

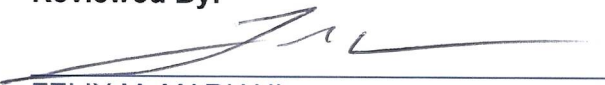
Department of the Army
Headquarters, U.S. Army Garrison Fort Belvoir
Fort Belvoir, Virginia

Integrated Pest Management Plan
FY 2017

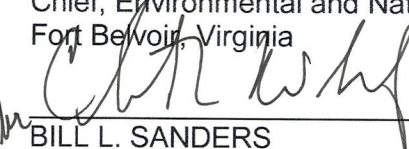
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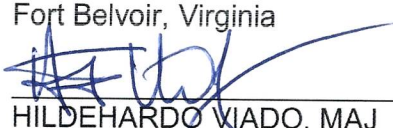
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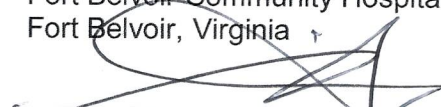
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EXECUTIVE SUMMARY

Purpose

This plan describes a comprehensive Integrated Pest Management (IPM) program for Fort Belvoir, Virginia. IPM is a sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health and environmental risks. Federal agencies are mandated by Section 136 et seq. of Title 7, United States Code, "Federal Insecticide, Fungicide and Rodenticide Act 1976 (FIFRA) as amended" to use IPM. This plan is a guide to reduce reliance on pesticides and to enhance environmental protection. It reflects current Department of Defense (DOD)/Department of Army (DA) policies, procedures and standards, and incorporates the requirements of the Environmental Protection Agency (EPA) and the Commonwealth of Virginia. Adherence to the plan ensures compliance with applicable laws and regulations as well as with current IPM practices and principles.

Scope of the Integrated Pest Management Plan

The contents of this plan apply to all organizations, tenants, contractors, subcontractors and private partners performing pest management operations on Fort Belvoir. All organizations on Fort Belvoir are required to contact the Directorate of Public Works (FB-DPW) for pest management contract support, review and compliance in accordance with applicable Federal, State and local laws and Inter-service/Intra-service Support Agreements specifying responsibilities for pesticide applications, records and contracts.

The IPM plan for Fort Belvoir describes the installation's pest management requirements, outlines the resources necessary for surveillance and control, and describes the administrative, safety and environmental requirements of the program. This plan is a working document and is continually updated to reflect current management practices, industry standards, regulatory requirements and installation coordination. IPM operations on Fort Belvoir include both state-certified privately contracted pest management technicians as well as DOD-certified Government personnel. Pests included in the plan are weeds and other unwanted vegetation, termites, mosquitoes, crawling arthropods (e.g., ants, crickets, cockroaches, spiders, ticks, etc.), leaf defoliators (e.g., eastern tent caterpillars, gypsy moth caterpillars), mice, moles, and other vertebrate pests. Without control, these pests could interfere with the military mission, damage real property, increase maintenance costs, and expose installation personnel to diseases.

Program Objective

The IPM objective is to identify operational procedures that use the least toxic method to control pest populations in a cost-effective, environmentally sound manner. IPM is a planned decision-making process that incorporates education, record keeping and best management practices to prevent pests and diseases from causing damage to personnel and property. At no time will pest management operations be done in a manner that will cause harm to personnel or the environment. Non-chemical control efforts will be used to the maximum extent possible before pesticides are used.

Authority

Army installations conducting either in-house or contracted pest management operations are required to prepare a written installation pest management plan that is to be reviewed and updated annually. The installation pest management plan is to be based on the IPM philosophy. The IPM philosophy of pest control shall be used for all pest control activities conducted at the installation. The following IPM Plan was prepared for Fort Belvoir in accordance with the following law and regulations:

- a. Section 136 et. Seq. of Title 7, United States Code, "Federal Insecticide, Fungicide, and Rodenticide Act" (FIFRA) as amended.
- b. DOD Instruction 4150.07, "DOD Pest Management Program", 28 May 2008.
- c. Army Regulation (AR) 200-1, "Environmental Protection and Enhancement", 13 December 2007.

1.0 U.S. ARMY GARRISON FORT BELVOIR

1.1 Fort Belvoir History

Fort Belvoir is an 8,656-acre United States (US) Army installation located in Fairfax County, Virginia. The installation was originally established in 1912, as Camp A.A. Humphreys, to provide training grounds for Army engineers stationed in the Washington Barracks at Fort McNair. On December 23, 1917, Congress approved the official transfer of the US Army Engineer School to the post. In 1935, Camp A.A. Humphreys was designated as Fort Belvoir, in honor of the historic Belvoir plantation. The installation trained engineers until June 1, 1988 when the Engineer School was officially moved to Fort Leonard Wood, Missouri. On October 4, 2006, Fort Belvoir was transferred from the Military District of Washington (MDW) to the Installation Management Command (IMCOM). Under the Base Realignment and Closure (BRAC) Act of 1988, Fort Belvoir developed as the principal administrative, housing and logistics center of the US Army in the National Capital Region. Under the BRAC Act of 2005, Fort Belvoir realized an increase in on-post military/civilian population from 29,978 to 48,662. Over the past two decades, Fort Belvoir has privatized utility services (gas, electric, water and wastewater) and Army Family Housing. Fort Belvoir Lodging and Unaccompanied Personnel was privatized in August 2011 under the Army's Privatized Army Lodging (PAL) Initiative.

1.2 Mission Statement

Fort Belvoir exists to: operate and maintain our installation; provide quality installation support and services to our customers; and, execute mobilization requirements, military operations and contingency/force protection missions. Our vision of Fort Belvoir for the 21st century is: to serve as a regional center where our customers receive premier support services; to provide a superior place to work, train, and live; and, to foster an innovative and professional team that meets the challenges of change, while maintaining harmony with the environment and surrounding communities.

Although its role as an engineer training center diminished after the move of the Engineering School, Fort Belvoir continues to fulfill an important and valuable military mission support role today. Fort Belvoir houses tenants from all armed forces, as well as such Department of Defense (DOD) agencies as the Defense Acquisition University (DAU) and Missile Defense Agency. To carry out this mission effectively, Fort Belvoir has evolved from a traditional military installation to a more broadly based community. Today, Fort Belvoir functions in many ways like a small city, with its own ordinances, land-use plan, building codes, utilities, public parks, and academic institutions.

2.0 RESPONSIBILITIES (DOD INSTRUCTION 4150.07, page 13, E2.11)

2.1 Garrison Commander

- a. Designate an Installation Integrated Pest Management Coordinator (IPMC) for all pest management activities.
- b. Approve and support the Integrated Pest Management (IPM) Plan.
- c. Ensure installation personnel performing pest control receive adequate training, and achieve pest management certification, as required.
- d. Ensure all pest management operations are conducted safely and have minimal impact on the environment.

2.2 Director of Public Works (DPW)

- a. Determine pest management requirements for the installation.
- b. Initiate requests for aerial application of pesticides when necessary.
- c. Request and monitor contract pest management operations.
- d. Ensure pest management operations comply with applicable laws and regulations and that equipment and facilities meet Fort Belvoir's needs for personal health protection and the protection of real property.
- e. Maintain adequate records of pest management operations.

2.3 US Army Medical Department Activity (USAMEDDAC), Fort Belvoir, Public Health Service

- a. Conduct surveillance for pests that could adversely affect the health and welfare of the installation.
- b. Coordinate with local health officials to determine the prevalence of disease vectors and other public health pests in the area surrounding the installation.
- c. Monitor pesticide sales at Commissary and Post Exchange System.
- d. Evaluate health aspects of the pest management program.

2.4 US Army Veterinary Command), Fort Belvoir, Veterinary Services

- a. Conduct surveillance for pests that damage or destroy food stored in installation facilities.
- b. Report the occurrence of zoonotic diseases seen in military/companion animals at the veterinary treatment facility to Public Health Service and local health agencies.

2.5 Installation Integrated Pest Management Coordinator (IPMC)

- a. Prepare, monitor, and update the installation Integrated Pest Management (IPM) Plan.
- b. Coordinate with activities conducting pest surveillance or controlling pests to ensure all applicable information is recorded and reported as required by this Plan.
- c. Function as liaison between those individuals who store and apply pesticides (e.g., public works, golf course, pest control contractors, and tenant activities) and activities or individuals who document or deal with pesticide use in their programs (e.g., Environmental Office, Safety Office, Fire Department, Industrial Hygienist).
- d. Monitor certification and continuing pest management training for pesticide applicators on the installation.
- e. Coordinate and monitor contracts dealing with pesticide application and keep a copy of each contract on file.
- f. Coordinate with local, State and Federal agencies as necessary to conduct the installation's pest management program.
- g. Answer pest management questions from the Garrison Commander, the Army Environmental Command (AEC), and Department of the Army (DA).
- h. Monitor sale and distribution of pesticides on the installation.
- i. Submit pest control contracts to AEC for review and approval by AEC Pest Management Consultants (PMC's).
- j. Annually submit IPM Plan to AEC PMCs for review and approval IAW DODI 4150.07, paragraphs 5.4.20.1 and E4.2.1.6
- k. Submit the following forms to the AEC PMCs, as required, Annual Plan Update Form (PUF); Out-of-Cycle Pesticide Use Request (OCPUR); Pesticide Use Proposal (PUP).

2.6 Building Occupants

- a. Apply good sanitary practices to prevent pest infestations.
- b. Use all IPM control techniques such as good housekeeping practices, pest exclusion, snap traps, glue boards and structural repairs before requesting further assistance from FB-DPW.
- c. Apply only those pesticides approved by DOD, DA and FB-DPW.
- d. Cooperate fully with FB-DPW personnel, Fort Belvoir Residential Community (FBRC) housing management personnel and contractors in scheduling pest management operations to include preparing the areas to be treated.

2.7 Pest Management Contractor (Government)

- a. Use IPM control techniques to the maximum extent possible.
- b. Control pests in accordance with current Fort Belvoir IPM Plan and IPM Policy Letter.
- c. Operate in a manner that minimizes risk of contamination to the environment and personnel.
- d. Ensure superiors are informed of changes in pest management requirements.
- e. Request pest management supplies and equipment in a timely manner.
- f. Maintain effective liaison with installation health and environmental officials and provide certification and pesticide data in a timely manner.

2.8 Field Sanitation Teams

- a. Unit Level Field Sanitation Teams (FST) using pesticides approved according to FM 4-25.12 are required to maintain records of usage in unit journals according to FM 4-02.17.
- b. Unit Level FSTs using pesticides not approved by FM 4-25.12 are required to report all pesticide usage to IPMC and document usage in unit journal according to guidance in FM 4-02.17.

2.9 Golf Course

a. Golf Course personnel who apply pesticides will adhere to Federal, DOD, DA, and Fort Belvoir requirements for certification, use of approved pesticides and pesticide use reporting.

b. Golf Course Superintendent will submit annual pesticide approval requests by September 1st each year.

2.10 Private Partners

a. This includes the electrical, sewer, water and gas companies who are required to follow all Federal, DOD, DA and Fort Belvoir directives, regulations and policies.

b. These companies are required to submit an annual pesticide usage proposal to IPMC by September 30th each year. Army privatized Family Housing and Privatized Army Lodging (PAL) are exempt from reporting requirements.

