

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



**ANNUAL REPORT  
FY 2004-05**

ENVIRONMENTAL HEALTH SERVICES  
1131 HARBOR BAY PARKWAY, SUITE 166  
ALAMEDA, CA 94502

## **MISSION**

The mission of the Vector Control Services District is to prevent human disease, injury, and discomfort to the residents of the district by controlling insects, rodents and other vectors and eliminating causal environmental conditions through education, legal enforcement, and direct pesticide application.

## **DISTRICT SERVICES**

### **Request for Service Investigations**

- Conduct investigations in response to service requests concerning vectors, assess the extent of the problem, and take the appropriate action.
- Investigate reported problems concerning cockroaches, flies, fleas, lice, yellow jackets, and other insects, as well as, ticks, mites, and spiders, and render the appropriate service.
- Provide advice on insect, tick and spider identification and recommended methods of control.
- Conduct surveys of insects and arachnids of public health importance and maintain a reference collection.
- Survey and effect control of cockroaches in public sewers, utility boxes, and storm drains.
- Conduct yellow jacket and feral bee control in public areas or by contract with other agencies.

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

- Oversees the administration of quarantine measures regarding animal bites.
- Conduct investigations of nuisances related to bats, skunks, opossums, raccoons, dogs, cats, rabbits, pigeons, chickens, and fowl.
- Trap biting or nuisance mammals when preventative alternatives are not possible or will probably be ineffective.
- Work cooperatively with local animal control agencies, and compile statistics for an annual report for the State Health Department.

### **Rodent Control**

- Make recommendations on rodent proofing and suppression of rats and mice.
- Conduct rodent suppression during disease outbreaks or emergencies.
- Conduct surveys of rat populations to assess species prevalence and population control needs.

- 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 allow rats to expand their range into neighborhoods.

### **Solid Waste Problems**

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

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

- Investigate reports of animal or human illness such as Lyme disease, Psittacosis, Scabies, head lice, Reptilian Salmonella, Ehrlichiosis, and Rabies to determine cause, and recommend preventative measures.
- Assist the public in submission of ticks to the public health laboratory for testing.
- Collect rat fleas and determine the potential risk of plague transmission.

### **Public Education and Information**

- Make presentations to groups on vector control, and participate at public events.
- Provide educational information on vectors and vector borne diseases for individuals and groups.
- Staffs public displays at health fairs, special events, and the county fair.
- Post the annual shellfish harvesting quarantine notices on the Alameda County bay shoreline.

### **Legal Enforcement**

- Enforce state laws, regulations, and local ordinances when necessary to protect the public from vectors and related problems.

## **INTRODUCTION**

Alameda County Annual Report for County Service Area (CSA) VC 1984-1 for Vector Control is presented to the Alameda County Board of Supervisors in compliance with Section 25210,77a of the Government Code; County Service Area Law, and Chapters 5.24 and 6.32 et. Seq. of the Alameda County General Ordinance. The report, which includes the recommended benefit assessment for the fiscal year 2005-06, is submitted for review and public hearing.

This report gives the history of 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 tables of assessments since the CSA was formed in 1984 as well as the proposed 2005-06 assessments.

This report is also available for review at the Vector Control Services District, 1131 Harbor Bay Parkway, Suite 166, Alameda, CA 94502. In addition, current reports will be posted on our website at (<http://www.acvcso.org>).

## **BACKGROUND & HISTORY**

The County Service Area (CSA) 1984-1 for Vector Control was established in June 1984 in order to meet the public needs by providing a comprehensive vector control program. Environmental Health Services was experiencing dwindling financial resources causing severe cutbacks in vector control in Alameda County. In response, the Board of Supervisors created the County Service Area following confirming election for Measure A, in which over 70% of the voters approved formation of the CSA. The CSA now includes 12 of the 14 cities of Alameda County and the unincorporated county areas. The CSA excludes the cities of Emeryville and Fremont, which opted to seek alternative sources for administering vector programs. The City of Dublin was initially not included in the CSA but was annexed by the Board of Supervisors in 1992 at the request of the City Council of Dublin, which voted to join the District.

