

**ALAMEDA COUNTY  
VECTOR CONTROL SERVICES DISTRICT  
COUNTY SERVICE AREA VC 1984-1**

**Annual Report 2013**



## **MISSION**

The mission of the Vector Control Services District is to prevent the spread of vector-borne diseases, injury, and discomfort to the residents of the District by controlling insects, rodents, and other vectors and eliminating causal environmental conditions through education and integrated pest management practices.

## **DISTRICT SERVICES**

### **Request for Service Investigations**

- Conduct investigations pertaining to service requests for disease vectors, assess the extent of the problem, and take the appropriate action.
- Investigate reported public health and vermin problems related to rodents, cockroaches, flies, fleas, lice, bed bugs, yellow jackets, as well as, ticks, mites, and spiders, and render the appropriate service.
- Provide insect, tick and spider identifications and recommend least-toxic control tactics.
- Conduct surveys of rodents, insects and arthropods of public health importance, and maintain a reference collection.
- Survey and control cockroaches in public sewers, utility boxes, and storm drains.
- Conduct yellow jacket and bee swarm control in public areas or by contract with other agencies.

## **Wildlife Management, Domestic Animals, and Rabies Control**

- Oversees the administration of rabies quarantine measures resulting from animal bites.
- Conduct investigations of nuisance wildlife problems relating to bats, skunks, opossums, raccoons, dogs, cats, rabbits, pigeons, and birds.
- Trap biting or nuisance animals when preventative alternatives are not possible or unlikely to be effective.
- Work in coordination with local animal control agencies, and submit annual statistical reports to the California Department of Public Health.

## **Rodent Control**

- Provide recommendations for rodent proofing and suppression in homes, neighborhoods, open areas, and businesses.
- Conduct rodent suppression during disease outbreaks or emergencies.
- Conduct surveys of rat populations to assess species abundance, distribution, and disease carrying potentials.
- Conduct District-wide inspection and baiting of sanitary sewers and waterfronts for rats.
- Inspect and test sewer laterals and mains to detect breaks, which may provide entry portals for rodents to move into adjacent neighborhoods.

## **Solid Waste Problems**

- Investigate complaints regarding solid waste handling and disposal problems involving garbage, human or animal waste, and odors at residential properties and businesses.

## **Vector-Borne Disease Surveillance and Control**

- Investigate reports of animal or human cases of vector-borne disease, such as Lyme disease, psittacosis, plague, hantavirus (HPS), scabies, head lice, reptilian salmonellosis, ehrlichiosis, and rabies to determine cause, incidence, and recommend preventative, and remediation measures.
- Assist the public with tick identification, and submissions to laboratories for Lyme disease testing.
- Collect rodent fleas and determine plague, or other vector-borne disease transmission potentials.

## **Public Education and Information**

- Provide vector control presentations to interested groups, and participate in public events.
- Disseminate educational information on vectors and vector-borne diseases to individuals and groups.
- Staff public display booths at health fairs, special events, and the County Fair.
- Post annual shellfish harvesting quarantine notices at the Alameda County bay shoreline.
- Maintain a current, informative and interactive web site.
- Provide timely and informative media releases on vector control issues.

## **Legal Enforcement**

- Provide assistance to local enforcement agencies to enforce state laws, regulations, and local ordinances when necessary to protect the public from disease vectors and nuisance problems.

## **INTRODUCTION**

This Annual Report for County Service Area (CSA) VC 1984-1 for Vector Control is presented to the Alameda County Board of Supervisors (BOS) in compliance with Sections 25214 and 25215.3 of the Government Code; County Service Area Law Chapter 13.20, and California Health and Safety Code Sections 116100-116180.

This report gives a history on how and why the County Service Area (CSA) known as the Alameda County Vector Control Services District was formed, explains how the assessments are calculated, and includes assessment tables since the CSA was formed in 1984.

This report is available for public review at the Vector Control Services District, 1131 Harbor Bay Parkway, Suite 166, Alameda, CA 94502, and it is also posted on our website at <http://www.acvcgsd.org>.

## **BACKGROUND & HISTORY**

The County Service Area (CSA) 1984-1 for Vector Control was established in June 1984 to serve the public needs by providing a comprehensive vector control program. The Environmental Health Department was experiencing fiscal shortfalls, and had to reduce vector control services in Alameda County. In response, the Board of Supervisors (BOS) created the County Service Area after the passage of Measure A, which received over 70% voter's approval for the formation of the CSA. Initially, Dublin, Emeryville and Fremont were not included in the District and opted to seek alternative sources for providing vector program.

In 1992, at the request of the Dublin City Council, which voted to join the District and subsequently Dublin was annexed by the BOS. In 2009, both Emeryville and Fremont were annexed to the District by the BOS after a successful Proposition 218 mail-out balloting process. Currently, the CSA is a countywide District; it provides vector control services to all 14 cities in Alameda County, and the unincorporated county areas.

The City of Berkeley already had an existing vector control program when the CSA was formed in 1984, which is currently funded by a formal contract between the City of Berkeley and the CSA.

## **CITY OF OAKLAND**

In 1987, the City of Oakland recognized that it had a severe rat problem emanating from the sanitary sewers which exceeded the District's staff capabilities to control the problem. Subsequently, Oakland voters approved a supplemental assessment, which was first levied in fiscal year 1988-89, and provided additional funding to control rodents in the sewers.

## 2013 ANNUAL SUMMARY

### Introduction

The County Service Area (CSA) VC 1984-1 is solely funded through benefit assessment (BA) charged to each property parcel. In 1997, the voters approved Proposition 218, requiring that all parcel owners receive a mailed ballot regarding any proposed change in an assessment prior to imposing an increase. Since then, the District (CSA 1984-1) had not been able to increase revenues without conducting a Proposition 218 Ballot Measure, and revenue only increased in accordance with the growth of new properties. Since 2005, the CSA was operating on reserves and savings, while costs and responsibilities had drastically increased. From 2005 to 2008, the District had reduced expenditures by not replacing staff vacancies and cutting back on purchasing equipment and supplies. The CSA had been able to keep up with services demand, but had cut back on District initiated work.

In 2007, the SCI Consulting Group was awarded the contract to conduct a survey among the property owners to gauge their support for a new benefit assessment. The result was an overwhelming support for a BA of \$ 4.08 to boost the existing annual assessment rate to \$10 per single-family residence. Assessment ballots were mailed to all property owners within the District boundary areas in May 2007. The ballot measure received 67.7% voter support and the Board of Supervisors approved the new assessment of \$4.08 in July of that same year.

In May of 1995, the Alameda County Department of Public Health contracted with a private consultant to prepare a Strategic Market-

ing Plan. The recommendation for the CSA was to work with the Cities of Emeryville and Fremont toward incorporation into the CSA. The City of Emeryville contracted for services with the District in the late 1980's, but discontinued the contract for financial reasons. The City of Fremont attempted to create its own Vector Control program, but was not able to secure the necessary funding to develop an effective program. In 2006, the Alameda County Local Agency Formation Commission (LAFCO) contracted with Burr Consulting to review all of the County Service Areas for possible consolidation. Burr Consulting recommended that the Vector Control District and the Mosquito Abatement Districts conduct balloting to provide countywide services and work toward consolidation. In January of 2008, SCI Consulting surveyed a sample of residents in Emeryville and Fremont, the results from both cities were favorable to a new benefit assessment to have the CSA provide vector control services.