3.0 GENERAL

3.1 Installation Description

a. **Background (Topography):** Fort Belvoir comprises an area of approximately 8,656 acres and is located at the Fall Line between the Piedmont and Coastal Plain physiographic provinces. The land is crossed periodically by water drainage systems that create deep coves and a flat alluvial bottomland. Elevations range from Potomac River level to +245 feet. Although Fort Belvoir lies in the Coastal Plain Physiographic Province, it also has some of the characteristics of the Piedmont region of Virginia. The northwestern edge of the installation is between 1.25 and 1.5 miles from the Fall Line. The land is gently to moderately rolling, with varying slopes. For general classification purposes, the land can be divided into four classes: Bottomland, Coves, Slopes, and Upland.

b. **Surface Water Resources and Wetlands:** Three major streams (Dogue Creek, Accotink Creek) pass through Fort Belvoir before discharging to the Potomac River. The southern reaches of these major streams, as well as the Potomac River, are within/adjacent to the installation. Extensive wetlands occur both on the installation and adjacent to the installation.

The surface waters on and adjacent to Fort Belvoir are known to support approximately 60 fish species including anadromous and catadromous species (e.g., river herring and eels). The on-post streams generally retain their natural bank and channel conditions and most have forested riparian areas. There are no wastewater treatment plant

discharges on post. The principal source of impact to the installation's waters comes from excessive/unmanaged storm water flow originating from both on-post and off-post.

c. **Climate:** The climate of Fort Belvoir is classified as modified continental. Summers are warm and humid, with occasional hot and dry periods. Winters are moderately cold with the principal form of precipitation being rain, although there may be several snow days each year. The mountains to the west act as a partial snow barrier to the continental cold air in the winter. In winter, the average temperature is 36.8°F. The lowest temperature on record is 10°F. In the summer, the average temperature is 75.5°F, and the average daily maximum temperature is 87.3°F. The highest recorded temperature is 106°F.

The average annual rainfall is 36.3 inches. Of this, 20.2 inches, or 56%, usually falls in April through September, which includes the growing season for most crops. In 2 years out of 10, the rainfall in April through September is less than 16.3 inches. The heaviest recorded one-day rainfall was 9.1 inches on June 21, 1972. Thunderstorms occur about 11 days each year, and most occur in the summer. Average seasonal snowfall is 15.3 inches. The greatest snow depth at any one time during any known period of record is 24 inches.

The average relative humidity in the mid-afternoon is about 50%. Humidity is higher at night, and the average at dawn is about 80%.

The sun shines 70% of the time in the summer with 30% cloud cover the remainder of the time and about 50% of the time in the winter. The prevalent wind is from the south. The average wind speed is eight miles per hour in the spring.

d. **Geology:** (Information drawn from Drake et al. referenced in paragraph 3.1.f.) Fort Belvoir lies within the Coastal Plain Physiographic Province that consists of a wedge of generally unconsolidated sediments that dip and thicken to the east. The sediments underlying Fort Belvoir are all of the Potomac Formation, early Cretaceous in age. They range from around 20 feet thick near Telegraph Road north of Davison Airfield to 400 feet thick at the entrance to the Dogue Creek Estuary. Thin beds of Miocene to Pleistocene terrace deposits on the plateau and Holocene deposits in the creek beds overlie them.

The Potomac Formation is principally varicolored clay and silt inter-bedded with sand, pebbly-sand, and gravel in fairly well bedded inter-fingering fluvial deposits. It unconformably overlies saprolite and crystalline rocks of lower Paleozoic age. There are two facies in the Potomac Formation. The clay facies is composed of predominantly red-brown, green, and gray silty and sandy clay with minor lenticular sands. The sand facies is predominantly buff to gray, fine- to coarse-grained pebbly feldspathic sands with minor lenticular clay and silt beds.

e. **Soil Data:** Soils consist almost entirely of Coastal Plain sand, silt, clay and gravel of marine or fluvial origin that overlies the Piedmont Upland material. Specific soils that can be found on Fort Belvoir consist of, but are not limited to, Beltsville, Dumfries, Matapeake, Lunt and Wehadkee. The US Department of Agriculture Soil Conservation Service (USDA SCS) completed a soil survey of Fort Belvoir in 1981. Survey maps are available in the Fort Belvoir Geographic Information System (GIS). Detailed Fort Belvoir soil data can also be found in the Fort Belvoir Integrated Natural Resources Management Plan (INRMP), which is available on the Fort Belvoir website.

f. **Other:** More-detailed topography descriptions, geology, hydrology, climate, major soil association, vegetation, petroleum and minerals can be found in the Fort Belvoir INRMP and GIS. Additional source documentation is provided in "Drake AA, Nelson AE, Froelich AJ, and Lyttle PT., 1979. Preliminary Geologic Map of Fairfax County, Virginia. US Geological Survey Open File Report 79-398." The Fort Belvoir Environmental Office (the Environmental and Natural Resources Division of the Directorate of Public Works (FB-DPW ENRD)) maintains copies of the INRMP, wetland delineations data and spill plans. As necessary, these documents are used whenever pesticide application is considered in order to evaluate the potential fate and impact on natural resources.

g. **Fort Belvoir North Area (FBNA)/Formerly Engineer Proving Ground:** FBNA is a former military training and testing area on an 807-acre, noncontiguous portion of the installation approximately 1.5 miles northwest of the Main Post. FBNA is bounded by I-95 to the east and by commercial and residential properties to the north, west and south. FBNA is further inland and on higher ground than the Main Post. Accotink Creek traverses FBNA from north to south, dividing it into two nearly equal parts. Broad level terraces are present on each half of the site. The Army acquired FBNA in the early 1940s for the testing of a wide range of engineering equipment and supplies including methods and equipment for the deployment, detection and neutralization of landmines. The Army used FBNA for these purposes from the 1940s through the 1970s. The FBNA property was returned to Fort Belvoir from the Research, Development and Engineering Center in 1989. Little activity took place at FBNA after the transfer until the recent cleanup and construction associated with BRAC 2005 and construction of the Fairfax County Parkway on a 170-acre tract of land along the western and southern boundaries.

h. **Rivanna Station:** Rivanna Station, also known as the National Geospatial and Intelligence Center (NGIC) facility, encompasses 76 acres located in Albemarle County, Virginia north of the City of Charlottesville. The topography of the Rivanna Station property consists of a moderately narrow ridge approximately 500 feet above mean sea level. From this ridge, several mapped subdrainages flank the north, east, south and western corners of the site. One mapped perennial stream (Herring Branch) along with a mapped intermittent system flow south into the North Fork of the Rivanna River.

3.2 Inventory of Land Use and Layout of Facilities

a. **Inventory of Land Use:** There are two categories of grounds on Fort Belvoir: improved and unimproved. The following acreages include Fort Belvoir Main Post, FBNA and Rivanna Station. The Real Property Planning Division, Bldg. 1442, 703-806-0043 /0853, gathers all Real Property information on an annual basis. Contact Chief, Facility Planning Division, for information and periodic updates.

(1) **Improved Grounds:** Building sites and other improved grounds occupy about 25% of Fort Belvoir's land area. The grounds maintenance program includes soil analysis tests, fertilizing, liming, lawn care, landscape plans and plantings, integrated pest control, tree maintenance, recycling and compost program, and an integrated weed and brush management program.

(a) Improved grounds include acreage on which intensive maintenance activities are planned and performed annually as fixed requirements. These activities include pest management, mowing, irrigation, dust and erosion control, drainage maintenance, weed and brush control, planting for landscape benefits, and other intensive practices.

(b) Fort Belvoir contains a total of approximately 1,902 acres of developed land that requires intensive annual maintenance. Summaries of the breakdown of ground area and developed land are found in Table 1. The table is subject to change.

(2) **Unimproved Grounds:** Unimproved grounds include surfaced areas, woodlands and other areas that require little or no maintenance. Activities on unimproved grounds do occur, but not on a regular basis, and are generally unpredictable and dependent upon mission activities.

(a) Unimproved grounds include natural and planted woodlands as well as most active and terminated training lands. Activities on these grounds do not occur regularly and are generally unpredictable depending upon mission activities and changing conditions due to flood, fire, insects, and other variables.

(b) There are approximately 4,823 acres of woodlands at Fort Belvoir that require little or no maintenance.

TABLE 1. Summary of land areas by use classification for Fort Belvoir, VA

<u>CLASSIFICATION:</u>	<u>APPROXIMATE ACREAGE:</u>	<u>% OF TOTAL</u>
Improved Grounds (Athletic Fields, Turf Areas Mowed), Golf Courses, Parade Fields, Cemeteries, Airfields and Landscape)	1,902	25%
Unimproved Grounds (Woodlands, Planted Forest Lands, Training, etc.)	6,904	75%
TOTAL:	8,806 acres	100%

Layout of Facilities: The geographic regions on Fort Belvoir are:

Main Post: Fort Belvoir is located within Fairfax County’s Lower Potomac Planning District. The majority of improved facilities are located on uplands and plateaus that run south-southeast from north of US Route 1 to the Potomac River and make up approximately 40% of the land area. Fort Belvoir has a total population (military and civilian) of approximately 48,662.

Adjoining Jurisdictions: Fort Belvoir Main Post abuts and/or politically and economically interacts with Fairfax County.

Installation Interface: Fort Belvoir abuts or politically and economically interacts with Albemarle County (Rivanna Station) and Fairfax County in the following ways:

Easement Rights of Way across Installation Property

Licenses and permits

Installation Out-leases - Fort Belvoir does not currently have out-leases.

3.3 Plan Maintenance

a. The IPMC, 703-806-0684 (DSN: 656-0684), maintains the IPM Plan. Pen and ink changes are made to the plan throughout the fiscal year. The Plan is reviewed and updated annually to reflect all changes made in the pest management program during the fiscal year.

b. Annual updates, including a pesticide use proposal, are sent to the AEC Pest Management Consultant.

4.0 PRIORITY OF PEST MANAGEMENT

This section provides background information on each pest category and the specific pests requiring control at Fort Belvoir. From early March to late November, roaches, bees/wasps, ants, flies, bed bugs, and fleas constitute the most important pests from the standpoint of general annoyance. Ticks, mosquitoes, spiders, bees/wasps and copperheads constitute the most important pests from the standpoint of disease transmission or medical threats.

4.1 Disease Vectors and Medically Important Arthropods

Disease vectors are those animals and insects that are capable of maintaining and transmitting diseases to man. Fort Belvoir routinely performs pest control activities in response to several pests that are potential carriers of disease. A few of the potential disease vectors found at the installation are detailed below in their order of significance.

a. **Mosquitoes:** Mosquitoes are potential vectors of human disease including West Nile Virus and Zika Virus (see section 4.10 and 4.11). Mosquitoes are considered to be some of Fort Belvoir's' most important disease vectors and can be found throughout the installation including off-post annexes and housing areas. Active duty personnel can minimize the nuisance and vector potential using the DOD Arthropod Repellent System. Other personnel conducting outdoor activities, especially during the early evening hours, can minimize the mosquito nuisance by wearing proper clothing (minimizing exposed skin surface) and utilizing an appropriate mosquito repellent.

(1) Mosquitoes represent one of the most important groups of vectors from the standpoint of disease transmission potential. Mosquitoes are capable of transmitting a number of diseases to man. The encephalidites (encephalitis = inflammation of the brain) are the most common mosquito-borne diseases in the US and continue to be a significant health problem in many parts of the US.

