

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



**ANNUAL REPORT
FY 2000-01**

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 casual 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. The district generally responds to about 5,000 requests for service per year.
- Provide advice on insect, tick and spider identification and recommended methods of control.
- 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.
- 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 alternatives are 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 escape 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.

Legal Enforcement

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

Vector Borne Disease Surveillance and Control

- Investigate reports of animal or human illness such as Lyme disease, Psittacosis, Scabies, head lice, reptile Salmonella, Ehrlichiosis and animal 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.

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 Code. The report, which includes the recommended benefit assessment for the fiscal year 2001-02, 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 2001-02 assessments.

This report is also available for review at the Vector Control Services District, 1131 Harbor Bay Parkway, Suite 166, Alameda, CA 94502.

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 voter 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 2000 ANNUAL SUMMARY

Introduction

The district was at full staff for at least part of the year, the first time in several years. Several retirements occurred during the year and will result in the rehiring of vacant VCO positions in the spring of 2001. An unusually mild winter provided staff with an opportunity to get an early start on the Oakland sewer-baiting program. Since the district provides a variety of services in a wide range of program areas, seasonal and environmental conditions can influence work priorities. Typical services include identification of pest species and advice on exclusion, prevention and control. The key programs include Urban & Sylvatic Rodent Surveillance, Venomous Arthropod Suppression, Rabies Surveillance, Wildlife Management, Nuisance Abatement, and Public Education. In addition the district enforces a variety of public health laws and regulations, primarily in the areas of public nuisances and harborage of vectors. The district participates in public events, offering information on our services, new and emerging diseases, and introduced pests.

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 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 in the sanitary sewers. A total of 4,520 inspections and bait applications (as necessary) were made into 85% of the sanitary sewers of Oakland in the year 2000. This represents a 100 % increase in the surveillance program over the previous year. It became evident that demand services during the summer, compete with the sewer-baiting program. As a result we are exploring alternative staffing methods in order to provide the highest level of service during the peak seasons. In the FY 2001-02, we will be hiring several "services as needed" assistants to help with the sewer baiting program. This will allow us to free up Vector Control Officer's to work on demand services, on a rotational basis.

Since the many sewers in Oakland are in need of repair and the number of census tracts with infestations is increasing, a new methodology, called "pulse baiting," was initiated. It has been demonstrated that this method can result in a significant reduction in rodent expansion. When sewer manholes are found with signs of rodent activity, the basin is treated with bait and then rebaited until rodent activity decreases. The method reduces rodent populations where they are at the highest population level and minimizes the likelihood that they will expand into other areas not currently infested. The sites with no evidence of rat activity were not treated. In addition, a total of 1329 sewer inspections were conducted in the communities of Castro Valley, Dublin, Livermore, San Leandro and Pleasanton. Inspections of the sewers in Alameda are being conducted at the current time. The district also responded to service requests concerning mice

and rats at businesses, apartments and single family residences.

District staff also performed additional 11,730 field services concerning domestic rodents, including smoke tests, consultations, field surveys, follow up evaluations, and enforcement actions. Approximately 75% of these field activities were conducted within the City of Oakland. District staff conduct inspections to locate broken sewer lines, when there is evidence that rats are surfacing near sewer laterals, and take appropriate action to insure those repairs are made. Introduction of smoke producing flares into the sewers helps locate any breaks in the lines, and document locations where rats can exit the sewers and infest neighborhoods. District staff performed 40 smoke tests and 45 dye tests were conducted on the sewers of Oakland and Alameda in the year 2000. We have taken steps to improve communication with the City of Oakland, and other municipalities, to facilitate repair of broken sewer lines and laterals.

In midsummer, the Norway rat population around Defremery Park expanded beyond the ability of the Oakland Parks and Recreation Department's ability to control it. Norway rats were being observed running around in the middle of the day. Staff met with Harry Edwards from the City of Oakland and Jim Webb of Webb's Pest Control to work out a control strategy. Arthur Yamashita was selected to fill a vacant IPM position with Oakland Parks and Recreation to coordinate the control effort. The landscaping shrubbery was reduced and the exposed burrows baited with anti-coagulant bait. District staff conducted smoke tests on the sewers, exposing breaches in the laterals adjoining the park. The Sewer Department for the City of Oakland was advised of locations where breaches in the sewer system were noted, and anti-coagulant bait was placed in manholes indicating rat activity. The incidence of rat activity dropped off to an insignificant level within two weeks.

