FINAL

INTEGRATED SOLID WASTE MANAGEMENT PLAN FOR MARINE CORPS AIR STATION MIRAMAR SAN DIEGO, CALIFORNIA

Prepared for

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INTEGRATED SOLID WASTE MANAGEMENT PLAN FOR MARINE CORPS AIR STATION MIRAMAR

Record of Annual Review and Approval

In accordance with MCO P5090.2A , this Plan has been reviewed, updated, and/or approved as follows.

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MCAS Miramar
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LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
BMP	Best Management Practice
BRAC	Base Realignment and Closure
C&D	Construction and Demolition
CalRecycle	California Department of Resources Recycling and Recovery
CBQ	Consolidated Bachelors Quarters
CCR	California Code of Regulations
CFR	Code of Federal Regulations
DoD	Department of Defense
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPR Portal	Environmental Portal
FY	Fiscal Year
GHG	Greenhouse Gas
HW	Hazardous Waste
I&L	Installations and Logistics
ISWM	Integrated Solid Waste Management
ISWMP	Integrated Solid Waste Management Plan
MAW	Marine Aircraft Wing
MCAS	Marine Corps Air Station
MCB	Marine Corps Base
MCCS	Marine Corps Community Services
MCO	Marine Corps Order
NAS	Naval Air Station
OPNAVINST	Operational Navy Instruction
P2	Pollution Prevention
QRP	Qualified Recycling Program
RCRA	Resource Conservation and Recovery Act
S2P2	Strategic Sustainability Performance Plan
SB	Senate Bill
Station	MCAS Miramar
SW	Solid Waste
U.S.	United States
U.S.C.	United States Code

EXECUTIVE SUMMARY

The *Marine Corps Environmental Compliance and Protection Manual, Marine Corps Order (MCO) P5090.2A*, states that the preferred method of environmental protection is to eliminate or control the pollutant source. While pollution prevention and source reduction remain the first considerations, integrated solid waste management (ISWM) is based on a more refined environmental management hierarchy that employs a hierarchy of approaches and technologies for managing solid waste (SW) to maximize resource conservation and protect the environment. [1]

The ISWM philosophy optimizes the design and operation of an installation's non-hazardous SW program through an integrated analysis of all comprehensive, cost-effective alternatives. ISWM includes the following concepts: [2]

- Source Reduction and Reuse: minimizes the initial waste stream input.
- Recycling and Composting: reduces the volume of the waste stream requiring disposal.
- Disposal (Landfilling and Incineration): activities used to manage waste that cannot be prevented through source reduction and reuse, or recycled or composted.

The Department of Defense (DoD) requires installations to develop and implement an ISWM strategy to reduce SW disposal. ISWM varies from the older SW management plans in that they adopt the pollution prevention hierarchy as the model for SW management decision making. This strategy begins with source reduction as a first priority, and then continues with recycling, composting, incineration, and finally disposal as the last option for waste management.

The primary requirements governing the content of this plan and the implementation of the ISWM Program are the DoD Integrated (Non-Hazardous) Solid Waste Management Policy (1 February 2008); Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and Transportation Management;* EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*; and MCO P5090.2A.

EO 13514, the most recent EO, will be used to guide the direction of the ISWM Program in future years. Marine Corps Air Station (MCAS) Miramar is not on track with meeting these goals. According to the Fiscal Year 2012 Environmental Portal (EPR Portal) Report, MCAS Miramar recycled 1463 tons of SW (excluding construction & demolition [C&D] debris), and 70,592 tons of C&D debris achieving a 22% and 56% diversion rate, respectively.

[1] "Environmental Compliance and Protection Manual, Marine Corps Order (MCO) P5090.2A," Headquarters United States Marine Corps, May 2009.
[2] "Integrated Solid Waste Management Plan (ISWMP) Guide," Naval Facilities Engineering Command, April 2009.

1.0 INTRODUCTION

The Department of Defense (DoD) has adopted integrated solid waste management (ISWM) to improve efficiency and foster increased diversion of non-hazardous solid waste (SW) from landfills and incinerators. ISWM, a concept introduced by the U.S. Environmental Protection Agency (EPA) in the early 1990s, is a comprehensive approach to managing non-hazardous SW that encompasses waste prevention, recycling, composting, and disposal programs. Instead of solely focusing on SW disposal activities, the ISWM approach minimizes the initial generation of materials through source reduction, and then through reuse and recycling further reduces the volume before disposal via landfill or incineration.[3]

1.1 APPLICABILITY

Per DOD Instruction 4715.4 (NOTAL) there is a requirement to reduce 50 percent of solid waste sent to a landfill by 2015. SW is a waste type consisting of everyday items we consume and discard; it predominantly includes food wastes, yard wastes, containers and product packaging, and other miscellaneous wastes (i.e., newspapers, clothing, disposable tableware, office and classroom paper, furniture, wood pallets, rubber tires, and cafeteria wastes) from residential, commercial, institutional, and industrial sources. Therefore Marines and Sailors aboard Marine Corps Air Station Miramar, their family members who live aboard the Air Station and civilian personnel who either work or visit the Air Station who generate the solid waste will participate in the authorized Station Recycling Program. Furthermore, the Qualified Recycling Program and all MCAS Miramar tenant units are encouraged to reduce all waste, recyclable or not. MCAS Miramar now operates a single, authorized recycling program designated to reduce the amount of trash sent to the landfill. Deputy Secretary of Defense Memo, Sales of Recyclable Materials (10 U.S.C.), provides guidance to the military services to implement their respective recycling programs. Marine Corps Order (MCO) P5090.2A provides further guidance for establishing a Marine Corps installation QRP and specifies the types of materials to be recycled. It provides the requirements for segregation, collection, accounting and how funds generated from the sale of recycled material will be obligated. Revenues generated from the recycling program are used to cover operation, maintenance and overhead costs incurred in the operation of the station's recycling program. Funds will also be used for pollution abatement, energy, and safety programs. After all operation and environmental costs are paid, funds may be utilized for non-appropriated morale, welfare and recreation purposes per the provisions of MCO 7300.21, appendix L. MCO 7300.21 gives procedures to provide unfunded obligation authority to installations and designates a Reimbursable Order Number (RON) for unfunded reimbursable obligation authority for Non-Appropriated Funds, MCCS.

The Department of the Navy, *Environmental Readiness Program Manual (Operational Navy Instruction [OPNAVINST] 5090.1C)*, requires:[4]

- All Navy installations worldwide that generate one ton or more of SW per day shall develop and implement an ISWM Plan and a Qualified Recycling Program (QRP);

[3] "Integrated Solid Waste Management Plan (ISWMP) Guide," Naval Facilities Engineering Command, April 2009.
[4] "*Environmental Readiness Program Manual, OPNAVINST 5090.1C*," Department of the Navy, 30 October 1997.

- All Navy installations worldwide that generate one or more tons of SW per day must follow the SW reporting, SW management planning, recycling requirements, and affirmative procurement requirements outlined in this chapter (16);
- Installations shall design these programs as total systems that consider relative economic advantages of the latest technology as well as the potential for resource recovery. Installations shall develop ISWM Plans using the following priority basis:
    1. Source reduction;
    2. Reuse;
    3. Recycling; and
    4. Disposal via landfill or incineration.

1.2 PURPOSE

To establish guidelines, responsibilities, and procedures for operating, managing and enhancing Marine Corps Air Station Miramar's (MCAS) integrated solid waste management (ISWM) program/Qualified Recycling Program (QRP) in accordance with the references. Marine Corps Air Station (MCAS) Miramar (Station) has prepared this ISWM Plan as required by MCO P5090.2A and other relevant regulations as described in Section 3.0. The purpose of this ISWM Plan is to accomplish the following:

- Define and document the installation's current ISWM program;
- Establish goals for improving SW management through ISWM; [5]
- Identify specific actions required to achieve diversion goals; [6] and
- Promote compliance with applicable federal, state, local, and DoD SW management regulations and policies.

Several existing SW diversion programs have been implemented aboard MCAS Miramar and include:

- Leaving grass clippings to naturally decompose on lawns;
- Recovering commercial tires by Marine Corps Community Services (MCCS) and recycling them off Station through a private vendor;
- Recapping specific aviation tires through a government wide Michelin tire contract.
- Grinding leaves and wood trimmings from landscaping maintenance into mulch for use aboard the Station;
- Encouraging vendors to take back wooden pallets for reuse, and collecting extra pallets and selling through the Installation QRP; and
- Contracting with multiple companies on a monthly basis for the collection of corrugated cardboard, office papers, newspapers, and glass, plastic, steel, and aluminum containers from various locations around the Station.

[5] Refer to Section 6 of this document for EO mandated goals for pollution prevention and SW.
[6] Refer to Section 7 of this document for actions on diverting SW.

2.0 MCAS MIRAMAR PROFILE

2.1 BACKGROUND

During World War I, the U.S. Army acquired 12,721 acres of land in the Miramar Ranch area. Camp Kearny was opened on 18 January 1917 and was primarily used to train infantrymen on their way to the battlefields of Europe. Following the Armistice, the base was used to demobilize servicemen and was closed on 20 October 1920.

During the 1930s, the Navy briefly used the air base for helium dirigibles. In 1932 a mooring mast and hangar were built at the camp for the dirigibles. In the early 1940s Camp Elliott was built on part of old Camp Kearny, to be used for Marine artillery and machine gun training. Camp Elliott became home to Fleet Marine Force Training Center, West Coast and the 2nd Marine Division, charged with defending the California coast. Runways were constructed in 1940, and the 1st Marine Air Wing arrived on 21 December 1940. The Navy commissioned Naval Auxiliary Air Station Camp Kearny in February 1943 and in March 1943 the Marines established Marine Corps Air Installation Miramar.

During the 1940s, both the Navy and the Marine Corps occupied Miramar. East Miramar (Camp Elliott) was used to train Marine artillery and armored personnel, while Navy and Marine Corps pilots trained on the western side. The bases were combined and designated Marine Corps Air Station Miramar in 1946.

In 1947, the Marines moved to MCAS El Toro in Orange County, California, and Miramar was re-designated as a Naval Auxiliary Air Station.

In 1993, the Base Realignment and Closure Commission (BRAC) recommended that MCAS El Toro and MCAS Tustin be closed down and that Naval Air Station (NAS) Miramar be transferred to the Marine Corps. On 1 October 1997, Miramar officially became MCAS Miramar.

2.2 MISSION

The primary mission of MCAS Miramar is to maintain and operate facilities and provide services and materials to support operations of the 3rd Marine Aircraft Wing (3rd MAW) and other tenants of the base. The mission of 3rd MAW is to provide combat ready expeditionary aviation forces capable of short notice worldwide deployment to Marine Air Ground Task Force, fleet and unified commanders. MCAS Miramar supports the military aviation training and maintenance operations for the squadrons of 3rd MAW, including CH-53, F/A-18, KC-130, and MV-22 aircraft.

The Commanding Officer's Environmental Policy Statement requires that all personnel commit to continuous improvement of MCAS Miramar's environmental programs. MCAS Miramar is committed to the conservation of natural and cultural resources to ensure preservation of resources over the entire air station and to promote more ground training opportunities in East Miramar.

2.3 MCAS MIRAMAR OPERATIONS AND ACTIVITIES

MCAS Miramar's main function is to support the operations of the 3rd MAW and other tenant organizations aboard the base by maintaining and operating facilities and providing required services and materials. The greatest priority of the base is providing and equipping well trained and organized combat ready forces. MCAS Miramar averages 250 aircraft at any given day, with about 200,000 flight operations per year. The Station provides operational support, maintenance, and unit and individual training for tactical deployment and combat for eight F/A-18C and F/A-18D jet squadrons, four CH-53E helicopter squadrons, five MV-22 squadrons, one KC-130 transport and refueling squadron, and nine station support aircraft.

MCAS Miramar controls and supports the training areas and buildings within its boundaries, and provides housing, law enforcement, training facilities, facilities maintenance, and logistical support to its tenant commands and organizations.

MCAS Miramar has a population of approximately 11,000; consisting of military personnel, their dependents, and civilian employees.

3.0 REGULATORY FRAMEWORK

Installations must make every effort to maximize non-hazardous SW diversion to reduce the volume of waste disposal and minimize the overall cost of disposal. This section provides a summary of the major requirements that govern the content of this plan and the operation of the ISWM program aboard MCAS Miramar.