## **CITY OF OAKLAND**

In 1987, it was recognized that the City of Oakland had a severe rat population, originating primarily from the sanitary sewers, which exceeded the capabilities of the district to cope with the problem. The

City of Oakland approved a supplemental assessment, which was first levied in fiscal year 1988-89, and provided for two additional vector control officers.

## **CSA ALAMEDA COUNTY VECTOR CONTROL** **2004 ANNUAL SUMMARY**

### Introduction

The district experienced staffing shortages for the past three years. The District currently has seven vacant positions, including two managers, one Vector Ecologist, and one Senior Vector Control Officer. We hope to hire trainees for the vector ecologist and two vector control officers before the end of the year. These vacancies have had a considerably impact on the disease surveillance program and district initiated work, but existing staff have been able to handle all demand services from the public. Since the district provides a variety of services in a wide range of program areas, seasonal and environmental conditions can influence work priorities.

### Urban Rodent Surveillance

The urban rodent surveillance program concentrates on the monitoring and control of domestic (old world) rats and mice of the rodent family Muridae. The program goals include dissemination of advice, and administration of a strategy to suppress populations of Norway Rats, Roof Rats, and House Mice. The District responds to service requests concerning rats and mice at single-family residences, apartments, and businesses. In 2004, the district received 1323 requests for service from the public concerning domestic rodents, representing 33% of all requests. Staff also performed an additional 9,342 field services concerning domestic rodents, dye tests consultations, field surveys, follow up evaluations, and enforcement actions. When there is evidence that rats are surfacing near sewer laterals, field staff conduct inspections to locate broken sewer lines, and take appropriate action to insure those repairs are made. We have discontinued utilizing smoke producing flares to help locate breaks in the lines, and document locations where rats can exit the sewers and infest neighborhoods. Even though the smoke is nontoxic, OSHA precautions, has resulted in some liabilities from the public concerning disclosure, and additional respiratory protection will reduce our field endurance. District staff performed found 23 broken sewer laterals and performed dye tests to document the break. Staff Supervisors advise Public Works Supervisors at the City of Oakland, and other municipalities, to facilitate repair of broken sewer lines and laterals. The Disease surveillance staff trapped 19 Norway Rats from the port of Oakland area and submitted blood samples for Plague Testing. None of the animals had been exposed to plague, but Oriental Rat Fleas, the vector of Urban Plague, were collected from some of the rats

The County has had a long history of Norway Rats invading homes and neighborhoods from the

sanitary sewers of Oakland, due to the age and cost of maintenance of the sanitary sewer system. Service Requests determined to be Norway Rats in Oakland totaled 220, plus an additional 191 complaints about rats in general which were probably about 50% Norway Rats. The property owners of Oakland are assessed an additional \$ 1.28 over the standard rate of \$ 5.92 per residence, to cover the cost of placing anticoagulant bait, when necessary, in to the sanitary sewers. A total of 7082 inspections and 1569 treatments were made into the sewers of Oakland, Alameda, Albany, Piedmont and San Leandro. This was a reduction in inspections from 2003, but approximated the figures from 2002. The staff vacancies and the inability to process the student assistants through Tap had an effect on the results. It looks like the pulse-baiting concept is working. As progress is made the District shift emphasis to improvement of the sewer infrastructure, working closely with the various Cities to effect repairs when breaks are documented.

In 2004 we continued our effort to evaluate areas with rat activity in the sewers and survey areas with clusters of rat complaints in neighborhoods on the surface of the ground. Staffing shortages impacted this plan, but some progress was made with the help of college students, working for the summer. Staff worked closely with neighborhood associations in an areas of Wade Johnson Park, Temescal Shopping Center, Frank Ogawa Plaza Jack London Square, the Fruitvale Business District, and the Oakland Coliseum. Staff arranged community meetings with local residents and the City of Oakland, and agreements were made to improve environmental conditions in the affected neighborhoods. Staff also worked with the City of Albany, residents and businesses on Solano Avenue to improve environmental conditions, and coordinate repair of broken laterals found during sewer baiting surveys.