An investigation into a complaint regarding rats at the Oakland Coliseum revealed that the facility was handling their solid waste and grease in an inappropriate manner. Rat burrows and active rat signs were observed at the edge of the railroad right-of-way adjacent to the rear parking area. Recommendations were made on proper storage and disposal of solid and liquid waste in order to reduce the amount of food available to the rodents. The burrows were treated with Ditrac, an anticoagulant tracking powder, in October and again in February 2001. Surveys of the adjoining drainage courses are planned for the spring of 2001. The surveillance will continue until the rat population is significantly suppressed.

Sylvatic Rodent Surveillance

Sylvatic rodents are generally native species to California and are normally confined to the rural and semi rural areas of Alameda County. Occasionally these rodents will enter buildings and put occupants at risk. Many of these animals are reservoirs of zoonotic diseases such as Bubonic Plague, Hantavirus Pulmonary Syndrome, Ehrlichiosis, Lyme disease, and Babesiosis. Alameda County has a history of bubonic plague, so surveillance of the sylvatic plague reservoirs in this county is an on going program. The district conducts rodent surveys routinely, usually working cooperatively with the California Department of Health Services, in an effort to evaluate potential risks of outbreaks of these diseases. These rodent surveys also provide an opportunity to advise the public on the potential health risks and the necessity to avoid exposure to these

animals.

In November staff conducted a rodent and wildlife survey at Camp Parks in Dublin. The United States Army Preventative Medicine Unit from Fort Lewis Washington worked cooperatively with District Staff and trapped rodents over four nights. The USDA-APHIS Trapper set traps for raccoons at the same time. Eighty-two mammals, primarily house mice, deer mice, roof rats and raccoons were captured. Blood samples were taken and submitted to various laboratories to be tested for such disease pathogens as Sin Nombre Virus, White Water Arroyo Virus, Bartonella Spp., Yersinia pestis and Leptospira interrogans. The results included the following: two deer mice were positive for Sin Nombre Virus; one house mouse was positive for Yersinia Sp.; one deer mouse was positive for White Water Arroyo Virus; one mouse was positive for Bartonella. We plan to return in the spring of 2001 to trap for California ground squirrels and voles, the indicator and reservoir species for plague respectively.

A case of Hantavirus Pulmonary Syndrome, from a patient who died in April of 1999, but was retrospectively diagnosed in November, is still ongoing. Sin Nombre Virus (SNV) is the agent responsible for Hantavirus Pulmonary Syndrome and has caused 277 human cases in the U. S. from 1994 to present. The victim, an employee of Lawrence Livermore Laboratory (LLL), was a resident of Contra Costa County, and had traveled to Las Vegas Nevada prior to the onset of Symptom. The news of the possible workplace source for the infection resulted in an extensive rodent eradication effort at "LLL, " before a survey could be conducted. In early February District Staff and Biologists from the State Health Department set traps at the facility, but were only able to capture one house mouse, which tested negative for the virus. An additional survey will be scheduled for the perimeter areas this spring.

A human case of relapsing fever was diagnosed in 4-year-old female resident of Oakland in early August 2000. The disease organism, an unspecified Borrelia, was never specifically identified, but the disease was diagnosed based on the symptoms. A site survey revealed that the residents were Spanish speaking creating a communication problem. It is known that an Ornithodoros (Argasidae) tick transmits relapsing fever organisms, and that most cases occur at high elevations. The family had dogs, chickens and rabbits in the back yard, which were removed to an undisclosed location as soon as the family realized that they might be the source of the infection. Staff did trap some Norway Rats, which tested negative for any Borrelia. We will be conducting more surveys at the house this spring.

A human case of an unnamed disease in a 14-year-old female resident of Oakland, occurred in April of 2000. The agent of the illness was the White Water Arroyo Virus, an Arena Virus, related to many of the hemorrhagic fever viruses of South America. This was the first documented fatality originating from an Arena Virus in North America. There is only minimal information about the victim's activities prior to onset of symptoms. Possible exposure locations include her home in the Oakland Hills, a riding stable, and a soccer field in the same general area. Rodent surveys have been conducted at all of these sites with no positive results so far. One Dusky Footed Woodrat from Sunol and one deer mouse from Dublin have tested positive for the White Water Arroyo Virus. The investigation is ongoing.

