



NAVAL SUPPORT ACTIVITY NAPLES



INTEGRATED PEST MANAGEMENT PLAN

DECEMBER 2015

PREPARED BY



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NSA Naples Integrated Pest Management Plan Approval and Implementation

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Date

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Date

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Approved for Implementation:

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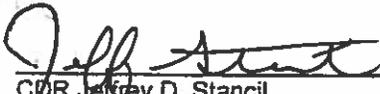
Naval Support Activity Integrated Pest Management Plan Technical Review

The Integrated Pest Management Plan has been reviewed in accordance with DODI 4150.07.



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Integrated Pest Management Plan Annual Review

Year	Completion Date	Integrated Pest Management Coordinator	Copies of changes to the Pest Management Consultant (Annual) Date Completed
16			
17			
18			
20			
21	Rewrite		

Scheduled On-Site Pest Management Technical Review

Scheduled Date	Integrated Pest Management Coordinator	Pest Management Consultant Date Review Completed

Note: Technical Reviews should be scheduled approximately 3 years apart and in conjunction with an EMS review if possible.

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Additional Source Documents

Pest Management Program Review Reports

Current Contracts

Applicable DOD and Federal Regulations

Installation-specific Pesticide Discharge Management Plan

Integrated Pest Management Plan Annual Update Form

Natural and Cultural Resources Management User’s Guide (2011)

Manual of Naval Preventive Medicine (NAVMED P) 5010-1 (2004), Chapter 1, Food Safety

Manual of Naval Preventive Medicine (NAVMED P) 5010-8 (2004), Chapter 8, Navy Entomology and
Pest Control Technology

NAVFAC Online Pesticide Reporting System Tutorial

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EXECUTIVE SUMMARY

This Integrated Pest Management Plan is a comprehensive, long-range document that captures all of the pest management operations and pesticide-related activities conducted on the installation. It incorporates pest management practices and the local, federal, and Department of Defense regulations, and conforms to the requirements of the Environmental Final Governing Standards Italy (Chapter 11, Pesticides), [Department of Defense Instruction 4150.07](#), DOD Pest Management Program, and [Chief of Naval Operations Instruction 6250.4C](#), Navy Pest Management Programs. It supplies comprehensive information about the pest management program to installation staff and internal and external compliance auditors.

The Naval Facilities Engineering Command, Atlantic's Applied Biology Center prepared this plan using information obtained through pest management data collection, on-site observations, installation personnel interviews, and document reviews.

The main goal of the various pest control functions is to support the mission of Naval Support Activity Naples. Commercial contract pest control operators currently provide the majority of the pest control services for the installation. In-house pest control operators provide pest control at the golf course located at Carney Park. Pest control services are needed on the installation in order to:

1. Provide services that will prolong the life of the structures through subterranean termite and nuisance pest control
2. Maintain the safety and security of industrial and storage areas through weed control
3. Provide nuisance pest control to all buildings (except public-private venture housing) and outdoor areas to ensure a good working and living environment
4. Control weed and insect pests in all recreational and lawn areas to maintain aesthetics and provide recreational facilities to personnel
5. Provide control of mosquitoes, flies, and other potential disease vectors to ensure the comfort and well-being of all personnel
6. Provide vertebrate pest control, including rodent control, to all areas of the installation.

For the current level of work to be accomplished, a sufficient staff of qualified applicators must be maintained. Contract personnel must meet host nation certification requirements as specified by the contract. Pest management performance assessment representatives must successfully take an initial Pest Management Performance Assessment Representatives course. To maintain their certification, the Pest Management Performance Assessment Representatives and Department of Defense pesticide applicators must successfully pass a Department of Defense pest management training and recertification course every three years. Pest control facilities must comply with current safety standards to provide a safe workplace and to minimize pesticide hazards.

This plan focuses on safe, environmentally-sound, and cost-effective control of pests through integrated pest management. Integrated pest management depends on education, proper surveillance, and

identification of pests, non-chemical and chemical control methods, and individual responsibility for pest prevention.

CHAPTER 1

Introduction

1.1 INTEGRATED PEST MANAGEMENT PLAN

The Integrated Pest Management Plan (IPMP) is a long-range, comprehensive planning and operational document that establishes the strategy and methods for conducting a safe, effective, and environmentally-sound Integrated Pest Management (IPM) program. The IPMP covers all pest management and pesticide-related activities conducted by civilian and military Department of Defense (DOD) personnel and commercial contractors within all functional areas of the installation.

1.1.1 Authority

[Department of Defense Instruction \(DODI\) 4150.07](#), DOD Pest Management Program; [Chief of Naval Operations Instruction \(OPNAVINST\) 6250.4C](#), Navy Pest Management Programs; [Chief of Naval Operations Manual \(OPNAV M\) 5090.1](#), Environmental Readiness Program Manual, Chapter 24—Pesticide Compliance Ashore; and the Environmental Final Governing Standards (FGS) Italy (Chapter 11, Pesticides) require that all Navy installations develop and implement an IPMP in accordance to the guidelines. The IPMP will detail all aspects of pesticide management including administration, procurement, contract services, storage, disposal, safety, reporting, vehicles, integrated pest management, and applicable laws and regulations.

1.1.2 Department of Defense Measures of Merit

This plan provides the framework for the installation to meet the DOD's annual goals or measures of merit (MoMs). As established in [DODI 4150.07](#), and updated by the Armed Forces Pest Management Board, the MoMs are:

1. Measure of Merit 1: All DOD installations will maintain installation Pest Management Plans that have been reviewed and approved by a DOD-certified Pest Management Consultant and annually updated by the installation pest management coordinator.

Naval Support Activity (NSA) Naples helps meet this goal by implementing (via the commanding officer's signature) this plan.

2. Measure of Merit 2: All DOD installations will adhere to the principals of integrated pest management and the DOD will maintain the goal of minimizing annual pesticide use by both government and contractor pesticide applicators on its installations. This goal is set at 425,000 lbs of active ingredient, the DOD's average annual usage for Fiscal Years 2007–2009 and an overall 52 percent reduction from the original fiscal year 1993 baseline.

NSA Naples provides data for this MoM through the reporting requirement ([section 2.3](#)).

3. Measure of Merit 3: All DOD pesticide applicators will be certified. All contracted employees shall have appropriate state or host-nation pesticide applicator certification in the appropriate categories at the time the contract is let.

NSA Naples ensures proper certification of all applicators through regular verifications and maintains a list of certifications in appendix E of this plan. See [section 2.4](#) for training and certification requirements.

1.1.3 Integrated Pest Management Plan Implementation

The IPMP must be reviewed and approved by installation stakeholders and professional pest management consultants (PPMCs) from Naval Facilities Engineering Command (NAVFAC), Atlantic and the Bureau of Medicine and Surgery (BUMED). The IPMP is implemented upon signature of the installation's commanding officer. The integrated pest management coordinator (IPMC) has the task of implementing, coordinating, and executing the IPMP among each of the functional areas of the installation.

1.1.4 Integrated Pest Management Plan Maintenance

Once the IPMP has been developed and implemented, it must be reviewed annually and updated as necessary. The installation IPMC is responsible for maintaining the IPMP.

1.1.4.1 Internal Review

The IPMC shall conduct an internal review annually in coordination with the pest management service providers (PMSPs) and other functional area points of contact (POCs). The review should include updating contract information, applicator certifications, pesticides, and pest management operations to be used on the installation, as well as, updating pesticide use records. The pest management program self-assessment checklist (appendix C) is available as a tool to review compliance issues during the internal review.

1.1.4.2 Off-Site Review

The IPMC may request that a NAVFAC Atlantic Applied Biology PPMC perform a review of regulatory requirements, reporting, and pesticide approval procedures.

1.1.4.3 On-Site Review

The NAVFAC Atlantic Applied Biology PPMC shall perform an on-site review of the entire pest management program every three years to ensure compliance with the IPMP. The review may be performed more frequently if extensive program problems exist.

1.1.4.4 Integrated Pest Management Plan Rewrite

The IPMP should be rewritten every five years to reflect new contracts, personnel, pest management practices, and regulatory changes.

1.2 INSTALLATION BACKGROUND

This IPMP covers pest management operations at Capodichino, Gaeta, Gricignano, and Carney Park.

1.2.1 Mission

The mission at NSA Naples is to exercise command and area coordination over assigned activities, to coordinate provisions, logistics and administrative support to authorized United States (U.S.) personnel attached to North Atlantic Treaty Organization (NATO) commands located in the Naples area, and U.S. Navy operating forces, naval activities, and units in the Naples/Gaeta area as well as other United States agencies as directed, and to carry out responsibilities for other U.S. naval matters assigned by competent authority.

Naval Support Activity Naples provides administrative and logistics support to tenant commands located throughout the Mediterranean region including:

1. NATO Regional Headquarters
2. Joint Forces Command
3. Commander, Fleet Air Mediterranean (Commander, Task Force [CTF] 63 and CTF 67)
4. Commander, Naval Surface Group Mediterranean
5. Commander, Submarine Group Eight
6. U.S. Naval Hospital, Naples, Italy
7. U.S. Naval Dental Center, Europe
8. U.S. Naval Legal Service Office, Europe and Southwest Asia
9. Naval Computer and Telecommunications Area Master Station, Europe Central
10. Naval Security Group Activity
11. Personnel Support Detachment, Naples
12. U.S. Trial Service Office, Europe and Southwest Asia
13. Officer in Charge of Construction, Naples
14. DOD Dependent Schools, Naples/Gaeta
15. Morale, Welfare, and Recreation (MWR) Department, NSA Naples

1.2.1 Location and Facilities

The Capodichino Compound is located in the northeast section of Naples, adjacent to the Naples International Airport. The compound is on land ceded for use by the Italian Ministry of Defense. Capodichino provides the U.S. Navy's air operation and supply facilities and bachelor housing serving NSA Naples. The major activities at Capodichino include the supply department, fleet mail center, naval overseas air cargo terminal, fleet weather detachment, and air navigation office. The complex also provides personnel support for approximately 300 personnel associated with the U.S. Coast Guard, the U.S. Air Force, and the Naval Communications Center. These activities are housed in approximately 50 separate buildings on 63 acres.

Naval Support Activity Detachment Gaeta is located in the city of Gaeta. The detachment is the headquarters of the U.S. Navy's SIXTH Fleet and homeport to its flagship the USS *Mount Whitney*.

The Gricignano Support Site is located on 190 acres about 30 km (18 miles) northwest of Naples in the municipality of Gricignano d'Aversa (province of Caserta) in an agricultural area known as Boscariello. The Gricignano Support Site provides family support facilities for NSA Naples including housing, educational, recreational, exchange, commissary, and medical support services.

Carney Park is an 85-acre recreational area that is located in the Regional Park of Campi Flegrei (*Parco Regionale dei Campi Flegrei*). Carney Park contains outdoor recreational areas including ball fields, campgrounds, tennis courts, a golf course, and an outdoor swimming pool.

1.3 PEST MANAGEMENT PROGRAM OVERVIEW

The pest management program is summarized below.

No in-house pesticide applicators are assigned to provide general pest management services at NSA Naples. Pest control activities are performed by contractors; however, there is an in-house certified pest controller located at Carney Park who performs ornamental and turf pest control on the site, primarily for the golf course and MWR recreational fields.

Individual personnel, including employees and housing tenants, are responsible for preventing and reducing pest infestations in their workplace and/or residence. This IPMP encompasses all of the activities of these organizations and individuals.

1.3.1 Pest Management Objectives

The objectives of the installation's pest management program are:

1. The prevention of pest-related health and safety problems that affect the mission.

Examples of health-related pests that may affect the mission include, but are not limited to mosquitoes, cockroaches, and bed bugs. Any pest may impact the mission when its numbers become excessive. Prevention of pest-borne disease and injury is a component of force health protection. Force health protection seeks to maintain a healthy and fit military and civilian force in order to maintain the highest levels of readiness. Pest management is a force multiplier for construction battalions, maintenance commands, and other deployable units. Additionally, the military and civilian infrastructure on the installation must be protected in order to provide the necessary support to these units as well.

2. The prevention of pest damage to equipment and subsistence used to support the operational mission of the activities and tenant commands.

Equipment and materials are susceptible to physical damage by pests and the financial costs of such damage can be high. Rodents, for example, can cause considerable damage to electronic equipment through gnawing on electrical components. Examples of pests that may damage equipment and subsistence include, but are not limited to rodents, wood-destroying pests, and stored-product pests.

3. Vegetation management to protect the local environment.

The introduction of non-native/invasive species of plants can increase the risk of fire and degrade the surrounding native environment that is home to a number of endangered and threatened animal and plant species.

4. The protection of government real property, materiel, and aesthetics.

Buildings and roads that form the infrastructure of the installation are susceptible to pests. If not adequately prevented and controlled, termites can cause extensive damage to wood structures. Weeds can cause damage to roadways and increase the risk of fire.

5. The reduction of the use of and dependence on pesticides.

1.3.2 Program Requirements

1.3.2.1 Administration

Proper administration of the pest management program ensures accountability and documentation through planning, record keeping, reporting, training, pesticide and contract approval, and regulatory compliance. Table 1-1 outlines the pest management administrative program requirements.

Requirement	Description	Reference	Responsibility	Locator
PLANNING	Review and revise the Integrated Pest Management Plan annually.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • DODI 4150.07 	<ul style="list-style-type: none"> • IPMC 	Section 1.2
RECORDING	Record all pest management operations conducted on the installation after each operation.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • DODI 4150.07 • FGS Italy 	<ul style="list-style-type: none"> • All pesticide applicators 	Section 2.3.1
MAINTAINING	Maintain records of all pest management operations conducted on installation on-site indefinitely.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • DODI 4150.07 • FGS Italy 	<ul style="list-style-type: none"> • IPMC in coordination with PMPARs 	Section 2.3.2
REPORTING	Compile and report all pest management operations to NAVFAC Atlantic Applied Biology monthly.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • DODI 4150.07 • FGS Italy 	<ul style="list-style-type: none"> • IPMC in coordination with PMPARs 	Section 2.3.3
PESTICIDE APPLICATOR CERTIFICATION	Ensure that all personnel applying pesticides on installations have current DOD pesticide applicator certification if in-house or state commercial applicator certification if	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • DODI 4150.07 • FGS Italy 	<ul style="list-style-type: none"> • IPMC in coordination with PMPARs 	Section 2.4

	contracted.			
COMPLIANCE	Ensure that all program elements are in compliance with all federal regulations. Navy policy is to comply with local/state regulations.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • DODI 4150.07 	<ul style="list-style-type: none"> • IPMC in coordination with PMPARs 	Section 3.3
PESTICIDE APPROVAL	Compile and submit list of new pesticides to NAVFAC Atlantic Applied Biology for approval for use on the installation.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • DODI 4150.07 	<ul style="list-style-type: none"> • IPMC in coordination with PMPARs 	Section 2.2
CONTRACT REVIEW	Review pest management contract specifications for compliance with the Integrated Pest Management Plan and submit to NAVFAC Atlantic Applied Biology for final review and approval prior to advertising.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • DODI 4150.07 	<ul style="list-style-type: none"> • Facilities Support Contracting personnel • PMPARs 	Section 2.5
<ul style="list-style-type: none"> • * (applies to restricted-use pesticides only) 				

Table 1-1. Pest management administrative program requirements.

1.3.2.2 Operations

Operations are the day-to-day management of pests through pesticides and non-chemical means. Pest management on the installation includes the following categories of operations:

1. Ornamental and turf—Control and management of pests of landscape plants and turf including arthropods, fungi, and weeds.
2. Right-of-way—Control and management of vegetation along roadways as well as vegetation control near fuel farms to reduce fire risk and along fence lines to enhance security.
3. Aquatic Weed Control—Control of vegetation in ponds and ditches.
4. Industrial, Institutional, Structural, and Health-Related—Control and management of pests in and around buildings. Pests may include cockroaches, termites, bees, venomous animals, stored product insects, rodents, and feral animals.
5. Public Health—Control and management of human and animal disease vectors such as rodents, mosquitoes, flies, and fleas.

6. Nuisance Pest Control—Control of insect pests that are a nuisance or annoyance to base personnel, but do not present a health risk.
7. Invasive weeds—Removal of non-native species of plants that are detrimental to native plant and animal habitats.
8. Vertebrate Control—Control of animal predators that prey upon endangered or threatened animals and their habitats, or infest food and material storage.

Each of these operations must meet various requirements that are listed and described in table 1-2.

Requirement	Description	Reference	Responsibility	Locator
INTEGRATED PEST MANAGEMENT	“Federal agencies shall use Integrated Pest Management techniques in carrying out pest management activities and shall promote Integrated Pest Management through procurement and regulatory policies, and other activities.”	<ul style="list-style-type: none"> • 7 U.S.C. § 136r-1 	<ul style="list-style-type: none"> • IPMC • Pesticide applicators 	NSA Naples IPMP - Section 3.1.1
STORAGE	Pesticides kept on installations must be procured and stored in accordance with installation and federal regulations. Navy policy is to comply with local/state regulations.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • AFPMB TG 17 • FGS Italy 	<ul style="list-style-type: none"> • Pest control shop supervisor 	NSA Naples IPMP - Section 3.4.3
CONTAINERS	All containers used to store or transport a pesticide must have the original or copy of the original label attached. Service containers must have attached label identifying the person responsible for the container,	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • DODI 4150.07 • FGS Italy 	<ul style="list-style-type: none"> • Pesticide applicators 	NSA Naples IPMP - Section 3.4.5.1

	the name of chemical, and the signal word.			
VEHICLES	Must carry pesticide spill kits and properly secure pesticides and pesticide application equipment when not in use.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C 	<ul style="list-style-type: none"> • Pesticide applicators • Vehicle operators 	NSA Naples IPMP - Section 3.4.3.3
APPLICATION	Only registered pesticides will be used. Applicators must apply pesticides in a manner that ensures safety and protects the environment. A copy of the pesticide label shall be available at the application site.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • DODI 4150.07 • FGS Italy 	<ul style="list-style-type: none"> • Pesticide applicators 	NSA Naples IPMP - Section 3.4.5
APPLICATOR SAFETY	The installation must provide procedures, medical support, equipment, and supplies to ensure the safety of DOD pesticide applicators during pest control operations.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • FGS Italy 	<ul style="list-style-type: none"> • Naval Branch Health Clinic • Safety Department 	NSA Naples IPMP - Section 4.1
OCCUPATIONAL HAZARDS MONITORING	Workplace monitoring shall be conducted by the medical department to ensure a safe and healthful environment for pest management personnel.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • OPNAVINST 5100.23G 	<ul style="list-style-type: none"> • Naval Branch Health Clinic 	NSA Naples IPMP - Section 4.1.2.9
CLEANING AND DISPOSAL	Equipment shall be cleaned to prevent health and environmental hazards due to	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • FGS Italy 	<ul style="list-style-type: none"> • Pesticide applicators 	NSA Naples IPMP - Section 3.4.6

	chemical residues. Prevent water from container and equipment rinsing from entering storm drains and water bodies. Dispose of empty containers properly. Manage and dispose hazardous waste and non-hazardous waste properly.			
SPILL PREVENTION	Spill kits should be maintained in pest control shops and on pest control vehicles. Pest management personnel should be familiar with the installation spill contingency plan.	<ul style="list-style-type: none"> • OPNAVINST 6250.4C • FGS Italy 	<ul style="list-style-type: none"> • Pesticide applicators 	NSA Naples IPMP - Section 5.3.4

Table 1-2. Pest management operations program requirements.

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CHAPTER 2

Program Administration

2.1 ROLES AND RESPONSIBILITIES

The success of the pest management program depends largely on a clear understanding of the roles and responsibilities for the organizations and personnel involved. The following is a listing of the key organizations and personnel and their duties as presented in DOD guidance documents for the implementation of the IPMP.

2.1.1 Commander, Navy Installations Command

The Commander, Navy Installations Command (CNIC) is responsible for the funding and prioritizing of the pest management program.

2.1.2 Installation Commanding Officer

The installation commanding officer (CO) is responsible for the compliance and enforcement of the pest management program. The installation commanding officer delegates compliance and enforcement of the pest management program to the IPMC via the IPMC designation letter. Responsibilities of the installation CO include:

1. Budgeting for IPMPs, training, operations, and facilities in compliance with legal and DOD requirements.
2. Designating an integrated pest management coordinator in writing
3. Implementing and supporting the IPMP
4. Ensuring all pest management operations are conducted safely and have minimal impact on the environment
5. Ensuring an IPM program, minimizing the use of pesticides, is implemented
6. Ensuring the installation's IPM plan and program are in compliance with all applicable federal, state, and local laws as well as DOD regulations.

2.1.3 Integrated Pest Management Coordinator

The IPMC is designated by the installation CO in writing as the advisor to the installation CO and coordinator of all installation pest management activities. The IPMC designation letter is in [appendix E](#). Responsibilities of the IPMC include:

1. Coordinating the installation's pest management program including implementation, maintenance, and annual update of the IPMP
2. Coordinating the rewrite of the IPMP every 5 years
3. Promoting integrated pest management (IPM) in the pest management program to cost-effectively and safely manage pests and to prevent adverse environmental impact
4. Coordinating reporting of all pest management operations on the installation to NAVFAC Atlantic Applied Biology
5. Ensuring current certification and continuing pest management training of pesticide applicators and Pest Management Performance Assessment Representatives (PMPARs)
6. Receiving and compiling lists of new pesticides and uses from all Pest Management Service Providers (PMSPs) on the installation and submitting them to NAVFAC Atlantic Applied Biology for review and approval
7. Maintaining current list of approved pesticides
8. Acting as liaison between installation and Applied Biology and local, state, and federal agencies for pest management and pesticide regulatory issues
9. Ensuring the installation contracting officers submit pest management contract specifications to the Applied Biology PPMC for review prior to advertising.

2.1.4. In-House Pest Control Shop

The in-house pest control shop performs the grounds pest management at the Carney Park golf course.

2.1.5 Environmental Division

The installation environmental division provides oversight on environmental protection and compliance regarding pest management operations. Responsibilities of the department include:

1. Reviewing and approving new pesticides and pest management operations that may adversely impact the environment
2. Conducting internal compliance assessments of the pesticide and pest management program
3. Providing technical review of the IPMP.

2.1.6 Facilities Engineering and Acquisition Division

The Facilities Engineering and Acquisition Division (FEAD) prepares, manages, and assesses pest control and grounds maintenance contracts. The performance assessment representative (PAR) monitors and evaluates the performance of contracted PMSPs to ensure that pest control measures are properly applied. The PAR serves as liaison between the contractor and the IPMC. Responsibilities of the FEAD include:

1. Preparing contracts ensuring that all requirements of the IPMP are included in the contract specifications

2. Coordinating with the NAVFAC Atlantic Applied Biology PPMC for a review of pest management contract specifications prior to advertisement for bid
3. Maintaining copy of each contract on file
4. Monitoring pest management contractors; ensuring effective and safe application of pest management practices, identifying and documenting discrepancies, and seeking corrective action with contractors in accordance with the contract
5. Ensuring contractors record all pest management activities and submit reports including actual pesticide use through the NAVFAC Online Pesticide Reporting System (NOPRS) or to the IPMC on a monthly basis.

All PMPARs shall be delegated the authority (in the contract and in the PMPAR appointment letter) to halt any contract pesticide applications that:

1. Endanger or present a hazard to humans, animals, or the environment
2. Violate contract specifications, or applicable federal, state, DOD, or Navy laws/regulations
3. Violate the pesticide label.

2.1.7 United States Naval Hospital, Naples

The U.S. Naval Hospital, Naples includes preventive medicine, industrial hygiene, and occupational health departments. This section discusses responsibilities for each department.

2.1.7.1 Preventive Medicine

The U.S. Naval Hospital, Naples provides public health support to the installation in accordance with Navy Medical (Command) (NAVMED) P-5010, Manual of Naval Preventive Medicine, and [OPNAVINST 6250.4C](#). Responsibilities of the preventive medicine department include:

1. Acting as advisor and liaison to the installation CO for public health pest prevention and management
2. Conducting surveys/surveillance for pests of medical importance, such as cockroaches, mosquitoes, bed bugs, etc., through habitability and food service sanitation inspections
3. Establishing and maintaining liaison with local health agencies as they pertain to vector management and vector-borne and zoonotic disease prevention
4. Maintaining current certification as DOD category 8 (public health) pesticide applicator
5. Developing and maintaining an emergency plan for vector and pest control during a vector-borne disease outbreak or disaster
6. Providing technical review of the IPMP.
7. Establish action thresholds where applicable.

2.1.7.2 Industrial Hygiene

Industrial hygiene (IH) personnel perform surveys (i.e., for pest management employees) to characterize occupational exposures (i.e., to inherent chemical, physical, ergonomic, and biological stressors) and control measures (e.g., engineering–local exhaust and mechanical dilution ventilation systems; administrative–warning signs, standard operating procedures, training requirements, etc.; and personal protective equipment–respiratory protection and chemical resistant clothing). In addition, IH surveillance information is used to initiate, continue, or end medical surveillance.

2.1.7.3 Occupational Health

Occupational health personnel are responsible for performing all necessary medical surveillance (such as physical examinations and blood testing) for government pest management personnel, as deemed necessary.

2.1.8 Contract Pest Management Service Providers

Contract PMSPs are required to be certified as pesticide applicators by the local Italian Provincial Agricultural Office. These responsibilities apply to all contractors on the installation. Responsibilities of contract PMSPs include:

1. Conducting pest management operations in accordance with the contract specifications or lease agreements and the IPMP and in compliance with federal and state laws and regulations
2. Submitting a list of pesticides proposed for use on the installation to their government representative
3. Communicating all pest management issues and requirements via the government representative
4. Submitting daily pest management operation records to the government representative or through NOPRS.

2.1.9 Morale, Welfare, and Recreation

Morale, welfare, and recreation provides recreational activities for military and civilian personnel on the installation. This includes maintenance of the golf course and athletic fields. Additionally, MWR oversees the child development center, Bella Napoli Food Court, Olde Town Pub, the bowling alley (support site), O’Rhy Irish Pub Bar (support site), and Fairways Bar and Grill (Carney Park). With respect to golf course and athletic field maintenance, MWR must:

1. Ensure that all personnel who apply pesticides maintain current certifications in the appropriate categories (see [section 2.4](#) for more information)
2. Ensure that all pesticides are approved, prior to use, by the NAVFAC PPMC
3. Provide copies of the pesticide labels to the IPMC
4. Maintain and report records of all pesticide applications in accordance with the requirements outlined in this IPMP
5. Maintain the pesticide storage and mixing facility in accordance with the requirements of this IPMP and installation regulations

6. Obtain adequate supplies of pesticides, pesticide dispersal equipment, and personal protective equipment (PPE), and ensure equipment is properly maintained
7. Ensure that all pesticide applicators practice IPM
8. Ensure that landscape cultural management practices are used to maintain the health of plants and turf to prevent disease and pest infestations
9. Ensure that new plants brought onto the installation for landscaping in recreational areas are not invasive, infested with pests, or infected with disease.

With respect to MWR food establishments, MWR must:

1. Ensure that proper sanitation is maintained in all food handling facilities.
2. Submit any contract specifications (outside of the installation pest management base operation support (BOS) contract) for pest management to the IPMC for technical review prior to submitting the contract for bid.
3. Ensure that only current, local-licensed pesticide applicators apply pesticides. Only certified pest control operators (PCOs) should be applying chemical treatments within facility, especially food facilities.
4. Ensure that all pest management activities are reported in accordance with the requirements outlined in this IPMP (for pest management that is conducted separately from the installation contract).

2.1.10 Navy Exchange

The Navy Exchange (NEX) displays and sells household and garden pesticides for retail sale. Additionally, the NEX runs commercial food concessions including the movie theater, Subway, Taco Bell, A&W, and Kentucky Fried Chicken. With respect to pesticide sales, the NEX must:

1. Ensure that pesticides are displayed in accordance with the pesticide label and other federal, state, and local regulations.
2. Ensure that store employees are properly trained on emergency procedures in the event of a pesticide spill.

With respect to food concessions, the NEX must:

1. Ensure proper sanitation is maintained in all food handling facilities
2. Submit any contract specifications (outside of the installation pest management contract) for pest management to the IPMC for technical review prior to submitting the contract for bid
3. Ensure only current, state-licensed pesticide applicators apply pesticides. Only certified PCO's should be applying chemical treatments within facility, especially food facilities.
4. Ensure all pest management activities are reported in accordance with the requirements outlined in this IPMP (for pest management that is conducted separately from the installation contract).

2.1.11 Commissary

The commissary not only sells food and healthcare items, but also household pesticide items. The commissary must:

1. Ensure proper sanitation is maintained in the store
2. Ensure food items for sale are free from stored product pests
3. Ensure commissary facilities are surveyed and controlled for invading pests
4. Coordinate with the Army Veterinarian on pest or sanitation problems
5. Ensure that pesticides are displayed in accordance with the pesticide label and other federal, state, and local regulations
6. Ensure store employees are properly trained on emergency procedures in the event of a pesticide spill.

2.1.12 United States Army Veterinary Services

The veterinary services department provides clinical support for military working dogs and services for privately-owned pets and animals. Veterinary technicians also provide food inspection for the commissary and for other food items delivered to the installation. Responsibilities of the veterinarian include:

1. Conducting surveillance for pests which damage, destroy, and contaminate food stored in the commissary and installation facilities
2. Ensuring stored field rations (e.g., meals, ready to eat (MREs), etc.) are free from pests
3. Advising preventive medicine (PREVMED) and the IPMC of any zoonotic diseases that may require pest management
4. Providing advice and education to pet owners on preventing pest infestations.

2.1.13 Public Private Venture Housing

The public-private venture housing manager provides pest control and landscape maintenance for military family housing residents.

1. Ensure that pesticide usage reports for outdoor pesticide applications (including herbicides) are forwarded to the IPMC or the NAVFAC Atlantic PPMC, or reported using NOPRS
2. Ensure that only current, state-licensed pesticide applicators apply pesticides.

2.1.14 Building Occupants and Barracks/Housing Residents

All installation personnel have the responsibility for:

1. Applying good sanitary and pest exclusionary practices to prevent pest infestations

2. Using pesticides in accordance with the pesticide label, if permitted for personal use
3. Coordinating and cooperating fully with PMSPs in scheduling pest management and preparing the areas for pesticide treatment if necessary.

2.2 PESTICIDE APPROVAL

Naval Facilities Engineering Command, Atlantic will ensure that appropriate pesticides are selected for the proposed use. Department of Defense and Department of the Navy (DON) directives require installations to submit a list of all pesticides that will be used during control operations to the cognizant NAVFAC Atlantic PPMC for review and approval ([OPNAVINST 6250.4C](#), paragraph 4). The purpose of this approval process is to ensure that only registered pesticides which are safe, effective, and appropriate for the site will be used on the installation. Requests for pesticide approval will be submitted to the NAVFAC Atlantic PPMC via the installation IPMC using NOPRS (see [section 2.3.3](#)). Once a pesticide is approved, it may be used on-site as per the label directions. New pesticides may also be added to the list and submitted for approval as needed. The list should be reviewed and updated annually by the IPMC as part of the IPMP maintenance. Pesticides currently approved for use on the installation are listed in [appendix D](#).

The IPMC shall maintain a hard copy or electronic version of the manufacturer's label and safety data sheet (SDS) for each pesticide on the pesticide authorized use list (AUL). The PMPARs or the PMSPs should also maintain copies. Pesticide labels and their registration status can be found on the Environmental Protection Agency's (EPA's) National Pesticide Information Retrieval System at <http://ppis.ceris.purdue.edu/>.

2.3 RECORDS AND REPORTING

All shore installations and units performing pest control operations shall maintain daily records of pesticide applications and submit reports of pest management operations monthly to the cognizant PPMC. ([OPNAVINST 6250.4C](#), paragraph 23 and [OPNAV M-5090.1](#), paragraph 24-3.4)

2.3.1 Pest Management Record Keeping

All PMSPs shall record pest management operations daily. Records shall include all pest management operations including surveys and non-chemical control operations performed on the installation by commercial contractors as well as work performed by DOD pest management personnel. The records will include the following information: date of application, location and site, type of operation, target pest, area treated, name of applicator, pesticide information (trade name, active ingredient, and formulation), amount of pesticide applied, and calculated pounds of active ingredient applied. The following operations are excluded from the record keeping requirement:

1. Personal use of insect repellent
2. Application of repellent by deployable units during mass treatment of clothing and tentage
3. Application of pesticides for personal relief by residents of military housing
4. Application of pesticides for flea and tick control to pets by pet owners and veterinary services.

Records shall be submitted to the IPMC monthly via the NAVFAC Online Pesticide Reporting System ([section 2.3.3](#))

2.3.2 Maintaining Pest Management Operations Records

The installation must archive complete daily pest management operation records on-site indefinitely. Pesticide applications for each building, structure, or outdoor site must be accounted for. Past hardcopy records must be archived so as to prevent them from being destroyed. Electronic records shall be stored to prevent destruction or loss; back-up copies are recommended. All records reported to NAVFAC Atlantic will be stored and may be used as a back-up. Downloading records from NOPRS at least annually and maintaining them on-site is highly recommended.

2.3.3 Pest Management Service Provider Reporting Procedures

Reports will be reviewed by the IPMC and the NAVFAC Atlantic PPMC to provide program oversight to the installation and to generate data for tracking overall DON pesticide usage.

All PMSPs that have Internet access must use the NAVFAC Online Pesticide Reporting System to record, report, and manage pesticide and pest management records. This system is preferred to other methods because it eliminates the need to send hardcopy or electronic records to the IPMC and then to the PPMC. The records are entered directly into a central database that can be accessed by the PPMC and the IPMC and downloaded into a spreadsheet. The only computer requirement is reliable Internet access. Integrated pest management coordinators must contact the NAVFAC Atlantic PPMC to establish a supervisor account. Pest management service provider's applicators can then contact the IPMC to request an applicator account. The NOPRS Web site is at: <https://clients.saic.com/PestManagementNET/>. The NOPRS PowerPoint tutorial is included on the CD of supporting documents provided with this plan.

2.4 TRAINING, CERTIFICATION, AND LICENSING

Integrated pest management requires personnel who are properly trained to investigate and diagnose pest problems, select the appropriate pest management method, apply the appropriate pesticide, perform these operations so that they are safe to humans and the environment, and educate and advise their customers on pest prevention methods. All DOD personnel who apply or supervise the application of pesticides shall be trained and certified within two years of employment in accordance with the DOD Plan for the Certification of Pesticide Applicators, or EPA-approved state certification plan ([OPNAVINST 6250.4C](#), paragraph 11). Additionally, professional pest management personnel shall be certified if their duties include:

1. Making recommendations for the use of pesticides, applying pesticides, or directly supervising the application of pesticides
2. Conducting demonstrations on the proper use and techniques of pesticide application or the supervision of pesticides
3. Conducting field research that includes using or supervising the use of pesticides.

An exception to the standard training and certification requirements are those individuals approved by the IPMC to apply ready-to-use pesticides as part of the self-help program.

2.4.1 Verification of Qualifications

Copies of contractor or lessee state licenses shall be obtained from all PMSP personnel applying pesticides on the installation. Verification of DOD pesticide applicator certifications, as well as IPMC and

PMPAR accreditation, can be obtained from the NAVFAC Atlantic PPMC. A list of applicator certifications as well as a list of pest control business licenses is found in [appendix E](#).

2.4.2 Requirements for Department of Defense Pesticide Applicators

Department of Defense applicators may be certified in the following categories:

1. Category 2—Forestry
2. Category 3—Ornamental and Turf (landscape arthropod and vertebrate pests)
3. Category 5—Aquatic (aquatic weeds in lakes, ponds, rivers, streams, irrigation canals)
4. Category 6—Right-of-Way (weeds on sidewalks, along fence lines, parking lots, road ways, storage tank grounds)
5. Category 7—Industrial, Institutional, Structural, and Health-Related (termites and other wood-destroying insects, cockroaches, crickets and other invading organisms)
6. Category 8—Public Health (mosquitoes, ticks, fleas, rodents)
7. Category 11—Aerial Application (application of pesticides for any pest by fixed or rotary-wing aircraft).

Preventive medicine technicians (PMTs) are required to be certified only in Category 8 and receive certification during PMT school. Golf course applicators are only required to be certified in categories 3, 5, and 6.

Initial certification in categories 2, 3, 5, 6, 7, and 8 for civilian employees is a three and a half week course conducted by a designated DOD training agency. The Navy course is conducted by the Navy Entomology Center of Excellence in Jacksonville, Florida. Initial certification and recertification in category 11 is a one week course conducted by the Air Force Reserve. Certification for all categories is valid for three years. With proper justification, certifications can be extended for an additional six months by the applicator's certifying authority. Recertification courses for civilians in all categories except category 11 are conducted annually by NAVFAC Atlantic. Initial and recertification course schedules can be viewed at <http://www.afpmb.org/content/training-and-certification>.