3.1 FEDERAL REGULATIONS AND GUIDELINES

3.1.1 Solid Waste Disposal Act

The Solid Waste Disposal Act requires that federal installations comply with all federal, state, and local requirements concerning the disposal and management of SW. These requirements include permitting, licensing, and reporting. The Act encourages the beneficial reuse of waste through recycling and burning for energy recovery. Additionally it requires the procurement, to the maximum extent possible, of EPA guideline products that contain recycled materials. This is outlined in the Comprehensive Procurement Guide VI issued in August 2004 and authorized under the Resource Conservation and Recovery Act (RCRA) 6002.

3.1.2 Resource Conservation and Recovery Act of 1976

RCRA defines SW and identifies what type of SW is considered hazardous waste (HW), and sets strict requirements for the handling of HW. RCRA Subtitle C regulates HW, while Subtitle D focuses primarily on managing municipal and SW. The goals of Subtitle D encourage state and local governments to plan, permit, regulate, implement, and enforce agencies to manage and dispose of household and industrial or commercial non-hazardous SWs in an environmentally sound manner. This includes the recycling of waste material and resource conservation. Subtitle D has mandatory technical standards for non-hazardous SW disposal facilities.

3.1.3 Pollution Prevention Act of 1990

The Pollution Prevention Act of 1990 was enacted on 5 November 1990. This act established pollution prevention (P2) as national policy in the U.S. This act was pivotal because it instituted a paradigm shift that emphasized source reduction rather than to control, reduce, or eliminate the generation of pollutants. This is the basis for constructing an ISWM Plan.

3.1.4 Executive Order 13423

Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, was established on 26 January 2007, and requires federal agencies to improve environmental, transportation, and energy-related activities by setting specific goals that address these areas. This EO requires a reduction in the quantity of toxic and hazardous chemicals purchased and requires the purchasing of bio-based, environmentally preferable, energy-efficient, water saving, and recovered material content products.

3.1.5 Executive Order 13514

On 8 October 2009, the federal government introduced EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*. EO 13514 is the latest update to past EOs and defines some of the goals and targets previously set. It builds on, but does not replace, EO 13423. Table 3-1 provides a summary of the elements and requirements presented in EOs 13423 and 13514 as they pertain to SW.

Table 3-1. Summary of EOs 13423 and 13514 SW Requirements

Element	EO 13423	EO 13514
P2	There are three main components of the P2 goal listed in EO 13423. First, agencies are required to reduce the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of through efficient material management. Second, agencies shall increase the diversion of SW as appropriate. Lastly, agencies shall maintain a cost-effective waste prevention and recycling program in their facilities. Baseline year: none.	Several P2 goals are listed in EO 13514. Agencies are required to reduce the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of through efficient material management. Agencies shall increase the diversion of SW and increase diversion of compostable/organic materials from the waste stream.[7] Agencies shall implement integrated pest management and other appropriate landscaping practices. Baseline year: none.
	Agencies shall increase the diversion of SW as appropriate. By 24 April 2007, each agency shall establish SW diversion goals to be achieved by 31 December 2010. Each agency shall maintain waste prevention and recycling programs in the most cost-effective manner possible. At a minimum, agencies shall strive to meet the national 35% recycling goal established by the EPA. Baseline year: 2000.	Agencies shall increase the diversion of SW by: (1) Diverting at least 50% of non-hazardous SW (excluding construction and demolition [C&D] debris) by the end of 2015. (2) Diverting at least 50% of C&D materials and debris by the end of 2015. (DoD Strategic Sustainability Performance Plan requires that 60% C&D non-hazardous SW be diverted by the end of 2015.) (3) Reducing printing paper use and acquiring uncoated printing and writing paper containing at least 30% post-consumer fiber. (4) Increasing diversion of compostable and organic material from waste streams. Baseline year: none.

3.1.6 DoD Instruction 4715.4

DoD Instruction 4715.4 implements policy, assigns responsibility, and prescribes procedures for implementation of P2 programs on DoD installations. In particular, this instruction authorizes direct sales of recyclable and other diverted materials, augmenting the existing Defense Reutilization and Marketing Office materials sales and programs.

3.1.7 DoD Strategic Sustainability Performance Plan

It is DoD policy to address sustainability concepts in their acquisition and procurement processes, and in planning and managing their installations. The DoD has established a Strategic Sustainability Performance Plan (S2P2) that applies a systematic framework for improving environmental performance. One of the established goals is to have sustainability practices become the norm. Specifically, the S2P2 identifies a metric to have 95% of procurements be conducted sustainably.[8]

[7] Refer to Section 6.5 for a discussion and examples of SW diversion.
[8] DoD, "Strategic Sustainability Performance Plan," August 2010.

The percent of contract actions (new and modifications) that adhere to the principles of sustainability by containing requirements for: energy-efficient (Energy Star or FEMP designated), water-efficient, bio-based, environmentally preferable (e.g., certified by the Electronic Product Environmental Assessment Tool), non-ozone depleting, containing recycled content, and/or are non-toxic or less-toxic alternatives. A further sub-goal applies to products and services, including task and delivery orders, but excluding the acquisition of weapon systems and their components and spare parts.

The Federal Procurement Data System will be used as the source of data on contracts meeting these requirements.

3.1.8 Other Applicable Federal Legislation

In addition to the above, SW regulations can be found in Title 40 of the Code of Federal Regulations (CFR), as well as in other legal resources. Below is a list of such regulations and acts.

- 10 U.S. Code (U.S.C.) 2577, "Disposal of Recyclable Materials," 1982: includes the provisions that form the basis of the QRP and requirements for the distribution of proceeds generated from the sale of recyclables;
- Military Construction Authorization Act of 1975: allows installations to retain net proceeds from the sale of QRP recyclables to be used for certain purposes (e.g., paying for energy conservation/P2 projects);
- Federal Property and Administrative Services Act of 1949: regulates the distribution of proceeds from the sale of recyclable materials on federal facilities;
- Military Construction Codification Act of 1982: amends 10 U.S.C. 2577 to allow the use of recycling proceeds for morale, welfare, and recreation activities;
- 40 CFR Part 240: Guidelines for the Thermal Processing of Solid Wastes;
- 40 CFR Part 243: Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste;
- 40 CFR Part 246: Source Separation for Materials Recovery Guidelines;
- 40 CFR Part 247: Comprehensive Procurement Guideline for Products Containing Recycled Material;
- 40 CFR Part 255: Identification of Regions and Agencies for Solid Waste Management;
- 40 CFR Part 256: Guidelines for Development and Implementation of State Solid Waste Management Plans;
- 40 CFR Part 257: Criteria for Classification of Solid Waste Disposal Facilities and Practices;
- 40 CFR Part 258: Criteria for Municipal Solid Waste Landfills; and
- 40 CFR Part 268: Land Disposal Restrictions.

3.2 STATE AND LOCAL REQUIREMENTS

California regulations pertaining to SW management are found primarily in titles 14, 23, and 27 of the California Code of Regulations (CCR). CCR titles 14 and 27 are administered by the California Department of Resources Recycling and Recovery (CalRecycle), formerly administered by the California Integrated Waste Management Board. It should be noted that CCR title 14, Division 2 is administered by CalRecycle, and deals primarily with beverage container recycling. CCR title 23, Chapter 15, is administered by the State Water Resources Control Board.

E-Waste Recycling:[9]

- Electronic Waste Recycling Act (Senate Bill [SB] 20): California has an Advanced Recovery Fee system where consumers pay a fee at the point of purchase of covered devices that are used for a statewide recycling fund. The fees are used to reimburse recyclers and collectors who submit receipts to the state, showing they have collected covered devices from state residents.
- Cell Phone Recycling Act of 2004 (Assembly Bill [AB] 2901): Requires retailers to take back old cell phones, at no cost to the consumer, to recycle or reuse.[10]
- Rechargeable Battery Recycling Act (AB 1125): Requires retailers that sell rechargeable batteries to take back and recycle them. Modeled after the same take-back concept of the cell phone bill, this legislation creates convenience and incentive for consumers.
- California Beverage Container Recycling and Litter Reduction Act aka "The Bottle Bill" (AB 2020): A 'redemption value' is assessed on beverage sales to retailers and paid to the state. This cost is generally added to the price of the product (often known as a deposit fee) and passed along to consumers.

3.3 MCO P5090.2A, ENVIRONMENTAL COMPLIANCE AND PROTECTION MANUAL

3.3.1 General Requirements

The Secretary of Defense has made the commitment that the DoD will take the lead in federal agency environmental compliance and protection. Military leaders are expected to conform to a national ethic and to consider a set of priorities that have been superimposed on our traditional defense mission. Consistent with this objective, the *Environmental Compliance and Protection Manual* was prepared to provide guidance and instruction to installations to enable them to meet stringent environmental legislation and increasing pressure by regulatory agencies at the federal, state, and local level.

The Manual was prepared to accomplish the following:

- Implement the substantive requirements of DoD environmental policy.
- Outline the requirements for compliance with federal environmental regulations.

[9] eWaste recycling is handled through the QRP.
[10] MCX Main Store would be required to establish a reuse or recycle program given that retail sales of cell phones occur.

- Establish Marine Corps policy for funding, evaluating, and continually improving environmental compliance and protection programs, with emphasis on P2, training, and education.

The MCO identifies and establishes requirements for 18 environmental program areas. These areas are:

- Environmental Compliance Evaluation Program
- Environmental Training and Education
- Air Quality Management
- Emergency Planning and Response
- Cultural Resources Management
- HW Management
- Installation Restoration Program
- Natural Resources Management
- National Environmental Policy Act
- Noise Management
- Pesticide Pollution Prevention
- P2
- Drinking Water Systems and Water Conservation
- SW Management and Resource Recovery
- Aboveground/Underground Storage Tanks
- Polychlorinated Biphenyls Management
- Water Quality Management
- Waste Military Munitions

The SW chapter in MCO P5090.2A primarily governs the content of this plan and the operation of the ISWM program; thus, requirements from this section are summarized below.

3.3.2 Solid Waste Management and Resource Recovery

This section establishes Marine Corps policy and responsibilities for compliance with statutory and procedural requirements for SW disposal, waste minimization, recycling, and resource recovery requirements. Federal, state, and local requirements concerning collection, storage, and disposal apply to Marine Corps installations that:

- Generate SW, whether it is collected by the Marine Corps or by a nonmilitary collector.
- Dispose of SW on Marine Corps property, regardless of whether the waste is originated by the Marine Corps or other sources.
- Dispose of SW off of Marine Corps property if the waste is generated by a Marine Corps installation and if the installation has direct management control over the disposal operation.

Marine Corps SW Policy

The Marine Corps will design SW disposal programs as total systems that consider the relative economic advantages of the latest technology as well as the potential for resource recovery. Installation SW programs should also explore shredding, compacting, energy recovery, and similar processes, and develop an installation ISWM plan according to the following hierarchy:

- Source reduction;
- Reuse;
- Donation;
- Recycling; and
- Composting/mulching.

Marine Corps source reduction programs must incorporate the following, where feasible[11]:

- Composting to facilitate yard waste reduction.
- Reducing excessive packaging, especially where packaging is used for attractive merchandising or convenience functions.[12]
- Procuring materials that generate less waste.[13]
- Reducing waste generation in an office by reusing materials (e.g., file folders, paper clips, and interoffice routing envelopes), employing double-sided copying, using electronic mail instead of paper memos, and reducing mail and distribution lists.[14]

In addition, all Marine Corps installations must establish an installation recycling program for the following purposes:

- To protect the environment and prevent the depletion of valuable natural resources.
- To comply with federal, state, and local environmental laws and regulations.
- To reduce the volume of waste disposed in landfills.
- To reuse readily available resources.
- To avoid excessive costs for the disposal of SW by other means.
- To obtain proceeds from the sale of recyclable material.

MCAS Miramar has an established QRP located in building 6310.

SW Resource Recovery

The philosophy underlying resource recovery is that material or energy recovery from waste is possible at a point downstream from the point of generation, and is an alternative to landfilling, incinerating, or otherwise disposing of the waste in a manner harmful to the environment or wasteful of natural resources.

The elements of a SW Resource Recovery Program as listed in MCO P5090.2A are:

- **Recycling Programs**. DoD policy requires all installations and commands to establish recycling programs and procedures that ensure, where cost-effective, that all installations and activities have, or participate in, QRP, and that these recycling programs are available to serve all host and tenant organizations occupying space on the installation, including leased space. Installations should also operate a composting program or participate in a regional composting program, if it is practicable to do so.

