

ALAMEDA COUNTY
VECTOR
CONTROL

ANNUAL REPORT 2014



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, bed bugs, lice, stinging insects (yellow jackets and bees), as well as, ticks, mites, and spiders, and render the appropriate services based on best management practices and integrated pest management strategies.
- Provide insect, tick and spider identifications and recommend the 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 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, turkeys, feral pigs, foxes, coyotes, dogs, cats, rabbits, and birds (pigeons).
- Trap biting or nuisance animals when preventative alternatives or exclusion practices are not possible or unlikely to be effective.
- Work in coordination with local animal control agencies, and submit annual statistics 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 vector-borne disease outbreaks or public health 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 wastes, and odors at residential properties and businesses.

Vector Borne Disease Surveillance and Control

- Investigate reports of animal or human cases of disease such as Lyme disease, psittacosis, plague, hantavirus (HPS), head lice, malaria, Dengue fever, Chikungunya virus, reptilian salmonellosis, ehrlichiosis, and rabies to determine cause, incidence, and recommend preventative, and remediation measures.
- Assist the public with tick identification, and submissions of ticks 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 schools, civic groups, property managements, home-owner associations and publics, and participate in public events.
- Disseminate educational materials on vector-borne diseases to residents and interested groups.
- Staff displays booths at local health fairs, special events, and the Alameda 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 code 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 Section 25214 and 25215.3 of the Government Code; County Service Area Law Chapter 13.20, and California Health and Safety Code Section 116110-116180.

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.acvc.org>).

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. Prior to 1984, 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 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.

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; provide the 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.

Background

The County Service Area (CSA) VC 1984-1 is solely funded through benefit assessment (BA) charged to each property parcel. In 1997, California 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 for eleven years, the District (CSA 1984-1) has not been able to increase revenues without conducting a Proposition 218 Ballot Measure.

In 2007, the SCI Consulting Group was awarded the contract by the BOS 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 BOS 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 Marketing 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 provides the vector services.

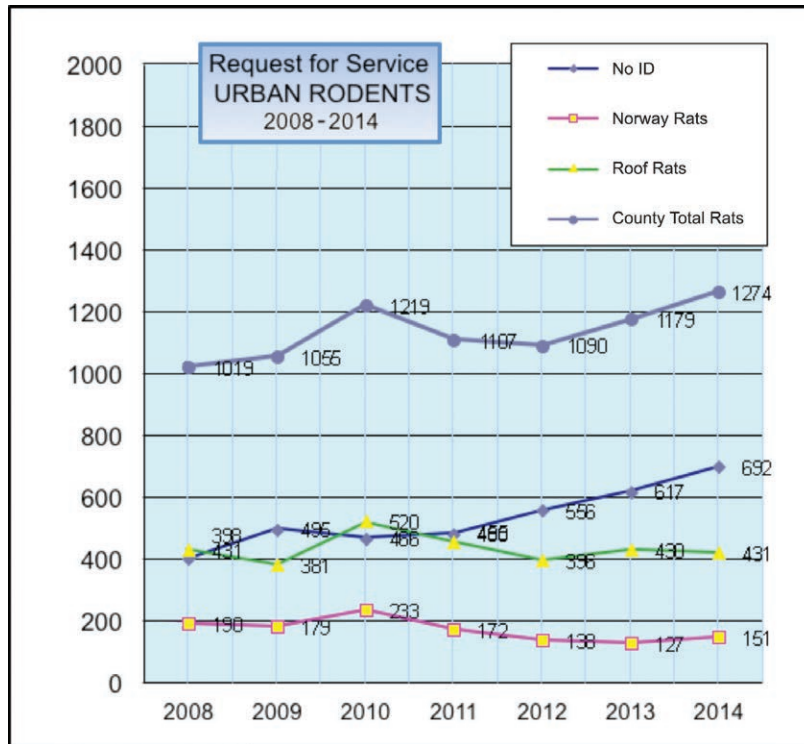
In March, 2008, the BOS authorized the CSA to proceed with an application to the LAFCO to obtain an approval of Annexation process to annex Emeryville and Fremont. The CSA submitted the application which included environmental documents (Initial Study, Negative Declaration) pursuant to the California 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 2014

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. In 2014, the District received 1,274 requests for service (431 roof rats, 151 Norway rats) from the public on domestic rats, representing 25.4% of all services. Our staff performed 9,405 field services related to domestic rodents including smoke and dye tests of sewer lines, field surveys, follow-up evaluations, and enforcement actions.