2.4.3 Requirements for Commercial Contract Applicators

“Licensed firms shall perform all pest management services procured by contract using only trained operators who are certified in the host nation pest management categories for the work planned. Copies of host nation business licenses and applicator certifications shall be reviewed prior to award” ([OPNAVINST 6250.4C](#), paragraph 15b). Copies of contractor business licenses and applicator certificates can be found in [appendix E](#). All contract pesticide applicators applying pesticides on the installation must hold a host nation commercial or government pesticide applicator's license.

2.4.3.1 Grounds Maintenance and Golf Course

To apply pesticides or herbicides on the installation for grounds maintenance, the contracted pesticide applicator must hold a pesticide applicator license in the appropriate categories issued by the host nation,

Chamber of Commerce of Napoli. More information can be found at:
<http://www.na.camcom.gov.it/wps/wcm/connect/cciaa/sito>.

2.4.3.2 Structural Pest Control (General Pest Control)

Applicators applying pesticides inside and outside buildings to control household or structural pests must hold a pesticide applicator license in the appropriate categories issued by the host nation Chamber of Commerce of Napoli. More information can be found at:
<http://www.na.camcom.gov.it/wps/wcm/connect/cciaa/sito>.

2.4.4 Requirements for Natural Resource Management Applicators

Commercial contract applicators applying herbicides for invasive weed control or habitat restoration must hold a state license. Personnel using pesticides for wildlife control must also hold an appropriate state license. Department of Defense employees applying pesticides for invasive weed control or habitat restoration should be DOD-certified as a pesticide applicator.

2.4.5 Requirements for Performance Assessment Representatives

Pest management performance assessment representatives assess the performance of contractors in the Performance-Based Acquisition (contracting) Program. The installation is required to train personnel to provide performance assessment for commercial pest control or grounds maintenance services in pest management within one year of appointment and send them to refresher training every three years ([OPNAV M-5090.1](#), paragraph 24-3.19). Naval Facilities Engineering Command provides initial and refresher PMPAR training annually. The training schedule is available at the Armed Forces Pest Management (AFPMB) Web site at: <http://www.afpmb.org/content/training-and-certification>.

2.4.6 Requirements for Integrated Pest Management Coordinators and Environmental Personnel

“The IPMC shall have the educational background, technical knowledge, and management skills to implement and oversee the pest management program” ([DODI 4150.07](#), section E.4.4.1). Newly designated IPMCs are required to receive training in the administrative and operational requirements of installation pest management. If the IPMC has never received training, training must be obtained within one year of being appointed. Environmental personnel who have compliance oversight of pesticides on the installation should also receive training. The initial PMPAR and IPMC course provides the necessary training. Naval Facilities Engineering Command, Atlantic conducts these courses annually in Norfolk, VA. If applying pesticides or recommending pesticide applications, the IPMC must be certified as a DOD pesticide applicator. Training schedules are available at: <http://www.afpmb.org/content/training-and-certification>.

2.5 PEST MANAGEMENT CONTRACTING

Contracts requiring the use of pesticides must be reviewed and approved by the NAVFAC Atlantic Applied Biology PPMC. This includes contracts issued by non-appropriated activities and tenant commands on the installation. Pest control contracts are required to be monitored by a trained PMPAR ([OPNAVINST 6250.4C](#), paragraph 1).

2.5.1 Pest Management Contracts

The installation’s pest management contracts are listed below.

2.5.1.1 Naval Facilities Engineering Command, Europe/Africa/Southwest Asia)Pest Management Contract

The installation has a pest management contract in place under the BOS contract. This contract covers general indoor and outdoor pest management for invertebrate and vertebrate pests. Additionally, the contract requires the contractor to pick up dead vertebrates and dispose of them appropriately. To put in a call for pest management services, personnel must contact the public works call center at 081-568-4981. The names of the current contract companies are listed in [appendix E](#).

2.5.1.2 Grounds Maintenance Contract

The installation has a grounds maintenance contract in place under the BOS contract. Grounds maintenance work includes the use of pesticides (herbicides) to control weeds in semi-improved and improved grounds including rabbit runs, substations, fence lines, railroads, thermal lines, parking lots, ditches, and ponds. The contractor also uses non-chemical methods of weed control such as line trimming. To put in a call for grounds maintenance services, personnel must contact the public works call center at 081-568-4981. The names of the current contract companies are listed in [appendix E](#).

2.5.2 Contract Specifications and Review

Pest management contract specifications must be written to ensure effectiveness, safety, and regulatory compliance. The facilities support contract/base operation support (FSC/BOS) performance-based contract template for pest control (sub-annex 1503020) and grounds maintenance (sub-annex 1503050) is available from NAVFAC Atlantic or on the NAVFAC Portal (requires login) at: <https://hub.navy.mil/webcenter/portal/pw/FSC+Mgmt+and+Facility+Services++/FSC/BOS+Templates>. The facilities contracting officer (KO) or contracting officer representative can provide additional information. The KO shall send the contract specifications to the NAVFAC Atlantic PPMC for review prior to sending the contract out for bidding ([OPNAVINST 6250.4C](#), paragraph 4).

Termite pretreatment contract specifications for new construction shall also be reviewed by the NAVFAC Atlantic PPMC prior to procurement. The [Unified Facilities Guide Specifications \(UFGS\) 31 31 16 Soil Treatment for Subterranean Termite Control](#) should be included in all new construction contracts for termite pretreatment. See [section 3.2.4.3](#) for more information on termite treatment contracts.

2.5.3 Government Representatives

Contractors will communicate and submit required pest management reports via their government representative. For the pest control and grounds maintenance (FSC/BOS) contracts, the representative is the PMPAR who is responsible for assessing the contract. For Non-Appropriated Fund Instrumentality programs (NAFI) (i.e., NEX, MWR) contracts, the representative is the local NAFI organization manager. In cases where a government representative is not available, the installation IPMC may liaison with a contractor's representative.

2.5.4 Contract Requirements

The application of pesticides on Navy properties by contractors is strictly regulated by Department of Defense and Navy regulations, this IPMP, and host nation regulations. These requirements apply to all pesticide applications including insecticides, herbicides, fungicides, molluscides, etc. to any area in or outdoors. These requirements apply to any size contract (small purchase or facility support contract generated) and services acquired by any other means including government purchase cards

([EBUSOFFINST 4200.1](#), chapter 6, paragraph 7). The specific requirements for contracted pest control operators working on Navy properties are:

1. Contractor Work Plan (CWP): If required by the contract, a CWP shall be submitted as part of the contractor's proposal. The CWP specifies how the contractor will meet the contract requirements.
2. Pesticide Applicator Certification: All contractor personnel, who apply pesticides (which include all herbicides), shall be certified/licensed in the appropriate applicator category in accordance with [section 2.4.4](#) of this IPMP. All contractors who will apply pesticides shall, prior to the start of work, supply a copy of the certificate(s)/license(s) in accordance with contract specifications. Pesticide business licenses and pesticide applicator certificates are included in [appendix E](#) of this IPMP.
3. Pesticide Approval: Pesticides used by contractors must be approved and added to the installation pesticide AUL, before use, by the NAVFAC Atlantic PPMC as described in [section 2.2](#). The list of proposed pesticides shall be included in the CWP or submitted to the designated Government representative using the format designated in the contract specifications. The pesticide AUL is in [appendix D](#) of this IPMP.
4. Pesticide Mixing, Storage, and Disposal: Contractors shall not store, mix, or dispose of pesticides or clean pest control equipment on the installation unless an approved pesticide storage and mixing area is specified in the contract and authorized by the KO. One exception to this is soil treatment for termite prevention during building construction; the contractor must mix the termiticide on-site while the PMPAR or IPMC is there to witness.
5. Pesticide Applications: Only pesticides listed on the pesticide AUL shall be used and applied in a manner consistent with the pesticide label.
6. Pest Management Reporting: Contractors shall submit reports in accordance with the reporting requirements in [section 2.3.3](#).
7. Contractor Vehicles:
 - a. Safety equipment: Vehicles used to transport pesticides shall be equipped with a fire extinguisher and a spill and decontamination kit, and be capable of cleaning up the maximum amount of pesticide transported at any given time. Clean water shall be carried for use in emergency personal decontamination.
 - b. Security: All pesticides carried on the vehicles shall be secured in locked compartments at all times. Vehicles shall not be left unattended at any time unless properly locked and secured.
 - c. Identification: Vehicles will be clearly marked as pest control vehicles.
 - d. Appearance: All vehicles shall be maintained with a clean and orderly appearance, free from observable pesticide spills, residues, or build-up.
 - e. Transporting pesticides: Pesticides shall not be transported in the cab or occupied part of any vehicle. They shall always be carried in a separate compartment from the occupied cab.
8. Compliance Assessment: All contractors are subject to regulatory compliance assessments by the PMPAR, IPMC, environmental compliance staff, and other authorized government personnel.

Pest control vehicles, pesticide applications, and administrative requirements are subject to inspection. Authorized government personnel may also require the contractor to stop work if the work is not being performed in a safe manner.

2.5.5 Contract Performance Assessment

Contracts shall be assessed by a trained PMPAR to ensure environmental and contractual compliance. For FSC/BOS contracts, Functional Assessment Plans for pest control and grounds maintenance should be developed and implemented. Functional Assessment Plan templates are available from the KO or NAVFAC Atlantic Applied Biology. Periodic assessments for pests prior to, during, or after pest control operations should be conducted to ensure efficacy of the services. Pest survey methods for contract performance assessments are found in chapter 8 on each of the Integrated Pest Management Sheets. Periodic assessment of the contractors during pesticide application should also be conducted to ensure appropriate safety measures are being taken. The contractors' vehicles and equipment must be made available for inspection when requested. In the absence of a PMPAR, a preventive medicine technician can provide information on the efficacy of pest control in some facilities. The PMT conducts monthly inspections that include pest surveys of food service facilities and child development centers. The PMPAR and the IPMC should liaison and coordinate performance assessment activities with the PMT.

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CHAPTER 3

Operations

3.1 INTEGRATED PEST MANAGEMENT

Presidential [Executive Order \(EO\) 13514](#), Federal Leadership in Environmental, Energy, and Economic Performance, October 5, 2009, requires federal agencies to promote pollution prevention and eliminate waste by implementing integrated pest management and other appropriate landscape management practices. United States Code ([7 U.S.C. § 136r-1](#)) states, “Federal agencies shall use Integrated Pest Management techniques in carrying out pest management activities and shall promote Integrated Pest Management through procurement and regulatory policies, and other activities.” Department of Defense policy is to, “Incorporate sustainable Integrated Pest Management (IPM) philosophy, strategies, and techniques in all aspects of DOD and Component vector control and pest management planning, training, and operations, including installation Integrated Pest Management Plans and other written guidance to reduce pesticide risk and prevent pollution” ([OPNAVINST 6250.4C](#)).

3.1.1 Integrated Pest Management Defined

Integrated pest management is, “a planned program incorporating education, continuous surveillance, record keeping, and communication to prevent pests and disease vectors from causing unacceptable damage to operations, people, property, materiel, or the environment. IPM uses targeted, sustainable (effective, economical, environmentally sound) methods including habitat modification, biological, genetic, cultural, mechanical, physical, and regulatory controls, and when necessary, the judicious use of least hazardous pesticides” ([OPNAVINST 6250.4C](#), paragraph 2). There are significant differences between IPM and traditional pest control methods. Table 3-1 lists some of the differences.

In IPM programs, treatments are not made according to a predetermined schedule. Rather, treatments are made only when and where monitoring has indicated that the pest will cause unacceptable economic, medical, or aesthetic damage. Treatments are chosen and timed to be most effective and least hazardous to non-target organisms and the general environment.

Pest Management	Traditional Pest Control	IPM
Program Strategy	Reactive	Preventive
Customer Education	Minimal	Extensive
Potential Liability	High	Low
Emphasis	Routine pesticide application	Pesticides used when exclusion, sanitation, and other non-chemical methods are inadequate
Inspection and Monitoring	Minimal	Extensive
Pesticide Application Frequency	By schedule	By need

Pest Management	Traditional Pest Control	IPM
Pesticide Application Target	Area-wide spraying	Spot treatment of areas where pests are found
Customer Involvement in Preventing Pests	Minimal	Extensive

Table 3-1. Comparison of traditional pest control and integrated pest management methods.

Under an IPM program, execution of individual pest management practices involves the following steps:

1. Identify pests.
2. Establish action thresholds that are sufficient to warrant treatment. In determining threshold levels, the amount of public health, aesthetic, or economic threat that can be tolerated must be correlated with the population size of pests, natural enemies, time in the season, and/or life stage of the pest or host.
3. Develop plans/strategies through an integration of treatment methods that are effective against the pest, least disruptive to natural controls, and least hazardous to human health and the environment.
4. Monitor pest population before and after treatment. Monitoring is an ongoing activity.
5. Implement pest control measures if economic damage or public health threat are above the established action threshold.
6. Document results.
7. Evaluate/redesign plan to determine the outcome of treatment actions.

Controlling pests has traditionally been the responsibility of the pest control operator. Using IPM, preventing and controlling pests is the responsibility of all personnel on the installation.

3.1.2 Integrated Pest Management Compliance

All pesticide applicators are trained in IPM techniques during initial and refresher licensing or certification training. Government representatives shall assess the PMSP's compliance with IPM. This may include:

1. Reviewing the approved pesticide list for use of less toxic pesticides, baits with sustainable control, short-residual and pest-specific products, and products used for spot treatment rather than broadcast application
2. Ensuring contractor work plans and partner pest management plans incorporate IPM
3. Reviewing pest management records to ensure that only approved pesticides are used, spot applications are performed, non-chemical methods are used, and routine surveys are being performed

4. Observing pest control service calls to ensure pest control operators identify conditions conducive to pest infestations, provide information to building occupants on how they can prevent pests, use only approved pesticides, perform spot treatments, properly apply baits, conduct routine surveys, and monitor baits/bait stations/traps.

3.1.3 Integrated Pest Management Sheets

The IPM sheets in [chapter 8](#) provide general guidelines for the integrated control of pests. They may be used as a reference for surveillance and non-chemical and chemical control alternatives.

3.2 CURRENT PEST MANAGEMENT OPERATIONS

3.2.1 Inspections

Routine inspections provide early detection of pests. Pest inspections should be conducted routinely at all food service, sales, and storage facilities. Preventive medicine technicians conduct food safety inspections including surveys for pests and pest signs at the galleys and food facilities each month. They also inspect the child development center, exchanges, and barber shops. The preventive medicine department provides monthly and quarterly sanitation inspection reports and, if necessary, immediate recommendations to facility managers when contractor-administered pest control operations are needed to control pests. United States Army Veterinarian food inspectors conduct food quality inspections that include examining food items for pests at the commissary and at food service and sales locations.

3.2.2 General Household and Nuisance Pests

Sanitation, glue traps, and pest exclusion are the primary sustainable means of non-chemical control. Low-toxicity insecticidal baits are used effectively against cockroaches and ants. Most pesticide applications can be effective in immediate reduction of pest populations, but have short residual efficacy and are not sustainable in the long term.

3.2.2.1 Cockroaches

German cockroaches are common pests. The general adaptability of the cockroach makes it both an important pest problem and the most common pest problem in food service areas. An integrated approach of using both preventive and corrective techniques is the only practical means of controlling this pest.

3.2.2.2 Control Measures

Non-chemical preventive control measures—including inspection, interior and exterior facility sanitation, and exclusion methods such as closing harborage areas by caulking or other modifications—reduce pest populations by limiting needed food, water, and shelter. In buildings that are most susceptible to pest infestation, these measures are performed on a scheduled basis through preventive maintenance contracts. Common use areas and food consumption areas of other buildings, such as restrooms, coffee messes, lounge areas, and vending machine rooms, are serviced on either a monthly or quarterly basis, depending on the preventive maintenance contract for that building, with response to call-backs as necessary. This also includes common use areas of the barracks, warehouses, and administration buildings. Buildings where there is no food and where problems occur only occasionally such as shops and storage buildings, are handled on a service call basis. Pesticide treatments in food handling areas shall be confined to crack and crevice placement when using residual aerosol or dust formulations. Insect growth regulators and baits are used to complement other control measures. Self-contained light traps may also be utilized in

these areas. Low-odor formulations are used in offices and in other spaces where a pesticide odor would be objectionable.

3.2.3 Grounds Maintenance

Grounds maintenance is performed on improved or landscaped grounds. Pest management during grounds maintenance may involve weed control; control of pests and disease on plants, trees, and turf; and control of vertebrate animals (e.g., squirrels, moles) that may destroy plants and turf. Mechanical removal of weeds and mowing are routinely performed. Grounds maintenance also includes weed control in drainage ditches that may contribute to mosquito control and bird habitat removal. Weed control is performed along roadways, fence lines, and at fuel farms where they pose fire and visibility concerns.

A wide variety of herbicides are available for controlling unwanted vegetation. Extreme care should be taken when using herbicides around waterways. Herbicides can be used around mowing obstacles such as signs, fire hydrants, and manholes. Herbicides are used to control weeds along cracks in sidewalks and asphalt parking areas, along fence lines, around buildings, and along ditch banks. Selective herbicides are used to control various weeds that occur in lawns on the installation. Various cultural and chemical controls can be used to deal with these and other weed control problems. When using chemical controls, both selective and non-selective herbicides may be used.

3.2.4 Golf Course and Athletic Fields

Pest management operations include weed, fungus, and insect control on golf course grounds.

The golf course includes greens, fairways, and rough. Undesirable vegetation in the turf grass is controlled by using pre- and post-emergent selective herbicides.

3.2.5 Structural Pests

Structural pests which have an impact on activity operations include termites, powder post beetles, wood borers, and wood destroying fungi. Of these, subterranean termites and wood destroying (decay) fungi cause the most damage.

A well-managed structural pest control program includes inspection, prevention, and chemical treatments when needed. All susceptible structures that contain wood or wooden structural members should be inspected on an annual basis. The records should note when a building was inspected, the location of any infestation found, and the description of any treatment performed.

3.2.6 Stored Product Pests

Stored product pests are a potential problem at any installation. Inspection upon receipt of products and rejection of obviously infested materials generally prevents heavily infested material from being placed in the storage area.

3.2.6.1 Dermestid Beetle

If the dermestid beetle (*Trogoderma*) is found in a commodity, the whole lot of food must be condemned. The pointed hairs on the larvae will cause digestive problems if the contaminated food is eaten. An accurate identification of *Trogoderma* is required to condemn the lot. For the most part, sanitation (keeping storage areas clean) and stock rotation minimize or prevent pest infestation. If an infestation is

found, the most effective way to control *Trogoderma* is through deep cleaning, vacuuming, and discarding or segregating the infested product while surveying adjacent areas.

3.2.6.2 Storing Meal, Ready-to-Eat Rations

More stringent controls are required for prevention of stored products pests when storing MRE rations. Guidance on this program can be found in [AFPMB Technical Guide No. 38](#), Protecting Meals, Ready-to-Eat Rations (MREs) and Other Subsistence during Storage.

3.2.7 Vector Pests

In accordance with [OPNAVINST 6250.4C](#) (paragraph 4c), the U.S Naval Hospital, Naples Preventive Medicine Department is responsible for conducting inspections and surveys aboard the installation to determine the species, source, location, and density of medically-important arthropods and provide the results to the public works and facilities departments for use in planning pest control operations. If the preventive medicine department cannot support the identification of species due to lack of equipment then the PMD will reach out to the medical entomologist at NEPMU-7 in Rota (DSN 314-727-2284) to provide assistance and determine the best course of action for treatment. Mosquitoes, biting flies, and filth flies constitute the most important insect pests for both disease transmission and general annoyance. Controlling these insect pests should be based on a thorough knowledge of the target pest, actionable surveillance data, and compelling evidence of an infestation that poses an emergent public health risk.

3.2.7.1 Mosquito Surveillance

Routine mosquito surveillance is the responsibility of the PMD. However, if a PMD consisting of PMTs is not available, a pest control provider can conduct mosquito surveillance. If additional assistance is needed, the Navy Environmental and Preventive Medicine Units can provide assistance in mosquito surveillance. The timeframe for mosquito surveillance conducted by PMD will begin in May and last until October. Trapping will only be conducted when weather permits and dependent on the size of the mosquito population being collected. Survey operations are essential to determine the species present, the population level involved, and the potential risk of disease transmission. Surveys also serve as a valuable tool in evaluating control operations. Mosquito surveillance includes conducting both larval and adult surveys. Larval surveys are important because they determine exactly where mosquitoes are breeding, providing the information necessary to manage or eliminate mosquitoes at the source. Larval surveys involve regular dipping stations that are selected, noted on a map, and inspected periodically throughout the mosquito season. In areas where mosquito control is conducted, random larval sampling should be made to check the effectiveness of the control program.

Adult mosquito surveys may be conducted by either collecting mosquitoes from resting sites or using light traps. The environmental health officer (EHO) or preventive medicine officer (PMO) will determine the action threshold for surveillance pertaining to their area of responsibility. Adult collections are then counted and identified to genus or species so the disease transmission risk can be assessed. Adult surveys focus on collecting female mosquitoes because they are the only ones that bite. Female mosquitoes require a blood-meal before they can lay viable eggs. The male mosquito feeds on plant sugars such as nectar, and does not bite. A high proportion of adult males in a trap collection usually will indicate a nearby larval habitat, and a survey of the area should be done to locate possible breeding sites. The Navy Bureau of Medicine and Surgery entomologists, centered at the Navy Entomology Center of Excellence and the Navy environmental and preventive medicine units, are responsible for providing professional guidance, recommendations, and on-site assistance on all technical matters relating to disease vectors and other medically important pests ([OPNAVINST 6250.4C](#), paragraph 4c).

3.2.7.2 Mosquito Control

Mosquito control methods are either permanent (e.g., eliminating the water source) or temporary (e.g., chemical control) in nature and may be directed against larvae or adults. The most effective way to control mosquitoes is to target the larval stage. Larvicides, pesticides specifically labeled to control mosquito larval stages, should be applied to areas where water stands for longer than 7 days when results of mosquito dip counts exceed 10 larvae per dip.

This installation performs ultra-low volume (ULV) pesticide applications to control adult mosquitoes on an as needed basis via the base pest control contractor. When female adult mosquito counts exceeds the action threshold determined by the EHO or PMO per night per trap, ULV pesticide applications should be initiated upon approval from preventive medicine. If a trap count exceeds the threshold, the area surrounding that trap should be surveyed to identify and treat the active breeding site. For most species, mosquito activity is greatest from dusk to dawn. Ultra-low volume treatments must be made during peak mosquito activity when weather conditions are optimal; therefore, ULV pesticide applications should be conducted in the early morning hours before the sun warms the ground or in the evening after the ground has cooled (when temperature inversion usually occurs).

3.2.7.3 Filth Fly Management

Performing routine sanitation is the best method to manage filth flies (houseflies, blow flies, flesh flies, bottle flies, etc.). Removal of refuse and routine cleaning of garbage cans and dumpsters will minimize the problem. Garbage cans and dumpsters should be placed on concrete pads at least 100 feet from facilities to reduce breeding under and around the containers and to minimize access to the facilities. Continuous monitoring of sanitation conditions in and around food service areas helps assure that significant fly breeding will not occur.

Chemical control of filth flies is short-term and unsustainable. The choice of fly control techniques must be based on an on-site evaluation of the problem. Pest control personnel inspect areas where garbage is handled and treat these locations with approved insecticides when flies exceed control limits. Preventive medicine technicians also inspect these areas and report significant findings to facility managers for corrective action. Exclusion devices, such as screens and air curtains, help prevent the entrance of flying insects into buildings when installed and properly maintained. Aerosol insecticide treatments are provided when adult flies become a problem in indoor spaces. Automated pesticide misting devices are not allowed according to [DODI 4150.07](#) (section E4.10.3). Light trap devices are also helpful for filth fly control in food handling areas, but only when they are placed inside of the building. Use only non-contaminating light traps with some way of containing the dead insects. For more information on filth fly management, see [AFPMB TG No. 29](#), Integrated Pest Management In and Around Buildings.

3.2.7.4 Bed Bug Management

Bed bugs belong to a family of blood-feeding, ectoparasitic insects called *Cimicidae*. They have a number of features that make them very effective pests and difficult to control. Their small, flattened body allows them to hide in inconspicuous places such as cracks and crevices. A female can lay several hundred eggs during her lifetime. Bed bugs can survive up to a year without a blood meal; and many insecticides have been rendered ineffective due to resistance development. Primary mode of transmission for bed bugs is by the movement of infested items (e.g., bedding, clothing, and luggage) from one place to another. Bed bugs are most commonly found in transient locations. The common bed bug however, is not known to transmit human disease at this time. For most people, the bite of a bed bug is painless and will usually go unnoticed, though many people can have allergic skin reactions, ranging in severity from local inflammation and itchiness, to asthmatic symptoms and anemia. Although the common bed bug seems to

prefer human hosts and are attracted to carbon dioxide, they are also capable of feeding on birds, rodents, or other mammals. While other cimicid species, like bat bugs and swallow bugs, mainly feed on bats or birds, but may incidentally bite people when their usual host abandons the nest or is eliminated from the building.

Bed bugs can be difficult pests to detect without a diligent survey strategy. Bed bugs typically feed at night when the host is asleep, and hide in cracks and crevices during the day. It is very important to thoroughly inspect areas where bed bug infestation is suspected. Typical harborage areas might include mattress seams, box springs, bed frames, night stands, picture frames, loose wallpaper, and curtains. Bed bugs typically travel 5–20 feet from their harborage area to feed. When populations are small, infestations may go unnoticed. Some tell-tale signs of a larger bed bug population include the presence of fecal spotting, noticeable bed bugs, shed skins, increased biting frequency, and in serious cases a distinct, obnoxiously sweet, odor produced by the bugs. Persons conducting inspections and surveys should be properly trained on what to look for and where to look for infestations and wear proper protective equipment; such as gloves and Tyvek suits. The preventive medicine department or NEPMU personnel are available to provide training on bed bug inspections.

Bed bugs are a public health issue; the installation preventive medicine department should be contacted immediately upon detection. The proper identification and implementation of mitigation measures can reduce the severity of the infestation and assist in preventing re-infestations and increased cost. The PMD will coordinate with public works or pest management to determine the appropriate course of action. Bed bug control may be more difficult to achieve today with increased travel and more stringent limitations on available control materials. A successful control program will require a carefully planned and integrated approach. For more information on controlling bed bugs see [AFPMB Technical Guide No. 44](#), Bed Bugs—Importance, Biology, and Control Strategies.

3.2.7.5 Rodent Management

Rodent control work is an ongoing program to eliminate the causes of rodent infestations. Major emphasis is placed on sanitation and exclusion to limit the amount of food and harborage available to rodents. Tamper-proof bait stations should be maintained in high infestation areas. There are specific EPA requirements for first generation anticoagulant products (warfarin, chlorophacinone, and diphacinone), second generation anticoagulant products (brodifacoum, bromadiolone, difenacoum, and difethialone), and non-anticoagulants (bromethalin, cholecalciferol, and zinc phosphide). Bait stations are required for all outdoor, above-ground placements and must be placed within 100 feet of man-made structures. Bait stations are also required indoors if exposure to children, pets, or nontarget animals is possible. Mechanical traps (snap traps, glue traps, etc.) are another effective control method. Trapping is an effective way of quickly reducing a large mouse population.

3.2.7.6 Bird Management

Pigeons are the primary bird pests on most installations. Pigeons, English sparrows, and starlings can be controlled without a permit because they are not covered under the Migratory Bird Treaty Act. Other bird species require special permits before any control measures can be taken. Bird control methods vary according to the situation. Bird droppings pose a health hazard, as a possible cause of histoplasmosis and other respiratory problems when airborne. Bird ectoparasites, such as mites, can also fall on installation employees. Ultrasonic devices and plastic owls and snakes, etc. are not effective for bird control. The best alternative for bird control is bird-proofing or the exclusion of birds by closing up all openings. Because of its permanency, bird-proofing (i.e., the placing of hardware cloth and chicken wire over potential roosts) is considered the most cost effective means of control. Population reduction techniques (e.g., destruction of nests accessible by a ladder or cherry picker) can sometimes be used effectively. Repellent

chemicals which produce alarm reactions and cause a flock to leave or avoid an area are often used. Control personnel should continually monitor bird population levels and take appropriate control actions when required.

3.2.7.7 Feral Animal Management

Feral or free-ranging domestic cats and dogs are considered by the professional wildlife management community to be one of the most widespread and serious threats to the integrity of native wildlife populations (e.g., birds, bats) and natural ecosystems in North America. Navy commands must prevent feral cat and dog populations, and ensure their humane removal from Navy lands through close coordination and cooperation between natural resources, pest management, security, veterinary, and housing personnel. In accordance with the Chief of Naval Operations Policy Letter Preventing Feral Cat and Dog Populations on Navy Property (10 Jan 2002) and [OPNAV M-5090.1](#), chapter 12, Navy commands prohibits trap-neuter-release or the release of unwanted house pets on their lands due to the potential of feral or free-ranging cat populations to act as disease reservoirs, threatening human health, native wildlife populations, and natural ecosystems.

Cats may be found near food handling areas or dwelling in crawl spaces under buildings where they can cause flea problems inside of the buildings. The elimination of available food by keeping garbage cans and dumpsters sealed will decrease the appeal of the area to the cats. Elimination of shelter is also a good means of control. The installation should discourage people from feeding stray cats. Guidance on feral cat management can be found in [AFPMB Technical Guide No. 37](#), Integrated Management of Stray Animals on Military Installations.

3.2.8 Pest Management in Housing

Housing areas on the installation are government owned and under the installation's pest contract. Certificates for the pesticide applicators are located in [appendix E](#). Contractors providing services in the housing areas must follow all local laws.

Pet dogs and cats released or lost by owners on base can become a pest problem. Feral cats and dogs are susceptible to and can carry disease, damage natural habitats, harm protected wild animals, become a vehicle strike hazard, and attack and injure personnel. Pet owners are required to microchip their pets. Microchipping is a permanent pet identification system using a computer chip implant in the skin of the animal. This allows a lost pet to be identified even if the collar tag is missing.

3.2.9 Self-Help Pest Management

Self-help pest control programs on DOD installations are authorized by [DODI 4150.07](#) (section E4.7.7.3) when they are cost-effective and when IPM monitoring indicates the need for control. Self-help pest control allows uncertified personnel to use low-toxicity, ready-to-use (RTU) pesticides for small-scale pest control operations. Examples of self-help programs available are: stinging insect pest control for maintenance personnel, venomous spider control, fire ant control, vegetation control using glyphosate, and barracks/office pest control. Any personnel or departments conducting unauthorized pesticide applications should be directed to immediately cease applications. Requirements for self-help are:

1. The program shall be reviewed and approved by the IPM coordinator and then by the NAVFAC Atlantic PPMC
2. A program manager, who will be responsible for the program and be the primary point of contact, shall be designated

3. All personnel that will be applying pesticide must be trained and their training documented
4. Only RTU pesticides approved for use by the NAVFAC Atlantic PPMC shall be used
5. The area(s) to be treated should be small enough to be practically treated with RTU pesticides
6. All pesticides will be stored in a storage site as described on the pesticide label
7. All pesticide use will be reported.

To request review of a proposed program and submit a statement of need, the IPMC must contact the NAVFAC Atlantic PPMC.

3.2.10 Prohibited Operations and Devices

Several operations and devices are prohibited by DOD and DON regulations.

Prohibited operations and devices include:

1. Occupied spaces—Installations shall not permit liquid spray and dust pesticide formulations in any space occupied by unprotected personnel. However, pesticides contained in gel or paste bait formulation may be applied in occupied spaces ([OPNAV M-5090.1](#), paragraph 24-3.2).
2. Preventive or Scheduled Pesticide Treatments—DOD policy prohibits the use of regularly scheduled, periodic pesticide applications except in situations where the installation pest management plan clearly documents that no other technology or approach is available to protect personnel or property of high value ([DODI 4150.07](#), section E4.10.3).
3. Electrically-Operated Devices—“Electromagnetic exclusion or control devices, ultrasonic repellent or control devices, and outdoor devices for electrocuting flying insects are not approved for use on DOD installations” ([DODI 4150.07](#), section E4.10.1). This does not apply to indoor use of selected devices, carefully placed, for electrocuting flying insects. Pest surveillance traps and monitoring equipment, such as non-electrocuting mosquito light traps, may also be used by trained personnel.
4. Paints and Coatings Containing Pesticides and Other Biocides—DOD policy prohibits the use of paint containing insecticides on DOD property. This includes interior and exterior paints. Paints containing fungicides as mildew inhibitors and approved marine antifouling compounds or coatings may be applied to protect surfaces of watercraft ([DODI 4150.07](#), section E4.10.2).

3.3 REGULATORY COMPLIANCE

The Department of Defense’s policy is to ensure that DOD pest management programs achieve, maintain, and monitor compliance with all applicable executive orders and applicable federal, state, and local statutory and regulatory requirements. When there is a conflict between federal and local regulations, the installation will comply with the more stringent of the two. This may occur with pesticides limited for use by the host nation, which are not necessarily restricted by the EPA. In this case, the installation must comply with state regulations.

3.3.1 Pesticide Regulation and Enforcement

The U.S. Environmental Protection Agency has the primary authority to regulate pesticides in the United States. The EPA delegates pesticide enforcement authority to states through cooperative agreements. Per [OPNAVINST 6250.4C](#), Navy installations must comply with host nation pesticide use regulations.

The responsibility for compliance and enforcement lies with the installation's commanding officer. As the installation CO's pest management advisor, the IPMC shall be familiar with federal and host nation pesticide use regulations. The environmental division should be familiar with these regulations as well due to the environmental hazards of pesticides. Regulatory enforcement for each of the PMSPs is provided.

1. Commercial contractor applicators: PMPARs shall provide assistance by monitoring contract PMSPs for compliance with all applicable regulations as specified in the contract and will recommend appropriate actions to the contracting officer if the contractor does not comply. Preventive medicine technicians conducting sanitation inspections of food service facility pest management programs can also ensure compliance for safe pesticide use and applicator licensing/certification. Inspection guidelines are found in NAVMED P-5010, chapters 1 and 8. The preventive medicine technicians will notify the IPMC of any potential pesticide application violations observed during the course of routine sanitation inspections.
2. DOD applicators: The pesticide applicator's immediate supervisor, with the assistance of the IPMC, shall also ensure that pesticide use is in compliance. Under the authority of [DODI 4150.07](#) and [DOD Directive 5134.01](#), and per [DODM 4150.07, Volume 1](#), the DOD may deny, suspend, or revoke the certificate of any DOD employee who violates any provision of Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) or falsifies records under [DODM 4150.07, Volume 1](#). In accordance with [DODM 4150.07, Volume 1](#), the installation CO may initiate a formal review if FIFRA violations are suspected. Violations shall be reported through appropriate command channels to the NAVFAC Atlantic certifying authority for review. The certifying authority shall determine if further action is required. That action may include suspension of the applicator's certification.

Naval Facilities Engineering Command, Atlantic Applied Biology shall provide assistance to the installation IPMC with compliance and enforcement issues and clarification of regulations.

3.3.2 Pesticide Laws and Regulations

Primary pesticide regulations include:

1. DOD and Navy: [DODI 4150.07](#), DOD Pest Management Program; [OPNAVINST 6250.4C](#), Navy Pest Management Programs; [OPNAV M-5090.1](#), Environmental Readiness Program.
2. Italy Final Governing Standards (FGS): The Italy FGS is the definitive source of environmental compliance criteria applicable to DOD components at installations in Italy. The Italy FGS includes environmental requirements developed by comparing and adopting the more protective requirements of the DOD's Overseas Environmental Baseline Guidance Document; Italian national, regional, and local environmental laws and regulations; and applicable international agreements (i.e., European Union [EU]). The FGS covers many different environmental areas including pesticides (Italy FGS Chapter 11). The Pesticides chapter provides criteria for regulating the use, storage, and handling of pesticides at installations in Italy.

3.4 PESTICIDE MANAGEMENT

Chemical control of pests using pesticides can be an integral part of an IPM program. Proper management of pesticides will ensure a safe and cost-effective pest management program. Management of pesticides includes the proper selection of pesticides, pesticide approval, procurement, storage, mixing, use of pesticide application equipment, and clean-up. The pesticide label provides most of the information needed to manage pesticide use and must be affixed to the container at all times.

3.4.1 Pesticide Selection

The following criteria should be used when selecting a pesticide:

1. Determine the need for a pesticide. Is a chemical pesticide really needed? In some situations non-chemical control methods may be more effective or less costly and time-consuming in the long term. Will exclusion or habitat elimination take care of the problem?
2. Choose a pesticide with a low toxicity. Can the pest be sufficiently controlled with a pesticide that has a low toxicity to humans?
3. Choose pesticides and pesticide formulations with minimal environmental impact. Avoid using “Restricted Use” pesticides if possible. The environmental impact of pesticide spills is reduced when using a granular pesticide formulation rather than a liquid. Can attractant bait stations be used instead of broadcast application of a pesticide?
4. Choose pesticides that provide a long-term or sustainable solution. For example, contact insecticides applied to ant trails will only temporarily halt the infestation, and may cause the colony to bud and form new colonies, while baits can kill the entire colony including the queen.

