

RESOLUTION NO. VCD-2023-1

RESOLUTION OF THE BOARD OF TRUSTEES OF THE SANTA CLARA COUNTY VECTOR CONTROL DISTRICT APPROVING ENGINEER'S REPORT AND LEVYING ASSESSMENTS FOR FISCAL YEAR 2023-2024

**WHEREAS**, the Santa Clara County Vector Control District ("District") is a special district that was formed in 1988 to provide vector control services within Santa Clara County;

**WHEREAS**, the District provides several services benefiting properties within Santa Clara County, including source reduction, larvicide and adulticide applications, disease monitoring, public education, reporting, accountability, research, and interagency cooperative activities;

**WHEREAS**, the District's capital costs and maintenance and operation expenses are funded primarily through two benefit assessments that are levied on properties within the District's boundaries;

**WHEREAS**, on July 30, 1996, the Board of Trustees of the Santa Clara County Vector Control District ("Board") conducted a protest hearing, adopted an Engineer's Report, and approved a benefit assessment in the amount of \$5.08 per benefit unit ("1996 Assessment");

**WHEREAS**, the 1996 Assessment is fully described and supported by the 1996 Engineer's Report, which is on file with the County and available for public review;

**WHEREAS**, in 2005, pursuant to Proposition 218, Cal. Const. art. XIII D, and all other applicable state laws, including but not limited to Government Code section 53739(b)(1), the Board conducted a ballot proceeding for a second assessment to provide funding needed to cover the capital costs and maintenance and operation expenses associated with additional services provided by the District in the amount of \$8.36 per benefit unit;

**WHEREAS**, the Engineer's Report originally prepared and adopted for the 2005 Assessment is on file with the County and available for public review;

**WHEREAS**, on August 2, 2005, based on approval of the 2005 Assessment by 69% of the weighted ballots returned by property owners, the Board levied the 2005 Assessment;

**WHEREAS**, in the ballot proceeding for the 2005 Assessment, the voters also authorized an annual adjustment to the 2005 Assessment equal to the change in the Consumer Price Index-U for the San Francisco Bay Area (the "CPI"), with a maximum annual adjustment not to exceed 3%;

**WHEREAS**, the mosquito, vector, and disease control services provided by the District with the revenues from the 1996 and 2005 Assessments provide tangible health benefits, nuisance-reduction benefits, and other special benefits to the properties within the areas of such services and upon which the assessments are levied;

**WHEREAS**, the 1996 and 2005 Assessment are both reviewed, updated and presented to the Board each year for consideration before they are levied on properties within the District;

**WHEREAS**, the 2005 Assessment rate has only been increased three times since it was first levied, first by 3.0% in Fiscal Year 2020-2021, then by 1.72% in Fiscal Year 2021-2022; and then by 2.97% in Fiscal year 2022-2023.

**WHEREAS**, the most recent Engineer's Report for the 2005 Assessment, *Santa Clara County Vector Control District Mosquito, Vector, and Disease Control Assessment, Fiscal Year 2023-2024* (April 2023) ("2023-2024 Engineer's Report"), which is attached hereto as Exhibit A, estimates that the capital costs, maintenance, and operation expenses to the District of providing the projects and services to the parcels within its boundaries for Fiscal Year 2023-2024 will total \$10,379,830;

**WHEREAS**, the 2023-2024 Engineer's Report demonstrates that a 3.00% increase in the 2005 Assessment rate from \$9.01 to \$9.28 per benefit unit in fiscal year 2023-2024 is needed to cover the District's reasonable capital costs and maintenance and operation expenses of providing the property-related services to the parcels within its boundaries; and

**WHEREAS**, the 2023-2024 Engineer's Report further demonstrates that the 1996 and 2005 Assessments both provide critical and additive funding needed to support the District's mosquito, vector, and disease control programs and that both Assessments comply with all legal requirements, including the requirement that the assessments not exceed the reasonable cost of providing the proportional special benefits conferred on each of the parcels upon which the Assessments are levied.

**NOW, THEREFORE, BE IT RESOLVED** by the Board of Trustees of the Santa Clara County Vector Control District, State of California, that:

1. All of the foregoing recitals are true and correct;
2. The 2023-2024 Engineer's Report is hereby approved and adopted;
3. The information contained in the original Engineer's Report for the 1996 Assessment and the 2023-2024 Engineer's Report is sufficient to support the levy of the 1996 and 2005 Assessments in the amounts levied herein for fiscal year 2023-2024;
4. An increase of 3.00% in the 2005 Assessment rate for fiscal year 2023-2024 is warranted based on the District's projected costs and expenses as shown in the 2023-2024 Engineer's Report and the fact that the Consumer Price Index-U for the San Francisco Bay Area (the "CPI") for 2022 has increased by 5.60% over and above the base 2021 CPI; and
5. For fiscal year 2023-2024, the 1996 Assessment shall be levied at the rate of \$5.08 per benefit unit as originally approved in 1996, and the 2005 Assessment shall be levied at the rate of \$9.28 per benefit unit, as set forth in the following table.

Property Type	2005 2005 Assessment		1996	
	Assessment	Unit	Assessment	Assessment Unit
Single Family Residential	\$9.28	each	\$5.08	each
Condominium	\$5.57	each	\$5.08	each
Duplex	\$3.99	per unit	\$10.16	each
Triplex, Fourplex	\$3.99	per unit	\$15.24	each
Multi-Family Residential, 5+ Units	\$2.60	per unit	\$25.40	each
Mobile Home on Separate Lot	\$2.69	each	\$5.08	each
Commercial / General Manufacturing	\$4.64	per fifth acre	\$17.62	each
Office	\$13.18	per fifth acre	\$14.83	each
Regional Shopping Center	\$4.64	per fifth acre	\$27.02	each
Community Shopping Center	\$4.64	per fifth acre	\$22.52	each
Neighborhood Shopping Center	\$4.64	per fifth acre	\$18.01	each
Industrial	\$4.64	per fifth acre	\$14.83	each
Parking Lot	\$0.19	per fifth acre	\$25.40	each
Agriculture	\$0.02	per fifth acre	\$10.75	each
Rangelands/Timber	\$0.004	per fifth acre	\$10.75	each

**PASSED AND ADOPTED** by the Board of Trustees of the Santa Clara County Vector Control District, State of California, on JUN 06 2023 by the following vote:

**ARENAS, CHAVEZ, ELLENBERG**

AYES: **LEE, SIMITIAN**

NOES: **NONE**

ABSENT: **NONE**

ABSTAIN: **NONE**

*Susan Ellenberg*

SUSAN ELLENBERG, President  
Board of Trustees

Signed and certified that a copy of this document has been delivered by electronic or other means to the President, Board of Supervisors/Board of Trustees.

**ATTEST:**

*Tiffany Lennear*

TIFFANY LENNEAR, Clerk  
Board of Board of Trustees

**APPROVED AS TO FORM AND LEGALITY:**

*Willie Nguyen*

WILLIE NGUYEN  
Deputy County Counsel

Exhibits attached to this Resolution:

A- 2023-2024 Engineer's Report



# ENGINEER'S REPORT

## **Santa Clara County Vector Control District**

Mosquito, Vector, and Disease Control Assessment

Fiscal Year 2023 - 2024

April 2023

Pursuant to the California Government Code,  
Health and Safety Code and Article XIII D of the  
California Constitution

Engineer of Work:



**SCI Consulting Group**  
Public Finance Consulting Services

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Fairfield, California 94534  
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## Table of Contents

<b>Introduction.....</b>	<b>1</b>
Overview .....	1
Legislative Analysis .....	5
Assessment Process .....	6
<b>General Description of the Program and Services .....</b>	<b>9</b>
About the Vector Control District .....	9
Description of Vector Control Programs .....	10
Vectors and Vector-Borne Diseases in Santa Clara County.....	23
<b>Assessment.....</b>	<b>35</b>
<b>Estimate of Cost.....</b>	<b>38</b>
<b>Method of Assessment .....</b>	<b>40</b>
Discussion of Benefit .....	40
Mosquito and Vector Control Is a Special Benefit to Properties .....	43
Benefit Factors .....	43
Benefit Finding .....	51
General vs. Special Benefit .....	51
Calculating General Benefit.....	55
Proportionality - Zones of Benefit.....	60
Method of Assessment background on 1996 Assessment .....	61
2005 Assessment Method of Assessment.....	62
Assessment Apportionment.....	64
Parcel Analysis of 1996 Assessment and 2005 Assessment.....	69
Duration of Assessment .....	70
Appeals and Interpretation .....	71
<b>Assessment Diagram.....</b>	<b>72</b>
<b>Assessment Roll.....</b>	<b>76</b>

# Introduction

## Overview

The Santa Clara County Vector Control District (“District”) operates within the County of Santa Clara’s (“County”) Consumer and Environmental Protection Agency (“CEPA”). The District currently provides mosquito, rodent, and wildlife education services, along with disease surveillance throughout Santa Clara County. The District has been providing its public health protection services in the County for over 30 years. The District’s services, which are provided throughout its service area, encompass approximately 1,291 square miles. The District is managed by County staff and is governed by the County Board of Supervisors acting as the Board of Trustees for the District (“Board”).

The District is responsible for mosquito and vector-borne disease surveillance and control services throughout Santa Clara County, including the municipalities of Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, and all unincorporated areas in the County.

The District’s core services are summarized as follows:

1. Early detection of public health threats through comprehensive vector surveillance.
2. Reducing vectors or exposure to vectors that transmit diseases.
3. Appropriate, timely response to requests to prevent/control vector-borne diseases on property.

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## The 1996 Assessment

In 1996, the District conducted a protest hearing to establish a benefit assessment (the “1996 Assessment”) to fund its mosquito, vector and disease control services throughout the County which provide special benefit to affected properties. The 1996 Assessment was approved by the Board on July 30, 1996 and has been assessed each year since its formation. It generates approximately \$2.8 million dollars per year to fund these critical public health services. The 1996 Assessment is fully described and supported by a separate Engineer’s Report which is on file with the County and is available for public review.