(2) With West Nile Virus permanently established in the US as well as other mosquito borne diseases, the monitoring, surveillance and control of mosquito populations will continue to be a major IPM requirement. Fort Belvoir serves as a major Housing, Recreation and Administration Support Center. Mosquito control is to be initiated and coordinated with Environmental Health and Medical personnel based upon surveillance data and established thresholds. Habitat management and reduction of breeding sites are the primary objectives in the control of mosquito populations. Adult mosquitoes rarely require fogging for control. Coordination for mosquito control on lakes and ponds is discussed in Section 9, this plan.

(3) Zika Virus is becoming established in the US. The monitoring, surveillance and control of mosquito populations will continue to be a major IPM requirement. Fort Belvoir serves as a major Housing, Recreation and Administration Support Center. Mosquito control is to be initiated and coordinated with Environmental Health and Medical personnel based upon surveillance data and established thresholds. Habitat management and reduction of breeding sites are the primary objectives in the control of mosquito populations. Adult mosquitoes rarely require fogging for control. Coordination for mosquito control on lakes and ponds is discussed in Section 9, this plan.

Ticks: Ticks are of significant concern at training sites, in housing areas and sites where maintenance personnel cut brush and weeds during the summer months. The US Army Center for Health Promotion and Preventive Medicine (USACHPPM) provides support in conducting arthropod surveillance. Ticks can be controlled by clearing and controlling brush and weed growth, using repellents and visual inspection of oneself after exposure. For severe infestations, chemical control may be necessary.

(1) The tick population at Fort Belvoir is of concern as both a nuisance and a disease vector. Troops training at Fort Belvoir can be expected to encounter large numbers of ticks, particularly along the edges between wooded habitats and open field areas. Units training on Fort Belvoir are required to maintain adequate field sanitation teams and supplies. Personnel conducting outdoor activities can minimize the tick nuisance by wearing appropriate clothing, applying tick repellent and performing personal hygiene inspections (with bathing) upon return to camp.

(2) In addition to the nuisance problems, ticks are capable of transmitting a number of diseases to man. Of these, the most serious and most likely to be encountered at Fort Belvoir is Lyme disease, most commonly transmitted by the deer tick, *Ixodes scapularis*. The deer tick is most common in the northeastern US; however, its range appears to be broadening.

(3) Past tick population studies, conducted by USACHPPM, have identified two common tick species at Fort Belvoir. The American dog tick, *Dermacentor variabilis*, is the primary vector of Rocky Mountain Spotted Fever (RMSF). RMSF is a rickettsial disease endemic to the Mid-Atlantic States and the middle Mississippi Valley, but less common in the Rocky Mountains, where it was first described. The lone star tick, *Amblyomma americanum*, is a suspected vector of RMSF, but is considered an unlikely vector in Virginia. However, it is the probable vector of the emerging disease human monocytic ehrlichiosis (HME).

(4) Conclusions drawn from USACHPPM Vector-borne Disease Assessment No. 18-NF-5985-97, conducted in June 1997 and annual tick surveys by Preventive Medicine personnel indicate that the overall risk of humans contracting RMSF or HME at the installation still appears to be small. However, frequent or repeated contact with active tick habitats would increase the risk of infection. Control of tick populations may be warranted as long as the mission of the installation calls for troop training exercises.

c. **Rodents:** Rodent populations are of concern due to their potential as disease vectors and due to damage they can cause to facility structures and their contents. There are a number of diseases that rodents can transmit to man. Most diseases are transmitted to man via rodent bites or through contact with soils, water, or food contaminated with infected rodent fecal matter and/or urine.

(1) Rats and mice routinely damage buildings and/or structures because of their attempts to gain entry, reach stored foods, or create a nest or den. Their efforts often result in widened openings where pipes or wires pass through exterior walls. Within buildings, rats and mice will enlarge existing openings or create new ones in walls, doors, cabinetry and furniture.

(2) Mice frequently nest around stationary electrical appliances, damaging wires and affecting appliance performance. Odors from feces and urine are generally offensive to most people, as is any destruction of personal property. Rodent control is periodically required in the various buildings located on site. Mice are controlled with snap traps, glue boards, or poison and by eliminating holes, cracks and other entry areas.

d. **Bees/Wasps:** Bees and wasps are found throughout the installation. Their stings are painful and may cause allergic reactions in some people. Bees and wasps are a common problem on Fort Belvoir. Yellow jackets, hornets, and wasps also cause problems on Fort Belvoir. About five to ten nests a day are removed in July, August, and September. Nests are either treated or removed by hand. Carpenter bee holes are sprayed and caulked.

e. **Spiders:** There is the potential to find black widow (*Latrodectus mactans*) spiders in undisturbed places in warehouses, training site restrooms, family housing storage areas and in and around other buildings. Due to training and education, Fort Belvoir personnel encounter few, if any, problems. Bites are treated/reported by Fort Belvoir Community Hospital.

Brown recluse spider (*Loxosceles reclusa*) is becoming an occasional pest in housing areas due to the frequent movement of active duty personnel.

f. **Poisonous Snakes:** Copperhead snakes are a minor problem in early spring, summer, and fall in both training and housing areas. They may be encountered, especially, in training areas. Soldiers are briefed and trained to avoid contact with all snakes. Any bite is treated as a potential medical emergency.

g. **Bed Bugs:** Bed bugs are becoming a major threat to occupants of temporary lodging facilities on the installation. Bed bugs possess all of the prerequisites for being capable of passing diseases from one host to another, but there have been no known cases of bed bugs passing disease from host to host. There are at least twenty-seven known pathogens (some estimates are as high as forty-one) that are capable of living

inside a bed bug or on its mouthparts. Extensive testing has been done in laboratory settings that also conclude that bed bugs are unlikely to pass disease from one person to another. Bed bugs are less dangerous than some more common insects such as the flea, however, transmission of Chagas disease or hepatitis B might be possible in appropriate settings. Bed bugs are annoying to man due to their blood sucking habits which may produce dermatitis (inflammation of the skin) in hyper-sensitive individuals.

4.2 Stored Products Pests

a. Stored product pests historically have not represented a major recurring pest problem at Fort Belvoir. Minor spot infestations have been routinely identified by building occupants and/or visiting inspectors and were addressed on an as-needed basis by the Pest Controller. Pest control personnel also conduct trap monitoring.

b. Saw-toothed grain beetles and confused flour beetles have been identified in storage facilities. A routine surveillance program and preventive maintenance program have been developed for control of these pests. Food items stored in the commissary, the AAFES Shoppettes, and food stored in food service facilities may occasionally become infested by stored products pests. Occasional complaints are received from family housing residents. Some of the pests found in stored food in the past include saw-toothed grain beetles, red flour beetles, rice weevils, Indian meal moths and dermestids.

4.3 Animal Pests

Animal pests periodically require control. Management of these populations is conducted mainly in response to isolated incidents. Non-chemical control is strongly encouraged for the management of these pest populations. Trapping and exclusion from structures is used to contain or control these animals. The species described below may be encountered anywhere on Fort Belvoir.

a. **Non-Poisonous Snakes:** Non-poisonous snakes are present in virtually every conceivable habitat in the world. Snakes, while not a major pest problem at Fort Belvoir, are of seasonal concern. Nuisance areas include the camps and training areas occupied by visiting troops. Snakes in housing areas are controlled using good sanitation and mechanical control methods.

b. **Birds/Bats:** Birds/bats are a potential problem on Fort Belvoir year-round. The control of bird species, excluding pigeons (Rock Doves), European starling, and the house/English Sparrow is protected by the Migratory Bird Treaty Act (MBTA) and a permit issued by the US Fish and Wildlife Service is required before impacting MBTA species to include their nests and eggs. The major bird problem occurs during the hatching season when birds get into the vents in family housing and under the eaves of the administration buildings or when birds are identified as the potential cause of mite infestations (a secondary threat of infestation within buildings). Sometimes birds or bats

fly into the buildings and have to be removed. The high nutrient content of accumulated bird and bat excrement provides an excellent growth medium for organisms of potential human health concern. The two primary diseases caused by potentially harmful organisms include cryptosporidiosis and histoplasmosis. Rabies in bats is also an issue of special concern. Although bats are potential carriers of the disease, only a few human fatalities have been attributed to bats. The Northern Long Eared Bat (NLEB) was listed by the U.S. Fish and Wildlife Service as a Threatened Species in May 2015. NLEB is considered to be present on Fort Belvoir. This bat may occur in a variety of habitats including buildings and other man-made structures. Fort Belvoir pest control contractors will follow the guidelines as stated in the IMCOM Final NLEB Programmatic Conference dated 4 May 2015 and IMCOM Northern Long Eared Bat Concurrence Letter dated 4 May 2015 and Fort Belvoir Bat Protection memo dated 15 October 2016, included as L-1, M-1 and O-1 respectively in the Annexes to this plan. Nevertheless, caution and care is used when handling bats. All bat removal work must be coordinated with the Conservation Branch Manager in advance. During removal, precautions detailed in USACHPPM TG No. 142 are strictly followed.

c. **Stray Dogs and Cats:** Stray dogs and cats occasionally need to be captured on the installation. The Pest Control Technicians and/or Military Police accomplish stray animal control in the Main Post area. The use of special animal handling gloves and other personal protective equipment to protect against rabies and other potentially harmful diseases is mandatory on Fort Belvoir.

d. **Beavers:** Beavers (*Castor canadensis*) have the ability to reach nuisance levels within the Fort Belvoir system and are recognized as a growing issue throughout the state of Virginia. The beaver population on the installation has caused, and continues to cause damage to bottomland timber stands and the expenditure of resources to clean out culverts and repair roads damaged by beaver impoundments. It must be recognized that while beavers can and do, constitute a nuisance on the installation, their construction of numerous shallow impoundments results in the creation of wetland and waterfowl habitats that have incalculable benefits to wildlife populations. Beaver conflicts are controlled by removing beaver dams where they interfere with facilities and roads and by installing beaver deterring structures. All control activities are coordinated with the installation Natural Resources Manager.

e. **Other Animal Pests:** Skunks, raccoons, and foxes also exist on Fort Belvoir. They may occasionally enter the vicinity of administrative areas to prey on small pets. Over the past few years, there has been a marked increase in the number of rabies cases in wild carnivores in Fairfax County.

4.4 Real Property Pests (Structural/Wood Destroying Pests)

From an economic perspective, termites are the most detrimental structural pests found on Fort Belvoir because of their ability to destroy wood in structures. In recent years, termites have been identified as the only structural pests requiring appropriate

management and control at Fort Belvoir. Termites are one of a limited number of organisms capable of breaking down the cellulose in wood. Consequently, the wood framed structures present at Fort Belvoir are susceptible to infestation by termites. If left uncontrolled, termites may cause significant damage to wood frame buildings. Other potential future pest threats from this category include powder post beetles and carpenter ants. The damage done by other structure pests, such as powder post beetles and carpenter ants, is not a regular occurrence. The Fort Belvoir inspection process usually identifies infested structures. Periodic surveys of wooden structures and treatment when termites and/or other Real Property Pests are found have kept damage to a minimum. Carpenter ants, although currently not a pest of significance, may occasionally invade wooden structures, particularly where wet conditions exist.

a. **Termites:** Termites have been identified as the only structural pest requiring control at Fort Belvoir. All wood buildings and structures shall be visually inspected on an annual basis to determine termite presence if possible. Survey procedures include crawl space investigation as well as inspections of internal areas of each building.

b. **Powder Post Beetles:** Over the years, the number of powder post beetles infestations in structures has not been excessive. In most cases, replacing the old wood eliminates the problem.

c. **Carpenter Ants:** Carpenter ants are potential threats in most of the older buildings on Fort Belvoir because they either have a wood frame construction or have aluminum siding. Carpenter ants usually nest in damp wood and in-between aluminum siding. Carpenter ants work in wood to excavate nest galleries. They do not digest it.

d. **Carpenter Bees:** Carpenter bees are a continuous problem during the months of May, June, July, and August.

