



May 7, 2026

The Honorable Board of Supervisors
County of Alameda
1221 Oak Street
Oakland, CA 94612

SUBJECT: HOLD A PUBLIC HEARING TO ACCEPT THE ANNUAL REPORT FOR THE COUNTY SERVICE AREA VC-1984-1 (VECTOR CONTROL SERVICES DISTRICT), ADOPT A RESOLUTION AND BENEFIT RATES FOR FISCAL YEAR 2026-27

Dear Board Members:

RECOMMENDATION:

- A. Hold a Public Hearing to consider statements for the 2025 Annual Report for the County Service Area (CSA) VC- 1984-1 (Vector Control Services District) which describes the historical and the proposed benefit rates for real property parcels within the CSA and Financial Report outlining the FY 2026-27 proposed budget; and,
- B. Adopt a Resolution accepting and confirming the annual report, approving any adjustments to the special assessment and benefit rates for Fiscal Year 2026-27, and authorizing the Auditor-Controller's Office and the Treasurer's Tax Collection Office to impose and collect the proposed amounts effective 07/01/26, on behalf of the Vector Control Service District.

DISCUSSION/SUMMARY:

County Service Area VC-1984-1 (Vector Control Services District) was established by your Board and became effective July 1, 1984. In order to improve health and safety in Alameda County, the Vector Control CSA provides the following services to County residents:

- Investigation, identification, and abatement of insects, rodents, and other animal vectors, as well as conditions conducive to these vectors.
- Surveillance and investigation of reports of vector-borne diseases such as Lyme disease, Anaplasmosis, Plague, Hantavirus (HCPS), Leptospirosis, West Nile virus, Seoul Virus, Psittacosis, Flea-borne Typhus, and Rabies.
- Public education relating to the preventive measures against vectors and vector-borne diseases.
- Vector Control services to the local enforcement agencies to enforce the local ordinances and State Laws relating to vectors and casual environmental conditions.
- Routine inspection and suppression of rats in sewers, unhoused encampments and along waterfronts. This includes monitoring for changes in abundance and species composition of ectoparasites and the diseases they may harbor.

- Wildlife Management Program, which includes a Wildlife Services Specialist provided by contractual agreement with the U.S. Department of Agriculture, Wildlife Services.

The CSA is solely funded through a benefit assessment charged to each property parcel. The CSA's current budget supports a staffing level of thirty-one (31) positions. This includes management, supervisory, field, clerical, lab personnel and vector control biologists. Additional administrative and technical support is provided by ACEHD.

Since July 1, 2009, the CSA includes all cities and unincorporated areas of the County and provides countywide vector control services throughout Alameda County.

The actual number of benefit units that met the criteria established by the Assessor's Office for the initial \$5.92 Benefit Unit rate in FY 2025-26 was 446,862. The number of single-family equivalents (SFE) meeting the criteria established by SCI, the Consulting Firm contracted for this benefit assessment work, for the secondary \$6.57 initial Benefit Unit rate in the FY 2025-26 was 404,022. From 1984 to FY 2025-26, the CSA Vector Control "basic" initial Benefit Assessments rates were based on land/property use as classified by the Assessor's Office. In calculating the secondary assessment, the values are based on the number of people who potentially live on or work at each different property use type. Therefore, the number of benefit units differs between those established under the \$5.92 and \$6.57 benchmarks.

The City of Oakland also has a "supplemental" assessment of \$1.28 which supports the special sanitary sewer inspections and rat suppression program within the City which will remain the same as the FY 2025-26 rates. The number of benefit units within the City of Oakland is 139,887.

Both Emeryville and Fremont opted not to join the District when the CSA was established in 1984.

With the approval of your Board on March 11, 2008 (Item No. 14), and in compliance with Proposition 218, the CSA started the application of the annexation process and mailed out the balloting process to all parcel owners in Emeryville and Fremont regarding the proposed New Vector and Disease Control Assessment of \$10 for a single-family residence in 2008. The balloting results were favorable and subsequently, your Board approved the newly proposed Vector and Disease Control Assessment of \$10 for single-family residence on January 13, 2009 (Item No. 35). The single-family residence units in FY 2025-26 for Emeryville were 4,076 and for Fremont were 66,638. The rate assessment of single-family residence for FY 2025-26 is \$12.49.

For FY 2026-27, with your Board's approval, the CSA proposes the levy of a fixed basic benefit assessment of \$5.92 and a secondary benefit assessment of \$6.77 per single family equivalent, an increase of \$0.20 per benefit unit from FY 2025-26, for vector control services within the cities of Albany, Alameda, Berkeley, Castro Valley, Dublin, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, San Lorenzo, Sunol, Union City, and the unincorporated areas; the "Supplemental" benefit assessment rate within the City of Oakland is \$1.28 per Benefit Unit; and the benefit assessment of \$12.69 per single-family equivalent, an increase of \$0.20 from FY 2025-26, is proposed for the annexed cities of Emeryville and Fremont for FY 2026-27.

Please see table below:

Single Family Residence	FY 2025-26	FY 2026-27	Difference
Basic Assessment per benefit unit	\$5.92	\$5.92	\$0.00
Secondary Benefit Assessment per benefit unit	\$6.57	\$6.77	\$0.20
Total Amount for each benefit unit for the following Cities: Albany, Alameda, Berkeley, Castro Valley, Dublin, Hayward, Livermore, Newark, Piedmont, Pleasanton, San Leandro, San Lorenzo, Sunol, Union City, and the unincorporated areas	\$12.49	\$12.69	\$0.20
Oakland Assessment per benefit unit (Includes Supplemental Benefit Assessment of \$1.28/Benefit Unit)	\$13.77	\$13.97	\$0.20
Emeryville/Fremont Assessment per benefit unit	\$12.49	\$12.69	\$0.20

For additional reference, the attached 2025 ACVCSD Annual Report provides comprehensive information regarding benefit assessments and the different types of property assessed within CSA Vector Control Services.

On April 28, 2026 (item # 2) your Board accepted the submission of the 2025 Annual Report for the County Service Area (CSA) VC- 1984-1 (Vector Control Services District) which describes the historical and the proposed benefit assessments for real property parcels within the CSA and Financial Report outlining the FY 2026-27 proposed budget and the proposed services to be provided with changes from the prior year rate, and set a hearing date for 6/2/26, to confirm the annual report and establish the special assessment and benefit rates for Fiscal Year 2026-27.

SELECTION CRITERIA/PROCESS:

Not applicable

FINANCING:

The Vector Control Services District (County Service Area VC-1984-1) is currently supported by a total budget of \$9,398,889, as submitted in the FY 2026-27 Maintenance of Effort Budget. All CSA costs are fully offset by parcel assessment and miscellaneous non-General Fund revenue. Approval of these recommendations will have no impact on net County costs.



Alameda County Health

The Honorable Board of Supervisors

May 7, 2026

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VISION 2036 GOAL:

Holding a Public Hearing to consider statements for the 2025 Annual Report for County Service Area VC-1984-1 (Vector Control Services District), and establishment of the special assessment and benefit rates for Fiscal Year 2026–27 support the 10X goal pathways of **Health for All** and **Accessible Infrastructure**, **advancing** our shared vision of a **Prosperous & Vibrant Economy**.

Sincerely,

Signed by:

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Aneeka Chaudhry, Director
Alameda County Health

THE BOARD OF SUPERVISORS OF THE COUNTY OF ALAMEDA, STATE OF CALIFORNIA

RESOLUTION NUMBER: R 2026- 293

**RESOLUTION ESTABLISHING SPECIAL ASSESSMENT AND BENEFIT RATE
COUNTY SERVICE AREA NO. VC-1984-1**

WHEREAS the County of Alameda includes a dependent special district called the Alameda County Vector Control Services District ("District") to provide vector and disease control services; and

WHEREAS the mission of the District is to reduce the risk of disease transmission and nuisance by vectors within the District boundaries; and

WHEREAS the District provides vector and disease control services including projects, programs, public improvements and services intended to provide for the surveillance, prevention and control of vectors and the diseases they carry throughout its boundaries ("Services"); and

WHEREAS the District is dependent on assessments to fund the costs of the continuation of Services in each service area; and

WHEREAS the Director of the Health Care Services Agency has filed a written report, the 2025 Annual Report and Financial Report, which has been considered by the Board of Supervisors. This report included information on the special assessments to be collected in FY 2026-27 to meet the cost of the provision of Vector Control Services within County Service Area No. VC-1984-1 in accordance with Section 25214-25215.7 of the Government Code and the Alameda County General Ordinance Code; and

WHEREAS the recommendation to continue the special assessment amounts with no increase with the exception of an increase of \$0.20 for the secondary benefit assessment rate from the FY 2025-26 amount for each benefit unit for Albany, Alameda, Berkeley, Castro Valley, Dublin, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, San Lorenzo, Sunol, Union City, Emeryville Fremont and unincorporated areas.; and

WHEREAS the Clerk of this Board has duly published an appropriate notice regarding the special assessments; and

WHEREAS the Board of Supervisor has considered this matter at its noticed, open and public meetings; and

WHEREAS this Board did hear and consider all information, support, protests, and public comment, if any, regarding the special assessment including the amount of the assessment charge for each benefit unit.

NOW, THEREFORE, BE IT RESOLVED, that this Board of Supervisors does hereby:

1. Accepted and confirm the submitted 2025 Alameda County Vector Control Annual Report and Financial Report.
2. The basic assessment for Vector Control Services for the entire County Service Area No. VC-1984-1 is fixed at the basic rate of \$5.92 per benefit unit and the secondary benefit assessment rate of \$6.77, an increase of \$0.20 from FY 2025-26 rate of \$6.57, for a total amount of \$12.69 for each benefit unit for Albany, Alameda, Berkeley, Castro Valley, Dublin, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, San Lorenzo, Sunol, Union City, and unincorporated areas.
3. The "Supplemental" benefit assessment rate within the City of Oakland is fixed at \$1.28 per Benefit Unit (for sewer baiting and smoke testing).
4. The benefit assessment of \$12.69, an increase of \$0.20 from FY 2025-26 rate of \$12.49, per benefit unit is fixed for the annexed cities of Emeryville and Fremont for FY 2025-26.
5. The Alameda County Auditor-Controller's Office and the Treasurer's Tax Collection Office is authorized to impose and collect above amounts effective July 1, 2026, on behalf of the Vector Control Service District.



David Haubert
President of the Board of Supervisors
County of Alameda, State of California

Adopted by the Board of Supervisors by the following called vote:

AYES: Supervisors Miley, Tam, Márquez, Fortunato Bas and President Haubert - 5

NOES: None - 0

ABSENT: None - 0

ABSTAIN: None - 0

ATTEST: Clerk of the Board of Supervisors, County of Alameda

Signed:



Date: 6/9/2026

Approved as to form:

Office of the County Counsel

Signed by:



By:

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Kathleen Flynn, Deputy County Counsel



ANNUAL REPORT 2025



INTRODUCTION

This 2025 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, or “the District”) was formed, explains how the assessments are calculated, and includes assessment tables since the CSA was formed in 1984.

In addition, this report includes highlights from the District’s field operations as well as a summary of disease surveillance activities and our public outreach program.

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

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

MISSION

The mission of the Vector Control Service 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: Overview

- Conduct investigations in response to requests for service from the public for rodent, wildlife, and insect vectors of disease, assess environmental conditions for vector harborage and access, and recommend solutions to reduce vector activity and associated public health risks.
- Investigate reported public health and vermin problems related to rodents, cockroaches, flies, fleas, bed bugs, lice, stinging insects (yellowjackets and bees), ticks, mites, and spiders, and render or recommend the appropriate control services based on integrated pest management strategies.
- Provide insect, tick and spider identifications and recommend the least-toxic control strategies.
- 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.

Wildlife Management and Rabies: Case Investigation

- Conduct investigations of nuisance wildlife problems relating to bats, skunks, opossums, raccoons, turkeys, feral pigs, foxes, coyotes, dogs, cats, rabbits, and birds (especially pigeons).
- Trap 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 the Alameda County Public Health Department to monitor and test wildlife (bats, skunks, opossums, cats, etc.) for rabies and submit an annual report to the California Department of Public Health.

Rodent Control

- Provide recommendations for rodent proofing and population control in homes, neighborhoods, open areas, and businesses.
- Conduct rodent suppression during vector-borne disease outbreaks, public health emergencies, or when the residents are experiencing a public health risk from rodents and their ectoparasites.

- Conduct surveys of rat populations to assess species abundance, distribution, and disease carrying potentials.
- Conduct inspection and rodenticide baiting of sanitary sewers for rats within the City of Oakland.
- Inspect and test sewer laterals and mains to detect breaks, which may provide an egress for rats to move into adjacent neighborhoods.