In March, 2008, the Alameda County Board of Supervisors (BOS) authorized the CSA to proceed with an application to the LAFCO to obtain an approval of Annexation process to annex Emeryville and Fremont. The CSA submitted the application which included environmental documents (Initial Study, negative Declaration) pursuant to the California Environmental Quality ACT (CEQA). In July of 2008, the LAFCO approved the CSA application of annexation and issued a Certified LAFCO Resolution. On September 9, 2008 the LAFCO adopted a Resolution and ordered the Annexation.

In compliance with Proposition 218, the CSA mailed out ballots to all parcel owners in Emeryville and Fremont regarding the proposed

new Vector and Disease Control Assessment of \$10 for single-family residence. The results were favorable (Emeryville-70.23% and Fremont- 66.36%) to support the new assessment in providing the vector services in both cities. In response, subsequently, the BOS

approved newly proposed Vector and Disease Control Assessment of \$10 for single-family residence. As of July 1, 2009, the CSA has extended the vector control services to Emeryville and Fremont and became a county-wide service District.

## VECTOR CONTROL SERVICES in 2013 - Detail

### Urban Rodent Surveillance

The urban rodent surveillance program focuses on monitoring and controlling commensal rats (Norway and roof rats) and mice in residential, commercial and business properties. Program objectives include giving recommendations on environmental manipulation and

sanitation methods to exclude and prevent rodent settlement, and when necessary, suppressing rodent populations to reduce property damage, food contamination, and disease transmission. In 2013, the District received 1,179 requests for service (430

### Rat Requests for Service 2000-2013



roof rats, 617 Norway rats) from the public on domestic rats, representing 20.1% of all requests. Additionally, staff performed 9,794 field services related to domestic rodents including smoke and dye tests of sewer lines, field surveys, follow-up evaluations, and enforcement actions.

As part of the supplemental assessment in the City of Oakland to reduce sanitary sewer rodent populations, District staff conducts weekly inspections of designated census tract blocks. Underground sanitary sewer access structures (manholes) were inspected for signs of rodent activities (live rats or their droppings). To control the rodents, anticoagulant bait blocks are suspended in sewers to allow feeding. In 2013, a total of 9,926 sewer inspections and 2,468 treatments were made in Alameda, Albany, Emeryville, San Leandro and in Oakland 7,929 inspected and 1,730 treated.

Staff responding to a rodent service request will conduct a thorough inspection of the exterior and interior premises looking for conditions conducive to rodents, and advise the homeowner on structural modifications to prevent rodent entry to their home. They will hand out brochures to neighbors and will inspect their premises as well if the neighbors approve. We also evaluated and surveyed the neighborhoods with rat activity in the sewers based on clusters of complaints, and where residents were seeing rats roaming on surface streets.

When evidence indicates rats are surfacing near sewer laterals, field staff conducts inspections to locate broken sewer lines, and notify the homeowners or the Public Works Department to ensure repairs are made. In 2013, staff found 39 broken sewer laterals and performed dye tests or smoke tests to verify the breaks. Our District notified Oakland Public Works supervisors and other municipi-

palities to facilitate repair of broken sewer lines and laterals.

The Oriental rat flea, *Xenopsylla cheopis* is a major vector of transmitting urban bubonic plague, this flea species is primarily found on Norway rats; no Orient rat fleas were collected from the rodents in Alameda County last year. Despite low flea numbers found on urban roof rats in the County (0.15/rat), roof rats are highly adaptable to the diverse ecological habitats. A relatively rich flea fauna was found on roof rats in semi-urban areas (1.9/rats) which could potentially be a public health concern.

Ectoparasites (fleas and ticks) attached on rodents are capable of vectoring a number of disease organisms. Norway and roof rats from urban and semi-urban (sylvatic) areas as well as native rodents and wildlife were trapped and examined for ectoparasites (Table 1).

### **Sylvatic Rodent Surveillance**

Sylvatic rodents such as deer mice, woodrats, squirrels, and meadow voles are commonly found in rural and semi-rural areas of Alameda County. Many of these animals serve as reservoir hosts to zoonotic diseases such as plague, Hantavirus Pulmonary Syndrome (HPS), tularemia, Lyme disease, and babesiosis. A reservoir host is an animal that can support pathogen development, remains infected for an extended time, and serves as a source of vector infection. The reservoir hosts are not affected by the pathogens.

Hantavirus Pulmonary Syndrome (HPS) was first recognized in 1993; it is a respiratory illness associated with breathing air containing rodent urine and feces particles which are contaminated with the Sin Nombre virus (SNV). Deer mice are the principal reservoir host. Occasionally, deer mice will enter buildings and potentially expose the occupants to

2013	N	# w/ fleas	# of fleas	FLEA SPECIES	FLEA INDEX	TICK SPECIES
<b>SYLVATIC RODENTS</b>						
Pinon mouse <i>Peromyscus truei</i>	4	1	1	<i>Malaraeus telchinum</i>	0.25	
Wood Rat <i>Neotoma fuscipes</i>	1	1	15	<i>Orchopeas sexdentatus</i>	15	
Roof Rat <i>Rattus rattus</i> Sylvatic	16	9	31	<i>Atyphloceras longipalpus</i> <i>Opisodasys keeni</i> <i>Or. sexdentatus</i> <i>M. telchinum</i> <i>Leptosylla segnis Hystrichop-</i> <i>sylla sp.</i>	1.9	2 <i>Ixodes pacificus</i> (larva)
<b>COMMENSAL RODENTS</b>						
Norway rat <i>Rattus norvegicus</i>	35	15	47	<i>N. fasciatus</i> <i>H. anomolus</i> <i>Ctenocephalides felis</i>	1.3	
Roof Rat <i>Rattus rattus</i>	20	3	3	<i>Nosopsylla fasciatus Hop-</i> <i>lopsyllus anomolus</i> <i>O. keeni</i>	0.15	
<b>WILDLIFE</b>						
Opossum <i>Dedelphis virginiana</i>	12	11	449	<i>C. felis</i> (435) <i>N. fasciatus</i> <i>H. anomolus</i> <i>Pulex sp.</i> <i>O. keeni</i> <i>Or. sexdentatus</i>	37	72 <i>Dermacentor varia-</i> <i>bilis</i> 1 <i>Ixodes pacificus</i> (adults)

Table 1. Ectoparasites (fleas and ticks) collected from wildlife, commensal and sylvatic rodents in urban and peridomestic areas.

the virus. Past surveillance conducted at various localities, detected 6-18% of the deer mice are infected with SNV. In collaboration with the California Department of Public Health (CDPH), the District conducts HPS surveys in the East Bay Regional Parks to increase public awareness of the disease and to reduce exposure to deer mice inhabited structures.

In 2013, District staff surveyed three parks in the East Bay Regional Park District: Anthony Chabot, Camp Ohlone (Sunol) and Lake Don Castro. Only Anthony Chabot and Camp Ohlone yielded rodents for serological testing. Four deer mice from Anthony Chabot and one deer mouse and two wood rats from Camp Ohlone were trapped, respectively. They tested negative for SNV.

