions, and/or quantity adjustments.

6.4 SOLID WASTE STREAMS

Solid waste streams and, in particular, solid waste and other waste recycling efforts, are detailed in the NAVSTA Newport Solid Waste Management Plan, prepared by Nobis Engineering.

6.5 GENERAL PROCESS CODE DESCRIPTIONS AND OPTIONS

6.5.1 Introduction

Sections 6.5.2 through 6.5.8 describe activities performed in each of the general process groups at NAVSTA Newport. Feasible options to reduce the amount of pollution generated by each activity are described in Section 7.2). This section summarizes actions that have already been implemented and actions to consider to further reduce the amount of pollution produced by NAVSTA Newport and tenant activities. Table 5 summarizes the process codes and HW generated that are described in this section.

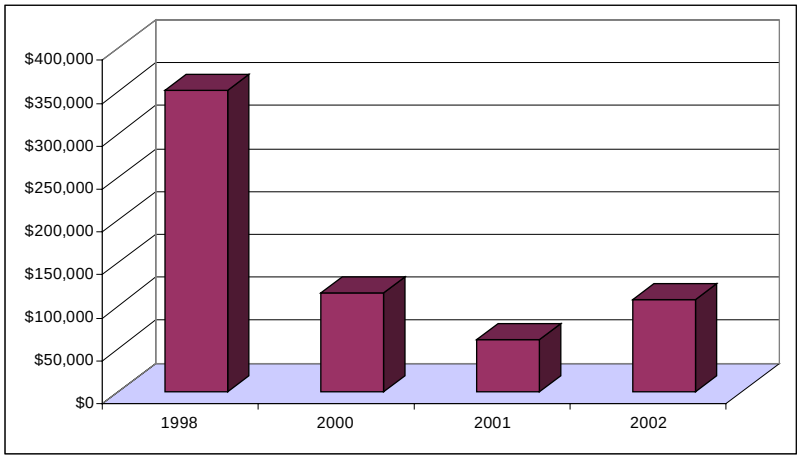


Figure 3. Pounds of hazardous waste disposed of using 1998 baseline year compared to Fiscal Years 2000, 2001, and 2002.

6.5.2 Painting Operations

Painting operations at NAVSTA Newport currently consist of painting for building maintenance purposes and open air/touch-up painting. Public Works Department maintenance performs all building maintenance painting operations and traffic painting, and the Sign Shop performs all sign painting operations. The majority of paint used is latex. Solvent-based paints are used only in isolated cases where latex is not feasible. Paints and coatings are applied using brushes and aerosol cans. The sign shop is also equipped with a walk-in paint booth with low pressure, high

volume paint guns. This paint booth is currently only used for approximately 2-3 hours per month. All paints and supplies used in painting operations are obtained through the HM Center and any unused portions are returned to the HM Center upon completion of the project.

Wastes generated from the painting processes include used rags, used brushes, used rollers, paint waste, thinner waste, empty paint cans, and used aerosol cans. All used rags, rollers, brushes, and waste paints and solvents are collected and brought to the less than 90-day disposed offsite as HW.

As Table 5 illustrates, a steady reduction in HW generated by process code has occurred since 1998. The largest reduction was in the fluid change-out process code associated with outsourcing of the vehicle fleet maintenance functions to the General Services Administration between 1998 and 2000.

Year 2002 HW data show a 76 percent increase over 2001 levels due to substantial increases in facility operation, non-recurring, and expired shelf-life and excess materials; non-ship occurred primarily due to continued integration of tenant activities into the NAVSTA Newport P2 program. The resulting increases are additions of tenants previously not captured, or one-time events related to facility renovations or maintenance, and collection of "legacy" HW identified during tenant addition and integration. All tenant activities, except the Naval Undersea Warfare Center, are managed under the P2 program.

6.5.3 Fluid Change-Out/Lubrication Operations (Process Code FC)

Fluid change-out/lubrication operations at NAVSTA Newport include processes involving either fluids change-out/purging (typically involving vehicles, and associated equipment) or facility maintenance (involving general industrial equipment maintenance). Oil filters and most oils have been recycled at NAVSTA Newport since 2000. Since 2001, most fleet vehicle maintenance functions have been contracted through General Services Administration to offsite vendors, with the exception of approximately 44 vehicles, thus significantly reducing the waste stream. This has resulted in the reduction of over 200,000 lb of waste fluids being handled and disposed of, principally waste oil, oil filters, and antifreeze. The Auto Hobby Shop and Building A-9 perform fluid change-out and lubricating operations; it is estimated that an average of 60 change-outs per month occur (assuming 2 per day). Processes involving fluid change-outs and facility maintenance use a wide variety of materials, but only petroleum products (such as oils and greases), antifreeze, and various other related materials (such as filters) are evaluated in the Fluid Change-Out/Lubrication Operations Group.

The fluid change-out/lubrication operations conducted by the Auto Hobby Shop and Building A-9 consist of topping-off or replacing oil and filters on vehicles and maintenance equipment, topping-off or replacing anti-freeze on vehicles and maintenance equipment, and changing belts and tires. Waste oil is collected and recycled offsite. NAVSTA Newport has implemented a policy of using reclaimed oil purchased from a recycler when conducting fluid change-out operations. Oil filters are drained and recycled offsite. Anti-freeze is also changed or topped-off in vehicles. Oil and anti-freeze are drawn from the HM Center. The anti-freeze is obtained in

concentrated form and diluted to proper freeze protection levels prior to installation in vehicles and equipment. Any waste antifreeze is containerized and sent offsite to a recycler. A shop towel laundering service is used to provide rags for general maintenance activities. Speedy-Dry is used to soak up fluid overflows and is disposed of as state-regulated HW.

Fluid change-out/lubrication operations conducted in the Auto Hobby Shop consist of Navy personnel topping-off or replacing oil and filters, and topping-off or replacing anti-freeze on their personal vehicles. Waste oil is collected in a 500-gal tank and recycled offsite. Anti-freeze is collected in drums and sent offsite to a recycler. Oil filters from this operation are sent offsite for recycling. The oils, filters, and anti-freeze used in the Auto Hobby Shop are supplied to Navy personnel by the Auto Hobby Shop, which obtains the supplies from the HM Center. Additionally, Navy personnel may bring their own fluids with them to the shop.

Additionally, fluid change-out activities are conducted on Coast Guard vessels at NAVSTA Newport. This activity is the highest producer of waste oil at NAVSTA Newport (6,971 lb reported in Fiscal Year 2001).

6.5.4 Degreasing/Cleaning Operations (Sub-Element of Process Code FC)

All hazardous degreasers/cleaners used in degreasing/cleaning operations have been eliminated from NAVSTA Newport's operations. Currently, all degreasing/cleaning operations are conducted using non-hazardous, biodegradeable cleaning agents.

6.5.5 Adhesives/Sealant Operations (Sub-Element of Process Code FP)

The operations using adhesives and sealants mainly include processes that belong to other general groups, however, the adhesives and sealants have been evaluated separately for option identification. NAVSTA Newport has implemented a policy of using RTV silicone gasket material in place of those containing HM. Adhesives and sealants are applied using rags and cotton swabs to various equipment and structures. Once applied, most of these compounds are used/consumed in the process. Unused quantities of gasket materials are returned to the HM Center. Rags and cotton swabs contaminated with waste adhesive/sealant are disposed of as solid waste.

6.5.6 Battery Operations (Sub-Element of Process Code FP)

The battery operation process is battery replacement/disposal, performed by Public Works Department transportation. Lead-acid batteries are the main type of batteries evaluated in this study. Various quantities of sealed lead-acid batteries used in vehicles and generators are recharged. Lead-acid batteries no longer rechargeable are returned to the supplier per Rhode Island regulations for recycling in a one-for-one exchange program. When a battery is replaced, a new battery is purchased from Carnegie Auto Supply, who takes the old battery. Old batteries are not stored onsite at NAVSTA Newport. Damaged batteries are disposed offsite as HW through the Environmental Protection Division.

6.5.7 Photographic Operations (Sub-Element of Process Code FP)

The photographic operations involve photographic developing by the Public Affairs Office, Naval War College, and Naval Hospital, and the medical x-rays taken at the hospital and dental offices. X-rays are taken in both the hospital and the dental office. Fixers and developers are used to develop the film, and after film development, silver is separated from the fixer/developer solution. The silver is recycled through the Defense Reutilization and Marketing Office and the waste fixer/developer solution is discharged to the sewer under NAVSTA Newport's discharge permit to the City's wastewater treatment facility. Old film is disposed through Defense Reutilization and Marketing Office for silver recovery.

6.5.8 Miscellaneous Operations

Miscellaneous operations at NAVSTA Newport include all processes that could not be grouped in the previous six operations. Although many unique operations exist in the Miscellaneous Operations Group, only the major operations are described below.

Boilerwater/feedwater and chemistry laboratories at Surface Warfare Officers School and the Naval Academy Preparatory School, respectively, are used to train students at each command. These laboratories produce small quantities of acids and bases that are disposed of as HW. Larger classes with fewer laboratory stations are conducted once per week in order to limit the quantity of waste chemicals produced.

The firefighter trainer at NAVSTA Newport is used to train naval personnel in proper firefighting techniques by the use of a controlled propane fueled fire. Students combating the fire wear oxygen-breathing apparatus to allow proper breathing during the training. Spent oxygen-breathing apparatus canisters are disposed of as HW. NAVSTA Newport has implemented a policy of conducting more walk-through evolutions and reducing the number of training classes to minimize the number of oxygen-breathing apparatus canisters used.

Medical laboratories at the naval hospital and dental clinic are used to treat military personnel and their dependents. These laboratories produce various chemical and medical waste products that are disposed of as medical/HW.