Solid Waste Problems

- Investigate complaints regarding solid waste involving garbage, human or animal waste, and odors at residential properties and businesses. These issues often attract or harbor rodent and wildlife vectors.

Vector Borne Disease Surveillance and Control

- Investigate reports of animal or human cases of disease such as Lyme disease, Psittacosis, Plague, Hantavirus (HCPS), Flea-borne Typhus, Tick Relapsing Fever, Chagas disease, Reptilian salmonellosis, Ehrlichiosis, Anaplasmosis, and Rabies to determine cause, incidence, distribution, and appropriate prevention and remediation measures.
- Assist the public with tick identification, and submissions of ticks to laboratories for Lyme disease testing.
- Collect rodent ectoparasites and determine Plague potential (or other vector-borne disease transmission potentials) and implement rodent suppression and ectoparasite elimination strategies as required.

Public Education and Information

- Provide educational presentations to schools, civic groups, property managements, homeowner associations and the general public.
- Disseminate educational materials on vector-borne diseases to residents and interested groups.
- Engage with the public through interactive outreach 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 related to rodent, wildlife, or insect vectors that pose a threat to public health and safety.

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% of voters' 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 programs.

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. 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, they 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 ballot process. Currently, the CSA is a countywide District, providing vector control services to all 14 cities in Alameda County, including the unincorporated county areas.

The City of Berkeley already had an existing vector control program when the CSA was formed in 1984. It 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 two benefit assessments (BA) charged to parcels benefiting from District services. In 1997, California voters approved Proposition 218, requiring that all parcel owners subject to the assessment receive a mailed ballot regarding any proposed change in an assessment prior to imposing an increase. Since then, the District (CSA 1984-1) is not able to increase revenues without conducting a new revenue measure.

In 2007, the SCI Consulting Group was awarded a contract by the BOS to conduct a survey among the property owners to gauge their support for a new vector control benefit assessment. The survey showed that there was overwhelming support for an additional benefit assessment at the rate of \$4.08 which when added to the existing levy of \$5.92, would result in a total rate of \$10 per single-family residence. Assessment ballots were mailed to all property owners within the original 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.

Previously, in May 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 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 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 2008, SCI Consulting surveyed a sample of residents in Emeryville and Fremont; results from both cities were favorable for creating a new benefit assessment that would permit the CSA to provide vector services. In March 2008, the BOS authorized the CSA to proceed with an application to the LAFCO to obtain approval of the 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 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 subject to the assessment in Emeryville and Fremont regarding the proposed New Vector and Disease Control Assessment of \$10 for a 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 the newly proposed Vector and Disease

Control Assessment of \$10 for a 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.

Since the CSA's original assessment and the annexations of Emeryville and Fremont, the BA rate for those cities held at \$4.08 and \$10.00 per single-family residence, respectively, until FY 2019-20, when rates increased by \$1.00 to \$5.08 and \$11.00.

With Board of Supervisors (BOS) approval, the CSA assessed \$5.92 and \$6.01 for basic and secondary vector control services countywide in FY 2022-23, an increase of \$0.93 from the prior year, bringing the Emeryville and Fremont rate to \$11.93 per single-family residence. In FY 2023-24, the secondary services rate increased by \$0.19 to \$6.19, while the basic rate held at \$5.92; the Emeryville and Fremont rate rose correspondingly to \$12.11.

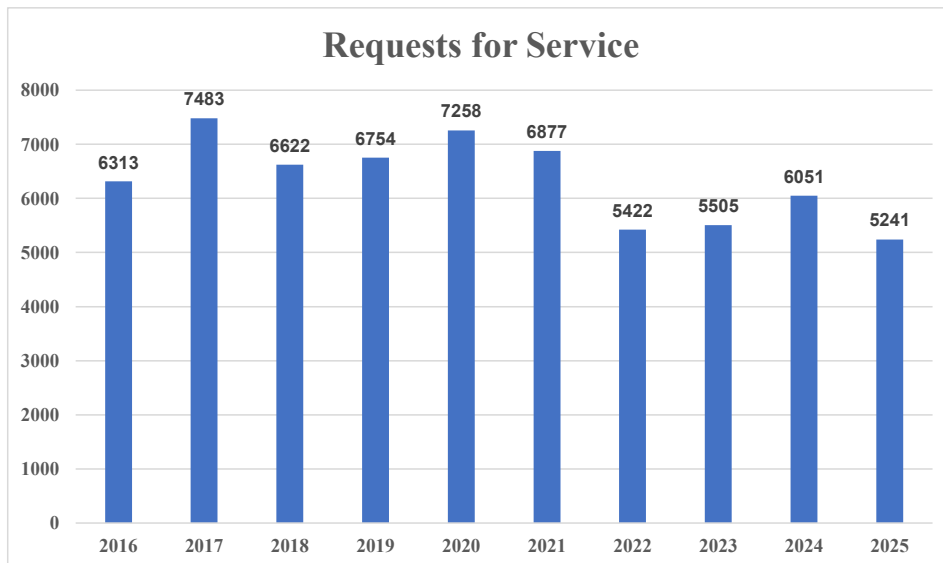
Subsequent years have continued to see a \$0.19 annual adjustment to the secondary services rate: \$6.38 in FY 2024-25 and \$6.57 in FY 2025-26, with the Emeryville and Fremont rate rising to \$12.30 and \$12.49 per single-family residence, respectively. The basic rate has remained unchanged at \$5.92. These assessments fund vector control services throughout the County.

VECTOR CONTROL FIELD SERVICES – OPERATIONS

REQUESTS FOR SERVICE

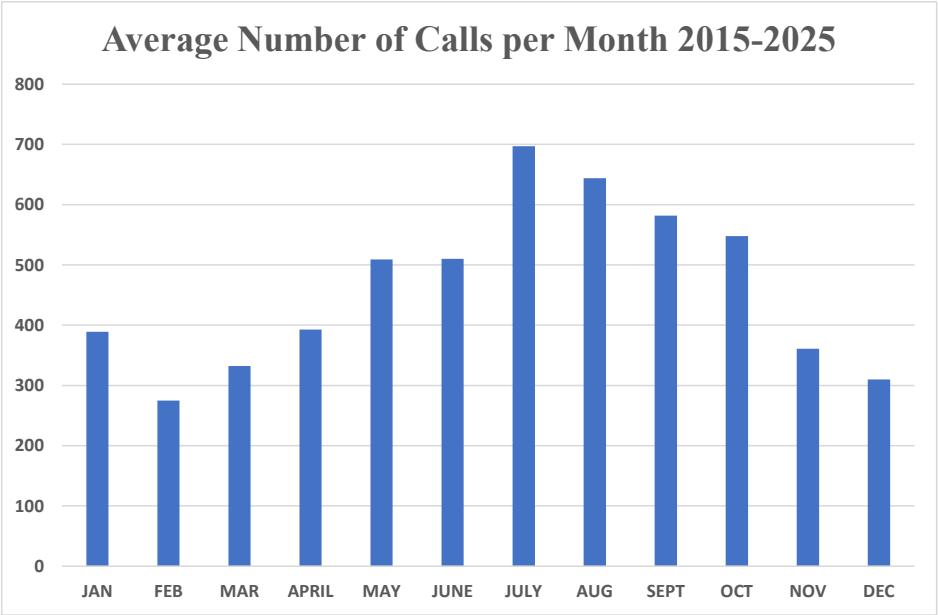
In 2025, the District received 5,241 Request for Service (RFS). There was a significant increase in the number of certain arthropod requests for service. “Yellow Jacket” and “Flea” RFS showed a significant increase, with “Flea” RFS reaching a 10-year high. In addition, actual calls to the District increased in 2025 compared to 2024. In 2024, the District received 6,051 calls, and in 2025 the District received 6,443 calls, reflecting a 6.5% increase. A call to the District can take the form of a direct phone call to the receptionist, filling in an online form found on our website, an email, or an in-person report. A single call may be comprised of more than one request for service. For example, a caller may report issues with cockroaches and mice. This represents one call and two requests for service.

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THE SEASONS OF OUR LOCAL VECTORS

A breakdown of calls received per month and averaged over ten years (2015-2025) reveals the busiest and slowest times of the year for the District's field staff. There are two distinct peaks, one relatively small and the other large. High numbers in January are due to skunk mating season, which can extend from December through February. Even though these vectors are nocturnal and avoid people, they receive a great deal of attention because of the overpowering odor they produce and their ability to spray as a defense against predators. Data shows February is the slowest time of the year, with overall vector activity steadily increasing each month until its peak in July. Warmer spring weather initiates and accelerates reproductive cycles for several vectors, including rodents, cockroaches, raccoons, fleas, and yellowjackets. Populations of several different species tend to peak towards the end of summer, before declining with cooler fall temperatures. Human behavior during the summer may also impact the number of received calls, as many residents are taking time off work and spending time at home, making interactions with vectors more likely. For our vector control biologists, July through October is clearly the busiest time of the year.

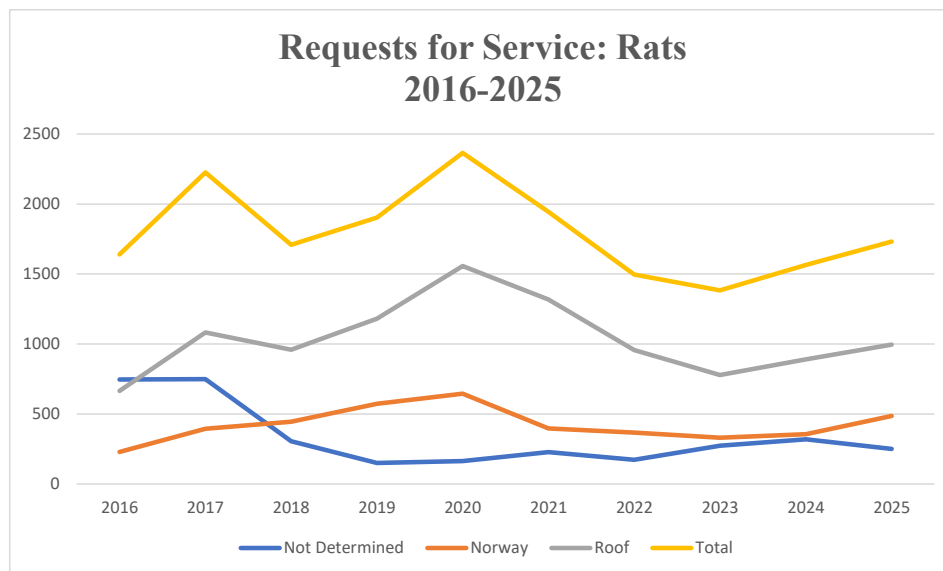


URBAN RODENT SURVEILLANCE AND CONTROL

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 2025, the District received 2,122 requests for service (1,768 rats, and 354 mice) from the public for domestic rodents, representing 40.0% of all service requests. Compared to 2024, these numbers reflect a slight increase in rat service requests and decrease in mice service requests. Those 2,122 rodent service requests lead to staff biologists performing 14,947 field services operations related to domestic rodents. The Request for Service operations included smoke and dye tests of sewer lines for breaks, field and residential surveys for rodent activity, recommendations and follow-up evaluations of rodent control measures, and assistance of enforcement actions.

Staff biologists responding to a rodent service request will carry out thorough inspections of the exterior and interior premises looking for rodent harborage or activity and will then advise the property owner on necessary structural modifications to prevent rodent entry into their home or business. They will hand out brochures to neighbors and will inspect adjacent properties when necessary. Staff biologists also evaluate and survey neighborhoods that have significant rat activity based on clusters of complaints, or where residents report seeing rats roaming on surface streets.

Staff biologists will locate rodent sources (sewers, food items, infested buildings nearby, etc.) and implement rodent suppression strategies to prevent public health issues related to rodent-borne diseases.



When evidence indicates rats are surfacing near sewer laterals, staff biologists conduct inspections to locate broken sewer lines within the system and notify the homeowners or the Public Works Department to ensure repairs are made. In 2025, staff biologists conducted 19 smoke tests and found 18 broken sewer laterals.

As part of the City of Oakland’s supplemental assessment targeting rodent populations in sanitary sewers, staff biologists conduct weekly inspections of underground sewer access structures (manholes) for signs of rodent activity (live rats or their droppings). To control rodent populations in areas with activity, rodenticide bait blocks are suspended in sewers to allow easy access for feeding. In 2025, a total of 8,804 sewer inspections were made in Oakland. The sewers that had active rodent activity totaled 2,024 and they were treated with a Contrac rodenticide bait block. In some cases, where signs of heavy rat activity were observed, additional rodenticide was used (220). In 2025, a few of the City of Alameda sewers were also inspected and treated. Of the 26 sewers inspected, 15 were baited, and five received additional bait.