Vector Control Officers responded to 392 Service Requests for Roof Rats this year. Roof rats are well established throughout the suburban and semi urban areas of Alameda County. The District responds to requests by homeowners, businesses, and communities regarding roof rat activity. Even though live trap surveys indicate that this rat has insignificant numbers of fleas and other ecto-parasites, historical accounts of bubonic plague site this rat as the most significant species associated with Bubonic Plague Epidemics. This is probably the result of this species' ability to live in a variety of habitats in close proximity to humans. The District has established a high priority to ensure that these rodents do not enter homes, and expose occupants to potential diseases. Homeowners and landlords are advised on recommended structural modifications to prevent rodent ingress. The perimeter yard is also surveyed for conditions conducive to rodents, and recommendations to eliminate these conditions are given. Staff responsibilities during the inspection include consultation, recommendations for habitat reduction, distribution of brochures (or fact sheets), and enforcement of Environmental Health Laws when necessary. If evidence is found suggesting an infestation over a larger area than a single-family residence, neighborhood surveys are conducted.

#### Sylvatic Rodent Surveillance

Sylvatic rodents are native species to California and are confined to the rodent families Sciuridae, Cricetidae, and Arvicolidae. These animals are normally confined to the rural and semi-rural areas of Alameda County. Many of these animals are reservoirs of zoonotic diseases such as Bubonic Plague,

Hantavirus Pulmonary Syndrome, Ehrlichiosis, Lyme disease, and Babesiosis. Occasionally Cricetid rodents, primarily deer mice, will enter buildings and put occupants at risk to exposure to hantavirus disease. Since Alameda County has a history of bubonic plague, surveillance of the sylvatic plague reservoirs in this county is an on going program. In addition, there is an ongoing surveillance of Sin Nombre Virus and White Water Arroyo Virus, in response to cases on human illness from a few years ago. The district conducts rodent surveys routinely, usually working cooperatively with the California Department of Health Services, in an effort to minimize outbreaks of these diseases. In 2004, thirteen deer mice were captured and samples of the blood were tested for Sin Nombre. None of the mice were positive for hantaviruses. Rodent surveys also provide an opportunity to advise the public on the potential health risks and the necessity to avoid exposure to these animals.

### Rabies Surveillance

The District and the various animal control agencies administrate the rabies surveillance programs in Alameda County. The Alameda County Animal Control and the thirteen municipal animal control agencies are responsible for monitoring rabies associated with cats and dogs. The District conducts surveillance over skunks, bats and occasionally other wildlife, by responding to service requests, and submitting specimens to the Alameda County Public Health Laboratory for rabies testing. Raccoon Rabies, a strain specific for this animal, is not present in California, and is confined to the Eastern United States and Canada. Raccoons can be exposed to bat or skunk rabies, but positive animals have been rare in recent years. The district also investigates animal bite incidents and prepares an annual report for the California Department of Health Services.

One hundred and seventy seven animals including dogs, cats, raccoons, skunks and bats were submitted to the Public Health Laboratory for rabies testing. Two bats and eight skunks tested positive for the rabies virus.

### Wildlife Management

The district responded to 1169 service requests concerning wildlife, and provided almost 2,518 hours of field support within or near residential areas. This represents a minimal increase in the number of service requests from the year 2003. The number of hours spent on each request, reflects an effort to follow up on these complaints; to insure that structural improvements have been made to minimize reoccurrence of an infestation. Most of these activities involve responding to service requests about raccoons, skunks, squirrels, or opossums, and advising homeowners on how to exclude these animals from their residences, and making their property unattractive to them. When circumstances require direct action, Vector Control Officers may assist property owners by coordinating with the USDA to set traps, pick up and remove the animal. On occasion staff will assist occupants to gain assistance from local service agencies to assist the poor or elderly with making structural repairs.