It should be noted that the 1996 Assessment was formed prior to the passage of Proposition 218 in November of 1996. Proposition 218 placed significant new administrative and engineering requirements on the formation and annual administration of benefit assessments in California while acknowledging that certain “pre-Prop 218” (including this 1996 Assessment) were fully valid. Subsequent legal decisions have confirmed that pre-Prop 218 assessments (e.g. the 1996 Assessment) may be evaluated in context of the standards at the time versus post-Prop 218 assessments (e.g. the 2005 Assessment.).

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### **The 2005 Assessment**

In 2005, the County proposed a new “overlay” assessment (the “2005 Assessment”) on properties within Santa Clara County, (the “2005 Assessment Area”) in order to maintain current levels of service, enhance disease surveillance, improve vector control services, and better respond to the threat of West Nile virus and other public health issues. This Engineer’s Report defines this 2005 benefit assessment, which provides funding for mosquito, vector and disease control services throughout Santa Clara County, as well as related costs for equipment, capital improvements, services, and facilities necessary for mosquito and vector control programs. In the absence of a new revenue source in 2005, the baseline level of mosquito, vector and disease control services in the County would be a deteriorating level of mosquito, vector and disease control services (i.e. the 1996 Assessment does not include any cost-of-living mechanism, and hence provides diminishing funding each year). The services provided to the County by this 2005 Assessment consist of expanded services, as further described in this report, above the baseline level of services previously provided.

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### **Relationship between the 1996 Assessment and the 2005 Assessment**

Both the 1996 Assessment and the 2005 Assessment are reviewed, updated and presented to the County Board of Supervisors each year for consideration, and have been approved and assessed each year since their formations. Both provide critical and additive funding in support of the County’s mosquito and vector control programs. It should be noted that there are differences in the underlying analysis, method of apportionment, benefit analysis, etc., between the two assessments. They are consistent with one another in mission and purpose, and both are compliant with Proposition 218 requirements.



Most importantly, the sum of the 1996 and 2005 assessments on each property do not exceed the reasonable cost of the proportional special benefit conferred on that parcel. Please refer to the Section on “Parcel Analysis of 1996 Assessment and 2005 Assessment” on page 69 for more discussion. Again this Engineer’s Report describes and supports the 2005 Assessment only, while a separate Engineer’s Report is on file in support of the 1996 Assessment.

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### **Additional Information on the 2005 Assessment**

The 2005 Assessment Area has been drawn to include properties that may request and/or receive direct and more frequent service, are located within the scope of the vector surveillance area, are located within flying or traveling distance of potential vector sources monitored by the District, and that will receive a direct special benefit from a reduction in the amount of vectors reaching and impacting the property as a result of the enhanced vector surveillance and control. The Assessment Diagram included in this report shows the boundaries of the 2005 Assessment Area.

The following is an outline of the primary services and improvements that are funded by the mosquito, vector and disease control Assessment:

- Mosquito control in the 2005 Assessment Area
- Surveillance for vector-borne diseases in the 2005 Assessment Area
- Mosquito inspections in the 2005 Assessment Area
- Response to service requests in the 2005 Assessment Area
- Mosquitofish for backyard fishponds and other appropriate habitats
- Presentations to schools and civic groups
- Identification and testing of mosquitoes, ticks and other arthropods in the 2005 Assessment Area
- Wildlife surveillance and disease control where there are public health threats in the 2005 Assessment Area
- Rodent Control in the 2005 Assessment Area
- Mosquito Surveillance and Disease Testing in the 2005 Assessment Area
- Rodent Surveillance and Disease Testing in the 2005 Assessment Area
- Tick Surveillance and Disease Testing in the 2005 Assessment Area
- Upgrading of the Facilities and Equipment Utilized by the District

As used within this Report and the benefit assessment ballot proceeding, the following terms are defined:

*“Vector” means any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and small mammals and other vertebrates (Health and Safety Code Section 2002(k)).*

*“Vector Control” shall mean any system of public improvements or services that is intended to provide for the surveillance, prevention, abatement, and control of vectors as defined in subdivision (k) of Section 2002 of the Health and Safety Code and a pest as defined in Section 5006 of the Food and Agricultural Code (Government Code Section 53750(m)).*

The District is governed by the Mosquito Abatement and Vector Control District Law of the State of California, California Health and Safety Code §§ 2000 et seq. Following are excerpts from the District Law which summarize the State Legislature’s findings and intent with regard to mosquito abatement and other vector control services:

*2001. (a) The Legislature finds and declares all of the following:*

*(1) California's climate and topography support a wide diversity of biological organisms.*

*(2) Most of these organisms are beneficial, but some are vectors of human disease pathogens or directly cause other human diseases such as hypersensitivity, envenomization, and secondary infections.*

*(3) Some of these diseases, such as mosquitoborne viral encephalitis, can be fatal, especially in children and older individuals.*

*(4) California's connections to the wider national and international economies increase the transport of vectors and pathogens.*

*(5) Invasions of the United States by vectors such as the Asian tiger mosquito and by pathogens such as the West Nile virus underscore the vulnerability of humans to uncontrolled vectors and pathogens.*

*(b) The Legislature further finds and declares:*

*(1) Individual protection against the vectorborne diseases is only partially effective.*

*(2) Adequate protection of human health against vectorborne diseases is best achieved by organized public programs.*

*(3) The protection of Californians and their communities against the discomforts and economic effects of vectorborne diseases is an essential public service that is vital to public health, safety, and welfare.*

*(4) Since 1915, mosquito abatement and vector control districts have protected Californians and their communities against the threats of vectorborne diseases.*

*(c) In enacting this chapter, it is the intent of the Legislature to create and continue a broad statutory authority for a class of special districts with the power to conduct effective programs for the surveillance, prevention, abatement, and control of mosquitoes and other vectors.*

*(d) It is also the intent of the Legislature that mosquito abatement and vector control districts cooperate with other public agencies to protect the public*

*health, safety, and welfare. Further, the Legislature encourages local communities and local officials to adapt the powers and procedures provided by this chapter to meet the diversity of their own local circumstances and responsibilities.*

Health and Safety Code, Section 2082 specifically authorizes the creation of special benefit assessments for vector control, as follows:

*(a) A district may levy special benefit assessments consistent with the requirements of Article XIID of the California Constitution to finance vector control projects and programs.*

## Legislative Analysis

### Proposition 218

This Assessment was formed in accordance with Proposition 218, The Right to Vote on Taxes Act, which was approved by the voters of California on November 6, 1996 and is now Article XIIC and XIID of the California Constitution. Proposition 218 provides for benefit assessments to be levied to fund the cost of providing services, improvements, as well as maintenance and operation expenses to a public improvement which benefits the assessed property.

Proposition 218 describes a number of important requirements, including a property-owner balloting, for the formation and continuation of assessments, and these requirements are satisfied by the process used to establish this Assessment. When Proposition 218 was initially approved in 1996, it allowed for certain types of assessments to be “grandfathered” in, and these were exempted from the property-owner balloting requirement.

*Beginning July 1, 1997, all existing, new, or increased assessments shall comply with this article. Notwithstanding the foregoing, the following assessments existing on the effective date of this article shall be exempt from the procedures and approval process set forth in Section 4:*

*(a) Any assessment imposed exclusively to finance the capital costs or maintenance and operation expenses for sidewalks, streets, sewers, water, flood control, drainage systems or vector control.*

Vector control was specifically “grandfathered in,” demonstrating the intent of the Proposition 218 drafters to carve out traditionally appropriate, non-controversial special assessments.

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### **Silicon Valley Taxpayers Association, Inc. v. Santa Clara County Open Space Authority**

In July of 2008, the California Supreme Court issued its ruling on the Silicon Valley Taxpayers Association, Inc. v. Santa Clara County Open Space Authority (“SVTA vs. SCCOSA”), 44 Cal.4<sup>th</sup> 431 (2008). The holding is significant because it further explains and clarifies the application of Proposition 218. Several of the most important elements of the ruling included further emphasis that:

- Benefit assessments are for special benefit to property, not general benefits.<sup>1</sup>
- The services and /or improvements funded by assessments must be clearly defined.
- Special benefits are directly received by and provide a direct advantage to property in the 2005 Assessment Area.

This Engineer’s Report, and the process used to establish this assessment are consistent with the SVTA vs. SCCOSA decision because there is a direct special benefit received by benefiting property and the assessment is proportional to the special benefit provided to each property.

### **Assessment Process**

In 1996 the District conducted a protest hearing in order to establish the 1996 Assessment. The District held a public hearing and did not receive a majority protest against the assessment. The Board adopted the 1996 Assessment on July 30, 1996.

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<sup>1</sup> Article XIII D, § 2, subdivision (d) of the California Constitution states defines “district” as “an area determined by an agency to contain all parcels which will receive a special benefit from the proposed public improvement or property-related service.”



In order to provide additional funding, the Santa Clara County Board of Supervisors, acting as the Board of Trustees for the District (the "Board"), called for an assessment ballot proceeding and Public Hearing on the proposed establishment of the Mosquito, Vector and Disease Control Assessment ("2005 Assessment") in March 2005. In May and June 2005 the Board conducted an assessment ballot proceeding. A notice of assessment and assessment ballot was mailed to property owners at least 45 days prior to the date of the Public Hearing set by the Board. The notice included a description of the proposed assessments as well as an explanation of the method of voting on the assessments. Each notice included a ballot on which the property owner could mark his or her approval or disapproval of the proposed assessments and a postage-prepaid ballot return envelope.

After the ballots were mailed to property owners, a minimum 45-day time period was provided for the return of the assessment ballots. Following this 45-day time period, a public hearing was held for the purpose of allowing public testimony regarding the proposed assessments and services. At this hearing, the public had the opportunity to provide input on this issue and had a final opportunity to submit ballots. After the conclusion of the public input portion of the hearing, the hearing was continued to August 2, 2005 to allow time for the tabulation of ballots. Ballot tabulation began after the close of the public hearing.