Beginning in October 2022, the District initiated a baiting strategy referred to as “pulse baiting”. Essentially, this means targeting those areas in the sewer system where Norway rat activity is

heaviest. It involves re-inspecting the manholes that have recently been baited (within a specific time frame) and if at least 50% of the bait has been consumed, the manhole is immediately re-baited. This process continues until the bait is no longer consumed. This strategy contrasts with inspecting manholes strictly on a calendar basis and is likely to have a greater impact on sewer rat populations.

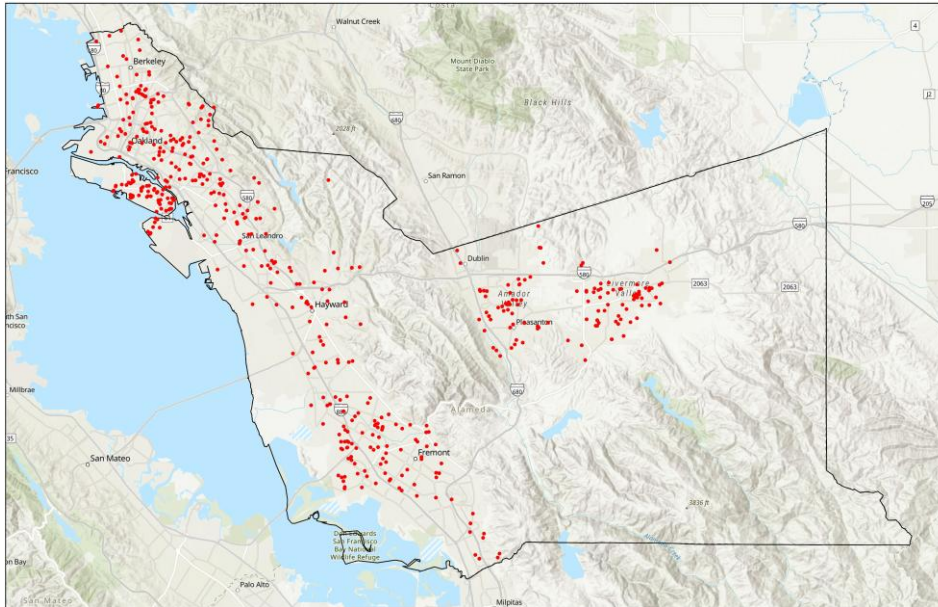
WILDLIFE MANAGEMENT PROGRAMS

In 2025, the District responded to 1,879 service requests concerning wildlife, and those service requests led to staff performing 11,862 field service operations within or near residential areas. Most of these service calls involved raccoons, skunks, opossums, and foxes. We advise homeowners to employ harassment techniques, make exclusion repairs, reduce food or other attractants, and modify the habitat to eliminate or prevent recurrence of the wildlife problem. Our staff biologists coordinate with the District's USDA Wildlife Specialist (WS) in the use of integrated pest management (IPM) techniques and who offers a wide range of preventive and population reduction methods. Below is a breakdown of the common wildlife nuisance species (raccoons and skunks) that account for most wildlife service requests the District receives.

Raccoons

In 2025, the District responded to 535 service requests related to raccoons. Raccoons often den in backyards, beneath decks, under homes, or in attics. They also feed on backyard fruits, insects, vegetables, garbage, and pet food left outside overnight. At certain times of the year, they dig for beetle grubs in lawns and can cause significant property damage. Raccoon "grubbing" on lawns was one of the leading reasons for raccoon related requests for service. To prevent damage to lawns, staff biologists and the WS may suggest applying commercial grub killer products, repellents, and cutting back on watering.

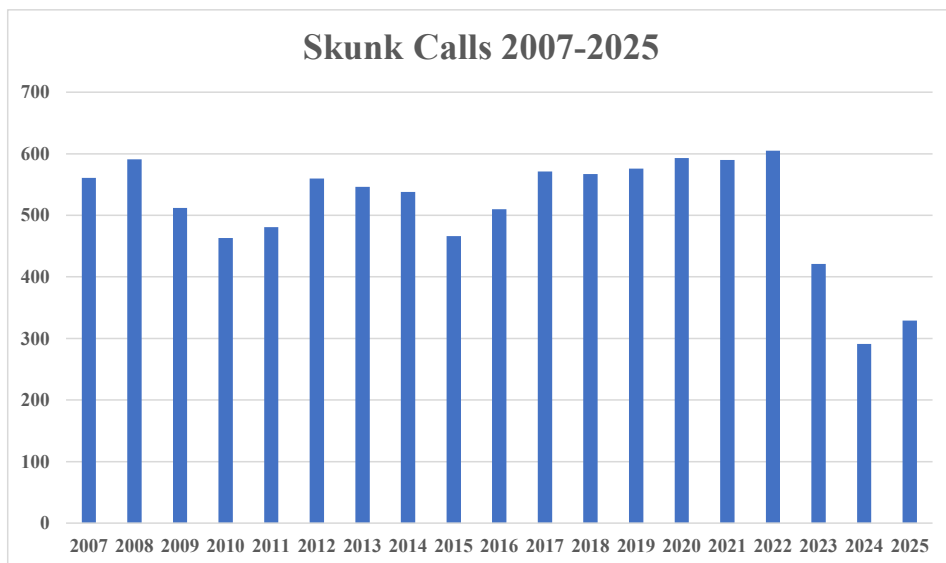
Young raccoons are generally born in April/May. Female raccoons readily nest and care for their young in attics and crawl spaces. This can result in urine and feces accumulating inside or underneath homes, creating an objectionable odor and a public health risk. These situations are a common service request we receive. Eviction and exclusion are the keys to eliminating den sites in structures. Raccoon eviction fluid, one-way doors, and harassment strategies can remove raccoons that have gained access to structures. The home then must be wildlife proofed by sealing all entry points. In situations where public safety is threatened, or property damage is recurring, trapping a nuisance raccoon may be necessary.



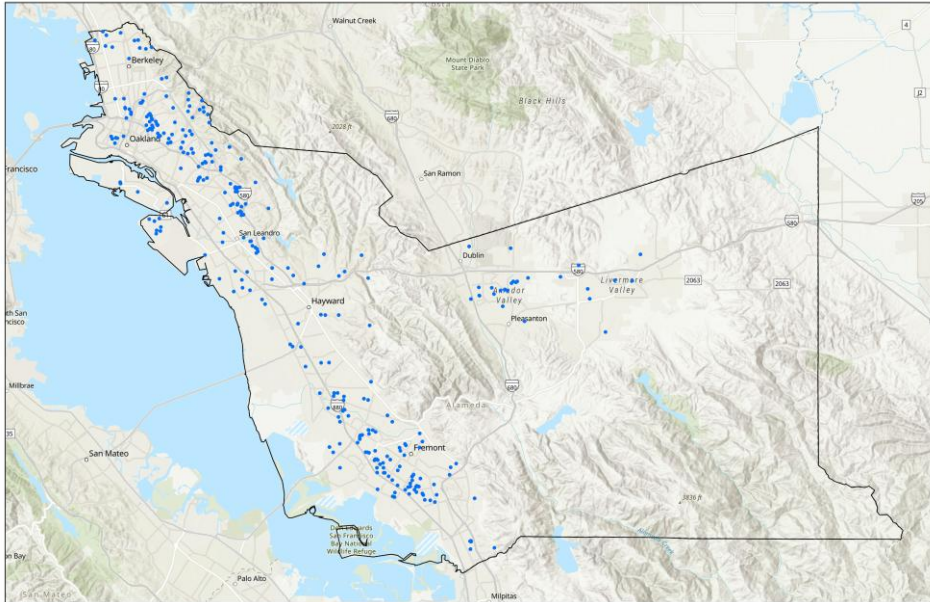
Raccoon Calls 2025

Skunks

In 2024, the number of skunk requests for service declined. In 2024 only 291 skunk requests for service were received by the district. This number is well below the previous 10-year average of 543 and is the lowest number recorded in the District's database, which started in 2006. Although it has never been officially confirmed, this decline is most likely due to distemper spreading among local populations. In 2025, the District received 329 calls, higher than the previous year but still much lower than average.



Skunks utilize residential areas because of the availability of food, water, and shelter. Skunk problems peak during their mating season (December through February), and young are born about 9 weeks later. During mating season, competing males will often spray, creating a nuisance. Females will often den in crawl spaces of homes. Additionally, skunks can be a carrier of rabies in California, creating a potential serious public health risk. Skunk control methods focus on harassment, eviction and exclusion through modifying den sites and access points, using one-way doors, and other deterrents like cayenne pepper and ammonia. Trapping may be warranted if these methods are not sufficient. Exclusion after successful evictions involves denying future access through screening and the use of 1/4-inch mesh hardware cloth. Homeowners can spray lawns with approved insecticide to control grubs and other insects, thus discouraging grubbing behavior.



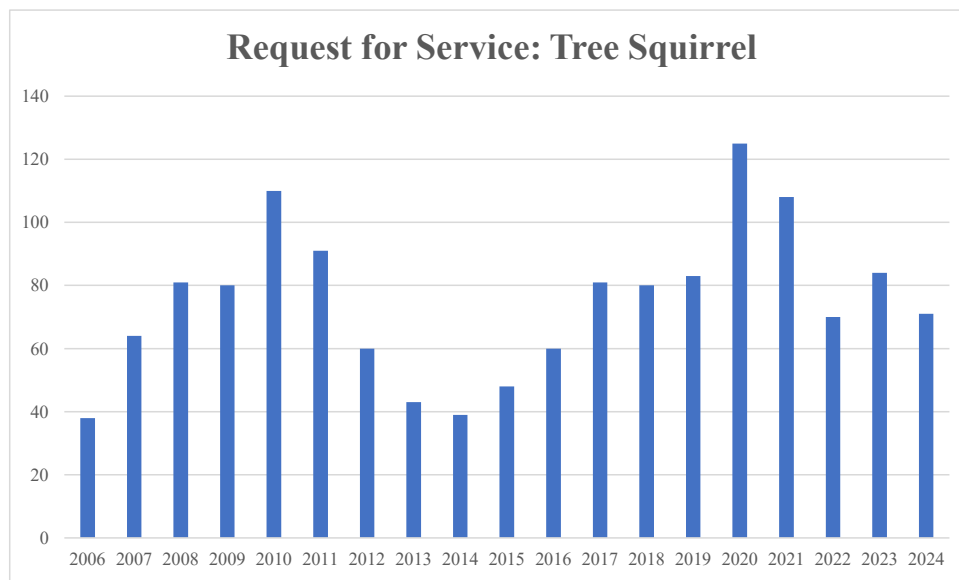
Skunk Calls 2025

Tree Squirrel Requests for Service

There are several tree squirrel species in California but in Alameda County only one is responsible for generating Requests for Service. The Eastern Fox squirrel, *Sciurus niger*, was introduced into California nearly 100 years ago. During this time, it has proven to be quite adaptable and has expanded its range, thriving in both urban and suburban environments. They are recognized by their overall gray color, orange-colored fur on the belly and a long bushy gray tail with orange on the sides.

Although many residents appreciate and enjoy this species, they may cause distress for others by damaging property. For example, they can injure trees by chewing off the bark or consuming green stems. They can damage electrical wiring, siding, and insulation or gnaw into eaves and fascia of houses, even chewing through drywall. They can gain access to attics and wall voids, where they may take up residence. During the fall, these squirrels harm garden and landscape plantings with their digging.

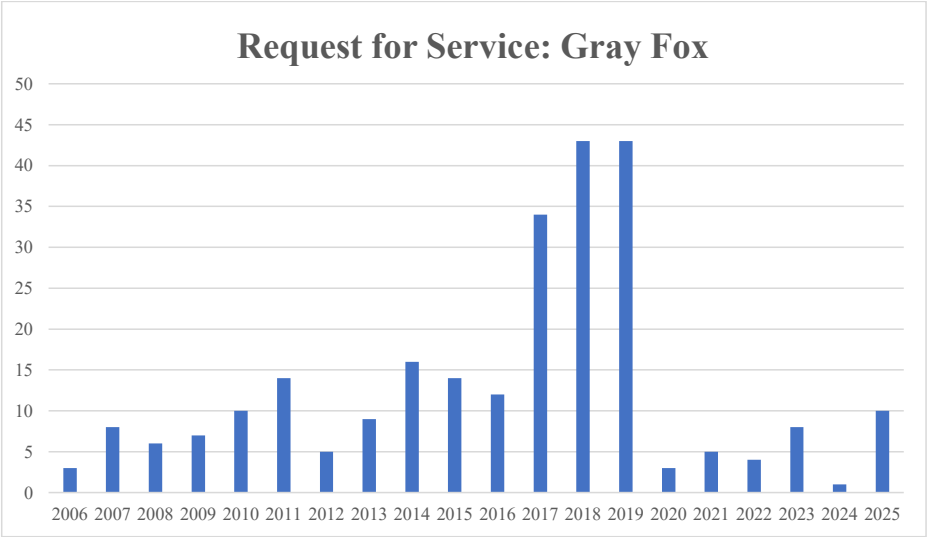
Alameda County Vector Control District has been tracking the number of tree squirrel Requests for Service since 2006. Graphing the number of these requests over time reveals an interesting pattern. Numbers are at their lowest in 2006 in 2014, a nine-year interval. Numbers peaked in 2010 and 2020, a 10-year interval. These changes in tree squirrel Requests for Service suggest significant shifts in the local population of these animals. Increases in numbers reveal that availability of resources such as food, water, and nesting sites are readily available. Factors such as intraspecific competition and disease incidence may cause changes in the population numbers and how they are affecting residents.



