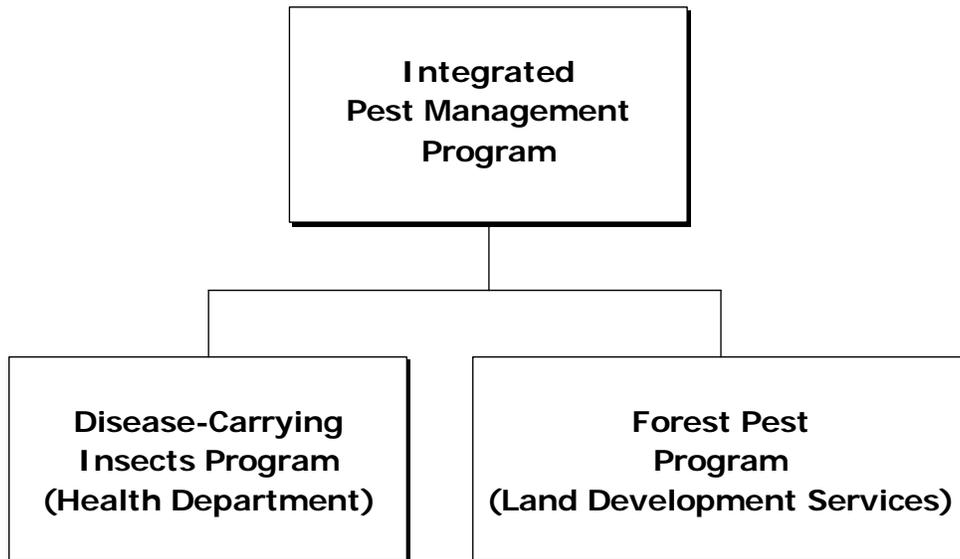


Fund 116

Integrated Pest Management Program



Mission

To suppress forest pest infestation and insect transmitted human disease throughout the County through surveillance, pest and insect control, as well as public information and education, so that zero percent of the County tree cover is defoliated and human morbidity and mortality are minimized while protecting the environment.

Focus

Fund 116, Integrated Pest Management Program, includes two separate programs – the Forest Pest Program managed by Land Development Services (Department of Public Works and Environmental Services) and the Disease-Carrying Insects Program managed by the Health Department. The Forest Pest Program currently focuses on preventing the spread of gypsy moth caterpillars, cankerworms, emerald ash borers and hemlock woolly adelgid in the County. The Disease-Carrying Insects Program focuses on maintaining a low incidence of the West Nile virus, Lyme disease, and other tick-borne diseases—as the prevention of epidemics and spread of disease is one of the core functions of the Health Department.

A countywide tax levy financially supports Fund 116 activities and this levy is subject to change annually due to funding requirements based on the level of infestation. Since FY 2001, the Board of Supervisors-approved tax rate has been \$0.001 per \$100 assessed value and has provided support for both the Forest Pest and the Disease-Carrying Insects Programs. In FY 2013, the same tax rate, along with the existing fund balance, will continue to support both programs.

Forest Pest Program (FPP)

The Forest Pest Program is a cooperative program with the United States Department of Agriculture (USDA) Forest Service and the Virginia Department of Agriculture and Consumer Services (VDACS). VDACS maintains a list of insects that are eligible for control by this program. Currently, four insects are listed: the gypsy moth, cankerworm, emerald ash borer, and hemlock woolly adelgid.

The gypsy moth program and the cankerworm program investigate tree damage due to both pests by conducting annual monitoring surveys. The surveys check egg masses and larval densities, are conducted every 2,000 feet throughout the County and are USDA Forest Service approved. Forested

Fund 116

Integrated Pest Management Program

areas with high gypsy moth and cankerworm populations are identified for possible treatment the following spring. The proposed treatment plan and resource requirements for these pests are submitted annually to the Board of Supervisors for approval in February. The County may also be eligible for partial reimbursement for aerial treatment costs from the federal government (assuming funding is available). Treatment is conducted in late April through early May before the gypsy moth and cankerworm can damage trees. Throughout the year, staff conducts public hearings, displays information at fairs and exhibits, and distributes brochures, educating Fairfax County communities about pest suppression methods and measures that they may take to alleviate potential forest pest population infestations.