4.5 Household and Nuisance Pests

Flies and crawling insects (ants, cockroaches, crickets, beetles, etc.) and spiders may require control in billets, family housing, food service facilities, warehouses, offices and other administrative buildings. All pests contained in this category are regarded primarily as household and nuisance pests; however, many are also potential disease vectors.

a. **Cockroaches:** Cockroaches are currently a minor problem; however, they still pose the greatest potential nuisance pest control problem due largely to inadequate insect proofing of old pre World War II facilities and inadequate troop sanitation practices. Cockroaches have been shown to carry organisms that cause salmonellosis, dysentery, and typhoid fever. Cockroaches may deposit these disease organisms on food products, whether in semi-permanent storage or ready for human consumption. Wherever lax sanitary conditions exist, large cockroach populations can be expected. Housing units are inspected and treated, if necessary between and during each

occupancy. Dining facilities and food service areas are inspected by Preventive Medicine on a monthly basis and treated where problems occur only after surveillance. The most common places for roaches are food service areas, barracks, dorms, Bachelor Enlisted Quarters, Visiting Officer Quarters, and General Officer Quarters. Cockroaches make up less than 10% of the pest management workload. Most of the person-hours spent are on surveillance, not control. The remainder of the pests in this category constitutes minor pest problems on the installation. Proper sanitation and housekeeping will do much to discourage these pests.

b. **Flies:** Flies are considered to represent a threat to individual efficiency and the morale of the entire installation community. Their main characteristic is that of a nuisance pest; however, flies have been found to carry organisms that cause typhoid, dysentery, and other diarrheas. Flies are mainly a nuisance during the summer and early fall. Control of flies is primarily through elimination of breeding habitat, prevention of entry into buildings, high sanitation levels, cleaning dumpster boxes, and timely disposal of wastes. Serious infestations and nuisance problems are treated after hours. Application of any pesticide to a fly breeding site, dumpsters, garbage can, etc., is strictly prohibited.

c. **Fleas:** Fleas sometimes are a problem, mainly in housing units that have pets or wild animals living under the structure. Use of systemic pesticides in companion animals is also an alternative available by prescription from the Fort Belvoir Veterinary Treatment Facility. Fleas can be medically important because they serve as vectors of disease. Fleas can be annoying to man due to their blood sucking habits, which may produce dermatitis (inflammation of the skin) in hypersensitive individuals.

d. **Other:** The remaining pests in this category represent nuisance pests that, when occupying internal areas of buildings, can affect efficiency and morale of building occupants.

(1) **Spiders:** Spiders (e.g., American house spider) are very common in the housing units. Inside spiders are controlled by sweeping, or vacuuming around baseboards and window frames.

(2) **Ants (Pharaoh):** Ants are very common on Fort Belvoir, especially in the older wooden buildings. Pharaoh ants prefer warmer buildings and warm areas (80-85°F) in buildings for nesting. These ants are active year-round in houses and portions of large buildings such as clinics, hospitals, office buildings and labs. Nesting sites include wall voids, cracks in woodwork, and stacks of paper, envelopes, bed linens, bandage packs and desk drawers. Pharaoh ants trail each other and are attracted to grease, meats, insects, and sweets. Special precaution is taken to prevent ant entry into administrative areas where food is present, Child Care Facilities and Medical Treatment Facility patient care areas. Pharaoh ants are treated with pesticide spray, powder and/or baits. Most control calls come from family housing or administration buildings.

(3) **Ants (Thief):** Thief ants are a potential problem year-round. They nest inside and outside and tend honeydew-producing insects.

(4) **Bird Mites:** Urban pest problems ranging from imaginary itches to suspected cases of pubic lice may be eventually diagnosed as bird mites. Bird mites sometimes infest Family Housing units or offices due to maintenance and resource constraints. Mites are controlled in conjunction with bird and nest removal.

(5) **Crickets:** Crickets are a common pest in the family housing and office areas on Fort Belvoir. Occasionally, they are found in dark moist damp areas, but seldom require chemical control.

(6) **Earwigs:** Earwigs are a seasonal problem on post, lasting typically about six weeks in early fall and mainly in family housing. They live under the slabs and eaves of houses. Units are sprayed with a labeled pesticide and occupants are encouraged to keep the vegetation down around the house and debris cleaned up to control them. Occasionally, they are also found in dark moist damp areas, but seldom require chemical control.

4.6 Ornamental Plant and Turf Pests

Various insect pests, resulting in damage or destruction of plants, can infest trees and shrubs on Fort Belvoir. Bagworms and other pests have caused minor problems annually and have required mostly mechanical control on the installation in recent years. Pests that damage lawns require continuing surveillance and control.

a. **Bagworms:** Bagworms occasionally attack junipers and cedars. These pests may require treatment, usually in late July.

b. **White Grubs:** White grubs (Japanese beetle and June beetle larvae) are a pest of turf areas such as parade fields and yards. Biological/chemical control may be necessary if populations reached control threshold levels.

c. **Fall Webworm:** The fall webworm is a minor problem on Fort Belvoir trees around housing and improved grounds areas. Webworms are controlled by cutting them out and spraying if needed. This pest threat is usually recognized and treated before residents call for support.

d. **Tent Caterpillars:** Tent Caterpillars are an annual occurrence on Fort Belvoir. They can be found in host trees (e.g., wild cherry) around the installation. They are controlled by direct removal. Normally, spraying is not required unless an ornamental plant is threatened.

e. **Gypsy Moths:** Gypsy moth populations have been on the decline since the early 1990's. Because of the recent introduction of Asian gypsy moths into the US,

Virginia agriculture and forestry officials have initiated increased annual gypsy moth surveillance programs to track the movement and reduce the tree defoliation threat of this voracious pest. Fort Belvoir coordinates and provides surveillance data working with local, state, federal agriculture and forestry officials.

f. **Cankerworms:** Cankerworms are an indigenous, leaf-eating species that generally do not cause sufficient damage to trees to warrant spraying. Following a severe nuisance outbreak in Fort Belvoir and Fairfax County in the spring of 1998, installation, county, state and federal officials became concerned that cankerworm problems in our area would increase. Monitoring of populations throughout the winter suggested potential problems in two areas of Fort Belvoir, and *Bacillus thuringiensis* (*B. t.*) was sprayed in those areas when the populations emerged in the spring of 1999. Since then, the installation has not had another nuisance outbreak of cankerworms. One can monitor cankerworm populations by capturing the adult, wingless females with Tanglefoot[®] applied to a band of tarpaper wrapped around susceptible oaks during winter months. If the females number greater than 90 per pair of trees monitored (trees selected should be within the same stand), then these results justify consideration of spraying *B. t.* following emergence.

4.7 Undesirable Vegetation and Microbial Organisms

a. **Weed Control:** Weed control, consisting of nonselective vegetative control, invasive weeds as defined by the Federal Noxious Weed Act (Public Law 93-629), Virginia Alien and Invasive Weeds as defined by the Virginia Department of Conservation and Recreation, and aquatic weed control, is conducted at Fort Belvoir. Control measures are implemented on an as-needed basis or, in certain cases, every spring, depending upon weather influences, work force, and budgetary constraints. Weed control is required to maintain fence lines, signposts, parking areas, building perimeters, control invasive species etc. Weeds along fence lines, on road shoulders, paved surfaces, etc., require control using appropriate herbicides. Some control of unwanted plants is done mechanically (mowing, weed eaters, etc.).

b. **Disease:** If disease is found in trees or ornamentals, the Pest Control Technicians work very closely with Roads and Grounds staff to develop a curative plan. The USDA and local state universities provide literature and assistance when needed. Most problems are controlled soon after discovery in order to avoid serious problems.

c. **Aquatic Weed Control:** Fort Belvoir has a few ponds that may occasionally require mechanical or chemical spot treatments to control aquatic weeds. Aquatic weed control is designed to provide for maximum efficient utilization of available water resources, consistent with the installation mission and wetland protection procedures. The program intent is to increase the potential recreational use of ponds and streams and to protect aquatic resources.

4.8 Other Pest Management Requirements

Pest Control Technicians are responsible for carcass removal. In addition, the Pest Control Technicians provide services for odor control in buildings and other structures on the installation. Odors may arise from such situations as dead animals in walls, crawl spaces, decaying vegetation, or molds and fungi or from other sources.

4.9 Quarantine Pests

When required, the local USDA inspector checks incoming materials for the presence of eggs, larvae, or adult pests. Retrograde cargo may be encountered infrequently and will be inspected for pests on an individual basis. Housing inspectors receive training so that they will be aware of concerns with in-bound household goods shipments.

4.10 West Nile Virus

FB-DPW ENRD, Preventive Medicine, Veterinarian Services, and the Base Operations (BASOPS) Contractor are continuing concerted efforts to reduce the threat of the West Nile Virus to Fort Belvoir residents. This includes ongoing surveys and monitoring of high-risk areas, treatment of mosquito breeding sites with larvicides, and reducing potential breeding pools. Mosquitoes are trapped and collected from several locations on the installation. Preventive Medicine personnel sort the mosquitoes by species and sex. There have been infected mosquitoes found in the State of Virginia, Fairfax County and most recently on Fort Belvoir. Birds are the first carriers of the West Nile (encephalitis) Virus. Dead birds should not be handled with bare hands. Housing residents are to call Family Housing Management Work Order Desk at 703-619-3880. All others call the BASOPS Contractor at 703-806-3109. Several species of birds are susceptible to the virus. Crows have been most prominent, due in part to their size and numbers. Individuals living off Fort Belvoir in Fairfax County should contact the Fairfax County Health Department at 703-246-2300.

a. Fort Belvoir will continue with a comprehensive, cooperative program to reduce the risk of West Nile Virus. The main objectives are to keep residents informed of current actions and precautions that should be taken, and to continue implementing best IPM practices to control mosquito populations and enhance the safety of Fort Belvoir's residents and employees.

b. Some mosquito breeding may take place on the installation in artificial containers and small temporary pools of water. Most of the mosquitoes that bite installation personnel come from these sources. Several viruses may be potentially transmitted by mosquito species listed in the most recent USACHPPM Pest Profile, Report #16-07-4673-96.

c. Adult mosquitoes rarely require fogging for control. When required, residual insecticides are applied to vegetative mosquito resting areas. Coordination for mosquito control on lakes and ponds is discussed in Section 9, this plan.