## Rabies Surveillance

The authority for the Rabies Program is the responsibility of the County Health Officer at the Department of Public Health, which provides laboratory support for the program, and performs human case investigations. The CSA manages the statistical data, and works cooperatively with the 13 local animal control agencies to administrate the rabies surveillance program in Alameda County. Moreover, the District responds to service requests and conducts surveillance on skunks, bats, and other wildlife. Suspected animals involved in biting or exposure incidents are euthanized, their heads removed and submitted to the Alameda County Public Health Laboratory (ACPHL) for rabies testing. The District also investigates animal bite incidents and prepares an annual report for the California Department of Public Health (CDPH). Bats and skunks are the primary rabies-infected animals in California. Rabies is almost never found in squirrels, rabbits, rats, or mice. The CSA submitted 146 animal heads, including dogs, cats, raccoons, foxes, squirrels, skunks and bats to the ACPHL for rabies testing in 2013. Five bats collected from Berkeley (1), Newark (1), Oakland (1), Pleasanton (1) and San Lorenzo (1) tested positive for the rabies virus. Of the animals submitted for testing, 72 were reported to have human contact; 74 had no human contact; 10 were reported as wildlife and domestic animal contacts; and one with unknown contact information.

## Wildlife Management

In 2013, the District responded to 1,464 service requests concerning wildlife, and provided almost 4084 hours of field support within or near residential areas. A majority of the service calls involved raccoons, skunks, opossums, foxes, and feral pigs. We advised homeowners to implement exclusion, sanitation, and modification of habitats to eliminate

or prevent recurrence of the wildlife problem. Our Vector Control Officers assist property owners by coordinating with the USDA Wildlife Specialist (WS) who deploys integrated pest management (IPM) techniques and offered a wide range of preventive (indirect control) and population reduction (direct control) methods. Here is a breakdown of the common wildlife nuisance species that comprised of most service requests.

### Raccoons

In 2013, the District responded to 655 service requests related to raccoon problems. Raccoons often den in backyards, beneath decks, under homes, or attics, and they feed on backyard fruits, vegetables; pet foods left overnight and dig for beetle grubs in lawns. A raccoon "grubbing" in lawns and the subsequent damage, was the leading reason for raccoon related requests for service. Moreover, young raccoons are generally born in April or May, and the mother's preference to nest and care for her young in attics is the second most common service request for trapping and exclusion. In the attic, the raccoons may urinate and defecate in a specific spot that can cause staining of the ceiling below and create an objectionable odor. To prevent damage to lawns, the WS suggests applying commercial grub killer products, repellents, and cutting back on watering the lawn. Exclusion is the key to eliminating den sites in structures. Repairing cracks and crevices, installing galvanized hardware mesh on openings can deny raccoon's access to homes, and using raccoon eviction fluid can expel raccoons that have gained access to structures.

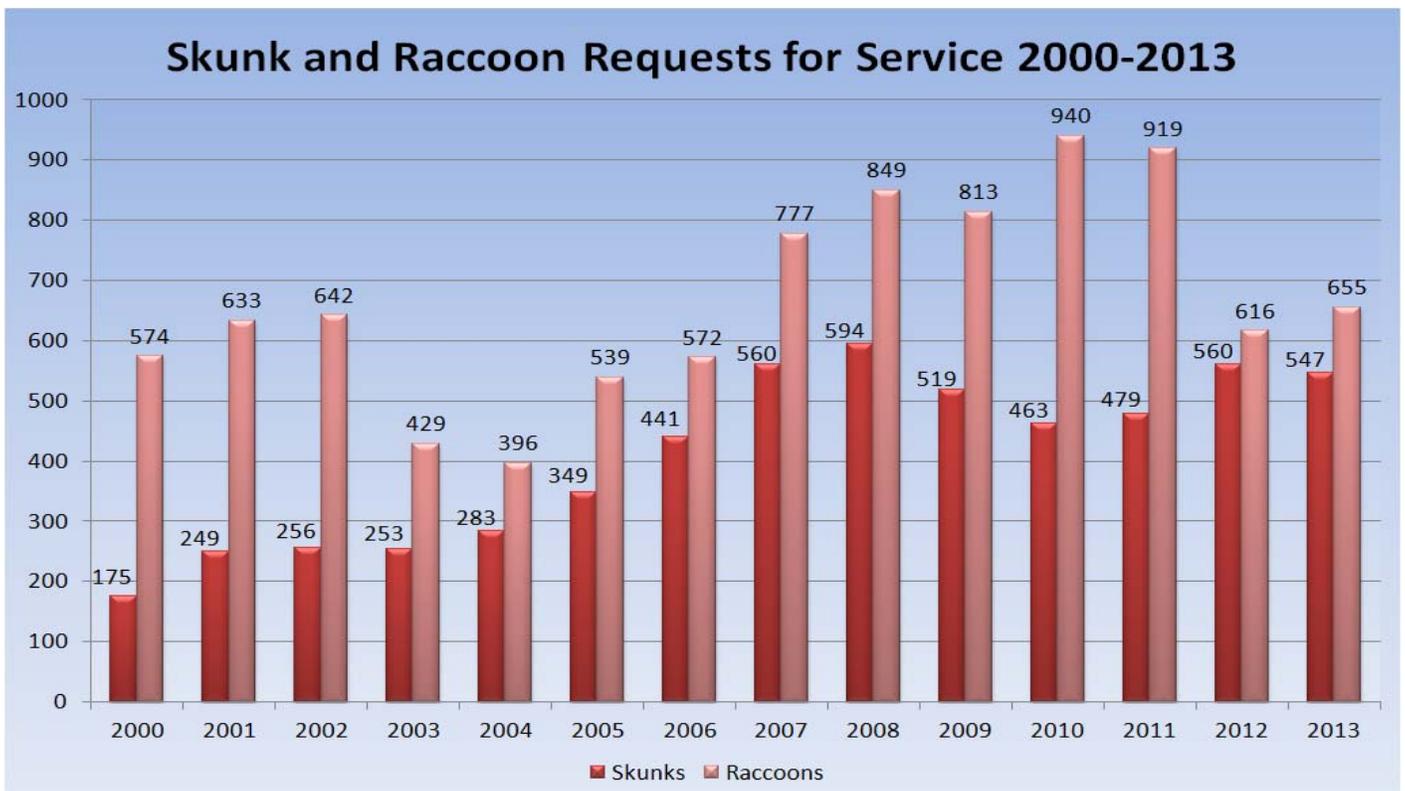
Skunk problems were the second most common wildlife service request after raccoons, totaling 547 calls in 2013. Skunks invade

Type of Animal Tested	Rabies Negative	Rabies Positive	Total Tested
Bat	44	5	49
Cat (domestic + feral)	44	0	44
Dog	30	0	30
Fox	6	0	6
Raccoon	2	0	2
Skunk	13	0	13
Squirrel	2	0	2
Total Animals Tested	141	5	146

**Animals tested for Rabies by the Alameda County Public Health Laboratory during 2013.**

residential areas due to the availability of food, water, and shelter. Skunk problems peak during the animal's mating season around February and March, with litters born about 9 weeks later. They become a nuisance problem when the mother, in defending her litter, will spray when she perceives threats from the homeowners. Additionally, skunks can be a carrier of rabies in California and are a potential public health problem. Skunk control methods focus on making the garden, yard, and residence

less attractive to skunks; trapping may be used if these methods are not sufficient. Habitat modification include cut back on overgrown shrubbery and tightly stack firewood to reduce potential den sites. Exclusion involves denying access through screening and using ¼-inch mesh hardware cloth. Homeowners can spray the lawn with an approved insecticide to control grubs and other insects, thus reducing the food for skunks and discourage them from digging.



Other wildlife nuisance animals

Our WS received 4 reports of feral pigs, 30 for wild turkeys, 21 for coyotes, and 4 for moun-

tain lions. Depredation permits were issued for four mountain lions, one for feral pigs, and 5 for wild turkeys.