Staff biologists responding to a rodent service request will lead to multiple field services by conducting 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 into their homes. 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, staff biologists conduct inspections to locate broken sewer lines, and notify the homeowners or the Public Works Department to ensure repairs are made. In 2014, staff biologists found 24 broken sewer laterals and performed dye tests or smoke tests to verify the breaks.

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, rodenticide bait blocks are suspended in sewers to allow feeding. In 2014, a total of 8,065 sewer inspections and 1,626 treatments were made predominately in Oakland, and also in Emeryville and San Leandro.



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.

Sylvatic Rodent Surveillance

Sylvatic rodents such as deermice, 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 parasite development, remains infected for an extended time, and serves as a source of vector infection. The reservoir hosts are not affected by the pathogens.

2014	N	# w/ fleas	# of fleas	Flea Species	Flea Index
SYLVATIC RODENTS					
Pinon Mouse <i>Peromyscus truei</i>	28	6	7	<i>Opisodasys keeni</i> <i>Orchopeas sexdentatus</i> <i>Atyphloceras longipalpus</i>	0.25
Deermouse <i>P. maniculatus</i>	5	2	7	<i>Malaraeus telchinum</i> <i>Opisodasys keeni</i>	1.4
<i>P. californicus</i>	1	1	1	<i>Atyphloceras longipalpus</i>	1
Meadow Vole <i>Microtus californicus</i>	1	1	4	<i>Opisodasys keeni</i>	4
COMMENSAL RODENTS					
Roof Rat <i>Rattus rattus</i>	16	0	0		
Norway Rat <i>Rattus norvegicus</i>	4	2	3	<i>Nosopsylla fasciatus</i>	0.75
Tree Squirrel <i>Sciurus niger</i>	7	6	38	<i>Orchopeas sexdentatus</i>	5.43

Ectoparasites (fleas) collected from commensal and sylvatic rodents in urban and peri-domestic areas. No ticks were found in any of the trapped urban and sylvatic rodents in 2014.

Hantavirus Pulmonary Syndrome (HPS)

Hantavirus Pulmonary Syndrome (HPS) was first recognized in 1993; it is a respiratory illness associated with breathing air containing rodent urine and feces contaminated with the Sin Nombre virus (SNV) particles. Deer mice are the principal reservoir host. Occasionally, deer mice will enter buildings and potentially expose the occupants to the virus. Past surveillance conducted at various localities within the county 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 2014, District staff surveyed three parks in the East Bay Regional Park District: (EBRPD) Anthony Chabot (Castro Valley), Bushy Peak Preserve (Livermore) and Mission Peak Regional (Fremont). All of the surveyed sites yielded rodents for serological testing. The number of rodents trapped: 5 deer mice, 1 harvest mouse, 1 house mouse, 1 meadow vole, 7 pinon mice and 1 California mouse. Two from the EBRPD tested positive for hantavirus. One was the pinon mouse from Anthony Chabot Regional Park, and the other was a meadow vole from Bushy Peak Preserve in Livermore. 17 Pinon mice were also trapped at a peri-domestic location on East Castro Valley Blvd., Castro Valley, and one tested positive for hantavirus.

Lyme Disease

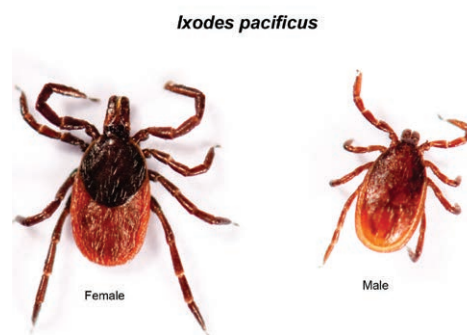
A four-year research collaboration with Dr. Robert Lane of University of California was completed and the manuscript was published in Journal of Ticks and Tick-borne Diseases in 2014*. The studies have identified seven different *Borrelia* spirochetes among ticks collected at 70 sites and an 8th *Borrelia* species in roof rat. Three of *Borrelia* species (*B. burgdorferi*, *B. bissettii* and *B. mimymotoi*) can cause clinical illness in California. Some of the woodland areas in the warmer, drier south-central inland region where infection rates of nymphs exceeded 20%. These findings potentially elevated the public health risk in isolated pockets within highly populated areas of Alameda County.