In 2004 the USDA Wildlife Services, Specialist documented an increase in raccoon problem associated with damaged landscape and lawns. The Specialist conducted a Risk assessment at a property where latrines were identified in proximity to areas where young children play. In this case 3hree raccoons

were trapped and removed. Successes were noted when the Specialist worked closely with homeowners to close openings to attics when raccoons were out side. The skunk-mating season was unusually busy this year resulting in a large number of service requests. In the east county ranches 10 lambs were killed by coyotes. Trapping 6 coyotes from the area minimized the predation cycle.

### Mosquito Surveillance

Alameda County Vector Control performs mosquito surveillance for the City of Albany. The Alameda County Mosquito Abatement District serves the remainder of the County. Over the years staff have documented a number of mosquito sources in Albany, primarily in the drainage close to the San Francisco Bay, and along the Southern Pacific Railroad Tracks. Mosquito breeding is usually found in the early spring when ditches do not completely drain after seasonal rainfall. The rapidly expanding West Nile Virus (WNV) epidemic has resulted in increased energy being devoted toward surveillance of mosquitoes in the Albany area, and preparation for the ultimate arrival of the disease. The Senior Vector Control Officer assigned as the Community Education Coordinator has done an outstanding job of getting the news out on WNV, including articles in the District's Newsletter and on the Web page.

As part of an ongoing West Nile Virus response plan, the District continued to place and monitor mosquito prevalence with Carbon Dioxide baited traps placed out overnight during the summer and fall months within the City of Albany. In addition we intensified our efforts at Golden Gate Fields, due to the landscaping sources for mosquito breeding & the presence of WNV susceptible horses. Our VCO's are working cooperatively with their staff to reduce the risk to humans and horses. Since we increased the duration of the surveillance season, we were able to add two additional mosquito species to our list. Albany now has *Culex tarsalis*, *C. pipiens*, *C. erythrothorax*, and *C. stigmatosoma*, which are recognized to be competent vectors of WNV. Starting on April 5, 2005 we will implement an expanded surveillance plan including the implementation of a risk assessment strategy, utilizing gravid traps for collecting mosquitoes. Gravid traps capture mosquitoes, which have taken a blood meal and are seeking a location to lay their eggs. They are the most likely transmitters of WNV, when they take a second blood meal. We plan to submit mosquito pools to U. C. Davis for testing.

### Venomous Arthropods

The district provides advice and identification of spiders, scorpions, bees, and a wide variety of wasps, including yellow jackets. Recommendations are made for exclusion and control of these pests in order to help property owners to reduce their risk of exposure. In the case of yellow jackets and honey bees, the risk of stinging incidents increases the urgency for timely response. The District will destroy the nests of these insects when they are located in close proximity to people, but outside of habitable structures. In addition, the district has a contract with the East Bay Regional Parks, to control ground nests within the county parks. In 2004, the District responded to 401 venomous wasp and 236 honeybee complaints. An additional six yellow jacket nests were controlled within the East Bay Regional Parks.

Yellow jacket populations increase when there are mild winters and the spring rains end in February. Most yellow jackets nest in the ground, and late rains tend to expose the developing nests to moisture and mold. Since the district is not licensed to make structural repairs to buildings, control of bees and wasp nests inside buildings are normally referred to structural pest control operators for abatement.

### Miscellaneous Arthropods

The district responds to service requests regarding a variety of arthropod and insect pests such as spiders, ticks, mites, head lice, cockroaches, flies, fleas, or ants that infest homes and commercial facilities. A total of 303 service requests for identifications, consultations and inspections were responded to concerning these pests. From time to time, the District will receive service requests concerning biting arthropods other than mosquitoes. There were three incidents concerning bedbugs that were investigated by the vector ecologist. Complaints about biting arthropods numbered 86, including Fleas (29), mites (26), lice (10), and ticks (10), were also investigated. In nine of the cases, Tropical Rat Mites were identified as the cause, and advice on eliminating the mites and the rodent hosts was provided. In four of the cases, no biting arthropods were found and it is possible that the victims were exposed away from their residence or were possibly suffering from delusory parasitosis. The term delusory does not imply that they do not have the sensation of being bitten. Some people with skin conditions or unusual reactions to drugs may experience sensations of being bitten by minute arthropods. In these instances, they are referred to their physicians for further evaluation.