4.11 Zika Virus

FB-DPW ENRD, Public Health, Veterinarian Services, and the DPW Contractor are continuing concerted efforts to reduce the threat of the Zika Virus to Fort Belvoir residents. This includes on-going surveys and monitoring of high risk areas, treatment of mosquito breeding sites with larvicides, and reducing potential breeding pools. Mosquitoes are trapped and collected from several locations on the installation. Public Health personnel sort the mosquitoes by species and sex. There have been 4 confirmed cases of Human Zika Virus found in the State of Virginia to date with the most recent in March 2016. These cases were all from travelers who traveled outside the Continental United States.

a. Fort Belvoir will continue with a comprehensive, cooperative program to reduce the risk of Zika Virus. The main objectives are to keep residents informed of current actions and precautions that should be taken and to continue implementing best IPM practices to control mosquito populations and to enhance the safety of Fort Belvoir's residents and employees.

b. Some mosquito breeding may take place on the installation in artificial containers and small temporary pools of water as discussed in Army Environmental Command (AEC) Integrated Pest Management Outline in Appendix N-1. Most of the mosquitoes that bite installation personnel come from these sources.

c. Adult mosquitoes rarely require fogging for control. When required, residual insecticides are applied to vegetative mosquito resting areas. Coordination for mosquito control on lakes and ponds is discussed in Section 9, this plan

5.0 INTEGRATED PEST MANAGEMENT (IPM)

IPM is the use of multiple techniques to prevent or suppress pests in a given situation. Although IPM emphasizes the use of non-chemical strategies, chemical control may be an option used in conjunction with other methods. IPM strategies depend on surveillance to establish the need for control and to monitor the effectiveness of management efforts.

5.1 IPM Approach

There are four basic methods of control used in the IPM approach. These methods, described below, are incorporated into each of the IPM Outlines. While any one of these methods may solve a pest problem, often several methods are used concurrently,

particularly if long-term control is needed. For example, screens may be used to prevent mosquitoes from entering buildings, breeding areas may be filled in or drained to eliminate larval habitat, and pesticides may be used to kill adult mosquitoes. Screens will protect people inside, but do little to keep people from being bitten outdoors. Larval control may eliminate mosquito breeding on the installation, but may not prevent adult insects from flying onto the installation from surrounding areas. Chemicals may kill most of the flying mosquitoes, but may miss others. Although chemical control is an integral part of IPM, nonchemical control is stressed. Chemical control is usually a temporary measure and, in the end, more expensive. Nonchemical control, which may initially be more expensive than chemicals, will usually be more cost effective in the end. Nonchemical controls also have the added advantage of being nontoxic, thereby reducing the potential risk to human health and the environment.

a. **Legal Mandate:** Federal Agencies are mandated by Section 136 et seq. of Title 7, United States Code, FIFRA, 1976 as amended to use IPM. IPM is a sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health and environmental risks. The Army is committed to IPM at its facilities and installations as the best approach to control pests and reduce pesticide reliance and resistance.

b. **Mechanical and Physical Control:** This type of control alters the environment in which a pest lives (trapping, removal and exclusion). Examples include: harborage elimination through caulking or filling voids, screening, mechanical traps or glue boards, and nets and other barriers to prevent entry into buildings.

c. **Cultural Control:** Strategies in this method involve manipulating environmental conditions to suppress or eliminate pests. For example, spreading manure from stables onto fields to dry prevents fly breeding. Elimination of food and water for pests through good sanitary practices may prevent pest populations from becoming established or from increasing beyond a certain size.

d. **Biological Control:** In this control strategy, predators, parasites or disease organisms are used to control pest populations. Sterile flies may be released to lower reproductivity. Viruses and bacteria may be used which control growth or otherwise kill insects. Parasitic wasps may be introduced to kill eggs, larvae, or other life stages. Biological control may be effective in and of itself, but is often used in conjunction with other types of control.

e. **Chemical Control:** Pesticides kill living organisms, whether they are plants or animals. At one time, chemicals were considered the most effective control available, but pest resistance rendered many pesticides ineffective. In recent years, the trend has been to use pesticides that have limited residual action. While this has reduced human exposure and lessened environmental impact, the cost of chemical control has risen due to requirements for more frequent application. Since personal protection and special handling and storage requirements are necessary with the use of chemicals, the

overall cost of using chemicals as a sole means of control can be quite costly when compared with nonchemical control methods.

5.2 IPM Outlines

IPM Outlines may be found in the IPMC's office at FB-DPW ENRD. Each major pest or category of similar pests is addressed, by site, in separate outlines. New outlines will be added as new pests or sites are encountered that require surveillance or control.

5.3 Annual Workload for Surveillance, Prevention, and Control

The number of person-hours expended for surveillance, prevention, and control of pests on Fort Belvoir is maintained by the IPMC.

6.0 HEALTH AND SAFETY

6.1 Medical Surveillance of Pest Management Personnel

Medical monitoring is required for all Fort Belvoir personnel involved in pest control operations as Quality Assurance Evaluators (QAEs). Medical surveillance is conducted by the Fort Belvoir MEDDAC/Preventive Medicine- Occupational Health Section to ensure that personnel are fit for the job and that there are no physical conditions that would make them especially vulnerable to potential pesticide health hazards. Contract Pest Control Technicians who apply pesticides on the installation are included in a medical surveillance program by the Contractor. This program is in compliance with current Occupational Safety and Health Administration/EPA standards.

a. Some common symptoms produced by cholinesterase-inhibiting substances are listed in Table 2.

Table 2. Symptoms Caused by Cholinesterase Inhibiting Substances

<u>Mild Poisoning</u>	<u>Moderate Poisoning</u>	<u>Severe Poisoning</u>
Anorexia	Nausea	Diarrhea
Dizziness	Salivation	Pinpoint, non-reactive pupils
Weakness		Lacrimation
Respiratory difficulty		
Anxiety	Abdominal cramps	Pulmonary edema
Tremors of tongue and eyelids		Vomiting
Cyanosis		
Miosis	Perspiration	Loss of sphincter control

Impairment of visual acuity

Slow pulse
Muscular tremors
Heart block

Convulsions
Coma

b. Personnel who handle or otherwise come into contact with wild animals on the installation receive rabies prophylaxis. This includes Military Police, Wildlife Biologists and Pest Control Technicians. Special gloves and equipment designed for handling wild animals will be procured and used by all personnel involved in such operations.

c. All government employees whose duties place them in close personal contact with pesticides through quality assurance evaluations or contracting officer representative responsibilities are monitored by the Occupational Health Clinic.

6.2 Hazard Communication

a. All Fort Belvoir personnel shall be provided access to all appropriate health and safety information pertaining to pesticide use at the installation.

b. The following items will be made available for use and review within DPW:

- (1) Fort Belvoir IPM Plan
- (2) Copy of Fort Belvoir Hazard Communication Program
- (3) Labels for all pesticides currently used on the installation
- (4) Copies of all pesticide Safety Data Sheets (SDS)

c. The IPMC will maintain a complete set of the above information for reference by all pest control personnel. Pest control personnel will also be provided with updated copies of the following:

(1) Technical Information Bulletins from Armed Forces Pest Management Board.

(2) Pest Management Bulletins from USACHPPM.

(3) Other relevant technical guidance documents as published by USACHPPM.

d. Installation personnel with pest management responsibilities are given hazard communication training, which includes a review of hazardous materials in his/her workplace. Following initial hazard communication classes, additional training is given to new employees or when new hazardous materials are introduced into the workplace.

When trained, Form SF 186 will be filed in each employee's personnel records and will be retained for 30 years. SF 186 copies will be procured and added to this IPM Plan.

e. Current Safety Data Sheets (SDS) for all pesticides and other toxic substances used in the pest management program are to be maintained in the Pest Control Office, Building 1496. SDS are to be accessible to employees at all times.

f. Additionally, SDS are kept in each facility where pesticides are stored or handled. Copies of SDS are also kept on each pest control vehicle for pesticides used that day. The IPMC, Fire Department, environmental management, and installation safety officers also maintain complete SDS files.

6.3 Respiratory Protection

a. The Pest Control Contractor is responsible for ensuring contract personnel are enrolled in a respiratory protection program.

b. Facility safety officers are responsible for developing programs to ensure personal protective equipment is available and correctly used in accordance with AR 385-10. All pest control personnel must conform to all applicable post respiratory protection programs.

6.4 Personal Protective Equipment

Approved masks, respirators, chemical resistant gloves, and boots, and protective clothing (as specified by applicable laws, regulations and/or the pesticide/label) are provided to pesticide applicators by the Contractor, as applicable. Personal protective equipment, including respirators, gloves, eye protection and protective clothing are to be utilized by all pest control personnel engaged in handling pesticides in accordance with the requirements set forth in the FIFRA (40 CFR 162), Occupational Safety and Health Administration Standards (29 CFR 1910), DOD Instruction 4150.07, Army Regulation 200-1, and individual pesticide labels. Personal protective equipment is to be worn as necessary by all pest control personnel.

6.5 Work Place Monitoring

Annual occupational hazard surveys shall be performed by Fort Belvoir Preventive Medicine to evaluate occupational health hazards associated with pest control operations at Fort Belvoir for non-contractor specific areas. Fort Belvoir Public Health telephone number is (703) 805-0059/0063.

a. In addition, USACHPPM can provide periodic review of the installation pest management program. The purpose of USACHPPM surveys is to review the pest

management program (emphasizing health related aspects) and to provide technical assistance on the adequacy, safety, effectiveness, and efficiency of the program.

b. All findings and recommendations provided by work place monitoring surveys shall be addressed and implemented by Fort Belvoir or the Contractor (as appropriate) in a prompt timely fashion.

6.6 Laundering Facilities

a. The Contractor is responsible for the laundering of protective clothing worn by Contract Pest Control Technicians.

b. Severely contaminated clothing is not laundered, but is considered a pesticide-related waste in accordance with 40 CFR 262.11. Clothing will be disposed of by the contractor in accordance with current Environmental Office requirements.

6.7 Emergency Decontamination Facilities

Emergency decontamination equipment, consisting of a shower and an eyewash fountain is located in the Pest Control Shop building 1496. All pest control personnel shall be instructed on the proper use of this equipment in the event of pesticide contact with skin or eyes. Decontamination procedures are conducted per guidance from installation medical personnel.

6.8 Fire Protection

a. Two outside Pesticide Storage Facilities, sited adjacent to Building 1496, contain all the pesticides stored by the Government Pest Control Contractor. The building area and land, approximately 20,000 square feet in size, is located within a secure area. Each facility is equipped with spill containment, double locking doors that are 4-hour fire-rated, fire protection, fire alarms, and heating and air conditioning. A current inventory is posted outside of each facility. Pesticides are not stored outside under any circumstances. The probability of a fire at this site is low. The golf course stores pesticides and probability of a fire at that location is also low.

The pre-fire plan includes a layout of the pest control storage facility. In addition, pesticide inventories are sent to the Fire Department every six months. The Fort Belvoir Fire Chief will determine which fire control efforts to employ depending on the size and type of fire at the time a fire call is reported. Maps and other information relating to fire control can be found on file in the IPMC's office and the Fire Department.

b. Minor amounts of pesticides are also provided for sale or distribution at the Commissary and Post Exchange.

6.9 Pest Control Vehicles

All pest control vehicles are contractor owned. Pest control vehicles are only used for pest control purposes. They are appropriately placarded and labeled "Contaminated with Pesticides" in accordance with Federal law. Care is taken to secure pesticides to prevent damage to the containers and spillage of the chemicals. At no time are pesticides left unsecured in the vehicles when unattended. The vehicle will have lockable cab and lockable storage compartments. Pesticides or contaminated equipment are not placed in the cabs of the vehicles. A copy of the pesticide label and SDS are on-hand for each pesticide carried in the vehicle. Portable eye lavage and spill kits are carried in each pest control vehicle when in use.