It was determined that the assessment ballots submitted in opposition to the proposed assessments did not exceed the assessment ballots submitted in favor of the assessments (weighted by the proportional financial obligation of the property for which ballots are submitted). As a result, the Board gained the authority to approve the levy of the assessments for the fiscal year 2005-06 and to continue to levy them in future years.

The assessments may be continued and increased in future years by an annual adjustment tied to the Consumer Price Index, with a maximum annual adjustment not to exceed 3%. The procedures for levy of the assessments in future years commence with the creation of a budget for the upcoming fiscal year's costs and services, an updated assessment roll listing all parcels and their proposed assessments for the upcoming fiscal year and the preparation of an updated Engineer's Report. After these documents are prepared and submitted, they are reviewed and approved by the Board at a noticed public meeting. At the annual public hearing, members of the public can provide input to the Board prior to the Board's decision on continuing the services funded by the assessments for the next fiscal year.

Since 2005 the assessments have been maintained at the same rate of \$8.36 per benefit unit, with the exception of a 3% increase to \$8.61 per benefit unit in FY 2020-21, a 1.72% increase to \$8.75 per benefit unit in FY 2021-22 and a 2.97% increase to \$9.01 per benefit unit in FY 2022-23. Although the assessment has only been increased three times since 2005, the assessments have received some minimal growth in revenue due to additional construction of houses and commercial properties, which increases the revenues because developed property gets assessed at a higher rate. However, the cost of services and supplies has increased substantially more than the assessment revenue during this period of time, causing a structural deficit within the District's operations fund.

At the start of fiscal year 2023-24, the District is projected to have a fund balance of approximately 14.4 months of operating expenses, but the current structural deficit will reduce that by approximately 1.5 months per year based on current labor costs. Other unanticipated events could also affect the estimated draw down, such as a public health crisis, disaster or emergency, and the introduction of previously unknown vector borne diseases. In order to bridge the gap in the structural deficit the District is proposing an increase in the 2005 Assessment at \$9.28 per benefit unit, for Fiscal Year 2023-24.

Beginning in fiscal year 2005-06 the District began to enhance its program and services. The fiscal year 2023-24 assessment budget includes outlays for enhanced West Nile virus surveillance and mosquito control, capital equipment, supplies, disease testing programs, and other vector control programs. This Engineer's Report ("Report") was prepared to establish the estimated costs for the mosquito, vector, disease surveillance and control services and related costs that would be funded by the proposed 2023-24 assessments, to determine the special benefits and general benefits received from the services and to apportion the proposed assessments to lots and parcels within the District based on the estimated special benefit each parcel receives from the services funded by the benefit assessment. If the assessments are so confirmed and approved, the levies would be submitted to the County Auditor/Controller by August 2023 for inclusion on the property tax roll for Fiscal Year 2023-24.

## General Description of the Program and Services

### About the Vector Control District

The County of Santa Clara Vector Control District (District) operates within the County's Consumer and Environmental Protection Agency (CEPA). The District protects property in Santa Clara County by controlling and monitoring disease-carrying vectors such as mosquitoes, ticks, flies, rodents, and wildlife. The District also protects the usefulness, desirability, and livability of property and the inhabitants of property within its jurisdiction through the abatement of vertebrate and invertebrate vectors. In addition, the District regularly tests for vector-borne diseases and educates property owners and the occupants of property in the County about protecting themselves from diseases transmitted by vectors. The District conducts public education and outreach activities to increase prevention and protection against vectors and vector-borne disease.

The District staff currently consists of approximately 42 employees. About 25% of the staff perform personnel and program management and non-technical support duties. The remaining 75% of District staff are assigned to work in the field, laboratory, and outreach. In addition to their scheduled duties, District employees respond to approximately 1,200 service requests from the public each year for mosquito-related issues, approximately 500 requests for other arthropod service requests such as ticks, bed bugs, cockroaches, and yellowjackets, 1,300 requests for rodent inspections, and approximately 800 requests for wildlife and vertebrate-related requests. Considerable technical information support, media relations, and administrative support is also provided by CEPA staff.

The agency is governed by the Board of Supervisors for Santa Clara County acting as the District's Board of Trustees. The Board meetings are held at least quarterly at 9:30 a.m. Tuesdays, and these meetings are open to the public and also available to view on-line.

## Description of Vector Control Programs

The assessment provides funding for the continuation and enhancement of projects, services and programs for surveillance, disease prevention, abatement, and control of vectors within the County. Such mosquito abatement, vector control, and disease prevention projects and programs include, but are not limited to, environmental management, source reduction, larvicide application, disease monitoring, public education, reporting, , research, and cooperative interagency activities (collectively “Services”). The cost of these Services includes capital costs (equipment, capital improvements and facilities), regulatory compliance costs, maintenance, and operational expenses necessary and incidental to the vector control program.

Best Management Practices (BMPs) describe the utilization of best methods and practices for managing vectors, pests, and wildlife to mitigate and reduce their impacts on public health and property. The goal of BMPs for mosquito management is to reduce mosquito production from permanent and temporary water sources and consequently, to reduce the risk for transmission of mosquito borne diseases to humans. The use of BMPs for management of rodents, wildlife, and other vectors are designed to minimize their impacts in the County and include, but are not limited to, Disease surveillance, vector identification, residential exclusion tactics, and recommendations on modifications to habitats. The use of BMPs is employed by all District staff and are updated continually as new practices and tools become available.

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### Introduction

Following are the Services and resulting level of service for the 2005 Assessment Area. The baseline level of service included a basic level of mosquito, vector, and disease surveillance and control services in the County. The Services funded by the 2005 Assessments provided improved and enhanced basic level of services.

<b>Final Level of Service</b>	<b>=</b>	<b>Baseline Level of Service</b>	<b>+</b>	<b>Enhanced Level of Service</b>
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The services in the 2005 Assessment Area are further defined as follows:

- Mosquito control
- Surveillance for vector-borne diseases
- Mosquito monitoring and inspections
- Public requests for service



- Predatory mosquito fish that feed on mosquito larvae for backyard fishponds, and other appropriate sites
- Presentations to schools, neighborhood, civic, and business groups and associations
- Social media, education materials, maintain and update websites with District activities
- Identification of mosquitoes, ticks, and other arthropods
- Education, surveillance, and best management practices of wildlife, where there are public health conflicts
- Rat abatement education and inspection
- Mosquito surveillance and disease testing
- Rodent surveillance, disease testing, and best management practices
- Tick surveillance and disease testing
- Upgrading of the facilities and equipment utilized by the District
- Yellowjacket best management practices in public areas

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### **Best Management Practices**

The District's BMP program, by definition, involves procedures for managing vectors and vector-borne diseases while minimizing potential environmental impacts. While the District's services address a variety of vectors, they all share general principles and policies. The District employs BMP principles by first determining the species and abundance of vectors through field sampling or surveys of vector populations, and measuring epidemiological values of vector-borne diseases. If the values exceed predetermined criteria, the District manages the populations using the most efficient, cost-effective, and environmentally-sensitive means. Public education is an important control strategy for all vectors, e.g., rodents, wildlife, and ticks; it is the District's primary vector management method. In some situations, water management or other physical control activities (source reduction or elimination of standing water) may be implemented to reduce vector-breeding sites. The District also uses biological control such as the planting of mosquito fish in ornamental ponds, unused swimming pools, and other bodies of water. When these approaches are not effective or are otherwise inappropriate, biorational pesticides that have been found to be environmentally safe are used to treat specific vector-producing or vector-harboring areas.

To accomplish effective and environmentally sound vector management, the manipulation and control of vectors must be based on careful surveillance of their abundance, habitat, pathogen load, and potential contact with people. This is done by establishing treatment criteria (thresholds) and appropriate selection from a wide range of control methods. This dynamic combination of surveillance, treatment criteria, and use of multiple control methods in a coordinated program is generally known as Integrated Pest Management (IPM). Best Management Practices utilizes the fundamentals of IPM to address vector-related issues in an area.

In support of its BMP program, the District has expanded current Geographic Information System (GIS) and Global Positioning Systems (GPS) capability by putting live digital mapping and data access into the hands of field staff. The District continuously analyses the collected data to plan and prioritize the services, plan for possible future vector-related issues, and to use for collaborative efforts.

The District is organized into four principal sections to accomplish BMP:

- Headquarters
- Field Operation Programs
- Research Laboratory and Vector-borne Disease Program
- Public Relations, Outreach, And Education Program.

The District's application of BMP to some of the main vectors such as West Nile virus carrying mosquitoes are outlined in the Response Plan.

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### **The Headquarters**

Management and field staff offices and meeting rooms are mainly located at the 1580 Berger Drive location, although some staff report to the District Yard at 1551 Berger Drive. The Headquarters provides a place for staff to conduct business and includes a reception desk, meeting rooms, offices, and cubicles. The geographic location of the Headquarters is conveniently near the intersection of two major freeways (I101 and I880), facilitating field staff access to the county. The District Laboratory and warehouse spaces are also found within the Headquarters building.

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### Field Operation Program

District staff utilizes Best Management Practices (BMP) to respond to vector issues in the county, including but not limited to, environmental management, biological control, chemical control, and public education on prevention and exclusion methods. As the climate changes, and as the urbanization expands, vectors find new habitats in close contact with county residents, and the District needs to quickly respond to the situations by implementing or expanding control measures. Some of the common control methods are quick remedies for immediate reduction of vectors. Additionally, the District invests on long-term sustainable solutions by communicating with wetland or property developers on mitigating potential vector issues. These sustainable measures range from supporting small businesses on prevention and exclusion methods to providing technical advice to larger agencies during CEQA review for habitat restorations, land management, and planned development.