As part of the Lyme disease surveillance program, staff collect and identify ticks, and may recommend testing for tick borne disease when appropriate. Field surveys were conducted at seven locations, which resulted in the collection of 446 questing ticks of which 439 were *Ixodes pacificus*, the Lyme disease vector. None of these ticks were confirmed to be Lyme disease positive by direct immunofluorescence (IFA). Forty four residents or pets from Alameda County were bitten by ticks. These were submitted to the Sonoma County Public Health Laboratory for Lyme disease testing. One local ticks which bit Alameda County Residents tested positive for the Lyme disease spirochete. The District now has the capability of conducting Lyme disease IFA Tests. We hope to expand this capability when new staff are hired.

### City of Berkeley

The City of Berkeley is within the ACVCSD, but enter into a contractual agreement with the Environmental Health Division within the City Health Department, for Vector Control responsibilities. ACVCSD staff respond to certain types of Service Requests, and City staff to others. In 2004 District Staff responded to 39 service requests, within the City, primarily venomous wasps and rodent ectoparasites, which were biting humans in households with rat infestations. City staff responded to 1,205 Service Requests in such areas as Invertebrates (63), Rodents (313), Solid Waste (174), and Wildlife (32). They also inspected 435 Sewer Manholes, treating ones with active rat signs with approved rodenticides.

### Inventoried Sources

The District maintains an inventory of stables and kennels, and inspects them routinely to prevent nuisances such as odors, insects, or rodents. Animal hobbyist facilities are also evaluated when Alameda County Animal Control requests an inspection, at the time of their annual permit renewal. At the current time there is not any statutory requirement or authority to conduct inspections of pet shops, animal grooming salons or livestock holding facilities, but we will inspect them when complaints are received regarding nuisances. A total of 29 inspections, and these facilities were conducted, either in response to a use permit renewal or a service requests from the public.

### Nuisance Abatement

Accumulations of garbage, rubbish, junk cars and stockpiles of animal manure can become public nuisances when left unattended prior to disposal. In addition, these nuisances can provide harborage and nourishment for rodents, flies and other pest arthropods that might result in human exposure and risk of disease. The District responds to complaints about these conditions and will follow up to assure compliance with applicable laws and regulations. The District responded to 228 service requests concerning nuisances, primarily garbage, resulting in 949 field services including investigations, progress assessments, correspondence, and compliance inspections.

### Public Education

In our continued response to a West Nile Virus threat, the District arranged for in-class distribution of our District Brochure, a West Nile Virus Brochure (English and Spanish), and “Fight the Bite” posters to 3,462 Albany students/households. Albany residents were provided with a WNV Newsletter regarding the progress of the disease expansion and surveillance efforts to reduce human exposure. Staff participated at 17 health fairs, conducted 10 presentations at communities throughout the County, and set up information booths at 7 public Libraries during West Nile Virus and Vector Control Awareness Week. During Headlice Awareness Month prevention information was distributed to 273 Alameda County Elementary Schools. A great effort was made to update all informational brochures and posters, and to research additional language versions for existing material.