The Rise and Fall of the Gray Fox

Alameda County has two fox species, the non-native red fox (*Vulpes vulpes*) and the native gray fox (*Urocyon cinereoargenteus*). Because they are adaptable, skilled hunters with an omnivorous appetite, red foxes are considered a threat to native ecosystems. Gray foxes are the only fox species capable of climbing. This species has a widespread range, is naturally shy and actively avoids people or pets. However, they may intimidate residents by establishing dens beneath decks or other structures.

Vector Control has been tracking the number of gray fox Requests for Service since 2006. During the 11-year period 2006 to 2016, the number of calls concerning gray fox averaged approximately nine per year. Unexpectedly, the District saw these numbers increase four-fold during the three-year period 2017-2019, averaging forty per year. Then, from 2020 through 2025 the average number of gray fox Requests for Service dropped dramatically to five per year. Reasons for these dramatic shifts are unclear but declines in gray fox populations have been noted in other parts of the country. Loss of habitat, increases in predation, and perhaps most significantly, an increase of disease transmission such as distemper are cited as explanations.



VENOMOUS ARTHROPOD PROGRAMS

Venomous arthropods include mites, ticks, spiders, wasps (and other insects) that can sting, bite, secrete venoms, or cause allergic reactions in humans and domestic pets. In 2025, the District received 881 service requests for venomous arthropods. County residents can request the identification of various stinging insects and arachnids that they find in and around their homes. A staff biologist will collect and identify the arthropod and advise residents on how best to control the insect while minimizing the risks of bites and stings.

The District works quickly to treat yellowjacket and wasp nests located near residential and public areas because of the public health risk these insects may pose. Staff biologists contact the Alameda County Beekeepers Association to safely remove honeybee swarms and hives when possible. In 2025, the District responded to 677 venomous wasps and 94 honeybee complaints. The District saw an increase in venomous wasps calls this year. There was a 48.5% increase in calls in 2025.

MISCELLANEOUS ARTHROPOD PROGRAMS

In 2025, the District responded to service requests on a variety of other arthropods such as ants (33 requests), cockroaches (438 requests), flies (83 requests) and fleas (99 requests) infesting homes, yards, and commercial facilities. Our staff biologists frequently identify insects and other arthropod species collected by concerned residents. Staff biologists will conduct inspections to locate insect breeding locations and recommend control options. Additionally, residents frequently request treatment of residential or commercial areas where they see cockroaches openly roaming sidewalks and streets. With the ongoing research programs, staff biologists are developing new operational strategies for controlling cockroaches in sewers, water meter boxes and storm drains. The Turkestan cockroach, introduced into California in 1978 and first recorded in Alameda County in 2013, has significantly increased its range and abundance.

SWIMMER'S ITCH PROGRAM

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 2025, there was one case of swimmer's itch reported. The case was not diagnosed, it was alleged. This is not a reportable disease by the County's Public Health Communicable Disease program, and the District will not be notified unless an outbreak of human cases has occurred.

NUISANCE ABATEMENT PROGRAM

Garbage, rubbish, abandoned vehicles, furniture/appliances, dog and cat waste, and animal manure stockpiles can become public nuisances when left unattended prior to disposal. In addition, these situations may provide harborage and food sources for rodents, flies, and other pests that might result in disease transmission to humans.

In 2025, staff biologists responded to 136 nuisance service requests for furniture, garbage, abandoned vehicles, overgrown vegetation, or rubbish. This resulted in 136 field services that included investigations, progress assessments, correspondence, and compliance inspections. When necessary, staff biologists work with local code enforcement agencies and public works to seek compliance with mediate problems.

VECTOR CONTROL LABORATORY SURVEILLANCE

AVIAN INFLUENZA SURVEILLANCE

Avian influenza is an infectious disease of birds caused by type A influenza viruses. The HPAI H5N1 strain causes significant disease in poultry, resulting in mortality of backyard and commercial flocks. Infections in wild birds may cause mild to severe disease or death, depending on the species and environmental conditions. For example, these viruses naturally circulate among waterfowl and waterbird populations and raptors that scavenge on these species are in jeopardy of acquiring infection. The Center for Disease Control and Prevention states that the probability of infection in humans is low, however some individuals may be at higher risk due to job-related or recreational exposure. Dead bird reports by the public can help reveal key sources of viral transmission and are continuously investigated by Vector Control to prevent disease amplification in Alameda County.

In 2025, the District provided surveillance of Highly Pathogenic Avian Influenza (HPAI) H5N1 in Alameda County. Forty-two birds from nine cities were screened for HPAI between January and December and a total of eight (19%) were positive for the virus. Half of the positive birds this season were owls.

ECTOPARASITE SURVEILLANCE ON SYLVATIC RODENTS, COMMENSAL RODENTS AND WILDLIFE

Sylvatic rodents such as pinyon and deer mice, woodrats, ground squirrels, and meadow voles are commonly found in rural and semi-rural areas of Alameda County. Commensal rodents refers to those rodents that live near humans and are typically non-native species. Wildlife species include the more common opossum, raccoon and skunk, but also include the less common fox, coyote, feral pig, bats, squirrels, and jackrabbits.

Many of these animals serve as reservoir hosts of zoonotic diseases such as Plague, Hantavirus Pulmonary Syndrome (HPS), Tularemia, Lyme disease, and Babesiosis. A reservoir host is an animal that remains infected with a pathogen for an extended period and may or may not develop symptoms of the disease. They serve as a source of infection. Ectoparasites (vectors) which feed on the host will transmit the pathogen to other animals or humans. Some reservoir hosts, such as deer mice, can spread pathogens through their feces and urine without ectoparasites. Our Vector Ecologist and staff Biologists routinely collect sylvatic and commensal rodent samples for surveillance and monitoring of ectoparasite abundance, diversity, and disease testing.

Host Species	Number of hosts	Number of hosts with fleas	Number of fleas	Flea species	Flea Index
SYLVATIC RODENTS					
Pinyon Mouse <i>Peromyscus truei</i>	18	0	0		0.0
Deer Mouse <i>Peromyscus maniculatus</i>	3	0	0		0.0
COMMENSAL RODENTS					
Norway Rat <i>Rattus norvegicus</i>	189	72	1070	<i>Xenopsylla cheopis</i> (1025) <i>Nosopsylla fasciatus</i> (37) <i>Ctenocephalides felis</i> (8)	5.7
Roof Rat <i>Rattus rattus</i>	9	0	0		0.0
WILDLIFE					
Desert Cottontail <i>Sylvilagus audubonii</i>	1	0	0		0.0
Fox (Tree) Squirrel <i>Sciurus niger</i>	6	4	13	<i>Orchopeas howardi</i> (12) <i>Hoplopsyllus anomalus</i> (1)	2.2
Ground Squirrel <i>Spermophilus beecheyi</i>	95	81	1143	<i>Oropsylla montana</i> (769) <i>Hoplopsyllus anomalus</i> (369) <i>Echidnophaga gallinacea</i> (5)	12.0
Jack Rabbit <i>Lepus californicus</i>	1	0	0		0.0
Mexican Free-tailed Bat <i>Tadarida brasiliensis</i>	1	1	30	<i>Myodopsylla gentilis</i> (30)	30.0
Opossum <i>Didelphis virginica</i>	9	9	423	<i>Ctenocephalides felis</i> (423) <i>Echidnophaga gallinacea</i> (3) <i>Nosopsyllus fasciatus</i> (1)	47.0
Raccoon <i>Procyon lotor</i>	7	4	10	<i>Pulex spp.</i> (6) <i>Ctenocephalides felis</i> (4)	1.4
Striped Skunk <i>Mephitis mephitis</i>	3	2	11	<i>Pulex spp.</i> (7) <i>Oropsylla montana</i> (3) <i>Ctenocephalides felis</i> (1)	3.7

Table 1. Ectoparasites (fleas) collected from commensal and sylvatic rodents, and wildlife from urban and sylvatic areas (including rodents from homeless encampments), 2025

HANTAVIRUS PULMONARY SYNDROME (HPS)

Hantavirus Cardiopulmonary Syndrome (HPS) was first recognized in 1993; it is a respiratory illness spread through airborne particles of rodent urine and feces contaminated with *Sin Nombre* virus (SNV). The deer mouse (*Peromyscus maniculatus*) is the principal reservoir host. Occasionally, deer mice will enter buildings and potentially expose human occupants to the virus. Past surveillance conducted at various localities within the county detected 6-18% of deer mice are infected with SNV.

In collaboration with the California Department of Public Health (CDPH), the Alameda County Vector Control District conducts hantavirus surveys in local parks to increase public awareness of the disease and to reduce exposure to deer mice and the structures they may inhabit.

Three hantavirus (SNV) surveys were conducted in 2025. A total of 21 deer mice, house mice, harvest mice and voles were collected and sent to the California Department of Public Health for testing. None of the 21 animals were positive by serology and by PCR (Table 2).

Date	Site	Specific Location	Species	Number Tested	Result
5/20/25	Castro Valley	Residence	<i>Peromyscus truei</i> Pinyon mouse	4	Negative
6/10/25	Oakland	North Oakland Sports Center	<i>Peromyscus truei</i> Pinyon mouse	5	Negative
			<i>Peromyscus maniculatus</i> Deer Mouse	1	Negative
9/23/25	Castro Valley	Anthony Chabot Campground	<i>Peromyscus truei</i> Pinyon mouse	9	Negative
			<i>Peromyscus maniculatus</i> Deer Mouse	2	Negative
			Total Tested	21	

Table 2. Hantavirus surveillance 2025

LEPTOSPIROSIS SURVEILLANCE

Leptospirosis is often considered the most widespread zoonosis in the world and is most common in temperate and tropical zones. It is caused by a bacterium that is spread through the urine of infected animals, which can get into water and soil where it can survive for weeks to months at a time. Various domestic and wild animals can carry the bacteria in their bodies and excrete it for months to several years. Humans can become infected through contact with urine, or other bodily fluids (except saliva) from infected animals or contact with soil, water or food that has been contaminated with the urine from infected animals. People most at risk are those that work outdoors or with animals. Symptoms in humans range from mild to severe, with most cases going unnoticed. *Leptospira* bacteria can be difficult to detect due to high variability between closely related strains. Leptospirosis was reinstated as a nationally notifiable disease by the CDC in 2013.

In 2025, the District responded to a dog that tested positive for leptospirosis in the City of Berkeley. *Leptospira* is maintained in nature through chronic renal infections of various animals, with dogs and rats being among the most common. Norway rats were trapped from the same area where the dog had been living and samples were sent to an external laboratory for antibody testing with MAT6 (Microscopic Agglutination Test). MAT6 is a serological test used to detect *leptospira* antibodies and the test can differentiate a specific *Leptospira* strain from among a total of 6 closely related strains. The District submitted five pools (3 rats per pool) and all five pools came back positive for a single *Leptospira* serovar (Table 3). To confirm infections were active at the time of collection, nine of the 15 rats were sent for PCR testing. Seven of these nine rats were PCR positive for *Leptospira* sp.

Due to the increased level of Leptospirosis surveillance in the last few years, the District decided to change its testing protocol. A subset of previously collected samples were sent for MAT 6 analysis and two locations from the City of Oakland came back as positive for servovar: *Leptospira ictero*.

The District is continuing to monitor sites countywide for the presence of *Leptospira* in rats to mitigate the risk of leptospirosis transmission.