The pistol range at NAVSTA Newport was formerly used by military personnel for professional and personal training. The by-products of firearm usage were solid lead debris and lead dust. The solid lead debris was formerly collected in metal containers and transported to the NAVSTA Newport scrap metal reclamation yard for resale as scrap metal. The lead dust was collected and disposed of as HW. Waste minimization has been accomplished by closing the pistol range.

Pesticide operations at NAVSTA Newport produce very little, if any, wastewater. All rinse water is saved and re-used to mix future chemicals as required by OPNAVINST 5090.1B and the Integrated Pest Management Plan prepared by Engineering Field Activity Northeast (2002). Any unused wastewater or expired pesticides are disposed of as HW.

NAVSTA Newport currently conducts various printing operations at Building 47 Coddington Cove. The equipment in use consists of various dry-type photocopiers and laser printers, which consume printing cartridges and toners. As printing and toner cartridges are consumed, NAVSTA Newport sends the consumed cartridges back to the manufacturers or vendors for recycling.

6.6 TECHNICAL FEASIBILITY EVALUATION OF OPTIONS

For each process code, a set of P2 options has been identified. Appendixes C through G provide summaries of process information and economic benefit summaries for newly identified P2 opportunities. If implemented, these options will achieve reduction in some or all of the following:

- HM usage
- Toxic chemicals release
- HW generation
- Toxic chemicals usage
- Wastewater
- Air emissions
- Health risks for workers.

Although all options identified would cause reduction in all or some of these areas, not every option is technically feasible. For each selected process site, technical feasibility of options was evaluated according to the following criteria:

- Commercial availability
- Economic requirements
- Compatibility
- Space/utility limitations
- Compliance issues
- Training requirements.

Options found to be technically infeasible were eliminated from further P2 evaluation. Also, any option requiring changes to military specifications were eliminated as those decisions need to be made by the cognizant engineering authorities. Tables 1 and 2 summarize the feasibility of all P2 opportunities.

7. P2 OPPORTUNITIES

7.1 INTRODUCTION

Since NAVSTA Newport does not meet or exceed the EPCRA Section 313 threshold reporting requirements for TRI data, an abbreviated process-specific assessment of reduction opportunities was developed in Section 6. For selected P2 opportunities, detailed data collection techniques were required, or used, to compile these findings. Therefore, an overall quantitative prioritization ranking methodology is not feasible.

NAVSTA Newport has been implementing P2 techniques for several years and the majority of the P2 options identified in Section 6 are feasible and have been implemented already. The remaining options will be evaluated, based on their economic benefits, pollution reduction capabilities, and practicality. Table 1 is the P2 Opportunity Action Plan. This action plan summarizes new P2 opportunities identified during this review period. Table 2 provides a summary of completed P2 opportunities.

P2 options that were determined to be feasible, but not yet implemented at NAVSTA Newport in the previous P2 Plan, are summarized and discussed further in Section 7.2.

7.2 FEASIBLE OPTION IMPLEMENTATION PLAN

7.2.1 Painting Operations

One option identified:

1. The use of laundered rags for painting operations. An offsite contractor would pick up and launder used rags and return cleaned rags for re-use. This would minimize the amount of rags disposed offsite as HW.

   This opportunity has been implemented at NAVSTA Newport at Building A-63 and at various locations facility-wide.

7.2.2 Fluid Change-Out/Lubrication Operations

Two options identified:

1. Material substitution for antifreeze. Propylene glycol is an alternative for ethylene glycol; however, propylene glycol may not perform as well as ethylene glycol. This option will require qualification testing by the Navy.

2. Install oil filter crushers in Buildings A-9 Coddington Cove and the Auto Hobby Shop. This will reduce the volume of oil filters disposed and reduced the quantity of containers sent offsite for disposal or recycling.

The Auto Hobby Shop and Building A-9 are the only locations where limited vehicle maintenance operations occur. Both facilities obtain AUL materials from the HM Center when needed. According to the FASTT Report, two oil filter crushers have been purchased by NAVSTA Newport.

7.2.3 Degreasing/Cleaning Operations

No options identified.

7.2.4 Adhesive/Sealant Operations

One option identified:

1. Use of laundered rags for adhesive/sealant operations. An offsite contractor would pick up and launder used rags and return cleaned rags for re-use. This would minimize the amount of rags disposed offsite as solid waste.

   This opportunity has been implemented at NAVSTA Newport.

7.2.5 Battery Operations

No options identified.

7.2.6 Photographic Operations

No options identified.

7.2.7 Miscellaneous Operations

Seven options identified:

1. Use colored water for class simulations and training sessions prior to actual chemical usage. This is dependent on changing the teaching policy at Surface Warfare Officers School COLCOM.

   This opportunity has been rejected because students need to learn how to properly mix the actual chemicals for ship operations in school before they board the ships

2. Implement a non-lead ammunition substitute for the pistol range. This would reduce the amount of lead-based ammunition disposed of as HW.

   This opportunity has been rejected because substitute ammunition does not perform the same as lead ammunition. The pistol range has been shut down as a result of lead contamination and potential health issues regarding those who used the range.

3. Use plastic media blasting instead of sand blasting/chemical paint removal. This would eliminate dust generated from the blasting process.

   This opportunity has been rejected. There is only one small, self-contained sand-blasting unit at NAVSTA Newport at Building A63 (Public Works Shop). This unit it rarely used (may be 20 times per year).

4. Install pulpers in the Ney Hall Galley for the volume reduction of food waste. This would eliminate the volume food waste occupies in solid waste dumpsters by approximately 75 percent.

   This opportunity has been implemented at NAVSTA Newport. Two pulpers have been installed in 2001 and two more are scheduled to be installed in 2004.

5. Install can crushers in the Ney Hall. This would eliminate the volume metal cans occupy in solid waste dumpsters by approximately 75 percent.

   This opportunity has been implemented at NAVSTA Newport (1 unit has been installed and the second unit is scheduled to be installed at the Officer's Club).

6. Construct Building 43 Coddington Cove transformer storage and reconditioning facility. This would reduce the volume of transformers disposed offsite and allow re-use of transformers routinely disposed of. The actual waste reduction quantities will vary depending on the frequency of use of the area and the quantity of transformers reconditioned.

   This opportunity has been rejected due to union issues. This would result in having "non-painters" paint.

7. Add a fluorescent light bulb crusher to the HW storage yard. This will reduce the total volume of fluorescent light bulbs and allow fewer containers to be shipped offsite for disposal.

   This opportunity has been rejected. The crusher is designed to crush one bulb at a time. NAVSTA Newport does not have personnel available to operate this equipment for the length of time it would need to be operated.

8. Install solid waste compactors that will result in a waste reduction ratio of 4:1 for NAVSTA Newport.

   This opportunity will be implemented at NAVSTA Newport. Solid waste compactor equipment has been requested/ordered.

9. Install cardboard compactors in an effort to further reduce the amount of solid waste that NAVSTA Newport generates.

   This opportunity will be implemented at NAVSTA Newport. Cardboard compactor equipment has been requested for NAVSTA Newport.

7.3 IMPLEMENTATION PLAN FOR NEW P2 OPTIONS

Four new P2 options were determined to be feasible, and have been implemented at NAVSTA Newport since the previous P2 Plan, are summarized and discussed below:

1. Sustainable landscaping via composting and mulching grass clippings, brush debris, and flower clippings to reduce the amount of solid waste generated at NAVSTA Newport.

   This opportunity is being implemented at NAVSTA Newport.

2. Recycle food waste from food services to local farmers where it is used as food for livestock to reduce the amount of solid waste generated at NAVSTA Newport.

   This opportunity is being implemented at NAVSTA Newport at the Commissary only.

3. Armed Forces Reserve Center – Dispose of old Safety Kleen chemical based parts washer and install new aqueous based parts washer.

   This opportunity is in the process of being implemented. The new parts washer has been delivered and is awaiting installation.

4. Armed Forces Reserve Center – Increase P2 awareness through training.

   This opportunity is in the process of being implemented at the Armed Forces Reserve Center. P2 training activities have already taken place.

The following option was identified that was determined to be feasible, but not yet implemented at NAVSTA Newport as follows:

5. Recycle condensate from boilers to promote water conservation efforts.

   This opportunity is currently under review.

Since most of these feasible options are from activities that are mutually exclusive, a numerical prioritization is not needed. Each issue can receive the same amount of attention and time. The P2 Committee will discuss each option and recommend actions to be taken or researched by the respective activity. Upon completion of the appropriate action/research, if the Committee feels

that the option can be effectively implemented, it will ensure appropriate actions are taken to do so. If future pollution waste streams are added at NAVSTA Newport, additional P2 options will be considered, and implemented as needed. These changes to the NAVSTA Newport waste stream inventory and P2 options will be added in future P2 Plans during the annual review.

8. POTENTIAL BARRIERS TO P2 PLAN

As with any new or developing program, potential barriers to P2 program implementation must be anticipated and addressed. The HW and HM Control Committees periodically review the P2 program and provide an ongoing mechanism for identifying and addressing such barriers. P2 barriers identified through past experience and Navy approaches for overcoming these barriers are presented below.

Navy maintenance and process manuals and military specifications specify standard operating procedures and specific chemical requirements. Navy policy does not allow NAVSTA Newport or its tenant activities to deviate from standard maintenance procedures without specific approval from a higher authority. This barrier is common service-wide and is documented in the Government Accounting Office report, Pollution Prevention Status of DoD's Efforts. These requirements impede changeovers to more efficient processes or less HM.

Regulatory requirements may impede P2 implementation by providing conflicting media-specific goals or mandates, imposing cumbersome permitting requirements on P2 technologies, or mandating best available control technologies rather than promoting performance criteria for industrial processes. NAVSTA Newport maintains a cooperative relationship with regulators to anticipate and address potential regulatory barriers to P2.