It is noted that the size of pest populations for gypsy moths and cankerworms is cyclical. Populations will be high for a period of years, and then drop for a period, only to rise again. For example, in the early to mid-1990s, annual treatment requirements for the gypsy moth fluctuated from 3,000 to 45,000 acres. In recent years, gypsy moth populations have moderated. Since FY 2001, treatment acreage has fluctuated between zero acres and 5,500 acres annually, with the average being 2,100 acres. Based on field surveys conducted in the fall of 2011, staff estimates that no acres will require treatment in FY 2012. Cankerworm populations also have moderated in recent years. Treatment has not been necessary since 2003, and none is anticipated in FY 2012. The FY 2013 budget provides capacity to treat 500 acres for gypsy moths and 500 acres for cankerworms, should egg mass surveys conducted between August and January of that fiscal year indicate the need.

The emergence of the emerald ash borer in Fairfax County was identified by VDACS in late 2003. In an effort to ensure that the insects did not spread any further, guidance was given by the USDA Animal Plant Health Inspection Service (APHIS) regarding eradication. Eradication efforts took place in spring 2004 before the adult borers emerged. Those efforts were coordinated among Fairfax County Forest Pest Program staff, APHIS, and VDACS and federal funding for eradication efforts was provided to the State. Forest Pest Program staffs continue to assist in eradication efforts through monitoring and surveying the treated area; however, County financial support for these efforts is not expected to be significant due to the relatively low emerald ash borer populations found in recent years. In July 2008, staff identified three new infestations in the Newington, Herndon and Bailey's Crossroads areas and one in the Fair Oaks area in July 2009. As a result of these infestations, USDA and VDACS have established a quarantine in northern Virginia which prohibits ash wood material from leaving the area. Fairfax County staff has also implemented an outreach program to inform public and private entities of the relevant state and federal regulations.



On average, County staff annually treats 2,100 acres to combat the gypsy moth infestations.

Hemlock woolly adelgid is a recent addition to the VDACS list of insects that can be controlled by the Forest Pest Program. Staff is currently considering various control options for this pest.

Fund 116

Integrated Pest Management Program

In March 2011, the Forest Pest Program added monitoring and outreach activities for two additional tree diseases (Thousand Cankers Disease of Black Walnut and Sudden Oak Death) and one additional insect (Asian Long horned Beetle) to its most recent suppression plan. While staff must petition VDACS to add additional pests to the list of insects and diseases that can be controlled by service districts in Virginia, past experience with new insects and diseases has proven that diligent monitoring, detection, and prevention are much more cost effective and accepted by the public than control.

Black Walnut (*Juglans nigra*) is a tree native to Fairfax County. In the summers of 2010 and 2011, black walnut trees were observed to be declining near Knoxville, Tennessee and Richmond, Virginia. Foresters confirmed that a disease called thousand cankers disease and the walnut twig beetle (*Pityophthorus juglandis*) that spreads it had been artificially introduced to the eastern United States from the west. VDACS has recognized the importance of early detection of this pest and is in the process of developing a management plan for its detection and control. Staff recommends that resources in the form of an outreach program be developed in order to monitor for this disease. Key targets of the outreach effort will include homeowners and private tree care companies.

Sudden Oak Death is caused by a fungus (*Phytophthora ramorum*) that has caused wide-scale tree mortality in the western United States since 1995. Fortunately, this disease has been found only in isolated locations in the eastern United States and officials feel that these infestations have been contained. Diligent monitoring is critical in slowing the spread of this disease and recent testing methods that are simple and cost-effective have been developed. Consequently, staff will implement these monitoring methods and develop a management plan that will address appropriate actions should Sudden Oak Death be found in Fairfax County. Part of this management plan will include an outreach component that will educate private and public groups on this disease and its control.

The Asian Long-horned Beetle (*Anoplophora glabripennis*) is an invasive, wood-boring beetle that, like the emerald ash borer, has the potential to have drastic economic and social impacts should it be introduced in Fairfax County. The larvae will infest and kill trees by boring into the heartwood of a tree and disrupting its nutrient flow. Imported into the United States via wood packing material used in shipping, infestations of this insect in or near Chicago, New York, and Boston have been discovered since the mid 1990's. These pests will infest many hardwood tree species but seems to prefer maple species, which are one of the predominant trees in Fairfax County's urban forest ecosystem. According to the United States Forest Service, most of the infestation found in the United States have been identified by tree care professionals and informed homeowners. Consequently, staff recommends development of a management plan to address such monitoring and outreach for this invasive species.

Disease-Carrying Insects Program

West Nile Virus and other mosquito diseases

The West Nile virus (WNV) is transmitted from birds to humans through the bite of infected mosquitoes and continues to be a public health concern. The first sign of the virus in Fairfax County was in 2000 and, to date, 25 human cases have been detected. More recently, two human cases were detected in FY 2011. During this timeframe, two fatalities have occurred—one in FY 2003 and a second in FY 2005.