3.4.2 Pesticide Procurement

Pesticides used by contractors are included in the cost of the contract and are procured through commercial sources. Pesticides used by DOD personnel may be purchased through the Federal Stock System. Contractors cannot purchase pesticides through the Federal Stock System. A list of pesticides approved by the DOD and found in the stock system can be found at http://www.afpmb.org/sites/default/files/pubs/standardlists/DOD_pesticides_list.pdf. These are not the only pesticides that may be used on the installation. Only pesticides listed on the installation’s pesticide AUL ([appendix D](#)) may be purchased. All pesticide products and pest control services procured via government credit cards must also be pre-approved by the NAVFAC Atlantic PPMC according to [DON eBusiness Operations Office Instruction \(EBUSOPSOFFINST\) 4200.1A](#), Department of Navy Policies and Procedures For the Operation and Management of the Government Commercial Purchase Card Program (chapter 6, paragraph 7). For information on requesting new pesticides to the installation pesticide AUL, see [section 2.2](#), Pesticide Approval.

3.4.3 Pesticide Storage

Pesticide storage facilities, retail sales, and vehicles each have specific requirements in regards to pesticide storage.

3.4.3.1 Pesticide Storage Facilities

[DODI 4150.07](#), section E4.5.1, states that pesticide storage facilities “shall comply with all applicable regulatory standards and shall, where feasible, be modified to meet the minimum standards for new pesticide storage facilities.” The Department of Defense standards are described in [AFPMB TG No. 17, Military Handbook, Design of Pest Management Facilities](#). The NAVFAC Atlantic PPMC should be consulted during the design phase of new pesticide storage facilities to ensure that the latest requirements are included.

At a minimum, all existing facilities shall meet the following standards:

1. An active ventilation system that provides a minimum of six air changes per hour
2. Backflow prevention on all water sources used for mixing/filling
3. No floor drains and a surrounding berm that provides containment of any pesticide spills
4. Warning signs
5. Surrounded by a climb-proof fence with access only through doors with locks.

The MWR golf course stores pesticides in a ventilated storage container at Carney Park.

3.4.3.2 Retail Sale Pesticide Storage

Household, pet, and garden pesticides displayed and sold at the commissary and NEX shall be stored in their original, sealed containers.

3.4.3.3 Vehicles

Pest control vehicles must carry pesticide spill kits in accordance with [OPNAVINST 6250.4C](#) (paragraph 13d). Pesticides shall not be transported in the vehicle’s passenger compartment and pesticide containers shall be secured to vehicles to prevent spillage.

3.4.4 Pesticide Mixing

All pesticide mixing conducted by commercial contractors is done off-site. One exception to this is soil treatment for termite prevention during building construction; the contractor must mix the termiticide on-site while the PMPAR or IPMC is there to witness. Pest control operators must mix pesticides in accordance with the pesticide label in appropriate areas that minimize the risk of safety and environmental hazards. Contracted pest control operators must also mix pesticides in accordance with the contract specifications. Persons mixing pesticides with water shall protect the water supply from back-siphoning of the pesticide mixture. They shall also ensure accurate measurement of concentrated pesticide to ensure proper application rate. Precautions must be taken to minimize the risk of a pesticide spill. See [section 5.3.4](#) for pesticide spill prevention measures. Spill kits must be maintained on pest control vehicles and must be available at the mixing site.

3.4.5 Pesticide Application

All pesticides shall be applied in accordance with federal, state, and label directions. Application of pesticides should be timed to ensure contact with and maximum kill of the pest and to prevent use under

adverse weather conditions that can cause drift of the chemical outside the target area. See [section 4.2.2](#) for more information on timing and drift prevention

3.4.5.1 Service containers

Containers other than the original pesticide container that are used for transporting pesticides to the job site must have a copy of the label attached. Service containers used for the application of a pesticide must have the following information on a tag attached to the container: name of party responsible for the container, the identity of the chemical in the container, and the signal word of the chemical. Containers commonly used for food, drink, or household products shall not be used to hold pesticides.

3.4.5.2 Equipment

Only pest control equipment that is in good repair and safe to operate shall be used by PMSPs. The equipment should be in good condition, free from corrosion, clean, and free from leaks. The PMPAR shall inspect equipment used by contract applicators. Applicators shall also ensure that they use equipment suitable to ensure proper application of pesticides.

3.4.6 Pesticide Disposal

All pest control equipment shall be properly cleaned. Contract PMSPs are not allowed to dispose of excess pesticide, used containers, or residues on the installation per contract specifications; they must conduct all cleaning off-site. Spray tanks and pesticide containers must be triple-rinsed prior to storage or disposal. Disposal of pesticide spray tank rinse water should be performed by applying to a site listed on the pesticide label, used for future mixing of the same pesticide, or disposed of as hazardous waste. Rinse water shall not be allowed to enter storm drains.

3.4.6.1 Sprayer Clean-Outs

When cleaned, spray equipment will be triple rinsed in the field using 10 percent of the tank capacity divided into 3 doses. The rinse material will be sprayed on the application site in accordance with the pesticide label.

3.4.6.2 Empty Containers

[OPNAV-M 5090.1](#) (paragraph 24-3.12) requires disposal of pesticide wastes be in accordance with 40 CFR § 262, EPA Regulations for Hazardous Waste Generators. The disposal of pesticides, their containers, and related wastes is strictly regulated. Empty liquid pesticide containers will be triple-rinsed with 10 percent of the container's capacity divided into 3 doses. Disposal of empty containers will be coordinated with the installation's environmental division. Empty containers will not be reused. If possible, pesticide containers shall be returned to the manufacturer for recycling.

3.4.6.3 Rinse Water

Water from rinsing out equipment will be used immediately. If it cannot be sprayed on the application site, rinse water should be stored in marked plastic containers and used as the diluent for the next time the same pesticide is formulated for application. Wastewater formulations that contain pesticides shall not be discharged into any storm or sanitary sewer system.

3.4.6.4 Excess Pesticides

Disposal or redistribution of excess pesticides shall be coordinated through environmental and the IPMC. The environmental program and the Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) will determine whether the pesticide can be redistributed or if it needs to be disposed of. Excess pesticides shall never be disposed in any storm or sanitary sewer system.

3.5 MINIMUM RISK PESTICIDES

Minimum risk pesticides, such as those marketed under the EcoEXEMPT brand, may be used by PMSPs as part of their IPM program. According to the EPA, “Minimum risk pesticides are a special class of pesticides that are not subject to federal registration requirements because their ingredients, both active and inert, are demonstrably safe for the intended use.” These pesticides are exempt from federal registration under section 25(b) of the FIFRA and are not labeled with an EPA registration number. Since there is no federal review of these pesticides or their pesticide label, there is no federal review of the instructions for effective use of these products. Although these pesticides are exempt from federal registration, they still need to be approved prior to use on DOD property, primarily for efficacy and safety reasons.

3.6 CANCELED PESTICIDES

The EPA has canceled or restricted several common pesticides.

3.6.1 Organophosphates

Chlorpyrifos (e.g., Dursban, Lorsban) and diazinon were, widely used pesticides that have been canceled. The following actions are allowed with these pesticides:

1. End users (e.g., PMSPs and private, residential users) should check with NAVFAC Applied Biology or state/local regulatory agencies for guidance. Some canceled pesticides are allowed to be used until stocks are depleted, while others are under a stop use order.
2. PMPARs should monitor the use of the pesticides by contractors to ensure that they are not using an increased amount of the pesticides as a means of using up their stock.

Fenamiphos (e.g., Nema-cur), a systemic insecticide/nematicide commonly used for the control of turf nematodes, was canceled by the EPA on May 31, 2008 with an end use date on October 6, 2017. Use any remaining stocks in accordance with the label until the end use date.

3.6.2 Organic Arsenicals

The EPA is also canceling most organic arsenical pesticide registrations, which consist of monosodium methanearsonate (MSMA), disodium methanearsonate (DSMA), calcium acid methanearsonate (CAMA), and cacodylic acid and its sodium salt. All uses of DSMA, CAMA, and cacodylic acid and its sodium salt were canceled as of September 30, 2009.

All uses of MSMA except cotton, sod farms, golf courses, and highway rights-of-way, were canceled as of September 30, 2009. Use of MSMA on sod farms, golf courses, and highway rights-of-way was to have been prohibited after December 31, 2013, but because the EPA is considering newly-submitted information, these uses remain registered. These uses, in addition to the cotton use, will be considered in the pending registration review process for MSMA. Users can continue to apply MSMA on sod farms,

golf courses, and highway rights-of-way until further notice, but thoughtful use and consideration of depleting stocks is highly encouraged. For golf courses and highway right-of-ways, the following restrictions currently apply:

1. For golf courses:
 - a. Spot treatments only (100 square feet per spot), not to exceed 25 percent of the total golf course acreage per year
 - b. One broadcast treatment for newly constructed courses only.
2. For highway right-of-way:
 - a. Two broadcast applications only on highway rights-of-way
 - b. A 100-foot buffer around permanent water bodies.

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CHAPTER 4

Health and Safety

4.1 PESTICIDE APPLICATOR SAFETY

To ensure the safe use of pesticides, pesticide applicators shall handle and apply pesticides in accordance with the product's label directions.

4.1.1 Potential Occupational Hazards

The following hazards may be encountered by pesticide applicators or Government representatives that may be exposed while inspecting pest management operations. Occupational safety and health guidance is found in the [OPNAVINST 5100.23G](#), The Navy Occupational Safety and Health Program Manual.

4.1.1.1 Direct Contact Toxic Chemical Exposure

Many chemicals used as pesticides are also harmful to humans. The three routes of exposure to applicators are dermal, inhalation and ingestion. For applicators, the most common route of exposure is dermal and is frequently due to not wearing the appropriate personal protective equipment. Severity of the harmful effects is determined by duration of exposure and toxicity of the chemical. The effects can be acute (rapid onset due to high-dosage, high-toxicity chemicals) or chronic (slow or delayed onset due to long-term exposure to low-dosage, low-toxicity chemicals). The highest risk for severe acute chemical exposure occurs during pouring and mixing of concentrated pesticide resulting in high-dose, rapid-onset chemical poisoning. Chronic exposure can occur when the applicator fails to use appropriate PPE during frequent pesticide applications and the chemical accumulates in the body of the individual over a period of time leading to delayed or gradual onset of illness or injury. Direct chemical exposure can result not only in pesticide poisoning, but also in skin burns due to corrosive chemicals.

4.1.1.2 Heat

The use of protective equipment such as a respirator, goggles, gloves, and coveralls increases the risk of heat injury especially in warm climates. Heat injury can occur during long periods of work outdoors during warm weather or in enclosed spaces where machinery or equipment may generate heat.

4.1.1.3 Noise

Some pesticide application equipment use gas-powered air compressors or pumps that produce noise hazards. Gas-powered backpack sprayers are particularly hazardous due to the proximity of the noise source to the ears.

4.1.1.4 Eye Hazards

Eye hazards may result from chemical splashed into the eyes causing corrosive, toxic, or impact injury. Some pesticides are labeled "Restricted Use" due to their corrosive nature. The highest risk occurs during pesticide pouring, mixing, and application. During pesticide applications, chemicals may enter the eyes

through splash back when applying the chemical under pressure into a crack or crevice or when applying pesticides overhead. Injury may also occur during equipment cleaning.

4.1.1.5 Infectious Zoonotic Disease

Care should be taken when trapping and handling live or dead animals. Hantavirus may be transmitted from rodents to humans through body fluid exposure or when breathing aerosolized rodent excreta. Pest management providers may be exposed when handling rodent carcasses after trapping or handling traps contaminated with rodent urine and feces. Feral dogs, cats, skunks, raccoons, and bats may carry and transmit rabies through a bite.

4.1.1.6 Inhalation Hazards

Many pesticides release hazardous vapors and are particularly hazardous in enclosed spaces. Some pesticides are labeled “Restricted Use” due to the high risk of inhalation injury. Personnel may be exposed during mixing, application, and equipment cleaning.

4.1.1.7 Electrical and Fire Hazards

Spot and crack and crevice applications may require application of a pesticide to areas near motors of refrigerators, compressors, and other machinery where it can become an electrical shock hazard. They may also be applied to areas near pilot lights resulting in an explosion and/or fire hazard.

4.1.1.8 Head Impact and Sharp Hazards

Surveys and pest control procedures may be done in attics, crawl spaces, basements, and other areas with low overheads where head impact hazards exist. Some devices used for bird roosting exclusion and rodent control have sharp edges and can cause cuts, puncture wounds, and abrasions.

4.1.1.9 Trip and Fall Hazards

Trip hazards may occur when applicators are spraying without close attention to where they are stepping. Spraying around buildings where there are various obstacles (e.g., plants, utility boxes, plumbing) in the path of the applicator can be particularly hazardous. Pest control may also need to be performed from ladders, on roofs, in ceilings, and in trees. Wet surfaces on the ground or on elevated surfaces can increase the risk of trips and falls.

4.1.1.10 Exposure to Harmful Animals

Venomous animals such as bees, wasps, rattlesnakes, and spiders are potential hazards when attempting to control them. Some of these are very dangerous due to envenomation and allergic reactions. Feral dogs, cats, coyotes, raccoons, and other large pest animals can inflict serious bites or clawing wounds.

4.1.2 Hazard Abatement

Detecting and reporting unsafe or unhealthful working conditions as early as possible, and then promptly controlling the reported hazards, is essential to a successful safety and occupational health program.

4.1.2.1 Operational Risk Management

Operational risk management (ORM) is a decision-making tool to reduce the risk of mishaps, whether in military contingency or support operations. Pest management operations pose risks to human health and

the environment that affect the installation's mission that can be reduced and minimized through ORM. Pest management ORM uses the following process to minimize hazards:

1. Identify hazards—the hazards may involve the pesticide or the application equipment (see list of hazards in [section 4.1.1](#)).
2. Assess hazards—determine the degree of risk based on the probability and severity of these hazards. For example, the risk may be high if a highly-toxic pesticide is used daily.
3. Make risk decisions—develop risk control options. Decide whether benefits of control outweigh the risks involved.
4. Implement controls
 - a. Engineering controls—e.g., use a less-toxic pesticide for controlling the pest
 - b. Administrative controls—e.g., place warning placards around pesticide vehicles and pesticide storage areas.
 - c. Personal protective equipment—e.g., wear a respirator when an inhalation hazard exists.
5. Supervise—follow-up to determine effectiveness of controls and monitor changes to hazards.

For more information on ORM, go to the Navy Safety Web site at <http://www.safetycenter.navy.mil/>.

4.1.2.2 Training and Education

Pesticide safety is a core requirement for DOD and civilian pesticide applicator certification and licensing programs. Topics included in the DOD training are listed in [DODM 4150.07, Volume 1](#), The DOD Plan for the Certification of Pesticide Applicators. Safety topics are also given during recertification courses. See [section 2.4](#) for specific training information.

4.1.2.3 Read the Pesticide Label

Pesticide labels are found on all pesticide containers used by installation PMSPs. The pesticide label provides directions for mixing, applying, and disposing of pesticides safely. It also includes a list of hazards to humans and first aid treatment. It may also include a list of personal protective equipment that must be worn and user safety recommendations. The label should always be read completely and thoroughly by the applicator before purchasing and using a pesticide. The label is a legal document mandated by FIFRA.

4.1.2.4 Personal Protective Equipment

Personal protective equipment should always be used when applying pesticides. The type and level of protection needed will be determined by the toxicity, formulation, and method of application of the pesticide. The pesticide label provides guidance on what PPE to use.

1. Respirator
2. Chemical-resistant gloves
3. Chemical-resistant coveralls or long-sleeve shirt and long pants

4. Chemical-resistant boots
5. Hard hat
6. Goggles
7. Apron
8. Face shield
9. Self-contained breathing apparatus (for fumigation).

Personal protective equipment must be appropriate for the type and application of the pesticide being used. It is the applicator's responsibility to maintain the PPE. Contractors must provide appropriate PPE to their applicators.

4.1.2.5. Pest Control Vehicle Safety Devices

Pest control vehicles should be equipped with safety devices and information.

1. Labels and SDSs for all pesticides in vehicle
2. Emergency medical information including nearest emergency treatment center
3. Fire extinguisher
4. Spill kit
5. First aid kit
6. Cell phone or radio
7. Drinking water supply
8. Rinse water supply for washing pesticide off skin.

4.1.2.6 Pesticides and Equipment

The risk of pesticide exposure can be reduced by selecting the appropriate pesticide and equipment for the job. Applying small amounts of low-toxicity pesticide using appropriate and properly-maintained equipment greatly reduces the risk of harm. Using pesticides that are formulated (e.g., contain emetics) or packaged (e.g., water-soluble packets) to minimize chemical exposure and increase safety should be considered when purchasing pesticides. Pesticide selection is addressed in [section 3.4.1](#). Equipment should be tested with water prior to use to ensure proper application and that it is not leaking. Situational awareness, such as monitoring meteorological conditions and location, may also prevent harmful exposure to pesticides.

4.1.2.7 Protection from Infectious Zoonotic Diseases

Pest control personnel who handle trapped animals or dead animal carcasses should wear gloves to prevent exposure to potentially infectious body fluids. A respirator fitted with a high-efficiency

particulate air filter should be worn when entering enclosed spaces with large amounts of rodent feces that might be disturbed and become airborne. Additional protection from hantavirus can be provided by spraying dead rodents and rodent feces with a commercial disinfectant. This will kill hantavirus as well as wet the feces to prevent it from becoming airborne. Detailed guidance on rodent handling is found in [AFPMB TG No. 41](#), Protection from Rodent-borne Diseases with Special Emphasis on Occupational Exposure to Hantavirus.

4.1.2.8 Hazard Communication

All pesticide applicators must receive Occupational Safety and Health Administration (OSHA) Hazard Communication training ([29 CFR § 1910.1200](#)). Contractors must carry SDSs in their vehicles or, as appropriate, at their on-base administration office. Applicators must understand all of the hazards associated with the chemicals they will use and be able to communicate those to the customer if necessary.

4.1.2.9 Medical Surveillance Program

Department of Defense pesticide applicators are required to be in a medical surveillance program depending on their hazard exposure. Medical surveillance is conducted by the Occupational Health clinic at the U.S Naval Hospital, Naples in accordance with [Navy Environmental Health Center Technical Manual \(NEHC-TM-OEM\) 6260.96-2](#), Occupational and Environmental Medicine Field Operations Manual.

4.2 PUBLIC SAFETY

By their nature, many pesticides may pose some risk to humans, animals, or the environment because they are designed to kill or otherwise adversely affect living organisms. Safely using pesticides depends on using the appropriate pesticide and using it correctly.

4.2.1 Potential Hazards to the Public

A potential hazard is the risk of harmful effects from pesticides and the level of risk depends on the toxicity of the pesticide and the exposure a human will receive in any situation.

4.2.1.1 Direct Contact with Pesticides

Pesticide exposure can occur through dermal contact with a pesticide on a surface, inhalation of vapors, or ingestion of pesticide through contaminated food or eating utensils. This type of exposure can occur if a pesticide application is done while unprotected building occupants are present, occupants are allowed entry into buildings before the pesticide has dried, or food and food preparation and serving equipment are not properly protected or cleaned after an application.

4.2.1.2 Pesticide Drift

Pesticide drift occurs when a pesticide leaves the target area and affects unprotected persons outside the area. This commonly occurs outdoors when winds can carry the pesticide off-site. Drift can occur indoors if there is air movement or pesticides are drawn up through ventilation ducts. Pesticide applications that involve small pesticide droplets, such as fogging or ultra-low volume application, or dusts are most susceptible to drift.

4.2.1.3 Contact with Contaminated Water

Some pesticides can move through soil and contaminate groundwater used for drinking. Others, if applied in or close to surface water, can cause contamination of recreational waterways.

4.2.1.4 Injury Due to Animals

The use of an inappropriate pesticide may cause collateral injury due to an insufficient knockdown of the target pest. This can occur with bees and wasps. Some insecticides do not knockdown the insects rapidly and may actually excite them causing them to become more aggressively defensive in behavior. Unprotected persons blocks away from the pesticide application may become the target of their aggression. Injury can also occur when persons get too close to or try to release a trapped animal or try to capture feral animals by themselves.

4.2.1.5 Fumigation Exposure

Fumigants are highly toxic and can cause immediate death upon exposure. Fumigations can be performed in the housing area where it poses a potential hazard to neighbors and pets. During fumigation the chemical is injected into a tarped structure and allowed to remain for 24 hours. The highest risk of injury or death occurs if a person or animal were to enter the tarp during this period or after the tarp is removed, but before the building is completely ventilated. The fumigant, when exposed to air, dissipates rapidly and readily.

4.2.2 Hazard Abatement

Pesticide applicators should continually be aware of the hazards associated with pesticide use in order to protect the public from exposure.

4.2.2.1 Proper Timing of Pest Control Operations

Most indoor application of pesticides should be conducted when building occupants are not present. An exception to this is the application of pesticide baits that are enclosed in a tamper-proof bait station that does not allow exposure to occupants or pets. The building occupants must remain out of the building to allow the liquid pesticide to dry. Some pesticide labels are specific about re-entry times (time after application that occupants are allowed back into the treated building). Some pesticides, such as fumigants, provide specific directions on aeration of spaces to remove pesticide prior to re-entry. Certain operations, such as bee and wasp control or removal, are best conducted after the area has been cleared of unprotected persons. Refer to the product label for specific information.

4.2.2.2 Preventing Pesticide Drift

Pesticide drift from target areas to areas where humans, animals, and plants can be affected can be reduced through the following means (adapted from University of Nebraska publication G1773, Spray Drift of Pesticides).

1. Select low or nonvolatile pesticides.
2. Read and follow the pesticide label. Apply a pesticide only if an application is warranted.
3. Use spray additives that decrease drift within label guidelines. This will increase the droplet sizes and pesticide effectiveness.

4. Use larger spray nozzle orifice sizes. This will give larger droplets and will increase the number of tank refills, but will improve coverage and effectiveness.
5. Avoid high pressure. High pressure creates finer droplets; 45 PSI should be considered maximum for conventional broadcast spraying.
6. Use drift-reduction nozzles. These will produce larger droplets when operated at low pressures.
7. Use wide angle nozzles and low boom heights, and keep the boom stable.
8. Drift is minimal when wind velocity is less than 10 mph. Do not spray when wind is greater or blowing towards sensitive crops, gardens, dwellings, livestock, or water sources.
9. Use shielded spray booms. When banding, use shroud covers to keep chemical from drifting.
10. For indoor applications, turn off ventilation and close doors to prevent air currents.

4.2.2.3 Prevent Tampering with Animal Traps

Caged animals can be very aggressive. Traps should be placed in areas where they will not be tampered with by humans or pets. Warning signs can be placed on the traps and area occupants can be warned of the risk of injury. Live and dead rodents in traps can also be a hazard for hantavirus. Traps should be placed in areas where humans or domestic animals will not be exposed to the rodents.

4.2.2.4 Protection of Fumigation Sites

Warning signs should be posted at the fumigation site warning of the hazards. Some installation contracts require the contractor to provide a 24-hour roving watchperson to patrol the fumigation site to prevent entry by unauthorized personnel.

4.2.3 Special Safety Considerations

Certain areas require special considerations due to the sensitive nature of the area or the people contained in that area.

4.2.3.1 Child Development Center

Children can be sensitive to pesticides and other chemicals. Parents are also concerned about potential hazards that their children may be exposed to and have a right to know about these hazards. Best practice is to minimize pesticide use in and around child development centers and schools, use only enclosed baits and low-toxicity pesticides, do not apply pesticides when people are present, and inform staff and parents of any pesticides used on the property. Integrated pest management methods should be used to reduce the health risks of pesticides to children.

4.2.3.2 Hospitals/Branch Clinic

Persons undergoing medical treatment may be highly sensitive to pesticides and pesticide odors in the environment. Additionally, medical equipment and supplies may be contaminated during pesticide applications. Alternative IPM methods must be considered prior to using pesticides in medical treatment areas. If pesticides must be used, then only crack and crevice treatments with low toxicity pesticides or enclosed baits can be used. Application of any liquid or dust formulation must only be done when the area

is unoccupied. Guidance for pest management operations in medical treatment facilities can be found in [AFPMB TG No. 20](#), Pest Management Operations in Medical Treatment Facilities.

4.2.3.3. Food Service Areas

Food contaminated with pesticides can lead to pesticide poisoning. Sanitation and exclusion should be the primary means of preventing and reducing pest infestations. Pesticide use in food service areas should be limited to low-toxicity pesticides, applied to cracks and crevices, and baits and should only be applied by certified PCO's. The area should be properly prepared for treatment by putting away utensils and equipment and covering food preparation services. After treatment, the area should be thoroughly cleaned to prevent contamination.

4.3 PEST CONTROL ACCIDENTS

In the case of a pest control accidents, applicators should be trained in first aid procedures and identify the nearest medical services.

4.3.1 First Aid

First aid for pesticide accidents is included on the pesticide label. The applicator should be familiar with first aid procedures required for the pesticide they are using. A copy of the label must be available at the application site. For some pesticides, immediate first aid and medical treatment may be required.

4.3.2 Medical Emergencies

Pesticide applicators experiencing an acute exposure to hazardous pesticides or significant injuries sustained in control operations should immediately go to the nearest emergency room capable of treating their emergent condition. Pesticide applicators that are government employees enrolled in a medical surveillance program with the occupational health department should schedule a follow-up appointment after their condition has subsided. The name, address, and telephone number of an emergency medical care facility should be posted in the commercial applicator's vehicle. For pesticide poisonings, a copy of the pesticide label should be given to the medical first responders or taken to the emergency medical facility. If cholinesterase-inhibiting pesticides (e.g., malathion) are used, the proper antidotes include atropine and 2-pam chloride.

CHAPTER 5

Environmental Considerations

5.1 ENVIRONMENTAL MANAGEMENT SYSTEM FOR PESTICIDES

This IPMP puts pesticide management within the framework of the DOD and the Navy Environmental Management System (EMS). This plan provides the tools and products to include pesticide management in the installation's overall EMS program.

5.1.1 Department of Defense Policy

Department of Defense policy states, "The Department of Defense shall integrate EMS into missions, activities, functions, contracts, and installation support agreements as a business practice for improving overall performance. EMS is a vital supporting component of the DOD mission and is therefore the responsibility of all DOD personnel. It is not just an environmental function responsibility, but requires active participation from all functions and organizations." The remainder of this policy and details on the EMS program are found in [DODI 4715.17](#), Environmental Management Systems.

5.1.2 Definition of an Environmental Management System

According to the Council on Environmental Quality, Instructions for Implementing Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management, March 29, 2007, "Environmental Management System means a set of processes and practices that enable an organization to increase its operating efficiency, continually improve overall environmental performance and better manage and reduce its environmental impacts, including those environmental aspects related to energy and transportation functions. EMS implementation reflects accepted quality management principles based on the "Plan, Do, Check, Act," model found in the ISO 14001:2004(E) International Standard and using a standard process to identify and prioritize current activities, establish goals, implement plans to meet the goals, evaluate progress, and make improvements to ensure continual improvement."

5.1.3 Conformance of the Pest Management Program to the Environmental Management System

An EMS is composed of five basic components. The components and how the pest management program conforms to these components are:

5.1.3.1 Policy

The installation has established an environmental policy to support "mission readiness through environmental stewardship." Pest management environmental objectives to meet this policy are:

1. Reduce pesticide pollution that affects the installation's neighbors through the use of IPM to prevent adverse impact on air, water, and land resources

2. Use IPM to preserve aspects of the natural environment by managing and controlling invasive and nuisance pests and preventing pesticide pollution
3. Ensure and maintain the competence of pest management personnel through certification and training to ensure that effective operations and technologies are used to control pests that minimize waste, prevent air and water pollution, minimize health and safety risks, and dispose of waste safely and responsibly
4. Enable the IPMC to maintain effective oversight and coordination of the program and liaison with local agencies in order to ensure regulatory compliance.

5.1.3.2 Planning

This IPMP is the installation's primary planning document. Specific planning items included in the IPMP are:

1. Legal and other requirements as identified in [section 3.3](#), [appendix F](#), and throughout the plan.
2. General objectives and targets as included in [section 1.3.2](#) and specific pest management objectives included in the IPM sheets in [chapter 8](#).

5.1.3.3 Implementation

Implementation of the EMS is addressed in the following sections of the IPMP:

1. Roles and responsibilities—[section 2.1](#).
2. Pest management personnel training and awareness—[section 2.4](#).
3. Program documentation includes record keeping, reporting, and IPMP updates—[sections 2.3](#) and [1.1.4](#).
4. Operational requirements—[section 1.3.3](#). Operational control is the responsibility of the pest management service providers and is maintained through their contract. Integrated pest management is the operation used for reducing environmental impacts and supporting mission priorities.
5. Safety considerations—[chapter 4](#).

5.1.3.4 Checking and Corrective Action

The success of an EMS depends on the ability of an installation to assess and correct itself. The self-assessment checklist ([appendix C](#)) provides the basis for a self-assessing and self-correcting system.

5.1.3.5 Management Review

The review of the program is conducted during environmental audits by CNIC.

5.1.3.6 Emergency Management System Definitions

The following are common terms used in EMS:

1. Practice—any activity conducted by an installation or its tenants in performing their missions that has an actual or potential impact on the installation’s assets. The term practice includes equipment, processes, and facilities. It includes both business and management practices.
2. Practice owner—the person, unit, or organization that operates, conducts, controls, or is otherwise responsible for a practice.
3. Environmental aspects—elements of an organization’s activities, products, or services which can interact with the environment.
4. Impact—the positive or negative effects on assets of conducting business and management practices.
5. Vulnerable assets—A resource on which the installation depends or for which it has some responsibility, and which may be impacted by the conduct of practices. Vulnerable assets may include environmental, historical, and cultural areas on and off the installation; personnel health and safety; mission effectiveness; military training lands; real property; financial resources; and public relations status.

5.2 ENVIRONMENTAL CONSIDERATIONS ON THE PESTICIDE LABEL

If the pesticide is potentially harmful to the environment, information will be provided in the following sections of the label:

1. Directions for Use—If pesticide drift is a potential environmental hazard, the directions may require certain application equipment and/or the addition of an anti-drift agent to the tank mix.
2. Environmental Hazards—This section may indicate the pesticide is particularly hazardous to specific animals (e.g., bees, fish). It will also provide information on how to avoid environmental damage.

5.3 MANAGING ENVIRONMENTAL IMPACT

Air, water, and soil risk contamination from pesticides. Pesticide drift to outside the target application area is the primary reason for contamination. Pesticides that pose the highest risk of contamination are herbicides applied to improved and unimproved grounds. Despite being applied in water, pesticides to control mosquito larvae pose a minimal risk due to the target-specific nature of the pesticide (e.g., the biopesticide, *Bacillus thuringiensis israelensis* (Bti), and insect growth regulators). Many procedures to reduce the impact of pest management practices on vulnerable assets are already in place.

5.3.1 Pesticide Pollution

A pesticide is unique as a potential environmental pollutant. When it is applied properly for the correct target pest and to the target location, it is not considered a pollutant. When a pesticide is applied or it drifts outside of the target area, it becomes a pollutant. Pollution can occur during most pest management practices as the result of accidental spills, air and water emissions, and container disposal. Pollutants can be in the form of pesticide residues from equipment and container cleaning or be waste containers.

5.3.1.1 Synthetic Pyrethroids

Pyrethroids are insecticides that are widely used for household, garden, and agricultural pest control. Most were replacements for more toxic and environmentally-hazardous organophosphate and carbamate

insecticides. Surveys have indicated that some pyrethroids are being detected in urban stream sediment and at least one chemical has been shown to be toxic to sediment dwelling organisms. Specific pyrethroids of concern include:

1. Bifenthrin (e.g., Talstar)
2. Cyfluthrin (e.g., Cykick, Tempo)
3. Beta-Cyfluthrin (e.g., Tempo Ultra)
4. Cypermethrin (e.g., Demon, Cynoff)
5. Deltamethrin (e.g., Deltadust)
6. Lambda-Cyhalothrin (e.g., Demand)
7. Permethrin (e.g., Permanone)
8. Tralomethrin

Outdoor operations pose the greatest risk for pyrethroid contamination of surface water and stormwater runoff. Increased risk operations that may use pyrethroids include landscape plant insect control, agricultural insect control, and uniform repellent treatment.

5.3.1.2 Pollinator Protection from Pesticides

Pollinators, such as bees, bats, birds, and butterflies, are essential to the majority of the flowering plants in the environment and to the production of more than 130 different food crops. Protection of both managed bee colonies that are used in the agricultural outleases and feral bees must be considered in pest management operations. Pollinators are highly sensitive to many pesticides, especially insecticides. Best management practices to protect pollinators include:

1. Read the pesticide label for any precautions for bees and apply the product in a manner consistent with the label directions.
2. Use less hazardous insecticides. Certain classes of insecticides, such as organophosphates, carbamates, and neonicotinoids (i.e., imidacloprid), are highly toxic to bees.
3. Choose the least hazardous insecticide formulation if possible. Granules are the least hazardous. Dusts are the most hazardous because they are similar in size to pollen, stick readily to the hairs on the insect, and can be carried back to the nest.
4. Use insecticides with short residuals. The label will include a residual toxicity (RT) time that is the time after application until there is minimal toxic effect on bees.
5. Avoid applying any bee-toxic pesticides on blooming plants that attract bees.
6. Do not apply insecticides when temperatures are forecast to be unusually low or when the evening forecast is for dew. These conditions extend the period in which the insecticide residue remains toxic.

7. Apply pesticides that are toxic to bees at night when most honeybees have stopped foraging and returned to their hives.
8. Use ground applications instead of aerial applications to reduce pesticide drift out of the target area.

Efforts should be made to conserve bee colonies. If the situation allows, bee swarms and hives should be removed and relocated rather than destroyed. For more on protecting bees and other pollinators from pesticides go to the EPA Pollinator Protection Web site: <http://www2.epa.gov/pollinator-protection>.

5.3.1.3 Pollution Prevention

The following pollution prevention best practices should be used on the installation:

1. Determine the need for pesticide use by conducting surveillance.
2. Apply pesticides and clean equipment away from storm drains to prevent storm water contamination.
3. Do not pour pesticide container rinsate into drains. Apply rinsate to a site listed on the pesticide label, store rinsate to use for future pesticide mixing, or dispose of according to local regulations.
4. Use less-toxic and target-specific pesticides.
5. When applying permethrin repellent to uniforms outdoors, do not mix or apply near storm drains or where water run-off will result in storm water contamination, avoid overspray of pesticide onto the ground, and apply spray tank rinsate to uniforms.
6. Minimize outdoor applications of pyrethroid pesticides.
7. Use targeted spot spraying or crack and crevice applications rather than broadcast or baseboard spraying.
8. Minimize pesticide storage on the installation through proper inventory management and by not allowing contractors to store pesticides on the installation.
9. Use rodent traps rather than rodenticides.

5.3.2 Natural and Cultural Resources Protection

Department of Defense installations have been assigned stewardship over environmental and cultural resources on their installations. Naval Support Activity Naples is home to a diverse population of resident and migratory animals and wide variety of plant species, some of which may be impacted by pest management practices. A listing of vulnerable species is in the Naval Support Activity Naples and Naval Support Activity Gaeta Natural and Cultural Resources Management User's Guide (2011).

Pesticides can have direct toxic effect on animals or may cause destruction of their habitats. Non-chemical methods, such as animal trapping, can have negative impacts on natural resources if non-target animals are captured. Archeological sites on the installation and are at low risk for damage due to pest management operations.

5.3.2.1 Environmentally-Sensitive Areas

Sensitive habitats are declared in the installation Natural and Cultural Resources Management User's Guide (2011). The IPMC is responsible for knowing the boundaries and restrictions of sensitive habitat(s) on their respective site and communicating this information to any pest control or grounds contractors via the PMPAR. Although the IPMC should have a general knowledge of these areas, any proposed application of pesticides in any of these areas must first be coordinated and approved by the natural resources manager. Applications of pesticides to wetlands or other environmentally sensitive sites, such as tidal marshes and beaches, or around these areas should be carefully planned. Strict adherence to both the pesticide label and the clearances described in the Natural and Cultural Resources Management User's Guide (2011) are required.

5.3.2.3 Invasive Species Prevention

Invasive species can cause damage to native habitats and introduce diseases to native plants and animals. All military vehicles and materials that have been in contact with foreign soil and returning from foreign locations including Hawaii are required to be cleaned by the deployed unit and inspected by the U.S. Department of Agriculture Plant Pest Quarantine Officer prior to disembarkation onto U.S. soil per [SECNAVINST 6210.2A](#), Quarantine Regulations of the Armed Forces. The purpose of these inspections is to prevent the introduction of disease causing organisms and plant pests. Although the inspections are generally thorough, the equipment of recently redeployed units should be monitored to ensure that any introduced pests are destroyed properly. Any pests found on this equipment should be reported to the environmental division.