7.0 ENVIRONMENTAL CONSIDERATIONS

The Fort Belvoir Pest Management Program is totally committed to conducting operations in a safe manner. Environmental stewardship emphasizes the importance of considering the environmental implications in the application of integrated pest management efforts.

7.1 Protection of the Public

Precautions are taken during pesticide application to protect the public, on and off the installation. Pesticides are not applied outdoors when the wind speed exceeds five miles per hour. Whenever pesticides are applied outdoors, care is taken to make sure that any spray drift is kept away from individuals, including the applicator. Outdoor applications also take precautions to ensure there is no possible contamination to potable water and the drinking water supply. Individuals wearing the proper personal protective clothing and equipment indoors accomplish pesticide application. At no time are personnel permitted in a treatment area during pesticide application unless they have met the medical monitoring standards and are appropriately protected. Pesticide applications also take into account operations near personnel who have been included in the local sensitive individual list. When appropriate, public notification of pest management efforts is conducted through the appropriate media.

7.2 Sensitive Areas

a. Pest control personnel should be aware of the potential impacts associated with pesticide use within sensitive areas at Fort Belvoir. A sensitive area is any place where pesticide use could cause great harm if not used with special care and caution. Examples of sensitive areas include barracks, residences, bivouac areas, training areas, campsites, recreational areas, dining facilities, medical clinics, playgrounds, sensitive crops, and all surface water sources (including wetlands). Areas where beekeepers maintain hives are also considered sensitive. Extreme caution must be

employed wherever and whenever the potential for human exposure to pesticides exists.

b. Special care is given when pesticides are applied in the child development centers (CDCs), in patient areas of the hospital, or in family quarters where newborn infants are present. Pesticide label instructions and guidance provided in the AFPMB TG No. 20, Pest Management Operations in Medical Treatment Facilities, are followed.

7.3 Child Development Centers (CDCs)

No pesticides are to be used in or around the Fort Belvoir CDCs except under the following stipulations and conditions.

a. In the event the CDC develops a pest control problem that cannot be controlled by any other IPM non-chemical control method, Preventive Medicine and the IPMC will identify the pest and approve a specific chemical application.

b. No herbicides shall be applied within 100 feet of CDC facilities.

c. Only pesticides registered by the Commonwealth of Virginia and approved by AEC may be used.

d. Only the least toxic material may be used, with emphasis on baits.

e. Notification procedures will be used in accordance with Best Management Practices. At least 72 hours prior to pesticide application, postings are placed in a centralized location and notice sign must be at least 8.5" by 11". Notice will provide locations to be treated, time/date of treatment, re-entry times, chemical to be applied, and precautions to be taken, and contact information. Notice will remain posted for 48 hours. Parents will receive notification information packet during the registration process and must complete a request to be notified or not to be notified during the enrollment process. Fort Belvoir pest control personnel shall coordinate with CDC staff prior to any application to ensure notification and adherence to this plan. If, in the event of a pest control emergency, and the use of pesticides are required, notification must be made by phone to those requesting to be notified.

f. A current copy of approved pesticide labels and SDS will be kept at the CDC office.

g. If required, pesticides are to be applied during non-operational hours only. A minimum of seven hours re-entry time for students must be adhered to.

h. No personal repellants shall be applied by CDC staff at any time.

i. The following classes of chemicals are exempt from notification:

- (1) Disinfectants and anti-microbials.
- (2) Manufactured self-contained baits and gel type baits in inaccessible locations (not accessible to children).
- (3) The use of soap and water mixtures for the removal of stinging insects and nests.

7.4 Endangered/Protected Species and Critical Habitats

a. The Virginia Field Office of the United States Fish and Wildlife Service (USFWS) website (<https://www.fws.gov/northeast/virginiafield/>) provides a search area that can be used to determine what federally listed species are in the area.

b. Fort Belvoir's unique diversity of habitats supports a substantial population of State and Federally listed endangered, threatened and rare species. The rare species surveys identified 17 rare ecological community types, and 63 rare, threatened or endangered (state-or federally listed) plant and animal species on Fort Belvoir. Twelve conservation areas meriting enhanced protection were identified and described. Of the 12 areas identified for special protection as conservation sites, nine are located at the western and southern portions of the installation. Three of these areas are found in the northern third of the installation. Detailed information on rare habitats and species is available at FB-DPW ENRD and in the INRMP, which is posted on the Fort Belvoir website.

c. The bald eagle, (*Haliaeetus leucocephalus*), is protected under the Federal Bald and Golden Eagle Protection Act, and is state-listed as threatened. Bald eagles have nested on Fort Belvoir since 1990. Multiple active nest sites occur throughout the Main Post, and historic nest sites are recorded on FBNA. The Fort Belvoir shoreline has been officially designated as part of the Mason Neck Bald Eagle Concentration Area due to the extensive year-round presence of bald eagles. Because of the major presence of bald eagles on Fort Belvoir, all surface waters are identified as sensitive areas by this plan. All outdoor pesticide applications in and around bald eagle habitat areas, such as described above, must receive approval prior to use from the IPMC. All work to be scheduled or accomplished in these areas must be coordinated with the Natural Resources Manager at 703-806-0049.

d. The small whorled pogonia (*Isotria medeoloides*) is a member of the orchid family, and one of the rarest plant species found in North America. This plant is currently protected as a threatened plant species under the Federal Endangered Species Act of 1973. A stem was found and identified at FBNA in 2006. Other potential habitat has been observed. The small whorled pogonia prefers relatively mature woodlands free of a dense under story. The plant is most often found in well-drained uplands. The habitat and surrounding environment of the small whorled pogonia

colonies are recognized as critically sensitive areas by this plan. All outdoor pesticide applications in and around habitat areas, such as described above, must receive approval prior to use from the IPMC. All work to be scheduled or accomplished in these areas must be coordinated with the Conservation Branch Manager at 703-806-0049.

e. The wood turtle, a state-listed threatened species, occurs in several locations, mostly riparian habitat, within Fort Belvoir. Outdoor pesticide applications in known wood turtle areas must also be coordinated with the IPMC. All work to be scheduled accomplished in these areas must be coordinated with the Conservation Branch Manager at 703-806-0049.

f. The Northern Long Eared Bat (NLEB) was listed by the U.S. Fish and Wildlife Service as a Threatened Species in May 2015. Fort Belvoir follows the guidelines as stated in the IMCOM Final NLEB Programmatic Conference dated 4 May 2015 and IMCOM Northern Long Eared Bat Concurrence Letter dated 4 May 2015, Ft. Belvoir's Northern Long Eared Bat memo dated 15 October 2015 and included as L-1, M-1, and O-1 respectively in the Annexes to this plan.

g. Actions that are potentially dangerous to endangered and threatened species are evaluated by the IPMC and must be approved by the Conservation Branch Manager at 703-806-0049 and AEC personnel.

7.5 Environmental Documentation

A programmatic environmental assessment (EA) is on file for the Fort Belvoir IPM Plan. The Fort Belvoir INRMP and Real Property Master Plan EAs address the IPM Plan. The Programmatic IPMP EA specifically addresses IPM actions, strategies, and principles implemented under the approved IPM Plan. The IPMC will ensure that this IPM Plan is referenced in the INRMP and Real property Master Plan EAs as documentation of pesticide use.

7.6 Pesticide Spills and Remediation

A pesticide spill cleanup kit is maintained in the pesticide storage area of Building 1495. Guidance from Armed Forces Pest Management Board Technical Guide (AFPMB TG) No 15, Pesticide Spill Prevention and Management and installation policies is followed for pesticide spill cleanup, decontamination, disposal, notification procedures, and components of spill kits. A spill clean-up kit is kept on each pest control vehicle. Additional information on pesticide spills can be found in AFPMB TG No. 15, this document, and in the installation spill plan located at the pest control facility. All reportable pesticide spills are reported to the installation hazardous waste manager.

7.7 Pollution Control/Abatement Projects

There are currently no pesticide pollution control or abatement projects on Fort Belvoir.

7.8 Pollution Prevention (P2)

This pest management program complies with the applicable sections of Executive Order (EO) 13148 of April 21, 2000, Greening the Government through Leadership in Environmental Management. NOTE: EO 13148 revoked EO 12856. See http://www.ofee.gov/eo/eo13423_main.asp for details.

7.9 Prohibited Activities

- a. At no time will a pesticide be used in any manner inconsistent with its label.
- b. No pesticide will be used whose registration has been suspended or cancelled by the EPA or the State of Virginia.
- c. Herbicides will not be used to control weeds in areas where children play.
- d. Pesticides will not be used in CDC facilities without the prior approval of AEC Senior Pest Management Consultant.
- e. Pesticide misuse – which includes use inconsistent with the label – is a violation of Federal Law. In accordance with DOD policy (see DOD 4150.7 – P), Fort Belvoir personnel will record and report any instances of pesticide misuse and falsification of records by contractors to the Commonwealth of Virginia. Furthermore, Fort Belvoir personnel will cooperate with Virginia regulators and the EPA in any subsequent investigation or actions.

NOTE: This is a sensitive issue with many States. They are concerned that a contractor would try to hide behind sovereign immunity (which was never waived for FIFRA).

8.0 ADMINISTRATION

8.1 Contracts

- a. Fort Belvoir pest management services are currently contracted out with the exception of the Golf Course. The IPMC reviews all pest management contracts before

issuance as directed by the Fort Belvoir Integrated Pest Management Policy. The scope and applicability for the contractor is provided in each contract. Termite treatments are included in the specifications of all new contracts, hence treatments in accordance with applicable product recommendations and labels are the sole responsibility of the general contractor. Fort Belvoir retains the right to and does inspect and review all facets of each pretreatment operation. The Contracting Officer's Representative (COR) accomplishes this. Contract review is conducted on the interval provided in the contract; completion of contract review is documented by the IPMC.

b. Performance work statements (PWS) and instructions are maintained on file with the IPMC. The PWS follows accepted IPM guidance of emphasizing the need to conduct surveillance first and use pesticide treatment as a last resort. Currently installation services are provided under Commercial Activities contracts. Copies of all contract cover pages will be kept on file with IPMC.

8.2 Job Orders

a. The Contract Pest Control Technicians perform pest surveillance and control under Standing Service Orders (SOO's) or Contract Line Item (CLIN's). The SOO's and CLIN's cover work performed in 1) family housing units (exterior only), 2) food handling buildings, 3) all other buildings and outside facilities on Fort Belvoir.

b. Work requests for buildings other than those mentioned above are performed under a separate SOO or CLIN that includes all buildings on the installation.

c. Outside of routine inspection and surveillance, building occupants who encounter a pest management problem beyond their ability to control are to contact FB-DPW. Housing residents are to contact FBRC Family Housing Work Order Desk at 703-619-3880 for interior pest control assistance and FB-DPW for exterior pests except termites. An assessment will be conducted and appropriate action taken.

8.3 Inter-service Support Agreements

Fort Belvoir will provide pest management support to tenant activities as stipulated in applicable Intra-service and Inter-service support agreements (ISSAs).