A lack of training and awareness and multiple job responsibilities may impede individual efforts to implement P2. Each individual must understand the benefits of P2 and how to effectively integrate P2 into an already busy schedule. NAVSTA Newport's training and awareness programs, conducted in conjunction with hazardous HM and HW training, should help reduce this potential barrier.

Incomplete cost accounting under current accounting systems may limit each department's incentive to reduce waste generation. For example, HW generation and disposal costs are not currently charged to the generating activity. Improved cost accounting and reporting systems will help reduce this barrier.

NAVSTA Newport expects that additional potential barriers will be identified as the P2 program develops over time. Identifying these barriers and addressing them will be an important element of ongoing P2 efforts.

9. OTHER REQUIREMENTS/RELATED PLANS

NAVSTA Newport is continually incorporating existing, new, and evolving federal, state, and local environmental protection requirements into ongoing mission-related activities. NAVSTA Newport's policy is to comply with all applicable federal, state, and local regulations. This section summarizes other regulatory and policy requirements, including Solid Waste Management Plan requirements, ODS requirements, and energy and water conservation programs.

9.1 SOLID WASTE MANAGEMENT PLAN REQUIREMENTS

Solid Waste Management Plan requirements are presented in relation to municipal solid waste management in Section 3.2.4. OPNAVINST 5090.1B requires all Navy shore installations to develop and implement Solid Waste Management Plans. NAVSTA Newport received the final version of the Solid Waste Management Plan for NAVSTA Newport and tenant activities in 1995 and an updated version in 1999 and 2002. NAVSTA Newport has now fully implemented the Solid Waste Management Plan.

9.2 OZONE DEPLETING SUBSTANCES PROGRAM REQUIREMENTS

Installations are required to prepare ODS plans for converting or replacing ODS equipment to meet Navy-wide schedules. These requirements are P2-related because they will require NAVSTA Newport to implement substitute, less HM to replace ODS. NAVSTA Newport has prepared a finalized ODS instruction which is being implemented throughout all NAVSTA Newport and tenant activities. NAVSTA Newport also has an ODS Elimination Plan which will eliminate ODS and substitute less HM.

9.3 ENERGY AND WATER CONSERVATION PROGRAMS

NAVSTA Newport Engineering Division (Code N32) is in the process of developing an Energy Conservation Plan for NAVSTA Newport and tenant activities. NAVSTA Newport Environmental Department (Code N8N) are researching an Architect and Engineering contract to develop a Water Conservation Plan for NAVSTA Newport and tenant activities.

TABLE 1 POLLUTION PREVENTION OPPORTUNITY ACTION PLAN

Organization Work Center Building No./Code Opportunity No.	Process ID (Plan _Year_Opportunity No.) ID	NAME	Pollution Prevention Opportunity Investment Cost ($) Annual Savings ($) Payback Period (Years) Funding Source[a]	Pollutant/Media Reductions (lb/yr) Applicable/Affects Compliance Media (See notes) ODS	TRI	AIR	HW	SW	WW	Estimated Completion Date (Comments)
NAVAL STATION NEWPORT, RHODE ISLAND										
NAVSTA Newport Maintenance Building 7CC No. 01	P2_02_OP03	Recycle Condensate from boilers	Water Conservation IC – $0 AS – TBD PP – TBD FS – Pollution Prevention Fund							TBD (determine feasibility)
NAVSTA Newport Public Works Base-wide No. 02	P2_02_OP04	Sustainable Landscaping via composting grass clippings, brush clippings, flower clippings	Recycle IC – $0 AS – $0 PP – NA FS – Public Works					610,000[b]		2002 (currently implemented)
NAVSTA Newport Commissary No. 03	P2_02_OP05	Recycle food (fruit/breads) not fit for human consumption to local farmer for animal food.	Recycle IC – $0 AS – $0 PP – NA FS – NA					610,000[c]		2002 (currently implemented)

(a) If Pollution Prevention Fund is indicated as the funding source, then base only pays installation costs – not investment.
(b) Assuming 0.5 percent of annual solid waste is recycled, using FY 2002 solid waste data.
(c) Assuming 1 percent of annual solid waste is recycled, using FY 2002 solid waste data.

NOTE: NAVSTA = Naval Station.
C = Investment cost.
FS = Funding source.
AS = Annual savings.
TBD = To be determined.
PP = Payback period.
NA = Not applicable.
Process ID Nos. P2_02_OP01 and P2_02_OP02 are associated with the Naval Reserve Center and have been completed, therefore, they are included on Table 2.

Organization Work Center Building No./Code Opportunity No.	Process ID (Plan _Year_Opportunity No.) ID	NAME	Pollution Prevention Opportunity Investment Cost ($) Annual Savings ($) Payback Period (Years) Funding Source[a]	Pollutant/Media Reductions (lb/yr) Applicable/Affects Compliance Media (See notes) ODS	TRI	AIR	HW	SW	WW	Estimated Completion Date (Comments)
NAVAL RESERVE CENTER – PROVIDENCE, RHODE ISLAND										
Reserve Center Providence Facility-wide No. 04	P2_02_OP06	Dispose of old Safety-Kleen chemical parts washer and install new aqueous-based parts washer.	Product Substitution IC – $0 AS – $0 PP – NA FS – Pollution Prevention Fund				360[d]			2003 (already have new parts washer; awaiting installation during 2002)
Reserve Center Providence Facility-wide No. 05	P2_02_OP07	Increase P2 Awareness through Training	Reduce hazardous materials usage and increase recycling IC – $0 AS – $0 PP – NA FS – Environmental	NA	NA	NA	NA	NA	NA	2003 (some training has already been implemented)

(d) Gal per year, assuming 30 gal/month.

TABLE 2 COMPLETED POLLUTION PREVENTION OPPORTUNITIES

Organization Work Center Building No. Opportunity No.	Process ID ID	Process ID Name	Pollution Prevention Opportunity Investment Cost ($) Funding Source[(a)]	Pollution Prevention Opportunity Implemented	Completion Date (Comments)
NAVAL STATION NEWPORT, RHODE ISLAND					
NAVSTA Newport Environmental Base-wide No. 01	P2_00_OP01	Expand use of rag recycling and increase cleaning efficiency	Recycle and Efficiency IC – $3,300/year FS – Environmental	Already recycling rags	Started 1997 (Completed – Ongoing as needed) FASTT Site Survey Report
NAVSTA Newport Environmental Base-wide No. 02	P2_00_OP02	Recycle crushed oil filters	Recycle IC – $0 FS – Environmental	Already recycling crushed oil filters	Started 1995 (Completed – Ongoing as needed) FASTT Site Survey Report
NAVSTA Newport Fire Fight School Building 1276 /N52 No. 03	P2_00_OP03	Oxygen-breathing apparatus canisters	Recycle IC – $2,500 FS – Not applicable	Not implemented and not feasible	2000–2002 (Completed – Need Permit Part "B" and need to be a TSDF) FASTT Site Survey Report
NAVSTA Newport HAZMIN N4112 No. 04	P2_00_OP04	Improve operation of hazardous materials warehouse	CHRIMP Implementation IC – $10,000 FS – Environmental	Already using CHRIMP	2001 (Completed) FASTT Site Survey Report
NAVSTA Newport Medical Clinic Building 23NH No. 05	P2_00_OP05	Improve method of silver recovery from x-ray operations	Silver Recovery IC – <$30,000 FS – Not applicable	Not implemented – not cost effective	2000–2002 (Not completed – do not do enough x-rays onsite to justify) FASTT Site Survey Report

(a) If Pollution Prevention Fund is indicated as the funding source, then base only pays installation costs – not investment.

NOTE: NAVSTA = Naval Station Newport.
IC = Investment cost.
FS = Funding source.
FASTT = Field Activity Support and Technology Transfer.
CHRIMP = Consolidated Hazardous Material Reutilization and Inventory Management Program.

Organization Work Center Building No. Opportunity No.	Process ID		Pollution Prevention Opportunity Investment Cost ($) Funding Source[(a)]	Pollution Prevention Opportunity Implemented	Completion Date (Comments)
	ID	Name			
NAVSTA Newport Electrical Utility N322 No. 06	P2_00_OP06	Reactivation of paint spray booth	Refurbish Electrical Equipment in-house IC – $0 FS – Not applicable	Not implemented – not cost effective	2000–2002 (Not completed – do not have the personnel) FASTT Site Survey Report
NAVSTA Newport Maintenance N33212 No. 07	P2_00_OP07	Standardize fluorescent tube disposal practice	Reduce Hazardous Materials and Hazardous Waste IC - $0 FS – Environmental	Already standardizing fluorescent bulbs. Used to be considered hazardous waste, now considered universal waste in Rhode Island.	1991 (Completed) FASTT Site Survey Report
NAVSTA Newport Maintenance N33212 No. 08	P2_00_OP08	Luminescent panel replacement for exit signs	Reduce Energy Use IC – $0 FS – Public Works	Replacing panels as they fail	Started 1997 (Completed – ongoing as needed) FASTT Site Survey Report
NAVSTA Newport Engineering N32 No. 09	P2_00_OP09	Reduce utility/energy costs	Energy/Utility Savings IC – 5 percent reduced use FS – NAVSTA	Base-wide efforts to retrofit lights, improve building controls, construct boiler centralization, promote education to advocate buying energy efficient products, look to achieve Narragansett electric rebates.	Started 2000 (Completed – looking to achieve goal of boiler centralization by 2004, and the base continually renovates/upgrades buildings on an as needed basis) FASTT Site Survey Report
NAVSTA Newport Transportation N3321 No. 10	P2_00_OP10	Petroleum residue cleanup	Product Substitution IC – $0 FS – Environmental	Already using non-hazardous bio-degradable cleanup products on Authorized Use List	May 2001 (Completed) FASTT Site Survey Report