The District Vector Programs include mosquitoes, ticks, fleas, rodents and wildlife. The Operations Section is comprised of field staff who perform BMP in the field. They have considerable training in performing duties but also benefit from continuing education and direct communication from the District's professional staff. Although most staff are assigned to a work zone in the county, they often collaborate with each other to perform more complex or large-scale BMP activities in a variety of areas. They perform inspections of properties for: mosquito developmental sites, rodent problems, wildlife issues, and other vector problems, such as cockroaches, bed bugs, yellowjackets, flies, and biting arthropods. In addition staff are certified by the California Department of Public Health. The District routinely surveys adult mosquitoes throughout the populated parts of the county, but also responds to public complaints. Larval mosquito populations are routinely checked via extensive examination of natural and man-made aquatic sites. The field staff perform BMP to control emerging populations of vectors, including prevention of new sources of vectors from developing; education of land-owners and others on measures to minimize vector production, and monitoring vectors in their areas to ensure that their control efforts have been successful. When needed, a technique known as ultra-low-volume (ULV) application generates aerosolized insecticide droplets to treat adult mosquitoes. ULV sprays are used in targeted areas where adult mosquitoes were confirmed positive for a human disease agent. Recommendations on habitat management and collaboration with other agencies (e.g., Santa Clara Valley Water District, Parks Departments, etc.), produce strategies that minimize vectors and vector-borne diseases. It may take years until the recommendations are implemented but they often result in a reduction or in the application of pesticides.

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### Research Laboratory and Vector-Borne Disease Program

The Research Laboratory and Vector-borne Disease Program provides surveillance and testing for mosquito-borne, tick-borne, rodent-borne, and other vector-borne diseases. This program also provides arthropod identification, authoritative guidance for wetland creation projects, implementing and assessing new vector control products and techniques, surveys for pesticide resistance, and interacts with local government agencies to formulate strategies for immediate or long-term reduction of vector issues.

#### Mosquito-borne diseases

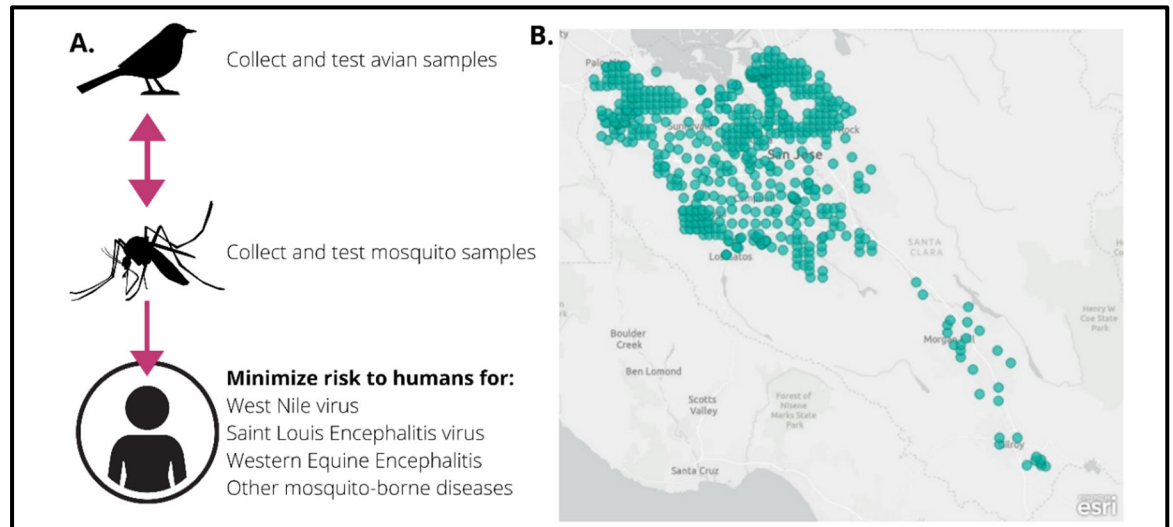
There are approximately 3,500 known species of mosquitoes throughout the world, with a variety of species functioning as disease vectors. Mosquito-borne disease surveillance by the Research Laboratory and Vector-borne Disease Program is targeted for mosquitoes that are known transmission vectors for human diseases such as West Nile virus (WNV), St Louis encephalitis (SLE), Western equine encephalitis (WEE), and Zika virus. Table 1 describes some the main mosquito vectors by genus, associated pathogens they transmit, and potential disease outcomes in humans.

**Table 1. Mosquito-borne diseases for California.** This list is not meant to be comprehensive.

Genus	Potential Pathogens transmitted	Disease outcome
<i>Culex</i>	West Nile virus	Febrile disease in humans, sometimes fatal
	St. Louis encephalitis	Febrile disease in humans, rarely fatal
	Western equine encephalomyelitis virus	Febrile disease in humans, moderately fatal
<i>Aedes</i>	Dog heartworm ( <i>Dirofilaria immitis</i> )	Fatal for dogs; not known to infect humans
	Zika virus	Febrile disease in humans, rarely fatal. Averse outcomes for infants
	Chikungunya virus	Severe febrile disease in humans
	Yellow fever virus	Febrile disease in humans, sometimes fatal
	Dengue virus	Febrile disease in humans, sometimes fatal
	California encephalitis virus	Febrile disease in humans, sometimes fatal. Adverse outcomes for children
<i>Anopheles</i>	Malaria ( <i>Plasmodium spp</i> )	Febrile disease in humans, sometimes fatal



Mosquito-borne diseases such as WNV and SLE, are frequently transmitted between birds and mosquitoes. Humans can become infected with mosquito-borne diseases when bitten by an infected mosquito, but humans cannot transmit the disease. Surveillance for mosquito-borne diseases in the county can come from different sources like dead birds, mosquitoes, or human case identification.



**Surveillance of mosquito-borne diseases.** A) Surveillance and testing schematic for avian and mosquito samples for mosquito-borne diseases. B) Map depicting scope of mosquito trapping activities in 2021.

Dead bird samples are collected throughout the county and tested for mosquito-borne diseases by the Research Laboratory and Vector-borne Disease Program. The District participates in the state-wide dead bird surveillance program for WNV, responding to reports of dead birds from the public. Mosquito traps are routinely set throughout the county to collect mosquito samples. Mosquito samples, like bird samples, are also tested for mosquito-borne diseases by the Research Laboratory and Vector-borne Disease Program. Virus in dead birds or mosquito samples can be detected using advanced molecular testing assays in the District’s laboratory. Pathogens transmitted by mosquitoes, birds, or mammals can also be tested by the California Department of Public Health. The District collaborates with the Santa Clara Public Health Department to survey sites near reported “travel cases” returning with infections of imported malaria, zika, dengue and chikungunya and mosquito traps are set to monitor for potentially infected Anopheles and invasive Aedes adult mosquitoes in the area within one mile radius of the address of the cases. Larval sources are also inspected within a one-mile radius of the address of the cases.

If mosquitoes are found to be positive for mosquito-borne disease, then treatments to reduce the number of mosquitoes in that area are performed. Adult mosquito populations are reduced by the application of or synthetic or naturally derived pyrethroids, a chemical found from chrysanthemum flowers. Pyrethroids effectively kill mosquitoes and biodegrade rapidly in the presence of sun or microorganisms. The Research Laboratory and Vector-borne Disease Program conducts field tests to determine the effectiveness of the application after each treatment.

### Tick-Borne Diseases

Tick borne pathogens, such as the pathogen for Lyme disease, are transmitted to humans through the bite of infected ticks. The District performs surveillance and testing for tick-borne diseases for county, city and state parks. Results are available to the park systems and to members of the public. Outreach and educational materials are also handed out to members of the public while staff are conducting surveillance on trails. The District also works with the parks system to provide signage about the dangers and related safety precautions for tick-borne diseases.



**Tick-borne surveillance.** A) Pathogens are transmitted to ticks and other mammals through the bite of an infected tick. B) A staff member inspects a flag for ticks along a park trail.

### Rodent-Borne Diseases

Rodents can transmit pathogens capable of causing serious disease to humans. Some examples of rodent-borne disease of serious concern in this county include leptospirosis, murine typhus, and hantavirus.

The Research Laboratory and Vector-borne Disease Program conducts surveillance for murine typhus, plague, and hantavirus by sampling and testing ectoparasites found on rodents throughout the county. See figure below for information related to rodent surveillance. Since 2019, murine typhus surveillance has been conducted on rodents from multiple locations in the county. Fleas collected from these rodents are tested for evidence of murine typhus infection.



**Rodent-borne disease surveillance.** A) Humans become infected with rodent-borne diseases when they come into close contact with rodent feces or rodent fleas that may be infected with rodent-borne diseases. B) Survey for murine typhus in 2019 and 2022. All samples tested negative for murine typhus.

### Other Vector-Borne Diseases

Vector-borne diseases are constantly evolving in the environment and pose unique and unforeseen risks to human health. One example of this is Chagas disease, which is transmitted to humans through the bite of an infected kissing bug. The Research Laboratory and Vector-borne Disease Program maintains capacity to survey for emerging vector-borne diseases. The Research Laboratory and Vector-borne Disease Program also remains in close contact with the California Department of Public Health to be aware of emerging vector-borne diseases statewide and work collaboratively while investigating human cases in the county.

### Research Projects

The District performs research projects to support operations by assessing efficacy of materials and control strategies. For example, surveys for pesticide resistance in mosquitoes provides information on the continued efficacy of control programs. Other projects assess emerging or potential diseases such as murine typhus disease in rodent populations.

In 2020, participation in the CEPA's Racial Equity and Leadership (REAL) training program began for several employees of the District. Through the training, staff were challenged to examine workplace activities through a racial equity lens. Review of the initial 2020 County of Santa Clara Vector Control District Mosquito Surveillance Plan and racial equity related distributions revealed that routine mosquito surveillance sites and other vector services did not overlap in areas of the county with the highest reported 2020 Diversity Index. The Research Laboratory and Vector-borne Disease Program will work to further investigate and provide solutions to better offer equitable services across the county. The Research Laboratory and Vector-borne Disease Program will also work with the Public Relations, Outreach, and Education Program to develop targeted surveys and messaging campaigns to increase comprehensive awareness and equitable access to the services that we provide.