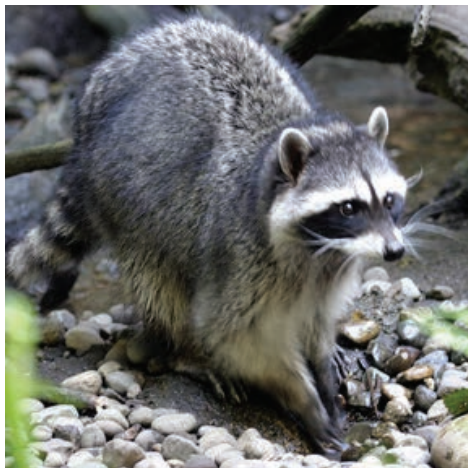
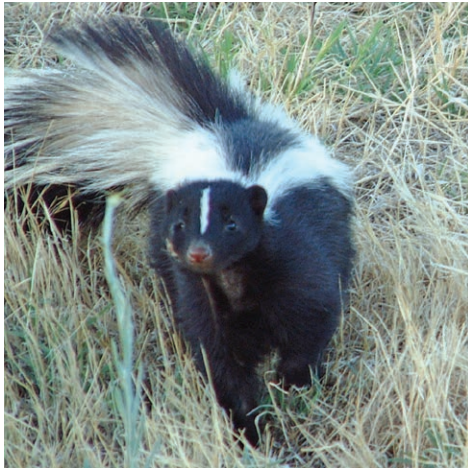
In 2014, 393 nymphs and 150 adults of *Ixodes pacificus* (Western Black-legged Tick) collected from 2010 to 2012 were tested for *Anaplasma phagocytophilum* (HGA); two nymphs from Oakland and three nymphs from Hayward were positives. A total of 945 nymphal ticks were surveyed at 5 sites in the Maritime side and 9 sites in Inland side of Coast Range. Eighty-five nymphs (9%) were cultured positive for *B. burgdorferi sensu lato*; and 15 (1.6%) were positive for *B. mimymotoi*.

**Fedorova, N., Kleinjan, J., James, D., Hui, L., Peeters, H., and Lane, L. 2014 Remarkable diversity of tick or mammalian-associated Borreliae in the metropolitan San Francisco Bay Area, California. Ticks and Tick-borne Diseases 5(2014), 951-961.*

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 107 animal heads, including bats, cats, dogs, coyotes, opossum, raccoons, and skunks to the ACPHL for rabies testing in 2014. Two bats collected from Fremont (1) and Pleasanton (1) tested positive for the rabies virus. Of the animals submitted for testing, 65 were reported to have human contact; 18 had no contact; 11 were reported as wildlife and domestic animal contacts; and 9 with unknown contact information.





Type of Animal	Number Negative	Number Positive	Total Tested
Bat	25	2	27
Cat	34	0	34
Dog	30	0	30
Coyote	3	0	3
Raccoon	4	0	4
Skunk	8	0	8
Opossum	1	0	1
Total Animals Tested	105	2	107

Wildlife Management

In 2014, the District responded to 1,527 service requests concerning wildlife, and provided 3,416 hours of field support within or near residential areas. A majority of the service calls involved raccoons, skunks, opossums, and foxes. We advised homeowners to implement exclusion, sanitation, and modification of habitats to eliminate or prevent recurrence of the wildlife problem. Our Vector Control Biologists assist property owners by coordinating with the District's 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 most service requests.

Raccoons

In 2014, the District responded to 697 service requests related to raccoon problems. Raccoons often den in backyards, beneath decks, under homes, or in 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 staff biologist and the WS will suggest 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.

Skunks

Skunk problems were the second most common service request after raccoons, totaling 539 calls in 2014. Skunks invade 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 is defending her litter and will spray when she perceives threats from the homeowners. Additionally, skunks can be a carrier of rabies in California, hence, creating a potential public health problem. Skunk control methods focus on making the garden, yard, and residences less attractive to skunks;

trapping may be used if these methods are not sufficient. Habitat modification includes cutting back overgrown shrubbery and tightly stacking firewood to reduce potential den sites. Exclusion involves denying access through screening and using 1/4-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 District's USDA Wildlife Specialist received 1 request for feral pigs; 9 for wild turkeys; 16 for coyotes; 3 for black tail deer; 2 for mountain lions; 30 for grey fox and 1 red fox. No depredation permits were issued 2014.