8.4 Agricultural Out-leases

Presently Fort Belvoir has no agricultural out-leases. If in the future agricultural out-leases are developed, the following procedure will be followed:

a. Prior to any agricultural chemical application to an out-leased property, the lessee shall notify the IPMC of the intent to perform chemical pest control. The notification shall be in writing and contain the following information:

- (1) Proposed date of application.
- (2) Pesticide to be applied (including label) and rate.
- (3) Application method (equipment to be used).
- (4) Application site.
- (5) Pest to be controlled.

b. The IPMC shall notify the pest controller and the lessee's environmental point of contact. These two offices, along with the IPMC, will review the lessee's control plan to determine adequacy with this pest control plan, as well as DOD, State, and Federal regulations. The lessee will be permitted to perform the planned pest control activity only after review and approval of the lessee's control plan by the above referenced offices. Any recommendations presented by Fort Belvoir shall be incorporated as part of the lessee control plan, otherwise, permission for application shall be denied.

8.5 Resources (Current and Proposed)

a. **Staffing:** The following personnel are involved with pest management on Fort Belvoir. The below list includes activities with both full-time and part-time employees. Copies of Pesticide Applicator Certification are provided for those personnel with direct oversight of the program and for those who apply pesticides as a principal responsibility of their position.

- DPW – Installation Integrated Pest Management Coordinator (IPMC)
- Contracted Pest Management Technicians (full-time, State certified)
- Public Health Specialists (full-time, DOD certified)
- Veterinary Food Inspectors/Animal Care Technicians (full-time)
- Golf Course (Government, full time, DOD certified)

b. **Materials and Equipment:** The Contractor furnishes all materials and equipment. Pesticides and pesticide application equipment are maintained on the installation by the North Post Golf Course and the in-house Government Contractor. Pesticides and IPM products are ordered as required to maintain Fort Belvoir facilities in accordance with the current IPM Plan. Pesticides which are required for use during a specific time of year (e.g., herbicides applied in the spring when weeds are emerging), are ordered in a timely manner to ensure effective application. The inventory of pesticides, provided as a Pesticide Usage Proposal as approved by AEC, lists the pesticides on hand at Fort Belvoir. This inventory is updated as changes occur.

c. Main Post Pest Control Facility (Mixing and Storage Sites)

(1) General Description: The Pest Control Shop, Building 1496, contains an office area, a mixing and formulation room, and an equipment storage room. All pesticides are stored in two pesticide storage buildings that were manufactured for pesticide storage and which meet all current Federal, State and DOD specifications for pesticide storage facilities. The pesticide storage facilities are located adjacent to Building 1496. It is located in a secure, fenced compound of approximately 20,000 square feet. The building is constructed of cinder block walls, concrete floors, and an asphalt over metal roof. The lavatory and storage areas have a drop ceiling. The facility provides personnel with a lavatory, locker room, shower, and laundry washing machine and dryer. The mixing facility is plumbed in a manner that precludes the possibility of a pesticide from entering the sanitary sewer system. A drawing on the facility layout is included in the pre-fire plan. All precautions will be taken to prevent spilling pesticides. If possible, all pesticides should be mixed at the mixing area.

(2) Mixing, Formulations, and Spill Containment: Pesticides are mixed in a well-ventilated area in Building 1496 on Fort Belvoir. The mixing/formulation area is a 320 square foot (approx.) room and is adjacent to the storage and treatment rooms. All mixing, formulating, loading of backpack sprayers, foggers, and cleaning of all small equipment take place in this room. The room is equipped with a hardwired and continuously active ventilation system. The concrete floor has been sealed and is sloped to a centrally located floor drain. The supporting Industrial Hygienist from Fort Belvoir performs extensive air quality testing (on an annual basis) to ensure that the mixing area has the proper ventilation system. There is a backflow prevention device on every fill hose used in the building.

(3) Equipment Storage Rooms: All pesticide equipment used by the Government Pest Control Contractor is stored in Building 1496. Plumbed eye lavage and deluge showers are provided within the building. This facility conforms to Army and Federal standards. A floor plan for this facility is located in IPMC's office. There is no general fire suppression system in the building. The building is equipped with fire extinguishers in the equipment storage and mixing rooms. The equipment storage room is equipped with an active ventilation system. The system is hardwired by a switch located inside the door leading from the mixing room into the office area. There are two floor drains in the storage area, one located centrally in each of the "rooms." These drains have been plugged with pipes and screw caps. The concrete floor is recessed by one-half foot, and is bermed, grouted and sealed. The floor is sloped toward each of the plugged drains, effectively providing about 1,300 gallon capacity containment.

(4) Spill Equipment: A pesticide spill kit is maintained in the pesticide storage and mixing area. Safety equipment is also stored in the mixing area. An emergency eyewash and safety shower is located in this room near the outside door.

d. North Post Golf Course Mixing and Storage Site

(1) General Description: The Golf Course Pest Control Shop, Building 2990, contains an office area, maintenance bay and an equipment storage room. All pesticides are stored in two pesticide storage buildings that were manufactured for pesticide storage and meet all current Federal, State and DOD specifications for pesticide storage facilities. The pesticide storage facilities are located adjacent to Building 2990. They are located in a secure, fenced compound of approximately 90,000 square feet. The building is constructed of cinder block walls, concrete floors, and asphalt over metal roof. The facility provides personnel with a lavatory, locker room, shower, and laundry washing machine and dryer. A drawing on the facility layout is included in the pre-fire plan. All precautions are taken to prevent spilling pesticides. All pesticides are mixed at the mixing pad.

(2) Mixing, Formulation, and Spill Containment: Pesticides are mixed on a concrete mixing pad specifically designed and built for mixing of pesticides and cleaning of pesticide application equipment. The mixing/formulation area is a 320 square foot (approx.) bermed concrete pad, and is adjacent to the storage rooms. All mixing, formulating, and loading of powered hydraulic sprayers, and cleaning of all equipment take place in this area. The concrete floor has been sealed, and is sloped to a centrally located floor drain. There is a backflow prevention device on every fill hose used in the building.

(3) Equipment Storage Rooms: All pesticide equipment used by the Golf Course is stored in Building 2991. Plumbed eye lavage and deluge showers are provided within the building. This facility conforms to Army and Federal standards. A floor plan for this facility is located in IPMC's office. There is no general fire suppression system in the building. The building is equipped with fire extinguishers. The equipment storage room is equipped with an active ventilation system. A pesticide spill kit is maintained in the pesticide storage and mixing area. Safety equipment is also stored in the mixing area. An emergency eyewash and safety shower is located in this room near the outside door.

8.6 Reports and Records

a. Adequate records of all pest management operations performed by engineering personnel, Preventive Medicine, Veterinarians, contractors, agricultural lessee, (when present), are maintained on the installation by the IPMC. Pesticide use on other military installations by Fort Belvoir-based units will be reported to host installation IPMC. Field units on deployed status that are not operating on a US military installation will report pesticide use through command channels. Personal use of repellents (e.g., DEET and permethrin) does not need to be reported.

b. Forms for daily pesticide application and surveillance recording are

maintained by all Contractors applying pesticides on Fort Belvoir. These forms provide a permanent historical record of pest management operations for each building, structure or outdoor site on the installation. The DD Form 1532-1 is maintained by the Pest Control Technician.

c. The monthly Pest Management Report (DD Form 1532 or approved alternate) is used to report all pest management operations on the installation. These reports are prepared by the Contractor and maintained by the IPMC.

d. The IPMC maintains the current inventory of stored pesticides. Copies of the inventory are sent to the Fire Department every six months.

e. Copies of termite inspection reports (DD Form 1070) are completed by the Contractor and forwarded to the IPMC as requested.

8.7 Training

a. Certification: Government (Fort Belvoir) employees who apply or oversee the application of pesticides are DOD-certified. Training and certification is conducted by the Army at Army Medical Department Center and School Fort Sam Houston, Texas. DOD Certification is also available from the Navy at the Disease Vector Ecology and Control Center, Jacksonville, Florida. Certified personnel are recertified every three years. Installation pest management personnel are certified in the appropriate EPA categories in order to perform pest management operations (see Table 3). Quality Assessment and Evaluation (QAE) functions are performed by the contract COR. In accordance with DOD policy, all contract personnel who apply pesticides on Fort Belvoir will be certified as "commercial applicators" by the Commonwealth of Virginia Department of Agriculture and Consumer Services. Depending on application type, certification will be in one or more of the following Virginia categories: Ornamental Pest Control (3A), Turf (3B), Right of Way (6), General Pest Control (7A), Wood-Destroying Pest Control (7B), Vertebrate Pest Control (7D), and Public Health Pest Control (8). Contractors will provide photocopies of employee certification documents to the IPMC before performing services on the installation. Copies of training certificates are maintained in IPMC's office.

Table 3. Fort Belvoir Certifications

There are two DOD certified applicators on Ft. Belvoir at this time.

<u>Name</u>	<u>Activity/Function</u>	<u>EPA Categories*</u>
Anthony Borros	NAF (Golf Course)	3, 6
Steve Watters	DPW	2, 3, 5, 6, 7 and 8

- Forest (EPA category 2)
- Ornamental and turf pest control (EPA category 3).
- Aquatic pest control (EPA category 5).
- Right-of-way pest control (EPA category 6).
- Industrial, institutional, structural and health-related pest control (EPA category 7).
- Public health pest control (EPA category 8).

b. Continuing Education and Training: Personnel who are certified in pesticide application attend local pest management classes, workshops, seminars, etc., in order to keep abreast of pest problems and pest management techniques that are unique to the area surrounding the installation. This is particularly true when dealing with vegetation control since many of the herbicide labels indicate that choices in strength and application technique should be based on local conditions. By attending local seminars, pest management personnel learn to solve problems on the installation by talking to people in the same geographic area that have solved similar problems in the past. The time and labor expended in this type of training is easily recouped through improved efficiency in pest control operations on the installation. Local pest management training consists of at least eight hours per year; which is in addition to any off-site re-certification training, such as the DOD course. Other personnel who deal directly with pest control operations, but who may not need to be certified, are also encouraged to attend local seminars to better understand the pest management needs of the installation.

8.8 Quality Assurance/Quality Control

a. The Quality Assurance Evaluator (QAE) duties are performed by the Pest Control Contracting Officer's representative (COR).

b. A written quality assurance surveillance plan is used to evaluate all pest management contracts.

8.9 Design/Review of New Construction

Construction projects on Fort Belvoir are reviewed with pest prevention and control in mind. Engineering and medical personnel review the design of new buildings or other structures and conduct a pest evaluation in the constructed facility prior to completion of the project to ensure that insect and rodent entry points and potential harborage have been eliminated.

8.10 Five-Year Plan

Many administrative elements of the program such as recurring and projected requirements are addressed in the five-year review and update. This serves as a tool to identify these requirements and the timeframes for implementation. The five-year review should also include facility changes (e.g., new construction), program management, and resource requirements. Technical reviews and updates are made annually.

9.0 COORDINATION - DOD, OTHER FEDERAL, STATE AND LOCAL AGENCIES, AND PRIVATE PARTNERS

9.1 The Army Pest Management Program

The Army Pest Management Program is responsible for protecting personnel and material from illness and damage by pests, wherever in the world they may be. The program includes both medical and operational responsibilities. While these responsibilities do overlap, medical representatives focus on preventing and minimizing medical consequences of pests and pest management operations while the Assistant Chief of Staff for Installation Management (ACSIM) and AEC concentrate on safe, effective implementation of day-to-day pest management operations and environmental considerations of pest management operations.