[11] Ref. MCO 5090.2A – Pertaining to source reduction aboard the installation, where applicable.
[12] Reduce packaging on purchases and packaging of consumer goods sold at stores on Station.
[13] This could be 'smaller units of issue', but other examples include items made from recyclable materials or other items (like batteries) that can be recharged.
[14] Reference Section 7.2 for "Continued Waste Reductions".

- **High-Grade Paper**. Waste high-grade paper generated at Marine Corps installations must be separated at the source of generation, separately collected, and sold for the purpose of recycling. Exceptions may be made only if analysis by the managing installation determines that a market for recovered products is not available, or that compliance is not economical.

- **Used Newspaper.** Installations should separate used newspapers generated in Marine Corps residential areas at the source of generation, and sell them for recycling. Exceptions are appropriate only if the managing installation determines through analysis that markets are not available or that compliance is not economical.

- **Corrugated Container Waste**. Installations should collect and sell waste-corrugated containers for the purpose of recycling. Exceptions are appropriate only if the managing installation determines through analysis that markets are not available or that compliance is not economical.

- **Resource Recovery Facilities**. Marine Corps installations with resource recovery programs must follow requirements outlined in 40 CFR 243 and 245. Marine Corps installations that dispose of, or are responsible for the disposal of, residential, commercial, or institutional SW in amounts of 100 tons per day or more (equivalent to 26,000 tons or more annually), after the implementation of source separation and other waste reduction procedures, must establish and/or use resource recovery facilities to separate and recover materials and/or energy from such SW. Such resource recovery facilities may be owned by the Marine Corps, federal agencies, or local/regional governmental or commercial interests. Marine Corps installations must not compete with a locally available commercial recycling industry that offers a total SW resource recovery system as directed by SECNAVINST 4860.44. Installations should make every effort to use an established commercial industry and should only consider constructing resource recovery facilities after a thorough study has been made of alternative methods for processing SW.

- **Returnable Beverage Containers**. Marine Corps installations must comply with state laws regarding beverage containers. They should bring to the attention of the Commandant of the Marine Corps, Facilities and Services Division any conflicts between federal (40 CFR 244) and state requirements, as well as any situations that preclude compliance.

4.0 ISWM RESOURCE STRUCTURE

The overall effectiveness of any ISWM program revolves around clear and unambiguous lines of authority and responsibility.[15] All Marine Corps personnel must know and comply with the environmental rules and regulations that apply to their duties, maintain a general awareness of all applicable Marine Corps environmental policies and goals, and promote P2 as the primary means of achieving and maintaining compliance with environmental requirements.

At MCAS Miramar, S-4/Installations and Logistics (I&L) implements the ISWM program and, with support from the Environmental Management Division, is responsible for compliance, education, and coordinating plan updates associated with SW and recycling. The following sections summarize the responsibilities of the key players in the implementation of the ISWM program.

4.1 COMMANDING OFFICER

Commander's Intent. To ensure that every unit, organization, contractors, and agency operation under MCAS Miramar's U.S. EPA identification number (CA9170024740) will, along with every Station household, participate to the fullest extent practicable in the Station's integrated solid waste management and recycling program. The Commanding Officer has overall responsibility for the ISWM program. Specific responsibilities include:

- Ensure installation-wide compliance with applicable federal and state laws, regulations, EOs, Marine Corps instructions/policies, and local requirements pertaining to recycling and SW management.
- Ensure implementation and sustainment of the ISWM program.
- Establish a QRP program.
- Assign in writing, an ISW Manager and a QRP Manager.

4.2 INTEGRATED SOLID WASTE AND QRP MANAGERS

The following subsections identify the responsibilities of an ISW Manager and QRP Manager.

4.2.1 ISW Manager Responsibilities

- Review and monitor compliance with all relevant environmental regulations pertaining to SW management and recycling. Ensure compliance of tenant commands.
- Act as the installation point of contact for all issues regarding SW management and recycling (e.g., source reduction, recycling, and affirmative procurement).

15 "Integrated Solid Waste Management Plan (ISWMP) Guide," Naval Facilities Engineering Command, April 2009.

- Advise and monitor activities of SW management personnel (i.e., contractors and/or installation personnel) to ensure compliance with SW and recycling regulations.
- Identify new recyclable materials markets, and discuss end use technologies (e.g., composting and incineration).
- Coordinate with major commands on SW and recycling issues (i.e., reporting and recordkeeping).
- Release ISWM guidelines (i.e., relating to P2, recycling, and source reduction strategies) to installation residents, civilian employees, and active duty installation personnel.
- Coordinate Installation-wide education and awareness initiatives.
- Notify the Environmental Management Division of any unauthorized wastes found in recycling bins and dumpsters.
- Ensure that the collection, storage, transportation, and disposal of SW are conducted in accordance with regulations.

4.2.2 QRP Manager Responsibilities

- Supervise recycling personnel and facilities. Ensuring the Recycling Center storage lot is kept clean of loose trash and all material is segregated into commodity bins.
- Oversee daily operation of the recycling facility and all recycling operations and monitor program participation.
- Ensure that all personal protective equipment for the QRP is being worn correctly and personnel are adhering to safety regulations.
- Establish a safety program within the Recycling Center for the proper handling and use of equipment (i.e., balers, forklifts, etc). Establish comprehensive equipment maintenance and a vehicle operator-licensing plan.
- Conduct local sales and award contracts and manage the contracts in support of the QRP.
- Act as the liaison between S-4 I&L and S-4 Finance, as required, and maintain records regarding receipt of revenues generated from the recycling program. Develop and submit potential recycling projects.
- Ensure all applicable Environment laws and regulations are followed per Marine Corps, State and local directives.
- Providing on-site assistance, as necessary, to all units, departments and activities for the implementation of source segregation recycling policies and ensuring sufficient recycling

containers are provided to all organizations. Coordinate and establish collection sites that are in accordance with applicable fire safety codes. Determine the type and quantity of materials at the Installation suitable for recycling.

- Identify locations where recyclable materials can be picked up, and notify program coordinators.
- Maintain records pertaining to the direct sale of recyclables.
- Provide monthly status reports to the Director, Logistics Division, S-4, and ISWM Manager pertaining to materials recycled by type and amounts as well as a monthly financial status of the recycling operations.
- Develop future budget requirements.

4.3 TENANT UNITS AND ORGANIZATIONS

- Actively engage in the Station Solid Waste Management and Recycling Program.
- Designate, in writing, a recycling representative to be the point of contact for recycling matters. Personnel assigned will coordinate all recycling matters with the Station's Qualified Recycling Program (QRP) Manager.
- All recyclable materials (metals, paper, etc.) will be turned into the Station Recycling Center. Units will contact either the Recycling Center personnel or Station Property for a screening of their materials at their unit site. Items that are not collected by the Recycling Center are each individual unit's responsibility to dispose of properly. The Station Recycling representative and command representative will determine whether material can be transferred to the Defense Reutilization and Marketing Office (DRMO).
- Each command and activity will segregate materials at their respective work place. The term segregation is defined as the placement of materials, such as glass, cardboard or cans, in appropriate containers. In addition, unit Recycling and Hazmat coordinators will ensure all Marines and civilians understand which items should not be deposited in dumpsters.
- Deliver all recyclable materials to the Recycling Center for disposal per the procedures contained in enclosure (1). The Station Recycling personnel will only pick up those recyclable items at the sites so designated by the QRP Manager. Large volumes of recyclable materials that rapidly accumulate may require the tenant unit to request collection and coordination by the Recycling Center personnel as well as unit logistical support. Recycling item segregation will still be completed by unit personnel prior to arrival at the recycling center, as prescribed in enclosure (1). Enclosure (2) provides a list of items that are considered recyclable.
- Conduct daily inspections of areas to ensure all materials are segregated and organized, all trash in and around the recycling center is picked up.

4.4 S-7 ENVIRONMENTAL MANAGEMENT

- Advise the Commanding Officer on all matters relevant to the management of the ISWM Program and QRP.
- Supervise the implementation of this Order.
- Chair the Recycling Advisory Board as required.
- Develop all budget data for proposed use of recyclable funds to be submitted to the MCAS Miramar Commanding Officer and Comptroller when requested.
- Provide staffing, directing and supervising of MCAS Miramar's Recycling program.
- Conduct semiannual internal financial review of funds provided or mailed to the QRP, which are then turned in to the Resource Plans and Operations Analysis (RPOA).
- Providing promotion/publicity for the recycling program through the Station newspaper, website, periodicals, and other methods as required.
- Ensure adequate and appropriate equipment is provided for a successful Recycling Program.

4.5 S-7 FINANCE, COMPTROLLER. In accordance with applicable laws and regulation and this Order, promote MCAS Miramar's recycling program by:

- Supervising the receipt, maintenance and disbursement of revenues generated from the recycling program per all applicable regulations and guidance.
- Supervising and monitoring the development and submission of a written recycling revenue monthly METRIC report. This monthly metric is to account for all revenues received, maintained and disbursed within the month, quarter, and within the fiscal year.
- Allocating to the S-4 I&L, funds for approved projects and authorized expenditures through the budget process.

4.6 S-4 INSTALLATION AND LOGISTICS.

- Assign a point of contact for solid waste contracting oversight.
- Coordinate solid waste collection container requirements with ISW Manager.
- Providing monthly solid waste disposal statistic's to the S-7, Waste Management Division.
- Providing recommendations to the S-7 concerning the requirement to meet with the Recycling Advisory Board to discuss recycling matters.

4.7 MARINE CORPS COMMUNITY SERVICES (MCCS).

- Provide a MCCS representative to coordinate with MCAS Miramar's Recycling Program Manager to supervise the implementation of the recycling program by ensuring, where practicable, that MCCS activities participate in MCAS Miramar's recycling program.

4.8 DIRECTOR, CONSOLIDATED BACHELOR HOUSING.

- Make occupants of bachelor quarters, including transient personnel, aware of the contents of this Order and ensure that the policies and procedures governing recycling in the consolidated bachelor quarters are followed.

- Promote & support the barracks recycling plan through:

- Ensuring each room has serviceable recycling bins.

- Ensuring the community-recycling-bins on each floor are emptied into the parking lot recycling containers as required.

- Monitoring the parking lot recycling collection bins and dumpsters to ensure that they are being emptied in a timely and supportive manner by the Station Recycling Center personnel, and that recyclables are not entering the dumpsters.

- As required, addressing the barracks recycling plan & procedures at CBQ meetings or with the QRP manager as necessary.

4.9 RECYCLING FUND ADVISORY BOARD CHARTER

The Recycling Fund Advisory Board was established to make recommendations to the Commanding Officer, regarding the disposition of revenue generated from the recycling program.

Recycling Fund Advisory Board membership will initially be composed of the following individuals, units or organizations or their designated representatives:

- Chair: S-7, Environmental Management Department, MCAS Miramar
- Member: Director, Logistics Division MCAS Miramar
- Member: Marine Corps Community Services (MCCS)
- Member: 3d Marine Air Wing (MAW), G-4
- Member: S-4 I&L, MCAS Miramar
- Member: QRP Manager

At the discretion of the Chair or upon the request of any member of the Board, invites can be issued to technical staff or other advisors in order to attend and contribute to Board meetings.

Committee meetings will be held, at a minimum, semiannually. The Board will consider recommendations consistent with the purpose of this charter and applicable laws, regulations and federal agency directives. Recommendations approved by the Recycling Fund Advisory Board will be forwarded to the Commanding Officer, MCAS Miramar, as required, for consideration and final action.

5.0 WASTE CHARACTERIZATION

A formal waste characterization study has not been conducted at MCAS Miramar. Basic surveys are the simplest type of survey that focuses on classifying larger categories as percentages of the total SW stream.

The waste characterization methodology used for this ISWM Plan was visual observations of SW collection points, observations of waste-generating areas and their processes, interviews with personnel, and data reviews of SW reports. Interviews were conducted with management personnel and others, as appropriate, to identify existing SW management practices and to collect information on types and quantities of wastes generated and the costs associated with existing and potential ISWM activities. Available contract, waste disposal, and recycling/reuse records were reviewed, in addition to SW annual reports describing quantities and costs of various SW streams, reduction measures, and success stories.