Mosquito Surveillance

The Alameda County Vector Control Services District conducts mosquito surveillance and suppression only in the City of Albany. The Alameda County Mosquito Abatement District has jurisdiction over the rest of the county.

In 2014, throughout the year our staff biologist provided 56 mosquito related services within the City of Albany and from April through December conducted an extensive adult mosquito surveillance program. This included, every two weeks, Mosquito Encephalitis Virus Surveillance (EVS) traps were set overnight to trap blood-seeking female mosquitoes. The captured specimens were identified, counted and reported to the State of California. A total of 98 trap nights were performed and 221 female mosquitoes were captured.

Due to the low mosquito catches only one mosquito pool was submitted to U.C. Davis for West Nile Virus (WNV) testing, and the result was negative. The positive WNV activities detected in Alameda County consist of 1 human case, 96 dead birds, 16 mosquitoes and 1 sentinel chicken. None of these WNV positive cases were reported in Albany.

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 arthropods including stinging insects and arachnids (46). Exclusion and least-toxic control recommendations are given to residents to avoid being bitten or stung by venomous arthropods. Our District responded to 22 tropical rat mite complaints. This mite is a nest-infesting parasite of the roof rat, but will bite humans causing intense itching and emotional distress.

Staff biologists also respond to yellow jackets nests and honey bee swarms because of the urgency and a serious public health threat. The biologists will correspond with bee hobbyists to remove the bee swarms and destroy wasp nests when they are located in close proximity to people. In addition, the District has a contract with the East Bay Regional Park District (EBRPD), to control ground nesting yellow jackets within the county parks. In 2014, the District responded to 173 venomous wasp and 165 honeybee complaints.

Miscellaneous Arthropods

The District responds to service requests on a variety of nuisance pests such as ants (13), cockroaches (343), flies (88), or fleas (89) 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 342 bedbug service requests in 2014, a 137% increase from 250 in 2013.

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 2014, for the fourth 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 out-break of human cases occurred.

Inventoried Animal Holding Facilities

The District maintains an inventory of stables and kennels, and inspects them occasionally by request for services 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 renewal. 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 436 service requests concerning nuisances, primarily furniture (70), garbage (96) and rubbish (73), resulting in 1,284 field services including investigations, progress assessments, correspondence, and compliance inspections. When necessary the District will work with the local code enforcement agencies to seek compliance to mediate the problem.

Public Information and Education Activities

We effectively engage a large audience through our web site, social media such as Facebook, media contacts, group presentations, and event participations. 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 1,092,110 hits in 2014—averaging 91,009 hits per month; this is an increase of 2.6% over 2013. Our website provides useful information to visitors, and is a conduit for residents to request our service, as well as email correspondence.

Fifty-seven days of events and presentations were provided to the public at schools and organizations throughout the county; among them were the Bed Bug Certification Training for Property Management Professionals, Oakland Airport Earth Day, Hayward Arbor Day, San Leandro Cherry Festival, Oakland High School Futurama and many other events.



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 rental property owners, managers, tenants and the public in Alameda County effectively respond to the bed bug infestations in rental housing. This project has led to several other bed bug related presentations to senior centers and low income housing venues.

California Association of Code Enforcement Officers (CACEO) requested vector control related training at their Fremont meeting last January, due to new regulations stemming from Senate Bill 488. The District staff gave presentations at this one-day training for code enforcement officers that may be interested in identifying vermin infestations.

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.

Our Community Relations Coordinator designed new, multi-language, mussel quarantine signs that were made for permanent posting, since every year we have the mussel quarantine during the same timeframe (May 1st thru October 31st), which should result in long-term cost and labor savings.



Community Events

At special events, our staff interacts directly with the public through hands-on demonstrations and answer questions on pests and vector-related matters. The District participated in information fairs and public venues including the seventeen-day Alameda County Fair, Fremont Festival of the Arts, Hayward Zucchini Festival, 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's Trade Expo as well as the Oakland Chinatown Lunar New Year Festival and StreetFest. The events in which we participate attract almost 1.5 million visitors and give our District community engagement opportunities throughout Alameda County, which is likely the largest vector control direct contact outreach program in the state of California.

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 additional vector programs within the City.