5.3.2.4 Threatened and Endangered Species

Section 7(a) of the Endangered Species Act (ESA) ([16 U.S.C. § 1536\(a\)-\(d\)](#)), as amended, requires federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat. Regulations governing this interagency cooperation are included in [50 C.F.R. § 402](#).

A comprehensive list of endangered and threatened species is listed on the [U.S. Fish and Wildlife Service](#) (USF&WS) Web site. Listed species habitats are also protected as critical habitat under the ESA. Critical habitat information can be found through species information found at the USF&WS Web site.

Most species of mammals (including bats, raccoons, and skunks) and all but a few birds are protected by state or federal law. Federally-protected species, their nests, or their eggs may not be taken without obtaining permits from the U.S. Fish and Wildlife Service. Control of state-protected species may require permits from the state. All attempts shall be made to solve the problem through habitat alteration, exclusion, fright techniques, or similar approaches before lethal control is attempted.

5.3.2.5 Cultural Resources

Pest control operations should be checked for consistency with the Natural and Cultural Resources Management User's Guide (2011). Pest management operations requiring alteration of the historical structure, including exclusion modifications and significant changes in landscape, will require consultation with the cultural resources program manager (CRPM) through the IPMC.

Termites damage wooden structures and incidental wood in steel and concrete buildings, such as trim or molding, paneling, or door and window frames. Annual termite inspections detect termite infestations

before significant damage occurs. Any termite inspections of historical buildings should be documented using DD Form 1070 and reported to the CRPM.

5.3.3 Spill Prevention and Management

Installation spill prevention guidelines shall be followed. The following spill prevention actions shall be taken:

1. Spill kits shall be readily accessible in all pest management vehicles, mixing sites, and pesticide storage facilities.
2. Pesticides shall only be stored in an area with containment to hold a spill and without a floor drain.
3. Portable mixing pads shall be used when appropriate.
4. All pesticide applicators shall be familiar with the installation spill contingency plan, if available.

All pesticide applicators are trained on spill response procedures as part of their initial pest management certification/licensing training. Spills will be managed as described in the installation spill contingency plan. Further information on preventing and controlling pesticide spills is contained in the [AFPMB TG No. 15: Pesticide Spill Prevention and Management](#).

5.3.4 Hazardous Materials and Hazardous Waste Management

Pesticides, being hazardous materials, shall be managed in accordance with the installation's Hazardous Material Management Plan. Proper inventory management and planning will prevent waste generation. The appropriate use of pesticides produces very little hazardous waste. Rinse water containing pesticide residues usually has very small quantities of chemical and is often applied to the target pest site. Not permitting contractor storage of pesticides and on-site disposal of pesticide waste eliminates the need for hazardous material and waste management. In general, pesticides that are not applied must be disposed of as hazardous waste. Large quantities of hazardous waste may be produced when a pesticide is not used by its expiration date. It may also be produced if a pesticide is not used up before the registration for that pesticide is canceled and the stop-use date has occurred. Any excess pesticides or absorbent material used for spill clean-up requiring disposal requires evaluation by the hazardous waste coordinator in the environmental division to ensure proper disposition.

5.4 PUBLIC PERCEPTION

The misuse of pesticides that lead to animal or human injury can lead to negative publicity for the installation. This is also the case with accidental pesticide spills, especially if they occur off-base or cause contamination of a local natural or cultural resource.

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CHAPTER 6

Emergency Pest Management

6.1 PUBLIC HEALTH EMERGENCIES

Pests create a public health emergency when the pests increase in number and/or are found to carry human disease pathogens. A public health emergency, or potential emergency, requiring pest management action may be indicated in several ways.

6.1.1 Natural or Manmade Disaster

Usually pest problems do not develop immediately after a disaster, such as earthquakes, wildfires, floods, vehicle accidents and terrorist attacks. Public health pest problems may be the result of increased amounts of refuse, collapse of local infrastructure (e.g., *lack of garbage pick-up*), decay of human and animal bodies, and accumulation of standing water. The potential pest-related consequences are vector-borne or zoonotic disease outbreaks and increased contact with rodents and feral animals that may cause injury.

6.1.2 Vector-Borne or Zoonotic Disease

The report of human cases of vector-borne or zoonotic disease or the detection of infected mosquitoes or sentinel animals is an indicator of a public health emergency or potential emergency and often warrants an increase in pest management activities.

1. Reports of human cases—Many human cases of vector-borne and zoonotic disease identified in local medical facilities are reportable to the local and/or state health agencies. A report of a human case of West Nile virus or other vector-borne disease may initiate an investigation and result in alerts going out to other hospitals and clinics if it appears that the case was locally acquired. Immediate vector control may be necessary to prevent further transmission.
2. Detection of infected mosquitoes or sentinel animals—Routine surveillance for mosquito-borne diseases are conducted by local and State health agencies. These agencies report testing results through the public health system. This surveillance program is an early warning system that indicates when vector control should be initiated or increased to prevent human disease. The CDC's ArboNET Maps, <http://diseasemaps.usgs.gov/mapviewer/> provide mosquito-borne disease information by state.

6.2 AGRICULTURAL EMERGENCIES

Agricultural emergencies are the result of the introduction of insects or other animals that can cause extensive damage to agriculture or forestry in the state. Examples of introduced agricultural pests include the Mexican fruit fly and gypsy moth. Military installations can be a conduit for the introduction of these pests due to the movement of military equipment and personnel in and out of the state and the country. The military's role in preventing introduction of these pests is described in [OPNAVINST 6210.2](#), Quarantine Regulations of the Navy and [SECNAVINST 6210.2A](#), Quarantine Regulations of the Armed

Forces. Inspections to prevent importation of pests are normally conducted at the port of debarkation in the foreign country.

6.3 EMERGENCY PEST MANAGEMENT RESOURCES

Contract PMSPs can be used for emergencies if it is written in the contract specifications. The U.S. Naval Hospital, Naples should develop an EDVCP to manage public health emergencies when applicable. It includes additional Navy and local government contingency vector surveillance and control resources.

CHAPTER 7

Program Resources

Naval Support Activity Naples has access to the following support agencies and organizations for pest management assistance. Contact information specific to the installation is included in appendix B.

7.1 NAVAL FACILITIES ENGINEERING COMMAND, ATLANTIC APPLIED BIOLOGY

Naval Facilities Engineering Command, Atlantic Applied Biology is currently staffed by six full-time, civilian DOD professional pest management consultants certified in DOD pesticide applicator categories 3, 5, 6, 7, 8, and 11. These personnel are assigned the following responsibilities:

1. Review and approve installation IPMPs in accordance with DOD and Navy policies
2. Provide technical assistance to the installation IPMCs, environmental managers, safety officers, medical officers, and other regional and installation personnel regarding pest management and pesticide regulatory compliance
3. Review and approve or reject pesticides and equipment to be used on installations
4. Conduct on-site program reviews and environmental compliance program external assessments to ensure compliance with the regulations and IPMPs
5. Compile and report actual pesticide use and pest management operations to appropriate DOD agencies
6. Provide IPM recommendations and pest identification;
7. Assist installations with writing or re-writing IPMPs
8. Provide recertification training for DOD-certified applicators as well as initial and recertification training for PMPARs/IPMCs.

The NAVFAC Applied Biology Web site is at:

<https://hub.navy.mil/webcenter/portal/ev/EV+Divisions/EV2+Planning+and+Conservation/Applied+Biology>. This site is on the Naval Facilities Engineering Command intranet and is only available to NAVFAC, CNIC, and U.S. Marine Corps personnel who have an account. To request an account, personnel must have a sponsor with access approve the request through the initial single sign-on page.

7.2 NAVY ENTOMOLOGY CENTER OF EXCELLENCE

Navy Entomology Center of Excellence is a subordinate command of Navy and Marine Corps Public Health Center and is staffed by full-time, active duty U.S. Navy entomologists. The entomologists are certified in DOD pesticide applicator categories 3, 5, 6, 7, 8, and 11. The unit's Vector Control Department provides the following products and services:

1. Act as BUMED's professional pest management consultants to provide BUMED review of IPMPs
2. Provide technical assistance on the surveillance and control of vectors on installations
3. Provide vector-borne disease risk assessments and disease prevention recommendations when requested
4. Provide disease vector management consultation and identification services
5. Provide contingency pest management in the event of a disaster or disease outbreak (see the Emergency Vector-borne Disease Control Plan in appendix J)
6. Provide initial certification for DOD-certified pesticide applicators

The Navy and Marine Corps Public Health Center Web site is at:
<http://www.med.navy.mil/sites/nmcphc/nece/Pages/default.aspx>.

7.3 NAVY ENVIRONMENTAL AND PREVENTIVE MEDICINE UNIT SEVEN

The Navy Environmental and Preventive Medicine Unit Seven (NEPMU-7) is staffed by one full-time, active duty Navy entomologist. The entomologist is a certified in DOD pesticide applicator categories 3, 5, 6, 7, 8 and 11 and is assigned the following responsibilities:

1. Acts as BUMED's professional pest management consultants to provide BUMED review of Emergency Vector-borne Disease Control Plans
2. Provides technical assistance on the surveillance and control of vectors on installations
3. Provides vector-borne disease risk assessments and disease prevention recommendations when requested
4. Provides disease vector management consultation and identification services
5. Provides contingency pest management in the event of a disaster or disease outbreak.

The NEPMU-7 Web site is at: <http://www.med.navy.mil/sites/nmcphc/nepmu-7/Pages/default.aspx>.

CHAPTER 8

Integrated Pest Management Sheets

The following sheets provide general guidance for control of common pests and are not installation specific. They should be used as a basis for pest management action, but should not be considered “regulations” for the job. Management sheets should be used as guidelines to help implement reasonable, cost effective, safe, environmentally responsible control of pests. The integrated pest management coordinator (IPMC) or other pest control personnel may choose to establish different thresholds and use IPM methods that are more appropriate to their local circumstances. Write in any new ideas or programs to maintain a document that will remain applicable over time. Any suggested pesticides from these sheets are required to be approved before use.

NUISANCE PESTS

Cockroaches in Food Preparation Areas

Drain Flies

Fruit Flies

Nuisance Ants

Stored Product Pests in Food Storage Areas

HEALTH-RELATED PESTS

Bed Bugs

Filth Flies

Fleas In and Around Buildings

Mosquitoes, Adult Control

Mosquitoes, Larval

Spiders

Stinging Insects

TURF AND ORNAMENTAL PESTS

Ornamental Plant Pests

VERTEBRATE PESTS

Nuisance Birds

Feral Cats

Rodents

VEGETATION MANAGEMENT

Terrestrial Weeds

Nuisance Pests

Cockroaches in Food Preparation Areas

Drain Flies

Fruit Flies

Nuisance Ants

Stored Product Pests in Food Storage Areas

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Cockroaches in Food Preparation Areas

TARGET PEST	
TARGET PEST(S)	Cockroaches (primarily German cockroach, <i>Blatella germanica</i>)
TARGET SITES(S)	<ul style="list-style-type: none"> • Food service facilities • All government dining facilities including galleys, sculleries, bakeries, storage, and mess decks. • All MWR facilities including clubs, restaurants, and storage. • All commercial lessees. • Coffee messes and snack bars in administrative areas.
PURPOSE	Control cockroaches that may cause food contamination, allergic reactions, or a nuisance.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>Food Service Personnel</u>: Ensure compliance with food handling regulations that prevent pest infestations. • <u>Installation Preventive Medicine Technicians</u>: Conduct food service inspections, enforce food handling regulations, provide quality assurance for pest control, and provide pest management recommendations. • <u>Pest Management Service Provider</u>: Conduct integrated pest management to control infestations. • <u>Pest Management Performance Assessment Representative</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications. • <u>Facilities Maintenance Provider</u>: Perform facilities repairs and improvements that exclude and minimize pest infestations as requested.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Visual inspections <ul style="list-style-type: none"> ○ Observation of pests in harborages ○ Application of a flushing agent • Sticky trap surveys • Vacuum surveys of harborages • Personnel complaints: including information on when, where, and how many pests were observed. • Conduct pre- and post-treatment surveys to determine whether control operation was effective. • Surveys should identify environmental conditions conducive to infestation.
FREQUENCY	<ul style="list-style-type: none"> • Daily observation by food service personnel. • Monthly observation and/or sticky trap monitoring by cognizant preventive medicine personnel.

ACTION THRESHOLD	<ul style="list-style-type: none"> • Visual sighting of 3 or more cockroaches (all life stages) per room per survey. Flushing agents or sticky traps may be used. • Sighting of 1 egg capsule per survey.
NONCHEMICAL CONTROL	
SANITATION	<ul style="list-style-type: none"> • Cleaning of floors and all surfaces to include debris and grease removal. • Clean up spills. • Store food in sealed containers. • Remove cardboard boxes from storage areas. • Keep garbage in containers with tight-fitting lids and use liners.
ELIMINATE STANDING WATER	<ul style="list-style-type: none"> • Fix leaking plumbing especially around sinks, faucets, and dishwashers. • Remove standing water from floors after daily cleaning.
MECHANICAL REMOVAL	Vacuum cockroaches from their harborages. Use a wet/dry vacuum cleaner filled with water or empty and dispose of vacuum bag immediately.
PEST PROOFING	Seal holes in walls, ceilings, and other areas that may serve as cockroach harborage as required. Request support from facilities maintenance provider if necessary.
EDUCATION	<ul style="list-style-type: none"> • Proper storage of food and sanitation to prevent infestations and increase effectiveness of pesticide applications • Understanding of how baits work
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	Fipronil, hydramethylnon, boric acid, indoxacarb, imidacloprid and abamectin baits; boric acid dust; pyrethroids
METHOD OF DISPERSAL	<ul style="list-style-type: none"> • <u>Flushing Agents</u>: The pest management service provider may use aerosol contact pesticides directed into potential harborage areas to flush out and kill pests as needed. • <u>Crack and Crevice Residuals</u>: The pest management service provider may apply (by crack and crevice technique) a residual pesticide spray to all known or suspected harborages, feeding sites, or passageways. • <u>Spot Treatment Residuals</u>: A residual pesticide may be applied as a spot treatment to indicated areas (such as under dishwashers and refrigerators or behind stoves). • <u>Baits</u>: Cockroach baits (station or injectable style gel baits) will be used as much as possible. Gel baits can be more effective than dry baits due to the moisture in the bait and because it can be applied to more areas. • <u>Growth Regulators</u>: Insect growth regulators will always be mixed with knock-down pesticides.
RESTRICTIONS/ REGULATIONS/ PERMITS	<ul style="list-style-type: none"> • Do not do spot treatments indoors. • Do not apply to baseboards as a preventive residual spray. • Do not apply liquid or dust formulations of insecticides in occupied spaces.
CONSIDERATIONS	
SENSITIVE AREAS	<ul style="list-style-type: none"> • Exposed food products, food containers, counter tops, any surface where food may be stored or prepared, or any food storage area. • Ensure that insecticides do not enter drains, streams, lakes, or other surface water.

PROHIBITED PRACTICES	<ul style="list-style-type: none">• Do not use ultrasonic pest repelling devices.• Do not use aerosols, dusts, and other insecticide formulations that can become airborne in occupied spaces or when food is exposed; baits may be applied when spaces are occupied• Do not do preventive baseboard spraying in the absence of a pest.
SAFETY AND ENVIRONMENTAL PRECAUTIONS	<ul style="list-style-type: none">• Allow for ventilation of spaces after liquid insecticides have been applied.• Clean food preparation surfaces after treatment.• Applicators must wear personal protective equipment as required by the product label.• Environmental impact is minimal since applications are performed indoors

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Drain Flies

TARGET PEST	
TARGET PEST(S)	Drain flies (<i>Psychoda</i> sp.); sometimes called moth flies, sewage flies, or filter flies.
TARGET SITES(S)	Buildings where adult flies may become a nuisance. These flies may be very common around sewage treatment facilities, where they are considered beneficial decomposers of organic matter.
PURPOSE	Control flies that may be both a nuisance and a health hazard due to respiratory problems that can be associated with the inhalation of fly hairs and body parts. Drain flies are also able to mechanically transfer bacteria and other microorganisms from their breeding sites to places where humans live and work.
RESPONSIBILITIES	<ul style="list-style-type: none"> • <u>All personnel</u>: Ensure proper sanitation in all living and working areas to avoid conditions that are attractive to flies. • <u>Facilities Maintenance Service Provider</u>: Periodically clean drain pipes to prevent buildup of organic matter where drain flies breed. • <u>Pest Management Service Provider</u>: Conduct integrated pest management to control infestations. • <u>Pest Management Performance Assessment Representative</u>: Ensure contracted pest management service provider performs work in accordance with contract specifications.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • <u>Visual sighting</u>: Adult drain flies will congregate on walls and windows of rooms containing drains where drain flies are breeding. Adults are weak fliers, and usually make a series of short, erratic flights to move from one area to another. The body and wings are hairy, and the wings are held roof-like over the body when at rest, giving the fly a moth-like appearance. Adult coloration is yellow, gray, or black. • <u>Source drain</u>: An attempt should be made to locate the drain(s) from which flies are emerging so that the breeding sites can be targeted. Sealing the suspected drain opening with a glue board, masking tape, or inverted plastic cup overnight should trap adult flies if they are present.
FREQUENCY	Scheduled surveys are not typically required. The presence of flies resting on walls in restrooms and other areas with drains will typically prompt a request for pest control.
ACTION THRESHOLD	Sufficient numbers of flies to constitute a nuisance indicate the need for treatment.

NONCHEMICAL CONTROL	
HABITAT REMOVAL	<ul style="list-style-type: none"> • <u>Drain cleaning</u>: Drain flies breed in accumulated organic matter inside drainpipes. This material may be removed with over-the-counter drain cleaners. A stiff brush may be necessary to remove heavy buildup. • <u>Bacterial drain cleaners</u>: Products containing a specialized complex of bacteria can be used to digest the organic matter in which drain fly larvae breed and should then be followed by rinsing with very hot water. These products cannot be used in conjunction with other cleaning products, and are only available to pest control operators.
EDUCATION	<ul style="list-style-type: none"> • Educate building occupants on sanitation, and proper food disposal.
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	Pyrethrum-based
METHOD OF DISPERSAL	Pyrethrum-based aerosols may be used to kill adult flies. However, the breeding site must be eliminated to prevent additional flies from emerging.
RESTRICTIONS/REGULATIONS/PERMITS	Do not apply liquid or dust formulations in occupied spaces.
CONSIDERATIONS	
SENSITIVE AREAS	<ul style="list-style-type: none"> • Chemical pesticide use inside hospitals should be minimized as much as possible to avoid exposing patients. Control should focus on drain cleaning, which will provide better control and reduce the health risks associated with pesticides. • Ensure that insecticides do not enter drains, streams, lakes and other surface water.
PROHIBITED PRACTICES	<ul style="list-style-type: none"> • Do not use ultrasonic pest repelling devices. • Do not apply aerosols, dust, and other insecticide formulations that can become airborne to occupied spaces or when food is exposed.
SAFETY AND ENVIRONMENTAL PRECAUTIONS	<ul style="list-style-type: none"> • Allow for ventilation of spaces after liquid insecticides have been applied. • Clean food preparation surfaces after treatment. • Applicators must wear personal protective equipment as required by the product label. • Minimal



Fruit Flies

TARGET PEST	
TARGET PEST(S)	Small flies in the family Drosophilidae, commonly called fruit flies or vinegar flies.
TARGET SITES(S)	Refuse containers, offices with windows facing the loading docks, galleys, and other areas that may have ripening fruit.
PURPOSE	Control flies that reduce the quality of life.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>All Personnel</u>: Ensure proper sanitation in all living and working areas to avoid conditions that are attractive to flies. • <u>Janitorial Personnel</u>: Ensure that refuse containers are emptied daily. Also, periodically clean refuse containers to prevent the buildup of organic matter where flies breed. • <u>Facilities Maintenance Provider</u>: Provide necessary building repairs and modifications needed for pest exclusion. • <u>Pest Management Service Provider</u>: Conduct integrated pest management to control infestations. • <u>Pest Management Performance Assessment Representative</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Flies are attracted to ripening and rotting fruit, as well as other decaying organic matter. • Flies can be seen hovering around refuse containers and resting on walls and cabinets near refuse containers. Fruit flies can be distinguished from other small flies by their tan or yellow colored bodies and red eyes.
FREQUENCY	<ul style="list-style-type: none"> • Scheduled fly surveying is generally not necessary. • Scheduled sanitation should prevent infestations.
ACTION THRESHOLD	The presence of flies in numbers constituting a nuisance for personnel indicates a need for control.
NONCHEMICAL CONTROL	
SANITATION	<ul style="list-style-type: none"> • <u>Refuse removal</u>: Waste baskets and other refuse containers should be emptied daily to prevent the buildup of decaying matter that will attract flies. • <u>Refuse container sanitation</u>: Fruit flies are attracted to moist fermenting foods. All they need for breeding is a moist film of decaying organic matter. They will lay their eggs in garbage disposals, empty bottles and cans, trash containers, mops and cleaning rags. Keep all these items clean. Over time organic debris builds up on the bottom and sides of waste containers,

	particularly large dumpster and other trash bins. Refuse containers should be periodically steam-cleaned or washed to remove organic matter.
ELIMINATE FOOD SOURCES	<u>Fruit bowls</u> : Fruit flies are attracted to volatiles produced by ripening fruit. Store fruit in the refrigerator in order to avoid attracting fruit flies and other pests.
PEST PROOFING	<u>Exclusion</u> : Flies may migrate indoors from breeding sites located outdoors. Tight fitting screens and weather proofing around doors and windows (caulking, weather stripping, etc.) may delay entrance.
CHEMICAL CONTROL	
METHOD OF DISPERSAL	<ul style="list-style-type: none"> • For chemical controls to work, all breeding sites must be found and cleaned first. Potential breeding sites which are inaccessible (e.g., garbage disposals and drains) can be inspected by taping a clear plastic food storage bag over the opening overnight. If flies are breeding in these areas, the adults will emerge and be caught in the bag. • Adults may be killed with pyrethrum-based aerosol insecticides applied as a space spray or surface residual.
CONSIDERATIONS	
SENSITIVE AREAS	<ul style="list-style-type: none"> • Fruit fly infestations often occur in food-preparation areas. Ensure that the insecticide is labeled for use in food preparation areas, and that foods are not contaminated during application. • Ensure that insecticides do not enter drains, streams, lakes, and other surface water.
PROHIBITED PRACTICES	<ul style="list-style-type: none"> • Do not use ultrasonic pest repelling devices. • Do not use aerosols, dusts, and other insecticide formulations that can become airborne in occupied spaces.



Nuisance Ants

TARGET PEST	
TARGET PEST(S)	Pharaoh ants, Argentine ants, black ants, crazy ants, and other nuisance species that invade structures
TARGET SITE(S)	Offices, food preparation and storage areas, living spaces, playgrounds, patios, barracks, medical treatment facilities, and other spaces invaded by ants
PURPOSE	Control ants that are a nuisance in offices, eat and contaminate food, and can make spaces uninhabitable or unusable.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>All Personnel</u>: Ensure proper sanitation in all living and working spaces. • <u>Preventive Medicine Technicians</u>: Conduct facilities sanitation inspections, enforce food-handling regulations, and provide pest management recommendations. • <u>Pest Management Service Provider</u>: Conduct integrated pest management to control pest infestations. • <u>Integrated Pest Management Coordinator</u>: Oversee all pest management operations and ensure the use of IPM. • <u>Pest Management Performance Assessment Representative</u>: Ensure contractor PMSP performs work in accordance with contract specifications. • <u>Grounds Maintenance Provider</u>: Control aphids and similar insects on ornamental plants that attract and feed ants. • <u>Facilities Maintenance Provider</u>: Perform facility repairs and improvements that prevent and minimize pest infestations as requested.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Visual inspections <ul style="list-style-type: none"> ○ Observation of foraging scout ants or ant trails ○ Follow ant trails to building entryways and to food source ○ Follow ant trails to nests • Personnel complaints: including information on when, where, and how many pests were observed. • Conduct pre- and post-treatment surveys to determine whether control operation was effective
FREQUENCY	<ul style="list-style-type: none"> • Daily observation by building occupants • Monthly inspections outdoors around buildings to identify ant nests

RECOMMENDED ACTION THRESHOLD	<ul style="list-style-type: none"> • Visual sighting of ants indoors • Food service areas: 3/room • Living areas: 5/room • Medical treatment facilities: 1/room • Grounds: 2 mounds/yard
NONCHEMICAL CONTROL	
SANITATION	<ul style="list-style-type: none"> • Thoroughly clean potential food sources in buildings, especially coffee messes and food preparation areas. • Thoroughly clean food preparation surfaces, countertops, and stoves. • Remove and discard food that is attractive to ants. • Clean up food and drink spills as soon as possible. • Do not leave dirty dishes on countertops or in sinks. • Some ants are attracted to moisture. Fix leaky plumbing and remove other sources of water.
MECHANICAL REMOVAL	<ul style="list-style-type: none"> • Use a wet sponge or cloth to wipe up ants. • Spray ant trail with household cleaner or soap water then wipe up.
PEST PROOFING	<ul style="list-style-type: none"> • Put food in tightly sealed containers. • Seal holes in walls with caulk or, temporarily, with petroleum jelly.
CONTROL OF PLANT INSECTS	<ul style="list-style-type: none"> • Ants live in cooperation with some plant-infesting insects such as aphids. • These insects produce sugars that are food for the ants, while the ants provide protection for the plant-sucking insects. • Control aphids and other plant-sucking insects on plants
EDUCATION	<ul style="list-style-type: none"> • Proper storage of food and sanitation to prevent infestations. • Use of soapy water to control ants indoors.
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	<ul style="list-style-type: none"> • Arsenic trioxide, abamectin, borate-based products, fipronil, hydramethylnon, sulfuramid; pyrethroids (e.g., bifenthrin, lambda cyhalothrin)
METHOD OF DISPERSAL	<ul style="list-style-type: none"> • <u>Baits</u>: Bait stations can be used indoors or outdoors. Granular baits can be applied outdoors near nests. Baits are very specific to the species of ant, and effective in killing the egg-producing queen of the colony, but may require 2–3 days for complete control. • <u>Barrier Spraying</u>: Application of a residual outdoors around a building may be necessary if there are many nests and entryways into the building. May also be necessary if nests are difficult to find. Usually requires periodic reapplication if ant nests are not destroyed. • <u>Dusts</u>: Boric acid dust is an effective low-toxicity insecticide that can be applied to wall voids where ants may be nesting. The treatment area should remain dry after the application to avoid washing the dust away. • <u>Granular insecticide</u>: Acute toxicant in granular form. Only effective if applied directly to the nest.
CONSIDERATIONS	
SENSITIVE AREAS	<ul style="list-style-type: none"> • Exposed food products, food containers, counter tops, on any surface where food may be stored or prepared, or any food storage area. • Outdoors where children or pets may be exposed to pesticides. • Medical treatment facilities. • Streams, lakes, and other water sources. Avoid stormwater runoff of insecticides and do not apply directly to water. Many insecticides are highly toxic to aquatic organisms.

<p>PROHIBITED PRACTICES</p>	<ul style="list-style-type: none"> • Do not do spot treatments indoors. • Do not do preventive baseboard spraying in the absence of a pest. • Do not apply liquid or dust formulations of insecticides in occupied spaces.
<p>SAFETY AND ENVIRONMENTAL PRECAUTIONS</p>	<ul style="list-style-type: none"> • Liquid and dust insecticides should not be applied to occupied spaces or when food is exposed; baits may be applied when spaces are occupied. • Allow for ventilation of spaces after liquid insecticides have been applied. • Clean food preparation surfaces after treatment. • Applicators must wear personal protective equipment as required by the product label. • Pyrethroid insecticides can be highly toxic to aquatic organisms.

COMMENTS:

For most people, ants become a problem and require action when they enter a building. Sometimes ants may nest in walls, especially if there is moisture in those areas; particularly bathrooms and kitchens. Surveys need to determine if the source of the infestation is indoors or outdoors. Control of ant nests outdoors during the spring and early summer may reduce ant problems later in the season. The most effective ant baits are slow acting to give worker ants enough time to carry small amounts of bait back to the nest where they will feed other ants and eventually kill the entire colony. For this reason, it may take several days to see results.

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Stored Product Pests in Food Storage Areas

TARGET PEST	
TARGET PESTS	Beetles and moths that infest food products
PURPOSE	Control stored product pests (SPPs) that may cause food contamination, medical problems, or be unsightly.
RESPONSIBLE PARTY	<ul style="list-style-type: none"> • <u>Food Service Personnel</u>: Ensure compliance with food handling regulations that prevent pest infestations; report infested food items to appropriate authority. • <u>Installation Preventive Medicine Technicians</u>: Conduct food service inspections, enforce food handling regulations, and provide pest management recommendations. • <u>Pest Management Service Provider</u>: Conduct integrated pest management to control infestations. • <u>Pest Management Performance Assessment Representative</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications. • <u>U.S. Army Veterinary Services</u>: Perform food quality inspections of storage facilities including surveys for SPPs.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Visual inspections of food items before and during storage. Conduct in accordance with MILSTD 904B. • Attractant traps may be used to monitor movement and spread of SPPs in storage areas. They are inefficient as a means of control. Guidelines for the use of traps are found in AFPMB TG 27, Stored Product Pest Monitoring Methods • Personnel complaints
FREQUENCY	<ul style="list-style-type: none"> • Particular attention should be given to animal feed which are a common source of infestation. • Daily observation by food service personnel • Monthly observation by cognizant preventive medicine personnel. • Routine food inspections by US Army veterinary technicians.

ACTION THRESHOLD	<ul style="list-style-type: none"> • Observation of any number of SPP (whole insect, webbing, droppings, skins) inside or immediately outside of package. This should initiate a more thorough survey and control if necessary. • Observation of one SPP on a monitoring trap.
NONCHEMICAL CONTROL	
SANITATION	<ul style="list-style-type: none"> • Maintain thorough sanitation of food storage area • Clean up all spills immediately
PACKAGING AND STORAGE	<ul style="list-style-type: none"> • Ensure all packages are intact. Place in sealed insect proof containers if available • Repair any torn packages • Rotate food items: “first-in-first-out”; do not allow food to remain stored for long periods of time • Store on pallets off the floor. • Maintain adequate ventilation and lighting in storerooms.
ISOLATION	Remove infested items from the storeroom if they can’t be disposed of immediately.
MECHANICAL REMOVAL	Vacuumping, sweeping, mopping of floors on which SPPs are found may be used. Ensure that a wet/dry vacuum filled with water is used or remove, empty, and dispose of vacuum bag immediately.
FREEZING/ HEATING	SPPs may be killed by freezing or cooking. Insects can be removed from food item by sifting
SURVEY (DISPOSAL)	Dispose of infested food items (see MIL-STD-904C, Detection, Identification, and Prevention of Pest Infestation of Subsistence for guidance)
CHEMICAL CONTROL	
METHOD OF DISPERSAL	<ul style="list-style-type: none"> • Since many infestations are confined to the food packages, nonchemical methods are the preferred control method. • <u>Crack and Crevice Applications:</u> The pest management service provider may apply (by crack and crevice technique) a contact or residual pesticide spray to areas in storerooms where insects may be found after leaving infested packages. • <u>Insect Growth Regulators:</u> Insect growth regulators (IGR) prevent immature insect larvae from developing into mature adults. IGRs may be useful for chronic SPP problems, but cannot be applied to food or cause immediate kill of the pest. It must be used in conjunction with other forms of control. • <u>Fumigation:</u> Consult a NAVFAC pest management consultant before considering fumigation. Fumigation can be performed on pallets of food items. It will penetrate most materials to kill insects inside the food without harming or making inedible the food item.
CONSIDERATIONS	
PROHIBITED PRACTICES	<ul style="list-style-type: none"> • Do not use aerosols, dusts, and other insecticide formulations that can become airborne in occupied spaces. • Do not do preventive baseboard spraying in the absence of a pest.
SENSITIVE AREAS	<ul style="list-style-type: none"> • Exposed food products, food containers, counter tops, on any surface where food may be stored or prepared, or any food storage area. • Ensure that insecticides do not enter drains, streams, lakes and other surface water.

COMMENTS:

Review TG 29, Integrated Pest Management In and Around Buildings or view the Department of Defense Armed Forces Pest Management Board web site at

<http://www.afpmb.org/sites/default/files/pubs/techguides/tg29.pdf>

Review TG 27, Stored Product Pest Monitoring Methods at

<http://www.afpmb.org/sites/default/files/pubs/techguides/tg27.pdf>

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HEALTH-RELATED PESTS

Bed Bugs

Filth Flies

Fleas In and Around Buildings

Mites

Mosquitoes, Adult Control

Mosquitoes, Larval

Spiders

Stinging Insects

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Bed Bugs

TARGET PEST	
TARGET PESTS	Bed Bugs (<i>Cimex</i> spp.)
PURPOSE	Control bed bugs that can cause bites or allergic reactions, be a nuisance, and affect morale and quality of life. Can be carried on board ship from infested barracks.
RESPONSIBLE PARTY	<ul style="list-style-type: none"> • <u>Berthing Quarters Managers</u>: <ul style="list-style-type: none"> ○ Establish rules and regulations to prevent establishment and propagation of pests. ○ Prevent movement of furniture between rooms if bedbugs are identified • <u>Berthing Quarters Residents</u>: <ul style="list-style-type: none"> ○ Comply with quarter's rules and regulations. ○ Maintain sanitation and cleanliness of personal items such as bedding. • <u>Cognizant Military Unit Leadership</u>: The command leadership, from the commanding officers to the non-commissioned officers, is responsible for their personnel and must enforce public health measures to protect their health and well-being. Sanitation and other pest prevention measures should be enforced through room inspections if necessary. • <u>Installation Preventive Medicine Technicians</u>: <ul style="list-style-type: none"> ○ Conduct berthing inspections ○ Enforce berthing regulation per NAVMED P-5010 ○ Provide informal quality assurance for pest control ○ Provide pest management recommendations • <u>Pest Management Service Provider</u>: Conduct integrated pest management to control infestations. • <u>Pest Management Performance Assessment Representative</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications. • <u>Facilities Maintenance Provider</u>: Perform facilities repairs and improvements that exclude and minimize pest infestations as requested.

SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Personnel complaints: Complaints are commonly received when a patient goes to medical complaining of itching or dermatitis due to bites. • Visual inspections <ul style="list-style-type: none"> ○ Look for pests in mattresses, box springs, bed frames, and headboards. Less commonly found on baseboards and on walls behind furniture. ○ Application of a flushing agent to cracks and crevices • Sticky trap surveys • Vacuum surveys of harborages • Conduct pre- and post-treatment surveys to determine whether control operation was effective • Dry ice/CO₂ attractant traps • Bed-bug sniffing dogs are available.
FREQUENCY	<ul style="list-style-type: none"> • Daily observation by residents. • Observation during zone inspections by unit command leadership personnel. • Monthly observation and/or sticky trap monitoring by PMT of spaces post-treatment. • In visitor's quarters, lodges and other hotel rooms, housekeeping should perform inspections during cleaning.
ACTION THRESHOLD	Detection of 1 bed bug, cast skins, or fecal stains should initiate survey and control.
NONCHEMICAL CONTROL	
SANITATION	<ul style="list-style-type: none"> • Thorough cleaning (field day) shall be performed in each room. • Remove all clutter particularly from under and around beds to reduce harborage. Removal of clutter also enables easier inspection of furniture and mattresses. <p>Note: When removing materials from an infested room, either treat the material or place in bags then seal before taking out of room to prevent spread of the bugs.</p>
WASHING/ CLEANSING	<ul style="list-style-type: none"> • Thoroughly wash bedding • Clean mattresses, box springs, frames, headboards with soap and water.
MECHANICAL REMOVAL	Vacuum bedbugs from their harborages on mattresses, headboards and other surfaces where they are found. Use a wet/dry vacuum cleaner filled with water or empty and dispose of vacuum bag immediately.
ISOLATION AND EXCLUSION	<ul style="list-style-type: none"> • Prevent removal of furniture from rooms found to be infested until they are cleaned. • Remove debris from around outside of buildings • Repair cracks in walls • Caulk windows and doors • Caulk cracks and crevices in bed frames and furniture • Specially designed mattress encasements without seams will prevent bed bugs from getting on mattresses and leaving mattresses to infest other areas.