5.1 SOLID WASTE GENERATION

SW is generated by residential, commercial and institutional, industrial, construction and demolition (C&D), and landscaping activities at the installation. Table 5-1 below summarizes the waste generation and handling of SW stream.

Table 5-1. SW Generation and Handling

Waste Type	Generation	Collection	Disposal
Aluminum cans	Empty beverage containers from Dining Facility, MCCS, Consolidated Bachelors Quarters (CBQ), restaurants, shops, and other locations at the installation where beverages are consumed.	Collected in separate aluminum beverage recycling containers at point of generation. Aluminum cans collected from general locations are brought to the Recycling Center.	Aluminum cans at the Recycling Center are managed through the QRP.
Bulk goods	CBQ, equipment and furniture upgrades, MCCS, equipment supply, and shops.	MCAS Miramar Recycling Center only accepts metal furniture or racks.	Bulk metal furniture is managed through the QRP.
Cardboard	Delivery of equipment and supplies to the installation.	Collected at point of generation in outside recycling containers throughout the installation; cardboard is then moved to the Recycling Center where it is compacted and baled using free labor from Marines on staff.	Cardboard is managed through the QRP.
C&D debris	C&D activities on the installation.	Managed by contractor at project site.	Contractors are responsible under terms of their contracts for proper off-site recycling or disposal.

Table 5-1. SW Generation and Handling

Waste Type	Generation	Collection	Disposal
Cooking Oil and Grease	Food preparation at the Dining Facility, and installation restaurants.	Collected in drums at waste storage area near points of generation at the Dining Facility, and installation restaurants.	Grease and cooking oil are collected by a vendor who recycles this waste into reusable fat, protein, and hide products that are used by commercial manufacturers.
Electronic Waste (e-Waste)	Outdated and expendable equipment from various locations installation-wide.	e-Waste is collected at the Recycling Center.	A local recycling vendor collects the e-waste from the Recycling Center.
Ferrous Metal Cans	Steel cans from dining facilities.	Cans at the Dining Facility are segregated for recycling and stored in outdoor bins near the kitchen.	Cans are managed through the QRP.
Food waste (other than cooking oil)	Housing, restaurant, and food service locations	Discarded in SW containers nearest point of generation.	All food, aboard the installation, is disposed of as SW.
Glass	Empty beverage and food containers from dining facilities, CBQ, and other locations at the installation where beverages are consumed.	Glass is segregated and sent to the Recycling Center where it is stored prior to recycling.	Glass is managed through the QRP.
Green waste	Primarily from golf course maintenance.	Green waste bin is located near at the golf course.	Grass clippings are mulched at the time of cutting; tree trimming waste is collected in bins and sent to the Miramar Landfill for compost.
Metals	Generated by maintenance activities at the various shops, construction and demolition activity, and MCCS.	Metal recycling bins are located near all points of generation at the installation.	All metal generated aboard the installation is managed through the QRP.
Paper	Primarily from administrative functions across the installation.	Paper is segregated at the point of generation and placed in paper recycling dumpsters. Paper is then sent to the Recycling Center for shredding and bailing.	Paper is managed through the QRP.
Plastic Containers	Empty beverage containers from dining facilities, CBQ, and other locations at the installation where beverages are consumed.	Plastic beverage containers are segregated at the point of generation and deposited into appropriate bins. Bins are taken to the Recycling Center where plastics are compacted and baled.	All plastics are managed through the QRP.
Plastic Packaging/Film	Delivery of equipment and supplies to installation. Pallet wrap.	Collected at the point of generation and sent to the Recycling Center.	All plastics are managed through the QRP.
Tires	Maintenance of government-owned vehicles and privately-owned vehicles.	Tires are collected at satellite accumulation areas near the point of generation. Additionally, tires are stored at the 90-Day Accumulation Site.	Commercial tires recovered by MCCS and recycled off Station through a private vender. Military tires are managed at each unit for DRMO disposal.

Table 5-1. SW Generation and Handling

Waste Type	Generation	Collection	Disposal
Wood and Plastic Pallets	Delivery of equipment and supplies to installation.	Plastic pallets from the dining facilities are sent back to the vendor for reuse. Pallets are collected and stored at the MCAS Miramar Recycling Center.	Pallets are managed through the QRP. Broken pallets are sent to Miramar Landfill for wood chipping.
Wood scrap	Renovations, carpentry, received shipments of large aircraft components, and small projects at the Installation.	Collected in shops, hangar, or stored at project sites.	Currently, wood scrap is accumulated as SW.

5.1.1 Residential

Residential housing has some permanent residents; otherwise, housing aboard the Station is temporary. Most residential waste from housing units consists of food and food packaging materials. Food packaging materials include plastic, paper and glass beverage containers, metal cans, paperboard boxes, and plastic/aluminum wrapping materials. Waste generated from residential housing (i.e., food and recyclables) is collected by a waste transport contractor and disposed of at the Miramar Landfill.

5.1.2 Commercial and Institutional

MCAS Miramar institutionally generates white and mixed paper, toner cartridges, e-waste, cardboard, and beverage containers. Personnel support services include the Dining Facility, MCCS, food vendors, and recreational facilities. These services generate food and food packaging wastes, aluminum cans, glass and plastic bottles, and steel cans. Medical and dental support activities typically generate paper products (i.e., computer paper, photocopy paper, towels, robes, etc.), packaging material, and plastic containers.

5.1.3 Industrial

MCAS Miramar industrial departments and tenant commands include support activities such as fueling, communications, vehicle maintenance, pest control, and facilities maintenance shops. Typical waste streams for industrial activities are varied. Material handling and storage facilities primarily generate wood, plastic, and packaging materials. System support activities generate scrap electrical and mechanical equipment and metals. Maintenance facilities generate wood, metal, plastic, and packaging materials.

5.1.4 Construction and Demolition

C&D debris is generated by construction projects at the installation. C&D debris of structures generally results in a waste stream composition of rubble (i.e., concrete mixed with rebar and wire mesh, cinder blocks, and dirt), painted wood, asphalt roofing, brick, metal, and reusable items such as utility fixtures, windows, and doors. Management and reporting of the types and amounts generated and recycled are the responsibility of the contractor under the terms of the contract.

5.1.5 Landscaping

Green/yard waste is generated by landscaping activities at the Station. The majority of the landscaping activities are conducted at the on-site golf course. Lawn clippings are mulched and left on the ground. The majority of the tree clippings are disposed of at the Miramar Landfill.

6.0 PROGRAM STATUS

6.1 REQUIREMENTS

Per OPNAVINST 5090.1C, Chapter 16, all Navy installations worldwide that generate one ton or more of SW per day shall develop and implement an ISWM Plan and a QRP. The ISWM Plan should be updated every three years to reflect new technologies, investment strategies, or environmental requirements.

The Environmental Portal (EPR Portal) is the primary tool used to summarize the types and quantities of wastes generated, and how each type of SW is managed (i.e., recycled, composted, incinerated or landfilled). The Environmental Management Division receives the annual installation SW disposal records from S-4 I&L and submits to the EPR Portal SW report annually.

6.2 SUMMARY OF GOAL STATUS

Table 6-1 provides a summary of the goals set forth in EO 13514 regarding SW. EO 13514 did not revoke EO 13423, but extends the reduction requirements of EO 13423 goals. As such, MCAS Miramar's goals and targets for environmental performance will be measured against EO 13514.

Table 6-1. Integrated Solid Waste Management Goal Status

EO Goal Area	Requirement	Baseline	2012 Metrics	Goal Status
P2	(1) Divert at least 50% of non-hazardous SW (excluding C&D debris) by the end of 2015.	None	1464 tons recycled	Achieved 22% diversion in 2012
	(2) Divert at least 50% of C&D materials and debris by the end of 2015.[16]	None	70,592 tons recycled	Achieved 56% diversion in 2012
	(3) Reduce printing paper use and acquire uncoated printing and writing paper containing at least 30% post-consumer fiber.	None	Not currently captured.	Reduction goals have not been established by DoD or EO 13514.
	(4) Increase diversion of compostable and organic material from waste streams.	None	No composting activities are being implemented.	0%

6.3 INTEGRATED SOLID WASTE MANAGEMENT

An effective ISWM program combines the most cost-effective activities for non-hazardous SW management, and at the same time affords the flexibility to handle the ever changing regulatory and market environments.

[16] DoD, Strategic Sustainability Performance Plan (2011), indicates a 60% diversion goal for C&D.

ISWM programs comply with applicable regulations, and focus on a "use hierarchy" principle that emphasizes source reduction and reuse first, followed by donation, recycling, composting, waste-to-energy, and landfilling as a last choice; each of these management approaches is discussed in the subsequent sections.

Table 6-2 summarizes the SW management activities at MCAS Miramar between Fiscal Years (FY) 2008 and 2012. It should be noted that data may not have been captured accurately during FYs 2008-2009; however, subsequent FY data collection efforts have been implemented and corrected.

Table 6-2. Solid Waste Management Activities (tons)

FY	Installation Population	Recycled	Composted	Incinerated	Landfilled	Total	Percent Diverted
2008	2,009	1,488	0.0	0.0	4,534	6,022	25%
2009	14,292	2,763	0.0	0.0	1,771	4,534	61%
2010	10,265	985	0.0	0.0	5,090	6,075	16%
2011	10,832	581	0.0	0.0	6,553	7,135	8%
2012	11,779	1463	0.0	0.0	5194	6658	22%

6.4 SOURCE REDUCTION

Source reduction is the practice of designing, manufacturing, purchasing, and/or using materials (including packaging) or products in ways that reduce the amount or toxicity of waste generated before they are discarded. Source reduction also involves the reuse of materials or products.[17]

When effectively implemented, source reduction cuts waste disposal and handling costs because it prevents/lessens expenses associated with recycling, composting, landfilling, and incineration. Source reduction also conserves resources, reduces pollution, and removes risks and liabilities associated with disposal. This is why source reduction ranks first among waste management options – it has virtually no negative effect on the environment, it conserves energy and resources, and does not require new facilities.

Source reduction differs from recycling in that it focuses on reducing waste at the source through a multitude of strategies, such as environmentally preferable purchasing, sustainable acquisition, P2, and reuse.

MCAS Miramar promotes source reduction by procuring materials that generate less SW and has a system to reuse and redistribute unused material to minimize Installation-wide waste generation. MCAS Miramar organizations and tenant commands make reasonable efforts to reduce waste by reusing products such as wood, packaging materials, containers, and other materials rather than disposing of them and by increasing the lifetime of products by proper maintenance and repairs. Examples of source reduction efforts in place at MCAS Miramar include:

[17] "Integrated Solid Waste Management Plan (ISWMP) Guide," Naval Facilities Engineering Command, April 2009.

- Double-sided copying;
- Utilization of mulching lawn mowers that leave finely cut grass to decompose on the lawn, provide nitrogen to the soil, and reduce SW; and
- Installation of hot air dryers in some restrooms, thereby reducing the volume of paper towels used.

6.5 REUSE

Reuse involves identifying materials that may be used again rather than discarded. Reused items do not require reprocessing; as such, reuse is typically preferred over recycling. Reused items may be used either for the same purpose, or a different one.[18] An example of this would be to reuse pallets that are in serviceable condition, rather than to send them to the Recycling Center for storage/recycling.

6.6 DIVERSION

Diversion can be defined as the act of averting SW from landfill disposal or incineration through methods such as recycling or composting/mulching. Diversion and landfill volumes are depicted on Figure 6-1. Note this figure does not include C&D debris. Additionally, the figure shows the percent diversion. Currently, MCAS Miramar is not meeting the diversion goals identified in EO 13514.