In 2014, the City responded to and investigated a total of 660 service requests and complaints in the following categories—rodents (241), vegetation overgrowth (24), sewer inspections and baiting (8), wildlife (45), arthropod (157), nuisance abatement (70), sewage (3) and general survey (101). The City participated in two community events: Solano Stroll, and Himalayan Fair; and one education outreach to the Parker-Grant-McGee Neighborhood Association.

Integrated Pest Management

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. 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.

Pesticide Use Summary 2014

Pesticide	Manufacturer	Formulation	Target Pest	Amount Used	Applications
Altosid XR Briquets	Wellmark International	Briquet	Mosquito Larvae	3 oz	1
Conrac Super Blox	Bell Labs	8 oz Block	Domestic Rodents	761 lbs	12 ¹
Conrac Pellets	Bell Labs	Pellet	Domestic Rodents	6 oz	1
Delta Dust	Bayer Environmental Science	Insecticidal Dust	Fleas/Yellowjackets/Wasps	8.5 oz	4
Diatomaceous Earth	Woodstream	Insecticidal Dust	Ant/Crawling Insect	0.5 oz	1
Ditrac Tracking Powder	Bell Labs	Insecticidal Dust	Domestic Rodents	7.69 lbs	35
Drione Dust	Bayer Environmental Science	Insecticidal Dust	Yellowjackets/Wasps	16.99 lbs	97
Maxforce Bait Station	Bayer Environmental Science	Bait Station	Cockroaches	2.85 lbs	34
Maxforce Roach Gel Bait	Bayer Environmental Science	Gel	Cockroaches	4.9 lbs	49
Prescription Treatment Brand P. I.	Whitmire	Aerosol Spray	Yellowjackets/Wasps	2.69 lbs	13
Victor Poison-free Wasp & Hornet Killer	Woodstream	Aerosol Spray	Yellowjackets/Wasps	8 oz	3
Wasp Freeze	Whitmire	Aerosol Spray	Yellowjackets/Wasps	19.81 lbs	21
Wasp-X	Wellmark International	Aerosol Spray	Yellowjackets/Wasps	25.13 lbs	19

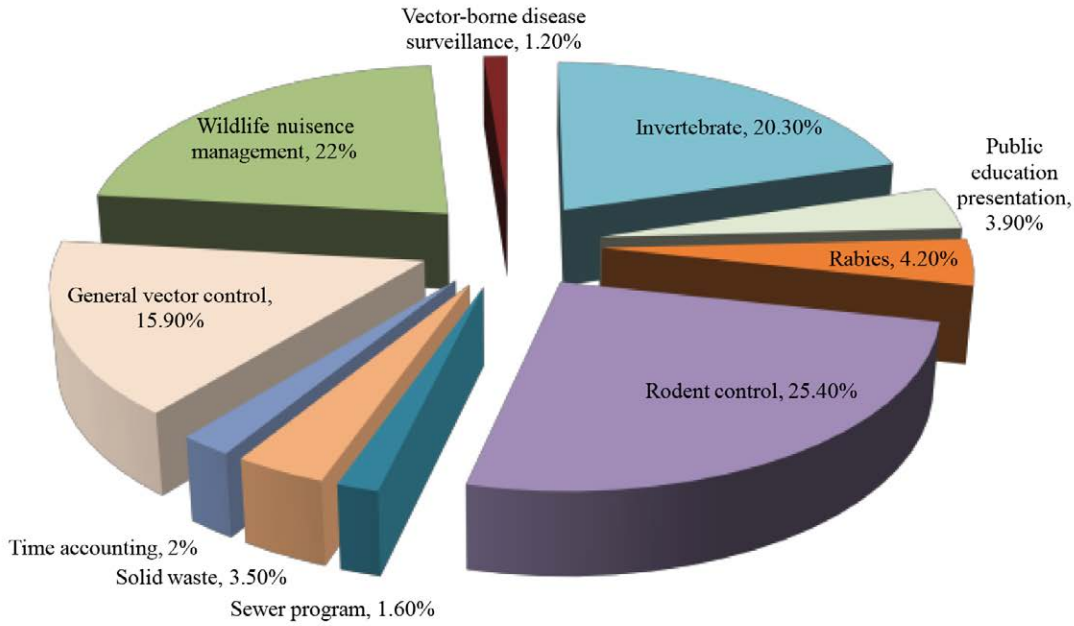
Pesticide Use for Berkeley, 2014

Pesticide	Manufacturer	Formulation	Target Pest	Amount Used	Applications
Talon	Syngenta	8 oz. wax block	Norway rats	96	20 ²
Drione insecticide	Bayer	Dust	Yellowjackets	9.5	19