MAT6 (Berkeley)			
Number of rats	Number of pools	Number of positive pools	Serovar Detected
15	5	5	<i>Leptospira icterohaemorrhagiae</i>
PCR confirmatory testing (Berkeley)			
Number of rats		Number positive for <i>Leptospira sp.</i>	
9		7	

MAT6 (Oakland)			
Number of rats	Number of pools	Number of positive pools	Serovar Detected
17	6	3	<i>Leptospira icterohaemorrhagiae</i>

Table 3. Leptospirosis testing 2025

WEST NILE VIRUS SURVEILLANCE

Our District has been assisting with monitoring for the presence and spread of West Nile Virus in Alameda County for many years. Initially this program consisted of testing live mosquitoes, dead birds, and sentinel chickens. Currently, the District maintains a sentinel chicken flock as part of its disease surveillance program for both avian and mosquito-borne diseases. This program is implemented in conjunction with the California Department of Public Health's (CDPH) Vector Borne Disease Section. In 2025, one of the sentinel chickens at the District's flock in the City of Livermore tested positive for West Nile Virus. CDPH and Alameda County Mosquito Abatement District used this data to help inform their West Nile Virus programs and responses.

HOMELESS ENCAMPMENT RODENTS, FLEAS, AND *RICKETTSIA SP.* SURVEILLANCE AND CONTROL OPERATIONS

In 2018, the District began conducting surveillance of commensal rodent and ectoparasite populations in homeless encampments within the City of Oakland.

The most common commensal rodent associated with homeless encampments is the Norway rat, *Rattus norvegicus*, which is a host for fleas, lice and mites that can vector diseases such as plague, flea-borne typhus, and salmonellosis.

It was found that several of these encampments had active Norway rat populations as indicated by active burrows within, and adjacent to the camps. These observations coincided with reports of

rat sightings by residents of the encampments, surrounding businesses, and members of the public. Staff biologists began live-trapping at a few of the larger encampments to ascertain the size of the Norway rat populations. Our Norway rat surveillance stopped for a time due to the COVID-19 pandemic but resumed in 2021.

In 2025, the District conducted 14 separate trapping events at seven different homeless encampments in the City of Oakland and collected 189 Norway rats (Table 4).

Staff biologists set out live cage traps in the afternoon and the traps are collected the following morning. Trapped rats are brought back to the laboratory for analysis, where they are combed for associated ectoparasites. Ectoparasites (especially cat fleas, *Ctenocephalides felis* and Oriental rat fleas, *Xenopsylla cheopis*) were sorted by species and tested for pathogens, specifically *Rickettsia felis* and *Rickettsia typhi*.

There were five Norway rat suppression applications conducted during 2025. Burrows are baited with rodenticide and rat carcasses are picked up post-treatment to reduce the risk of non-target effects on other domestic animals and wildlife.

Suppressing the Norway rat populations will continue by staff biologists following the clean-up of the encampments by Public Works staff, and the relocation of encampment residents and their pets into more permanent housing as they become available.

Ongoing Norway rat suppression is conducted in coordination with Public Works and other city/county agencies engaged with encampments.

Homeless Encampments Surveyed In the County	# of Separate Trapping Events	Total # of Norway rats trapped	Total # of fleas collected for disease testing	Total # of rodenticide applications for Norway rat suppression
7	14	189	1,069	5

Table 4. Norway Rats at Homeless Encampments Summary 2025

FLEA-BORNE RICKETTSIAL DISEASES SURVEILLANCE

Rickettsial diseases are found worldwide and are transmitted to humans via an arthropod host, specifically fleas, lice, ticks and mites. Most cases of flea-borne typhus occur in Texas, Hawaii and California, with approximately 300 human cases per year. Los Angeles and Orange counties are known endemic areas for flea-borne rickettsioses but sometimes cases are reported from other parts of California. Humans become infected with flea-borne *Rickettsia* through the infectious bite of a flea or through infectious flea fecal material.

In 2020, the Alameda County Vector Control Services District began a surveillance program examining flea borne Rickettsial disease by collecting fleas from different host animals throughout the County. The cat flea (*Ctenocephalides felis*) and the Oriental rat flea (*Xenopsylla cheopis*) are the focus of the surveillance program. Alameda County has historical populations of Oriental rat fleas and Norway rats, the rodent hosts.

Rickettsia typhi, the causative agent of endemic typhus, is maintained in a rat-flea-rat cycle involving Norway rats, *Rattus norvegicus*, and the Oriental rat flea, *X. cheopis*. Although *X. cheopis* is considered the major vector of murine typhus, natural infection with *R. typhi* has been reported in other flea species including *Leptopsylla segnis*, *Pulex* spp., and *Nosopsylla fasciatus*.

Rickettsia felis, the etiologic agent of flea-borne spotted fever, is suspected to be a human pathogen. *Rickettsia felis* appears to share the same suburban transmission cycle as *Rickettsia typhi* where the cat flea, *C. felis*, serves as the primary vector and domestic animals and urban wildlife act as potential reservoir hosts. The cat flea is cosmopolitan in nature and is highly associated with people and pets.

In 2025, the Alameda County Vector Control Services District continued its flea-borne Rickettsial disease surveillance program, collecting and testing fleas from different mammals. In total, 1,345 fleas were tested in pools (up to five fleas per pool, up to 50 fleas per host animal) using *Rickettsia* genus-specific real time PCR assay. Out of 101 animals, 15 were infested with fleas that showed the presence of Rickettsial DNA (Table 5). The animals were three Norway rats, eight opossums, and four raccoons.

Host	Number of animals	Number of fleas tested	Number of animals with <i>Rickettsia</i> positive fleas	Percent of animals with <i>Rickettsia</i> positive fleas, %
Norway rat	72	1,049	3	4.2
Opossum	19	207	8	42.1
Raccoon	8	81	4	50.0
Skunk	2	8	0	0
Total:	101	1,345	15	

Table 5. Infestation of commensal rodents and wildlife animals with *Rickettsia* spp. positive fleas.

In total, 274 *Ctenocephalides felis*, 953 *Xenopsylla cheopis*, 41 *Nosopsylla fasciatus*, 77 *Pulex* spp were tested for the presence of Rickettsial DNA (Table 6). The highest percentage of infected pools was found in the *C. felis* flea population. Our results showed that Rickettsial infections are not common in *X. cheopis*, *N. fasciatus*, and *H. anomalous* fleas in Alameda County.

To identify *Rickettsia* species, the positive samples were screened using additional PCR assays. *R. felis* infections were identified in 31 flea pools. *C. felis* (cat fleas) were commonly infected: out of 68 pools, 29 were positive. Occasionally, *R. felis* was present in *X. cheopis* and *Pulex* spp fleas from Norway rat and raccoons. *R. typhi* was not detected in any of the fleas collected in 2025

Flea spp.	No. of fleas tested	No. of pools tested	No. of <i>R. felis</i> positive pools	Percent of <i>R. felis</i> positive pools, %	Minimum Infection Prevalence (MIP), %
<i>C. felis</i>	274	68	29	42.6	10.6
<i>X. cheopis</i>	953	227	2	0.9	0.2
<i>Pulex</i> spp.	77	22	0	0	0
<i>N. fasciatus</i>	41	33	0	0	0
Total:	1,345	350	31	8.9	2.3

Table 6. *Rickettsia felis* infections in fleas collected in 2025.

Understanding the flea distributions on commensal rodents and urban wildlife animals is of public health concern because they regularly interact with humans in parks and housing communities. An analysis of the flea infestation on host animals and *R. felis* infections in fleas (Table 7 and Figure 1) shows that opossums and racoons have more fleas with the Rickettsial agent compared with other mammals.

Host	Number of animals	<i>X. cheopis</i> , No. of <i>R. felis</i> positive pools (No. of fleas tested)	<i>C. felis</i> , No. of <i>R. felis</i> positive pools (No. of fleas tested)	<i>N. fasciatus</i> No. of <i>R.</i> <i>felis</i> positive pools (No. of fleas tested)	<i>Pulex spp.</i> , No. of <i>R.</i> <i>felis</i> positive pools (No. of fleas tested)	TOTAL No. of <i>R. felis</i> positive pools (No. of fleas tested)
Norway rat	72	2 (953)	1 (6)	0 (40)	0 (50)	3 (1,049)
Opossum	19		17 (206)	0 (1)		17 (207)
Raccoon	8		11 (61)		0 (20)	11 (81)
Skunk	2		0 (1)		0 (7)	0 (8)
Total:	101	2 (953)	29 (274)	0 (41)	0 (77)	31 (1,345)

Table 7. *Rickettsia felis* infection in fleas by host animal and by flea species.

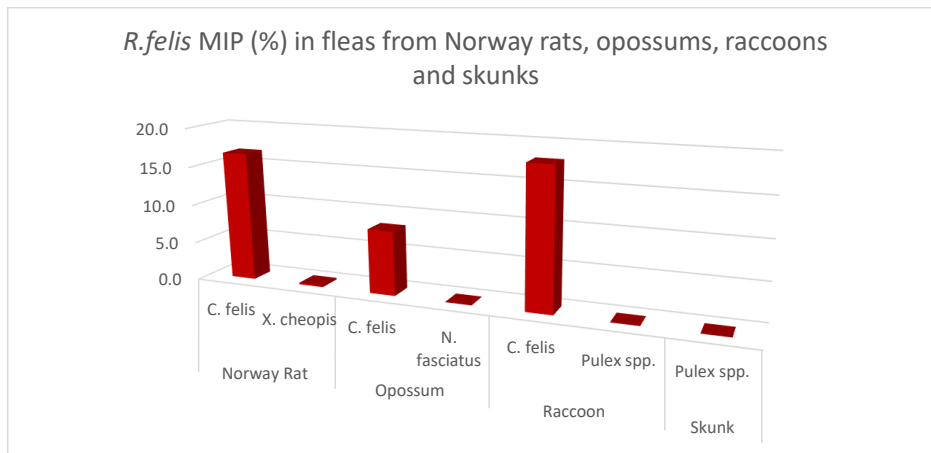


Figure 1. Comparison of *R. felis* Minimum Infection Prevalence (MIP, %) in fleas from Norway rats, opossums, raccoons, and skunks in 2025.

In 2025, *Rickettsia* positive fleas were found on mammals collected in Alameda, Albany, Fremont, Livermore, Newark, Oakland, Pleasanton, and San Leandro (Figure 2). Most of the locations included in the flea-borne Rickettsial disease surveillance program are considered urban or suburban. Due to ecological, biological, and behavioral factors promoting contact between humans and fleas, it is important to continue monitoring flea borne rickettsioses in Alameda County.

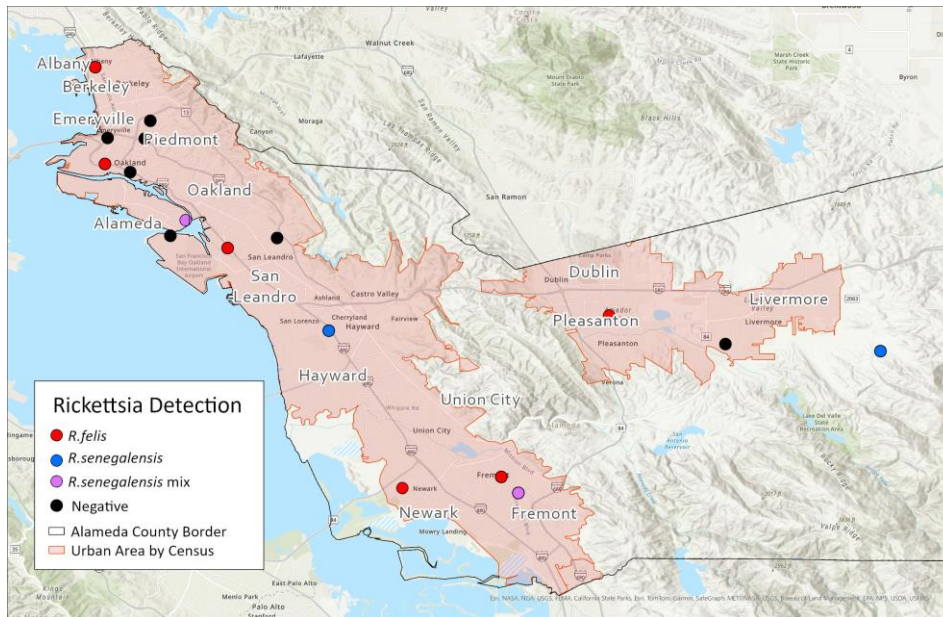


Figure 2. Distribution of *Rickettsia* infected fleas in Alameda County in 2025.