Figure 6-1. Diversion and Landfill Volumes

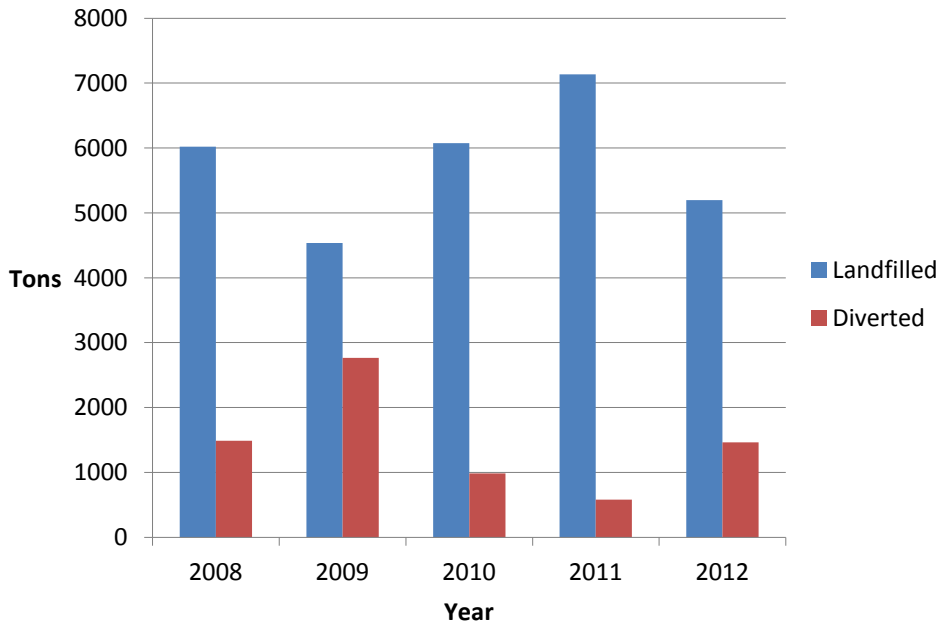


Table 6-3 summarizes the C&D management activities at MCAS Miramar between FY 2008 and 2012.

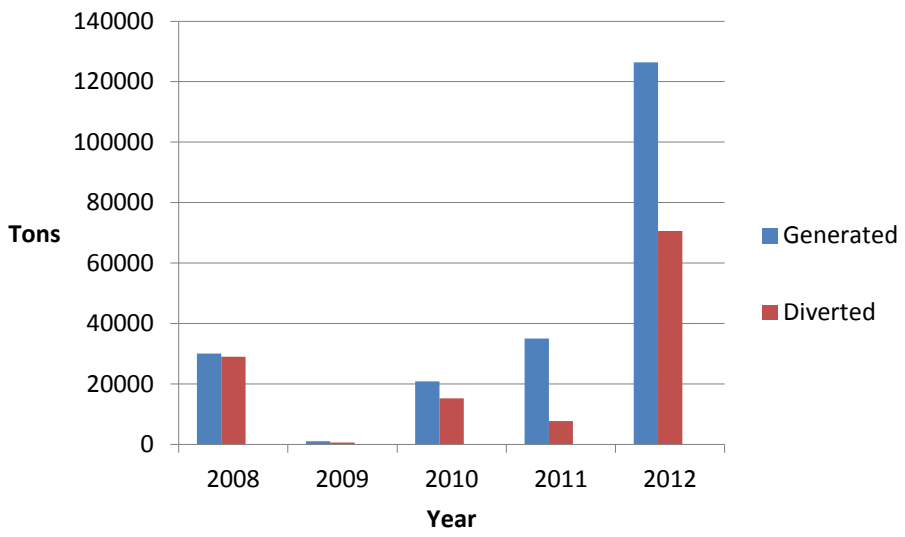
[18] "Integrated Solid Waste Management Plan (ISWMP) Guide," Naval Facilities Engineering Command, April 2009.

Table 6-3. C&D Management Activities (tons)

Fiscal Year	Recycled	Landfilled	Total	Percent Diverted
2008	28,927	1,062	29,988	96%
2009	627	400	1,028	61%
2010	15,238	5,622	20,859	73%
2011	7,648	27,392	35,040	22%
2012	70,592	55,759	126,351	56%

Figure 6-2 shows the total volume of C&D debris diverted and landfilled for FYs 2008 through 2012.

Figure 6-2. C&D Debris Diversion and Landfill Volumes



6.7 Recycling

Recycling is a series of activities that includes collecting recyclable materials that would otherwise be considered waste, sorting and processing recyclables into raw materials such as fibers, and manufacturing raw materials into new products.[19]

Most recyclables are collected and taken to the MCAS Miramar Recycling Center for processing. Recyclable plastic and aluminum beverage containers, plastic cooking containers, and cardboard are compressed and baled at the Recycling Center. Paper is sorted and shredded.

MCAS Miramar operates a direct sale QRP. The QRP Manager obtains bids for each commodity every month in order to maximize revenue. Commodities currently processed through the QRP include: cardboard, paper (various types), metals (i.e., steel, aluminum, copper, etc.), and pallets (wooden and

[19] "Integrated Solid Waste Management Plan (ISWMP) Guide," Naval Facilities Engineering Command, April 2009.

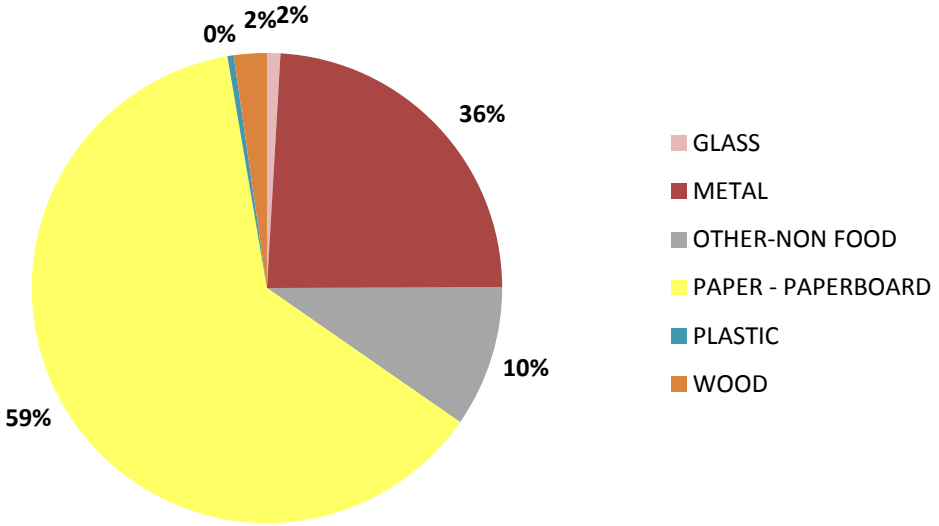
plastic). MCAS Miramar also receives revenue from the sale of automotive and aircraft batteries. In addition to these items, the Station recycles beverage containers at the current California Redemption Value. Table 6-4 summarizes recycled quantities and revenues earned from the Installation's QRP from FY 2008 through FY 2012.

Table 6-4. Annual Recycled Solid Waste

FY	Tons	Revenue
2008	1488	$299,255
2009	2763	$93,663
2010	985	$216,311
2011	581	$106,219
2012	586	$204,352

Figure 6-3 shows the FY 2012 commodities recycled through the Station QRP and the respective percentage.

Figure 6-3. FY 2012 QRP Commodities



6.7.1 Management of proceeds from QRP.

The Station is entitled to 100 percent reimbursement of proceeds from sales of recyclable materials only when the designated account number appears on the Disposal Turn-In Document (DTID). Proceeds shall be deposited into Budget Clearing Account (Suspense) 17F3875.27RM 007 00264 0 000027 3C 000000 000026498004 as instructed by MCO 7301.116. The accumulation of funds in the account is not affected

by fiscal year end, so proceeds acquired during one fiscal year may be carried forward and merged with proceeds of subsequent fiscal years.

Distribution of Proceeds: All projects recommended for funding with proceeds from the Budget Clearing Account will be reviewed by the Commandant of the Marine Corps (HQMC) prior to distribution of funds. Additional budget and account guidance includes:

- Proceeds shall first be withdrawn to cover costs of operations, maintenance, and overhead for processing and handling recyclable materials, including the cost of any equipment purchases for recycling purposes. Military personnel shall not be reimbursed from this account.
- If a balance remains, not more than 50 percent of that balance may be used at this Air Station for projects for pollution abatement, energy conservation, and occupational safety and health activities. Construction project funding is limited to 50 percent of minor construction authority.
- Any remaining balance may be transferred to this Air Station's non-appropriated MWR account as directed by S-4/I&L.
- If the balance of this Installation's proceeds remaining in the account exceeds $2 million at the end of a fiscal year, the amount in excess of $2 million shall be deposited into the U.S. Treasury as miscellaneous receipts.

The Station QRP funding priorities will be executed on an unfunded reimbursable basis and will be coordinated with the CMC (LFF-1, Facilities Branch, Special Programs) as required. Reimbursement will be made from proceeds in the Budget Clearing Account and will be credited to the Operations and Maintenance, Marine Corps (O&M, MC) appropriation at the HQMC level. The unfunded reimbursable authority will be the amount required for QRP operations plus the amount authorized from 50 percent of the remaining balance. Obligation authority will be included in the O&M, MC operating budget issued by HQMC. Recycling proceeds authorized for investment-type equipment will be issued by HQMC as Procurement, Marine Corps funds via an allotment (NAVCOMPT Form 372). Actual transfer of proceeds to the Air Station's non-appropriated MWR account will be processed by HQMC. The amount(s) issued will be footnoted on the operating budget as not being available for any other purpose (e.g., recycling, MWR, etc.).

6.7.2 Composting

Composting, another form of recycling, is the controlled aerobic decomposition of organic matter (i.e., yard and food wastes), into a soil-like material called humus. End uses include mulches and soil conditioners used in landscaping and gardens. Compost not only keeps organic wastes out of landfills, but it has numerous other benefits, such as providing nutrients to the soil, increasing beneficial soil organisms (i.e., worms and centipedes), and assisting in pollution remediation.[20] Untreated wood is diverted from the landfill through the use of a wood chipper that processes untreated wood, tree clippings, and branches into mulch that is used at the Installation.

[20] "Integrated Solid Waste Management Plan (ISWMP) Guide," Naval Facilities Engineering Command, April 2009.

MCAS Miramar currently has no composting programs for food waste. Composting will be done at the Miramar landfill.

6.8 SOLID WASTE DISPOSAL PROCEDURES

Disposal activities, such as incineration, waste-to-energy, and landfilling, are used to manage remaining waste that cannot be prevented, reused, or recycled. Waste Management is contracted to collect and transport SW to the Miramar Landfill for disposal. SW is primarily collected in plastic bags. Janitorial staff empty SW containers from office areas into rolling containers and deposit the collected waste in dumpsters located outside of the buildings. Dumpster locations are currently determined by S-4 I&L.

Storage of bulky wastes shall include, but is not limited to, removing all doors from large household appliances and covering the item(s) to reduce the problems of an attractive nuisance, and the accumulation of solid waste and water in and around the bulky items.

No waste is to be placed beside any SW collection point and any waste spilled during collection or transportation needs to be cleaned up. Additionally, items that may damage the compactor truck (i.e., large metals parts or furniture) should be scheduled for disposal through the SW Manager.

Each unit, organization, and agency operating aboard MCAS Miramar will recycle solid waste to the greatest extent practicable. This is applicable to all tenant units, organizations, as well as residents of the consolidated bachelor quarters. Procedures for management of particular waste streams are as follows:

- Cardboard. Flatten cardboard and place it in the unit's designated cardboard container and transport it to the Station Recycling Center (cardboard trailers will be retrieved via recycling personnel).

- High Grade and Computer Paper. Recycling all white high grade and computer paper. High grade paper includes: letterhead, business forms, stationary, typing paper, most Marine Corps forms and manuals (colored covers removed). Whenever possible, do not mix high grade and computer paper with other mixed paper. Transport the paper to the Station Recycling Center.

- Mixed paper. Collect other paper of all grades and transport it to the Station Recycling Center. Do not include NCR paper, carbon paper, film, paper towels and wrappers.

- Mixed plastics. Collect plastics with codes 1 & 2 and transport to the Station Recycling Center. You may include plastic bags and shrink-wrap with plastic containers.

- Aluminum and Scrap Metal. Deliver scrap aluminum and other scrap metal to the Station Recycling Center.

- Pallets. Collect and deliver all serviceable or broken pallets to the Station Recycling Center. All broken pallets and any other crates with treated stamps (e.g. PA, PB, PC, HT, MT) will be placed in treated wood bin.

- Serv-Mart Items. Many types of materials (i.e., printer toner cartridges, electronic typewriter ribbons, etc.) can be recycled. Often, recycling these materials is as simple as returning them in their original containers to Serv-Mart. The Recycling Center will accept toners.