Pesticide Use Summary  
2004

Pesticide	Manufacturer	Formulation	Target Pest	Amount Used	Applications
Delta Dust	AgrEvo	Dust	Yellow Jacket/ Wasp nests		
Conrac Super Blox	Bell Labs	8oz or 1 lb blocks	Domestic Rodents	815 Lbs.	82
Ditrac Tracking Powder	Bell Labs	Dust	Domestic Rodents	7.4 Lbs	30
Drione Dust	Roussel UCLA	Dust	Yellow Jacket/ Wasp nests	31 Lbs	145
Quintox Meal	Bell Labs	Meal	Domestic Rodents		
Conrac Pellets	Bell Labs	Pellets	Domestic Rodents	11.8 Lbs.	18
Conrac Blox	Bell Labs	1 ounce	Domestic Rodents	3.43 Lbs	6
M-Pede	Mycogen	Liquid	Bees		
Maxforce	Clorox	Large Bait Stations	Cockroaches	2.2 Lbs.	138
Wasp Freeze PT515	Whitmire	Aerosol Spray	Wasps	12.3 Gal	72
PT565	Whitmire	Aerosol Spray	Wasps		
Drione Dust	Aventis	Dust	Yellow Jackets	31.2 Lbs.	145
Rozel	Lipha Tech	Tracking Powder	Domestic Rodents		
Poison Free	Victor	Aerosol	Yellow Jackets	1.7 Gal	9
BTI Briquette	Summit	10.0%	Mosquitoes		
BTI Liquid	Valent	VectoBac 12-AS	Mosquitoes	9.92 grams	1*
Methoprene	Wellmark	ALL SR-20	Mosquitoes	0.62 grams	1*
Altocid XR .	Wellmark	XR Briquette	Mosquitoes	1.28 oz	5
Altocid XR-G	Wellmark	XR-G granules	Mosquitoes	0.0625 Lbs	4

The district follows a policy of Integrated Pest management, in conformance with the Board of Supervisors IPM Plan. The largest amount of pesticides are applied to suppress rats in the sewers or to destroy yellow jacket nests. The total amount of Larvicide applications for mosquitoes is less than a quarter pound of active ingredient. The (\*) for BTI Liquid and Methoprene Liquid refer to a field formulation called Duplex, which is a mixture of the two biorational insecticides.

• **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 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, and at the Clerk of the Board Office at 1221 Oak Street, Oakland, 5th floor.

Assessments are based on land use as classified by the Assessor’s Office. A basic assessment rate is established as a single benefit unit (BU), which is applied to the schedule for assessments according to land use as follows:

**LAND USE CATEGORIES**

1. Single Family Residence/Condominium	1BU
2. Vacant Land Parcel	1BU
3. 2-4 Residential Units	2 BU’s
4. Commercial and Industrial Property	2 BU’s
5. Large Agricultural Rural Properties	2BU’s
6. 5 Residential Apartments or more	5 BU’s
7. Improved Commercial Property	5BU’s

**ASSESSMENT FOR ONE BENEFIT UNIT (BU)**  
**(Single Family Residential and Vacant Land)**  
**CSA Basic Rate and Oakland**  
**1984-2005**

<b>FISCAL Year</b>	<b>CSA Basic Rate</b>	<b>OAKLAND Supplemental Rate</b>	<b>OAKLAND 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

**\*Includes Oakland Supplemental initiated 1988-89**

**CSA VECTOR CONTROL SERVICES  
RECOMMENDED ASSESSMENTS  
FY 2005-2006**

Use/Size	Benefit Unit Assessment	
	Basic	Oakland
<b>1. Single Family Residence/ Condominiums</b>	<b>\$ 5.92</b>	<b>\$ 7.20</b>
<b>2. Vacant Land</b>	<b>5.92</b>	<b>7.20</b>
<b>3. Multiple Residential small (2-4 Units)</b>	<b>11.84</b>	<b>14.40</b>
<b>4. Commercial, Industrial</b>	<b>11.84</b>	<b>14.40</b>
<b>5. Large Rural Property (More than 10 acres)</b>	<b>11.84</b>	<b>14.40</b>
<b>6. Multiple Residential</b>	<b>29.60</b>	<b>36.00</b>
<b>7. Large Commercial (Hotels, Motels, Mobile Home Parks)</b>	<b>29.60</b>	<b>36.00</b>