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### **Public Relations, Outreach, and Education Program**

The District conducts public education and outreach to inform residents about the importance of vector control, vectors, and vector-borne diseases. Outreach efforts include educational campaigns through a variety of media advertisements, school presentations, community fairs, brochures, informational sheets, educational videos, and social media. In addition, the District has a robust outreach plan specifically for West Nile virus treatments.

### Educational Campaigns

Each annual campaign is composed of messaging focused on prevention and protection from vectors and vector-borne diseases, with the goal of improving residents' skillset in dealing with vectors, with emphasis on identifying vector issues and signs, sanitation, self-protection, and exclusion. A variety of media advertisements have been used historically including television commercials (Figure A), targeted social media boosts (Figure B), banner ads at local shopping centers, and newspaper ads all in multiple languages. Other educational campaigns include partnerships with neighboring Districts to provide a unified message on mosquito control (Figure C) and public service announcements through local radio stations. These outreach efforts have resulted in more than 13 million, yearly campaign views.



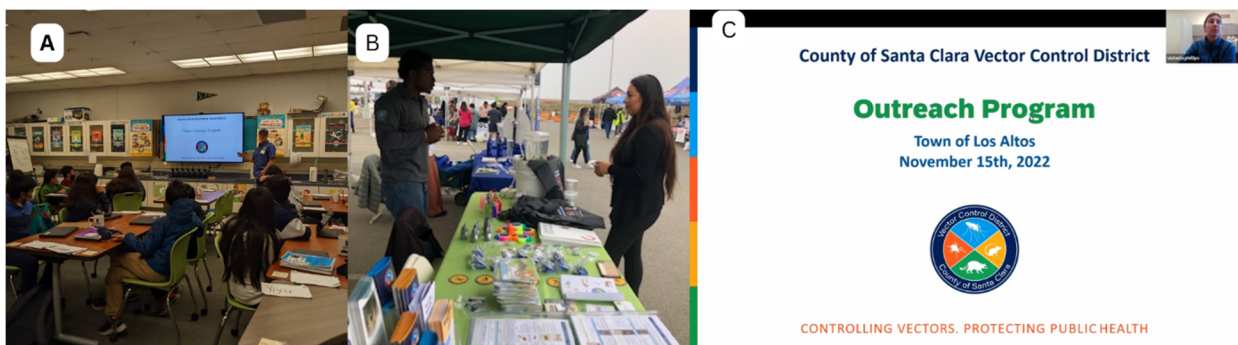
**Educational Campaigns and Advertisements.** Figure A) Example of television commercial focused on dumping and draining stagnant water. Figure B) A variety of boosted and targeted social media posts. Figure C ) Example of a collaborative campaign with neighboring districts on how to differentiate between tadpoles and mosquito larvae.



### School Presentations and Community Fairs

The District has a dedicated education and outreach program for schools and the community. School presentations are offered to K-12 students with materials tailored to each grade and offered in individual classroom settings or combined for a school assembly (Figure A). School presentations are composed of a short PowerPoint presentation with hands-on activities. Children are provided with vector themed activity sheets, a mosquito assembly kit, and mosquito and tick story books.

Community educational booths (Figure B) and in-person or virtual presentations (Figure C) are offered to groups such as homeowner associations, libraries, business associations, and senior centers. Samples of adult mosquitoes, larvae, pupae, and eggs are displayed to showcase the mosquito life cycle. Raising awareness about the risks of vectors, vector-borne diseases, and fostering interest on the importance of vector control is integral to the public taking preventative measures to protect themselves and the community.



**School Presentations and Community Fairs.** Figure A) Example of an individual classroom presentation tailored to engage students of any age. Figure B) An educational booth example. Figure C) A virtual community presentation provided to the Town of Los Altos residents, reviewing District services and an overview of vectors.

### Educational Materials, Social Media, and District Website

Brochures, informational sheets, and other educational materials are distributed to the public during outreach events such as presentations, educational booths, and public interactions in the field. All of the educational materials are being updated with current information on vectors and to reflect unified branding, as well as distinguish between our four service categories – arthropods, mosquitoes, rodents, wildlife, and general District information (Figure A). These same informational materials are also available through the District website and can be downloaded electronically by the public. Other educational materials include promotional items that reinforce the District’s outreach messaging.

Educational information is also disseminated through social media platforms such as Twitter, Facebook, Instagram, and YouTube. Educational and informational posts are released every week to reach the public in the quickest manner. Posts include educational videos, DYK (Did You Know) posts, activities such as word cross puzzles, reminders of the services that are provided by the District, tips to prevent vectors (Figure B), and links to presentations and external resources from the California Department of Public Health and the Centers for Disease Control and Prevention. Educational and promotional videos are also developed and posted on YouTube, Twitter, Facebook, Instagram, and the District website.







**Educational Materials and Social Media.** Figure A) Brochures designed to unify branding and help distinguish category of topic. Figure B) Example of an Instagram post teaching the public how the District identifies the presence of West Nile virus. Figure C) A Twitter post for National Wildlife Week explaining to avoid touching bats found on the ground to protect against rabies exposure. Figure D) An example of a Facebook Post for National Pet Day. Figure E) A social media post providing guidance for vector self-protection while traveling during the holiday season.

### West Nile Virus Outreach

A specific outreach plan is in place for West Nile virus treatments. The District works closely with the County Public Information team to distribute press releases and media advisories. A map of the treatment area, along with a link to the press release and District information is posted to social media platforms including Facebook, Instagram, Twitter, and Next-door. A copy of the press release is also distributed to the Public Information Officer of the City in which the treatment is taking place, for distribution through their outreach outlets. All information regarding treatments is hosted on the District website homepage. An email alert system for treatments is also available for the public to receive direct notification of any treatments taking place in the County.

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### **Interagency Programs**

The District actively seeks cooperative exchanges with a wide range of other agencies at county, state, and national levels. Among the relationships are or have been:

- Santa Clara County Department of Public Health – Data sharing for threat assessment and coordination of public outreach.
- Santa Clara County Department of Environmental Health –Waste tire disposal (a significant mosquito breeding source)
- Santa Clara County Division of Agriculture – Insect identification, non-medical pests, pesticide use
- Santa Clara County Parks and Recreation Department – Monitoring vector populations and joint community engagement opportunities

- Code Enforcement divisions of individual cities Countywide – Enforcement of sanitation, including mitigating blight, and development or modifications of structures which can foster or deter vector habitat
- City of Palo Alto Parks and Recreation Department – Salt marsh treatment
- City of Palo Alto Public Works Department – Storm drain treatment and wastewater treatment facilities access
- City of Los Altos – Storm drain treatment and wastewater treatment facilities access
- San Jose - Santa Clara Regional Wastewater Facility – Contracts with the District for mosquito control; Housing Department – outreach and mitigation of vectors in housing; Animal Care Services – wildlife/human conflict BMPs
- Sunnyvale Department of Services – Salt marsh treatment
- Valley Water (formerly Santa Clara Valley Water District) – Access to streams, design of wetlands and other structures; mitigation of constructed vector habitat
- California Department of Fish and Wildlife – Wildlife problems, human/wildlife conflict resolution BMPs, endangered species issues
- California Department of Public Health – Laboratory support, interaction with other districts, collation of data, licensing staff, arbovirus predictive risk analyses and planning for invasive *Aedes*
- US Fish and Wildlife Service – Salt marsh treatment, endangered species issues
- US Army Corps of Engineers – Project development
- Valley Homeless Healthcare Program – Notification and information to the housing insecure community about targeted pesticide application events
- Elementary schools throughout the county for environmental education program related to District activities
- Wildlife Center of Silicon Valley – coordinate with for providing wildlife services to the public
- Animal Services, County of Santa Clara – collection of ectoparasites for surveillance testing; collection of dead birds, and wildlife issues

## Vectors and Vector-Borne Diseases in Santa Clara County

Among the principal threats to which the District responds are:

- Human and animal diseases associated with mosquitoes
- Annoyance and economic disruption caused by nuisance mosquitoes
- Injury to humans from ectoparasitic arthropods
- Injury to humans from venomous arthropods

- Human diseases or conflicts associated with wildlife or other vertebrates

The diseases of most concern are:

- WEE, SLE, WNV, and malaria - transmitted through the bite of infected mosquitoes
- Plague and Murine typhus, transmitted by infected fleas
- Hantavirus Pulmonary Syndrome transmitted by field mice and rodents
- Lyme disease, Pacific Coast Tick Fever Relapsing fever, and Tularemia transmitted through the bite of infected ticks

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### Mosquitoes

Mosquitoes generally occur where there is adequate vegetation for harborage and where water is standing and/or stagnant. Although these mosquitoes have seasonal cycles, they tend to reproduce continuously when conditions are suitable. Mosquito species are categorized based on their importance in transmission of diseases, habitats, host preference (human, birds, and other animals), and the time day and months that they are active. For major mosquito and mosquito-borne diseases, the District has adopted Response Plans that outline procedures for responding to major mosquito issues in the county.

Risk Assessment: Surveillance of these mosquitoes is accomplished by a combination of methods. Field staff actively examine potential sites by sampling water, collecting larvae, and identifying the larvae to species. Various traps (light traps, carbon dioxide baited traps, and foul water traps to attract ovipositing females) are used to collect adult mosquitoes. Adults collected in these traps are subsequently classified and identified to species. Individual residents and property owners also call the District with complaints about bites or potential larval sites. Surveillance and control of mosquito larvae in urban areas can be accomplished by the aerial detection of green or foul water sources, such as neglected swimming pools, that can potentially breed mosquito larvae. Other Districts use, unmanned aerial vehicles (UAVs) in inaccessible areas to detect the water bodies in remote areas. In some cases, they use UAVs to manage the larvae populations for safety and higher efficiency.