- Refrigeration Equipment. The Recycling Center may accept refrigeration equipment for recycling on a case-by-case basis depending on the type, quantity, and other re-sale factors. Any unit-requiring disposal of this type of equipment, if accepted, will be required to remove the doors prior to acceptance at the Recycling Center.

- Tires. Refer to StaO 5090.5 Hazardous Waste Management Plan for guidance. The Station Recycling Center will not accept any tires; contact the Station Environmental department for disposal of tires. Units requiring turn in of tires may also contact the DRMO scrap yard at the Naval Base 32nd Street, San Diego.

- Drums with oil residue. Refer to StaO 5090.5 Hazardous Waste Management Plan for guidance. All drums requiring turn in will be "California Empty." The definition of California Empty is the container must not contain any oil that can be poured out.

- Furniture/Racks. The Recycling Center will only accept metal furniture or racks. All wooden furniture or other non-metal materials will be addressed to Station Property for recommendation of disposal.

6.8.1 Tentative Pick-Up Schedule for Recycling

- Pallets. Every Wednesday is pallet pick-up. If any command requests a pallet pickup or turn in of pallets, contact the Station Recycling Center at extension 6366/8872.

- Paper. Every Thursday, command and MCCS offices without government or company vehicles will be supported by the Station Recycling Center for paper pick-up. For shredded paper, please place only the debris in trash bags. Shredded materials should be separated from whole paper. The recycling center provides limited disposal support for large drops of paper. All commands and MCCS offices should place their recycling bins or bags outside their building to make collection more efficient (see pickup schedule below).

- Satellite. As required, the Station Recycling Center will clean and exchange recyclable bins and trailers after working hours and weekends upon notification/coordination. During working hours all recyclables should be turned-in directly to the Station Recycling Center at bldg 6310, there is a 24-hour drop-off site located at the building for after working hours.

- Trailers. Cardboard trailers are removed and emptied by the Station Recycling Center personnel daily. Marines and civilian personnel should not remove cardboard from the trailers at any time.

6.8.2 Items that may or may not be recycled and sold through QRP

Accepted Items:

- Metal (steel, aluminum, etc), contact Recycling Center for other metals accepted.

- Paper (white, newspapers, etc.) shredded or whole
- Cardboard (broken down/flattened)
- Glass
- Aluminum Cans
- Plastics with codes # 1 & 2 (including bags/shrink-wrap)
- Treated Wood with perforated imprint, stenciled or stamped markings (i.e., PA, PB, PC).
- Spent Toner Ink Cartridges
- Serviceable Pallets
- 55 Gallon Drums (must be free of ALL liquids)
- Electronics (CRTS/computer monitors, etc)

The Recycling Center **cannot** accept the following items. Please contact the recommended sections for support:

▪ HAZMAT (used oil, paint, batteries, etc.)	Environmental 858-577-1108
▪ Tires	Environmental 858-577-1108
▪ Fluorescent Lamps	Environmental 858-577-1108
▪ Furniture	Thrift Store 858-271-4633
▪ Mattresses	Large Green Trash Bins, Bldg. 8219
▪ Clothing	Thrift Store 858-271-4633

6.8.3 Procedures for turn-in of Ammunition, Explosives and Dangerous Articles (AEDA)

To establish and implement comprehensive procedures for the turn-in of expended ammunition retrograde material to the Station Recycling Center.

To ensure the safety and health of the Marines and personnel assigned to this function, the following items will be thoroughly screened, certified inert and segregated by caliber and category prior to turn in at the Miramar Station Recycling Center. The (AEDA) items listed below are the only items that MCAS Miramar Station Recycling Center is allowed to receive. All other (AEDA) items must be turned into (DRMO):

- Expended small arms ammunition cartridge casings (e.g., Spent Brass up to .50 caliber).
- Mixed metals gleaned from range clearance.
- Wood ammunition containers (e.g., P-Wood) such as empty 76 crates, .50 cal wire bound boxes, etc.

Turn-in Procedures.

- All units will contact Station Recycling Center in advance to schedule the turn-in of AEDA by calling extension 577-8873/72.
- A file of all activities authorization letters will be maintained at the Station Recycling Center
- These letters will identify those personnel authorized by the activity's commanding officer to inspect, verify and certify AEDA as being spent or expended. Every unit will resubmit a new authorization letter by 30 September of each year or when personnel changes occur.
- Each command will ensure personnel authorized to turn in range residue, are on their activity's munitions residue inspector's authorization letter. It is the commands responsibility to ensure the letter is current, and the signatures match the authorization letters on file at the Station Recycling Center.
- All units will provide a turn-in document (DD Form 1348-1) that has the required AEDA certification statement, personnel on their activity's authorization letter will sign the statement. Preparation of the DD Form 1348-1 must include the following statement at the bottom of the form:
- This certifies and verifies that the AEDA residue, and or Explosive Contaminated property listed have been 100 percent properly inspected and to the best of our knowledge and belief, is inert and / or free of explosives or related materials".
- The unit AEDA certifier and unit AEDA verifier will include the following information on the 1348-1A turn-in document.
- Print Name, Unit, Phone No., Rank, and Signature.
- In addition to the safe certification turn-in document a Dangerous Property Statement will be attached to the turn-in document and signed by both certifier and verifier with the following statement:

"Purchasers are cautioned that articles or substances of a dangerous nature may remain in the property regardless of the care exercised to remove same. The U.S. Government assumes no liability for damages to property of the purchaser or for personal injury, disability or death of the purchaser, its employees, or to any other person arising from or affiliated with the purchase, use or dispositions of this material. The purchaser shall hold the U.S. Government harmless from any and all such demands, suits, actions, or claims arising from or otherwise relating to the purchase of this material."

- All (AEDA) materials will be inspected before turn-in to the Station Recycling Center by qualified individuals to ensure no live ammunition, unfired primers, or misfired rounds are present. Additionally, the unit will ensure that there is no remaining unspent residue in the cavities.

- Casings must be sorted by the unit, by caliber type and will contain no contaminants, such as steel clips, dirt, wood, or other debris.

- Each command will deliver the AEDA to the Recycling Center and provide a working party to assist the recycling center with the unloading of (AEDA) items at the time of turn in.

- For safety reasons, it is critical that expended AEDA items be verified by Station Recycling personnel to ensure all items are inert and expended.

- The Station Recycling Center representative will stamp and sign the activity's DD Form 1348-1 signifying Miramar's Station Recycling Center has inspected, verified, and certified all residue as being spent or expended. A record file of 1348's for all AEDA turned in will be maintained in the Recycling Center for two years.

- Ensure all markings/stickers on A&E containers are obliterated/removed. Each command will spray paint over markings and all explosives identification stickers will be removed.

- A&E Containers marked with PA, PB, PC, and PD are treated with chemicals that require them to be managed in accordance with the Station's Hazardous Waste Management Plan. They must not be placed in solid waste collection dumpsters. These items may be placed in the 40 cubic yard roll-off dumpsters located at the recycling center or at Station Ordnance in East Miramar. Containers treated with pentachlorophenol (P-wood) are treated and disposed of as a hazardous waste. These containers can be identified by a single letter P stamp on the container identifying it as having been treated with pentachlorophenol.

- The Recycling Center will not accept any AEDA or A&E containers that do not meet the above criteria or conform to the standards set forth in the references.

- Upon findings of mixed calibers, live rounds, clips with brass, wood, dirt or any discrepancies by Station Recycling personnel, the property will not be accepted and a memo stating the discrepancy will be forwarded to the appropriate commander.

- The Recycling Center will store all materials in a segregated manner and the materials will be secured in lockable storage bins.

6.8.4 Storage, Collection, and Disposal of Wastes

All solid wastes (or materials which have been separated for the purpose of recycling) shall be stored in such a manner that they do not constitute a fire, health, or safety hazard or provide food or harborage for vectors, and shall be contained or bundled so as not to result in spillage. All solid waste containing food wastes shall be securely stored in covered or closed containers which are nonabsorbent, leak proof, durable, easily cleanable (if reusable), and designed for safe handling. Containers shall be of adequate size and in sufficient numbers to contain all food wastes, rubbish, and ashes that an establishment generates in the period of time between collections. Containers shall be maintained in a clean condition so

that they do not constitute a nuisance, and to retard the harborage, feeding, and breeding of vectors. When serviced, storage containers should be emptied completely of all solid waste.

Refuse is collected from the Station through a local waste disposal contractor. Dumpsters are owned and maintained by the contractor and are for "Official Use" by Installation tenants only. Personnel residing in Lincoln Military Housing or residing off Station are not to use dumpsters for disposal of personal property. Personnel residing in the Consolidate Bachelor Quarters are exempted.

Dumpster locations, volume, and frequency of collection are presented in Appendix B. Requests for immediate service, repair, additional containers, or any modifications to frequency of service must be requested via S-4 I&L.

7.0 PROGRAM IMPROVEMENT

To ensure continued progress towards achieving the federal, state, and Marine Corps SW goals, MCAS Miramar must develop and implement a system to periodically identify and evaluate new SW reduction opportunities. Opportunities are initiatives that involve significant equipment, process, or technology modifications. Implementation of an opportunity usually requires an initial capital expenditure.

Best management practices (BMPs) are initiatives that typically involve changes in administrative procedures, service contract modifications, changes in management practices, or minor process modifications. An example BMP includes improved housekeeping. BMPs typically do not require significant capital investment to implement.

7.1 RECOMMENDED SW REDUCTION OPPORTUNITIES

Based upon the information obtained during site visits and interviews with Base personnel, it is recommended that MCAS Miramar implement the following SW reduction opportunities.

7.1.1 Qualified Recycling Program

MCAS Miramar operates a direct sale QRP and has an established Recycling Center. The Recycling Center is operated by Marines, which benefits the program by not having to pay labor out of the commodity revenue. To further increase revenues and diversion, the following actions are being considered:

- **Establish a more dedicated workforce**

  The workforce for the Recycling Center consists of three permanent Marines, and eight Fleet Assistance Program (FAP) Marines. With an already small staff, the result is a lack in manpower to operate the recycling program as intended. Limited staff results in a slowing down of the collection of potential recyclables, which end up getting disposed of as SW and sent to the Miramar Landfill.

- **Contracted recycling services**

  The option of contracting for recycling services via an independent services contract is under consideration. This contracted service would involve single source recycling containers and required source separation on or off Station.

- **Increase frequency of pick-up of recyclable materials**

  If the overflow of recyclables was picked up more frequently, the diversion percentage goal of EO 13514 would go up.

- **Implement crushing of aluminum cans in the Dining Facility food prep areas**

  Because the cans take up a significant amount of space, the bins fill up quickly. If the bin is full, personnel dispose of the cans in the adjacent SW container and then they are disposed of at the Miramar Landfill as SW. If both the tops and bottoms of the cans are removed and the cans are partially or fully compacted, a significant amount of space would be saved in the recycling bin.

The time required to change the current procedure is minimal and would greatly reduce the workload of the Recycling Center staff.

- **Begin collection of plastic shrink wrap and grocery bags.**

  While visiting the MCCS Commissary and MCX Main Store area of the installation, it was observed that shrink wrap and other miscellaneous plastics are being disposed of in SW containers. It is recommended to reduce plastic disposal as SW as much as possible at the MCCS Commissary and MCX Main Store, and to recycle these items through the Recycling Center.

7.1.2 Implement Composting

Composting is the controlled aerobic decomposition of organic matter (i.e., yard and food wastes), into a soil-like material called humus.[21] Compost is organic material that can be used as a soil amendment or as a medium to grow plants. Compost not only keeps organic wastes out of landfills, but it has numerous other benefits, such as providing nutrients to soil and increasing beneficial soil organisms (e.g., worms and centipedes).

The EPA has collected and reported data on the generation and disposal of waste in the United States for more than 30 years. The information is used to measure the success of waste reduction and recycling programs across the country. In 2010, Americans generated about 250 million tons of trash and recycled and composted nearly 85 million tons of this material. On average, individuals generate 0.36 lb/day (per person) of SW that can be composted.[22]

For MCAS Miramar, an increase in composting would assist the Station in meeting the EO SW diversion goals. Table 7-1 summarizes the current SW management activities at MCAS Miramar between FY 2008 and 2012 and includes composting potential.