TICK SURVEILLANCE PROGRAM

Tick-borne diseases threaten the health of people. For over 25 years, Alameda County Vector Control Services District has conducted a tick surveillance program concurrent with the surveillance of pathogens in ticks that may cause disease in humans. Using a standard flagging method, ticks are collected in regional parks, city parks and public open spaces. In 2025, 6,937 *Ixodes pacificus*, 7,833 *Dermacentor occidentalis*, 112 *Dermacentor similis* (formerly *Dermacentor variabilis*), 46 *Ixodes spinipalpis*, 7 *Haemaphysalis leporispalustris* ticks were collected during 141 collecting events (Table 8). More than 2,000 ticks were collected on trails in Pleasanton Ridge Regional Park, Redwood Regional Park, and Augustin Bernal Park, Pleasanton. In addition, Joaquin Miller Park in Oakland and Anthony Chabot Regional Park demonstrated the highest tick species diversity (5 species).

Location	<i>Ixodes pacificus</i>	<i>Dermacentor occidentalis</i>	<i>Dermacentor similis</i>	<i>Ixodes spinipalpis</i>	<i>Haemaphysalis leporispalustris</i>	Total
Anthony Chabot Regional Park	602	889	6	2	1	1,500
Augustin Bernal Park, Pleasanton	904	1,248	2			2,154
Butters Canyon Regional Open Preserve	6	8				14
Cull Canyon Regional Recreational Area	505	112	13			630
Don Castro Reg. Rec. Area	4	269	6			279
Joaquin Miller Park, Oakland	848	725	11	44	6	1,634
Pleasanton Ridge Regional Park	1,568	941	12			2,521
Redwood Regional Park	2,219	2,055	3			4,277
Tassajara Creek Regional Park	15	51	14			80
Open spaces, Berkeley	32	203	22			257
Open spaces, Dublin	1	2	2			5
Open spaces, Castro Valley	54	857	17			928
Open spaces, Pleasanton	179	473	4			656
Total per tick species	6,937	7,833	112	46	7	14,935

Table 8. Tick Collection Summary

***Ixodes pacificus* Tick Surveillance**

Borrelia spirochetes

Ixodes pacificus (*I. pacificus*) or Western Blacklegged tick is the main vector of Lyme disease, which is caused by the bacterium *Borrelia burgdorferi* and is also the vector of tick-borne relapsing fever (TBRF), which is caused by the bacterium *Borrelia miyamotoi*. Both pathogens are primarily transmitted to humans through the bite of an infected Western Blacklegged tick. The Western Blacklegged tick has three life stages: larva, nymph, and adult. All three stages can be found in parks and open spaces in Alameda County, but tick abundance varies across the County. Nymphal and adult ticks can bite humans and transmit bacteria. In 2025, 6,545 adult, 297 nymphal and 95 larval *I. pacificus* ticks were collected as a part of the District's tick surveillance program (Table 9).

Location	Adults	Nymphs	Larva	Total
Anthony Chabot Regional Park	550	51	1	602
Augustin Bernal Park, Pleasanton	886	18	0	904
Butters Canyon Regional Open Preserve	6	0	0	6
Cull Canyon Regional Recreational Area	463	34	8	505
Don Castro Reg. Rec. Area	3	1	0	4
Joaquin Miller Park, Oakland	633	133	82	848
Pleasanton Ridge Regional Park	1,520	46	2	1,568
Redwood Regional Park	2,219	0	0	2,219
Tassajara Creek Regional Park	15			15
Open spaces, Berkeley	32			32
Open spaces, Dublin	1			1
Open spaces, Castro Valley	54	0	0	54
Open spaces, Pleasanton	163	14	2	179
Total:	6,545	297	95	6,937

Table 9. *Ixodes pacificus* Collection Summary

The likelihood of encountering an *I. pacificus* tick depends upon stage-specific host-seeking behavior and seasonality. Adult ticks seek hosts in grass and brushy areas, whereas nymphal ticks can be found in leaf litter or on tree trunks. Tick activity is seasonal and depends on temperature and humidity. Figure 3 demonstrates the seasonal patterns in host-seeking. *I. pacificus* based on the number of collected ticks observed during the January-July period in 2025. Adult ticks were active from January through April. In contrast, April, May and June were the months of the highest activity for nymphal *I. pacificus* ticks.

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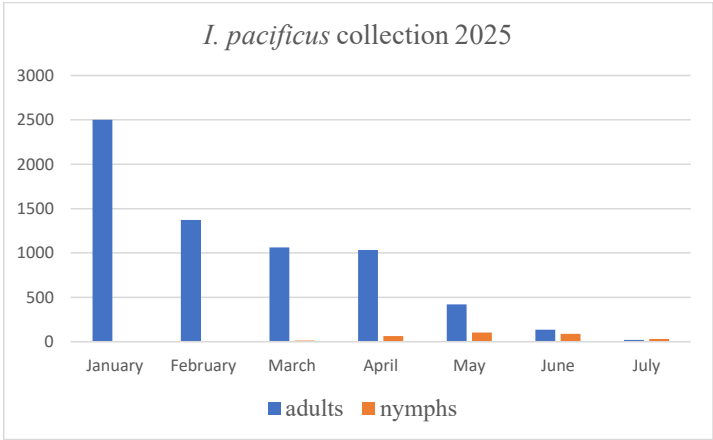


Figure 3. Monthly Numbers of Collected *I. pacificus* in 2025

Based on previous tick surveillance data and an estimated human risk of being bitten by a tick, i.e. how popular a given trail is with the general public, *I. pacificus* from selected locations were tested in groups, or “pools”, of a maximum of five adults and two nymphs, for presence of *Borrelia sensu lato* (*Bbsl*) and *Borrelia miyamotoi* (*B.miya.*). In 2025, DNA from 1,375 *I. pacificus* ticks (1,123 adults, 252 nymphs) were evaluated using *Borrelia* specific real-time PCR. The results are reported as a minimum infection prevalence, or MIP (Table 10). MIP is the ratio of the number of positive pools to the total number of ticks tested. This is the standard way of expressing the proportion of vectors infected with a specific pathogen assuming that only one vector in a positive pool is infected.

<i>I. pacificus</i> life stage	Number of ticks	Number of pools	Number of <i>Bbsl</i> positive pools	Number of <i>B.miya</i> positive pools	<i>Bbsl</i> MIP, %	<i>B.miya</i> MIP, %
adults	1,123	226	11	13	1.0	1.2
nymphs	252	132	8	2	3.2	0.8
Totals	1,375	358	19	15		

Table 10. *Borrelia sensu lato* and *Borrelia miyamotoi* Infections in *Ixodes pacificus* Ticks

County-wide, *Borrelia sensu lato* and *B. miyamotoi* were detected at 1.0% and 1.2% MIP in adult *I. pacificus* ticks respectively. In nymphal *I. pacificus* ticks, *Borrelia sensu lato* and *B. miyamotoi* were detected at a MIP of 3.2% and 0.8% respectively. The MIP values recorded in 2025 are in a typical range of *Bbsl* and *B.miya*. infection prevalence for Alameda County.

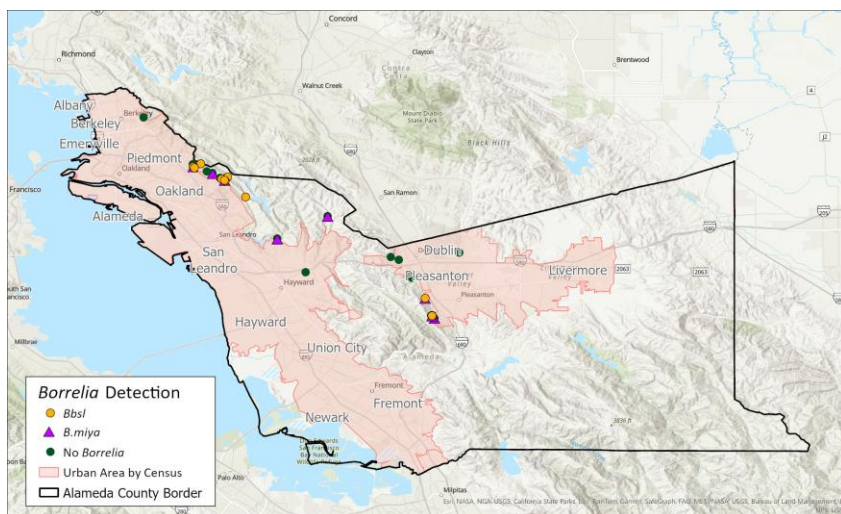


Figure 4. Distribution of *Borrelia sensu lato* and *B. miyamotoi* Positive ticks in Alameda County 2025

Anaplasma phagocytophilum

I. pacificus ticks can transmit *Anaplasma phagocytophilum*, a bacterium which causes human granulocytic anaplasmosis. The annual incidence of anaplasmosis in the U.S. has increased in recent years and in 2022 the District started to test *I. pacificus* ticks for the presence of *A. phagocytophilum*. In 2025, 1,123 adult ticks and 252 nymphal ticks were screened by real-time PCR. Out of 226 adult tick pools, 11 were positive for *A. phagocytophilum*, which corresponds to a county-wide MIP of 1.0%. Out of 132 nymphal tick pools, only one pool was positive, which corresponds to a MIP of 0.4% (Table 11). The spatial analysis of *A. phagocytophilum* data (Figure 5) demonstrates that *A. phagocytophilum* infected ticks can be found on both sides of the East Bay Hills but 75% of the infected ticks in 2025 were collected on maritime side of the East Bay Hills.

<i>I. pacificus</i> life stage	Number of ticks	Number of pools	Number of <i>A.phagocytophilum</i> positive pools	<i>A.phag.</i> MIP, %
adults	1,123	226	11	1.0
nymphs	252	132	1	0.4
Totals	1,375	358	12	

Table 11. *A. phagocytophilum* Infections in *Ixodes pacificus* Ticks 2025

The spatial analysis of infected ticks across the County (Figure 5) illustrates the distribution of *Borrelia* and *Anaplasma* whose maintenance depends on tick vectors, vertebrate hosts, habitat, and climate.

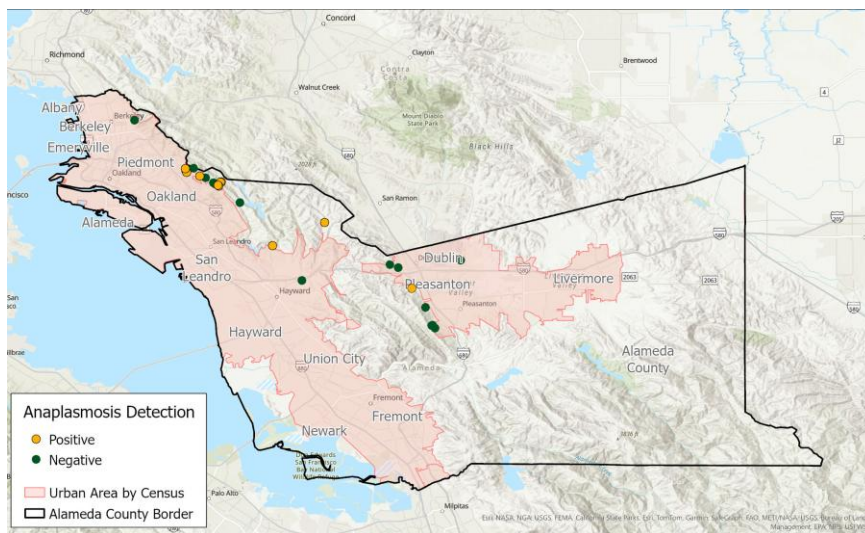


Figure 5. Distribution of *Anaplasma phagocytophilum* Positive Ticks in Alameda County in 2025

***Dermacentor* Tick Surveillance**

Tick species in the genus *Dermacentor* are very important from medical and veterinary standpoints. In 2019, the District started surveillance for tick-borne diseases associated with *Dermacentor occidentalis* and *Dermacentor similis* (former *Dermacentor variabilis*) ticks. According to California Department of Public Health records, the Pacific Coast tick (*D. occidentalis*) is second only to *I. pacificus* in total numbers of tick attachments to humans and is the primary vector of *Rickettsia philipii*, the causative agent of Pacific Coast tick fever. The American dog tick (*D. similis*) is a vector of various viral and bacterial pathogens including *Rickettsia rickettsii*, the causative agent of Rocky Mountain Spotted Fever.

In 2025, 7,833 *D. occidentalis* and 112 *D. similis* ticks were collected in regional parks, city parks and open spaces (Table 9). Most of the ticks were adult ticks (7,829 *D. occidentalis* adults and 108 *D. similis* adults).

Pacific Coast ticks (*D. occidentalis*) may be found year-round in Alameda County, but they are most abundant in the late spring and early summer (Figure 6).