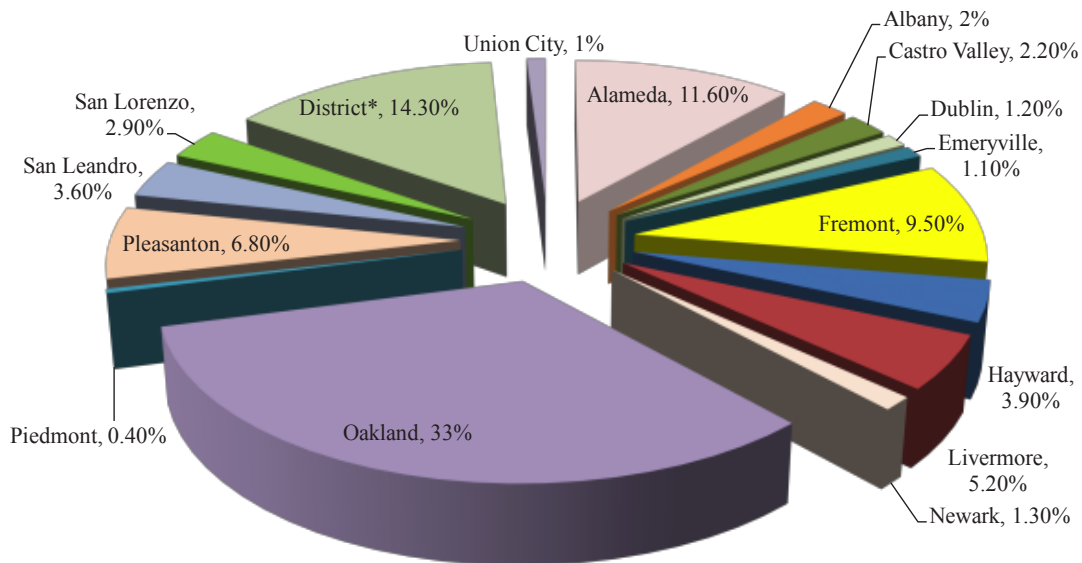
1. Applications based on cumulative per census tract