Organization Work Center Building No. Opportunity No.	Process ID ID	Process ID Name	Pollution Prevention Opportunity Investment Cost ($) Funding Source[a]	Pollution Prevention Opportunity Implemented	Completion Date (Comments)
NAVSTA Newport Maintenance N33212 No. 11	P2_00_OP11	Freon reclamation unit	Reduce Freon Waste IC – $1,500 FS – Public Works	Reduce ozone depleting substance and hazardous waste	2002 (Completed – Public Works has already purchased 8 in 2001) FASTT Site Survey Report
NAVSTA Newport Maintenance USCG No. 12	P2_00_OP12	Improved wire rope lubricator and lubricant	Product Substitution IC – $0 FS – USCG	Reduce hazardous materials use and hazardous waste	2000–2002 (Not completed – they will look into this product substitution) FASTT Site Survey Report
NAVSTA Newport Maintenance USCG No. 13	P2_00_OP13	Faster, more effective cleaning of heat exchangers (ship-side)	Reduce ship bilge water and reuse solution IC – $1,000 FS – USCG	Not implemented currently not use chemicals	2000–2002 (Not completed – will continue to clean them manually) FASTT Site Survey Report
NAVSTA Newport Auto Hobby Shop Building A-9 No. 14	P2_00_OP14	Oil filter crushing equipment	Reduce Hazardous Waste IC – $0 FS – Pollution Prevention Fund	Already using 2 units and have a 3rd unit in storage	2001 (Completed - 3rd unit still in shipping container)
NAVSTA Newport Galley (292CP) Ney Hall (95CHI) No. 15	P2_00_OP15	Install can crushing equipment	Reduce Solid Waste IC – $0 FS – Pollution Prevention Fund	Already installed 2 units	2001 (Completed)
NAVSTA Newport Environmental Base-wide No. 16	P2_00_OP16	Install solid waste compactors – reduces waste ratio 4:1	Reduce Solid Waste IC – $5,000 (install) FS – Pollution Prevention Fund	Will further reduce solid waste	2004 (Equipment requested)
NAVSTA Newport Environmental Base-wide No. 17	P2_00_OP17	Install cardboard compactors	Reduce Solid Waste IC – $5,000 (install) FS – Pollution Prevention Fund	Will further reduce solid waste	2004 (Equipment requested)

Organization Work Center Building No. Opportunity No.	Process ID		Pollution Prevention Opportunity Investment Cost ($) Funding Source[(a)]	Pollution Prevention Opportunity Implemented	Completion Date (Comments)
	ID	Name			
NAVSTA Newport Environmental Galley (292CP) Ney Hall (95CHI) No. 18	P2_00_OP18	Install pulpers (4) to eliminate 80 percent of the waste	Reduce Solid Waste IC – $11,000 (install) FS – Pollution Prevention Fund	2 units already installed in building 292 and 2 more will be installed by 2004 (1 in building 292CP and 1 in building 95CHI)	2001 and 2004 (Completed – 2 installed in 2001 and 2 to be installed in 2004)
NAVSTA Newport Supply Storage B-15CC No. 19	P2_00_OP19	Install antifreeze recycling unit	Reduce Hazardous Waste IC – $0 FS – Pollution Prevention Fund	Not implemented because this facility no longer performs vehicle maintenance activities	2003 (Completed – to be returned to Pollution Prevention Program – no more vehicle maintenance onsite except for Hobby Shop)
NAVSTA Newport Environmental Navy-wide – Pollution Prevention Goal No. 20	P2_00_OP20	Develop Authorized Use List for NAVSTA Newport	Reduce Hazardous Materials Usage IC – $0 FS – Not applicable	Already developed for host site and will incorporate all tenant activities as a future goal	2000 (Completed – to incorporate tenant activities as a future goal)
NAVSTA Newport Environmental Navy-wide – Pollution Prevention Goal No. 21	P2_00_OP21	Institute CHRIMP	Reduce Hazardous Materials Usage IC – $0 FS – Not applicable	CHRIMP already instituted	1998 (Completed – currently re-CHRIMPing)
NAVSTA Newport Environmental Navy-wide – Pollution Prevention Goal No. 22	P2_00_OP22	Implement training and awareness programs and Pollution Prevention Plan development	Reduce Hazardous Materials Usage IC – $0 FS – Environmental	Training is already implemented	2001 (Completed)

Organization Work Center Building No. Opportunity No.	Process ID		Pollution Prevention Opportunity Investment Cost ($) Funding Source[(a)]	Pollution Prevention Opportunity Implemented	Completion Date (Comments)
	ID	Name			
NAVSTA Newport Environmental Navy-wide – Pollution Prevention Goal No. 23	P2_00_OP23	Remove or convert halon 1211/1302 fire extinguishers by 1996/2000	Reduce Hazardous Materials IC – $0 FS – Pollution Prevention Fund	No more halon 1211 or 1302 fire extinguishers onsite	1996 and 2000 (Completed – 1,211 gone by January 1996, 1,301 gone by December 2000)
NAVSTA Newport Environmental Navy-wide – Pollution Prevention Goal No. 24	P2_00_OP24	Eliminate non-critical Class I ozone depleting substance solvent applications by January 1996	Reduce Ozone Depleting Substance IC – Not applicable FS – Not applicable	Class I ozone depleting substance solvent applications have been eliminated	1996 (Completed)
NAVSTA Newport Environmental Navy-wide – Pollution Prevention Goal No. 25	P2_00_OP25	Convert or replace CFC air conditioning and refrigeration equipment by December 2000	Reduce Air Emis. IC – $10,000 FS – Various Sources	Reduce ozone depleting substance use	2000 (Completed)
NAVSTA Newport Environmental Navy-wide – Pollution Prevention Goal No. 26	P2_00_OP26	Reduce hazardous waste generation by 50 percent by December 1999	Reduce Hazardous Waste IC – Not applicable FS – Environmental	Reduce hazardous waste From 1998 to 2001 hazardous waste generation was reduced by 83% (350,731 to 60,516 lb). From 2001 to 2002 hazardous waste generation increased by 76% (60,516 to 106,786 lb).	1999 (Completed – The increase in hazardous waste generation from 2001 to 2002 was likely the result of the re-CHRIMPing process and inclusion of additional departments and tenant commands)

Organization Work Center Building No. Opportunity No.	Process ID		Pollution Prevention Opportunity Investment Cost ($) Funding Source[(a)]	Pollution Prevention Opportunity Implemented	Completion Date (Comments)
	ID	Name			
NAVSTA Newport Environmental Navy-wide – Pollution Prevention Goal No. 27	P2_00_OP27	Reduce toxic chemical releases by 50 percent by December 1999 (if subject to the Resource Conservation and Recovery Act)	Reduce TRI IC – Not applicable FS – Not applicable	NAVSTA Newport does not meet the regulatory threshold, therefore, this is not applicable	1999 (Completed – NAVSTA Newport is exempt)
NAVSTA Newport Environmental Base-wide No. 28	P2_00_OP28	Reduce solid waste by 20-80 percent (>40 percent by 2005)	Reduce Solid Waste IC – $0 FS – Environmental	Achieved >40 percent reduction by 2001	2001 (Completed – >40 percent by 2001)
NAVSTA Newport Environmental Base-wide No. 29	P2_00_OP29	Pollution Prevention database links CHRIMP with hazardous materials use and hazardous waste generation	Reduce Use and Waste IC – $35,000 FS – Atlantic Fleet	To be completed in the future – date to be determined	To Be Determined (Not completed – hazardous Substance Management System running only for hazardous materials use currently)
NAVSTA Newport Environmental Base-wide No. 30	P2_00_OP30	Use non-hazardous bio-degradable degreasing cleaners	Product Substitution IC – $0 FS – Environmental	Already using non-hazardous biodegradable degreasing cleaners; use products on the Authorized Use List	2000 (Completed)
NAVSTA Newport Maintenance Base-wide No. 31	P2_00_OP31	Use non-hazardous sealant products	Product Substitution IC – Not applicable FS – Not applicable	Use products on the Authorized Use List	2000–2002 (Completed)
NAVSTA Newport Warehouse N41143 No. 32	P2_00_OP32	Recharge lead acid batteries for forklifts (no more vehicle maintenance operations or battery–powered generators).	Reuse and Reduce Hazardous Waste IC – $0 FS – Supply	Already recharging lead acid batteries	1997 (Completed)
NAVSTA Newport Environmental Base-wide No. 33	P2_00_OP33	Recycle dry type photo-copier and printer toner cartridges.	Reduce Hazardous Waste IC – $10,000 FS – Various	Already recycling toner cartridges	2002 (Completed)

Organization Work Center Building No. Opportunity No.	Process ID		Pollution Prevention Opportunity Investment Cost ($) Funding Source[(a)]	Pollution Prevention Opportunity Implemented	Completion Date (Comments)
	ID	Name			
NAVSTA Newport Environmental Base-wide No. 34	P2_00_OP34	Use water-based paint instead of solvent-based paint, properly prepare surfaces, and use low volatile organic compound aerosol cans	Product Substitution IC – $0 FS – Various	Do not purchase solvent-based paints since 2001; Use Authorized Use List	2001 (Completed – do not purchase solvent-based paint, still in process of using up existing supply)
NAVSTA Newport Environmental Pistol Range No. 35	P2_00_OP35	Minimization – limit rounds fired and time allowed per person - only allow use by those who need it for their line of work.	Reduce Usage IC – Not applicable FS – NAVSTA	Pistol Range is shut down due to lead contamination issues	2002 (Completed – currently shut down due to high lead levels)
NAVSTA Newport Environmental Pistol Range No. 36	P2_00_OP36	Implement non-lead ammunition	Product Substitution IC – Not applicable FS – NAVSTA	Pistol Range is shut down due to lead contamination issues	2002 (Completed – currently shut down due to high lead levels)
NAVSTA Newport Pesticide Operation Base-wide No. 37	P2_00_OP37	Use CHRIMP to reduce use of hazardous pesticides, the amount used per application, reuse of rinse water, and use of manual controls	Reduce Hazardous Materials and Hazardous Waste IC – Not applicable FS – Not applicable	Not implemented	2000–2002 (Completed – Not applicable – Have integrated Pest Management Plan with Authorized Use List and controls but not tied into CHRIMP)
NAVSTA Newport Miscellaneous SWOSCOLCOM No. 38	P2_00_OP38	Use colored water for class simulations instead of chemicals	Reduce Hazardous Materials and Hazardous Waste IC – Not applicable FS – Not applicable	Not implemented and not feasible	2000–2002 (Completed – need to learn proper mixing formulas for boilers with actual chemicals in a classroom setting…should not be learning aboard the ships)
NAVSTA Newport Maintenance A63 PW Shop No. 39	P2_00_OP39	Use plastic media blasting instead of sand or chemical stripping	Eliminate Air Emis. IC – $0 FS – Public Works	Have 1 small self-contained sand blasting unit that is rarely used.	2000–2002 (Not completed – minimal use and the existing unit is self-contained)