Current Risk: Historically, the Western encephalitis mosquito (*Culex tarsalis*) and the Northern House Mosquito (*Culex pipiens*) have been very abundant in the Santa Clara County. The great vector potential of these species has been documented locally each year since the arrival of WNV in 2004. They breed in various habitats from neglected pools to underground rainstorm systems.

*Anopheles* species decreased in abundance when streams and ponds were polluted by fertilizer run-offs, but these mosquitoes are increasing in abundance now that creeks are less polluted and have more shade. The threat of *Anopheles* as vectors is significantly reduced when there are no local malaria pathogens, but active human malaria “travel cases” continue to be reported each year.

*Culex erythrothorax* could become an important mosquito in the county. It is associated with large emergent vegetation in fresh water (e.g., tules), but is abundant in only very small areas of Santa Clara County. *Culex erythrothorax* is known to be an efficient vector of WNV.

Floodwater habitats are occupied by mosquitoes that lay their eggs in damp soil that might be flooded up to two years later. Once the area floods, most of the eggs hatch, producing a large number of mosquitoes for a short period of time. The Winter Salt March Mosquito (*Aedes squamiger*) can be very abundant in spring, and was the first cause of organized mosquito abatement along the southern coast of San Francisco Bay. If untreated, it emerges in huge numbers during spring, moves up to 20 miles inland, and bites day and night.

*Aedes washinoi* is common at the sea level, emerging from freshwater ground pools and riverine habitats. Like the other *Aedes* species, it is a day-biter and can cause significant nuisance when its flight range intersects with human populations. It tends to inhabit shallow, intermittent water sources in wooded areas, and emergence usually lasts from late March through the end of July.

*Aedes dorsalis*, a secondary vector of the WEE virus, has multiple generations and its numbers can be augmented by rainfall during the warm season and water management in marsh areas.

*Aedes sierrensis*, our native tree-hole mosquito, can be a significant nuisance and hatches only one generation per year. It can reach great abundance locally and it does not fly far. The tree-hole mosquito is commonly considered our most important vector of dog heartworm.

Potential Risk: Asian tiger mosquito (*Aedes albopictus*), yellow fever mosquito (*Aedes aegypti*) and *Aedes notoscriptus* are three potentially important container breeders that could get introduced into Santa Clara County. Since 2013 these species have expanded in central and south San Joaquin Valley, and throughout most of southern California. Since these mosquitoes are known to “hitchhike” in vehicles, the likelihood that they will arrive here has increased significantly. *Aedes albopictus* has been introduced into the county twice, each time having been eradicated.

*Aedes aegypti* has recently invaded our county as well as Santa Cruz and Contra Costa County in 2022. This species was detected late in 2022 and only two adult female mosquitoes were captured. *Ae. aegypti* can become a significant problem in the County because they spread to many neighborhoods, reproduce throughout the warm season, and create a nuisance day-biting problem that currently does not exist. Those invasive *Aedes* are important because they reach great abundance, bite during the day, and reproduce continuously in containers often associated with human habitations. They are very effective vectors of Zika, Dengue Fever and Chikungunya viruses, which spread between human-mosquito cycle.

Future Risk: There are three additional floodwater species that could become major pests in Santa Clara County with the climate change. *Aedes taeniorhynchus* is a salt marsh species that has only been found once in the county, but it can become very abundant in the summer in other locations. If climate change predictions prove to be accurate, this species may progress northward to the bay area as temperatures warm.

*Aedes melanimon* occurs in the fall in salt marshes, but its major pest status in the Central Valley suggests that it could potentially take advantage of changing conditions in Santa Clara County. *Aedes nigromaculis* used to be abundant in parts of the county, associated with irrigated pastures. Should average temperatures increase significantly in the long term, there are several other species (*Aedes vexans* and *Psorophora columbiae*) that could be a significant problem in our area.

Best Management Practices: The District currently uses three main control methods to manage aquatic and biting stages of mosquitoes, including environmental management, biological control, and chemical control. The District implements BMP to manage mosquito populations.

Environmental management can modify available aquatic habitats so they do not produce mosquitoes and can have a long-lasting effect in preventing mosquito breeding. A recent example was the repair of an artesian well that had been leaking, producing a very large *Culex* site. The District collaborated with Caltrans to provide a solution to eliminate the mosquito source in the area. Long-range wetland conversion projects may result in improved tidal action and better drainage, which was made possible by working closely with the South Bay Salt Pond Restoration Project and the US Army Corps of Engineers. It may be possible to reduce coastal wetland acreage requiring pesticide treatment by maximizing acreage of fully tidal marsh (which does not produce many mosquitoes), avoiding seasonally flooded wetlands along the coast, and constructing deep water reservoirs for mosquito predators. The District was successful in making mosquito control one of the objectives of the salt marsh restoration which could lead to implementation of effective environmental management.

The District also collaborates with City of Palo Alto during the warm season to manage *Aedes dorsalis* and *Aedes squamiger* fly-offs from the Palo Alto Flood Basin using water level management. Other collaborative efforts were made with the Santa Clara Valley Urban Runoff Pollution Prevention Program, the planning departments of individual cities, the Santa Clara County Parks and Recreation Department, and the Santa Clara Valley Water District to design civil infrastructure in ways to exclude mosquitoes. Public education campaigns to empty and drain standing water in their property is another effort to reduce the mosquito breeding sites.

The District uses mosquitofish, *Gambusia affinis*, for biological control. These work particularly well during warm months in decorative ponds and swimming pools, but they are also used in surface water that does not connect with watersheds or have endangered species concerns. District policy prohibits introducing these fish into watersheds. If necessary, mosquitofish can be used in combination with chemical control. The District has an upgraded fish-rearing facility to allow in-house breeding and production of mosquitofish.

The toxin of the natural bacteria, *Bacillus thuringiensis* var. *israelensis* (Bti) can be applied as either a liquid or a granule. This toxin is eaten by larvae, restricting its use to the first through third larval instars. Bti has the tremendous advantage of specificity, only affecting mosquitoes and closely related groups of flies. The spores of *Bacillus sphaericus*, also known as *Lysinibacillus sphaericus* (Lsph), are also available for liquid spray or granular application. Methoprene is an analogue of a natural insect hormone that prevents successful development of larvae and pupae. It is available as a short-lived liquid, longer acting granules, and briquets. In recent years, the combination of different toxins is applied to reduce the chance of resistance developing in mosquito populations. Finally, the District uses surface films in the form of a short life cycle oil combined with surfactants (BVA, kontrol) as the only quick control method for the last aquatic stage of mosquitoes, the pupae. A new class of control agent, called spinosad, is derived from naturally occurring soil bacterium and has recently been used in the BMP program.

The District has been investing on using the methods mentioned above to manage mosquito larvae populations to reduce the threat of biting mosquitoes in the county. In cases that disease-carrying mosquitoes are identified, the District follows the California Department of Public Health procedure, Santa Clara County WNV Response Plan and applies EPA approved adulticides within the boundaries of the high-risk areas to reduce the chance of disease transmission to the public. Districts in Central California where *Aedes aegypti* is established have had some success with ULV applications of larvicides in urban residential settings.

In order to improve efficiency and manage mosquito larvae populations before they emerge, the District utilizes various ground or aerial applicators. For example, large areas of the salt marsh habitats are treated with naturally occurring microbes and the mosquito-specific hormone with the use of a helicopter. The District has been using this method for more than 25 years. This method also reduces adverse environmental impact of the ground equipment and staff footprints on wildlife there.

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### Ectoparasites

Santa Clara County has the full range of ectoparasites that commonly affect humans. The most common are ticks, fleas, bed bugs, lice, scabies mites, and rat mites. The two most abundant species of ticks in the county are *Dermacentor occidentalis* and *Ixodes pacificus*. *Dermacentor* adults are reported a little later in the year, but both are most found on humans in the cooler part of the year. The Lyme disease bacterium (*Borrelia burgdorferi*, associated with *Ixodes pacificus*) is the primary tick-transmitted pathogen and Lyme disease cases still occur in the county each year. Potentially, *Ixodes pacificus* could transmit one of the ehrlichial pathogens (causing human granulocytic ehrlichiosis or human monocytic ehrlichiosis) and *Dermacentor occidentalis* could transmit the agent causing Rocky Mountain spotted fever (*Rickettsia rickettsii*) or Pacific Coast Tick Fever (*Rickettsia philippi*). In recent years, *Borrelia miyamotoi*, also transmitted by *I. pacificus*, has been detected in the county and is known to cause relapsing fever. Our most abundant flea problem is from the common cat flea (*Ctenocephalides felis*). Unhoused resident encampments often have Norway rat infestations and potential for murine typhus transmission exists to the greater community.

Bed bugs are a growing problem world-wide, and since 2006 the number of complaints received by the District had been doubling each year until finally leveling off in 2010. Residents of shelter facilities, homeowners who have visited an infested site, hotel users, and college dormitories are the most common problem sites. Bed bugs are not known to transmit any pathogen, but they can cause annoyance, loss of sleep, and sometimes secondary skin infection.

Other important ectoparasites include:

- Rat mites (*Ornithonyssus bacoti*) are a very common problem in Santa Clara County due to the abundance of commensal rodents. Generally, the mites disappear when rats are effectively controlled.



- Scabies mites (*Sarcoptes scabiei*) appear to be increasing in abundance and may explain at least some of the cases of residents who complain of an unknown source of skin irritation.
- Head lice (*Pediculus humanus capitis*) are abundant among children, as they are in most parts of the country.

Risk Assessment: Residents usually encounter ticks when hiking in county or state parks. The District performs regular surveillance by brushing vegetation with a large flag of cloth, to which the ticks stick. The ticks are processed in the District laboratory for detection of the Lyme disease bacteria (*Borrelia burgdorferi*), Tickborne Relapsing Fever bacteria (*Borrelia miyamotoi*) and Pacific Coast Tick fever (*Rickettsia philipii*).