Allowing wildlife access to our pets' food is a leading cause of wildlife population growth, and results in an increase of conflicts between people, our pets and wildlife.



Typical inspection report images documenting animal entry access points.

**Mosquito Surveillance**

The Alameda County Vector Control District conducts mosquito surveillance and control only in the City of Albany. Alameda County Mosquito Abatement District has jurisdiction

over the rest of the county. Mosquito carbon dioxide (EVS) traps were set overnight (every two weeks) from April through September to selectively trap female mosquitoes seeking

a blood-meal. Captured specimens were then identified, counted and reported to the State of California. A total of 55 trap nights were performed, and 118 female mosquitoes were captured. Due to the low mosquito catches, no mosquito pools were submit-

ted to U.C. Davis for West Nile Virus (WNV) isolation. Positive WNV activities detected in Alameda County consist of 22 WNV-positive dead birds. None of these reported in Albany.

Adult Mosquito Species Trapped in Albany

Week	<i>Culex tarsalis</i>	<i>Culex pipiens</i>	<i>Culiseta incidens</i>	<i>Aedes sierrensis</i>	<i>Aedes squamiger</i>	Totals	Weekly Totals
16	4	6		2			12
18	3+1*	1	1				6
19	5	1+2*			3+67*		78
20	4		2	1	6*		13
23	13	1	1	2			17
24	25	1	1				27
30			4	1+1*			6
32		8	4				12
36	3	4	1				8
38	2	13	1				16
<b>Species Totals Female</b>	59	35	15	6	3	118	
<b>Male*</b>	1*	2*		1*	73*	77*	
<b>Species All</b>	60	37	15	7	76		195



Left: Placing CO<sub>2</sub> baited mosquito surveillance trap. Center: “Dipping” for mosquito larvae. Right: “Gravid” mosquito trap to catch female egg-laying mosquitoes.

## Venomous Arthropods

Venomous arthropods include insects, mites, ticks, and spiders that can sting, bite, secrete venoms, and cause allergic reactions in humans and domestic pets. The District provides identification of stinging insects and arachnids. Exclusion and least-toxic control recommendations are given to residents to avoid being bitten or stung by venomous arthropods. Our District responded to 17 tropical rat mite complaints. This mite is a nest parasite of the roof rat, but will bite humans causing itchy bites and emotional distress. With yellow jackets nests and honey bee swarms, the risk of stinging increases the urgency for timely response. The District will destroy wasp nests when they are located in close proximity to people. In addition, the District has a contract with the East



Staff member destroying ground-nesting wasps in an East Bay Regional Park

Bay Regional Park District (EBRPD), to control ground nests within the county parks. In 2013, the District responded to 266 venomous wasp and 200 honeybee complaints.

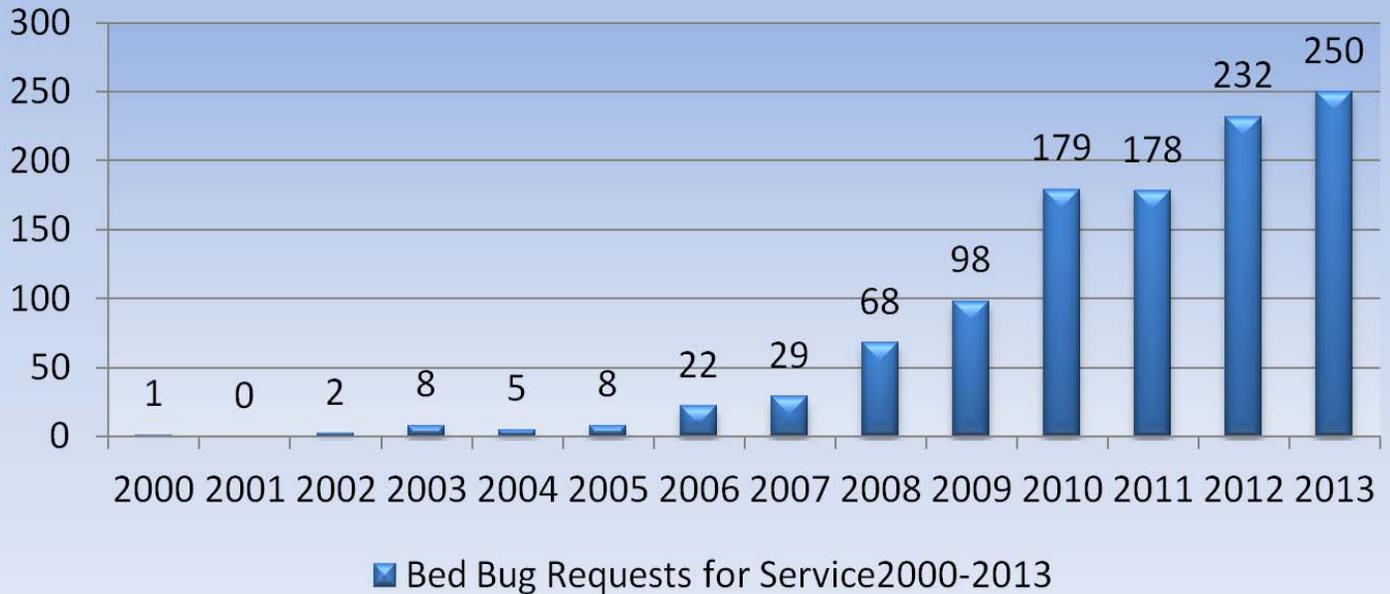
## Miscellaneous Arthropods

The District responds to service requests on a variety of nuisance pests such as ants (20), cockroaches (433), flies (99), or fleas (61) that infest homes and commercial facilities. The Turkestan cockroach, introduced into California in 1978, was first recorded in Alameda County in 2013. Bedbugs continue to be an increasing nuisance pest problem in Alameda County. The District responded to 250 bedbug service requests in 2013, over a 1000% increase since 2006.

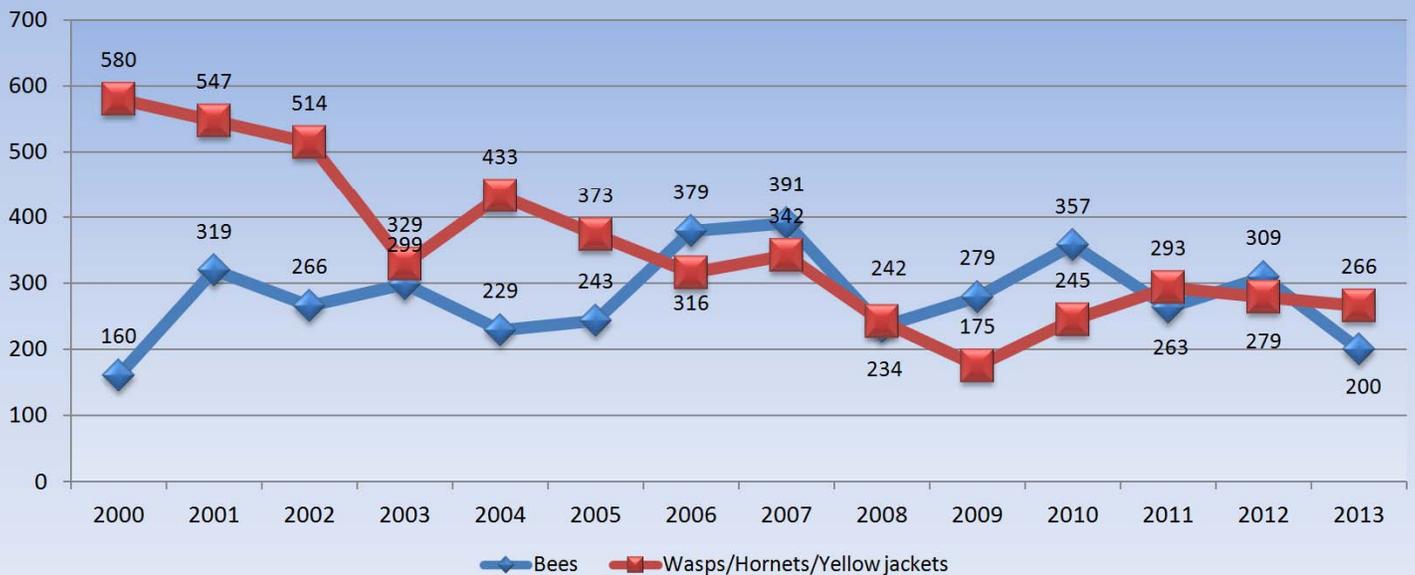


Adult bed bug: about 6 MM length (un-fed)