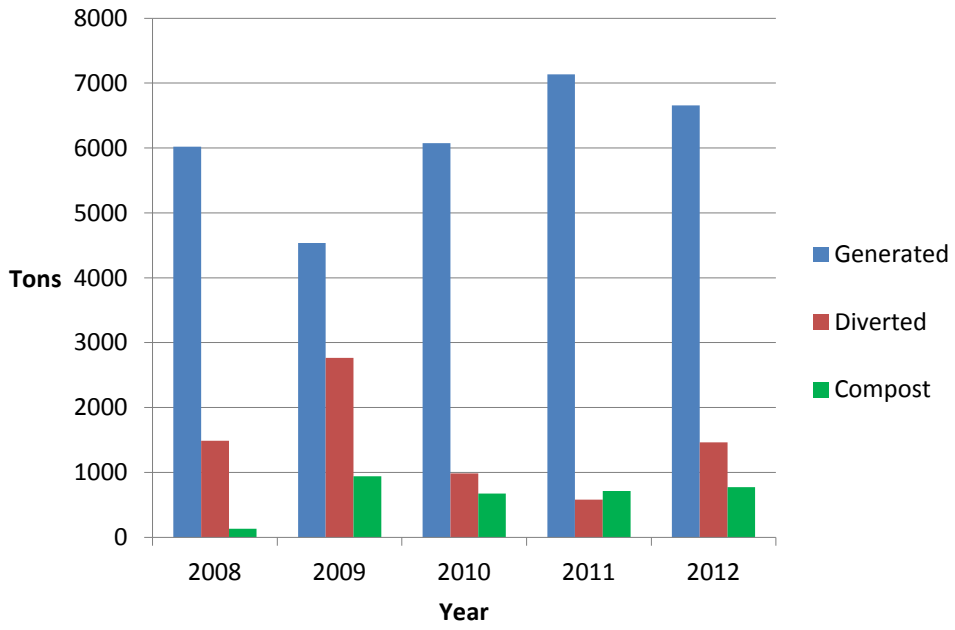
Table 7-1. SW Management Activities (tons) with Compost Potential

FY	Installation Population	Recycled	Potential Compost	Landfilled	Total	Percent Diverted
2008	2,009	1,488	132	4,402.17	6,022	27%
2009	14,292	2,763	939	832.02	4,534	82%
2010	10,265	985	674	4,415.89	6,075	27%
2011	10,832	581	712	5,841.50	7,135	18%
2012	11,779	1463	773	5,194	6,658	34%

Diversion with composting potential and landfill volumes are shown on Figure 7-1. Note that this figure does not include C&D debris. Even though MCAS Miramar would still not meet the diversion goal identified in EO 13514 with the additional composting alone, coupled with the QRP improvements discussed above, overall diversion would be enhanced.

[21] "Integrated Solid Waste Management Plan (ISWMP) Guide," Naval Facilities Engineering Command, April 2009.
[22] Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2010. EPA. 2010.

Figure 7-1. Diversion including Composting and Landfill Volumes



Located within the City of San Diego's Miramar Landfill, the Miramar Greenery produces high quality compost, mulch, and wood chips.[23] MCAS Miramar has considered but will not implement composting aboard the Station. MCAS Miramar will review current food and green waste management procedures in order to take full advantage of the Miramar Landfill's composting program, by having Miramar generated food and green waste composted there. MCAS Miramar will than receive composting credit toward diversion goals.

7.1.3 Establish a Scrap Wood Waste Bin

To reduce the amount of wood that is disposed of as SW, MCAS Miramar will established a "Scrap Wood Waste Only" container at the Building 8219, Solid Waste Collection Area. This will reduce the amount of wood waste that is currently disposed of in SW containers along the flight line. If the wood is segregated in this manner, it will be sent to the Miramar Landfill and chopped up as woodchips for landscaping reuse.

7.2 RECOMMENDED P2 BEST MANAGEMENT PRACTICES

The following BMPs have been identified for implementation at MCAS Miramar.

7.2.1 C&D Recordkeeping

C&D debris is generated by construction projects aboard the Station. Management and reporting of the types and amounts generated and recycled at MCAS Miramar are the responsibility of the contractor under the terms of the contract. The contractors often do not report the volume of material generated and recycled to the Environmental Management Division. To facilitate this recordkeeping, a form is included

[23] http://www.sandiego.gov/environmental-services/pdf/miramar/GreeneryGuide.pdf

in Appendix A of this ISWM Plan. Also included in Appendix A is a bulleted step-by-step approach to reducing, reusing, and recycling demolition waste.

7.2.2 Continued Education and Awareness

Education and awareness are vital pieces of all ISWM Programs. To ensure program success, all facets of ISWM require continuous education and/or advertising. Currently, the Environmental Management Division conducts monthly meetings with tenant Environmental Compliance Coordinators regarding environmental programs. These meetings are the perfect setting to make tenants aware of the ISWM Program and how they can help the Station achieve continued diversion success. On-going awareness and training of SW programs is crucial to long-term success.

APPENDIX A -
CONSTRUCTION AND DEMOLITION DEBRIS DATA COLLECTION FORM

Marine Corps Air Station Miramar

C&D Recordkeeping Form

Contractor: x

Contract Number: x

Project Description: x

Date	Type of Material	ACM[1] (YF, YN, N)	ACM Source	Bulk load (m^3 or yd^3)	Weight (lb)	Weight (ton)	Recycled or Disposed	Cost	Revenue	Final Disposition Location

1. ACM (Asbestos Containing Material): Yes, friable YF; Yes, non-friable, YN; or No, N.

Step-by-step approach to reducing, reusing, and recycling construction and demolition (C&D) waste:

1. Inspect the Site: Perform a thorough visual assessment of the structure and surrounding area. Determine what types of materials will be available, anticipated volume of material, and level of contamination.
2. Assess Markets: Contact local materials processors/end markets to acquire specification requirements for material preparation, acceptable level of contamination and delivery instructions. Determine whether items should be source-separated or can be commingled.
3. Pre-Demolition Audit and Removal: Match up potential end-users with the materials that can be salvaged before demolition begins. Materials such as doors, sinks, toilets, light fixtures and windows can all be salvaged through skilled removal.
4. Develop Contract Documents: Specify which materials shall be salvaged and how they will be prepared. Specify required use of recordkeeping form.
5. Site Setup: Identify locations for separation of materials at the job site in the early stages of planning. Estimate the quantities of materials to be generated and size of containers that will be required. Clearly designate recycling bins by color and/or large identification signs. Bins may need to be located in a fenced area to prevent contamination by those who are not familiar with the project.
6. Provide Education: Develop an education program to teach MCAS Miramar staff and contractors about waste reduction, source separation and recycling of C&D materials.
7. Provide Onsite Management: The most successful programs will be those that have close onsite management. Assign staff to monitor the recycling containers for contamination and to answer material preparation questions the contactor may have.
8. Monitor Disposal and Diversion: Use scale, if available, or volume-based conversions to determine level of diversion.

APPENDIX B-
SOLID WASTE CONTAINER LOCATION

Marine Corps Air Station (MCAS), Miramar													
ELIN	**Location By Building**	**Activity / Customer**	**No. and Size of Containers**	**Service Frequency**	**Collection Days**							**Annual Services**	**Note Key**
					SUN	**MON**	**TUE**	**WED**	**THU**	**FRI**	**SAT**		
	STATION FACILITIES												
050AA	MAC1-DET B	MCAS Miramar	2 –5 CY	W			X					104	
050AA	EOD/B-21020	MCAS Miramar	2 –5 CY	W		X						104	
050AA	NBC/B-21021	MCAS Miramar	1 –5 CY	2W			X			X		104	
050AA	CAMP ELLIOT B-21132B	MCAS Miramar	1 –5 CY	W			X					52	
050AA	CAMP ELLIOT/B-21138	MCAS Miramar	2 –5 CY	2M	Twice Monthly							48	
050AA	WAREHOUSE 21139	MCAS Miramar	1 -40 CY	1M	Monthly Mondays							12	
050AA	PISTOL RANGE/B-21302	MCAS Miramar	2 –5 CY	W								104	
050AA	FIELD MAINT. SHOP/ B-22101	MCAS Miramar	1 –5 CY	W			X					52	
050AA	INERT WHSE/B-22102	MCAS Miramar	1 –5 CY	W			X					52	
050AA	WEAPONS ASSEMBLY/ B-22103	MCAS Miramar	1 –5 CY	2W			X			X		104	
050AA	WEAPONS ASSEMBLY-REG. LUMBER/B-22103	MCAS Miramar	1-40 CY	3M	Three Times Monthly							36	
050AA	WEAPONS ASSEMBLY/ B-22103	MCAS Miramar	1 – 40 CY	M	Monthly							12	
050AA	MAINT. SHOP/B-22595	MCAS Miramar	1 –5 CY	W			X					52	
050AA	RIFLERANGE-E MIR/B-23030	MCAS Miramar	2 –5 CY	W			X					104	
050AA	LEGAL/B-2244	MCAS Miramar	1 –5 CY	2W		X					X	104	
050AA	MITSCHER & ELROD PARK	MCAS Miramar	1 –5 CY	2W		X				X		104	
050AA	JRC/TMO/B-2258	MCAS Miramar	1 –5 CY	2W		X			X			104	
050AA	ELECTRONICS/COMM/ B-3322	MCAS Miramar	1 –5 CY	2M	Twice Monthly							24	
050AA	3RD MAW BAND/B-3379	MCAS Miramar	1 –5 CY	3W		X		X		X		156	
050AA	MESS HALL/B-5500	MCAS Miramar	5-5 CY	5W		X	X	X	X	X		1,300	
050AA	CHAPEL/B-5632	MCAS Miramar	1 –5 CY	2W		X				X		104	
050AA	MWSS-373 WHSE/B-6001	MCAS Miramar	2 –5 CY	W						X		104	
050AA	MWSS-373/B-6003	MCAS Miramar	1 –5 CY	4W			X	X	X	X		208	
050AA	MWSS-374/B-6004	MCAS Miramar	1 –5 CY	3W			X		X	X		156	
050AA	GENERAL STORE/B-6006	MCAS Miramar	1 –5 CY	3W			X		X	X		156	
050AA	MWSS-374/B-6008	MCAS Miramar	1 –5 CY	4W			X	X	X	X		208	
050AA	NMC1/B-6012	MCAS Miramar	1 –5 CY	2W		X			X			104	

ELIN	Location By Building	Activity / Customer	No. and Size of Containers	Service Frequency	Collection Days							Annual Services	Note Key
					SUN	MON	TUE	WED	THU	FRI	SAT		
050AA	MAG-46-MTCE/B-6014	MCAS Miramar	1 –5 CY	2W		X			X			104	
050AA	GENERAL STORAGE/ B-6016	MCAS Miramar	1 –5 CY	3W			X		X	X		156	
050AA	MWSS-373/B-6018	MCAS Miramar	1 –5 CY	3W			X		X	X		156	
050AA	MWSS-373/B-6022	MCAS Miramar	1 –5 CY	W		X						52	
050AA	HEAVY EQUIPMENT (ADCSSD)/B-6216	MCAS Miramar	1 –5 CY	3W			X	X		X		156	
050AA	CSSD-14/B-6217	MCAS Miramar	2 –5 CY	5W	X		X	X		X	X	520	
050AA	WAREHOUSE/B-6237	MCAS Miramar	1 –5 CY	3W		X	X		X			156	
050AA	WAREHOUSE/B-6238	MCAS Miramar	2 –5 CY	3W		X			X		X	312	
050AA	THRIFT STORE/B-6275	MCAS Miramar	1 –5 CY	3W		X	X		X			156	
050AA	RECYCLING/B-6310	MCAS Miramar	4-5 CY	3W		X			X		X	624	
050AA	RECYCLING/B-6310	MCAS Miramar	2-40 CY	3M	Three Times Monthly							72	
050AA	RECYCLING (TREATED LUMBER)/B-6310	MCAS Miramar	1-40 CY	2M	Twice Monthly							24	
050AA	PWD/B-6311	MCAS Miramar	2 –5 CY	2W		X			X			208	
050AA	FOOD LOCKER/B-6316	MCAS Miramar	1 –5 CY	2W		X				X		104	
050AA	ENVIRONMENTAL/B-6317	MCAS Miramar	1 –5 CY	W		X						52	
050AA	TRANSPORTATION/ B-6317	MCAS Miramar	1 –5 CY	3W			X		X		X	156	
050AA	TRANSPORTATION/ B-6318	MCAS Miramar	1 –5 CY	3W			X		X		X	156	
050AA	SECURITY KENNEL ADMIN/B-6644	MCAS Miramar	1 –5 CY	W		X						52	
050AA	HAZMAT												
050AA	STORAGE/TRANSFER/ B-6687	MCAS Miramar	1 –5 CY	2W		X			X			104	
050AA	MALS-16/B-7116	MCAS Miramar	2 –5 CY	2W			X			X		208	
050AA	MACG-38 STORAGE/ B-7133	MCAS Miramar	2 –5 CY	3W		X		X		X		312	
050AA	MACG-38 STORAGE/ B-7133	MCAS Miramar	1-40 CY	W			X					52	
050AA	ARMORY/B-7134	MCAS Miramar	1 –5 CY	2W			X		X			104	
050AA	MALS-11 VAN PAD/B-7136	MCAS Miramar	1-40 CY	W				X				52	
050AA	AV SUPPLY/B-7208	MCAS Miramar	1 –5 CY	3W		X		X	X			156	
050AA	WAREHOUSE-REAR/ B-7209	MCAS Miramar	2-40 CY	W				X				104	
050AA	WAREHOUSE-FRONT/ B-7209	MCAS Miramar	4-5 CY	4W		X		X	X		X	832	
050AA	MACG-38/B-7515	MCAS Miramar	1 –5 CY	5W		X	X	X	X	X		260	