Other ectoparasites are surveyed only in response to complaints. Several techniques are available, including direct visual search, watching for ectoparasites on white socks, placing a container with dry ice on a tray of soapy water, and placing sticky traps.

Fleas associated with rodents and carnivores that parasitize rodents raise the possibility of plague. Scabies is usually considered a medical problem, but some residents find that they are unable to get a diagnosis from physicians. Rat mites are abundant in the county, often creating an intolerable problem with biting mites in a home. Head lice are common in the county, but infestations are usually handled without advice from the District.

Best Management Practices: The District identifies ectoparasites such as bed bugs and collaborates with Municipal Code Enforcement agencies throughout the county to assist affected public and property managers. The District's primary focus is to advise and educate the property owners, tenants, and disadvantaged communities on self-protection, prevention, and exclusion.

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### **Venomous Arthropods**

Venomous arthropods are a common cause for concern among residents. Yellowjackets (*Vespula*) and paper wasps (*Polistes*) are the most common problem, especially in late summer and fall. The only dangerous spiders in the county are the black widow (*Latrodectus mactans*) and the yellow-sac spider (*Cheiracanthium*). The brown widow spider (*Latrodectus geometricus*) is established in Southern California and is rapidly colonizing other areas of the state. Its venom is more potent than that of the black widow, but it is less likely to bite. The brown recluse spider (*Loxosceles lata*) does not occur in the county.

Risk Assessment: Responses concerning other venomous arthropods are based on complaints from the public. Yellowjacket wasps can be very abundant at locations with waste food (e.g., parks). To our knowledge, the Africanized honeybee (AHB) has not entered the county. However, new reports show their spread as far north as Sacramento. In established areas, it has caused significant stinging incidents after it arrives in the county. Aggressive honeybees reported are collected for morphometric evaluation to determine whether they are AHB. The actual threat from other venomous arthropods (tarantula and scorpion) in the county is very small.

Best Management Practices: The District treats yellowjackets and stinging bees on public land with EPA-approved materials where there is an imminent risk to the public. In response to inquiries, the public is advised on safe use of a commercial product. The District provides public education regarding spiders.

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### Other Arthropods

Most of the filth flies in Santa Clara County are either blow flies (*Phormia*), lesser house flies (*Fannia*), or house flies (*Musca domestica*). Although flies are produced in compost heaps, dog feces, and other domestic sites, most of the problems result from agricultural practices in the southern part of the county. A variety of biting flies occur in the county (stable flies, snipe flies, black flies, no-see-ums, deer/horse flies), but black gnats are the only non-mosquito species that commonly affect large areas. Black gnats (*Leptoconops torrens*), sometimes called the valley gnat, develop in the cracks of soil with high clay content. Black flies (*Simulium vittatum*) have recently become an issue in limited areas. Their larvae live in flowing non-polluted water and attach to stationary objects in the streams. Various species of cockroaches are associated with indoor and public sewer systems in the county including the recently detected Turkestan cockroach (*Blatta lateralis*). Cockroaches are associated with domestic conditions, may transmit some diseases, and can cause allergies.

**Risk Assessment:** In some cases, the District relies on complaints from the public to detect, identify and map the arthropods in the county. Significant infestations of filth flies are invariably the result of improper solid waste management in rural areas of Santa Clara County. As a result, the source of flies can be very persistent. Flies transmit several pathogens including bacteria, viruses, fungi, and parasites by simply carrying them from place to place. Several existing studies showed that bacteria causing diarrhea are carried by houseflies mainly. In addition to direct visual search, the District uses strips of sticky paper to count flies and white index cards to count fly feces. Most of the biting flies are attracted to traps that are baited with dry ice (carbon dioxide). Black flies are surveyed by placing yellow tapes in water streams so that larvae attach to them. In addition to complaints from the public, special sticky traps are used to monitor the population of cockroaches in an area. The District identifies other arthropods such as storage and agricultural pests, and even beneficial harmless arthropods to educate the public or direct them to appropriate agencies such as the County Agricultural Division.

**Best Management Practices:** The District provides consultation and advises the public about sanitation, exclusion, and potential insecticidal treatment. In some cases, the District has worked with Solid Waste Management or Code Enforcement to force owners to clean up a filth fly problem. Surveillance at a problematic site can assure compliance with sanitation requirements. Environmental management, such as control of the water flow, can alleviate the issues of black flies. However, with high black fly larval populations, the natural bacteria *Bacillus thuringiensis var. israelensis* (Bti) can be applied. Sanitation, exclusion, and continuous facility maintenance are the main principles of cockroach management. Advising and educating small businesses on the preventive measures are the main steps in protecting the public.

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## Rodents

The roof rat (*Rattus rattus*) is by far the most abundant rodent pest in the county. The Norway rat (*Rattus norvegicus*) can be an important pest in areas with high urban development, but unhoused resident camps are increasing Norway rat populations. Mice are widespread but minor problem. Four kinds of native rodents can cause problems in residential areas. The wood rat, *Neotoma fuscipes*, sometimes infests homes in much the same manner as a roof rat. The California vole (*Microtus californicus*) and various species of deer mice (*Peromyscus* spp.) can have seasonal population surges and infest peridomestic habitats. The California ground squirrel (*Otospermophilus beecheyi*) infests embankments near homes and damages earthen levees. The mild climate in the Santa Clara County creates ideal conditions for commensal rodents. Rodents cause extensive damage to structures and harbor important human pathogens.

Rodents can be very destructive to property through their normal activities, destroying wiring, walls, and other property. They also spoil or consume huge quantities of food. The close association of commensal rodents (rats and mice) with humans is sometimes the source of a variety of bacterial diseases, including salmonellosis and leptospirosis. The dangerous urban cycle of plague (*Yersinia pestis*) can be supported by flea-infested commensal rodents and the sylvatic cycle of the disease by all the native rodents mentioned above. The last urban plague outbreak in California was recorded in 1924, but sylvatic plague continues to this day in our county. Sin Nombre (Hanta) virus, is excreted in rodent urine, droppings, and saliva and is acquired by humans by breathing in virus particles. It is present in the county and associated with *Peromyscus*, and *Microtus*. *Neotoma* species have a worrying association with leishmaniasis and American trypanosomiasis, but neither pathogen has been observed in the county.

**Risk Assessment:** Rodents are generally detected through the presence of droppings or signs of damage. The type of rodent can be approximated from the size and shape of feces and the kind of damage. The District commonly evaluates problems based on these signs and evidence.

**Best Management Practices:** The District performs rodent inspections on request for the public. These inspections include a comprehensive, written recommendation to the resident on how to eliminate rodents from the house or business. The strategy proposed by the District is exclusion of rodents through rodent-proofing the house, elimination of outdoor food and harborage sources of rodents (e.g., ivy, fruits, nuts), and decimation of the rodents through trapping.

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### **Wildlife and Other Vertebrates**

The District utilizes the same BMP principles for wildlife as in its other vector programs. Educating the public is the primary means of resolving issues with wildlife, for example, on how to protect their pets and to use exclusion techniques at their properties against coyotes or raccoons. Certain wildlife may constitute a threat to the public health of humans. Mountain lions are a 'specially protected species' that requires close communication between the District and the California Department of Fish and Wildlife. For any emergency or public safety issues, the District refers the public to emergency responders.

Wildlife and some of other vertebrates associated with human activities can cause several health problems. Certain animals such as crows, sparrows, bats, raccoons, opossums, and skunks are reservoirs of pathogens such as WNV, SLE, rabies, plague, and other pathogens which may be introduced to humans. The District mainly focuses on smaller urban animals as the reservoir or vector that can pose a public health risk to humans.

Some animals are reported as potential vectors of rabies. However, in California, the virus has primarily been detected in bats. If handled or found indoors, they can incidentally bite people, and their bites are undetectable. They are the main vector of rabies in our County.

The District occasionally receives calls about other vertebrates such as rattlesnakes and pigeons. Rattlesnakes pose a serious envenomation risk to humans and can cause serious injuries on rare occasions. Pigeons, especially when aggregating in large numbers, can pose a risk of psittacosis transmission, a respiratory illness, to humans.

**Risk Assessment:** Service requests from the public are the principle means of wildlife surveillance. The District updates maps and lists on occurrence of wildlife problems. The District responds to complaints from residents by inspecting properties for presence of animals, their droppings, or signs of damage. Raccoon are hosts to the common raccoon roundworm, *Baylisascaris procyonis* and defecate millions of worm eggs into backyards, parks and playground areas exposing young children to a dangerous disease called Larval Migrans. If accidentally ingested, large number of larval nematodes migrate through human tissues and into the nervous system, particularly the brain.

**Best Management Practices:** The District performs inspections upon request for the public, and provides outreach on prevention, exclusion, and sanitation. The District also collaborates with the County Animal Services, City of San Jose Animal Care Services, Wildlife Center of Silicon Valley, and the County Public Health Laboratory for monitoring rabies in bats. The District collaborates with other agencies to collect ectoparasites from rehabilitated or dead animals and test them for potential transmittable diseases. Trapping is used in collaboration with other agencies to monitor the roles of smaller urban wildlife as disease reservoirs when they pose direct public health concerns. In cases when ectoparasites can transmit diseases, the District carries out practices based on Integrated Pest Management (IPM) to control the population of vectors.

The District routinely meets and communicates with other internal and external agencies, such as the Santa Clara County Division of Agriculture, County Services, County Parks and Recreation Department, San Jose Animal Care and Services, Wildlife Center of Silicon Valley, California Department of Fish and Wildlife, California Department of Public Health, US Fish and Wildlife Service, US Department of Agriculture, and University of California Cooperative Extension to share information, coordinate, and collaborate on the Best Management Practices in response to issues relevant to health and safety of the public.

## Assessment

The District has evaluated and estimated the costs of extending and providing the Services to the 2005 Assessment Area. The estimated costs are summarized in the Summary Cost Estimate below and detailed in Estimate of Cost, located on page 38.