2. Applications based on each individual application

Services by Program, 2014

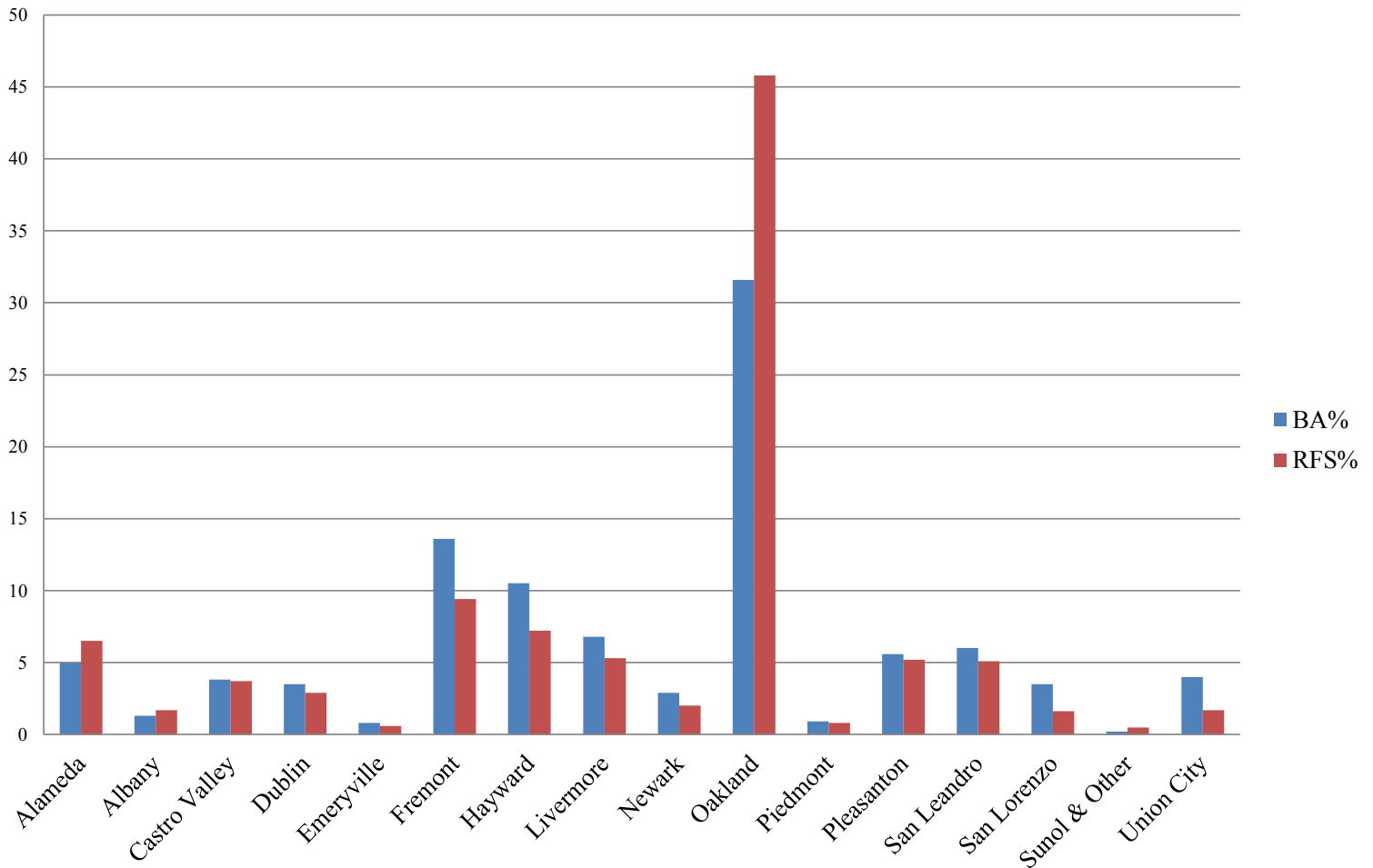


Total Services Provided to Cities, 2014



*District initiated includes disease surveillances and services to Sunol and Berkeley

Percentage of Services Requests and Benefit Assessment Per City, 2014



CSA Vector Control 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.

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 lots, self storage, industrial properties

and golf courses will be assessed in a lower BU under the Post Proposition 218 rate. The table below 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 (Initial Benefit Assessment)	CSA Vector Control Benefit Units/per property type (Secondary Benefit Assessment)
Single Family Residence/Condominium	1 BU	1 BU/0.61 BUs
Vacant Land Parcel	1 BU	0.25 BUs
Multiple Residential Small (2-4 units)	2 BUs	0.46 BUs
Commercial, Industrial	2 BUs	0.5 BUs
Large Rural Property (10 acres +)	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 1/4-acre increments)

Benefit Assessments, FY 2014-2015

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

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 1/4-acre increments.

**Assessment for One Benefit Unit (BU)
(Single-Family Residence – CSA Basic Rate and Oakland)
1984-2014**

Fiscal Year	CSA Basic Rate	Oakland Supplement Rate*	Oakland Total Rate
1984-85	\$3.15		\$3.15
1985-86	2.66		2.66
1986-87	2.66		2.66
1987-88	3.24		3.24
1988-89*	3.30	0.70	4.00
1989-90	3.58	0.66	3.84
1990-91	3.80	0.70	4.50
1991-92	3.96	0.70	4.66
1992-93	3.96	0.70	4.66
1993-94	4.72	1.04	5.76
1994-95	4.82	1.06	5.88
1995-96	5.82	1.26	7.08
1996-97	5.92	1.28	7.20
1997-98	5.92	1.28	7.20
1998-99	5.92	1.28	7.20
1999-2000	5.92	1.28	7.20
2000-01	5.92	1.28	7.20
2001-02	5.92	1.28	7.20
2002-03	5.92	1.28	7.20
2003-04	5.92	1.28	7.20
2004-05	5.92	1.28	7.20
2005-06	5.92	1.28	7.20
2006-07	5.92	1.28	7.20
2007-08**	10.00	1.28	11.28
2008-09	10.00	1.28	11.28
2009-10***	10.00	1.28	11.28
2010-11	10.00	1.28	11.28
2011-12	10.00	1.28	11.28
2012-13	10.00	1.28	11.28
2013-14	10.00	1.28	11.28

**Includes Oakland Supplemental (initiated 1988-89)*

***Includes Initial and Secondary Benefit Assessments*

****Includes Emeryville and Fremont (annexed 2009-10)*





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