The district allocates \$ 25,000 to the County Agricultural Commissioners Office to prepare and distribute poison bait to control ground squirrels, and other rodent pests, at ranches at the eastern portion of the county. California ground squirrels are considered the most significant animal species in plague transmissions to humans, because they harbor large numbers of competent vector fleas. The Agricultural Commissioners Office prepares grain bait and distributes it to 175 ranchers or farmers in the Livermore, Pleasanton, and Sunol areas. Although the bait was provided without charge to the agriculturist, a surcharge of \$ 0.50 per pound was collected, to be used to finance statewide research on vertebrate pest control.

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 2000 the district responded to 566 venomous wasp and 153 honeybee complaints. An additional 6 yellow jacket nests were controlled within the East Bay Regional Parks. This was a slight decrease over the previous year, but the trend has been increasing over the past three years. 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 does not have the ability to make structural repairs to buildings, control of bees and wasp nests inside buildings are normally referred to structural pest control operators for abatement.

Rabies Surveillance

The rabies surveillance programs in Alameda County are administrated by various animal control agencies. The Alameda County Animal Control and the thirteen municipal animal control agencies are responsible for monitoring rabies associated with cats and dogs. The vector control district conducts surveillance over skunks, bats and other wildlife, by responding to service requests, and submitting animal heads to the Alameda County Public Health Laboratory for rabies testing. The district also investigates animal bite incidents and prepares an annual report for the California Department of Health Services. The year 2000 was a big year with a human case in Amador County and others on the East Coast. At least four residents of Alameda County underwent the Rabies Vaccine treatment after close contact with a rabid skunk or bat. The district submitted 157 animal heads to the Alameda County Public Health Laboratory for testing. Six wildlife specimens tested positive for rabies including two skunks and four bats. Staff provided 1596 services including consultations, neighborhood notifications, investigations, and collection of samples for testing.

City of Berkeley

The district maintains a contract with the Berkeley City Health Department for vector control services within that city. The district forwards funding received from the citizens of Berkeley to the City Health Department for rodent suppression and related services. On occasion District staff will work with City staff, usually in special studies and disease surveillance. In the current year Berkeley City Crews conducted six residential surveys, to determine the presence and prevalence of Norway rat activity in the neighborhoods. City staff achieved the goal of surveying 1850 of the sewer manholes (40 %) and applying anticoagulant bait to the ones with active rat signs. In addition staff responded to 650 complaints regarding, overgrown vegetation, garbage, trash, debris and other materials offering harborage to rodents. The City has also implemented a GIS linked, laptop driven communication network capable of direct information in the field. This innovation will enable city staff to provide quicker and more efficient service to the residents.

Wildlife Management

The district responded to 631 service requests concerning wildlife, and provided almost 2000 hours of field support within or near residential areas. Most of these activities involve responding to service requests about raccoons, skunks 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 setting traps for these pests, and coordinate with the USDA-APHIS trapper or local animal control agencies to pick up and remove the animal. The USDA trapper destroyed 67 wild animals this year, which might have been prevented if people would not offer food to these animals. The problem of wildlife in residential areas is becoming an ever-increasing problem. The district was not charged with this program when it was formed, but animal control agencies struggling with continuously tight budgets, have been unable to take on this responsibility. The only solution for this problem is to enact strict ordinances concerning the feeding of wildlife by animal fanciers. The lack of natural habitat in the urban areas results in the animals being forced to inhabit residences, resulting in property damage. Office consultations for other animals such as pest birds, carnivores and larger rodents such as squirrels, are provided on an ongoing basis, and recommendations are made for exclusion.

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 538 requests for identifications, consultations and inspections were responded to concerning these pests. In addition, the district worked cooperatively with city operated water districts in Pleasanton, Livermore, Hayward and unincorporated areas of Alameda County, by placing cockroach bait stations in water meter boxes, which had been identified with infestations. The sewers in Hayward and Oakland and the storm drains in Hayward and Union City were also baited on an "as need" basis. In the current year the districts requested treatment for 339 water meter boxes throughout the various participating municipalities.

The district will identify ticks and mites, and will authorize testing for tick borne disease when appropriate. Fifty-seven residents of Alameda County were bitten by ticks, and submitted them to the Alameda County Public Health Laboratory for Lyme disease testing. Some additional samples were sent to IgeneX, a private laboratory for PCR Testing. One of the Ixodes pacificus ticks tested positive for Borrelia burgdorferi, the bacteria responsible for Lyme disease.