Inter-jurisdictional cooperation is a key component of the program, allowing for coordination of surveillance and management activities on public lands and with surrounding jurisdictions.

Fund 116

Integrated Pest Management Program

Mosquito and WNV surveillance activities are performed weekly by County staff from May through October. Mosquito surveillance activities also allow the Disease-Carrying Insects Program (DCIP) to monitor for invasive mosquito species. Currently, the DCIP screens mosquito samples for WNV in-house and suspect positive samples are confirmed by another agency. In FY 2012, the Health Department lab began testing mosquito WNV samples via a molecular diagnostic test (Reverse-Transcriptase Polymerase Chain Reaction or RT_PCR). Contracted services have been retained for the more labor-intensive preemptive control activities that require a significant fleet of vehicles and specialized equipment. The County continues to proactively treat the stormwater catch basins in an effort to reduce the population of *Culex* mosquitoes that transmit WNV. Catch basins are treated in three six-week cycles from May through October. Weather conditions are the principal factors that determine the number of catch basins that will be treated any given year. Inspection and larviciding activities are carried out in targeted areas of the County identified as significant mosquito breeding areas.

Lyme diseases and other tick-borne diseases

The bacteria that causes Lyme disease is transmitted from small mammals to humans through the bite of an infected deer tick, also known as the black legged tick (*Ixodes scapularis*), and continues to be a growing public health concern. In Fairfax County, there were 260 human cases of Lyme disease reported in calendar year (CY) 2009, 256 cases in CY 2010, and 126 cases in CY 2011. Other tick-borne diseases reported in Fairfax County are: Spotted Fever Group Rickettsias (six cases in CY 2009, 11 cases in CY 2010, and 19 cases in CY 2011); Ehrlichiosis (one case in CY 2009, six cases in CY 2010, and 12 cases in CY 2011); Q fever (no cases in CY 2009, one case in CY 2010, and no cases in CY 2011); and Anaplasmosis (no cases in CY 2009, one case in CY 2010, and five cases in CY 2011).

The County tick surveillance program was initiated to determine the distribution and infection rate of the bacterium (*Borrelia burgdorferi*) that causes Lyme disease. This pathogen is only transmitted by the deer tick (*Ixodes scapularis*). Contract services have been obtained for the molecular (Polymerase Chain Reaction or PCR) identification of the various pathogens that infect the four human-biting tick species in the County. The DCIP offers a tick identification service for County residents to inform them of the type of tick that had bitten them. In FY 2011, the animal shelter and veterinary clinic component of the tick surveillance system was able to detect the apparent establishment of a different, non-native species of tick in the County (i.e., the Gulf Coast tick, *Amblyomma maculatum*) that is the vector for a bacterium (*Rickettsia parkeri*) causing a spotted fever disease. Following detection, focused efforts are being used to monitor and try to eliminate this population. These programs and services will continue in FY 2013.

In FY 2010, the groundwork was laid for a collaborative three year tick control pilot project between the Police Department and the Health Department's Disease Carrying Insects Program. In the fall of 2010, supplemental feeding stations, known as poster-deer treatment stations, were deployed to two areas of the County. These devices apply an insecticide to the deer while they are feeding, thus killing the ticks that are on the deer. Two test and two control areas are being utilized for a total of four stations in the two areas of the County. Tick surveillance began in 2010 and will continue until the end of the project.

Outreach and Education

The outreach and education component of the DCIP is aimed at increasing residents' awareness of personal protection actions that can be taken against mosquitoes and ticks, and the reduction of mosquitoes, ticks, and mosquito breeding areas on private property. The program continues to produce and distribute outreach material in English, Chinese, Farsi, Korean, Spanish, Urdu and Vietnamese. In FY 2011, the program produced and printed a seventh edition 18-month calendar with complementary captions, facts, figures, important dates, and helpful reminders of things for readers to do around the

Fund 116

Integrated Pest Management Program

home to manage mosquitoes and ticks. In addition, the calendar provides helpful hints to protect residents from mosquito- and tick-borne diseases. General facts, local figures and brief descriptions of the County's efforts were included to educate the public about basic mosquito and tick biology and inform them specifically about mosquitoes, ticks, West Nile virus and Lyme disease in Fairfax County. A third children's book about mosquitoes and ticks entitled What's Bugging You? was printed in late FY 2011. In order to ensure consistency in outreach and educational materials, two five-year contracts were negotiated for layout, design, and artwork for the "Fight the Bite" calendar and the DCIP children's books. The contracts began in FY 2012. An updated mosquito brochure was printed in early FY 2012. All the educational material is available on the County's Web site. Outreach and education materials will be created, updated, and printed as needed in FY 2013.