HEAT	<ul style="list-style-type: none"> • Heat infested articles and/or areas through to at least 113 °F (45 °C) for at least one hour. The higher the temperature, the shorter the time needed to kill bed bugs at all life stages. • A pesticide barrier around doorways may be necessary to prevent spread of fleeing bed bugs to adjacent spaces. • Infested bedding and clothing can be placed in a clothes dryer on high heat. <p>Note: Heat may damage sprinkler systems and will require protective measures before treatment of rooms.</p>
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	<ul style="list-style-type: none"> • Pyrethrin, pyrethroids (cyhalothrin, bifenthrin, deltamethrin), hydroprone (IGR), chlorfenapyr, dichlorvos strips, silica gel, boric acid • Chemicals that leave a residual are preferred.
METHOD OF DISPERSAL	<p>Chemical control using insecticides alone will not control/prevent a bed-bug infestation.</p> <ul style="list-style-type: none"> • <u>Flushing Agents</u>: The pest management service provider may use aerosol contact pesticides directed into potential harborage areas to flush out and kill pests as needed. • <u>Crack and Crevice Residuals</u>: The pest management service provider may apply (by crack and crevice technique) a residual pesticide spray to all known or suspected harborages. • <u>Spot Treatment Residuals</u>: A residual pesticide may be applied as a spot treatment to indicated areas. • <u>Mattress Treatment</u>: Infested mattresses can be treated. Using a residual insecticide will prevent future infestations. • <u>Slow-release vapor strips</u>: A plastic strip impregnated with Dichlorvos slowly releases an insecticide vapor that will control flying and crawling pests. Treatment times are 48–72 hours for adults and nymphs and 7–14 days for eggs. Any room/area where strip is placed must be vacated by people and pets during the treatment. This can also be placed in containers or bags to treat infested materials. • <u>Insect Growth Regulators (IGRs)</u>: Affect the development and reproduction of predators. When properly applied, IGRs have essentially no effect on vertebrate metabolism because of their mode of action and low application rates, but they have a significant impact on bed-bug molting, fertility, and egg hatching success.
RESTRICTIONS	<ul style="list-style-type: none"> • Insecticide resistance may cause treatment failure • Use of aerosols, dusts, and other insecticide formulations that can become airborne shall not be applied in occupied spaces. Spaces must be vacated before treatment and then ventilated and the insecticide allowed to dry before personnel are allowed to occupy the space.
CONSIDERATIONS	
SENSITIVE AREAS	<ul style="list-style-type: none"> • Some persons may be sensitive to some pesticides. Pesticide applications should be avoided if possible and be made only to areas where pests have been observed. • The insecticide on treated mattresses should be allowed to dry and then should be covered with a mattress cover before use. • Ensure that insecticides do not enter drains, streams, lakes, or other surface water.

PROHIBITED PRACTICES	<ul style="list-style-type: none"> • Do not use ultrasonic pest repelling devices. Do not apply aerosol, dust, or other insecticide formulations that may become airborne in occupied spaces. • Do not do preventive baseboard spraying in the absence of a pest.
SAFETY AND ENVIRONMENTAL PRECAUTIONS	Minimal

ADDITIONAL INFORMATION:

Treatment failure may be due to incomplete surveys for the pest, improper application, and insecticide resistance. Follow-up inspections and control are crucial to eliminating the bugs.



Filth Flies

TARGET PEST	
TARGET PEST(S)	House flies (<i>Musca domestica</i>), face flies (<i>Musca autumnalis</i>), stable flies (<i>Stomoxys calcitrans</i>), little house flies (<i>Fannia</i> spp.), and other fly species that breed in garbage, compost, manure, or other organic debris.
TARGET SITES(S)	<ul style="list-style-type: none"> • Animal kennels or stables • Refuse storage areas • Any places where organic debris may accumulate • Dumpsters • Garbage dumps and recycle centers
PURPOSE	Reduce populations of flies that are a nuisance and may mechanically transmit pathogens.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>Food Service Personnel</u>: Ensure compliance with food handling regulations that prevent pest infestations • <u>Installation Preventive Medicine Technicians</u>: Conduct food service inspections, enforce food handling regulations, provide quality assurance for pest control, and provide pest management recommendations • <u>Pest Management Service Provider</u>: Conduct integrated pest management to control infestations. • <u>Janitorial Personnel</u>: Ensure that refuse containers are frequently emptied and sanitized. • <u>Pest Management Performance Assessment Representative</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications. • <u>Facilities Maintenance Provide</u>: Perform facilities repairs and improvements that exclude and minimize pest infestations as requested.
SURVEILLANCE	

METHODS	<ul style="list-style-type: none"> • Visual sighting <ul style="list-style-type: none"> ○ Flies that enter buildings will congregate around windows. ○ Flies may be seen crawling on or flying around organic debris. ○ Flies are active during the daytime in warm weather. ○ Flies may be seen flying and landing on dumpsters and trash cans. ○ Visual surveys of adult flies should also identify where flies are entering a building and where they are breeding. • Bites <ul style="list-style-type: none"> ○ Adult stable flies will painfully bite humans, dogs, and livestock. ○ Stable flies may be surveyed by counting the flies on all four legs of livestock animals. ○ Most filth flies do not bite. • Trapping <ul style="list-style-type: none"> ○ <u>Light traps</u>: traps can be used to control adult flies as well as monitor populations. Flies are attracted to ultraviolet light and trapped on a sticky pest strip. ○ <u>Sticky traps</u>: Traps can be placed around areas where filth flies are known to be a problem. Many types contain visual lures. ○ <u>Pheromone traps</u>: Use a fly pheromone (muscamone) to attract flies to a container. Directions for constructing a baited jug trap can be found at http://ohioline.osu.edu/b853/b853_4.html. • Spec counts <ul style="list-style-type: none"> ○ Index cards (3×5) may be placed around areas to be monitored. Flies that land on the cards will leave vomit or fecal specs that can be counted. Though inexpensive and simple, this technique gives no indication of fly species and may overestimate fly numbers since a single fly may leave multiple specs. <p>Note: Identification of adult flies is important in determining where flies are breeding in order to target control at the source of the infestation. If you can't find the breeding locations of the flies, then collect some flies and identify or send to an entomologist for identification.</p>
FREQUENCY	<ul style="list-style-type: none"> • Visual observations should be made around likely breeding sites (e.g., dumpsters). • Traps should be inspected weekly. More frequent inspection may be necessary if sticky traps are placed in areas where they will quickly become covered with dust, insects, or other debris. • Counts of flies on animals should be conducted weekly.
ACTION THRESHOLD	<ul style="list-style-type: none"> • The presence of biting flies in numbers constituting a nuisance for people or animals indicates a need for control within 24 hours if the presence is interfering with the mission or activities. • For counts on livestock, an average of 10 stable flies per animal indicates a need for control. • For counts on sticky traps, 100 flies per week indicates a need for control.

NONCHEMICAL CONTROL	
BIOLOGICAL CONTROL	<ul style="list-style-type: none"> • Several species of parasitic wasps can be purchased for use against filth flies. • Biological control agents do not kill adult flies. Wasps lay their eggs in fly pupae, where the wasp larvae consume the developing fly, preventing it from emerging. • Biological control agents will not sting or otherwise harm humans or animals. • Biological control agents are not compatible with chemical insecticides. • Release timing, climatic conditions, release frequency, and number of agents released are all critical for biological control success. • Contact pest management consultants for additional information before instituting a biological control program.
TRAPPING	<ul style="list-style-type: none"> • Ultraviolet light traps may be used to reduce adult fly populations in buildings invaded by flies. • Exercise caution when placing traps; if the trap is visible from outside the structure, it may attract flies into the building. • Traps by themselves are unlikely to control heavy fly infestations. • Do not use bug zappers that electrocute flies in food-preparation areas or eating facilities. Use attractant light traps that collect flies on sticky traps.
SANITATION TO ELIMINATE BREEDING SITES AND FLY ATTRACTANTS	<ul style="list-style-type: none"> • Eliminating breeding sites is critical for effective filth fly control. • Filth flies often breed in neglected refuse containers. • Cover outdoor trash containers with tight-fitting lids. • Empty trash containers frequently. • Sanitize trash containers that have accumulated organic material. • Steam clean dumpsters regularly. • Do not allow animal manure to build up. • Maintain compost piles to promote rapid decay of organic material. • Do not place compost piles near areas where flies are likely to become a nuisance. • Hydrated lime may be applied to stable floors to speed manure decomposition and render stables less suitable for fly breeding.
PEST PROOFING	<ul style="list-style-type: none"> • Seal cracks and other openings around doors and windows. • Use tight-fitting screens. • Air-screens/air-curtains may be installed in commercial facilities.
EDUCATION	<ul style="list-style-type: none"> • Educate building occupants on sanitation, excluding flies by closing doors and maintaining screens, and proper food storage.
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	Pyrethroids, dichlorvos (in insecticide strips), methomyl, and others

METHOD OF DISPERSAL	<ul style="list-style-type: none"> • <u>Non-residual space spray or aerosol</u>: may temporarily control adult fly populations in buildings; will not provide long-term control unless breeding sites are eliminated. • <u>Residual insecticides</u>: may be applied to areas outside where adult flies rest; will not provide long-term control unless breeding sites are eliminated. • <u>Baits</u>: may be used around refuse containers and other places to which flies are attracted. Do not use baits indoors or in other areas where flies are not already present. Baits may attract flies to an otherwise fly-free area. • <u>Impregnated strips</u>: Plastic/paper strips impregnated with insecticides will kill adult flies that contact the strips. Useful when placed inside trash cans or other unoccupied spaces. • <u>Insect repellents</u>: may be used on humans or animals for temporary prevention of stable fly bites. Will not provide long-term control of fly populations, and must be frequently re-applied. • <u>Oral larvicides</u>: may be administered to livestock; will render manure unsuitable for fly breeding.
RESTRICTIONS/ REGULATIONS/ PERMITS	<ul style="list-style-type: none"> • Do not apply liquid or dust formulations in occupied spaces. • Dichlorvos is a carcinogen and cannot be placed in occupied spaces.
CONSIDERATIONS	
SENSITIVE AREAS	<ul style="list-style-type: none"> • Filth fly infestations often occur in food-preparation areas. Ensure that the insecticide is labeled for use in food preparation areas, and that foods are not contaminated during application. • Emphasize nonchemical control in areas frequented by children (e.g., child development centers). • Ensure that insecticides do not enter drains, streams, lakes, and other surface water.
PROHIBITED PRACTICES	<ul style="list-style-type: none"> • Do not use ultrasonic pest repelling devices. • Do not use aerosols, dusts, and other insecticide formulations that can become airborne in occupied spaces.
SAFETY AND ENVIRONMENTAL PRECAUTIONS	<ul style="list-style-type: none"> • Take precautions when using pesticides around food service areas and the child development center. • Applicator should use personal protective equipment as required by the product label. • Avoid contaminating water with pesticides. • Space spraying outdoors can result in drift and have impact on non-target organisms.

COMMENTS:

The numbers of products available for filth fly monitoring and control is overwhelmingly large. The efficacy of a given product often depends on local climatic characteristics, the severity of the infestation, the species comprising the infestation, and other localized conditions. Also, many products are available that do not work or whose efficacy is unproven. Pest management consultants or county or state extension personnel can assist with choosing fly control methods that are most appropriate for a given area.



Fleas In and Around Buildings

TARGET PEST	
TARGET PESTS	Dog, cat, and rodent fleas
TARGET SITES(S)	Military family housing, administrative and industrial buildings that harbor feral cats and other animals, and dog kennels
PURPOSE	Control fleas that are a biting nuisance and pose the potential for transmission of diseases such as murine typhus.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>Veterinary Services</u>: Prescribe pet treatments for flea control • <u>Pet owner/Dog handlers</u>: Treat animals for flea infestations. • <u>Installation Preventive Medicine Technicians</u>: Conduct surveys and inspections of pests of public health importance to assess health risk. • <u>Pest management service provider</u>: Conduct integrated pest management to control infestations. • <u>Pest Control Performance Assessment Representative</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications. • <u>Facilities Maintenance Provider</u>: Perform facilities repairs and improvements that exclude and minimize pest infestations as requested.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Observe for fleas on pets or while grooming and washing pets • Walk around a room with light colored pants • Pull a white cloth across the floor • Concentrate on areas where pets animals frequent or rest • Survey for feral cats and buildings under which they may be harboring; survey in crawl spaces
FREQUENCY	Flea infestations are usually reported by housing residents or building occupants. Survey should be conducted by the PMSP to determine where to treat.
ACTION THRESHOLD(S)	<ul style="list-style-type: none"> • One flea per room • One flea-infested animal in or under a building

NONCHEMICAL CONTROL	
VACUUMING	Using a vacuum cleaner with a rotating brush on an infested carpet will remove a majority of the adults, larvae, and eggs. Should be done even if an insecticide will be applied. Hard surfaces should also be vacuumed if they contain cracks and crevices.
CARPET CLEANING	Steam cleaning or cleaning with a carpet cleaner, especially after vacuuming, may be sufficient to remove remaining fleas from carpet.
CLEAN PET BEDDING	Launder in soap and water all pet bedding and any other materials upon which dogs or cats sleep
CONTROL AND EXCLUDE FERAL CATS	<ul style="list-style-type: none"> • Feral cats are a common source of fleas in industrial and office buildings and are often encouraged by uninformed cat lovers to harbor under buildings. • DOD policy requires removal of feral animals from installations; neutered cats still carry fleas. • Cat harborage under buildings should be cleaned and treated with an insecticide. • Openings to crawl spaces should be sealed to exclude animals.
GROOM AND WASH PETS	<ul style="list-style-type: none"> • Flea combs can be used on pets to extract fleas. • Washing pet with soap and water is very effective at killing fleas.
EDUCATION	<ul style="list-style-type: none"> • Teach pet owners about ways to prevent fleas and treat pets for fleas • Provide awareness to installation personnel about the risk of flea infestations caused by feral cats. • Pre-treatment awareness of the need to clean/treat pets and pet bedding concurrently with the PMSP's insecticide treatment of the premises.
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	Pyrethroids, methoprene and pyriproxyfen (insect growth regulators), fipronil, imidacloprid, lufenuron, spinosad, and others
METHODS OF DISPERSAL	<ul style="list-style-type: none"> • <u>On-pet Treatments</u>: <ul style="list-style-type: none"> ○ Spot-on treatments, such as Frontline (fipronil) and Advantage (imidacloprid) are convenient and easy to use and very effective at preventing fleas when monthly treatments are maintained throughout the season (late spring to early fall). ○ Oral treatments, such as Program (lufenuron) are effective and useful on pets that frequently swim or are bathed frequently. • <u>Indoor Treatment</u>: These treatments target areas where pets rest or on carpets and other surfaces that might hold adult and immature fleas. The most effective treatments contain IGRs which are often mixed with a contact insecticide (such as a pyrethroid). The contact insecticide will kill any existing adult fleas while the residual IGR will prevent larvae from becoming biting adults. • <u>Outdoor Treatment</u>: This is rarely necessary in residential situations if indoor and on-pet treatment is done correctly. Outdoor dog kennels and crawl spaces where feral cats were harboring should be treated if infested. Again, an IGR / contact insecticide treatment is most effective.
CONSIDERATIONS	
SENSITIVE AREAS	Medical treatment facilities, child development centers

PROHIBITED ITEMS	Do not use ultrasonic pest repelling devices.
SAFETY AND ENVIRONMENTAL PRECAUTIONS	Applicators should use personal protective equipment as required by the product label.

ADDITIONAL INFORMATION:

Successful control of fleas in a building requires room cleaning (vacuuming and carpet cleaning, cleaning pet bedding), pet treatment or washing, and insecticide treatment be done within 12 hours of each other. Some of the products and devices that aren't effective for flea control are indoor aerosol foggers, (otherwise known as bug bombs), ultrasonic devices, herbal collars, vitamin B1, brewer's yeast, and flea repellents.

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Adult Mosquito Control

TARGET PEST	
TARGET PEST(S)	Flying adult pest mosquito species.
TARGET SITES(S)	Industrial and residential areas
PURPOSE	Control adult mosquitoes that are a nuisance or may transmit disease.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>Housing Residents</u>: <ul style="list-style-type: none"> ○ Use personal protective measures to prevent mosquito bites. ○ Ensure maintenance of window and door screens. ○ If screens are not available, keep doors and windows closed when mosquitoes are present. • <u>Installation Preventive Medicine Technicians</u>: <ul style="list-style-type: none"> ○ Conduct adult mosquito trapping to identify problem areas and mosquito species. ○ Map locations of trapping sites. ○ Conduct disease risk assessments including pathogen testing if available. ○ Provide information to housing residents on how to prevent mosquito biting. • <u>Mosquito Control Provider</u>: <ul style="list-style-type: none"> ○ Conduct surveys to verify presence of adult mosquitoes at site to be treated. Treat only when and where adult mosquitoes are present. ○ Use pesticides in accordance with the label. • <u>Pest Management Performance Assessment Representative</u>: <ul style="list-style-type: none"> ○ Ensure contractor pest management service provider performs work in accordance with contract specifications. ○ Conduct pre- and post-treatment surveys to monitor efficacy of control measures • <u>Natural Resources Manager</u>: Review and approve mosquito control operations conducted adjacent to sensitive areas to ensure minimal impact on the environment. • <u>Housing Director</u>: <ul style="list-style-type: none"> ○ Ensure that residents keep premises clear of clutter that can hold water and become breeding sites. ○ Ensure distribution of mosquito prevention and control information to residents. • <u>Integrated Pest Management Coordinator</u>: <ul style="list-style-type: none"> ○ Coordinate with PMTs, control provider, PMPAR, and natural resource manager to identify mosquito-breeding sites that can be permanently

	<p>eliminated by nonchemical methods.</p> <ul style="list-style-type: none"> o Maintain mosquito control operation records.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Conduct surveys using visual assessments (i.e., landing counts) and/or traps at sites where personnel complain about mosquito bites to verify presence of mosquitoes. • Record sites of verified complaints on a map. Use GPS receiver if available. • Use traps weekly at same locations to reveal seasonal trends in mosquito abundance. Surveys can be used in subsequent years to plan mosquito control program. • Trap mosquitoes for virus testing. • PMTs will continue to conduct adult mosquito surveys.
FREQUENCY	<ul style="list-style-type: none"> • Ongoing surveys by residents. • Survey prior to application of adulticide. For visual surveys, post-treatment surveys may be conducted immediately after the treatment. For traps, survey within 24 hours after application.
ACTION THRESHOLD	<ul style="list-style-type: none"> • Light traps: 25 biting females or 1 vector species in an un-baited light trap • Disease emergencies declared: light traps: 1 female of a species which has been identified as carrying disease within 5 miles of base caught in a trap <p>NOTE: Action thresholds can be changed on advice of a BUMED entomologist</p>
NON-CHEMICAL CONTROL	
PERSONAL PROTECTION	<ul style="list-style-type: none"> • Encourage use of repellents when outdoors in mosquito-infested areas. Products with the active ingredient diethyl toluamide (DEET) are most effective. • Avoid outdoor activities at dusk and during the evening hours to lessen chances of being bitten. • Wear long-sleeved shirts and pants when outdoors in mosquito infested areas.
EXCLUSION/PEST PROOFING	<ul style="list-style-type: none"> • Window and door screens • Remove tall weeds and overgrowth to remove possible resting areas for mosquitoes.
TRAPS	Propane-powered trapping devices that use heat and a chemical attractant have been shown to be effective for small to moderate area control of certain species of mosquitoes.
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	<ul style="list-style-type: none"> • <u>Organophosphates (i.e., malathion, naled)</u>: Some chemicals may be corrosive. Resistance to organophosphates is widespread. <u>Pyrethrum and Pyrethroids</u>: Safer for humans and mammals. May be toxic to non-target insects and fish.
METHOD OF DISPERSAL	<ul style="list-style-type: none"> • <u>Organophosphates (i.e., malathion, naled)</u>: Apply with ULV or fog-generating equipment. • <u>Pyrethrum and Pyrethroids</u>: Apply with ULV equipment.
SENSITIVE AREAS	All ULV-applied pesticides may affect aquatic organisms especially fish. Care should be taken to ensure proper insecticide droplet size, timing of application, environmental conditions, and calibration of equipment. The installation environmental department should be consulted regarding sensitive areas.

COMMENTS:

Emergency control operations as the result of a disease outbreak may require large area application of an adulticide.

See AFPMB Technical Guide 13 for more information on ULV application of pesticides.

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Larval Mosquitoes

TARGET PEST	
TARGET PEST(S)	Mosquito larvae
TARGET SITES(S)	<ul style="list-style-type: none"> • <u>Permanent:</u> Catch basins, culverts, ponds, planters, gutters, drainage ditches, and freshwater marshes • <u>Temporary:</u> Any containers that collect water, trash piles, tires, flower pots, boats, rain gutters, bird/backyard pond.
PURPOSE	Control larval mosquitoes that are a nuisance or that may transmit diseases.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>Housing Residents:</u> <ul style="list-style-type: none"> ○ Eliminate backyard mosquito breeding sites. ○ Keep gutters and backyard ponds clean. • <u>Preventive Medicine Technicians:</u> <ul style="list-style-type: none"> ○ Survey and identify larval breeding sites ○ Map locations of breeding sites ○ Conduct disease risk assessments ○ Provide information to housing residents and installation personnel on how to prevent mosquito breeding and biting. • <u>Mosquito Control Provider:</u> <ul style="list-style-type: none"> ○ Conduct surveys to verify presence of larvae at site to be treated ○ Use integrated pest management methods to control mosquito larvae ○ Use pesticides in accordance with the label. • <u>Pest Management Performance Assessment Representative:</u> <ul style="list-style-type: none"> ○ Ensure contractor pest management service provider performs work in accordance with contract specifications ○ Conduct pre- and post-treatment surveys to monitor efficacy of control measures. • <u>Natural Resources Manager:</u> Review and approve mosquito control operations conducted adjacent to sensitive areas to ensure minimal impact on the environment.

	<ul style="list-style-type: none"> • <u>Housing Director:</u> <ul style="list-style-type: none"> ○ Ensure residents keep premises clear of clutter that can hold water and become breeding sites ○ Ensure distribution of mosquito prevention and control information to residents. • <u>Integrated Pest Management Coordinator:</u> <ul style="list-style-type: none"> ○ Coordinate with preventive medicine technicians, mosquito control provider, performance assessment representative, and natural resources manager to identify mosquito-breeding sites that can be permanently eliminated by nonchemical methods ○ Maintain mosquito control operation records.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Maps should be used to identify non-residential water-holding sites; verify presence of sites. • Record all water-holding sites on a map or on a GPS receiver regardless of the presence or absence of mosquito larvae. • Survey water-holding sites for larvae. Use a dipper to take water samples. Dip as follows: <ul style="list-style-type: none"> ○ 1 dip/10 ft in linear sources ○ 1 dip/100 ft² in wide sources ○ 2 dips/source when small source (i.e., catch basin) <p>For the first two sources, dip until larvae are found, then record number of dips after that; do not count negative dips prior to this.</p> <ul style="list-style-type: none"> • Record quantity as number of larvae/dip. Record negative sources. • Mark locations for treatment or treat immediately. • All positive sites will be identified on the map as larval sampling stations. These stations will be used in the ongoing surveillance program to detect the presence of mosquitoes after a high tide and when the action threshold for that site is exceeded, then control will be initiated. • PMTs will continue to look for and identify additional non-residential water-holding and breeding sites.
FREQUENCY	<ul style="list-style-type: none"> • Ongoing surveys by residents. • Weekly survey of permanent or semi-permanent sites. • Survey prior to application of larvicide and within 24 hours after application. (Method cannot be used after application of methoprene.)
ACTION THRESHOLD	One or more larvae per dip
NONCHEMICAL CONTROL	
SOURCE REDUCTION	<ul style="list-style-type: none"> • Ponds may be drained to eliminate breeding sites. • On base residential housing, water-holding containers (ex. pet food dishes, garbage cans, garden pots, boats, flower pots, and wheel barrels) should be emptied of water and prevented from collecting water. • Trash or tire piles identified within the installation should be cleared immediately.
VEGETATION REMOVAL	<ul style="list-style-type: none"> • Aquatic vegetation encourages mosquito breeding by slowing down water movement in ditches and streams and by providing larvae with protection from predators. Emergent and floating vegetation can be removed mechanically.

PROPER IRRIGATION	<ul style="list-style-type: none"> Lawn and landscape should be irrigated properly to prevent over watering and run-off that can collect and produce mosquitoes.
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	<i>Bacillus thuringiensis israelensis</i> (Bti), <i>Bacillus sphaericus</i> , methoprene, temephos, insect growth regulations (e.g., s-hydroprene, s-kinoprene), mineral oils, monomolecular films
METHODS OF DISPERSAL	<ul style="list-style-type: none"> <u>Bti</u>: Apply by hand (granules), hand-compressed or hydraulic sprayer (liquid), as briquettes, or by manual or powered granule spreader. Liquid cost-effective when applied to open water; granules effective when water is covered by heavy vegetation. <u>Methoprene</u>: Apply by hand or manual or powered granule spreader (granules and pellets), as briquettes, or by hand-compressed or hydraulic sprayer (liquid). Methoprene slow-release briquettes can be applied as a pre-flood application to dry water-holding areas that have been surveyed and are known to produce mosquitoes. <u>Surface Films</u>: Apply by hand compressed sprayer.
SITE PREPARATION	Survey treatment site prior to application of Bti and methoprene to ensure that majority of mosquitoes are in larval stage. Both are not effective on pupae.
CONSIDERATIONS	
SENSITIVE AREAS	<ul style="list-style-type: none"> Some catch basins and culverts drain into environmentally-sensitive habitats and pesticide use may have adverse effects. Some permanent and semi-permanent water sources may be habitats for birds, fish, and other animals. Alterations, such as vegetation removal or drainage, introduction of fish, or herbicide application may have significant impact on these habitats. Some drainage channels drain into environmentally-sensitive habitats and pesticide use may have adverse effects.

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Spiders

TARGET PEST	
TARGET PEST(S)	Various spiders. Medically important spiders such as the black widow (<i>Latrodectus hesperus</i>), the brown widow (<i>Latrodectus geometricus</i>), the desert recluse (<i>Loxocceles deserta</i>), the brown recluse (<i>Loxocceles reclusa</i>), and the hobo spider (<i>Tegenaria agrestis</i>).
TARGET SITES(S)	Housing and child development centers where young children may be at risk for spider envenomation, especially under playground equipment. Other areas where spiders are unwanted.
PURPOSE	<ul style="list-style-type: none"> • Control spiders that may cause envenomation or painful, serious bites. • Reduce discomfort or fear associated with the presence of spiders. • Webs are a nuisance.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>All Personnel</u>: Ensure proper of all living and working spaces as spiders harbor in areas that are rarely disturbed. • <u>Installation Preventive Medicine Technicians</u>: Conduct sanitation inspections. Investigate reported spider bites. Provide control recommendations. • <u>Pest Management Service Provider</u>: Conduct integrated pest management to control infestations. • <u>Pest Management Performance Assessment Representative</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Visual inspections: look for spiders and webbing in areas where people may be at risk for spider bites. • Personnel complaints: including information on when pests were observed, where, and how many. • Conduct pre- and post-treatment surveys to determine whether control operation was effective
FREQUENCY	<ul style="list-style-type: none"> • Daily observation by building occupants • Monthly inspections outdoors around buildings by PMSP to identify spiders.
ACTION THRESHOLD	Visual sighting of one medically-important spiders indoors/room.
NONCHEMICAL CONTROL	
VIGILANCE TO PREVENT BITES	Be cautious when entering areas that are infrequently visited and disturbed such as storage sheds, wood piles, attics, utility sheds, etc.

SANITATION	<ul style="list-style-type: none"> • Routinely clean out storage areas. • Vacuum carpets and furniture routinely. • Remove webbing from ceilings.
MECHANICAL REMOVAL	<ul style="list-style-type: none"> • Smash the spider. • Place a jar over the spider and slip a piece of paper under the opening. Relocate the spider outdoors. • Vacuum spiders and webs while cleaning. Use a wet/dry vacuum filled with water or carefully empty bag when done.
PEST PROOFING	<ul style="list-style-type: none"> • Avoid attracting flying insects to buildings with exterior lighting. Reducing flying insects near buildings will deny spiders of their food. Save energy and turn off lights, or use motion detectors or colored lamps that do not attract insects readily. • Seal cracks in the foundation and other parts of the structure and gaps around windows and doors.
EDUCATION	<ul style="list-style-type: none"> • Emphasize the importance of sanitation in preventing spiders. • Education and awareness to reduce the fear of spiders and to highlight the benefits of spiders
CURRENT NONCHEMICAL CONTROL PRACTICES	<ul style="list-style-type: none"> • Sanitation: in indoor storage areas, place boxes off the floor and away from walls to reduce harborages. Seal boxes with tape. • Vigilance
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	Pyrethroids, silica gel, and other insecticides
METHOD OF DISPERSAL	<p>Pesticides are a last resort for recurring problems, since non-chemical control methods, particularly mechanical, are very effective.</p> <ul style="list-style-type: none"> • <u>Residual application</u>: Pesticide applications should be done only as a last resort for recurring spider problems. • <u>Liquid Aerosol</u>: Most indoor-use insecticides do not leave a residual and require direct application to the spider. • <u>Dust</u>: Sorptive dusts, such as silica gel, that are formulated with pyrethrin can provide residual control. <p>Preventive baseboard spraying in the absence of a pest is prohibited.</p>
SENSITIVE AREAS	<ul style="list-style-type: none"> • Outdoors where children or pets may be exposed to pesticides. • Ensure that insecticides do not enter drains, streams, lakes and other surface water.
CONSIDERATIONS	
PROHIBITED PRACTICES	<ul style="list-style-type: none"> • Do not use ultrasonic pest repelling devices. • Do not use aerosols, dusts, and other insecticide formulations that can become airborne in occupied spaces.
SAFETY AND ENVIRONMENTAL PRECAUTIONS	<ul style="list-style-type: none"> • Applicators must use personal protective equipment as required by the product label. Insecticide liquid and dusts shall not be applied to occupied spaces. • Minimal. Avoid contamination of water with pesticides.

COMMENTS:

The greatest problem posed by spiders is arachnophobia, the fear of spiders. Most spiders are harmless and are very beneficial in controlling insects around buildings. Education of the public is an important part of control.

ADDITIONAL INFORMATION:

Eliminating spiders around homes and buildings, <http://www2.ca.uky.edu/entomology/entfacts/ef623.asp>

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Stinging Insects

TARGET PEST	
TARGET PEST(S)	Bees, wasps, and yellow jackets
TARGET SITES(S)	Outdoors
PURPOSE	<ul style="list-style-type: none"> • Control stinging insects that can cause painful stings, massive envenomization, or serious allergic reactions. • Remove bee hives that can cause property damage and attract other unwanted pests.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>Installation Preventive Medicine Technicians</u>: Evaluate medical threat of stinging insects if necessary • <u>Pest Management Service Provider</u>: Conduct inspections and integrated pest management to control infestations through killing or removal. Arrange for removal of beehives in buildings. • <u>Pest Management Performance Assessment Representative</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications. • <u>Facilities Maintenance Provider and Grounds Maintenance Provider</u>: Report any stinging insect nest sightings.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Observation of insect nesting or swarming. • Routinely examine buildings for openings where bees or other stinging insects appear to be entering and exiting. • Personnel complaints: including information on when pests were observed, where, and how many. • Identify whether bees are swarming or nesting. (see remarks below)
FREQUENCY	As observed by personnel.
ACTION THRESHOLD	<ul style="list-style-type: none"> • Nesting bees, wasps, or yellow jackets near populated areas require immediate response. • Swarming bees, especially near areas where few people are found, should be left alone. • Swarming bees in areas that cannot be avoided by people and appear to be a threat should be controlled. • Individual bees are foraging and are docile, but may be nesting nearby.
NONCHEMICAL CONTROL	

DISCOURAGE AND ELIMINATE NESTS	Nests should be removed by trained personnel
AVOIDANCE	Stay away from stinging insects if possible.
ELIMINATE FOOD SOURCES	<ul style="list-style-type: none"> • Keep pet foods indoors. • Cover trash cans.
ELIMINATE STANDING WATER	<ul style="list-style-type: none"> • Some stinging insects are attracted to water. • Repair leaking outdoor faucets and other mechanical water sources. • Eliminate standing water.
TRAPS	<ul style="list-style-type: none"> • Wasps and yellow jackets: <ul style="list-style-type: none"> ○ Trapping should start in the spring and be continued through the summer. Early elimination of queen will reduce the size of populations later in the year. ○ Lure traps—baited with a chemical attractant or with meat. ○ Water traps—Meat hung on a string hung 1-2 inches over a bucket of soapy water. Cover bucket with mesh to exclude other animals. • Bees: Swarming bees can be lured into a trap that mimics a nesting site.
MECHANICAL REMOVAL	Wet/dry vacuums may be used to remove bees, but should only be done by trained personnel.
PEST PROOFING	<ul style="list-style-type: none"> • Seal holes in exterior walls of buildings. Request support from facilities maintenance provider if necessary. • Remove debris that can serve as nesting areas. • Cover tree holes.
CHEMICAL CONTROL	
METHOD OF DISPERSAL	<ul style="list-style-type: none"> • <u>Aerosol knockdown agents</u>: High pressure aerosols that can be applied from a long distance can be used. Application of these insecticides results in a rapid knockdown of the insects. • <u>Dusts</u>: Dusts can be applied to nesting areas. • <u>Baits</u>: Baits mixed with a toxicant can be used for wasps and yellow jackets
CONSIDERATIONS	
SENSITIVE AREAS	<ul style="list-style-type: none"> • Personnel that may be harmed by bees or pesticide application. • Buildings that may be damaged by hives. • Ensure that insecticides do not enter drains, streams, lakes and other surface water.

TURF AND ORNAMENTAL PESTS

Ornamental Plant Pests

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Ornamental Plant Pests

TARGET PEST	
TARGET PEST(S)	Insects and mites attacking ornamental plants
TARGET SITES(S)	All interior and exterior areas with ornamental plants
PURPOSE	<ul style="list-style-type: none"> • Prevent damage to real property (valuable ornamental plants) • Prevent unsightly honeydew and mold accumulation on vehicles and structures
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>All Personnel</u>: properly care for houseplants in working areas • <u>Pest Management Service Provider</u>: conduct integrated pest management to control infestations. • <u>Pest Management Performance Assessment Representative</u>: ensure contractor pest management service provider performs work in accordance with contract specifications • <u>Grounds Maintenance Provider</u>: maintain the health of ornamental plants • <u>Landscape Designer</u>: ensure use of plants well adapted for the given areas in landscaping; ensure placement of plants in areas where their health can be maintained • <u>Integrated Pest Management Consultant</u>: identify unknown pests and recommend control measures.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Visual sighting of pests: <ul style="list-style-type: none"> ○ <u>Caterpillars</u>: immature forms of moths and butterflies. These insects chew on leaves and are often found on the undersides of leaves. ○ <u>Aphids</u>: small (usually about 1/16-inch or smaller) globular, pear-shaped insects. Color is usually green, but may be pink, yellow, blue-green, or black. Almost always with two dorsal tubular structures on the posterior end of the body (cornicles). Wingless and winged forms may be present. Typically found on the undersides of leaves, but may also be present on stems. ○ <u>Scales</u>: flattened sessile insects that suck plant juices from leaves or, more often, stems. Usually appear as oval, waxy shells; no legs or body divisions are visible. Size and color vary depending on age and species. ○ <u>Mealybugs</u>: oval insects that superficially resemble small sowbugs. Exude loose cottony wax that may obscure the body of the insect. May be found on almost any part of the host plant, including the roots. ○ <u>Whiteflies</u>: adults usually appear as minute white flies that hold their wings roof-like over their bodies at rest (though these insects are not true flies). Dark spots or patterns are visible on the wings of some species.