ELIN	Location By Building	Activity / Customer	No. and Size of Containers	Service Frequency	Collection Days							Annual Services	Note Key
					SUN	MON	TUE	WED	THU	FRI	SAT		
050AA	FUEL FARM/B-7229	MCAS Miramar	1 –5 CY	2W			X			X		104	
050AA	AVIONICS/B-7490	MCAS Miramar	2 –5 CY	5W		X	X	X		X	X	520	
050AA	G6/B-7494	MCAS Miramar	1 –5 CY	3W		X		X		X		156	
050AA	ADMINISTRATION												
050AA	OFFICE (AVIATION SUPPLY)/B-7550	MCAS Miramar	2 –5 CY	5W		X	X	X		X	X	520	
050AA	AVIONICS SHOP/B-7690	MCAS Miramar	2 –5 CY	5W		X	X	X	X	X		520	
050AA	CRYOG/B-8113	MCAS Miramar	1-40 CY	2M	Twice Monthly							24	
050AA	VMGR-352/B-8116	MCAS Miramar	1 –5 CY	5W		X	X	X	X	X		260	
050AA	GSE SHOP/B-8119	MCAS Miramar	1 –5 CY	2W			X		X			104	
050AA	PARKING LOT/B-8219	MCAS Miramar	3-5 CY	5W		X	X	X	X	X		780	
050AA	PARKING LOT/B-8219	MCAS Miramar	2-40 CY	3W		X		X		X		312	
050AA	H&HS/B-8380	MCAS Miramar	1 –5 CY	2W			X			X		104	
050AA	3RD MAW	MCAS Miramar	4-5 CY	3W		X		X		X		624	
050AA	ENGINEERING MAINT. SHOP/B-8461	MCAS Miramar	2 –5 CY	6W		X	X	X	X	X	X	624	
050AA	MAG-11/B-8477	MCAS Miramar	2 –5 CY	2W			X		X			208	
050AA	GSE/B-8478	MCAS Miramar	2 –5 CY	2W				X		X		208	
050AA	COMCAB-WEST/B-8630	MCAS Miramar	2 –5 CY	3W		X		X		X		312	
050AA	APPLD INST												
050AA	TRAINING/ B-8656	MCAS Miramar	1 –5 CY	3W		X		X		X		156	
050AA	STORAGE/B-8669	MCAS Miramar	1 –5 CY	2M	Twice Monthly							24	
050AA	COMPTROLLER/B-8671	MCAS Miramar	1 –5 CY	3W		X		X		X		156	
050AA	FISC/H2/B-8672	MCAS Miramar	1 –5 CY	W				X				52	
050AA	HGR O PARKING LOT	MCAS Miramar	1 –5 CY	5W		X	X	X	X	X		260	
050AA	HQ MAG-46/B-9175	MCAS Miramar	2 –5 CY	5W		X	X	X	X	X		520	
050AA	ELEC/COMM/B-9176	MCAS Miramar	1 –5 CY	W		X						52	
050AA	OUTBLDG CALA AREA/ B-9184	MCAS Miramar	1 –5 CY	M	Monthly							12	
050AA	A/C OPS/B-9211	MCAS Miramar	2 –5 CY	2W		X			X			104	
050AA	A/C FIRE STATION/B-9227	MCAS Miramar	1 –5 CY	5W		X	X	X	X	X		260	
050AA	ANTENNA STATION/B-9265	MCAS Miramar	1 –5 CY	2M	Twice Monthly							24	
050AA	RECEIVING STATION/ B-9267	MCAS Miramar	1 –5 CY	M	Monthly Tuesdays							12	
050AA	HANGER 4/B-9470	MCAS Miramar	4-5 CY	5W		X	X	X	X	X		1040	

ELIN	Location By Building	Activity / Customer	No. and Size of Containers	Service Frequency	Collection Days							Annual Services	Note Key
					SUN	MON	TUE	WED	THU	FRI	SAT		
050AA	HANGER 3/B-9500	MCAS Miramar	3-5 CY	5W		X	X	X	X	X		780	
050AA	HANGER 5/B-9570	MCAS Miramar	5-5 CY	5W		X	X	X	X	X		1300	
050AA	MISSILE MAINT/B-9648	MCAS Miramar	2 –5 CY	6Y	Six Times Yearly							12	
050AA	HANGER 6/B-9670	MCAS Miramar	1-40 CY	2W			X		X			104	
050AA	CONSOLIDATED												
050 AA	THEATER/B-2242	MCAS Miramar	3-6 CY	3W		X			X		X	468	
050 AA	WAREHOUSE (PWC CODE 800)/B-6240	MCAS Miramar	3-5 CY	2W		X			X				
	CAT A FACILITIES												
050 AB	POND	MCCS CAT A	1 –5 CY	M	Monthly							12	
050 AB	FITNESS CENTER/B-2002	MCCS CAT A	2 –5 CY	3W		X		X		X		312	
050AB	MUSEUM/B-2264	MCCS CAT A	1 –5 CY	2W		X					X	104	
050AB	MCCS/B-2273	MCCS CAT A	1 –5 CY	3W		X		X		X		156	
050AB	FAMILY SERVICES/B-2274	MCCS CAT A	1 –5 CY	2W		X			X			104	
050AB	GYM/B-2471	MCCS CAT A	2 –5 CY	2W		X				X		208	
050AB	SOFTBALL FIELD/B-2626	MCCS CAT A	1 –5 CY	2W		X			X			104	
050AB	LIBRARY/B-5305	MCCS CAT A	1 –5 CY	W				X				52	
050AB	THE BARN/B-7115	MCCS CAT A	1 –5 CY	2W		X			X			104	
050AB	FAMILY SERVICES B-2525	MCCS CAT A	2 –5 CY	5W		X	X	X	X	X		520	
050AB	MCCS RECEIVING/B-6011	MCCS CAT A	1 –5 CY	2W		X			X			104	
	CAT C FACILITIES												
050AC	OFFICER'S CLUB/B-4472	MCCS CAT C	3-6 CY	3W		X		X		X		468	
050AC	HORSE STABLES/B-19547	MCCS CAT C	1 –5 CY	W			X					52	
050AC	MIRAMAR LODGE/B-2516-18	MCCS CAT C	4-5 CY	2W		X			X			416	
050AC	(MAINT.)/ B-3426	MCCS CAT C	1 –5 CY	W				X				52	
050AC	GOLF COURSE (SAND TRAP REST.)/B-3750	MCCS CAT C	2 –5 CY	W					X			104	
050AD	COMMISSARY / B-2661	MCAS Miramar	15-6 CY	D7	X	X	X	X	X	X	X	5460	
050AE	MEDICAL CLINIC / B-2496	MCAS Miramar	5-5 CY	4W		X		X		X	X	1040	

ELIN	Location By Building	Activity / Customer	No. and Size of Containers	Service Frequency	Collection Days							Annual Services	Note Key
					SUN	MON	TUE	WED	THU	FRI	SAT		
050AE	DENTAL CLINIC / B-2495	MCAS Miramar	1 –5 CY	4W		X		X		X	X	208	
050AE	DENTAL CLINIC / B-2495	MCAS Miramar	1 –5 CY	W			X					52	
	Reserve Center/B-20300												
050AF	RESERVE CENTER/B-20300	MCAS Miramar	2 –5 CY	2W			X			X		208	
050AF	B-7684/85 BRIG	MCAS Miramar	6-6 CY	3W		X		X		X		936	
050AG	VET CLINIC/B- 6360	MCAS Miramar	1 –5 CY	2W		X			X			104	
	BEQ/BOQs MCAS Miramar												
050AH	BOQ/B-4312	MCAS Miramar	1-5 CY	5W		X	X	X	X	X		260	
050AH	BOQ/B-4325	MCAS Miramar	1-5 CY	5W		X	X	X	X	X		260	
050AH	BEQ/B-5105	MCAS Miramar	2-4 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5110	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5111	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5207	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5210	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5302	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5307	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5401	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5403	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5401	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5406	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5414	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5416	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5509	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5533	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5535	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5640	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5699	MCAS Miramar	4-5 CY	5W		X	X	X	X	X		1040	
050AH	BEQ/B-5703	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5704	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	
050AH	BEQ/B-5712	MCAS Miramar	2-5 CY	5W		X	X	X	X	X		520	

ELIN	Location By Building	Activity / Customer	No. and Size of Containers	Service Frequency	Collection Days							Annual Services	Note Key
					SUN	MON	TUE	WED	THU	FRI	SAT		
050AJ	FIRE STATION #62, E. MIRAMAR/B-21134	MCAS Miramar	2-5CY	W			X					104	
050AJ	FIRE STATION #62, E. MIRAMAR	MCAS Miramar	1-40 CY	M	Monthly							12	
050AJ	FIRE STATIONS/B-7224	MCAS Miramar	2-5 CY	2W		X		X				208	
	Child Care MCAS Miramar												
050AK	CHILD CARE CENTER/B-2740	MCAS Miramar	2-5 CY	2W		X			X			208	
	MCAS Miramar PWD – CAT B Facilities												
050AL	YOUTH CENTER/B-2247	MCCS CAT B	1-5 CY	2W				X			X	104	
0505AL	SWIMMING POOL/B-2396	MCCS CAT B	1-5 CY	2W		X			X			104	
050AL	YOUTH CENTER/B-2247	MCCS CAT B	1-5 CY	2W				X			X	104	
050AL	YOUTH CENTER/B-2247	MCCS CAT B	1-5 CY	2W				X			X	104	
050AL	AUTO HOBBY SHOP/B-6673	MCCS CAT B	2-5 CY	W			X					104	
	MCAS Miramar Leather Neck Museum												
050AM	T-4203 LEATHER NECK MUSEUM	MCAS Miramar	1-5 CY	W		X						44	
050AN	MCX FOOD COURT/B-2261	MCCS CAT C	1 –5 CY	5W		X	X	X	X	X		260	
050AN	MCX WAREHOUSE/B-6239	MCCS CAT C	1 –5 CY	2W		X			X			104	
050AN	MCX FLEET CAFETERIA/B-8600	MCCS CAT C	2 –5 CY	5W		X	X	X	X	X		520	
050AN	MCX WAREHOUSE/ B-21133	MCCS CAT C	2 –5 CY	2W		X		X				208	
050AN	MCX JET MART/B-2499	MCCS CAT C	2 –5 CY	2W		X		X				208	
050AN	MARINE CORPS EXCHANGE/B-2660	MCCS CAT C	10-6 CY	D7	X	X	X	X	X	X	X	3640	
050AN	MCX CAR WASH B-2761	MCCS CAT C	1 –5 CY	3W		X			X		X	156	
050AN	MCX GAS STATION (MAIN)/B-6214	MCCS CAT C	3-5 CY	3W		X		X			X	468	
050AN	MCX GAS STATION (ANNEX)/B-7498	MCCS CAT C	1 –5 CY	3W		X		X			X	156	
050AP	HRSC Bldg 6300	Miramar	3-5 cy	1W					X			156	
050AQ	BRIG Bldg 7683	Miramar	3-6cy	1W	X							52	