Budget and Staff Resources

Agency Summary				
Category	FY 2011 Actual	FY 2012 Adopted Budget Plan	FY 2012 Revised Budget Plan	FY 2013 Advertised Budget Plan
Authorized Positions/Staff Years				
Regular	12 / 12	12 / 12	12 / 12	12 / 12
Expenditures:				
Personnel Services	\$1,118,677	\$1,195,505	\$1,209,431	\$1,241,236
Operating Expenses	951,440	1,827,847	1,898,064	1,827,847
Total Expenditures	\$2,070,117	\$3,023,352	\$3,107,495	\$3,069,083

Summary by Program				
Category	FY 2011 Actual	FY 2012 Adopted Budget Plan	FY 2012 Revised Budget Plan	FY 2013 Advertised Budget Plan
Forest Pest Program				
Authorized Positions/Staff Years				
Regular	7 / 7	7 / 7	7 / 7	7 / 7
Expenditures	\$782,838	\$1,061,937	\$1,068,320	\$1,084,635
Disease-Carrying Insects Program				
Authorized Positions/Staff Years				
Regular	5 / 5	5 / 5	5 / 5	5 / 5
Expenditures	\$1,287,279	\$1,961,415	\$2,039,175	\$1,984,448

Position Summary	
FOREST PEST PROGRAM 1 Urban Forester III 4 Urban Foresters II 1 Administrative Assistant II 1 Information Technology Technician III	DISEASE-CARRYING INSECTS PROGRAM 1 Environmental Health Supervisor 1 Environmental Health Specialist III 2 Environmental Health Specialists II 1 Administrative Assistant III
TOTAL POSITIONS	
12 Positions / 12.0 Staff Years	

Fund 116

Integrated Pest Management Program

FY 2013 Funding Adjustments

The following funding adjustments from the FY 2012 Adopted Budget Plan are necessary to support the FY 2013 program:

- ◆ **Employee Compensation** **\$20,289**
An increase of \$20,289 in Personnel Services reflects a 2.18 percent market rate adjustment (MRA) in FY 2013.

- ◆ **Full Year Impact of FY 2012 Market Rate Adjustment** **\$18,249**
As part of the *FY 2011 Carryover Review*, the Board of Supervisors approved an increase of \$18,249 in Personnel Services for a 2.0 percent market rate adjustment (MRA), effective September 24, 2011.

- ◆ **Other Post-Employment Benefits** **\$7,193**
An increase of \$7,193 in Personnel Services reflects required adjustments associated with providing Other Post-Employment Benefits (OPEBs) to retirees, including the Retiree Health Benefits Subsidy. Before FY 2011, costs related to these benefits were paid solely by the General Fund; however, these costs are now spread across funds in order to more appropriately reflect benefit-related expenses for the employees within each fund. For more information on Other Post-Employment Benefits, please refer to Fund 603, OPEB Trust Fund, in Volume 2 of the FY 2013 Advertised Budget Plan.

Changes to FY 2012 Adopted Budget Plan

The following funding adjustments reflect all approved changes in the FY 2012 Revised Budget Plan since passage of the FY 2012 Adopted Budget Plan. Included are all adjustments made as part of the *FY 2011 Carryover Review*, and all other approved changes through December 31, 2011:

- ◆ **Carryover Adjustments** **\$84,143**
As part of the *FY 2011 Carryover Review*, the Board of Supervisors approved funding of \$13,926 in Personnel Services for a 2.0 percent market rate adjustment, effective September 24, 2011. In addition, the Board approved encumbered funding of \$70,217 in Operating Expenses.

Key Performance Measures

Objectives

- ◆ To control the infestation of gypsy moths, cankerworms, and emerald ash borers through detection and abatement programs so that no more than 1 percent of the County tree cover is defoliated in a given year.

- ◆ To suppress the transmission of West Nile virus from infected mosquitoes to the human population, holding the number of human infections to no more than three.