## Bed Bug Requests for Service 2000-2013



## Stinging Insects: Bee and Wasp Request for Service 2000 to 2013

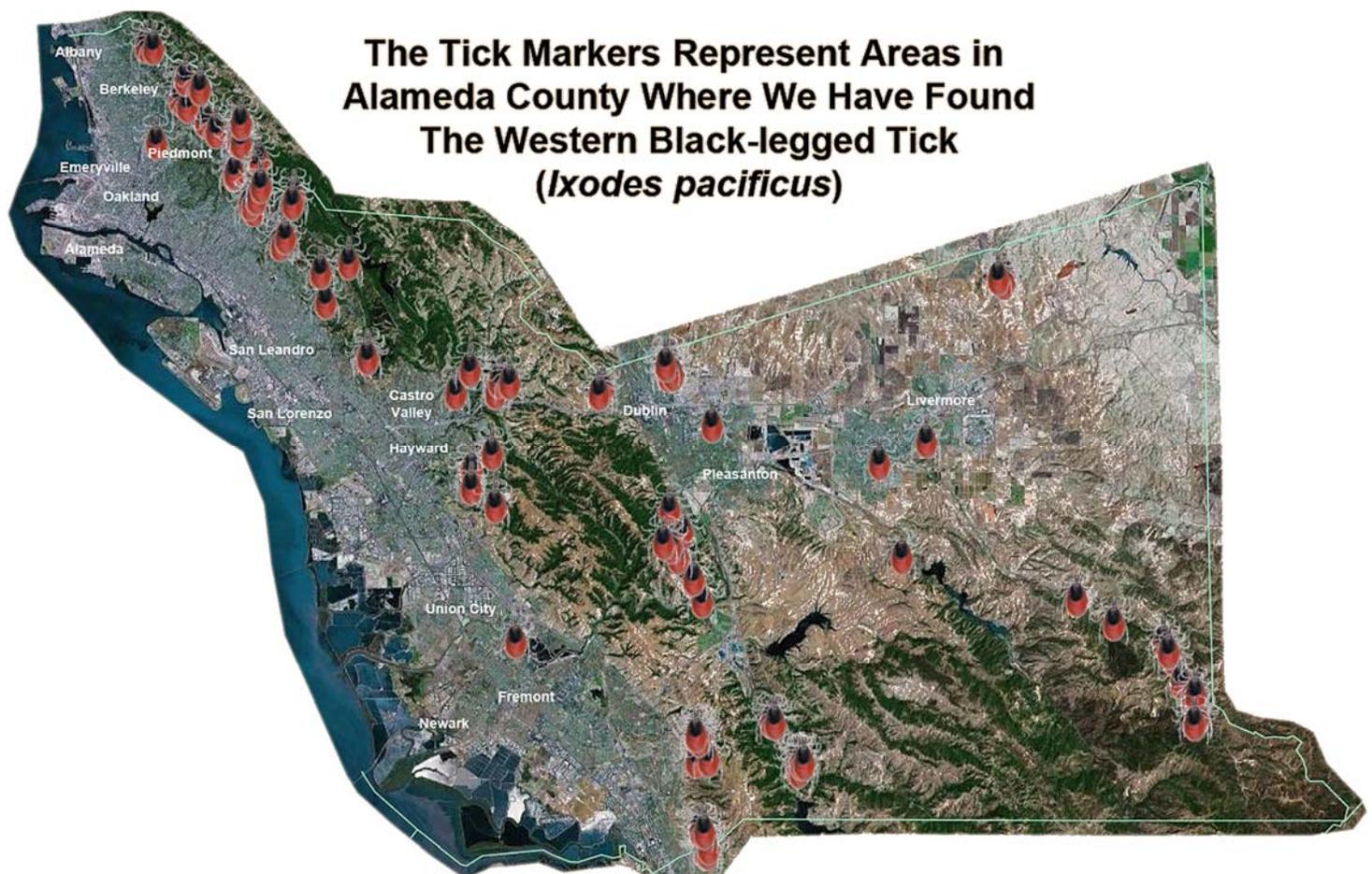


## Lyme Disease

Our four-year research collaboration with Dr. R. Lane of University of California was completed in 2013. The studies have identified the tick ecological habitats and the diseases they are vectoring in Alameda County. In addition to *Borrelia burgdorferi* (Lyme disease pathogen), *B. bissettii*, *B. americana*, *B. californiensis*, *B. genomospecies 2*, and *B. miyamotoi*, a relapsing-fever group spirochete were also detected. Overall infection of *Borrelia burgdorferi* sensu lato for adults was 0.9% and nymphs was 6.5%, and *B. miyamotoi* was

0.4% for both adults and nymphs. Two manuscripts will be submitted for publications in 2014.

In 2013, tick surveillance was focused in areas associated with particular plant alliances were with higher infection rate for adult and nymphal ticks for different *Borrelia* pathogens. A major variable with unknown consequences was spring temperature and rain. Further surveillance will be conducted in 2014 to determine the infection prevalence in the county in association with climate.



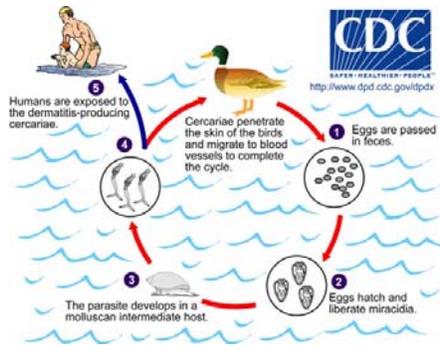
## Swimmer's Itch

Swimmer's itch, also called cercarial dermatitis, appears as a skin rash caused by an allergic reaction to certain parasites found in specific birds and mammals. When these microscopic parasites are released from infected snails, they can burrow into the nearby swimmer's skin, causing an allergic reaction and rash.

In 2013, for the third year in a row, no cases of swimmer's itch were reported at Robert W. Crown Memorial State Beach in Alameda. This is not a reported disease; the CSA will not be notified by the County Public Health Communicable Disease unless an outbreak of human cases occurred.



Skin Rash on Arm



Swimmers Itch Transmission Cycle



Skin Rash on Foot

## Inventoried Sources

The District maintains an inventory of stables and kennels, and inspects them regularly to prevent nuisance problems such as odors, insects, or rodents. Upon request by the Alameda County Animal Control, animal hobbyist facilities are inspected during annual permit re-

newal. Currently, there is no statutory requirement or authority to inspect pet shops, animal grooming salons or livestock holding facilities; however, when there are nuisance complaints, we will perform the inspections.