	<p>Adults typically rest on the undersides of leaves, but fly readily if disturbed. Immature whiteflies are sessile, flattened, oval insects that are almost always found on the undersides of leaves. They suck plant juices and can severely reduce plant vigor.</p> <ul style="list-style-type: none"> ○ Mites: minute, globular arachnids very diverse in habit and form. Some are pests of plants. Adult mites will have eight legs, distinguishing them from insects which have six legs. Spider mites are the most common mite pests of ornamentals. Immature spider mites are usually yellowish or straw-colored and the adults are yellowish or green. In severe infestations, a fine web, similar to spider web will coat the plant's foliage. Bright red, fast moving, velvety mites are often present on plant foliage. These mites are predaceous and, therefore, considered beneficial. ○ Nematodes: microscopic, eel-like roundworms. Many species are root-feeding. They are difficult to control and can be easily spread from garden to garden on tools, in soil, or on boots. ○ Other pests: other insects, including cicadas, psyllids, leaf-feeding beetles, and gall-forming insects may be pests of ornamentals. Contact a pest management consultant if unsure of the identity of a pest. <ul style="list-style-type: none"> ● Signs of pest infestation: <ul style="list-style-type: none"> ○ Leaves: chewed, spotted, curled, or otherwise disfigured leaves can indicate an insect or mite infestation. Plant pathogens, nutrient imbalances, and uptake of toxic substances can cause similar disfigurements of leaves. Consult with the pest management consultant when in doubt of the origin of plant damage. ○ Branches: girdled twigs are an indication of infestation by certain types of beetles. ○ Trunks: holes in the trunk or globules of plant resin can indicate infestation by certain types of boring beetles. ○ Ants: ants scurrying about the foliage of a plant may be a sign of infestation by certain plant feeding insects, especially scales, aphids, and mealybugs. These insects exude sugary waste products that ants feed upon. In return, the ants protect the plant feeding insects from predators and parasites.
FREQUENCY	Ornamental plants should be inspected weekly for pests or signs of pests.
ACTION THRESHOLD	Variable, depending on pest. A low-level of infestation is to be expected on outdoor plants. Natural controls (predators, parasites, and plant defenses) typically prevent these low-level infestations from significantly harming the plant. Infestations that significantly reduce plant health or seriously affect plant aesthetics are candidates for chemical control. Unnecessary or excessive pesticide application can compromise natural control by killing beneficial organisms and may lead to pesticide resistance.
NONCHEMICAL CONTROL	
BIOLOGICAL CONTROL	<ul style="list-style-type: none"> ● Bti: Several formulations of the bacterial agent, <i>Bacillus thuringiensis israelensis</i> are available for use against certain pests, particularly caterpillars. ● Fungi: some fungal pathogens of insects have been isolated and formulated for use against insect pests. ● Natural control: Many pests of ornamentals are maintained at low, undamaging levels by the actions of natural enemies. Applying chemical pesticides only when necessary can help conserve these natural enemies. In some cases, universities and government agencies may be actively importing, rearing, and releasing natural enemies for control of particular pests.

SANITATION	<ul style="list-style-type: none"> • Removing, burning, or chipping dead wood and other plant debris can reduce certain pest populations, particularly beetles. • Keep gardening tools clean so as not to carry pests from one plant to the next. • Only buy plants from reputable sources. Ensure that plants don't harbor ants, nematodes, invasive weeds, or other problems.
MECHANICAL REMOVAL	<ul style="list-style-type: none"> • <u>Minor infestations</u>: simply picking pests off of plants can sometimes control small infestations. This technique is typically not practical for large infestations or infestations on outdoor landscaping. • <u>Severe infestations</u>: in some cases, a plant may be so severely infested that there is little chance of control, or the cost of control is not justified by the value of the plant. These plants should be removed, and their tissues destroyed (chipping or burning) so that they do not serve as a source of pests for other plants.
IMPROVE AND MAINTAIN PLANT HEALTH	<ul style="list-style-type: none"> • The best defense against pest infestations is maintenance of healthy, vigorous plants. Healthy plants will be able to tolerate low levels of infestation and prevent pest outbreaks. • Ensure proper watering, fertilizing, and pruning schedules. Do not over water or over fertilize. • Place plants in areas where they receive the appropriate quality and quantity of light.
USE OF NATIVE VEGETATION LANDSCAPING	<ul style="list-style-type: none"> • Native plants are usually less susceptible to pests because they are well adapted to survival in the area. Consider using native vegetation rather than exotic vegetation in landscape design. • Grow a diversity of plants. Plant a variety of sequentially flowering species to provide natural enemies with nectar, pollen, and shelter throughout the growing season.
EDUCATION	Education on natural enemies
CURRENT NONCHEMICAL CONTROL PRACTICES	Maintain health of ornamental plants through proper watering and pruning.
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	<ul style="list-style-type: none"> • A number of soap and oil insecticides are available. Many of these are "25(b)" or EPA minimum-risk pesticides and are exempt from registration due to the low toxicity of the active and inactive ingredients in the product. For a list of these active ingredients, go to http://www.epa.gov/oppbppd1/biopesticides/regtools/25b_list.htm.
METHOD OF DISPERSAL	<ul style="list-style-type: none"> • <u>Contact pesticides</u>: may be sprayed directly onto infested plants. The pesticide must directly contact the pest for control. The applicator should concentrate on the undersides of leaves for most types of pests. Insecticidal soaps are a particular class of contact pesticide with very low toxicity to nontarget organisms. These can be particularly effective against some scale, mealybug, and mite infestations. • <u>Systemic pesticides</u>: these chemicals are absorbed by the plant and ingested by the pest when it feeds on the plant. Some systemics are applied to the foliage; others are applied to the soil and absorbed by the plant's roots.
SENSITIVE AREAS	<ul style="list-style-type: none"> • Use nonchemical controls whenever possible around playgrounds and childcare centers. • Avoid exposing natural areas containing endangered or threatened species. • Ensure insecticides do not enter drains, streams, lakes and other surface water.

<p>RESTRICTIONS/ REGULATIONS/ PERMITS</p>	<p>None.</p>
<p>CONSIDERATIONS</p>	
<p>PROHIBITED PRACTICES</p>	<p>Do not use ultrasonic pest-repelling devices.</p>
<p>SAFETY AND ENVIRONMENTAL PRECAUTIONS</p>	<ul style="list-style-type: none"> • Applicators must use personal protective equipment as required by the product label. • Take precautions to prevent pesticide exposure to personnel when spraying near buildings or other populated areas. • Avoid contaminating water. Do not apply before rain or irrigation to prevent runoff.

VERTEBRATE PESTS

Nuisance Birds

Feral Animals

Rodents

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Nuisance Birds

TARGET PEST AND SURVEY	
TARGET PEST(S)	Nuisance birds (including pigeons, English sparrows, starlings, seagulls, etc.)
TARGET SITES(S)	<ul style="list-style-type: none"> • Office buildings, warehouses, aircraft hangars, and parking lots • Light posts and signs • Ledges, window ledges, and rooftops
PURPOSE	Manage birds that cause safety hazards (Bird/Wildlife Aircraft Strike Hazard), deface buildings, vehicles, and equipment, and provide a potential source of disease, mites, and bed bugs. Bird droppings which accumulate over several years may harbor spores of fungus that cause histoplasmosis, ornithosis, and cryptococcosis.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>Installation Preventive Medicine Technicians</u>: Conduct surveys if birds pose a health hazard and provide pest management recommendations. • <u>Pest Management Service Provider</u>: Conduct integrated pest management to control birds. • <u>Pest Management Performance Assessment Representative</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications. • <u>Facilities Maintenance Provider</u>: Perform facilities repairs and improvements that exclude and minimize pest infestations as requested. • <u>BASH Manager</u>: Manage birds in and around airfields and aircraft facilities to prevent bird aircraft strike hazards (BASH). • <u>Natural Resource Manager</u>: Coordinate management of birds and other wildlife with USDA Wildlife Services and be the POC for depredation permits. • <u>All Personnel</u>: <ul style="list-style-type: none"> ○ Report bird problems especially when they pose a health hazard. ○ Do not feed pest birds (except for residential bird feeders) ○ Keep lids closed on dumpsters and other receptacles
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Visual inspections <ul style="list-style-type: none"> ○ Observation of birds roosting or nesting or entering into a building ○ Observation of signs of bird roosting and nesting such as feces ○ Observation of bird mites in buildings infested with birds. • Personnel complaints: including information on when, where, and how many pests were observed.
FREQUENCY	Daily observation by all personnel and pest management service providers.

ACTION THRESHOLD	When birds pose a health hazard, become a nuisance, or deface property.
NONCHEMICAL CONTROL	
REMOVAL OF FOOD SOURCES	<ul style="list-style-type: none"> • Cover trashcans and dumpsters which attract birds such as gulls • Avoid feeding birds especially pigeons • Sanitation
EXCLUDE ENTRY INTO BUILDINGS	<ul style="list-style-type: none"> • Close windows and doors to buildings • Place netting over windows and doors that must remain open • Place wood, metal, glass, masonry, rust-proofed wire mesh (1/4" thick), or plastic/nylon screen/netting or other barriers over openings or areas of buildings that might be used for nesting
ELIMINATE ROOSTING	<ul style="list-style-type: none"> • Design structures that prevent bird roosting. For example, place a board over ledges at a 45° angle. Make sure the ends are closed to prevent entry. • Remove structures that allow roosting. • Attach anti-roosting devices such as Nixalite bird strips • Apply a chemical repellent such as Hot Foot. • Thinning or pruning trees to remove protective cover can discourage roosting.
SHOOTING	<ul style="list-style-type: none"> • If allowed, a low-caliber rifle can be used indoors to eliminate birds. • Outdoors, shotgun blasts can also scare birds. • This method should only be used by personnel trained in the use of firearms. There are tight restrictions on bringing firearms onto an installation.
HABITAT MODIFICATION	<p>Modify habitats to make them less attractive to birds (especially around airfields)</p> <ul style="list-style-type: none"> • Keep grass low • Fill in areas that hold water
TRAPPING	<ul style="list-style-type: none"> • Pigeon traps have proven to be effective in some situations. • "Australian crow traps" collect a wide variety of birds, but may require a permit to use. • Pigeons should not be relocated as they will likely return to their roosting and feeding areas. They may need to be euthanized.
NEST REMOVAL	<ul style="list-style-type: none"> • Remove bird nests. Nuisance bird nests can be removed with eggs or chicks. Other bird nests cannot be removed unless abandoned or empty. • Cliff swallows: remove mud nests while they are still under construction and do not contain eggs or hatchlings. Once the nest has been established, it is illegal to destroy the nest until it is abandoned.
SCARE DEVICES	<ul style="list-style-type: none"> • Acoustical devices, such as propane-fired cannons, are known as bird bangers. The cannons that work most effectively are those that randomly fire at different times and are multidirectional. It is the unpredictable nature of the noise that frightens the birds • Visual repellent devices such as scare-eye balloons, bird effigies, laser lights, and streamers and flashtape. • Timing is important. It is easier to scare birds if the site has been occupied for a short period of time rather than used for many nights. Scare tactics require at least three to five evenings to be effective. • Raptor Models—strategic placement of owl decoys or raptor silhouettes may be used to discourage roosting. Models must be relocated frequently and have only a short-term effectiveness. <p>Both visual and auditory frightening devices are only effective for short periods of time.</p>

EDUCATION	Understanding of how baits and repellents work Importance of not feeding birds and keeping trash receptacles closed.
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	<ul style="list-style-type: none"> • 4-aminopyridine, polybutene, methyl anthranilate
METHOD OF DISPERSAL	<ul style="list-style-type: none"> • Bait: One type of chemically-treated bait causes birds that ingest the toxicant to emit distress and alarm cries and visual displays that frighten the rest of the flock causing them to leave the site. (e.g., Avitrol) • Chemical repellent: Chemical repellents are non-toxic to the birds and are available for direct application to turf and other surfaces where birds feed or roost. (e.g., 4 The Birds, Hot foot, Tanglefoot, Roost No More, Bird-Proof). Another application method available is a ULV formulation that is allowed to drift directly onto the birds (e.g., Fog Force).
RESTRICTIONS/REGULATIONS/PERMITS	<ul style="list-style-type: none"> • Nuisance birds are not protected under the Migratory Bird Treaty Act, but control of the birds may require a depredation permit. • The NRM should always be consulted when managing non-nuisance birds.
CONSIDERATIONS	
SENSITIVE AREAS	<ul style="list-style-type: none"> • Areas where endangered or threatened species occur. • The use of toxicant bait can elicit a negative public response. Public education, timing, and placement of the bait are important in preventing negative publicity.
PROHIBITED PRACTICES	Do not use ultrasonic pest repelling devices.
SAFETY AND ENVIRONMENTAL PRECAUTIONS	<ul style="list-style-type: none"> • Firearms safety if shooting • Noise hazards with auditory scare devices. • Fall hazard when working on roofs or ledges • Adverse impact on non-target bird especially when using chemicals.

COMMENTS:

All birds except rock doves (pigeons), English sparrows, and starlings are protected under the Migratory Bird Treaty Act (MBTA) and require a depredation permit to control. This also includes nests occupied by birds protected by the MBTA. Contact the installation environmental division regarding a permit before beginning new bird control operations.

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Feral Animals

TARGET PEST	
TARGET PEST(S)	Feral Animals
TARGET SITES(S)	Buildings and property where feral animals frequent
PURPOSE	Control feral animals that may contribute to flea infestations, increase the risk of rabies and other diseases, and prey on local wildlife.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>Pest Management Service Provider</u>: Conduct integrated pest management to control feral animals near buildings when necessary. • <u>Pest Management Performance Assessment Representative</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications. • <u>Facilities Maintenance Provider</u>: Perform facilities repairs and improvements that exclude and minimize pest infestations as requested.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Visual inspections • Customer complaints
FREQUENCY	Daily observation by all personnel.
ACTION THRESHOLD	<ul style="list-style-type: none"> • Any wild/feral animals capable of transmitting rabies and acting sick or aggressive, or damaging property shall be managed. • Any animal (capable of carrying rabies) that has bitten or scratched someone shall be managed and analyzed for rabies.
NONCHEMICAL CONTROL	
LIVE TRAPS	Feral animals requiring extensive care will be taken to the local competent authority under Italian law. If determined by the local competent authority to be sick or injured they may be sterilized as a humanitarian measure by the local competent authority.
SANITATION	<ul style="list-style-type: none"> • Remove food source • Cover trash cans/dumpsters
EDUCATION	Keep personnel from feeding the feral animal population.
HABITAT MANAGEMENT	Remove available harborage sites

COMMENTS:

Toxic baits shall not be used for feral animal management.

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Rodents

TARGET PEST	
TARGET PEST(S)	<ul style="list-style-type: none"> • Commensal: Norway rats, roof rats, house mice • Peridomestic: Field mice (e.g., deer mice) • Landscape: gophers, ground squirrels
TARGET SITES(S)	Buildings, utility vaults, other structures, and landscaped areas
PURPOSE	Control rodents that may cause food contamination, disease transmission, property damage or be a nuisance.
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>Building Occupants</u>: Ensure sanitation and other measures to prevent introduction and propagation of pests. • <u>Installation Preventive Medicine Technicians</u>: <ul style="list-style-type: none"> ○ Conduct surveys where rodents pose an adverse health or safety risk ○ Provide informal quality assurance for pest control ○ Provide pest management and disease prevention recommendations. • <u>Pest Management Service Provider</u>: Conduct integrated pest management to control infestations. • <u>Pest Management Performance Assessment Representative</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications. • <u>Facilities Maintenance Provider</u>: Perform facilities repairs and improvements that exclude and minimize pest infestations as requested. • <u>Grounds Maintenance Provider</u>: Perform removal of potential food sources (e.g., fruit on trees) and creation of barriers (e.g., vegetation removal) around buildings that promote rodent invasion. • <u>Natural Resource Manager</u>: Provide guidance when rodent control operations may impact endangered or threatened species or species of concern.
SURVEILLANCE	
METHODS	<ul style="list-style-type: none"> • Visual inspections: observations of rodents or signs of rodents, such as nests, rub marks, gnawing, earth mounds, holes, etc. • Use of tracking powder • Personnel complaints: including information on when pests were observed, where, and how many. • Conduct pre- and post-treatment surveys to determine whether control operation was effective • Use of ultraviolet inspection lights (rodent urine and hair will fluoresce under UV light)
FREQUENCY	Daily observation by building occupants. Routine facilities inspections by cognizant PMT or pest control service provider.

ACTION THRESHOLD	Sighting of any rodent or sign of rodent in or immediately surrounding the building.
NONCHEMICAL CONTROL	
SANITATION	Remove or prevent access to all potential food and harborage sources inside and outside of buildings.
ELIMINATE STANDING WATER	Fix leaking plumbing around buildings
PEST PROOFING	<ul style="list-style-type: none"> • Trim ornamental plants and trees to prevent harborage. • Seal holes in exterior walls that may serve as entryways. • Trim tree limbs so that they are at least 6 feet from the building. • Trim vegetation around buildings. • Clean up debris from inside and around buildings. • Request support from facilities maintenance and/or grounds maintenance provider if necessary.
HABITAT DESTRUCTION	<ul style="list-style-type: none"> • For field mice: vegetation removal and disking of soil in a barrier 50 ft around buildings will prevent rodent invasion. This is usually done after area-wide rodenticide application. • Use of native landscaping will tend to reduce peridomestic and landscape rodent infestations. Avoid heavy ground covers that provide harborage and cover for rodents to move into buildings from unimproved grounds.
TRAPPING	Glue boards, snap traps, or other mechanical trapping devices. (see health precautions below)
EDUCATION	<ul style="list-style-type: none"> • Awareness of the importance of sanitation on preventing rodents. • Understanding and preventing diseases associated with rodents.
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	<ul style="list-style-type: none"> • Second generation anti-coagulants: brodifacoum, bromadiolone, difenacoum, difethialone • First generation anti-coagulants: diphacinone, chlorophacinone, warfarin • Others: zinc phosphide, cholecalciferol, bromethalin • Fumigant: aluminum phosphide
METHOD OF DISPOSAL	<ul style="list-style-type: none"> • <u>Anticoagulant bait</u>: Multi or single dose blocks or pellets; toxicant effect is delayed. • <u>Single dose acute toxicant bait</u>: Acute toxicant effect; often broadcast outdoors on ground. • <u>Liquid bait</u>: Used in areas where water sources are scarce. <ul style="list-style-type: none"> ○ When used in occupied spaces or outdoors where there is a risk of exposure to humans and nontarget animals, the bait should be contained in a tamper-proof bait station. ○ Baits can be applied directly into burrows. • <u>Fumigation</u>: Used for control of rodents in burrows. Consult a NAVFAC pest management consultant if necessary.
RESTRICTIONS/REGULATIONS/PERMITS	All rodenticide baits are required to be applied in tamper-proof bait stations.

CONSIDERATIONS	
SENSITIVE AREAS	<ul style="list-style-type: none"> • Areas where humans and nontarget animals may come into contact with the rodenticide, particularly childcare centers. • Areas where endangered or threatened rodent species occur and may consume bait. • Areas where rodents may be primary food source for an endangered or threatened animal. • Habitat destruction to reduce food sources or harborage may also be destructive to critical habitats of endangered or threatened species. • The pest management coordinator shall consult the environmental compliance office before any pest management operations are conducted outdoors on unimproved grounds or wildlands.
PROHIBITED ITEMS	<ul style="list-style-type: none"> • Do not use ultrasonic pest repelling devices. • Myth: Allowing cats to live around buildings controls rodent population. Reality: Cats are inefficient at rodent control especially when they are already being fed. In many situations, cats pose greater hazards than rodents.
SAFETY AND ENVIRONMENTAL PRECAUTIONS	<ul style="list-style-type: none"> • Active ingredients in rodenticides are highly toxic to humans and precautions must be taken to prevent human exposure. • Applicators must wear proper protective equipment as required by the product label. • Rodenticides can adversely impact non-target animals through direct poisoning or secondary poisoning. • Traps, such as stick traps, may catch non-target animals such as reptiles and birds. These should only be used indoors.

COMMENTS:

1. Precautions on indoor rodent control:

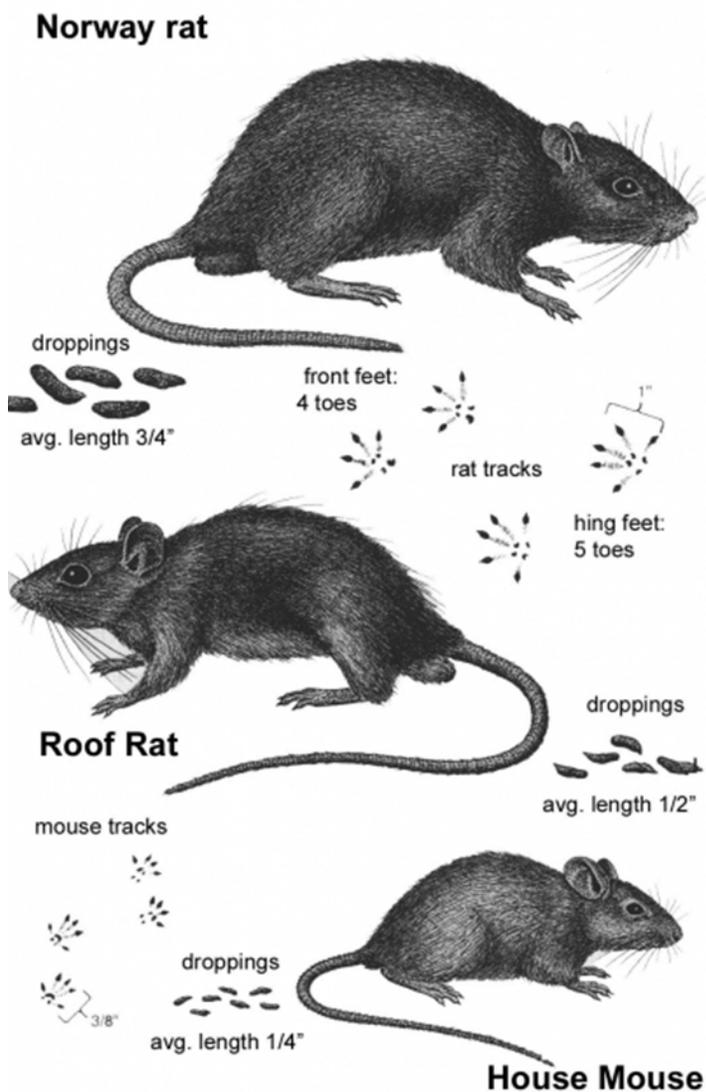
- a) Most rodents are infested with ectoparasites (fleas, mites, lice) that may also infest or transmit disease to humans. Ectoparasite control should be conducted prior to eliminating (trapping or rodenticides) rodents.
- b) Rat control indoors using rodenticides should be avoided. The most commonly used rodenticide baits have a delayed toxic effect that do not kill the rodent until hours (or days for multidose) after they have consumed the bait. Rodents may die in walls and other voids where the carcass is difficult to retrieve leading to odor problems due to the decaying carcass.

2. Disease Prevention:

Rodents can harbor a number of human disease agents; among them are hantavirus and plague. Precautions must be taken when working in rodent infested areas. Rodent feces and dried urine may contain hantavirus that is transmitted when these waste materials are inhaled. Precautions should also be taken when handling dead rodents in traps and when found after rodenticide use. The following precautions should be taken:

- a) Avoid disturbing feces and other rodent waste when entering enclosed spaces. Use a fitted respirator with high efficiency particulate air (HEPA) filter if necessary.
- b) Soak rodent waste and dead rodents with a household disinfectant or bleach solution before removing.

- c) Wear gloves when cleaning or picking up rodent carcasses. Put material in a double plastic bag and dispose of in regular trash.



VEGETATION MANAGEMENT

Terrestrial Weeds

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Terrestrial Weeds

TARGET PEST	
TARGET PEST(S)	Grass-like, broadleaf, and woody weeds growing on land
TARGET SITES(S)	<ul style="list-style-type: none"> • Landscaped areas • Natural areas threatened by invasive weeds
PURPOSE	<ul style="list-style-type: none"> • Reduce fire hazards • Remove vegetation coverage for rodents and other pests • Control the spread of invasive species
RESPONSIBILITY	<ul style="list-style-type: none"> • <u>Pest Management Service Provider (PMSP)</u>: Conduct integrated pest management to control weeds. • <u>Pest Management Performance Assessment Representative (PMPAR)</u>: Ensure contractor pest management service provider performs work in accordance with contract specifications. • <u>Grounds Maintenance Provider (GMP)</u>: Remove weeds during regular landscape maintenance to prevent establishment; maintain the health of desirable plants.
SURVEILLANCE	
METHODS	Visual sighting
FREQUENCY	<ul style="list-style-type: none"> • Daily inspection of areas with extreme fire hazard • Weekly inspection of landscaped areas. Can be done in conjunction with regular landscape maintenance. • Yearly inspection of natural habitats targeted for ongoing weed-abatement programs
ACTION THRESHOLD	Areas of installations where ordinance or other flammable/explosive materials are stored have zero tolerance for weeds due to fire hazard. Consequently, visual sighting of any weed warrants control.

NONCHEMICAL CONTROL	
MECHANICAL REMOVAL	<ul style="list-style-type: none"> • <u>Pulling or hoeing</u>: pulling can be done either by hand or with tools such as the weed wench which works well on large plants. Try to pull up as much root as possible as roots can sprout new shoots. Digging or hoeing is sometimes used in conjunction with pulling to remove the entire root. Follow up work will be necessary until desired plants become well established. • <u>Mulching</u>: mulch shades the soil surface and kills sprouting weeds. Mulching also keeps lawn mowers away from ornamentals. • <u>Mowing</u>: Mow unwanted plants before they have a chance to set seeds. • <u>Chaining</u>: chains are dragged across the top of target weeds, destroying the canopy and reducing weed density. • <u>Root plowing</u>: horizontal blades beneath the surface of the ground sever the root system of target weeds
STEAM	Steam applied to foliage will often kill plants. This technique is unlikely to be cost effective for most weed-control situations
IMPROVE PLANT VIGOR	<ul style="list-style-type: none"> • Landscaping plants that are healthy will be better able to compete with weeds, thereby slowing the rate of weed invasion. • Maintain proper watering, fertilizing, and pruning schedules for desirable landscaping plants. This is particularly important for managing crabgrass in turf.
MULCH	<ul style="list-style-type: none"> • Organic mulches include wood chips, sawdust, yard waste, and bark chips. Course textured mulches should be applied up to 4 inches deep. Fine textured mulches should be applied to a depth of about 2 inches. • Inorganic mulches include sand, gravel, and pebbles. Use a porous landscape fabric underneath to prevent mulch from sinking into soil. • Synthetic mulches include geotextiles and landscape fabric. Synthetic mulches can be used in conjunction with organic and inorganic mulches.
CHEMICAL CONTROL	
COMMON ACTIVE INGREDIENTS	Glyphosate, 2,4-D, diuron, dicamba, sethoxydim, bromacil, diquat, surflan, and others
METHOD OF DISPERSAL	<ul style="list-style-type: none"> • <u>Pre-emergent</u>: herbicide is applied to the soil before the weed emerges, preventing the weed from developing. The chemical should be applied to the soil just before seed germination. Selective pre-emergents must be used so that desirable landscape plants are not harmed. • <u>Foliar-sprayed Post-emergent</u>: herbicide is sprayed directly onto the foliage of the weed. Post-emergents should be applied after the weed emerges, but before seed set. Foliar application is most effective when weeds are young. • <u>Soil-applied Post-emergent</u>: herbicide is applied to the soil around the weed. The herbicide is absorbed by the plant through its root system. • <u>Stump Treatment</u>: herbicide is applied to stumps immediately following cutting. For trees, the herbicide needs to cover the cambium which is located between the bark and wood. The herbicide prevents the tree or weed from growing stump-sprouts in the next growing season. • <u>Weed and Feed Products</u>: Some fertilizers are formulated with herbicides to prevent the growth of weeds. <p>Note: Correct timing of the herbicide application is often essential for effective weed control. Timing will depend on the species of weed, the mode of action and persistence of the herbicide, nonchemical practices in use, soil conditions, and climate.</p>

CONSIDERATIONS	
SENSITIVE AREAS	<p>ical controls instead of chemical controls whenever possible around playgrounds and nters.</p> <p>sing natural areas containing endangered or threatened plant or animal species.</p> <p>icide drift into sensitive areas and onto desirable landscape plants.</p>
SAFETY AND ENVIRONMENTAL PRECAUTIONS	<p>use personal protective equipment required by the product label.</p> <p>t of herbicides to non-target areas and prevent contact with desirable plants. Avoid ng water.</p>

ADDITIONAL INFORMATION:

Non-chemical methods are preferred.

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APPENDIX A

Points of Contact

- A.1 INSTALLATION PEST MANAGEMENT POINTS OF CONTACT**
- A.2 NAVAL FACILITIES ENGINEERING COMMAND, ATLANTIC APPLIED BIOLOGY SECTION POINTS OF CONTACT**
- A.3 NAVY ENTOMOLOGY CENTER OF EXCELLENCE POINTS OF CONTACT**
- A.4 NAVY ENVIRONMENTAL PREVENTIVE MEDICINE UNIT SEVEN POINTS OF CONTACT**

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A.1 INSTALLATION PEST MANAGEMENT POINTS OF CONTACT

This list provides the contact information for pesticide compliance and pest management. This page should be kept up to date to ensure the appropriate personnel may be contacted as necessary.

Name	Title	Phone Number (Area Code XXX)	E-mail
Mike Carsley	IPMC	DSN 626-6706	Michael.j.carsley@eu.navy.mil
CDR Tom Bestafka	Public Works Officer	DSN 626-8212	Thomas.Bestafka@eu.navy.mil
Rondel Williams	FSC Contracting Officer	DSN 626-3927	Rondel.williams@eu.navy.mil
Rob Chichester	Environmental Director	DSN 626-6644	Robert.chichester@eu.navy.mil
LCDR Juan Chavira	FEAD	DSN 626-5704	Juan.chavira@eu.navy.mil
Rob Chichester	Natural/Cultural Resources Manager	DSN 626-6644	Robert.chichester@eu.navy.mil
Silvana Di Ieso	Hazardous Waste/Materials	DSN 626-6643	Silvana.Dilesio.it@eu.navy.mil
LT Courtney Coker	PREVMED Department Head	DSN 629-4170	Courtney.a.coker.mil@mail.mil
LCDR Anne McDonough	Occupational Health Department Head	DSN 626-5801	Anne.r.mcdonough.mil@mail.mil
LT Robin Schubauer	Industrial Hygienist	DSN 626-5801	Robin.schubauer@med.navy.mil
Patrick Bolton	Safety Officer	DSN 626-4790	Patrick.bolton@eu.navy.mil
Janet Murdoch	Golf Course Superintendent	DSN 626-4054	Janet.murdoch@eu.navy.mil
Tony Smith	MWR Manager	DSN 626-5130	Anthony.smith1@eu.navy.mil
	Navy Lodge Manager		
Jayme Thibault	Housing Manager	DSN 629-4410	Jayme.thibault@eu.navy.mil
Cheryl Ludington	Commissary Store Director	DSN 629-4871	Cheryl.ludington@deca.mil
Tom Goodman	NEX Manager	081-813-5424	Tom.goodman@nexweb.org
Christopher Kasperek	Child Development Center Director	DSN 629-4390	Christopher.kasperek@eu.navy.mil
CAPT White	Veterinary Clinic	DSN 629-7919	lauren.e.white6.mil@mail.mil

A.2 NAVAL FACILITIES ENGINEERING COMMAND, ATLANTIC APPLIED BIOLOGY SECTION POINTS OF CONTACT

NAVFAC Atlantic Applied Biology Section			
Code EV51		6506 Hampton Blvd	
		Norfolk, VA 23508-1278	
COMMERCIAL		DSN	
Commercial: (757) 322-XXXX		DSN: 262-XXXX	
NAME	TITLE	EXT	EMAIL
Sabra Scheffel	Applied Biology Dept Head	4320	sabra.scheffel@navy.mil
Steven Holmes	Pest Management Consultant	8295	steven.p.holmes@navy.mil
Chris Martin	Pest Management Consultant	4611	chris.d.martin@navy.mil
Steve Robertson	Pest Management Consultant	4796	steve.b.robertson1@navy.mil
Kirk Williams	Pest Management Consultant	4254	kirk.williams@navy.mil

A.3 NAVY ENTOMOLOGY CENTER OF EXCELLENCE POINTS OF CONTACT

Navy Entomology Center of Excellence		
Naval Air Station		P.O. Box 43 Bldg 937
		Jacksonville, FL 32212-0043
COMMERCIAL		DSN
(904) 542-2424		942-2424

A.4 NAVY ENVIRONMENTAL PREVENTIVE MEDICINE UNIT SEVEN POINTS OF CONTACT

Navy Environmental Preventive Medicine Unit Seven (NEPMU-7)		
NEPMU-7		PSC 819 Box 67
		FPO AE 09645-0085
E-MAIL		WEBSITE
nepmu7@med.navy.mil		http://www.med.navy.mil/sites/nmcphc/nepmu-7/Pages/default.aspx
COMMERCIAL		DSN
011-34-956-83-2230		314-727-2285