Staff conducted a tick survey at Sunol/Ohlone Regional Park in April of 2000, in response to a report of a confirmed case of Lyme disease by a visitor to the park. Twenty-five Western Black Legged Ticks, Ixodes pacificus, were collected and submitted to the Alameda County Public Health laboratory for testing. One of the tick pools, containing about 5 ticks, tested positive for Borrelia burgdorferi, the spirochete responsible for Lyme Disease.

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 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 saloons or livestock holding facilities, but we will inspect them when complaints are received regarding nuisances. A total of 42 inspections of 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 470 service requests concerning nuisances, resulting in 3,366 actions including progress assessments, correspondence, and compliance inspections. An additional 146 inspections were conducted in accordance with the Beat Health Code enforcement program, which may include elements of substandard housing in addition to nuisances.

Public Outreach

One of the goals for the district from the Environmental Health Strategic Plan is to work toward annexation of the City of Fremont into the County Service Area. In September and February displays were set up at the County Public Library in Fremont, which describe the services provided for district members. We frequently receive inquiries from residents of Fremont, regarding joining the district. Staff participated at 21 health fairs, conducted 8 presentations at communities throughout the county, and participated in the public health week activities. The Education Coordinator managed a low cost Nix (pediculicide) distribution program with local

school districts and Burroughes-Wellcome. He also completed a Spanish language brochure on head lice prevention and control and distributed them to participating schools. In addition a Spanish version of the District’s rat brochure was developed.

Staff actively participated on Alameda County Public Health Department, Community Health Teams in Oakland (Beat Health), Livermore, and Unincorporated Alameda County. Four staff members are currently participating on Community Health Teams. Other staff members are participating in community preservation action groups in the cities of Oakland, Union City, Livermore, and unincorporated Alameda County.

Pesticide Usage

The District was formed with a goal of protecting the public health by an Integrated Pest Management (IPM), which applies various methods and techniques to reduce the risk of human disease from exposure to disease vectors. Our main programs for accomplishing these goals include:

- Educate the public on the most current methods of prevention, exclusion, and suppression of disease reservoirs and vectors.
- Enforce public health laws and ordinances that pertain to vectors, when it is determined that the general public may be at risk.
- Maintain surveillance over disease reservoir species and vectors associated with them, and make recommendations for reduction of human risk.
- Suppress reservoir and vector species in the public domain when there is a risk of exposure to the public.

The use of pesticides by the district is usually confined to the public sewers and storm drainage systems, but we also make applications at public buildings and recreational areas. In addition the district will control venomous insects on private property, with the understanding that this will reduce exposure to neighbors and visitors. The chemicals used by the district in the current year are listed in the table below.

Pesticide	Manufacturer	Formulation	Target Pest	Amount Used	Applications
Contra Super Blox	Bell Labs	8oz or 1 lb blocks	Domestic Rodents	1010 lbs	64
Contra Blox	Bell Labs	1 oz blocks	Domestic Rodents	11.75 lbs	4
Contra Pellets	Bell Labs	Pellets	Domestic Rodents	1.60 lbs	5
Ditrac Tracking Powder	Bell Labs	Tracking Powder	Domestic Rodents	45 oz	15
Delta Dust	AgrEvo	Insecticidal Dust	Yellow Jacket Nests	22.4 lbs	96
Wasp Freeze PT 515	Whitmire	Aerosol Spray	Wasp Nests	19.40 gal	128

- **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
1984-2001**

FISCAL Year	CSA Basic Rate	OAKLAND Supplemental Rate	OAKLAND Total Rate*
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	.70	4.00
89-90	3.58	.66	3.84
90-91	3.80	.70	4.50
91-92	3.96	.70	4.66
92-93	3.96	.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

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

**CSA VECTOR CONTROL SERVICES
RECOMMENDED ASSESSMENTS**

FY 2001-2002

Use/Size	Benefit Unit Assessment	
	Basic	Oakland
1. Single Family Residence/ Condominiums	\$ 5.92	\$ 7.20
2. Vacant Land	05.92	7.20
3. Multiple Residential small (2-4 Units)	11.84	14.40
4. Commercial, Industrial	11.84	14.40
5. Large Rural Property (More than 10 acres)	11.84	14.40
6. Multiple Residential	29.60	36.00
7. Large Commercial (Hotels, Motels, Mobile Home Parks)	29.60	36.00