## Nuisance Abatement

Garbage, rubbish, junk cars and animal manure stockpiles can become public nuisances when left unattended prior to disposal. In addition, these nuisance piles provide harborage and food sources for rodents, flies, and other pests that might result in disease transmission

to humans. The District responded to 777 service requests concerning nuisances, primarily garbage and rubbish (199, 251), resulting in 3489 field services including investigations, progress assessments, correspondence, and compliance inspections.

## Public Information and Education Activities

The most effective way to reach a large audience is through our web site, social media such as Facebook, media contacts and event participation. Our District continues to expand outreach to the public and our ethnically diversified populations. We had several media contacts/press releases/interviews—on ticks, rabies, and bed bugs.

The District's website received 1,063,990 hits in 2013—averaging 88,665 hits per month; this is an increase of 8.2% over 2012. Our website provides useful information to visitors, and is a conduit for Requests for Service from the public, as well as email correspondence. Throughout the year our website receives regular and timely updates regarding current vector related events.

Sixty-one days of events and presentations were provided to the public at schools and organizations throughout the County; among them were at the our Bed Bug Certification Training for Property Management Professionals, Eden I&R, Oakland High School Futurama, Cal State East Bay Malaria Day,

Berkeley Homeowners Association, Castlemont High School and several other schools.

The District initiated a “Vectors and Vector Control” educational program intended to educate our school children about vectors and vector prevention. Our staff have been working on and giving presentations at elementary schools in Fremont. We also have an on-going educational project aimed at rental property management professionals regarding bed bugs. Our goal is to be an educational resource to help the property owners, managements, tenants and the public in Alameda County.

At the District office, our Vector Ecologist, Community Relations Coordinator, and management provide phone consultations on vector-related questions and onsite identifications of insects, ticks, and other specimens. The annual Mussel Quarantine was posted along the Alameda County shoreline—to prevent paralytic shellfish poisoning (PSP), as well as “Bay Caught Fish” advisory signage.



Event participation throughout the County!



## Community Events

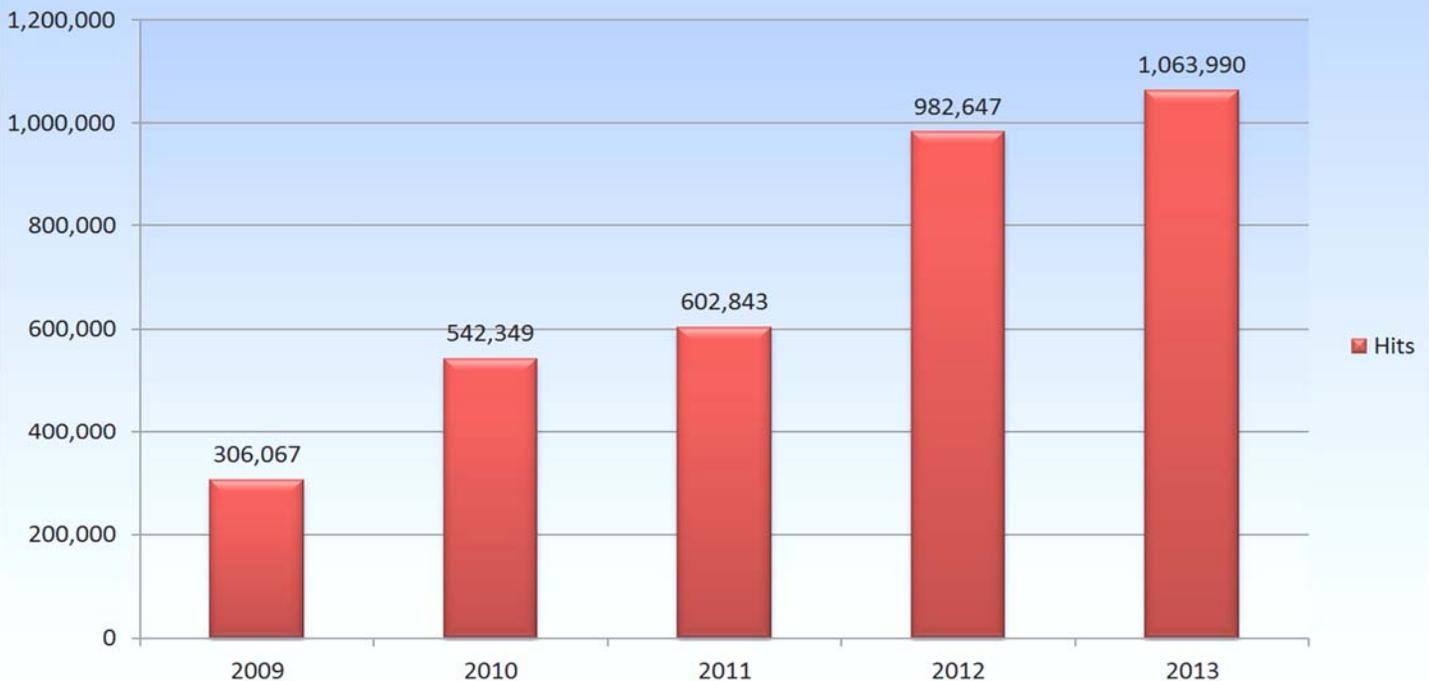
At special events, our staff interacts directly with the public through hands-on demonstrations and answer questions on pests and vec-

tor-related matters. The District participated in information fairs and public venues including the Alameda County Fair, Fremont Festival of

the Arts, Hayward Zucchini Festival, Tres Ranchos Boy Scout Ranch-O-Rama, Fremont and Oakland Earth Days, Dublin's St. Patrick's Day, Solano Stroll, India Festival in Fremont, Black Business Expo, Northern Alameda County Rental Property Association Expo as

well as the Oakland Chinatown Lunar New Year Festival and StreetFest. These events in which we participate attract almost 1.5 million visitors and give our District wide exposure throughout Alameda County.

## ACVCSD Web Site Hits 2009-2013



### City of Berkeley

The City of Berkeley is one of four cities in California with its own environmental health jurisdiction. In 1976, the City adopted several environmental health ordinances that provide a mechanism to protect public health from vectors. The voters of Berkeley approved Measure A in 1984 and became part of the CSA. Since the Berkeley Division of Environmental Health already had a vector control program that contains enforceable regulations for controlling rodents and other vectors, the CSA authorized a contract each fiscal year to fund the City vector program through the benefit assessment. In the years since 1984, the Berkeley vector program was not able to perform all of the Duties expected of the CSA,

and CSA staff continued to provide field services to enhance their program. In 2006 the City added new staff and expanded the services to provide all vector programs within the City.

In 2013, the City responded to and investigated a total of 687 service requests and complaints in the following categories--rodents (255), vegetation overgrowth (44), sewer inspections and baiting (36), wildlife (37), arthropod (157), nuisance abatement (49), sewage (3) and general survey (132). The City participated in two community events: Solano Stroll, and Himalayan Fair; and one education outreach to the Berkeley Chinese Senior Community Center.

## Pesticide Use Summary 2013

The District participates in a countywide Integrated Pest Management policy set by the Board of Supervisors. The majority of pesticides applications were used to suppress Norway rats in the sewers or to destroy yellow jacket nests. Mosquito larvicides totaled less

than a quarter pound of active ingredient. The total pesticide usage is listed below and is reviewed by the Alameda County Agricultural Commissioner, the Department of Pesticide Regulation and the California Department of Public Health.