APPENDIX B

Maps

B.1 GENERAL LOCATION MAP

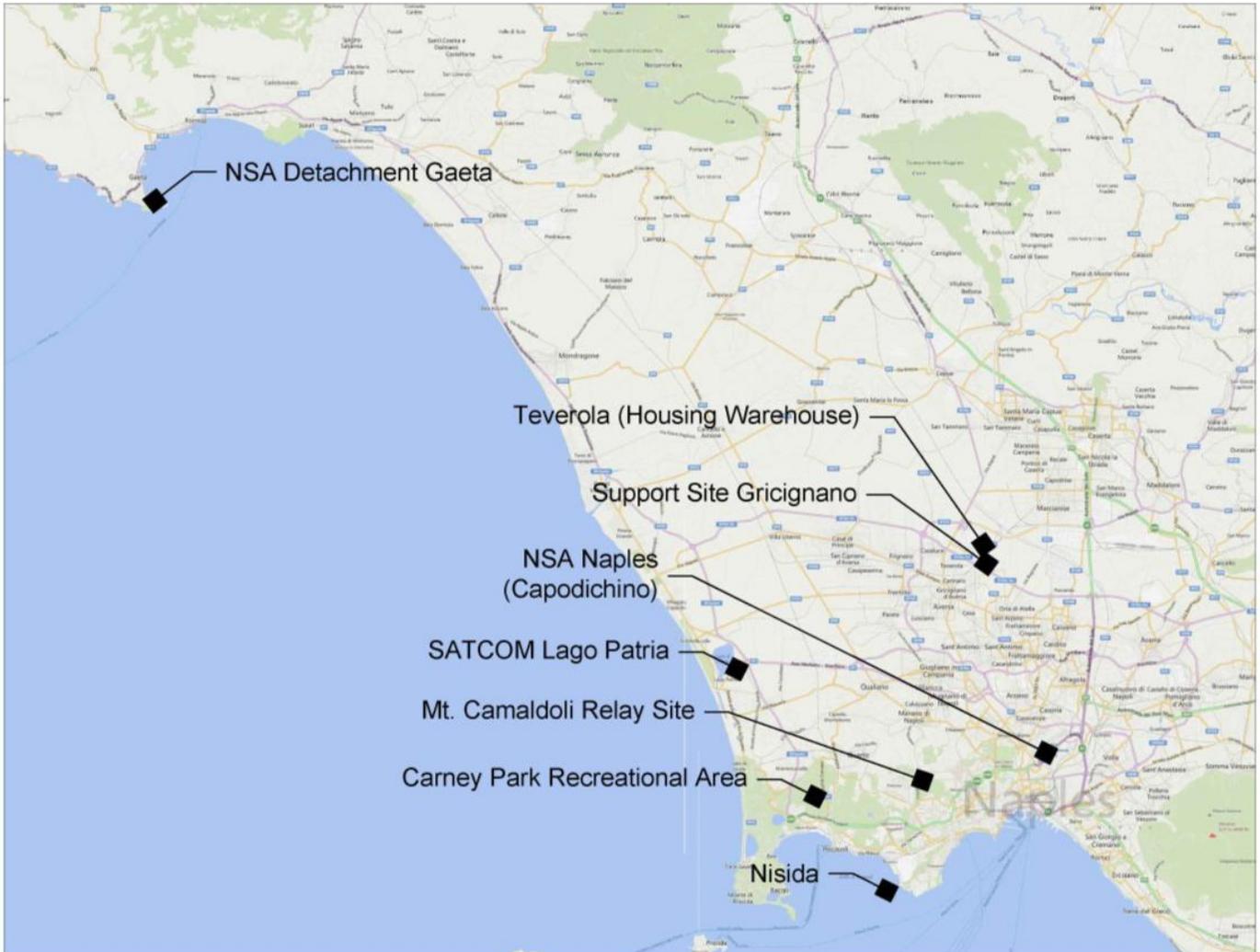


Figure B-1. General location map

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B.2 MAPS OF INSTALLATION

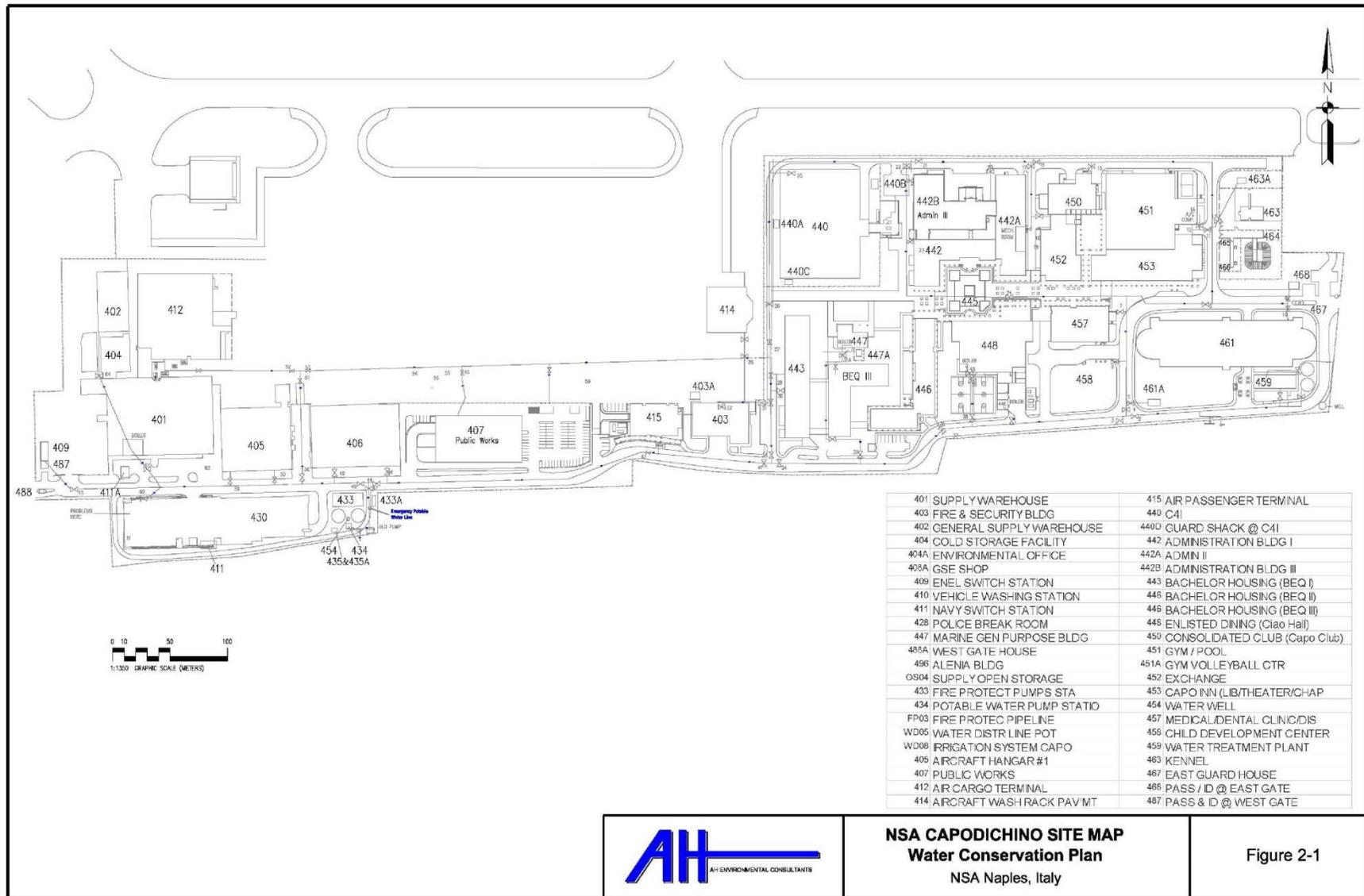


Figure B-2. Capodichino Site Map

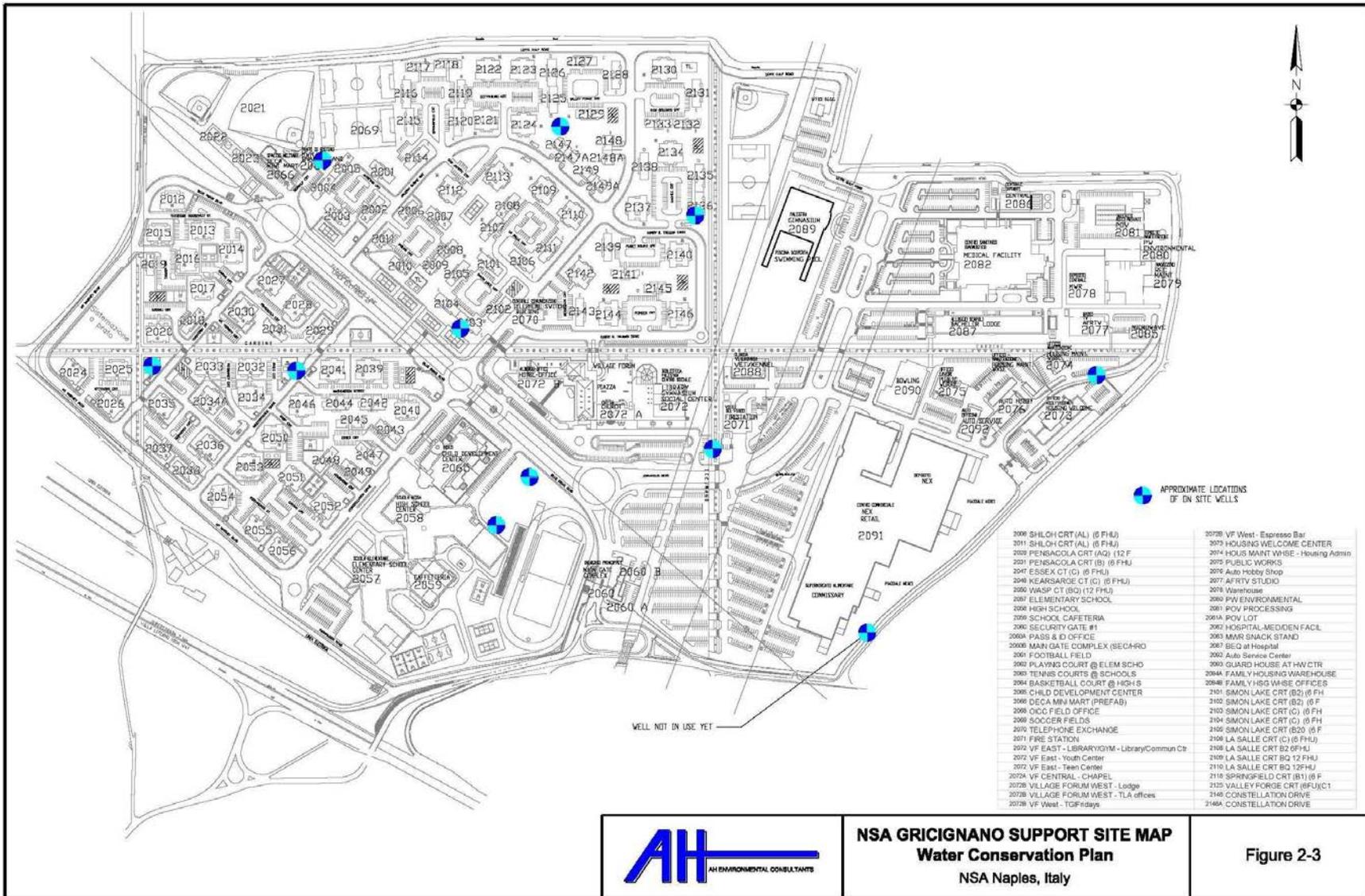


Figure B-3. Grigignano Site Map

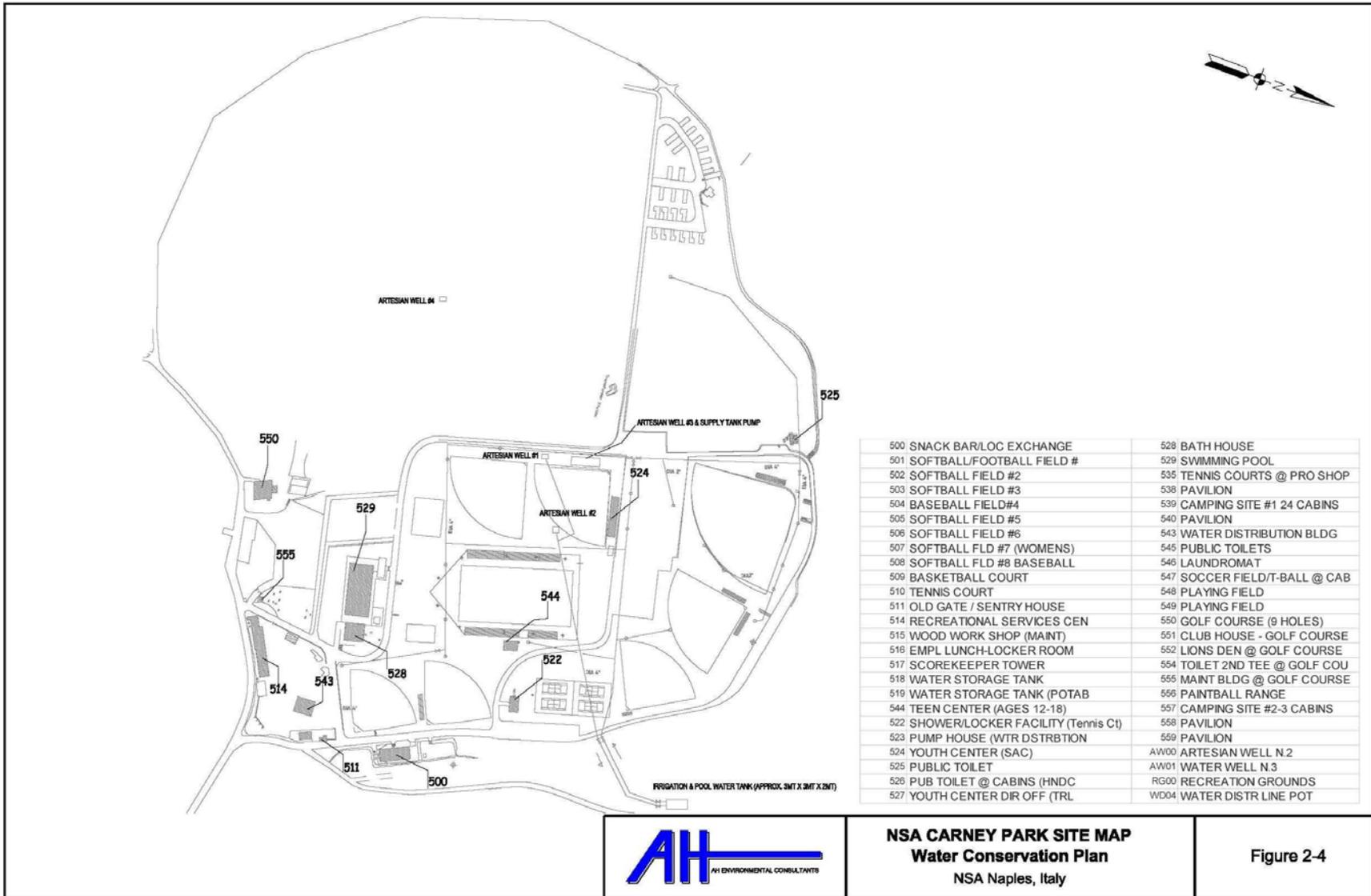


Figure B-4. Carney Park Site Map

APPENDIX C

Program Review

- C.1 PEST MANAGEMENT PROGRAM SELF-ASSESSMENT CHECKLIST**
- C.2 INTEGRATED PEST MANAGEMENT PLAN ANNUAL UPDATE FORM**
- C.3 CARNEY PARK INSPECTION CHECKLIST**
- C.4 2014 PROGRAM REVIEW**

Add to appendix C: copies of program review reports, EMS reports, and inspection checklists

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C.1 PEST MANAGEMENT PROGRAM SELF-ASSESSMENT CHECKLIST

Installation Name: _____ Date: _____

Name of Person Completing Checklist: _____

Review Item	Reference	Verification and Documentation	Y	N	N/A
Pest Management Coordinator					
Is IPMC designated and appointed by CO/CG by letter?	6250.4C : Encl. (1), Para.4.h.(6) 5090.1 : 24-5.3	Copy of appointment letter.			
Is IPMC properly qualified and trained? If an IPMC selects or applies pesticides, he or she must be certified as a DOD pesticide applicator.	6250.4C : Encl. (1), Para.6.	Copy of course completion certificate or DOD pesticide applicator certificate.			
Does the IPMC oversee the installation pest management program and pest management plan and remain aware of and familiar with all pest management operations on the installation?	4150.07 : E2.11	Operations documented in the installation integrated pest management plan; IPMC has copies of pesticide approvals and pest management reports; IPMC is actively involved in pest management decision making.			
Pest Management Plan					
Does installation have a current comprehensive IPMP? IPMPs remain current for 5 years.	4150.07 : E4.2. 6250.4C : Encl. (1), Para.9.a. 5090.1 : 24-3.9. 5090.2A: 14203	Copy of IPMP.			
If installation does not have an IPMP, has command planned and budgeted for development and maintenance of an IPMP?	4150.07 : E4.2.1.1.	Environmental division should have IPMP listed as a deficiency and submit an EPR.			
Is IPMP signed by CO/CG?	6250.4C : Encl. (1), Para.9.a.	IPMP signature page.			
Is IPMP reviewed and signed by IPMC, medical department, and BUMED and NAVFAC pest management consultants?	4150.07 : E4.2.1.7 6250.4C : Encl. (1), Para.6.a.	IPMP signature page.			
Is IPMP updated annually by qualified personnel (trained or certified IPMC or PMPAR) and current (contains current POCs, contracts, applicator licenses, list of approved pesticides, etc.)?	4150.07 : E4.2.1.2.	View applicator licenses, dates of pesticide approvals, and other items that indicate the information is not outdated.			
IPMP includes the following sections: <ul style="list-style-type: none"> List of program objectives Description of all pest management requirements and programs and staffing requirements (including in-house, contract, agricultural outlease, golf course, NAFI, GOCO, experimental, and natural resources) Description of IPM procedures for all pest and disease vectors Identification of program resources (facilities, equipment, etc.) to support program List of pesticides approved by NAVFAC pest management 	4150.07 : E4.2.	IPMP contains information and sections as outlined in 4150.07 , Encl.4.			

consultant <ul style="list-style-type: none"> • Procedures for managing spills • Identification of planned measures to comply with DOD MOA and with state pesticide regulatory office regarding use or application of pesticides • Description of contracted pest management operations • Description of operations with special environmental considerations • Identification of animal control efforts • Identification of potential vector-borne diseases and collaboration with local health agencies • Applicable laws and regulations • Agricultural outlease operations 					
Section of IPMP pertinent to pest management in habitat(s) of endangered/threatened species is reviewed and comment provided by U.S. Fish and Wildlife Service.	4150.07 : E4.8.1.	Correspondence from USF&WS that they have reviewed the IPMP is on file.			
All stakeholders (including IPMC, PMPARs, environmental division, medical department, pest control shops, NAFIs, agricultural outlease program manager, and golf course superintendent) have copy of or ready access to current IPMP.	BMP	IPMP readily available to stakeholders as hard or electronic copy.			
Program Maintenance					
Have BUMED and/or NAVFAC conducted program reviews in order for the installation to maintain program and IPMP?	6250.4C : Encl. (1), Para.10.a. 5090.1 : 24-3.10. 5090.2A: 14204,1.c.	Program reviews on file.			
Have deficiencies and recommendations from past reviews been resolved or addressed in order to maintain and improve program?	6250.4C : Encl. (1), Para.10.a. 5090.1 : 24-4.4 5090.2A: 14204,1.c.	Documentation of corrections on file and/or corrections made were noted in follow-up inspection or review.			
Do DOD pest management personnel remain current in IPM technologies?	BMP	Personnel attend training workshops, are provided in-service training and/or have access to pest control trade journals.			
Training and Certification					
Do all installation pest management personnel who apply or supervise the application of pesticides have current DOD certification or EPA-approved certification or license?	4150.07 : E4.4.2. 5090.1 : 24-3.19.	Copies of all licenses and certificates on file, preferably in IPMP, and applicators have cards while applying.			
If DOD applicator certification expired, has applicator received a six-month extension from a NAVFAC pest management consultant?	4150.07 : E4.4.2.1.	Correspondence from NAVFAC approving extension.			
If DOD applicators are not certified (i.e., apprentices), are they under the direct supervision of a certified applicator while performing pesticide applications?	4150.07 : E4.4.2.	Observe operations to ensure proper supervision, if necessary.			

Was evidence of contractor pesticide applicator licensing or certification provided to contracting officer prior to award?	4150.07 : E4.4.2.2 6250.4C : Encl. (1), Para. 15.b.	Copies of all licenses and certificates on file, preferably in IPMP, and applicators have cards while applying.			
Are PMPARs trained in performance assessment evaluation and pest management technology?	6250.4C : Encl. (1), Para. 15.c.	Copies of training course certificates on file, preferably in IPMP.			
Do pest management personnel seek and attend continuing education courses?	BMP	Copies of course completion certificates on file.			
Staffing					
Is staffing sufficient to effectively control pests and manage program?	BMP	Interview applicators, supervisors, and managers.			
If personnel indicate that staffing is insufficient, then what indicators or data are being collected to show that staffing levels are insufficient?	BMP	View indicators or data.			
Pesticide Procurement					
Does installation use only pesticides approved by NAVFAC pest management consultant?	4150.07 : E4.2.2.1. 5090.1 : 24-3.16. 5090.2A: 14206.1.b.	IPMC maintains approved pesticide list. Inspect pesticides in pest control storage and on vehicles to ensure they are listed on the current pesticide approval list.			
Pest Management Records and Reporting					
Are records kept for all pest management operations conducted on the installation, including those by NAFIs and for agricultural operations and environmental protection?	7 U.S.C. § 136i-1(a)(1) 6250.4C : Encl. (1), Para. 23. 5090.1 : 24-3.16. 5090.2A: 14210 4150.07 : E4.11.1				
Are records retained indefinitely?	6250.4C : Encl. (1), Para.23.a. 5090.1 : 24-3.4.				
Do personnel and regulatory agencies have ready access to records? (e.g., able to access records by location, pesticide, applicator, etc.)	7 U.S.C. § 136i-1(b)				
Is the installation using the NAVFAC Online Pesticide Reporting System?	BMP				
Are reports of pest management operations being sent to NAVFAC?	6250.4C : Encl. (1), Para. 23.b.				
Contracting					
Do properly trained PMPARs inspect the performance of contractors?	4150.07 : E4.6.4.(1)	Training certificates and contract monitoring documents are on file.			
Are all pest management contracts on the installation monitored by PMPARs?	4150.07 : E4.6.2.	Check also MCCS, MCX, NEX, and MWR contracted services.			
Do PMPARs measure efficacy and ensure safety and environmental compliance of contract pest control?	6250.4C : Encl. (1), Para.15.c.	Interview PMPARs to identify method and frequency of inspections. List methods of measurement.			
Are pest management contracts sent to NAVFAC for review?	5090.1 : 24-3.16	Correspondence with NAVFAC.			
Are all contract pesticide applicators currently licensed in the state in which they operate?	4150.07 : E4.4.2.2. 4150.07 : E4.6.1.	Copies of current certificates or licenses are on file, preferably in IPMP.			
Is the pest control contractor currently registered with the Structural Pest	4150.07 : E4.6.1.	Copy of current registration certificate on file, preferably in IPMP.			

Control Board or the equivalent state pest control business registration agency?					
Pest Control Shop					
Does pesticide storage area pose a hazard to personnel in adjacent areas or buildings?	4150.07 : E4.5.1. 1028/8A: Para.2.4	Inspect building to see that exhaust vapors will not move into adjacent occupied areas.			
Does storage area have sufficient security to prevent unauthorized entry?	4150.07 : E4.5.1. 1028/8A: Para.2.8	Conduct inspection to ensure doors can be locked, equipment storage areas can be secured, and that applicators lock doors when leaving premises.			
Does building have clean area for office?	4150.07 : E4.5.1. 1028/8A: Para.3.1.3.1				
Are separate laundry facilities (designated only for cleaning of clothing potentially contaminated with pesticide) available for work clothing?	BMP				
Are shower facilities available for employees?	BMP				
Is separate space or cabinets provided for storage of PPE?	4150.07 : E4.5.1. 1028/8A: Para.3.1.3.1.3				
Are pesticides stored off the floor and with sufficient access so that all labels are visible?	4150.07 : E4.5.1. 1028/8A: Para.3.1.4.1.2				
In areas where pesticide concentrates are stored or mixed, are floor drains sealed or not present and is containment provided (bermed or sloped floors)?	4150.07 : E4.5.11028/8A: Para.3.1.4.1.2 5090.1 : Para.24-3.11				
Are all surfaces on which pesticides are stored and mixed and on which pesticide application equipment is serviced made of non-absorbent materials?	4150.07 : E4.5.1. 1028/8A: Para.3.1.4.1.2				
Are pesticides stored in a dry room or building with a temperature between 50 °F and 100 °F?	4150.07 : E4.5.1. 1028/8A: Para.3.1.4.1.2				
Are fire extinguishers provided and easily accessible to occupants?	4150.07 : E4.5.1. 1028/8A: Para.3.1.4.1.2	Inspect inspection record and see that fire extinguishers are fully charged.			
For large pesticide containers with spigots, is a drip pan containing absorbent material placed below spigot?	4150.07 : E4.5.1. 1028/8A: Para.3.1.4.1.2				
Are backflow prevention devices installed on faucets used to fill pesticide tanks?	4150.07 : E4.5.1. 1028/8A: Para.3.5.2.10				
Are emergency decontamination facilities (i.e., eye wash, deluge shower) provided onsite and readily accessible?	4150.07 : E4.5.1. 1028/8A: Para.3.5.2.12	Check to see that it is functional and that inspection records are up-to-date. Ensure that, in an emergency, personnel can easily access and operate the devices.			
Are ventilation fans available in storage and mixing areas and do they function and provide adequate ventilation (six changes of air per hour)?	4150.07 : E4.5.1. 1028/8A: Para.3.5.4.2 5090.1 : 24-3.11.	Operate fans. Check IH survey ventilation results (Copy may be available in shop or contact installation IH).			
Are identification signs clearly visible on building and fences to advise	4150.07 : E4.5.1. 1028/8A: Para.3.8				

personnel of the contents and warn of their hazardous nature?					
Are only pesticides listed on approved pesticide list stored?	4150.07 : E4.5.1. 5090.1 : 24-3.16. 5090.2A: 14206.1.b.	Compare approved pesticides list with items stored on shelves.			
Do all pesticide containers have EPA-approved labels attached?	5090.1 : 24-3.5.				
Are spill kits provided and readily accessible?	6250.4C : Encl. (1), Para. 13.d. 5090.1 : 24-3.12(b)	Inspect to ensure contents are suitable for pesticide spills.			
Are SDSs and labels for each pesticide stored and used maintained and readily accessible in the pest control shop?	5090.1 : 24-3.5	Review SDS/label book and compare with pesticides stored in shop and on vehicles.			
Pest control equipment					
Is equipment properly maintained and clean (no evidence of leakage and spillage)?	BMP				
Are different sprayers used for herbicides and insecticides?	BMP	Sprayers are properly marked.			
Is equipment routinely calibrated to ensure proper delivery of pesticide?	BMP	Calibrations, if needed, are recorded in a logbook or other recordkeeping system.			
Is application equipment stored in a secure area?	4150.07 : E4.5.1. 1028/8A: Para. 3.4.6.				
Pest Control Vehicles (DOD and Contract)					
Are pesticides stored in a lockable compartment on the vehicle?	BMP				
Does applicator ensure that pesticides are not stored in passenger compartment of vehicle?	BMP				
Is the vehicle clean and maintained (no evidence of leakage and spillage)?	BMP				
Does the vehicle have a properly stocked spill kit?	6250.4C : Encl. (1), Para. 13.d.				
Is the vehicle properly identified to warn of pesticides on vehicle?	BMP				
Are all containers on vehicle, including service containers, properly labeled?	5090.1 : 24-3.5.				
Is PPE properly stored on vehicle?	BMP				
Are SDSs (formally MSDSs) for pesticides carried on vehicle?	BMP				
Are appropriate wash racks provided for cleaning vehicles (i.e., does not drain into stormwater system)?	BMP				
Integrated Pest Management					

Is integrated pest management practiced in order to minimize pesticide use when non-chemical alternatives are available and cost effective?	7 U.S.C. § 136r-1 6250.4C : Encl. (1), Para. 3.c. (5) 5090.1 : 24-3.8 5090.2A: 14202/14301.8. 4150.07 : E4.2.	Pest management service providers have survey devices (i.e., sticky traps) and less toxic and sustainable pesticides (i.e., baits) in their inventory. Records include surveys and the application of less toxic pesticides and use of non-chemical methods.			
Does the installation pest management plan emphasize and describe the use of IPM to provide sustainable pest management?	7 U.S.C. § 136r-1 6250.4C : Encl. (1), Para. 3.c.(5). 4150.07 : 4.2 5090.2A: 14202	Review IPMP sections that list pest control methods. Review installation instructions, orders, or policies, especially for housing, that encourage IPM practices.			
Does the installation use practices that demonstrate IPM?	7 U.S.C. § 136r-1 6250.4C : Encl. (1), Para. 3.c. (5) 4150.07 : 4.4 5090.2A: 14202	Identify and list practices.			
Does the installation promote IPM?	7 U.S.C. § 136r-1 6250.4C : Encl. (1), Para. 3.c. (5) 4150.07 : 4.1 5090.2A: 14202	Identify and list promotion practices.			
Pesticide Application					
Are pesticides applied in accordance with the label directions?	7 U.S.C. § 136(j) 4150.07 : E4.5.3.	Interview applicators. Observe application if possible. Wear appropriate PPE.			
Are special precautions taken for operations at child development centers, housing, medical treatment facilities, and food preparation areas?	4150.07 : E4.8.1, E4.8.2, and E.4.8.3.	Interview applicators and review records to see if steps are taken to minimize pesticide use or use less toxic pesticides in these areas.			
Are liquid and dust formulations of pesticides applied only when unprotected personnel are not occupying the work space to be treated?	5090.1 : 24-3.2.	Interview applicators. Observe application if possible. Wear appropriate PPE.			
Are preventive pesticide treatments prohibited unless approved by a pest management consultant?	4150.07 : 4.10.3.	Interview applicators regarding practices. Review pest management records to see if there is any indication of routine pesticide applications.			
Are all applicators familiar with the installation's spill response procedures?	6250.4C : Encl. (1), Para. 13.d.	Get copy of installation instruction on spill response procedures. Interview applicators.			
Are all feasible efforts and management controls used to avoid production of hazardous wastes and to ensure use of pesticides before shelf-life expiration?	6250.4C : Encl. (1), Para. 13.f.	Ask applicators how they clean equipment and dispose of rinsate. Interview shop supervisor to determine container disposal methods.			
Is the installation aware of and do they enforce pesticide "stop sale, use, or removal" orders issued by the EPA?	FIFRA	Check EPA Web site regarding the provisions of pesticide orders. Check records to see if pesticides that have a "stop sale, use, or removal" order are being used contrary to the provisions of the order.			
Aerial Pesticide Applications					
If conducted or proposed, has a plan for the aerial application of pesticides been reviewed and approved by a BUMED (medically-important pests) or	6250.4C : Encl. (1), Para. 13.e.	Ask for and review signed validation statement.			

NAVFAC (economic pests) aerial spray-certified pest management consultant?					
Safety					
Are applicators provided with the appropriate PPE?	5090.1 : 24-3.7.	Ask applicators to show you PPE in shop and on vehicles.			
Do applicators maintain and wear appropriate PPE when applying pesticides?	6250.4C : Encl. (1), Para. 12.b.	Ask applicators to show you PPE in shop and on vehicles. Observe application, if possible.			
Do all applicators receive training on use of PPE? Are applicators physically qualified to wear respirators?	4150.07 : 5.4.17.	Review training record or rosters. Ask to see respirator fit test cards.			
NAFI Operations (NEX/MCX/MCCS/MWR)					
Are all NAFI pest management operations described in the IPMP? This includes operations conducted at: <ul style="list-style-type: none"> • NEX/MCX retail stores • NEX/MCX and MWR/MCCS food service facilities • MWR/MCCS athletic fields and golf courses 	4150.07 : 4.2.	Review IPMP.			
Are pesticides used by NAFI pest control providers included on the installation approved pesticide list?	4150.07 : E4.2.2.1. 5090.2A: 14206.1.b.	Pesticides used by NAFIs are included on pesticide approval list.			
Are pesticide use records maintained at each facility?	7 U.S.C. § 136i-1(a)(1) 6250.4C : Encl. (1), Para. 23.a. 5090.2A: 14210	NAFI maintains records.			
Are all pest management operations reported to the installation IPMC so that it can be reported to NAVFAC?	6250.4C : Encl. (1), Para. 23.b.	Records and reports contain operations conducted by NAFIs			
If NAFIs purchase pest control services with the DON purchase card, are the services in compliance with DOD and DON pest management requirements?	4200.1: Para.7.				
Pesticide Retail Sales in the Navy Exchange, Commissary, and Veterinary Clinics					
Are only pesticides that are <u>not</u> Category I pesticides labeled "Danger, Poison" displayed for retail sale?	6250.4C : Encl. (1), Para. 13.c.	Inspect pesticide display.			
Are pesticides properly displayed to prevent contamination of food, equipment, utensils, linens, and single-service and single-use articles? (i.e., separated by partition or located in an area not above items)	FOOD: 7-301.11	Inspect pesticide display.			
Are spill containment items available?	6250.4C : Encl. (1), Para. 13.d.	Inspect spill containment kits.			
Are employees familiar with spill procedures?	6250.4C : Encl. (1), Para. 13.d.	Ask employees to describe procedures.			
Is the retail store aware of and do they enforce pesticide "stop sale, use, or removal" orders issued by the EPA?	FIFRA	Check EPA Web site regarding the provisions of pesticide orders. Check retail shelves to see if pesticides that have a "stop sale, use, or removal" order are being displayed for sale contrary to the provisions of the order.			

Environmental Programs					
Does the installation have a program to comply with the Federal Noxious Weed Act that is also being implemented on state or private lands in the vicinity of the installation?	5090.2A: 14208.14.	Review any plans (User's Guide) or contracts for noxious weed control. Identify and list specific control/prevention measures.			
If the installation has an active airfield, does the IPMP reference the BASH plan?		Review any plans, directives, or contracts for BASH. Identify and list specific control/prevention measures.			
Does the IPMP reference the User's Guide? Are appropriate portions of the IPMP implemented in accordance with the User's Guide?	5090.1 : 24-3.9. 4150.07 : 5.4.20.12	Review IPMP.			
Are pesticides used in invasive weed control, BASH, depredation and other environmental programs included in the installation approved pesticide list?	5090.1 : 24-3.16. 5090.2A: 14206.1.b.	Review records or plans.			
Are pesticides used in these operations recorded and reported to the IPMC so that they can be reported to NAVFAC?	7 U.S.C. § 136i-1(a)(1) 6250.4C : Encl. (1), Para. 23.b. 5090.2A: 14210	Review records. Check to see that IPMC has records.			
Have pest management operations that may have an impact on natural resources been coordinated with and reviewed by the natural resources program manager?	6250.4C : Encl. (1), Paragraphs 20, 21, and 22. 5090.2A: 14301.18.h.	Review IPMP for environmental impacts of pest management operations and for environmental manager signature. Interview natural resources manager to ensure if he/she is aware of pest management impacts on natural resources.			
If feral cats and dogs are present or potentially present, does the installation have a program to capture and remove them from the installation?	6401.1A: Para.4-2c(4) CNO policy letter 5090 N456M/1U595820 of 10 Jan 2002	Visual observations. Review installation policies or directives. Identify and review procedures.			
Are installation pest management and environmental personnel and the installation commander aware of the CNO policy on feral animals?	CNO policy letter 5090 N456M/1U595820 of 10 Jan 2002	Does the installation have an instruction, order, or policy to prevent feral animals?			
Is the CNO feral animal policy communicated to installation personnel and enforced?	CNO policy letter 5090 N456M/1U595820 of 10 Jan 2002	Identify practices that support the presence of feral animals.			
Agricultural Outlease Program					
Does the IPMP describe the agricultural outlease pest management program?	4150.07 : E4.2.	Review IPMP.			
Are agricultural pesticides included on the installation list of approved pesticides?	4150.7 : E4.6.a.(2) 5090.1 , 24-3.16 5090.2A: 14206.1.b.	Review records or plans.			
Are the pest management operations reported to the installation IPMC reported to the NAVFAC PPMC?	7 U.S.C. § 136i-1(a)(1) 6250.4C : Encl. (1), Para. 23.b. 5090.1 , 17-4.2 5090.2A: 14210	Review records. Ensure IPMC has records.			
Is on-base agricultural pesticide storage in compliance with local and State regulations?	4150.07 : 4.3	Obtain State regulations and inspect pesticide storage or review agricultural commissioner inspection records.			
If lessee(s) use aerial pesticide application, has the aerial spray	6250.4C : Encl. (1), Para. 13.e.	Review aerial spray validation letter.			

project been reviewed and approved by NAVFAC?					
Pest Management Operations					
What are the installation's top five pests and what are their impacts on the installation?	BMP	Interview pest management service providers and complete pest management project sheets for each pest.			
What survey methods are used to detect, assess, and prescribe treatment for the top five pests?	BMP	Interview pest management service providers and complete pest management project sheets for each pest.			
What non-chemical control methods are used to prevent and control the top five pests?	BMP	Interview pest management service providers and complete pest management project sheets for each pest.			
<p>Key to references:</p> <ul style="list-style-type: none"> • 7 U.S.C. § 136 FIFRA • 4150.07: DODI 4150.07, DOD Pest Management Program • 1028/8A: MIL-HDBK-1028/8A, Military Handbook, Design of Pest Management Facilities • 6401.1A: SECNAVINST 6401.1A, Veterinary Health Services • 6250.4C: OPNAVINST 6250.4C, Navy Pest Management Programs • 5090.1: OPNAV M-5090.1, Environmental Readiness Program Manual • 5090.2A: MCO 5090.2A, Environmental Compliance and Protection Manual • 4200.1: EBUSOPSOFFINST 4200.1 (DON EBusiness Operations Office Instruction), Department of the Navy Policies and Procedures for the Operation of the Government Commercial Purchase Card Program • FOOD: U.S. Food Code 2013 					

C.2 INTEGRATED PEST MANAGEMENT PLAN ANNUAL UPDATE FORM

Navy/Marine Corps Integrated Pest Management Plan Annual Update

Fiscal Year Submission Date

1. **Installation:** Please provide the following information about your installation.

Installation Name	State/Country	County(ies), if applicable	Year current IPMP was written

2. **Contact Information:** The following data provides information on installation resources and responsibilities in support of the pest management program. If not applicable, leave blank.

	Name	E-mail	Phone	Organization
Installation Pest Management Coordinator				
Lead Pest Controller				
Primary Pest Management PAR				
Primary Grounds Maintenance PAR				
Lead MWR Golf Course Applicator				
Medical Dept. Representative				
Natural Resource Manager				
Cultural Resource				

Manager				
Public Works Officer				
Installation Environmental Program Manager				

3. **Certification and Training:** List all personnel who have DOD certification or training numbers at your installation. This may include Public Works, MWR and/or Natural Resources personnel. Be sure to include all contractor personnel who apply pesticides (e.g., insecticides, herbicides, etc.) as a part of pest control or grounds maintenance contracts, including those contractor operations performed via credit card or small purchase contracts.

DOD or State Certification	Type of Work*	Organization or Contractor Name	Applicator Name	Applicator Certification/ License Number	License Class/Type (i.e., Commercial, Noncommercial, Government, Registered Technician)	Certification Category Number(s) or Letter(s)**	Exp Date MM/DD/YY
DoD							
DoD							
DoD							
DoD							
DoD							
DoD							
DoD							
DoD							
DoD							
DoD							
DoD							
DoD							
DoD							
DoD							
DoD							

*Specify the type of work (e.g., grounds maintenance, pest control, QAE/PAR, IPMC, Natural Resources, etc.)

**Provide a list of all categories of certification

4. **Plan Maintenance:** Please list any minor program changes (e.g., personnel changes, certifications, other programming changes or challenges, etc.) relative to the IPMP for the upcoming fiscal year. Major program changes require re-submittal of the entire updated plan for approval.

5. **Assistance:** Please indicate if you require on-site assistance from a NAVFAC Applied Biologist (Professional Pest Management Consultant) for your pest management program. Briefly describe the reason for such a visit. If you are planning aerial spray or other large scale pest management operations (such as large-scale weed control) please indicate the nature of the project below.