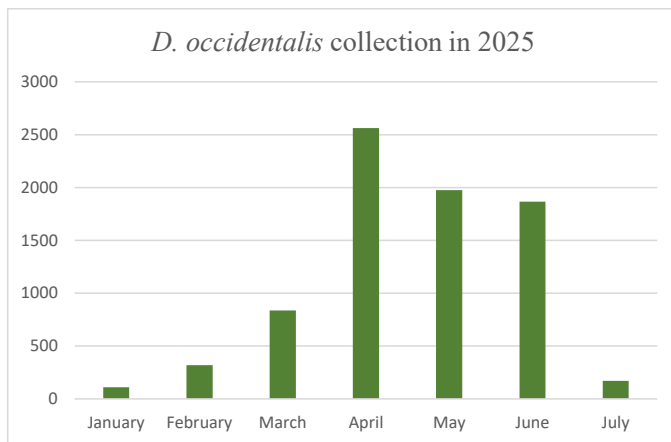


Figure 6. Monthly Numbers of *D. occidentalis* ticks Collected in 2025

In 2025, 1,281 *D. occidentalis* and 86 *D. similis* were tested in pools for the presence of rickettsia pathogens using PCR. (Table 12). A total of 106 *Dermacentor* pools were infected with rickettsia. An additional molecular assay identified the rickettsia species as *Rickettsia philipii*, *Rickettsia bellii*, and *Rickettsia rhipicephali*. *R. rickettsia*, the causative agent of Rocky Mountain Spotted Fever, was not found in *D. similis* ticks. *R. philipii*, the causative agent of Pacific Coast Tick Fever, was detected in six *D. occidentalis* pools collected in Anthony Chabot Regional Park, Joaquin Miller Park, Redwood Regional Park, Augustin Bernal Park, and Pleasanton Ridge Regional Park. *R. rhipicephali* and *R. bellii* were present in *D. occidentalis* and/or *D. variabilis* ticks from the areas where large populations of *Dermacentor* ticks were found. To date, neither *R. bellii* nor *R. rhipicephali* have been associated definitively with disease in humans or animals.

Dermacentor spp.	Number of ticks	Number of pools	Number of <i>Rickettsia</i> spp. positive pools	Number of <i>R. philipii</i> positive pools	Number of <i>R. rickettsii</i> positive pools
<i>D. occidentalis</i>	1,281	258	96	6	
<i>D. similis</i>	86	42	8		0

Table 12. Rickettsia Infections in Dermacentor ticks

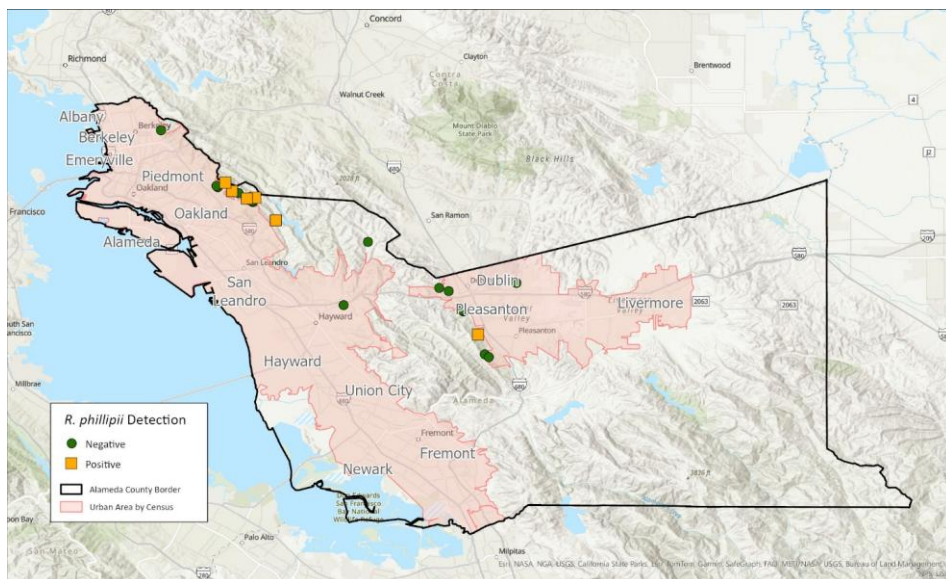


Figure 7. Distribution of *R. philipii* Positive Ticks in Alameda County in 2025

RABIES SURVEILLANCE

The authority for the rabies program is the responsibility of the County Health Officer at the Alameda County Public Health Department, which provides laboratory support for the program, and performs human case investigations. The District manages the statistical data and works cooperatively with the 13 local animal control agencies to administer the rabies surveillance program in Alameda County. Moreover, the District responds to service requests and conducts surveillance on skunks, bats, and other wildlife that are susceptible to rabies. Suspected animals involved in biting or exposure incidents may be euthanized and submitted to the Alameda County Public Health Laboratory (ACPHL) for rabies testing.

If requested, the District, along with Animal Control Agencies, 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. In 2025, the District submitted 176 animal samples, including bats, cats, dogs, opossums, raccoons, and skunks, to ACPHL for rabies testing. Eight (8) bats, two from Berkeley and six others across the county from Fremont, Oakland, and Alameda tested positive for the rabies virus. Seven submitted specimens were not testable.

Type of Animal	Number Negative	Number Positive	Total Tested
Bat	58	8	66
Cat	52	0	52
Dog	37	0	37
Fox	0	0	0
Opossum	9	0	9
Raccoon	12	0	12
Rat	0	0	0
Skunk	8	0	8
Total	176	8	176

COMMUNITY OUTREACH 2025

Vector Control staff attended the 94th Mosquito and Vector Control Association of California annual conference, where the following talk was presented by our group:

A Bite-sized Introduction to Rabies in Alameda County, which gave an overview of how the rabies program is run in Alameda County.

Vector Control Biologists participated in the following community outreach and education events:

- The 7th Annual Tri-Valley Innovation Fair
- Bug Day at San Francisco Randell Museum
- San Leandro Cherry Festival
- 31YZ Health and Resources Fair
- Alameda County Healthy Homes Webinar
- Oakland Chinatown Lunar New Year
- Oakland Chinatown Lions Club Health Fair
- Alameda County Fair
- Annual Backpack Distribution & Community Resource Fair
- Lodestar Backpacks Distribution
- Walnut Grove Elementary School
- Newark Day Information Fair
- Annual Harvest Festival and Resource Fair
- Trunk or Treat
- Hayward Ag Days
- Fremont Safety Fair
- Community Hero's Day

Our District continues to expand our outreach program to the public and our ethnically diverse communities by delivering our services directly to all Alameda County residents. Our department works with County Public Information Officers to issue press releases and respond to media requests for information and interviews.

Our website provides valuable information to visitors and is a conduit for the public to request our services. The District completed the development of a new and improved website in December 2016 and continued to enhance and update it during 2025. The public can access information on current vector-related issues, and the user-friendly online form simplifies making service requests. There are current plans to modernize the website. This will include making changes to the visual

design and overall aesthetic, improving the user experience and navigation, creating a new site map, ensuring cross-platform compatibility, streamlining site content and structure to enhance clarification and precision of information, and making the site ADA compatible. District staff are participating in this overhaul.

The District provides an on-going educational program aimed at “rental property management professionals” regarding bed bugs, cockroaches and other vector issues. Our goal is to be an educational resource to help rental property owners, property managers, tenants, and Alameda County residents to effectively respond to vector issues, such as bed bugs, cockroaches and rodent infestations in housing.

Mussel Quarantine (due to dangerous levels of paralytic shellfish poisoning (PSP) toxins) signs and “Bay Caught Fish” advisory signs were made for permanent posting. The mussel quarantine occurs during the same timeframe (May 1st through October 31st) and this should result in long-term cost and labor savings.

INTEGRATED PEST MANAGEMENT STRATEGY

The District participates in a countywide *Integrated Pest Management* policy set in place by the Alameda County Board of Supervisors. Most pesticide applications are used to suppress Norway rats in sanitary sewers or to destroy ground nesting 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.

2025 Pesticide Use

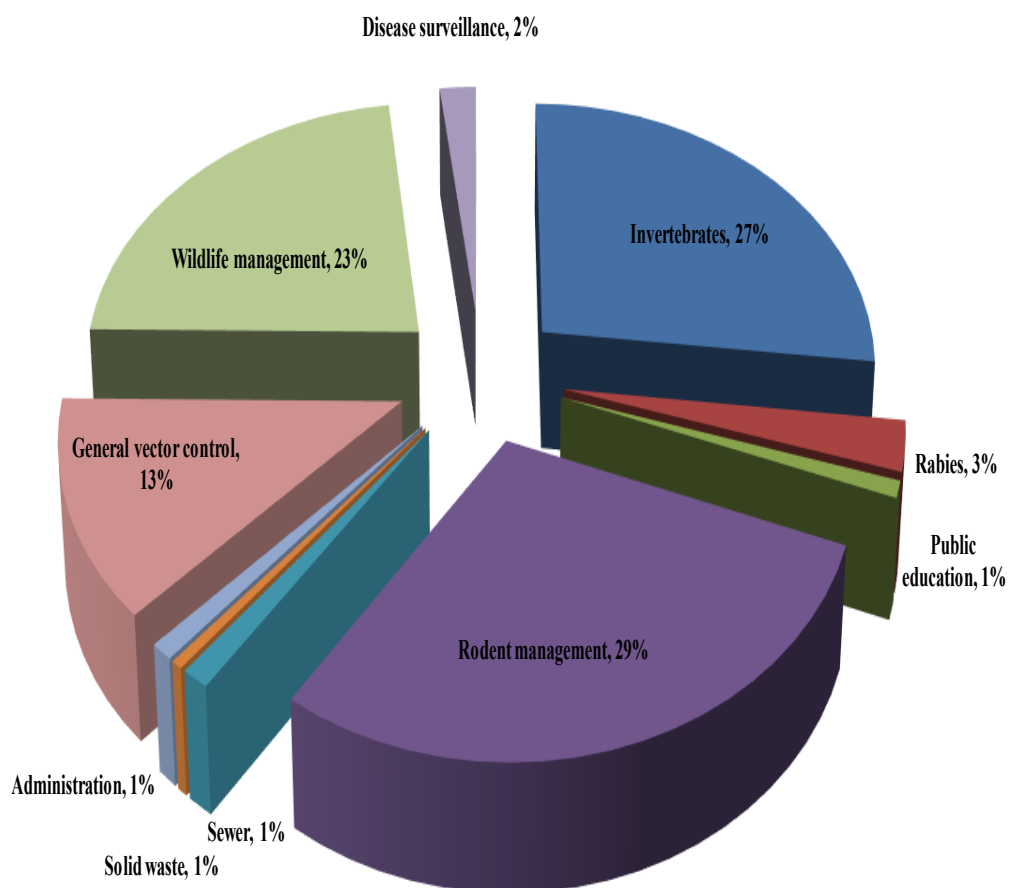
Pesticide	Manufacturer	Formulation	Target Pest	Amount Used	Applications
Contrac California Bromethalin Blox	Bell Labs	1 oz. Block	Domestic Rodents	848 oz.	11
Contrac Bulk Pellets	Bell Labs	Pellets	Domestic Rodents	892 oz.	5
Contrac Super Size Blox	Bell Labs	8 oz. Block	Domestic Rodents	17120 oz.	180
Delta Dust	Bayer	Insecticidal Dust	Fleas, Yellowjacket/Wasps	19.34 oz.	48

Drione Dust	Bayer	Insecticidal Dust	Yellowjacket/Wasps	74.205 oz.	364
EcoExempt D	EcoSMART Technologies Inc.	Aerosol Spray	Yellowjacket/Wasps	0.25 oz.	1
EcoVia WH	Wellmark International Inc.	Aerosol Spray	Yellowjacket/Wasps	2 oz.	1
Essentria Wasp & Hornet Spray	Zoecon	Aerosol Spray	Yellowjacket/Wasps	388.175 oz.	37
Maxforce Roach Gel Bait - FC Select	Bayer	Gel	Cockroaches	21.374 oz.	31
Maxforce Roach Gel Bait - Impact	Bayer	Gel	Cockroaches	56.939 oz.	86
Prescription Treatment P.I.	Whitmire	Aerosol Spray	Fleas, Yellowjacket/Wasps	0.5 oz.	1
ProVerde Wasp & Hornet Killer (PV1)	Envance	Aerosol Spray	Yellowjacket/Wasps	35.15 oz.	7
Wasp-X Wasp & Hornet Spray	Zoecon	Aerosol Spray	Yellowjacket/Wasps	2 oz.	1