9.2 Fort Belvoir Residential Communities (FBRC)

FBRC, under the Municipal Services Agreement with Fort Belvoir, is responsible for all indoor and structural pest control services in family housing units. This includes control measures within five feet of foundations for the purpose of structure associated pests, such as termites. The Government will provide all outdoor pest control services, including mosquito control. All FBRC operations must be in compliance with applicable Federal and State Statutes. As stated in the Community Development and Management Plan and the Memorandum from Headquarters, Department of the Army

(DAIM-ZA, Subject: Installation Management of Pest Control Activities on FBRC Properties, 3 October 2003), FBRC operations are not required to comply with AR 200-1 (Pest Management), the Fort Belvoir IPM Plan, or DOD Measures of Merit regarding pesticide applications and reductions.

9.3 Fort Belvoir Privatized Army Lodging and Unaccompanied Personnel (PAL)

PAL is responsible for all indoor and structural pest control services in Army Lodging and Unaccompanied Personnel units. This includes but is not limited to control measures within the facility for such pests as cockroaches, ants, bed bugs, etc. The Government will provide all outdoor pest control services, including mosquito control. All PAL operations must be in compliance with applicable Federal and State Statutes.

9.4 The Army Environmental Command Pest Management Consultant

Provides technical oversight for the IPM Plan, and gives special attention to any pesticide application that: uses restricted-use pesticides; uses any pesticide that may significantly contaminate surface or ground water; includes 259 or more hectares (640 acres) in one pesticide application; may adversely affect endangered or other protected species or habitats; or, involves aerial application of pesticides.

9.5 The Installation IPM Coordinator and Preventive Medicine Personnel

Personnel maintain liaison at Fort Belvoir to determine the prevalence of disease vectors and other public health pests in the area surrounding the installation.

9.6 Directorate of Public Works Pest Control Contractor

The Contractor is responsible for pest control on the installation and performing feral animal control. The contractor coordinates additional assistance for stray animal control throughout the installation with the Directorate of Emergency Services.

9.7 Control of Mosquito Larvae

Control of mosquito larvae on open water (e.g., during an encephalitis outbreak) is coordinated with the following agencies:

- a. State of Virginia - Proposed actions are coordinated with health officials and environmental personnel.
- b. Fairfax County Health and Environmental Offices - Proposed actions are coordinated with personnel in counties affected.

c. Bureau of Land Management and US Fish and Wildlife Service - These services are consulted whenever any proposed action may be detrimental to endangered species of birds.

d. Bureau of Reclamation - Responsible for managing the waterways in and around Fort Belvoir.

e. The Metropolitan Washington Council of Governments will be involved with coordinating mosquito control efforts should an outbreak of West Nile Virus or Zika Virus occur in or around Fort Belvoir.

9.8 Predator Control

Predator control, if required, must be done under permit from the Virginia Department of Game and Inland Fisheries and in coordination with FB-DPW-ENRD. After duty hours, disposition instructions will be obtained from the Fort Belvoir Military Police at 703-805-3105 following coordination with Installation Game Warden. Capture methods shall be limited to live traps or capture.

9.9. Military Construction Projects

Installation personnel coordinate with the Corps of Engineers to ensure that pesticide application, such as termite pretreatment for new construction, is properly performed and documented.

9.10 Private Partners

Private partners such as electrical, water, sewer companies must coordinate all pesticide applications with IPMC.

10.0 SALE AND DISTRIBUTION OF PESTICIDES

10.1 Family Housing

FBRC has sole responsibility for implementing and managing pest management in family housing areas with the exception of mosquito and wild animal control.

10.2 Privatized Army Lodging and Unaccompanied Personnel

PAL has sole responsibility for implementing and managing pest management in PAL areas with the exception of mosquito and wild animal control.

10.3 Self Service Supply Center (SSSC) and Unit Supply Operations

There is no SSSC on Fort Belvoir. Units are authorized to order the following repellents, and other pest management equipment as listed in AR 40-5, for Field Sanitation Team (FST) stockage, directly through supply channels. These repellents are for use on uniforms and skin, respectively.

- a. Permanone, NSN: 6840-01-278-1336
- b. 3M Insect Repellent, NSN: 6840-01-284-3982

10.4 Other Activities

a. AAFES: The pesticides sold in the Post Exchange Garden Center, (Building 1189) and AAFES Shoppettes are registered by the EPA for general use; restricted use products are not sold. Pesticide products are grouped into several separate categories: products applied to pets for ectoparasite control, repellents, household, and lawn and garden products. A spill clean-up kit is on hand in the immediate vicinity of the home and garden pesticide storage area. Store personnel are familiar with the use of the clean-up kit and with installation spill contingency procedures. Additional guidelines on pesticides in Exchanges can be found in DA Pamphlet 40-11, paragraph 4-7b(1)(f)5.

b. The Fort Belvoir Commissary: The Commissary carries limited supplies of EPA-registered, general use pesticides in aerosol cans. A spill clean-up kit is on-hand. Store personnel are familiar with the use of the cleanup kit and with installation spill contingency procedures. Additional guidelines on pesticides in Commissaries can be found in DA Pamphlet 40-11, paragraph 4-7b(1)(f)5.

c. Veterinary Clinic: The Fort Belvoir Veterinary Treatment Facility provides support for military working dogs and domestic animals. Prescription items for ectoparasite control are available for sale to authorized personnel.

11.0 PEST MANAGEMENT SERVICES PROVIDED TO OTHER ACTIVITIES

11.1 Tenant Activities

Pest control services are provided to all tenant activities on Fort Belvoir. This includes: Fort Belvoir Community Hospital and subordinate clinics, dental clinics, all Reserve Centers, Post Exchanges, Commissary, Defense Logistics Agency, Army Staff Management College, Army Material Command, Criminal Investigation Division, and others.

11.2 Agencies Located Off the Installation

There are no other agencies located off the installation that require pest management services.

12.0 REGULATED PESTS

12.1 Quarantine Pests

The USDA, when required, inspects incoming household goods and other cargo for the presence of gypsy moths. There are no other requirements for plant or animal quarantine on Fort Belvoir.

12.2 Noxious Weeds

The installation complies with all Federal and State noxious weed laws. When noxious weeds are encountered on the installation, care is taken to ensure that nearby non-target plants are not adversely affected. The Commonwealth of Virginia lists four noxious plant species. These are Johnson grass (*Sorghum halepense*), multiflora rose (*Rosa multiflora*), musk thistle (*Cardus nutans*), poison hemlock (*Conium maculatum* L.) and curl thistle (*Cardus* spp). State law requires these species be eradicated whenever they are found. Currently approved herbicides should be used in accordance with the directions and restrictions listed on the label.

13.0 PEST MANAGEMENT REFERENCES

13.1 Federal and State Laws and Mandates

These can be found in

http://www.law.cornell.edu/uscode/html/uscode07/usc_sup_01_7_10_6_20_II.html

- a. Section 136 et seq. of Title 7, United States Code, FIFRA 1976, as amended.
- b. Title 29, Code of Federal Regulations, 1996 revision, Section 1910, Occupational Safety and Health Standards.
- c. Title 40, Code of Federal Regulations Parts 150-189, Pesticide Programs.
- d. Sections 4321 to 4370a of Title 42, United States Code. "National Environmental Policy Act of 1969," as amended.
- e. Executive Order 13696, Planning for Federal Sustainability in the Next Decade, March 25, 2015
- f. Public Law 104-170, Food Quality Protection Act of 1996.
- g. Rules and Regulations for Enforcement of Virginia Pesticide Law, 2VAC5-670
- h. Virginia Noxious Weed Law, 1996, as amended.
- i. The Virginia Pesticide Control Act, 1989, as amended.

13.2 Department of Defense Regulations, Directives, and Memorandums

- a. DODI 4150.07, DoD Pest Management Program, 29 May 2008.
- b. DODM 4150.07, Volume 1, DOD Pest Management Training and Certification Program: the DoD Plan for Pesticide Applicators, 23 May 2013.
- c. DODM 4150.7, Volume 2, DOD Pest Management Training and Certification Program: The DoD Plan for non-Federal Insecticide, Fungicide and Rodenticide Act of Pesticide Applicators, 23 May 2013.
- d. DODM 4150.07, Volume 3, DoD Pest Management Training and Certification Program: The DoD Plan for Federal Insecticide, Fungicide and Rodenticide Act Pesticide Applicators, 23 May 2013.

e. Memorandum of Agreement between the United States Department of Agriculture and the Department of Defense for Conduct of Forest Insect and Disease Suppression on Lands Administered by the U.S. Department of Defense, December 1990.

13.3 Army Regulations

- a. AR 11-34(The Army Respiratory Protection Program), 25 July 2013.
- b. AR 40-5(Preventive Medicine), 25 May 2007.
- c. AR 200-1(Environmental Protection and Enhancement), 13 December 2007.
- d. AR 385-10 (The Army Safety Program), 27 November 2013.
- e. DA PAM 40-11(Preventive Medicine), 22 July 2005, RAR 19 October 2009
- f. MIL-STD-903C, Sanitary Standards for Commissaries, 20 November 1986.
- g. MIL-STD-904A, Guidelines for Detection, Evaluation and Prevention of Pest Infestation of Subsistence, 13 January 1984.
- h. MIL-STD-909, Sanitation Standards for Food Storage Facilities, 31 August 1989.

13.4 U.S. Army Center for Health Promotion and Preventive Medicine Guides (<http://chppm-www.apgea.army.mil/default.asp>)

- a. No. 103, Plague Surveillance Guide, September 1995.
- b. No. 119, Collecting and Shipping Insects for Resistance Testing, August 1980.
- c. No. 138, Guide to Commensal Rodent Control, December 1991.
- d. No. 142, Managing Health Hazards Associated with Bird and Bat Excrement, December 1992.

13.5 Armed Forces Pest Management Board (<http://www.acq.osd.mil/eie/afpmb/>)

This includes all applicable TG's, Pesticide lists and the complete revised "Military Pest Management Handbook".

- a. No. 13, Ultra Low Volume Dispersal of Insecticides by Ground Equipment, December 1999.

- b. No. 14, Protective Equipment of Pest Control Personnel, March 1992.
- c. No. 15, Pesticide Spill Prevention Management, June 1992.
- d. No. 16, Pesticide Fires: Prevention, Control, and Cleanup, June 1981.
- e. No. 17, Military Handbook- Design of Pest Management Facilities, November 1991.
- f. No. 18, Installation Pest Management Program Guide, March 2003.
- g. No. 20, Pest Management Operations in Medical Treatment Facilities, November 2005.
- h. No. 21, Pesticide Disposal Guide for Pest Control Shops, July 2002.
- i. No. 24, Contingency Pest Management Pocket Guide, May 2008.
- j. No. 26, Tick-Borne Diseases: Vector Surveillance and Control, February 2006.
- k. No. 29, Integrated Pest Management in and Around Buildings, July 2003.
- l. No. 31, Contingency Retrograde Washdowns: Cleaning and Inspection Procedures, November 2004.
- m. No. 36, Personal Protection Techniques Against Insects and Other Arthropods of Military Significance, April 2002.
- n. No. 37, Guidelines for Reducing Feral/Stray Cat Populations on Military Installations, January 1996.
- o. No. 39, Guidelines for Preparing DOD Pest Control Contracts using IPM, February 1997.
- p. No. 41, Protection from Rodent-Borne Diseases, April 1999.