<b>Pesticide Use ACVCSD 2013</b>					
<b>Pesticide</b>	<b>Manufacturer</b>	<b>Formulation</b>	<b>Target Pest</b>	<b>Amount Used</b>	<b>Applications</b>
Altosid XR Briquets	Wellmark International	Briquets	Mosquito Larvae	0.9375 lbs	4
ContraC Blox	Bell Labs	1 oz Block	Domestic Rodents	0.5625 lbs	3
ContraC Super Blox	Bell Labs	8 oz block	Domestic Rodents	1311 lbs	191 <sup>1</sup>
Delta Dust	Bayer Environmental Science	Insecticidal Dust	Fleas/Yellow-jacket Wasps	0.0625 lbs	1
Diatomaceous Earth	Woodstream	Insecticidal Dust	Ant/Crawling Insects	0.5625 lbs	3
Ditrac Tracking Powder	Bell Labs	Rodenticidal Dust	Domestic Rodents	6.63 lbs	11
Drione Dust	Bayer Environmental Science	Insecticidal Dust	Yellowjacket Wasps	37.27 lbs	172
Maxforce Bait Station	Bayer Environmental Science	Bait Stations	Cockroaches	0.504375 lbs	9
Maxforce Roach Gel Bait	Bayer Environmental Science	Gel	Cockroaches	7.58 lbs	95
Prescription Treatment Brand P. I.	Whitmire	Aerosol Spray	Yellowjacket Wasps	3.92 lbs	14
Victor Poison-free Wasp & Hornet Killer	Woodstream	Aerosol Spray	Yellowjacket Wasps	14.78 lbs	31
Wasp Freeze	Whitmire	Aerosol Spray	Yellowjacket Wasps	26.13 lbs	24
Wasp-X	Wellmark International	Aerosol Spray	Yellowjackets/ Wasps	11.0 lbs	7

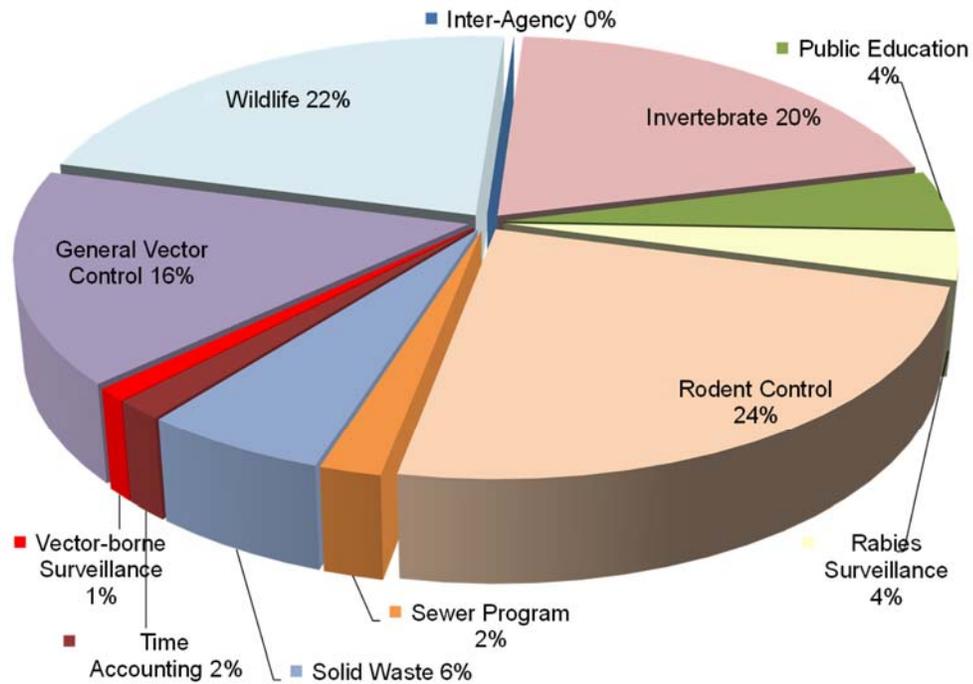
### **Pesticide Use by Berkeley Vector Control 2013**

<b>Pesticide</b>	<b>Manufacturer</b>	<b>Formulation</b>	<b>Target Pest</b>	<b>Amount Used (oz.)</b>	<b>Applications</b>
Talon	Syngenta	8 oz. Wax Block	Norway Rats	2,560	320 <sup>2</sup>
Drione Dust	Bayer	Dust	Yellowjackets	5.5	11

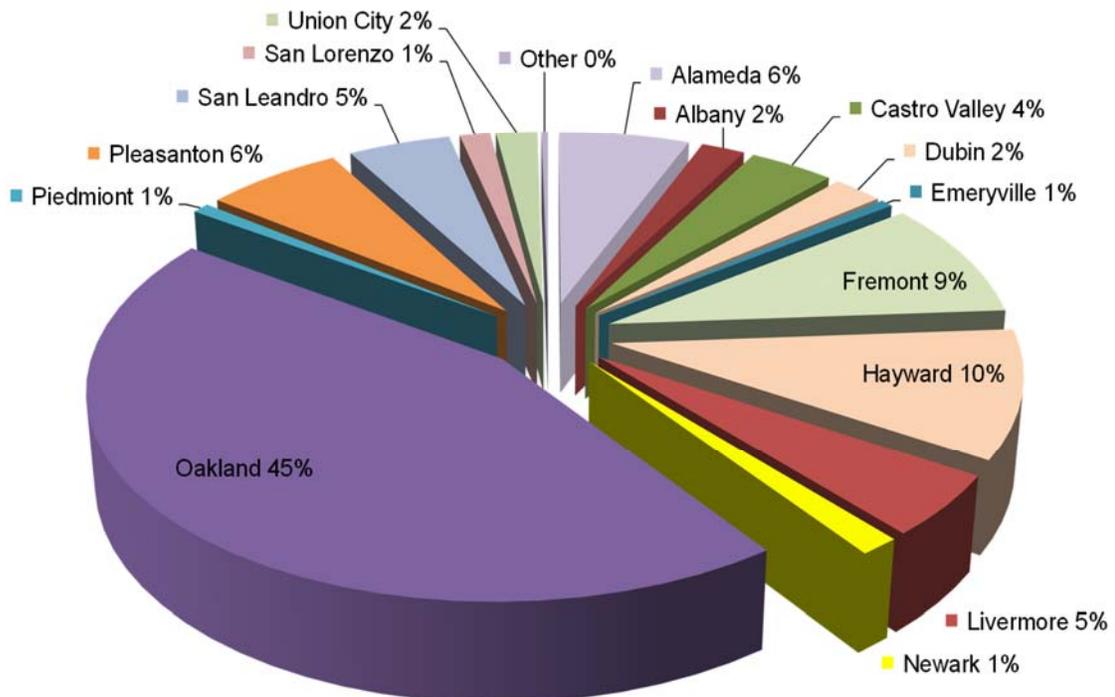
1. Applications based on cumulative per census tract