Organization Work Center Building No. Opportunity No.	Process ID		Pollution Prevention Opportunity Investment Cost ($) Funding Source[(a)]	Pollution Prevention Opportunity Implemented	Completion Date (Comments)
	ID	Name			
NAVSTA Newport Maintenance Building 43 CC No. 40	P2_00_OP40	Construct transformer storage and recondition facility	Reduce Hazardous Waste IC – Not applicable FS – Not applicable	Not implemented and not feasible	2000–2002 (Completed – do not have the personnel and union type issues)
NAVSTA Newport Maintenance Base-wide No. 41	P2_00_OP41	Eliminate vehicle maintenance operations	Reduce Hazardous Materials and Hazardous Waste IC – $0 FS – Public Works	Eliminated operations except for the Hobby Shop	2002 (Completed)
NAVSTA Newport Environmental Base-wide No. 42	P2_00_OP42	Recycle telephone directories	Reduce Solid Waste IC – Not applicable FS – Environmental	Already recycling telephone directories	2000 (Completed)
NAVSTA Newport Environmental Base-wide No. 43	P2_00_OP43	Recycle all glass	Reduce Solid Waste IC – Not applicable FS – Environmental	Already recycling all glass clear and colored	2000 (Completed)
NAVSTA Newport Environmental Base-wide No. 44	P2_00_OP44	Recycle No.1, No. 2, and No. 4 plastics	Reduce Solid Waste IC – Not applicable FS – Environmental	Already recycling No. 1, No. 2, and No. 4 plastics	2000 (Completed)
NAVSTA Newport Maintenance Paint Shop No. 45	P2_00_OP45	Use decals instead of paint	Reduce Hazardous Materials Usage IC – $0 FS – Public Works	Already using reflective tape and decals instead of paint when possible	2001 (Completed)
NAVSTA Newport Supply HAZMIN Center No. 46	P2_00_OP46	Aerosol can puncturer	Reduce Solid Waste IC – $0 FS – Pollution Prevention Fund	Already have 1 unit at HM Center	2002 (Completed)

Organization Work Center Building No. Opportunity No.	Process ID ID	 Name	Pollution Prevention Opportunity Investment Cost ($) Funding Source[a]	Pollution Prevention Opportunity Implemented	Completion Date (Comments)
NAVAL RESERVE CENTER, PROVIDENCE, RHODE ISLAND					
Reserve Center Providence Facility-wide No. 47	P2_02_OP01	Recycle used and spent oil filters	Recycle IC – $0[b] FS – Reserve Center	Collect used oil and used oil filters in 55-gal drums for a local vendor to pick up for recycling	2000–2002 (Completed – ongoing as needed)
Reserve Center Providence Facility-wide No. 48	P2_02_OP02	Launder used rags for reuse	Recycle IC – $0[b] FS – Reserve Center	Already recycling rags	2000–2002 (Completed – ongoing as needed)

(b) Use NAVSTA Newport's contract (see process ID Nos. P2-00-0P01 and P2-00-0P02).

TABLE 3 DOCUMENTS AND REQUIREMENTS RELEVANT TO NAVAL STATION NEWPORT POLLUTION PREVENTION PLAN

Title/Reference	Date	Relevant Requirements
Secretary of the Navy Memorandum	29 APR 88	Instructs Chief of Naval Operations to ensure that adequate resources are available to successfully implement a HW Minimization Program
DoD Directive 4210.15, HM P2	27 JUL 89	Establishes policy, assigns responsibilities, and prescribes procedures for HM P2 and requires Navy to develop, revise, and implement an overall HM P2 Plan
OPNAVINST 4110.2, HM Control and Management	20 JUN 89	Establishes uniform policy, guidance, and requirements for life-cycle control and total quality management of HMs acquired and used by Navy; also contains Navy's current P2 Plan
Pollution Prevention Act 42 U.S.C. 13101	1990	Defines P2 and establishes a national policy stating that P2 is the most-preferred approach for environmental protection; states that recycling, treatment, and finally, disposal should be considered after feasible P2 opportunities are evaluated and implemented
Facility Pollution Prevention Guide EPA/600/R-92/088	MAY 92	U.S. Environmental Protection Agency (EPA) guidance document for facility P2 Plans and programs
Executive Order 12856, P2 and Right-to-Know in the Government	3 AUG 93	Requires each federal facility to present EPA with a P2 Plan for reducing its total releases of toxic pollutants to the environment and offsite transfers of such wastes for treatment and disposal by 50 percent by 31 December 1999; P2 Plans due 31 December 1995; installations to support agency-wide goals
Executive Order 12873, Federal Acquisition, Recycling and Waste Prevention	20 OCT 93	Establishes high level positions within each federal agency responsible for implementing P2 and recycling into daily operations and for increasing markets for recovered materials
Executive Order 12902, Energy Efficiency and Water Conservation at Federal Facilities	8 MAR 94	Requires federal facilities to: (1) achieve energy and water conservation goals by implementing more efficient technologies, and (2) conserve nonrenewable resources by using alternate energy sources
DoD Comprehensive Pollution Prevention Strategy Memorandum	11 AUG 94	Lists objectives for DoD P2, including those of Executive Orders 12856, 12873, and 12902 for P2 planning, life-cycle analysis, P2 training, energy conservation, and water conservation; installations to support P2 strategy
OPNAV P45 120 10 94, Navy Shore Installation P2 Planning Guide	OCT 94	Provides guidance for Navy shore installations preparing and implementing P2 Plans and programs; also summarizes Navy P2 goals
OPNAVINST 5090.1B, Chapter 3, P2 Policies and Procedures	NOV 94	Describes minimum requirements for Navy P2 programs and plans
NAVSTA Newport Ozone Depleting Substance (ODS) Plan, Final Submission	12 APR 95	Provides guidance on the elimination and procurement of ODS materials. Plan prepared by Quad Three Group, Inc. that outlines NAVSTA Newport's plan to eliminate/replace ODS (Class I and II) in accordance with the Clean Air Act of 1990.

Title/Reference	Date	Relevant Requirements
NAVSTA Newport/Local Area Rhode Island Coordinator Instruction 5090.10, ODS Management Plan	JUL 95	NAVSTA Newport instruction to implement all applicable federal, state, and local ODS requirements within NAVSTA Newport and tenant activities.
Contract N62472-93-D-1448 Amendment No. 32, NAVSTA Newport Solid Waste Management Plan.	JUL 95	Plan prepared by HRP Associates, Inc. to meet the requirements of OPNAVINST 5090.1B, Chapter 14 and to address concerns and issues specific to NAVSTA Newport as revealed during the Plan preparation.
Executive Order 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition	SEP 98	Establishes high-level positions within each federal agency responsible for implementing P2 and recycling into daily operations and for encouraging the government's use of recycled products and environmentally preferable products and services. Revokes Executive Order 12873.
Executive Order 13148, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition	APR 00	Requires federal agencies to develop and implement Environmental Management Systems to archives.
NAVSTA Newport P2 Plan	MAY 00	Prepared by GZA Geoenvironmental/Lincoln Environmental to meet the requirements of the OPNAVINST 5090.1B, Chapter 3.
Chief of Naval Operations Document N45, Guide to the Navy's Environmental Quality Initiatives – Using Pollution Prevention to Achieve Environmental Excellence	JUL 00	Provides guidance on the Navy's Environmental Quality Initiative and, specifically, elements to be considered when developing a P2 Opportunity Action Plan.
Affirmative Procurement Plan	JAN 01	Provides guidance regarding the purchase of environmentally preferred products.
Naval Facilities Engineering Services Center Users Guide UG-2046-ENV, Guidance Manual for the Preparation of Navy Shore Installation Pollution Prevention Plan Updates	FEB 01	Provides guidance for developing P2 Plan updates.
Stormwater Pollution Prevention Plan	APR 02	Prepared by Siegmund & Associates. Provides goals, management, and guidance regarding stormwater management.
HW Management Plan	JUN 02	Prepared by NAVSTA Newport. Provides goals, management, and guidance regarding the acquisition, use, handling, storage, and disposal of HM and HW.
Integrated Pest Management Plan	JUL 02	Prepared by Engineering Field Activity Northeast. Provides goals, management, and guidance for the use of pesticides.
Spill Prevention Control and Countermeasures Plan	DEC 02	Prepared by TRC Environmental, Inc. The plan provides goals, management, and guidance for management of aboveground storage tanks in accordance with 40CFR 122.7.
Hazardous Substance Spill Prevention Plan	JAN 03 (pending)	Prepared by Tageson Marine. Provides goals, management, and guidance of hazardous substance management.