Fund 116 Integrated Pest Management Program

Indicator	Prior Year Actuals			Current Estimate
	FY 2009 Actual	FY 2010 Actual	FY 2011 Estimate/Actual	FY 2012
Output:				
Gypsy moth/cankerworm field surveys completed annually in areas known or suspected to be infested	3,200	3,200	3,200 / 3,200	3,200
Mosquito larvicide treatments of catch basins to control West Nile virus	105,099	109,898	105,000 / 102,754	109,500
Efficiency:				
Gypsy moth/cankerworm field surveys conducted per staff	800	800	800 / 800	800
Disease-carrying insects program cost per capita	\$1.28	\$1.20	\$2.01 / \$1.15	\$1.75
Service Quality:				
Percent of County households in gypsy moth and cankerworm treatment areas notified of abatement efforts	100%	100%	100% / 100%	100%
Percent of targeted catch basin areas treated with mosquito larvicide within the scheduled timeframe	90%	100%	100% / 88%	100%
Outcome:				
Percent of County tree defoliation resulting from gypsy moth and cankerworm infestation	0%	0%	0% / 0%	0%
Confirmed human cases of West Nile virus in Fairfax County, Fairfax City and Falls Church City as reported by the Virginia Department of Health	1	1	1 / 2	1

Performance Measurement Results

Forest Pest Program: There was no aerial treatment for the gypsy moth in the spring of FY 2011. Based on field surveys of the gypsy moth population in the fall of 2011, staff estimates no acres will require treatment in the spring of FY 2012. Based on surveys for the cankerworm, no treatment was necessary in the spring of FY 2011, and none is required during the spring of FY 2012. Defoliation surveys for both insects conducted in the summer of 2011 indicated that there were no acres of defoliation in Fairfax County during FY 2011, totaling zero percent.

Disease-Carrying Insects Program (DCIP): The goal of DCIP in FY 2012 is to continue to hold the number of human cases of West Nile virus (WNV) as reported by the Virginia Department of Health to no more than one case, the same goal as in the last fiscal year. In FY 2011, there were two human cases of WNV in the County.

Fund 116

Integrated Pest Management Program

DCIP costs are based on the number of catch basin treatments and other larvicide treatments carried out by a contractor in a given year, as well as education, outreach and surveillance activities carried out in-house by DCIP. Treatment, although dependent on weather conditions, remain relatively constant throughout the years, maintaining a relatively stable program cost. The total DCIP cost per capita was \$1.15 in FY 2011; lower than the budgeted estimate of \$2.01 per capita due to fewer treatments being done than originally budgeted. The actual number of treatments was lower than the estimated number due to unfavorable weather conditions. The estimated cost for FY 2012 provides the capacity for a higher cost per capita; but actual spending will depend on environmental factors, insecticide treatments resulting from larval inspections and surveillance activities, as well as follow-up studies for the evaluation of the outreach program.

The tick surveillance program continues in FY 2012. This program will increase the understanding of the magnitude and breadth of tick-borne diseases in the County. The DCIP has a contract in place to test the ticks for pathogens they may transmit. The increased testing of ticks for pathogens and the four-poster deer treatment pilot project will also impact DCIP cost per capita in future years.

Fund 116

Integrated Pest Management Program

FUND STATEMENT

Fund Type G10, Special Revenue Funds

Fund 116, Integrated Pest
Management Program

	FY 2011 Actual	FY 2012 Adopted Budget Plan	FY 2012 Revised Budget Plan	FY 2013 Advertised Budget Plan
Beginning Balance	\$3,250,878	\$1,782,594	\$3,118,555	\$1,763,376
Revenue:				
General Property Taxes	\$1,856,919	\$1,747,860	\$1,747,860	\$1,782,817
Interest on Investments	15,875	4,456	4,456	10,600
State Reimbursement	65,000	0	0	0
Total Revenue	\$1,937,794	\$1,752,316	\$1,752,316	\$1,793,417
Total Available	\$5,188,672	\$3,534,910	\$4,870,871	\$3,556,793
Expenditures:				
Forest Pest Program	\$782,838	\$1,061,937	\$1,068,320	\$1,084,635
Disease-Carrying Insects Program	1,287,279	1,961,415	2,039,175	1,984,448
Total Expenditures	\$2,070,117	\$3,023,352	\$3,107,495	\$3,069,083
Total Disbursements	\$2,070,117	\$3,023,352	\$3,107,495	\$3,069,083
Ending Balance¹	\$3,118,555	\$511,558	\$1,763,376	\$487,710
Tax Rate Per \$100 of Assessed Value	\$0.001	\$0.001	\$0.001	\$0.001

¹ Due to the cyclical nature of pest populations, the treatment requirements supported by this fund may fluctuate from year to year. Therefore, Ending Balances may also fluctuate depending on the level of treatment necessary to suppress gypsy moth, cankerworm, emerald ash borer or West Nile Virus - carrying mosquito populations in a given year.