2. Applications based on each individual application

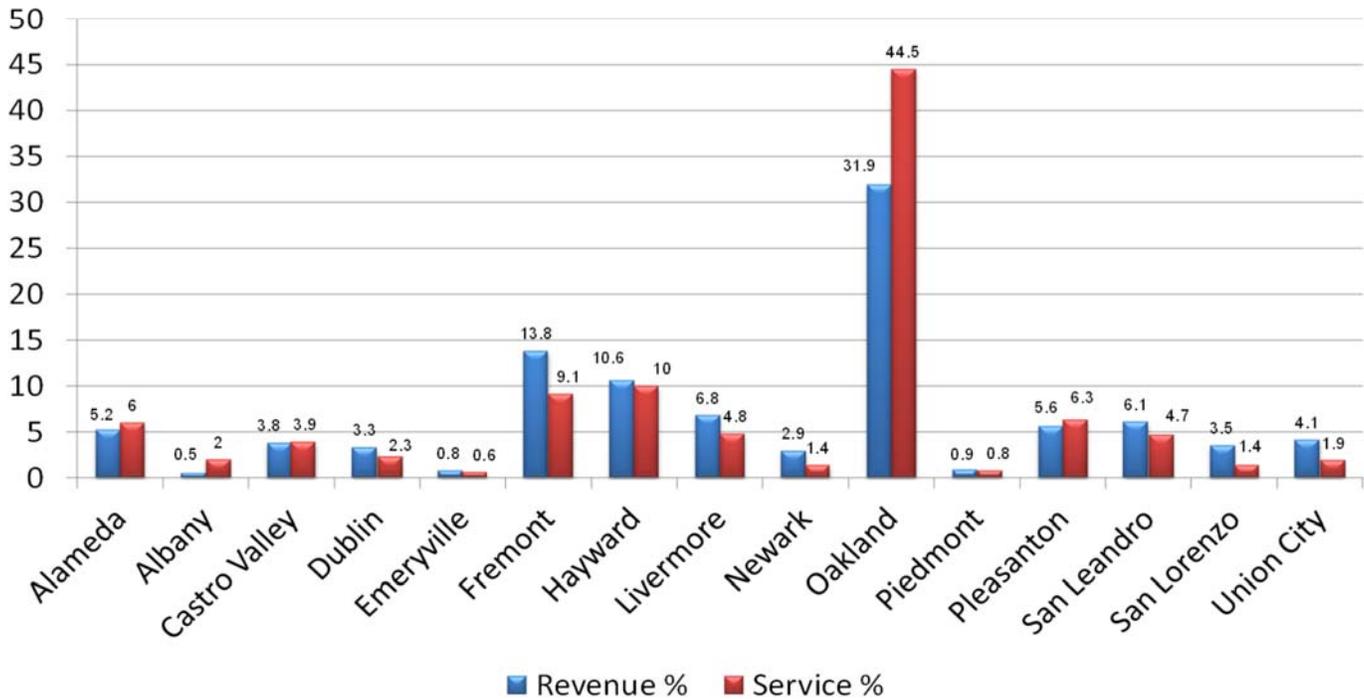
### Alameda County Vector Control Services District Services by Program, 2013



### Alameda County Vector Control Services District Total Services Provided to Cities, 2013



## Alameda County Vector Control Services District Percentage of Service Requests and Benefit Assessments Per City 2013



### BENEFIT ASSESSMENT

The Board of Supervisors reviews annually the proposed rate of assessment, holds public hearings, and then establishes the assessment for the fiscal year. Assessments are levied and collected at the same time and in the same manner as the general county property taxes. They are subject to the same fines, penalties, and forfeiture as property taxes. The assessment charge levied against each parcel is available for review at the Vector Control Services District Office.

From 1984 to 2007, the CSA Vector Control Benefit Assessment (Initial Benefit Assessment) was based on land/property use as classified by the Assessor's Office. A basic assessment rate was established as a single benefit unit (BU), which was applied to the

schedule for assessments according to land/property use.

In the Post Proposition 218 (Secondary Benefit Assessment) formulas (approved by voters in 1997), the BU rates was established on the number of people who potentially live on or work at the various types of property. The methodology determined by the ratio of population density factors in relation to the usage density for different types of property. In general larger properties such as parking lot, self storage, industrial property and golf course will be assessed in a lower BU under the Post Proposition 218 rate. The following table depicts some of the differences between the two rate calculation methods.

## LAND/PROPERTY USE CATEGORIES

Property Use Categories	CSA Vector Control Benefit Units/per property type	CSA Vector Control Benefit Units/per property type
Single Family Residence/Condominium	1BU	1BU/0.61BU
Vacant Land Parcel	1BU	0.25 BU
Multiple Residential Small (2-4 units)	2 BUs	0.46 BUs
Commercial, Industrial	2 BUs	0.5 BUs
Large Rural Property	2 BUs	0.08 Bus (per 10 acres)
Multiple Residential (5 units +)	5 BUs	0.32 BUs
Large Commercial (Hotels, Mobile Home Parks)	5 BUs	0.5 BUs (per ¼ acre increments)

## CSA VECTOR CONTROL SERVICES BENEFIT ASSESSMENTS FY 2013-2014

Use/Size	CSA Vector Control Initial Benefit Assessment	Oakland (Residence only) + Supplement Assessment (\$1.28)	CSA Vector Control Secondary Benefit Assessment
Single Family Residence/ Condominiums	\$5.92	\$7.20	\$4.08/2.49
Vacant Land	5.92	7.20	1.02
Multiple Residential Small (2-4 units)	11.84	14.40	1.88 <sup>1</sup>
Commercial, Industrial	11.84	14.40	2.04 <sup>4</sup>
Large Rural Property (More than 10 Acres)	11.84	14.40	0.34 <sup>3</sup>
Multiple Residential (5 units +)	29.60	36.00	1.30 <sup>2</sup>
Large Commercial (Hotels, Mobile Home Parks)	29.60	36.00	2.04 <sup>4</sup>

- Notes:
1. This rate is per unit. There would be a minimum of 2 units for this category.
  2. This rate is per unit. There would be a minimum of 5 units for this category.
  3. A property would be charged this minimum. It would be \$.34 for 10 acres.
  4. These estimates are based on per ¼ acre increments.

**ASSESSMENT FOR ONE BENEFIT UNIT (BU)**  
**(Single Family Residence - CSA Basic Rate and Oakland)**  
**1984-2013**

<b>FISCAL</b>	<b>CSA</b>	<b>OAKLAND</b>	<b>OAKLAND</b>
<b>Year</b>	<b>Basic Rate</b>	<b>Supplemental Rate</b>	<b>Total Rate*</b>
84-85	\$3.15	\$0.00	\$3.15
85-86	2.66	0.00	2.66
86-87	2.66	0.00	2.66
87-88	3.24	0.00	3.24
88-89*	3.30	0.70	4.00
89-90	3.58	0.66	3.84
90-91	3.80	0.70	4.50
91-92	3.96	0.70	4.66
92-93	3.96	0.70	4.66
93-94	4.72	1.04	5.76
94-95	4.82	1.06	5.88
95-96	5.82	1.26	7.08
96-97	5.92	1.28	7.20
97-98	5.92	1.28	7.20
98-99	5.92	1.28	7.20
99-00	5.92	1.28	7.20
00-01	5.92	1.28	7.20
01-02	5.92	1.28	7.20
02-03	5.92	1.28	7.20
03-04	5.92	1.28	7.20
04-05	5.92	1.28	7.20
05-06	5.92	1.28	7.20
06-07	5.92	1.28	7.20
07-08**	10.00	1.28	11.28
08-09	10.00	1.28	11.28
09-10***	10.00	1.28	11.28
10-11	10.00	1.28	11.28
11-12	10.00	1.28	11.28
12-13	10.00	1.28	11.28

\*Includes Oakland Supplemental—Initiated 1988-1989; \*\*Includes Initial Secondary Benefit Assessment; \*\*\*Includes Emeryville and Fremont—Annexed



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