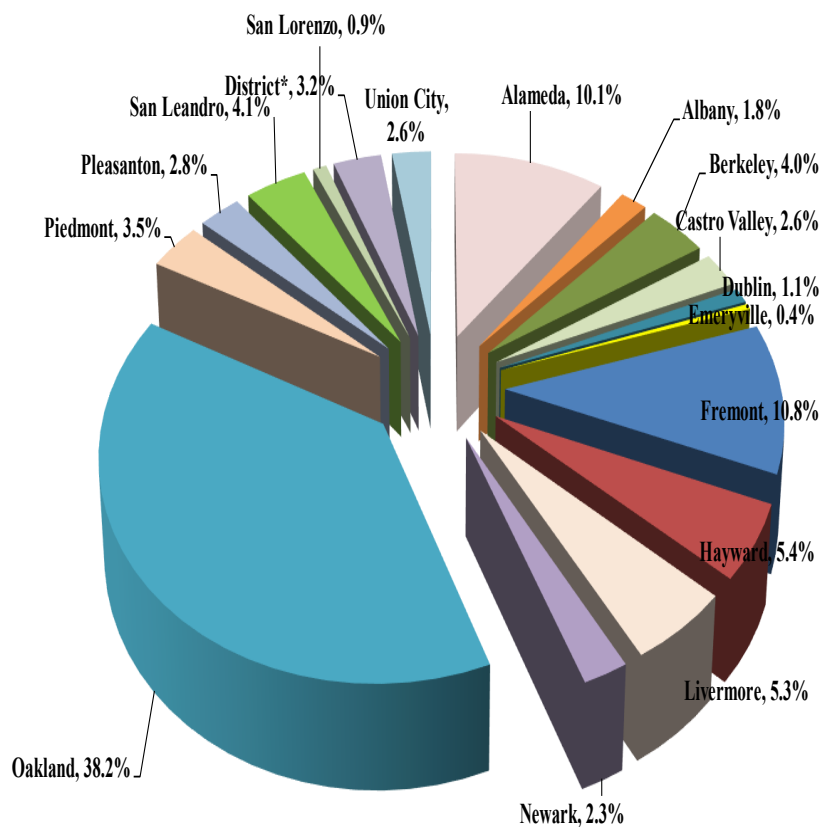
CITY OF BERKELEY VECTOR CONTROL PROGRAM

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 has enforceable regulations for controlling rodents and other vectors, the CSA authorizes a contract each fiscal year to fund the City's vector program through the benefit assessment. In the years since 1984, the Berkeley vector program has been limited in their ability to perform all the duties expected of the CSA, and District staff continue to provide supportive field services within Berkeley to enhance their program.

Alameda County Vector Control Services District Services by Program, 2025

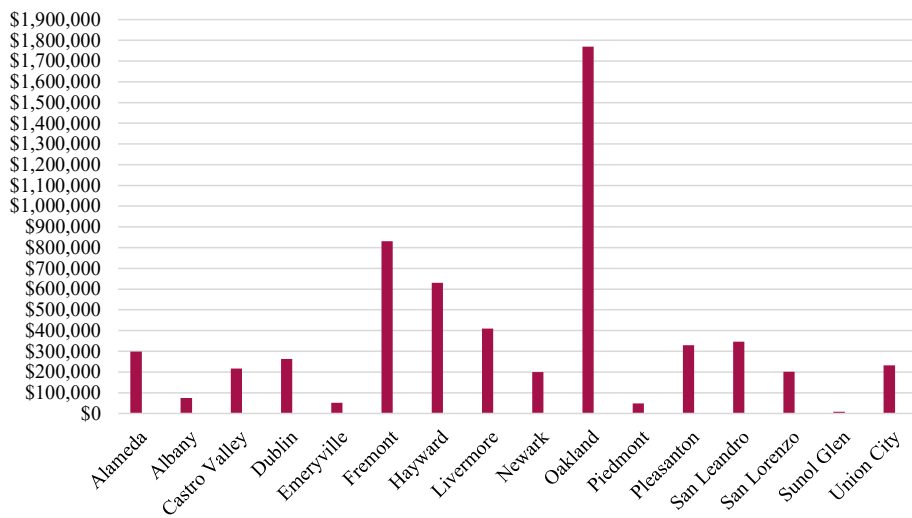


Alameda County Vector Control Services District Total Services Provided to Cities, 2025

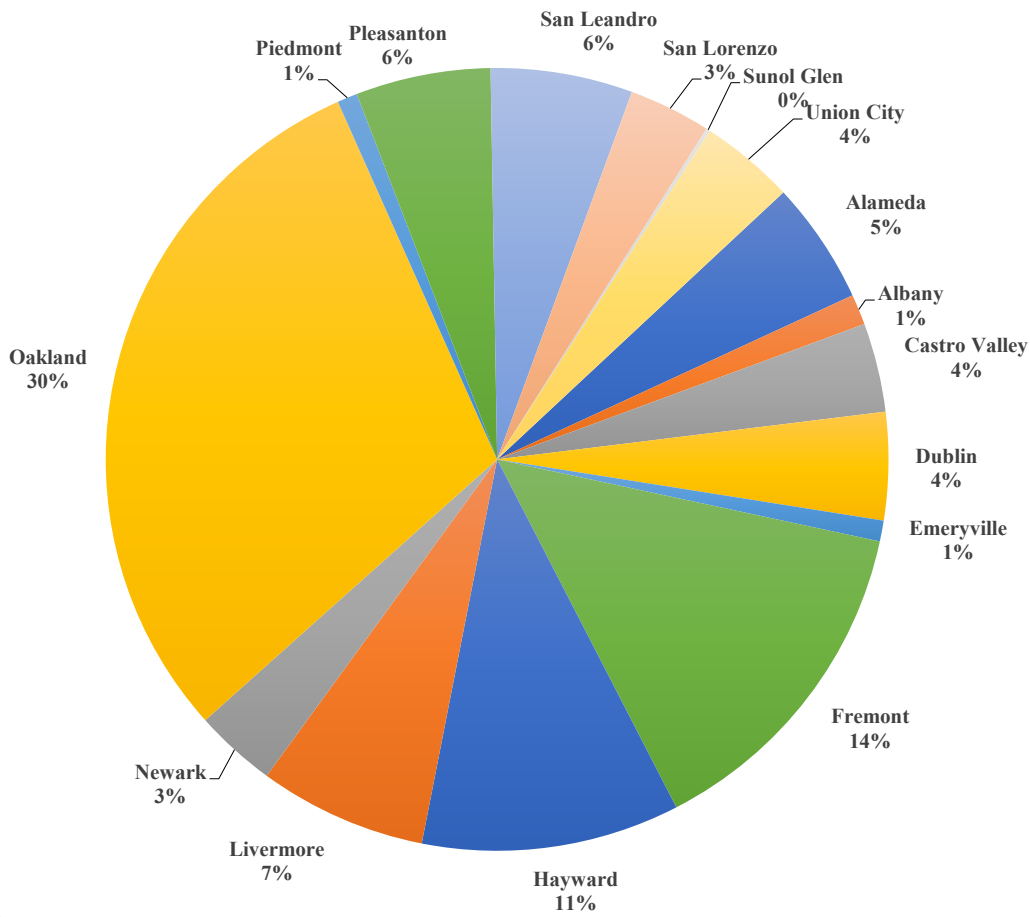


*District initiated includes disease surveillances and services to Sunol and Ashland

Funding Measure Revenue Totals by City Fiscal Year 2025



Funding Measure Revenue Percentages by City



BENEFIT ASSESSMENT (BA)

The Board of Supervisors annually reviews the planned operations and budgets, and the corresponding proposed rate of assessment and then conducts a public hearing to establish the assessment for the upcoming fiscal year. Funding for vector services comes from two funding sources described below.

Established in 1984, the CSA Vector Control Benefit Assessment (Initial Benefit Assessment) created a rate formula and methodology primarily based on land/property use as classified by the Assessor's Office.

Established in 2007, the Vector and Disease Control Assessment (Secondary Benefit Assessment) created a rate formula and methodology determined by several factors including the ratio of population density factors in relation to the usage density for different types of property. The table below depicts some of the differences between the two rate calculation methods.

Both funding sources are levied and collected at the same time and in the same manner as the general county property taxes. These levies are subject to the same fines, penalties, and forfeiture as property taxes.

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	1BU	1BU/0.61BU
Vacant Land Parcel	1BU	0.25 BU
Multiple Residential Small (2-4 units)	2 BUs	0.46 BUs
Commercial, Industrial	2 BUs	0.50 BUs
Large Rural Property	2 BUs	0.017 BUs (per 10 acres)
Multiple Residential (5units +)	5 BUs	0.32 BUs
Large Commercial (Hotels, Mobile Home Parks)	5 BUs	0.50 BUs (per ¼ acre increments)

**CSA VECTOR CONTROL SERVICES
BENEFIT ASSESSMENTS, FY 2025-2026**

Use/Size	CSA Vector Control Initial Benefit Assessment	Oakland (Residence only) + Supplement Assessment (\$1.28)	CSA Vector Control Secondary Benefit Assessment	CSA Vector Control Emeryville/Fremont
Single-Family Residence/ Condominiums	\$5.92	\$7.20	\$6.57/3.94	\$12.49/7.49
Vacant Land	5.92	7.20	1.64	3.12
Multiple Residential Small (2-4 units)	11.84	14.40	3.02 ¹	5.75 ¹
Commercial, Industrial	11.84	14.40	3.29 ⁴	6.25 ⁴
Large Rural Property (More than 10 Acres)	11.84	14.40	0.55 ³	1.05 ³
Multiple Residential (5 units +)	29.60	36.00	2.10 ³	4.00 ³
Large Commercial (Hotels, Mobile Home Parks)	29.60	36.00	3.29 ³	6.25 ³

Notes:

1. This rate is per unit. There would be a minimum of 2 units for this category.
2. This rate is per unit. There would be a minimum of 5 units for this category.
3. A property would be charged this minimum.
4. These estimates are based on per ¼ acre increments.

ASSESSMENT FOR ONE BENEFIT UNIT (BU)

(Single Family Residence - CSA Basic Rate and Oakland) 1984-2025

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	\$ 0.70	\$ 4.00
89-90	\$ 3.58	\$ 0.66	\$ 4.24
90-91	\$ 3.80	\$ 0.70	\$ 4.50
91-92	\$ 3.96	\$ 0.70	\$ 4.66
92-93	\$ 3.96	\$ 0.70	\$ 4.66
93-94	\$ 4.72	\$ 1.04	\$ 5.76
94-95	\$ 4.82	\$ 1.06	\$ 5.88
95-96	\$ 5.82	\$ 1.26	\$ 7.08
96-97	\$ 5.92	\$ 1.28	\$ 7.20
97-98	\$ 5.92	\$ 1.28	\$ 7.20
98-99	\$ 5.92	\$ 1.28	\$ 7.20
99-00	\$ 5.92	\$ 1.28	\$ 7.20
00-01	\$ 5.92	\$ 1.28	\$ 7.20
01-02	\$ 5.92	\$ 1.28	\$ 7.20
02-03	\$ 5.92	\$ 1.28	\$ 7.20
03-04	\$ 5.92	\$ 1.28	\$ 7.20
04-05	\$ 5.92	\$ 1.28	\$ 7.20
05-06	\$ 5.92	\$ 1.28	\$ 7.20
06-07	\$ 5.92	\$ 1.28	\$ 7.20
07-08**	\$ 10.00	\$ 1.28	\$ 11.28
08-09	\$ 10.00	\$ 1.28	\$ 11.28
09-10***	\$ 10.00	\$ 1.28	\$ 11.28
10-11	\$ 10.00	\$ 1.28	\$ 11.28
11-12	\$ 10.00	\$ 1.28	\$ 11.28
12-13	\$ 10.00	\$ 1.28	\$ 11.28
13-14	\$ 10.00	\$ 1.28	\$ 11.28

ASSESSMENT FOR ONE BENEFIT UNIT (BU)
(Single Family Residence - CSA Basic Rate and Oakland) 1984-2025

Fiscal Year	CSA Basic Rate	OAKLAND Supplemental Rate*	OAKLAND Total Rate
14-15	\$ 10.00	\$ 1.28	\$ 11.28
15-16	\$ 10.00	\$ 1.28	\$ 11.28
16-17	\$ 10.00	\$ 1.28	\$ 11.28
17-18	\$ 10.00	\$ 1.28	\$ 11.28
18-19	\$ 10.00	\$ 1.28	\$ 11.28
19-20	\$ 11.00	\$ 1.28	\$ 12.28
20-21	\$ 11.00	\$ 1.28	\$ 12.28
21-22	\$ 11.00	\$ 1.28	\$ 12.28
22-23	\$ 11.93	\$ 1.28	\$ 13.21
23-24	\$ 12.11	\$ 1.28	\$ 13.39
24-25	\$ 12.30	\$ 1.28	\$ 13.58
25-26	\$ 12.49	\$ 1.28	\$ 13.77

** Supplemental Oakland rate begins in FY 1988-89.*

*** FY 2007-08 reflects the increase in the CSA basic rate.*

**** FY 2009-10 annotation retained from prior report formatting.*