TABLE 4 NAVAL STATION NEWPORT DEPARTMENTS AND CODES

Department[a]	Code(s)
Commanding Officer	N01
Executive Office/Staff	N01, N02, N01A-N01P
Inspector General/MA	N1
Port Operations	N2
Public Works	N3
Supply Department	N4
Fire Department	N52
Security	N53
Information Technology	N6
Fleet and Family Supply Center	N71
Housing	N72
Combined Bachelor Housing	N73
Morale Welfare and Recreation	N75
Environmental	N8
Navy Occupational Health and Safety	N9

(a) Source: Commanding Officer, Naval Station Newport, Departmental Listing (October 2002).

TABLE 5 ANNUAL HAZARDOUS WASTE GENERATED BY PROCESS CODE

Process Code	Process Code Description	HW Total Pounds (Calendar Year 1998)	HW Total Pounds (Calendar Year 2000)	HW Total Pounds (Calendar Year 2001)	HW Total Pounds (Calendar Year 2002)
ES	Expired Shelf-life and Excess Materials, Non-Ship	6,955	174	972	11,658
FC	Fluids Changeout	258,331	2,676	12,429	10,195
FP	Facility Operations	0	46,439	20,278	47,166
NR	Non-Recurring	77,971	56,651	23,863	32,608
PD	Painting/Depainting/Surface Finishing	0	8,446	2,864	5,159
SP	Ship Operations	0	774	110	0
Total		350,731	115,160	60,516	106,786

REFERENCES

Engineering Field Activity Northeast (EFANE). 2002. Integrated Pest Management Plan. July.

Field Activity Support and Technology Transfer (FASTT) Team (C. Tittle, B. Vozzella, B. Swaidan, M. Hanke, S. Ragley, B. Dougherty, D. Miller, and R. Ouellette). 2000. Field Activity Support and Technology Transfer, Naval Station Newport, Rhode Island. October.

GZA Geoenvironmental, Inc. and Lincoln Environmental, Inc. 2000. Pollution Prevention Plan, Naval Station Newport, Rhode Island. May.

HRP Associates. 1995. Stormwater Management Plan. July.

NAVSTA Newport. 2002. Hazardous Waste Management Plan. June.

Siegmund & Associates, Inc. 2002. Stormwater Pollution Prevention Plan. April.

Tageson Marine. 2003. Hazardous Substance Spill Prevention Plan. January (pending).

The Quad Three Group. 1995. Ozone Depleting Substances Plan, Naval Station Newport, Rhode Island. April.

TRC Environmental, Inc. 2002. Spill Prevention Control and Countermeasures Plan. December.

Appendix A

Recycle Boiler Condensate

APPENDIX A
Process Information

Installation UIC: **N62472** **Department/Tenant UIC: Building 7CC - Maintenance**

Work Control No.: _____ **Process ID No.: P2_02_OP03**

Process Name: Sustainability Principals to recycle boiler condensate.

Local ID No.: NA

Process Description: Recycle boiler condensate in an effort conserve water and reduce water usage costs.

PPE Description (What is required, replacement frequency, etc.): NA

Permits (Type(s), ID Number(s), annual Fee): NA

Total Labor Hours Per Year: NA **Production Units Per Year**: NA

Functional Input: NA **Functional Output:** NA

List Air Emissions Generated by this Process (e.g., VOCs from paint, dust from blasting, etc): NA

Estimated Volume of Water Used: TBD **Kgal/year** **Method of Pre-Treatment:** TBD

Volume of Wastewater Pre-treated Onsite (e.g., oil/water separator): TBD **Kgal/year**

Volume of Wastewater Discharged (Kgal/year): TBD **IWTP** TBD **POTW** TBD **FOTW**

TBD **NOTW** TBD **NPDES (Stormwater)**

No. of Backflow devices in process equipment: TBD

Recommendations by Personnel: Determine the feasibility

APPENDIX A.1

ECONOMIC BENEFIT FOR NEWLY IDENTIFIED P2 OPPORTUNITIES

Process ID: P2_02_OP03
Process Description: Water Conservation – Recycle Boiler Condensation

Further assessment is required during this next review period to determine the feasibility and economic benefit of recycling boiler condensate at NAVSTA Newport.

Appendix B

Use of Beneficial Landscaping Principles

APPENDIX B
Process Information

Installation UIC: **N62472** **Department/Tenant UIC: Base-wide**

Work Control No.: _____ **Process ID No.: P2_02_OP04**

Process Name: Sustainability Principals to recycle Landscaping debris/waste.

Local ID No.: NA

Process Description: Recycle landscaping debris/waste (grass clippings, brush clippings, flower clippings, etc.) through mulching and local composting.

PPE Description (What is required, replacement frequency, etc.): NA

Permits (Type(s), ID Number(s), annual Fee): NA

Total Labor Hours Per Year: NA **Production Units Per Year:** NA

Functional Input: NA **Functional Output:** NA

List Air Emissions Generated by this Process (e.g., VOCs from paint, dust from blasting, etc): NA

Estimated Volume of Water Used: 0 **Kgal/year** **Method of Pre-Treatment:** NA

Volume of Wastewater Pre-treated Onsite (e.g., oil/water separator): 0 **Kgal/year**

Volume of Wastewater Discharged (Kgal/year): 0 **IWTP** 0 **POTW** 0 **FOTW**

0 **NOTW** 0 **NPDES (Stormwater)**

No. of Backflow devices in process equipment: 0

Recommendations by Personnel: None

APPENDIX B.1

ECONOMIC BENEFIT FOR NEWLY IDENTIFIED P2 OPPORTUNITIES

Process ID: P2_02_OP04
Process Description: Sustainability Principals – Recycle Landscaping Debris/Waste

1. Calculation of Operation Cost (without recycling debris/waste)

FY2002 Annual Solid Waste Disposal Amount – Base (Tons from 2002 ADS Report)	$5,258.00
Amount of Solid Waste Recycled (Tons from 2002 ADS Report)	314.73
Tipping/disposal Fee (per ton per 2002 ADS Report)	x 55.00
Annual Cost for disposal of debris/waste	$17,310.15

2. Calculation of Implemented Operation Cost (with recycling debris/waste onsite)

Assuming 40 hours/year @ $10.00/hour to compost/mulch onsite	$400.00
Maintenance vehicle costs (10 trips at 5 mi/trip at $.365/mi)	$50.37
Annual Cost	$450.37

3. Benefit/Cost Summary

Annual Savings:	$16,859.78
Equipment Purchase/Installation Cost:	$0
Years to Payback:	$0
Ten-Year Savings:	$168,597.80

Comments:

Appendix C

Recycle Food Waste

APPENDIX C
Process Information

Installation UIC: N62472 **Department/Tenant UIC: Galley/Ney Hall**

Work Control No.: _____ **Process ID No.: P2_02_OP05**

Process Name: Sustainability Principals to recycle food and food waste.

Local ID No.: NA

Process Description: Recycle food (fruits/bread) not fit for human consumption to local farmer for animal feed. Local farmer provides 55-gal drums and labor at no cost to NAVSTA Newport.

PPE Description (What is required, replacement frequency, etc.): NA

Permits (Type(s), ID Number(s), annual Fee): NA

Total Labor Hours Per Year: NA **Production Units Per Year:** NA

Functional Input: NA **Functional Output:** NA

List Air Emissions Generated by this Process (e.g., VOCs from paint, dust from blasting, etc): NA

Estimated Volume of Water Used: 0 **Kgal/year** **Method of Pre-Treatment:** NA

Volume of Wastewater Pre-treated Onsite (e.g., oil/water separator): 0 Kgal/year

Volume of Wastewater Discharged (Kgal/year): 0 **IWTP** 0 **POTW** 0 **FOTW**

0 **NOTW** 0 **NPDES (Stormwater)**

No. of Backflow devices in process equipment: 0

Recommendations by Personnel: None

APPENDIX C.1

ECONOMIC BENEFIT FOR NEWLY IDENTIFIED P2 OPPORTUNITIES

Process ID: P2_02_OP05
Process Description: Sustainability Principals – Recycle Food Waste

1. Calculation of Operation Cost (without recycling food waste)

FY2002 Annual SW Disposal Amount – Base	
(Tons from 2002 ADS Report)	$5,258.00
Assuming 1% is recycled by local farmer for livestock food	x 0.01
Amount of SW Recycled (Tons)	52.58
Tipping/disposal Fee (per ton per 2002 ADS Report)	x 55.00
Annual Cost	$2,891.90

2. Calculation of Implemented Operation Cost (with recycling food waste)

Farmer provides drums, transportation, and recycling at no cost.

Requires no additional effort or cost for personnel to dump food waste in drums instead of dumpster.

3. Benefit/Cost Summary

Annual Savings:	$2,891.90
Equipment Purchase/Installation Cost:	$0
Years to Payback:	$0
Ten-Year Savings:	$28,919.00

Comments:

Appendix D

Replacement of Solvent-Based Aqueous Parts Washer with Water-Based Aqueous Parts Washer at Armed Forces Reserve Center, Providence, Rhode Island

APPENDIX D
Process Information

Installation UIC: N62472 **Department/Tenant UIC: Armed Forces Reserve Center, Providence**

Work Control No.: _____ **Process ID No.: P2_02_OP06**

Process Name: Parts washer product substitution

Local ID No.: NA

Process Description: Dispose of old Safety-Kleen chemical parts washer and replace it with an aqueous based parts washer. Note: New aqueous unit has already been purchased, awaiting installation.