FOR OFFICIAL USE ONLY

IPMP Approved by NAVFAC Professional Pest Management Consultant

Date of Approval: (FY approval)

C.3 CARNEY PARK INSPECTION CHECKLIST

Environmental Inspection Checklist for the Pesticide Storage Facility at Carney Park

Date:	Time:			
Installation: Carney Park / Golf Course	Work Center: MWR			
Command: NSA Naples	Building Location and #:			
POC:	Telephone #:			
Inspector's Name: Bill Raspet	Signature:			
Inspection Question	Yes	No	NA	
Pesticide Storage Facility				
Is the facility clean and orderly?				
Is the facility secure from unauthorized entry?				
Is a spill containment kit of adequate size present and easily accessible from the storage and mixing areas?				
Are Safety Data Sheets, (SDS can also be MSDS) for every pesticide in storage, maintained on site?				
Have old, unnecessary, SDS been discarded?				
Is a current inventory posted and readily-visible?				
Is a fire extinguisher available and regularly inspected?				
Are emergency phone numbers posted?				
Is personal protective equipment stored separately from pesticides?				
Are there signs posted that say "Danger" "Poison" "Pesticide Storage Area" (or similar)?				
Is the facility in good condition (roof non-leaking, doors lockable, etc)?				
Pesticide Storage Practices				
Are pesticide containers in good condition free from rust, tears or leaks?				
Are pesticide bags tightly resealed after opening?				
Are liquid pesticides stored below dry pesticide materials?				
Do all pesticide containers have label affixed?				
Are pesticides stored in accordance with the label directions?				
Is the storage area free of spills or leaks?				
Are pesticides stored in an area (or in cabinets) that contains spills?				
Are shelves/cabinets made of non-absorptive material?				
Is the ventilation capable of effecting at least 6 air changes per hour?				
* Pesticide Mixing (Indoors and Outdoors)				
Are backflow prevention devices installed on all water sources used to mix pesticides and fill sprayer(s)?				
Are pesticide spill procedures posted?				
Are the emergency eyewash and shower tested regularly?				
Are all pesticide sprayers filled over a contained surface or device?				
Are pesticide storage buildings in the spill prevention and response plan				
Are pesticide storage buildings considered pesticide facilities per the FGS ; if so it must meet C.1.3.8				

Remarks:

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C.4 2014 PROGRAM REVIEW



DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, ATLANTIC
6506 HAMPTON BLVD
NORFOLK VA 23508-1278

6250 IN REPLY REFER TO:
Ser EV51KPW/00619
23 DEC 2014

From: Commander, Naval Facilities Engineering Command, Atlantic
To: Commanding Officer, Naval Support Activity, Naples

Subj: PEST MANAGEMENT PROGRAM REVIEW

Ref: (a) DoDI 4150.07
(b) OPNAV M-5090.1
(c) OPNAVINST 6250.4c
(d) Italy Final Governing Standards

Encl: (1) Review of Pest Management Program, Naval Support
Activity Naples, Italy

1. As required by references (a) through (d), your program was reviewed 06-09 October 2014. The purpose of the review was to evaluate compliance with references (a) through (d) and to recommend needed program changes due to new technology or varying field conditions.

2. Your installation pest management program is in good order, but does not meet all of the basic requirements of references (a) through (c). A discussion of review findings and detailed recommendations for improvements are included in enclosure (1). In accordance with reference (c), please respond within sixty days advising us of action planned or taken on recommendations contained in the enclosed report.

3. We are grateful for the assistance provided by your staff. A special thanks to Mr. Bill Raspet, whose efforts toward implementing more progressive integrated pest management concepts have helped to improve your program. Questions may be referred to Mr. Kirk Williams, Entomologist, at DSN 262-4254, (757) 322-4254, or by email at kirk.williams@navy.mil.


CHERRYL F. BARNETT
By direction

Copy to:
NAVENTOCTR JACKSONVILLE (OIC, FS)
NSA Naples (PWO, IEPM, IPMC, PMPAR)
NAVFAC EURAFSWA (EVBLC)

Pest Management Program Review

Naval Support Activity Naples, Italy

Date of Review: 06–09 October 2014

Reviewer: Kirk Williams, Entomologist, Applied Biology Branch,
Naval Facilities Engineering Command, Atlantic

References: (a) DoDI 4150.07, DOD Pest Management Program
(b) OPNAV M-5090.1, Environmental Readiness Program Manual, Chapter 24, Pesticide Compliance Ashore
(c) OPNAVINST 6250.4C, Navy Pest Management Programs
(d) Italy Final Governing Standards

Personnel Contacted:

Mr. R. Chichester	Environmental Director
Mr. B. Raspet	Integrated Pest Management Coordinator
Mr. S. Alfieri	Facility Support Contract Manager Director
B1. C. Alba	Pest Management Performance Assessment Representative
Mr. A. Amorizzo	Derichebourg (prime contractor)
Mr. G. Gennaro	La Gardenia SRL (subcontractor)
Mr. C. Lelio	La Gardenia SRL (subcontractor)
Mr. M. Yates	Carney Park Director
Mr. D. Giuseppe	Carney Park Lead Foreman
Ms. J. Neacosia	Carney Park Administrative Assistance
Mr. C. Cennaro	Gaeta MWR Site Manager
Mr. C. Lelio	Gaeta Facility Operation Manager
LCDR J. Sirkin	Gaeta Chief Staff Officer
Ms. C. Ludington	DECA Store Director
Sgt. D. Shin	Food Safety Officer
Mr. C. Picariello	DOD Dependents School Kitchen Manager
CS2 R. Laurentino	Hospital Galley Manager
LCDR C. Coker	Environmental Health Officer
HM1 B. Croker	Preventive Medicine Technician

SUMMARY OF COMPLIANCE RECOMMENDATIONS

Recommendation 1: Add the MWR pesticide storage structures located at Carney Park to the NSA Naples spill plan as required by FGS C18.3.2.3.

SUMMARY OF BEST MANAGEMENT PRACTICE (BMP) RECOMMENDATIONS

Recommendation 1: Place sticky traps with dates on them in the food establishments for surveillance of nuisance pests.

Recommendation 2: Place a fly fan over the rear kitchen door of the bowling alley.

Recommendation 3: At the hospital galley, repair the flooring and ceiling in the dish washer room. Repair the wall tiles in the dry food storage room.

Recommendation 4: Re-inspect cabin 3 at Carney Park for bed bugs and if necessary have a certified applicator treat accordingly.

Recommendation 5: Treat the hornet nest located on the golf course at Carney Park.

Recommendation 6: Ensure mosquito surveillance and control is conducted at NSA Naples, the NSA Naples support site, Carney Park, and the Gaeta support sites.

Questions or comments regarding this report should be addressed to the assigned Naval Facilities Engineering Command, Atlantic professional pest management consultant.

Name: Kirk Williams
Phone: 757-322-4254
DSN 262-4254
E-mail: kirk.williams@navy.mil

INTRODUCTION

Periodic on-site reviews are required by references (a) through (d) to maintain the program and to ensure regulatory compliance with these references and federal, state, and host-nation regulations. This review focused on pest control operations, pesticide safety, and pesticide program compliance at Naval Support Activity (NSA) Naples.

Program STATUS

General

Pest control and ground maintenance services are provided by contract with Derichebourg (prime contractor) and La Gardenia SRL (subcontractor). There is one host nation-certified applicator applying pesticides at Carney Park golf course.

Program Administration

The Integrated Pest Management Coordinator (IPMC) is the installation commanding officer's advisor on pest management issues and has the authority to oversee all pest management operations, including non-appropriated activities. Currently, the designated IPMC for NSA Naples is Mr. William Raspet. The IPMC certification for Mr. Raspet is valid through January 2017. The IPMC maintains and annually updates the NSA Naples Integrated Pest Management Plan (IPMP), which is currently being rewritten by NAVFAC Atlantic Applied Biology. Naval Support Activity Naples has seven certified Pest Management Performance Assessment Representatives.

Pesticide Records and Reporting

Currently, all pest management service providers report pesticide application records to NAVFAC Atlantic Applied Biology through the NAVFAC Online Pesticide Reporting System (NOPRS)—the preferred method of reporting.

Pesticide Storage and Mixing Facilities

Carney Park Golf Course

The golf course has one host nation applicator applying herbicides, fungicides, and insecticides as needed for golf course management. The moral, welfare, and recreation (MWR) pesticide storage structures were in compliance. However, the MWR pesticide storage structures located at Carney Park are not addressed in the NSA Naples spill plan.

Compliance Recommendation 1: Add the MWR pesticide storage structures located at Carney Park to the NSA Naples spill plan as required by FGS C18.3.2.3.

Nuisance Pest Control

Overall, the condition of the pest management program at NSA Naples was good. During this review, no sticky traps were observed in the food facilities. It is important to provide these traps as a surveillance method to catch the infestation early. Traps should also be replaced monthly with dates on them to maximize their effectiveness.

Best Management Practice Recommendation 1: Install sticky traps with dates on them in the food establishments for surveillance of nuisance pests.

Bowling Alley

While no nuisance pests were observed at the support site bowling alley, no fly fan was observed above the rear kitchen door. Filth flies can transmit disease-causing organisms, contaminate food and be an annoyance. A fly fan over the kitchen door will limit filth fly access.



Figure 1. No fly fan over the rear kitchen door of the bowling alley.

Best Management Practice Recommendation 2: Install a fly fan over the rear kitchen door of the bowling alley.

Hospital Galley

While no nuisance pests were observed in the hospital galley, improvements are recommended to prevent nuisance infestations.



Figure 2. Cracked floor in dish washer room holds standing water.



Figure 3. Ceiling in dish washer room needs repairing.



Figure 4. Cracked wall tiles in dry-food storage room observed.

Best Management Practice Recommendation 3: At the hospital galley, repair the flooring and ceiling in the dish washer room. Repair the wall tiles in the dry food storage room.

Morale, Welfare, and Recreation Carney Park

Issues with bed bugs have been reported in cabin 3 at Carney Park. The director of Carney Park stated that tenants had reported insect bites after the bed bug treatments were made. This structure should be re-inspected and treat accordingly. A nest with large hornets was observed on the golf course.



Figure 5. Issues with bed bugs have been reported in cabin 3.

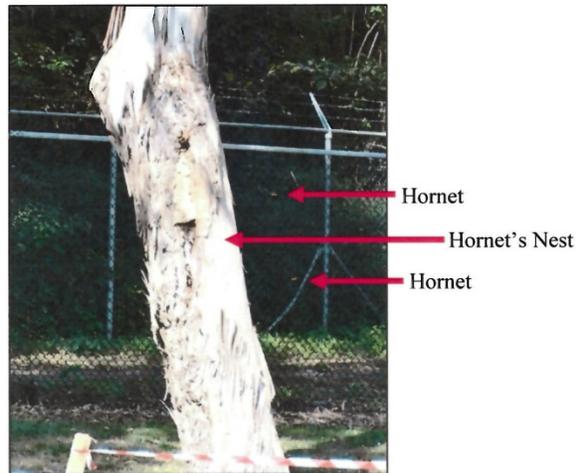


Figure 6. Hornet nest located on the golf course at Carney Park.

Best Management Practice Recommendation 4: Re-inspect cabin 3 at Carney Park for bed bugs and, if necessary, have a certified applicator treat accordingly.

Best Management Practice Recommendation 5: Treat the hornet nest located on the golf course at Carney Park.

Mosquito Pest Control

Not only are mosquitoes an annoyance, they also pose a serious health threat to everyone on the installation. Mosquito populations are not being monitored at NSA Naples, the NSA Naples support site, Carney Park, or the Gaeta support sites. As stated in OPNAVINST 6250.4C, the Bureau of Medicine and Surgery (BUMED) is responsible for providing technical guidance and services for medically important pest surveillance. If BUMED does not have enough staff members at NSA Naples to perform mosquito adult and larval surveillance, the pest control contract should be modified to include mosquito surveillance.

Best Management Practice Recommendation 6: Ensure mosquito surveillance and control is conducted at NSA Naples, the NSA Naples support site, Carney Park, and the Gaeta support sites.

KIRK WILLIAMS



Applied Biology Branch
Naval Facilities Engineering Command, Atlantic

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APPENDIX D

Pesticide Authorized Use List

D.1 PESTICIDE AUTHORIZED USE LIST

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D.1 PESTICIDE AUTHORIZED USE LIST

The following pesticides are authorized for use at Naval Support Activity Naples as of October 2015

The most current list of approved pesticides for each installation can be found on the NAVFAC Online Pesticide Reporting System at <https://clients.saic.com/PestManagementNET/>.

Pesticide Type	Formulation	Pesticide Name	Active Ingredient	EPA Number
Fungicide	Solution	BANOL	PROPAMOCARB HYDROCHLORIDE	45639-88
Fungicide	Wettable Granules	Insignia	Pyraclostrobin	7969-184
Fungicide	Liquid*	Tilt	Propiconazole	100-617
Herbicide	Emulsifiable Concentrate	ACTIVUS EC	Pendimethalin	FSG-03094
Herbicide	Liquid*	Cambel S	Dicamba	EC # 233002-7
Herbicide	Solution	Dicotil Extra	Dicamba / Mecoprop / Clopiralid	Reg. CEE 1907/2006
Herbicide	Emulsifiable Concentrate	PENDULUM 3.3 EC HERBICIDE	PENDIMETHALIN	241-341
Herbicide	Solution	ROUNDUP	GLYPHOSATE	524-445
Insecticide	Emulsifiable Concentrate	DECAFLOW	Deltamethrin	COPYR #149-44
Insecticide	Solution	Deltacid 15	deltamethrin	N/A
Insecticide	Solution	Deltacide Speedy	Deltramethrin / Tetamethrin / Piperonyl butoxide	NA
Insecticide	Bait - Solid	Max Force Fly Bait	Imidacloprid / Tricosene	432-1375
Insecticide	Bait - Solid	Max Force Fly Spot Bait	Imidacloprid / Tricosene	432-1455
Insecticide	Bait Stations	MAXFORCE ANT BAIT F1	FIPRONIL	64248-10
Insecticide	Bait Stations	MAXFORCE ANT KILLER BAIT STATION	HYDRAMETHYLNON	64248-2
Insecticide	Gel	Maxforce Ant Killer Gel	Fipronil	432-1264
Insecticide	Granules/Pellets	Maxforce Complete Granular Bait	Hydramethylnon	432-1255
Insecticide	Gel	MAXFORCE EC BAIT	FIPRONIL	64248-21
Insecticide	Gel	MAXFORCE FC	FIPRONIL	64248-14

Insecticide	Bait Stations	MAXFORCE FC ANT BAIT STATIONS	FIPRONIL	432-1256
Insecticide	Bait - Solid	Maxforce FC Fire Ant Bait	Fipronil	432-1433
Insecticide	Bait Stations	MaxForce FC Large Roach Bait Stations	Fipronil	64248-12
Insecticide	Gel	MAXFORCE FC ROACH BAIT GEL	FIPRONIL	432-1259
Insecticide	Bait Stations	MAXFORCE FC ROACH BAIT STATIONS	FIPRONIL	64248-11
Insecticide	Bait Stations	Maxforce FC Roach Killer Bait Stations	Fipronil	432-1257
Insecticide	Bait - Solid	MAXFORCE FINE GRANULE INSECT BAIT	HYDRAMETHYLNON	64248-19
Insecticide	Granules/Pellets	Maxforce Fine Granule Insect Bait	hydramethylnon	432-1262
Insecticide	Granules/Pellets	MAXFORCE GRANULAR INSECT BAIT	HYDRAMETHYLNON	64248-6
Insecticide	Bait - Solid	MAXFORCE IC	Imidacloprid	KSA 188-11-599
Insecticide	Bait Stations	MAXFORCE ROACH CONTROL SYSTEM	HYDRAMETHYLNON	64248-1
Insecticide	Gel	MAXFORCE ROACH KILLER BAIT GEL	HYDRAMETHYLNON	64248-5
Insecticide	Gel	Maxforce Roach Killer Bait Gel (Reservoir)	Hydramethylnon	432-1254
Insecticide	Bait Stations	Maxforce Roach Killer Small Bait Station	Hydramethylnon	432-1251
Insecticide	Aerosol	Vespastop	pyrethrum / permethrin / piperonyl butoxide	COPYR 189-35
Rodenticide	Bait - Solid	First Strike	Difethialone	7173-258
Rodenticide	Bait - Solid	RATACUM	Difenacoum	COPYR #175-32
Rodenticide	Bait - Solid	RATADIOL	Bromadiolone	COPYR #146-31
Rodenticide	Bait - Solid	RATIR	Chlorophacinone	COPYR #124-99

APPENDIX E

Certifications

- E.1 TABLE OF CURRENT CONTRACTORS**
- E.2 TABLE OF APPLICATOR AND PAR CERTIFICATIONS**
- E.3 SAMPLE—INTEGRATED PEST MANAGEMENT COORDINATOR APPOINTMENT LETTER**
- E.4 SAMPLE—NAPLES CERTIFICATION**

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E.1 CURRENT CONTRACTORS

Contractor	Type of Work	Business License Number
La Gardenia SRL	Pest Control	05983520635

E.2 PESTICIDE APPLICATOR AND PAR CERTIFICATIONS

DOD or Host	Organization or Contractor Name	Name	Title	Expiration Date
Italy	La Gardenia SRL	Raimo Ernesto	Pesticide Applicator	08-01-18
Italy	La Gardenia SRL	Ciambriello Nicola	Pesticide Applicator	11-14-17
Italy	La Gardenia SRL	Barbarino Pasquale	Pesticide Applicator	12-19-17
DOD	PWD	Guido Cavagnuolo	PAR	01-31-17
DOD	PWD	Crisostomo Alba	PAR	01-31-17
DOD	PWD	Celeste Ciccone	PAR	01-31-17
DOD	PWD	Antonio Curcio	PAR	01-31-17
DOD	PWD	Antonio De Angelis	PAR	01-31-17
DOD	PWD	Luigi Del Prete	PAR	01-31-17
DOD	PWD	Vincenzo Ignarra	PAR	01-31-17
DOD	PWD	Sergio Merolla	PAR	01-31-17
DOD	PWD	Giuseppe Musolino	PAR	01-31-17

E.3 SAMPLE—INTEGRATED PEST MANAGEMENT COORDINATOR APPOINTMENT LETTER

From: Commanding Officer/Commander, [installation name]
To: [Name of designee]

SUBJ: APPOINTMENT AS THE INSTALLATION INTEGRATED PEST MANAGEMENT COORDINATOR

Ref: (a) DoD Instruction 4150.07: Department of Defense Pest Management Program
(b) OPNAV Instruction 6250.4C: Navy Pest Management Programs

1. References (a) and (b) require that Department of Defense installations have a formally appointed Integrated Pest Management Coordinator (IPMC). By notice of this letter, you are appointed to this position.
2. As IPMC, you are to act as my representative in all matters related to pesticides and pest management. You have the authority to inspect any pesticide facility or operation on the installation, including appropriated and non-appropriated fund operations.
3. Your responsibilities are:
 - a. Coordinate and ensure implementation of the installation Integrated Pest Management Plan (IPMP), and ensure that it is reviewed and updated annually. Submit the annual updates to the NAVFAC regional pest management consultant for review and approval.
 - b. Function as the primary point of contact for the installation's pest management program and serve as pest management liaison between public works, environmental, medical, supply, housing, tenant commands, and pest management service providers (PMSP) as needed.
 - c. Ensure that all pest management operations are recorded and reported in the proper format.
 - d. Ensure that pesticides used by all PMSPs are approved for use.
 - e. Ensure that all pesticide applicators on the installation are properly trained and certified / licensed.
 - f. Ensure that contracts involving pest management are forwarded to the regional pest management consultant for review and approval before advertisement.
 - g. Advise the NAVFAC regional pest management consultant of changes in the program and contact with pesticide regulatory agencies.
 - h. Update aerial application project documentation, particularly the associated environmental assessment, if subsequent aerial application operations are planned.
4. This appointment is effective immediately and remains in effect unless revoked or until you are properly relieved.

Copy to:
NAVFAC regional pest management consultant

E.4 SAMPLE—NAPLES CERTIFICATION

<p>DECRETO DEL PRESIDENTE DELLA REPUBBLICA n. 290 del 23 aprile 2001 - art. 25</p> <p>Autorizzazione all'acquisto</p> <p>1 - I Prodotti fitosanitari ed i loro coadiuvanti, se classificati molto tossici, tossici o nocivi, possono essere venduti per l'impiego diretto, per sè o conto terzi, soltanto a coloro che siano muniti di apposita autorizzazione rilasciata dall'Assessorato Regionale Agricoltura e Attività Produttive.</p> <hr/>	 <p>Giunta Regionale della Campania Assessorato all'Agricoltura</p> <p>Settore Sperimentazione, Informazione, Ricerca e Consulenza in Agricoltura (SeSIRCA)</p> <p>Settore Tecnico Amministrativo Provinciale Agricoltura - Centro Provinciale Informazione e Consulenza in Agricoltura (STAPA - CePICA) di NAPOLI</p> <p>Autorizzazione per l'acquisto di Prodotti Fitosanitari classificati: molto tossici, tossici o nocivi.</p> <hr/>
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APPENDIX F

Laws

- F.1 DEPARTMENT OF DEFENSE LAWS, REGULATIONS, POLICIES, AND GUIDANCE RELATED TO PESTICIDES AND PEST MANAGEMENT
- F.2 DEPARTMENT OF THE NAVY LAWS, REGULATIONS, POLICIES, AND GUIDANCE RELATED TO PESTICIDES AND PEST MANAGEMENT

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F.1. DEPARTMENT OF DEFENSE LAWS, REGULATIONS, POLICIES, AND GUIDANCE RELATED TO PESTICIDES AND PEST MANAGEMENT

DEPARTMENT OF DEFENSE		
Title/Reference	Date	Relevant Requirements/Guidance
Armed Forces Pest Management Board TECHNICAL GUIDE NO. 37	25 May 2012	Integrated management of stray animals on military installations
AR 40-905 SECNAVINST 6401.1B AFI 48-131	29 Aug 2006	Veterinary Health Services
DOD Instruction 4150.07 , DOD Pest Management Program <i>http://www.afpmb.org/sites/default/files/pubs/directives_mous/DOI4150.07.pdf</i>	29 May 2008	Sets policies, responsibilities, and procedures for implementing an environmentally sound IPM program to control pests and ensure installations develop, maintain, and review their pest management plans.
DOD 4150.07-M, Volume 1, DOD Pest Management Training: The DOD Plan for the Certification of Pesticide <i>http://www.afpmb.org/sites/default/files/pubs/directives_mous/415007m_vol1.pdf</i>	23 May 2013	Outlines the DOD procedures for pest management training and certification of pesticide applicators.
DoD Manual 4150.07, Volume 2, DoD Pest Management Training and Certification Program: The DoD Plan for Non-Federal Insecticide, Fungicide, and Rodenticide Act Pesticide Applicators <i>http://www.afpmb.org/sites/default/files/pubs/directives_mous/415007m_vol2.pdf</i>	23 May 2013	Assigns responsibilities and sets procedural requirements for non-FIFRA training and certification.
DOD 4150.07-M, Volume 3, DOD Pest Management Training and Certification Program: The DOD Plan for FIFRA Pesticide Applicators <i>http://www.afpmb.org/sites/default/files/pubs/directives_mous/415007m_vol3.pdf</i>	23 May 2013	Outlines the DOD procedures for pest management training of IPMCs and PARs.

DOD Directive 4715.1E, Environmental Security http://www.dtic.mil/whs/directives/corres/pdf/471501p.pdf	19 March 2005	Establishes the AFPMB which provides information, guidance, and publications related to pest and pesticide management. Also advocates implementing IPM into DOD acquisition, procurement, maintenance, and repair processes for systems, equipment, facilities, and land.
DOD /EPA MOU with Respect to IPM http://www.afpmb.org/sites/default/files/pubs/directives_mous/MOU-DOD-Epa.pdf	March 1996	Adopts integrated pest management strategies to reduce the potential risks to human health and the environment associated with pesticides.
DOD D/USDA Master MOU http://www.afpmb.org/sites/default/files/pubs/directives_mous/MOU-DOD-USDA.pdf	14 Mar 2003	Indicates that these agencies will work together and meet regularly to discuss such mutual interests as pest management, forestry, and wildlife activities.
DOD /USDA MOU—Animal Damage Assessment and Control http://www.afpmb.org/sites/default/files/pubs/directives_mous/MOU-DOD-USDA-Aphis.pdf	15 May 1990	Establishes procedures for planning, scheduling and conducting animal damage control activities exclusive of routine vertebrate pest control operations.
Armed Forces Pest Management Board Technical Guides http://www.afpmb.org/content/technical-guides		DOD-specific guidance on various pest management and pesticide-related topics.

F.2 DEPARTMENT OF THE NAVY LAWS, REGULATIONS, POLICIES, AND GUIDANCE RELATED TO PESTICIDES AND PEST MANAGEMENT

DEPARTMENT OF THE NAVY		
Title/Reference	Date	Relevant Requirements/Guidance
OPNAVINST 6250.4C , Pest Management Programs	11 April 2012	The Navy policy that implements DOD's Pest Management Program. Provides policy specific to Navy operations. This includes record keeping, reporting, safety, management of contracted operations, pest management plans, and environmental protection. Provides responsibilities for preventive medicine.
OPNAVINST 5090.1D, Environmental Readiness Program	10 Jan 2014	Overarching document implementing OPNAV M-5090.1 .

OPNAV M-5090.1 , Environmental Readiness Program Manual (Chapter 24—Pesticide Compliance Ashore)	10 Jan 2014	Generally requires all pesticide applicators to be DOD- or state-certified. In addition, pest management records must be kept and a pest management plan developed, implemented, and maintained that stresses the importance of IPM.
OPNAVINST 5100.23G , Navy Occupational Safety and Health (NAVOSH) Program	11 July 2011	Requires that pest control operations be thoroughly evaluated to identify and quantify potential health hazards.
NAVMED P-5010, Manual of Naval Preventive Medicine Chapter 8—Navy Entomology and Pest Control Technology	9 Nov 2004	Guidelines and procedures on the prevention, surveillance, and control of medically important pests.
OPNAVINST 6210.2, Quarantine Regulations of the Navy	29 June 2006	Delineates the Navy and Marine Corps responsibility to prevent the introduction of medically and economically important pests into the United States

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APPENDIX G

Environmental

G.1 SAMPLE PESTICIDE MANAGEMENT PROGRAM ENVIRONMENTAL IMPACT LOG

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G.1 SAMPLE PESTICIDE MANAGEMENT PROGRAM ENVIRONMENTAL IMPACT LOG

Practice	Practice Owner	Aspects	Impacts	Vulnerable Assets
Pesticide storage	Pest control shop supervisor	Potential spill	Degradation of water quality Human exposure to chemicals	Environmental resources Human health and safety
	Pest control shop supervisor	Fire	Risk of human injury due to fire and chemicals Degradation of air quality	Human health and safety Environmental resources
Pesticide transportation	Pesticide applicator/ transporter	Potential spill due to container damage	Degradation of water and soil quality Property contamination	Real property Mission Human health and safety Public perception
	Vehicle owner	Air emissions from vehicle	Degradation of air quality	Environmental resources
Pesticide mixing	Pesticide mixer/applicator	Potential spill	Degradation of water and soil quality	Environmental resources
	Pesticide mixer/ applicator	Hazardous waste generation	Cost of disposal	Mission
	Pesticide mixer/ applicator	Chemical mixing	Exposure to toxic chemicals	Human health and safety

Practice	Practice Owner	Aspects	Impacts	Vulnerable Assets
Pesticide application	Pesticide applicator	Potential spill	Degradation of water and soil Exposure to toxic chemicals	Natural resources Human health and safety
	Pesticide applicator	Pesticide drift	Killing of non-target plants and animals	Natural resources
	Pesticide applicator	Stormwater discharge	Degradation of water	Environmental resources
	Pesticide applicator	Air emissions from gas powered application equipment	Degradation of air quality	Natural resources
	Pesticide applicator	Vehicle use for pesticide application	Damage to plants and animal habitats if off road	Mission Human health and safety
	Pesticide applicator	Hazardous waste generation	Cost of disposal Exposure to toxic chemicals	Mission Human health and safety
	Pesticide applicator	Chemical usage	Exposure to toxic chemicals	Human health and safety Environmental resources
Cleaning pesticide application equipment at application site and in pest control shop	Pesticide applicator	Waste water generation	Degradation of water quality Cost of treatment/disposal	Mission

Practice	Practice Owner	Aspects	Impacts	Vulnerable Assets
Non-chemical control: Animal trapping	Pest control operator	Animal relocation	Potential destruction of natural resources	Natural resources
	Pest control operator	Trapped animal	Human or domestic animal injury caused by trapped animals	Human and domestic animal health and safety
Non-chemical control: mechanical weed removal	Grounds maintenance workers	Root damage to native plants	Destruction of natural resources	Natural resources

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APPENDIX H

Medical

H.1 EMERGENCY VECTOR-BORNE DISEASE CONTROL PLAN FOR NSA NAPLES

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H.1 EMERGENCY VECTOR-BORNE DISEASE CONTROL PLAN FOR NSA NAPLES

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Glossary

Acaricide. An agent used to kill mites and ticks.

Applied Biology Program. A network of NAVFAC Pest Management Consultants (PMCs) in the Environmental Business Line that assist Navy and Marine Corps installations with FIFRA and Final Governing Standards-based compliance and provide Integrated Pest Management solutions that protect operations, war-fighters, quality of life, property, materiel and the environment from the adverse effects of living organisms.

Arachnid. An arthropod that has eight legs and two body segments in the adult stage.

Arthropod. Invertebrate animals (insects, arachnids and crustaceans) that have jointed appendages and a segmented body.

Avicide. An agent used to kill or repel birds.

Broad spectrum. A classification of pesticide that will kill a wide range of pests.

Broadcast application. The application of a pesticide to a wide area.

Crack and crevice treatment. Application of a pesticide to cracks and crevices where pests are known to live, feed, and/or breed.

DOD-certified pesticide applicator. Military or civilian personnel certified per the “DOD Plan for Certification of Pesticide Applicators” in the pest management categories that are appropriate for their type of work.

Drift. The movement of a pesticide through air, ground, or water out of the control target area.

Exclusion. A pest control method that prevents the entry of a pest into an area to be protected from the pest.

Functional area. Installation personnel, agencies, departments, contractors and facilities that use or store pesticides, conduct pest management operations, provide for safety or security of pest control operations, or have the responsibility of preventing pests.

Fungicide. An agent used to destroy or inhibit growth of fungi.

Herbicide. An agent used to destroy or inhibit plant growth.

Insecticide. An agent used to destroy insects.

Integrated pest management (IPM). A planned program incorporating education, continuous monitoring, record keeping, and communication to prevent pests and disease vectors from causing unacceptable damage to operations, people, property, materiel, or the environment. IPM uses targeted, sustainable (effective, economical, environmentally sound) methods including habitat modification;

biological, genetic, cultural, mechanical, physical, and regulatory controls; and, when necessary, the judicious use of least-hazardous pesticides.

Integrated pest management coordinator. The individual officially designated by the installation commander to coordinate and oversee the installation pest management program and installation IPM plan. IPM coordinators must be certified as pesticide applicators if their job responsibilities require them to apply or supervise the use of pesticides.

Integrated Pest Management Plan. A detailed document for the design, implementation, and maintenance of all pest management and pesticide storage and use on an installation or group of installations.

Invasive species. A species of animal, plant or organism that is not native to a geographic area and can potentially cause harm to native organisms and their habitats.

Leach. The movement of a pesticide through soil.

Molluscicide. An agent used to kill snails.

Noxious or invasive weed. A weed that, if introduced, into a habitat can cause damage or injury to other organisms in that habitat. They may cause deprivation of water to other plants, physical injury to animals, or increased risk for wild fire.

Personal relief. Pest management control efforts made by DOD personnel or their family members at their own expense for control of pests consistent with DOD and Navy policy.

Pest. Any organism (except for microorganisms that cause human or animal diseases) that adversely affects operations, preparedness, the well-being of humans or animals, real property, materiel, equipment or vegetation, or is otherwise undesirable.

Pest management performance assessment representatives (PMPARs). Installation personnel trained in contract performance assessment and pest management, whose duties include surveillance of commercial pest management services to ensure that the performance complies with contract specifications and legal requirements. [Formerly known as Pest Control Quality Assurance Evaluators (PCQAE).]

Pest management. The prevention and control of disease vectors and pest that may adversely affect the DOD mission or military operations; the health and well-being of people; or structures, materiel, or property.

Pesticide. Any substance or mixture of substances registered by EPA under FIFRA, intended to destroy, repel, or mitigate pests. Includes, insecticides, rodenticides, herbicides, fungicides, plant regulators, defoliant, desiccants, disinfectants, antifouling paints and biocides (such as water treatment chemicals). NAVFAC PPMCs do not approve disinfectants or biocides.

Pesticide applicator. Any individual who applies pesticides.

Pesticide cancelation. An action by EPA that may limit the use of a pesticide. EPA often issues instructions with the pesticide cancelations providing information on the disposition of canceled pesticides.

Pesticide Facility. The building and areas designated for handling and storing pesticides.

Pre-treatment. A termiticide applied to the soil during the construction of a new building or addition.

Professional pest management consultant. Degreed technical specialists, such as NAVFAC civilian entomologists (Applied Biologist) and BUMED commissioned medical entomologists, who have command program oversight responsibilities and provides guidance and information on the management of pest management programs for commands and installations.

Registered pesticide. A pesticide registered by EPA for sale and use within the United States.

Residual pesticide. The application of a pesticide that will remain effective on to the surface to which it is applied for a long period of time.

Rodenticide. An agent used to destroy rodents.

Safety Data Sheet. A document (OSHA form 174, or equivalent) that accompanies a pesticide product, providing the handler with chemical information on ingredients, handling instructions, potential hazards, and manufacturer address and emergency contact information.

Space spray. The application of a pesticide as a fine airborne mist to kill flying insects. This includes ultra-low volume application and fogging.

Stakeholder. A person, agency, organization, or department that has an interest in the installation's pest management program.

State-certified commercial pesticide applicators. Personnel certified in accordance with FIFRA by a State (in which the work will be performed) with an EPA-approved certification plan and certified in the category in which a pesticide will be applied.

Subsistence. Stored food items.

Surveillance. The use of surveys over a period of time to monitor the increase and decrease of pest populations over time. Often used as a means of "early warning" of increase in pests or risk of disease and as a means of determining efficacy of pest management operations.

Survey. Observing, collecting, quantifying, identifying and analyzing a pest population.

Ultra-low volume (ULV). A method of applying a pesticide as a space spray. This method involves applying fine droplets of concentrated pesticide.

Uncertified pesticide applicators. Individuals who have not successfully completed certification training. Uncertified military and DOD civilian personnel who are in training to become certified pesticide applicators may apply pesticides when under the direct line-of-sight supervision of a DOD-certified pesticide applicator. Uncertified personnel may apply self-help or personal relief pesticides when the operation has been approved by a command pest management consultant.

Vector/Disease Vector. Any animal capable of transmitting the causative agent of human disease; serving as an intermediate or reservoir host of a pathogenic organism; or producing human discomfort or injury, including (but not limited to) mosquitoes, flies, other insects, ticks, mites, snails, and rodents.

It is recognized that certain disease vectors are predominantly economic pests that as conditions change may require management or control as a disease vector.

Vector-borne disease. A disease transmitted by a vector.

Zoonosis. A disease that normally occurs in animals that can be transmitted to humans.

List of Acronyms and Abbreviations

AFPMB	Armed Forces Pest Management Board
AUL	authorized use list
BOS	base operation support
Bti	<i>Bacillus thuringiensis israelensis</i>
BUMED	Navy Bureau of Medicine and Surgery
CAMA	calcium acid methanearsonate
CFR	Code of Federal Regulations
CO	commanding officer
CNIC	Commander, Navy Installations Command
CRPM	cultural resources program manager
CTF	commander, task force
CWP	contractor work plan
DOD	Department of Defense
DODI	Department of Defense instruction
DON	Department of the Navy
DSMA	disodium methanearsonate
EHO	environmental health officer
EMS	Environmental Management System
EO	executive order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EVDCP	Emergency Vector-borne Disease Control Plan
FEAD	Facilities Engineering and Acquisition Division
FGS	final governing standard

FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FSC	facilities support contract
IH	industrial hygiene
IPM	integrated pest management
IPMC	integrated pest management coordinator
IPMP	Integrated Pest Management Plan
KO	contracting officer
MoM	measure of merit
MRE	meal, ready to eat
MSMA	monosodium methanearsonate
MWR	morale, welfare, & recreation
NAVFAC	Naval Facilities Engineering Command
NAVMED	Navy Medical (Command)
NAFI	non-appropriated fund instrumentality
NATO	North Atlantic Treaty Organization
NEPMU	Navy Environmental and Preventive Medicine Unit
NEX	Navy Exchange
NOPRS	NAVFAC Online Pesticide Reporting System
NSA	naval support activity
OPNAVINST	Chief of Naval Operations instruction
OPNAV M	Chief of Naval Operations manual
ORM	operational risk management
OSHA	Occupational Safety and Health Administration
PAR	performance assessment representative
PCO	pest control operator
PMPAR	Pest Management Performance Assessment Representative
PMSP	pest management service provider

PMT	preventive medicine technician
PMO	preventive medicine officer
POC	point of contact
PPE	personal protective equipment
PPMC	professional pest management consultant
PREVMED	Preventive Medicine Department
RTU	ready-to-use
SDS	safety data sheet
TG	technical guide
UFGS	Unified Facilities Guide Specifications
ULV	ultra-low volume
U.S.	United States
U.S.C.	United States Code
USDA	United States Department of Agriculture
USDA	United States Department of Agriculture
USF&WS	U.S. Fish and Wildlife Service

References

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