PPE Description (What is required, replacement frequency, etc.): NA

Permits (Type(s), ID Number(s), annual Fee): NA

Total Labor Hours Per Year: NA **Production Units Per Year:** NA

Functional Input: NA **Functional Output:** NA

List Air Emissions Generated by this Process (e.g. – VOCs from paint, dust from blasting, etc): Eliminate VOCs

Estimated Volume of Water Used: 0 **Kgal/year** **Method of Pre-Treatment:** NA

Volume of Wastewater Pre-treated Onsite (e.g., oil/water separator): 0 **Kgal/year**

Volume of Wastewater Discharged (Kgal/year): 0 **IWTP** 0 **POTW** 0 **FOTW**

0 **NOTW** 0 **NPDES (Stormwater)**

No. of Backflow devices in process equipment: 0

Recommendations by Personnel: None

APPENDIX D.1

ECONOMIC BENEFIT FOR NEWLY IDENTIFIED P2 OPPORTUNITIES

Process ID: P2_02_OP06
Process Description: Product Substitution – Chemical Based vs. Aqueous-Based Parts Washer

See attached pages (Page 3 of 6) for Economic Analysis.

Appendix E

Increase P2 Awareness through Training at Armed Forces Reserve Center, Providence, Rhode Island

APPENDIX E
Process Information

Installation UIC: N62472 **Department/Tenant UIC: Armed Forces Reserve Center, Providence**

Work Control No.: _____ **Process ID No.: P2_02_OP07**

Process Name: Increase Pollution Prevention awareness

Local ID No.: NA

Process Description: Increase Pollution Prevention awareness through training

PPE Description (What is required, replacement frequency, etc.): NA

Permits (Type(s), ID Number(s), annual Fee): NA

Total Labor Hours Per Year: NA **Production Units Per Year:** NA

Functional Input: NA **Functional Output:** NA

List Air Emissions Generated by this Process (e.g., VOCs from paint, dust from blasting, etc): NA

Estimated Volume of Water Used: 0 **Kgal/year** **Method of Pre-treatment:** NA

Volume of Wastewater Pre-treated Onsite (e.g., oil/water separator): 0 **Kgal/year**

Volume of Wastewater Discharged (Kgal/year): 0 **IWTP** 0 **POTW** 0 **FOTW**

0 **NOTW** 0 **NPDES (Stormwater)**

No. of Backflow devices in process equipment: 0

Recommendations by Personnel: None

APPENDIX E.1

ECONOMIC BENEFIT FOR NEWLY IDENTIFIED P2 OPPORTUNITIES

Process ID: P2_02_OP07
Process Description: Increase Pollution Prevention Awareness through Training

Economic benefit analysis is Not Applicable. The NAVSTA Newport Environmental Department provides training for the Armed Forces Reserve Center at no cost.

Appendix F

NAVSTA Newport P2 Activity Data Sheet

Appendix G

Implementing Letter of Instruction

DEPARTMENT OF THE NAVY
NAVAL STATION NEWPORT
690 PEARY STREET
NEWPORT, RI 02841-1522

IN REPLY REFER TO:
NAVSTANPT/LOCAL AREA RI
COORDINST 5090.11A
Code N8N

NAVSTA NEWPORT/LOCAL AREA RHODE ISLAND COORDINATOR INSTRUCTION 5090.11A

From: Commanding Officer

Subj: POLLUTION PREVENTION (P2) PLAN

Ref: (a) OPNAVINST 5090.1B, Environmental and Natural Resource Manual
(b) Executive Order 13148, Greening the Government through Leadership in Environmental Management

Encl: (1) Pollution Prevention (P2) Plan

1. Purpose. To establish a Pollution Prevention (P2) Plan as directed by references (a) and (b).

2. Cancellation. NAVSTANPT/LOCAL AREA RI COORDINST 5090.11.

3. Applicability. This instruction is applicable in it's entirety to all military and civilian personnel assigned to or working at Naval Station Newport. All contractors providing construction or other services at theis facility are subject to the provisions of this instruction.

4. Policy. It is the policy of this command to implement P2 to the maximum extent technically possible and economically feasible without compromising the installation's primary national defence mission.

5. Action. All activities and contractors onboard this installation shall:

a. Implement and use enclosure (1) to the maximum extent possible when designing, building, renovating and planning new projects or changes to existing projects.

b. Reduce the usage of Hazardous Materials (HMs);

c. Reduce the generation of Hazardous Waste (HW) and toxic pollutants requiring treatement or disposal; and

d. Reduce the release of toxic pollutants into the environment.

R. A. COOPER

Distribution List:
List A, P (less 2,)

Appendix H

Economic Benefit Analyses Completed During Fiscal Year 2002 for Cardboard Compactors, Solid Waste Compactors, and Pulpers

P2 CATALOG CUT FOR CARDBOARD COMPACTOR

Equipment Title: Cardboard compactor

Manufacturer: Pacific Compactor Corporation
Model: C-300
Equipment Cost: $13,500

Facilities: The cardboard compactor is 5.6 feet wide and 13.25 feet long. It has a 20-horse power motor with a 92,300-pound cylinder to crush the cardboard at one end of the container.

Utilities: The cardboard compactor requires a poured concrete slab to set on and a 208/230/460-volt TEFC electrical hookup.

Proprietary: Each Cardboard compactor will replace four eight-yard containers that are emptied twice weekly. This saves manpower to break the boxes down and cost as it is not emptied as often as the eight-yard containers.

Economic Analysis:

Location	Current pick-up cost	Labor hours/ week	Current Labor cost	Current total cost	Purchase cost	Compactor installation cost	Compactor pick up cost	Maintenance cost	Annual Cost Savings	Break even Point
292CP	$3120	7	$4653	$7773	$13,500 (900/yr)	$5000 (333/yr)	$ 845	$400	$6528	2.83 years
95CHI	$4680	14	$9282	$13962	$13,500 (900/yr)	$5000 (333/yr)	$1690	$400	$11,872	1.56 years
1250CP	$3120	7	$4653	$7098	$13,500 (900/yr)	$5000 (333/yr)	$ 845	$400	$6528	2.83 years
1901CP	$3120	7	$4653	$7098	$13,500 (900/yr)	$5000 (333/yr)	$ 845	$400	$6528	2.83 years
991CHI	$3120	7	$4653	$7098	$13,500 (900/yr)	$5000 (333/yr)	$ 845	$400	$6528	2.83 years

Note: Life cycle is 15 years
Labor cost is based on the time used to physically break up the cardboard multiplied by the rate of $12.75 per hour, which the use of the compactor eliminates. Compactor pickup is $65.00 per pickup.

P2 CATALOG CUT FOR SOLID WASTE COMPACTOR

Equipment Title: Solid Waste Compactor

Manufacturer: Capitol Compactors
Model: CS5 with open top loading hopper
Equipment Cost: $13,500

Facilities: The SW compactor is a 16 cubic yard REL container. It has a 20-horse power motor with a 92,300-pound cylinder to crush the cardboard at one end of the container.

Utilities: The SW compactor requires a poured concrete slab to set on and a 208/230/460-volt TEFC electrical hookup.

Proprietary: Each SW compactor will replace four eight-yard containers that are emptied twice weekly. This saves the cost of emptying the containers 2 or 3 times per week. The compactor reduces the waste in a 4:1 ratio.

Economic Analysis:

Location	Number of current 8-yd containers	Current pick-up cost per year	Purchase cost	Compactor installation cost	Compactor pick up cost	Maintenance cost	Annual Cost Savings	Break even Point
292CP	5 emptied 2x per week	$13,000	$13,500 (900/yr)	$5000 (333/yr)	$3380	$400	$9220	2.01 years
95CHI	3 emptied 3x per week	$11,700	$13,500 (900/yr)	$5000 (333/yr)	$3380	$400	$7920	2.34 years
1250CP	4 emptied 2x per week	$10,400	$13,500 (900/yr)	$5000 (333/yr)	$3380	$400	$6620	2.80 years
197CP	4 emptied 2x per week	$10,400	$13,500 (900/yr)	$5000 (333/yr)	$3380	$400	$6620	2.80 years
991CHI	4 emptied 2x per week	$10,400	$13,500 (900/yr)	$5000 (333/yr)	$3380	$400	$6620	2.80 years

47CC	8 emptied 1x per week	$10,400	$13,500 (900/yr)	$5000 (333/yr)	$3380	$400	$6620	2.80 years
1CC	4 emptied 1x per week	$5,200	$13,500 (900/yr)	$5000 (333/yr)	$1690	$400	$3110	5.95 years

Note: Life cycle is 15 years
Each solid waste pick up is $25.00 for one 8-yard container. Compactor pickup every two weeks at $130.00 per pickup.

Nominee Information

Name/Title: CAPT R. A. Cooper
Organization: Naval Station Newport
Address: 690 Peary Street, Newport RI 02841
Phone Number: (401) 841-7561

Project Information

Project Title: Military Food Service Facility Reduces Food Discards to Landfill
Start Date/Completion Date: 9 July 2001
Location: Ney Hall Galley, Naval Station Newport

1. Specific Information:

a. Pollutants/wastes produced or energy used by the process before project implementation: The Ney Hall Galley is a military food service facility at Naval Station (NAVSTA) Newport. The Galley serves approximately 638,750 meals per year and generates 228 tons of food waste per year (see Table 1).

Table 1. Waste/Residue Generated by Military Food Service Facilities*

Mean weight per meal (lb)	0.99
Mean volume per meal (gal)	0.94
Food weight (%)	72.1
Packaging weight (%)	27.9
Food volume (%)	12.3
Packaging volume (%)	87.7

* BioCycle, 2001

b. Feedstock chemical(s), water, or energy use reduction: The installation of the pulper has enabled NAVSTA to reduce both rinse and wash water usage, reduce the amount of solids discharged to the sanitary sewer, and has reduced the amount of solid waste deposited in the landfill.

c. Quantity of waste(s) reduced: NAVSTA reduced the food waste contributions to the landfill from the Ney Hall Galley by 80% or from 182 tons per year down to 46 tons.

2. Describe the original waste/pollution-generating process: Food discards were generated during the preparation (i.e., food scraps) of 1,750 meals/day and from pre- and post-consumer discards in the Ney Hall Galley. Large material was had scraped into the trash, then water was used to clean the remaining solid waste from the dishware. The water (along with small amounts of food) was discharged to the sanitary sewer, while the remainder of the solid waste was collected and sent to the landfill.

3. Describe the pollution prevention project: NAVSTA installed a food pulper in the West Scullery at the Ney Hall Galley. This device is a waste-processing unit that grinds and pulps food scraps and disposable dining materials, into a water-based slurry that is pumped to a separate unit for de-watering. The pulper bypasses the waste water system by recycling rinse water and capturing solid wastes generated from rinsing pre-scraped dishware. The de-watered slurry includes a semi-solid portion and a liquid portion (http://www.somatcorp.com/faq.htm). The liquid phase is returned to the pulper and used again which

conserves water usage. Very little water is actually discharged to the sanitary sewer. The semi-solid portion is dried, condensed and odor-free. This is the portion that is sent to the landfill.

4. Provide a brief economic analysis of your pollution prevention efforts (include management costs before implementation of the source reduction effort, capital investment costs, operational costs and savings):

a. Management costs before implementation: Before implementation, food waste was hand scraped from dishware and collected for disposal as solid waste; dishware was rinsed and rinse water with solid material was discharged to the wastewater system. Solid waste was disposed in five 8-cubic yard dumpsters emptied twice weekly. The current average tipping fee in RI, (the cost charged to dispose of a ton of waste at a solid waste landfill), is $40.80 (http://www.monad.net/~tclark/Recycle/bottomline.html). NAVSTA must also pay a hauling fee of $40.00 per ton to a contractor for taking the waste to the landfill. Based on the total amount paid per ton to collect and bring the waste to the landfill before the installation of the food pulper was $18,422 annually.

b. Capital investments: NAVSTA installed one of two pulpers in the West Scullery of Ney Hall on 9 July 2001. A second pulper is scheduled for installation on 10 September in the East Scullery. The combined cost of both pulpers was $48,600. The cost for installation of both pulpers is $62,900.

c. Operational costs: The average industrial electrical usage rate per kW-h in RI in 1998 was $7.69 (http://www.econsci.net/rates/industrial.html). The food pulper uses 13 kW-h and operates for seven hours each day (http://www.hobartcorp.com/). The total yearly cost to operate the pulper is $2554 (0.0769 x 13 kW-h x 7 hours x 365 days).

d. Operational savings: The food pulper will save on water usage, reduce sewer costs, reduce solids discharged to the waste water system and reduce tipping fees, waste volume and landfill space by 80%. The water usage charge for the City of Newport is $3.73 per 1,000 gallons of water (personal communication, Ms. Carol Bowman, 27 August 2001, City of Newport Water Department, (401) 846-9600)). The sewer service charge for the City of Newport is $4.92 for every 1,000 gallons discharged (http://navigation.helper.realnames.com/framer/1/112/default.asp?realname=Newport+RI&url=http%3A%2F%2Fwww%2Ecityofnewport%2Ecom&frameid=1&providerid=112&uid=17423159). The original process used and discharged 766,500 gallons of water annually to rinse solids from dishware after scraping. The combined water and sewer usage rate was approximately $8650 per year. The pulper uses recycled water to rinse dishes and capture solids.

Based on the current average tipping fee of $40.80 per ton, NAVSTA Galley fees will be reduced from $$18,422 to $3686 annually. This represents an annual savings of $14,736. Additional savings of approximately one man year ($22,000) will be realized due to reduced labor required to scrape, process and rinse dishware and haul food waste from the Galley to the dumpster area.

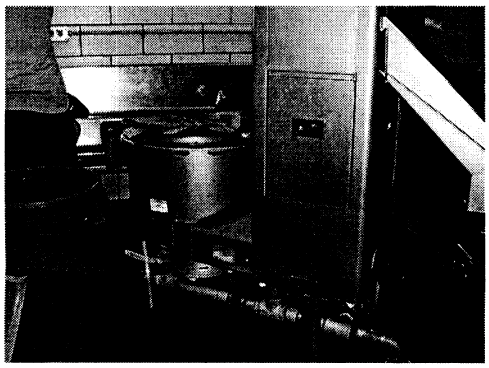
5. Describe the effect of your pollution prevention efforts (specific improvements in environmental quality, product quality, and worker health and safety):

In general, food wastes have a density of 2000 pounds per cubic yard at the landfill (http://industryclick.com/magazinearticle.asp?magazineid=121&releaseid=4720&magazinearticleid=56115&siteid=27). NAVSTA food wastes from the Galley required 228 cubic yards of landfill space. The Galley pulpers reduce landfill space needed for food wastes to 46 cubic yards per year. Reducing the food waste contribution to the landfill lowers leachate and methane management costs for the landfill and

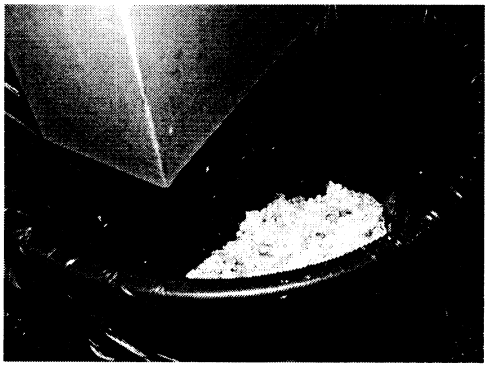
conserves air space (Waste Age, 2001). Landfill gas is created when waste in the landfill decomposes. This gas is about 50 percent methane (CH_4), an important greenhouse gas, and 45 percent carbon dioxide (CO_2). One million tons of landfill waste typically generates 300 cubic foot per minute (cfm) of landfill gas. The NAVSTA Galley reduced the food waste landfill gas produced from 0.068 cfm to 0.014 cfm per year or the equivalent of planting 1.5 acres of trees each year (http://www.epa.gov/lmop/about.htm).

6. Describe whether the specific pollution prevention measures taken are directly applicable to others in Rhode Island or the U.S. (include the basis for your conclusions):
Food pulpers are applicable to the entire food service sector including universities, military facilities, restaurants and schools. A typical fast food restaurant serving 2000 customers per day generates 238 pounds of waste per day of which 34% or 15 tons per year is food waste and discards (http://www.epa.gov/epaoswer/non-hw/muncpl/factbook/internet/mswf/gen.htm). A food pulper would reduce the food waste generated per day to less than 3 tons per year.

Worldwide, McDonalds has fast food restaurants in 119 countries serving 43 million customers each day (http://www.mcdonalds.com/corporate/press/corporate/2000/09192000/index.html). Collectively, McDonalds' 28,000 restaurants produce 317,824 tons of food waste annually requiring 317,915 cubic yards of landfill space. Use of food pulpers in McDonalds would reduce food waste by 254,259 tons per year to 63,565 tons and landfill space requirements would be reduced to 63,510 cubic yards per year.



The new food pulper in the West Scullery of the Ney Hall Galley. The pulper will reduce waste volume by 80%.



The new food pulper grinds and macerates food scraps. The new product is dry, condensed and odor-free.

Appendix I

Associated Media-Specific Plan Summaries

APPENDIX I

ASSOCIATED MEDIA-SPECIFIC PLAN SUMMARIES

The installation Pollution Prevention (P2) Plan Update is intended to supplement other environmental management plans that have been prepared for the Activity. When updating the P2 Plan, the following plans should be reviewed for media-specific requirements, issues, or accomplishments. Media-specific plans affecting an installation may include the following:

- **Hazardous Waste Management Plan—**At a minimum, this Plan addresses how the Activity will manage hazardous wastes generated by its operations, including management and administration, collection, waste characterization, generation rates, recordkeeping, training, and compliance with federal, state, and Navy hazardous waste regulations.

- **Solid Waste Management Plan—**At a minimum, this Plan addresses management and administration, collection, waste characterization, generation rates, recycling, composting, incineration, landfilling, plan goals, recordkeeping, and training. The Solid Waste Management Plan describes how the Activity will ensure proper management and disposal of its solid wastes and provides the basis for achieving the solid waste reduction goals set by the P2 Program.

- **Risk Management Plan—**This Plan provides a summary of an installation's Risk Management Program. Military installations with "processes" that have present more than a threshold quantity of a regulated toxic or flammable substance, as defined in 40 CFR 68 Subpart F, must prepare, submit, and maintain a Risk Management Plan. EPA defines a "process" as operations that include manufacturing, use, storage, loading, unloading, onsite movement, or any combination of these operations that could be involved in a single accidental release.

- **Ozone Depleting Substance Conversion/Replacement Plan—**This Plan must describe the systematic replacement of ozone depleting substance compounds at the Activity. Navy policy for ozone depleting substance management can be found in OPNAVINST 5090.1B CH-2 Chapter 6.

- **Stormwater Pollution Prevention Plan—**This Plan must describe how the installation will manage its stormwater and prevent contamination of the stormwater runoff in the industrial areas of the base. If the Activity is an industrial wastewater discharger, it must also comply with the Treatment Plant's Industrial Wastewater Pretreatment Program.

- **Spill Prevention, Control, and Countermeasures Plan—**This Plan defines what measures are being taken at oil and hazardous substance areas to prevent spills. A Spill Prevention, Control, and Countermeasures Plan documents spill prevention structures, procedures, and equipment that are already in-place, and recommends any additional spill containment structures, procedures, and equipment that should be in-place.

- **Integrated Pest Management Plan—**The Integrated Pest Management Plan includes a description of the related aspects of the pest management program, including the role in mission support; significant health, economic, environmental, and regulatory issues; staffing; and resources. The Plan stresses control measures that emphasize an integrated approach to pest control activities that are based on prior and ongoing surveillance.