The amount to be paid for the Services and the expenses incidental thereto, to be paid by the Santa Clara County Vector Control District for the fiscal year 2023-24 is generally as follows:

### Summary Cost Estimate - F.Y. 2023-24 Budget

Vector & Disease Control Services	\$10,131,663
Fixed Asset & Capital Equipment	\$248,167
<b>TOTAL COST OF SERVICES</b>	<b>\$10,379,830</b>
Contributions to / (from) Reserve / Contingency	(\$2,041,518)
Incidentals	\$116,359
<b>TOTAL BUDGET</b>	<b>\$8,454,671</b>
Less:	
District Contribution & Current Rev. <sup>1</sup>	(\$3,567,184)
<b>Net Amount To Assessments</b>	<b>\$4,887,487</b>

#### Notes:

1. As determined in the following section, at least 4% of the cost of the Services must be funded from sources other than the 2005 Assessment to cover any general benefits from the Services. Therefore, out of the total cost of Services of \$10,379,830 the District must contribute at least \$415,193 from sources other than the 2005 Assessment. The District will contribute \$3,567,184 which is over the estimated general benefits and equates to 34.4% of the total budget.

An Assessment Diagram is hereto attached and made a part hereof showing the exterior boundaries of the 2005 Assessment Area. The distinctive number of each parcel or lot of land in the 2005 Assessment Area is its Assessor Parcel Number appearing on the Assessment Roll.

I do hereby determine and apportion said net amount of the cost and expenses of the Services, including the costs and expenses incidental thereto, upon the parcels and lots of land within the Mosquito, Vector and Disease Control Assessment, in accordance with the special benefits to be received by each parcel or lot, from the Services, and more particularly set forth in the Cost Estimate hereto attached and by reference made a part hereof.

The assessment determination is made upon the parcels or lots of land within the 2005 Assessment Area proportion to the special benefits to be received by the parcels or lots of land, from the Services.

The assessment is subject to an annual adjustment tied to the change in the Consumer Price Index-U for the San Francisco Bay Area (the "CPI"), with a maximum annual adjustment not to exceed 3%.

The 2005 Assessment may be levied annually and may be adjusted by up to the maximum CPI change, not to exceed 3% annually, without any additional assessment ballot proceeding. The additional change in the CPI, over and above the 2021 CPI, is 5.60%. Therefore, the maximum authorized assessment rate for fiscal year 2023-24 is increased by 3.00% which equates to \$9.28 per single family equivalent benefit unit. The estimate of cost and budget in this Engineer's Report proposes assessments for fiscal year 2023-24 at the rate of \$9.28 per single family equivalent benefit unit.

Table 1, below provides a summary of the proposed rates for various property use types for the 2005 assessment. (The rates for the 1996 Assessment are also shown for convenience.)

**Table 1 – 2005 Rates by Property Use Type (and 1996 Assessment Rates Shown)**

Property Type	2005 2005 Assessment		1996 1996 Assessment	
	Assessment	Unit	Assessment	Unit
Single Family Residential	\$9.28	each	\$5.08	each
Condominium	\$5.57	each	\$5.08	each
Duplex	\$3.99	per unit	\$10.16	each
Triplex, Fourplex	\$3.99	per unit	\$15.24	each
Multi-Family Residential, 5+ Units	\$2.60	per unit	\$25.40	each
Mobile Home on Separate Lot	\$2.69	each	\$5.08	each
Commercial / General Manufacturing	\$4.64	per fifth acre	\$17.62	each
Office	\$13.18	per fifth acre	\$14.83	each
Regional Shopping Center	\$4.64	per fifth acre	\$27.02	each
Community Shopping Center	\$4.64	per fifth acre	\$22.52	each
Neighborhood Shopping Center	\$4.64	per fifth acre	\$18.01	each
Industrial	\$4.64	per fifth acre	\$14.83	each
Parking Lot	\$0.19	per fifth acre	\$25.40	each
Agriculture	\$0.02	per fifth acre	\$10.75	each
Rangelands/Timber	\$0.004	per fifth acre	\$10.75	each

Each parcel or lot of land is described in the Assessment Roll by reference to its parcel number as shown on the Assessor's Maps of the County of Santa Clara for the fiscal year 2023-24. For a more particular description of the property, reference is hereby made to the deeds and maps on file and of record in the office of the County Assessor of the County of Santa Clara.



Dated: April 24, 2023

Engineer of Work



A handwritten signature in blue ink, appearing to read "John W. Bliss", written over a horizontal line.

By \_\_\_\_\_  
John W. Bliss, License No. C52091  
Vice President, SCI Consulting Group (SCI)

## Estimate of Cost

<b>SANTA CLARA COUNTY VECTOR CONTROL DISTRICT</b>			
<b>Mosquito, Vector and Disease Control Assessment</b>			
Estimate of Cost			
Fiscal Year 2023-24			
			<i><b>Total Budget</b></i>
<b>Vector Control Services and Related Expenditures</b>			
Vector Control and Disease Prevention Operations			\$6,239,173
Materials, Supplies, Equipment and Administration			\$3,892,490
Other/Emergency Services/Contingency Funds			\$0
Fixed Assets			\$248,167
Facility Debt Service Payments			\$0
<b>Total Services and Operation</b>			<b>\$10,379,830</b>
<b>Less:</b>			
Contribution from other Sources <sup>1</sup>			(\$570,162)
Interest Income			(\$114,001)
Contribution from 1996 Assessment			(\$2,883,021)
<b>Net Cost of Vector Control, Fixed Asset Equipment, Operation</b>			<b>\$6,812,646</b>
Contributions to / (from) Reserve / Contingency Fund			(\$2,041,518)
<b>Incidental Costs</b>			
County Collection, Levy Administration, and Other Incidentals <sup>2</sup>			\$116,359.37
<b>Total Mosquito, Vector &amp; Disease Control Services and Incidentals</b>			<b>\$4,887,487</b>
(Net Amount to be Assessed)			
<b>Budget Allocation to Property</b>			
		Assessment	Total
Zone of Benefit	Total SFE Units <sup>3</sup>	per SFE <sup>4</sup>	Assessment <sup>5</sup>
Zone A	525,819.43	\$9.28	\$4,879,604
Zone B	1,698.85	\$4.64	\$7,883
			<b>\$4,887,487</b>

**Notes:**

1. As determined in the following section, at least 4% of the cost of the Services must be funded from sources other than the 2005 Assessment to cover any general benefits from the Services. Therefore, out of the total cost of Services of \$10,379,830 the District must contribute at least

\$415,193 from sources other than the 2005 Assessment. The District will contribute \$3,567,184 which is over the estimated general benefits and equates to 34.4% of the total budget.

2. Incidental Costs includes allowance for uncollectible assessments from assessments on public agency parcels, County collection charges, and assessment administration costs.

3. SFE Units means Single Family Equivalent benefit units. See method of assessment in the following Section for further definition.

4. The assessment rate per SFE is the total amount of assessment per Single Family Equivalent benefit unit.

5. The proceeds from the assessments will be deposited into a special fund for the 2005 Assessment. Funds raised by the assessment shall be used only for the purposes stated within this Report. Any balance remaining at the end of the fiscal year, June 30, must be carried over to the next fiscal year. The assessment amounts are rounded down to the even penny for purposes of complying with the collection requirements from the County Auditor. Therefore, the total assessment amount for all parcels subject to the assessments may vary slightly from the net amount to be assessed.

## Method of Assessment

This section of the Report explains the benefits to be derived from the Services provided for property in the District, and the methodology used to apportion the total assessment to properties within the Mosquito, Vector and Disease Control Assessment area. The benefit discussion section applies to both the 1996 Assessment and the 2005 Assessment as described below.

The Mosquito, Vector and Disease Control Assessment Area consists of all Assessor Parcels as defined by the approved boundary description (boundary will be coterminous with the County of Santa Clara).

The method used for apportioning the assessment is based upon the proportional special benefits to be derived by the properties in the assessment area over and above general benefits conferred on real property in the Assessment Area. Special benefit is calculated for each parcel in the Assessment Area using the following process:

1. Identification of total benefit to the properties derived from the Services
2. Calculation of the proportion of these benefits that are special vs. general
3. Determination of the relative special benefit within different areas of the Assessment Area
4. Determination of the relative special benefit per property type and property characteristic
5. Calculation of the specific assessment for each individual parcel based upon special vs. general benefit; location, property type and property characteristics

## Discussion of Benefit

In summary, the assessments can only be levied based on the proportional special benefit provided to the real property from the additional Services. This benefit is received by property over and above any general benefits received. With reference to the engineering requirements for property related assessments, under Proposition 218 an engineer must determine and prepare a report evaluating the amount of special and general benefit received by property within the Assessment Area as a result of the improvements or services provided by a local agency. That special benefit is to be determined in relation to the total cost to that local entity of providing the service and/or improvements.

Proposition 218 as described in Article XIID of the California Constitution has confirmed that assessments must be based on the proportional special benefit to property:

*"No assessment shall be imposed on any parcel which exceeds the reasonable cost of the proportional special benefit conferred on that parcel."*

The below benefit factors, when applied to property in the Assessment Area, confer proportional special benefits to property and ultimately improve the safety, utility, functionality and usability of property in the Assessment Area. These are special benefits to property in the Assessment Area in much the same way that storm drainage, sewer service, water service, lighting, sidewalks and paved streets enhance the safety, utility and functionality of each parcel of property served by these improvements, providing them with more utility of use and making them safer and more usable for occupants and property owners.

Proposition 218 included a requirement that existing assessments in effect upon Proposition 218's effective date were required to be confirmed by either a majority vote of registered voters in the Assessment Area, or by weighted majority property owner approval using the new ballot proceeding requirements. However, certain assessments were excluded from these voter approval requirements. Of note is that in California Constitution Article XIID Section 5(a) this special exemption was granted to assessments for sidewalks, streets, sewers, water, flood control, drainage systems and vector control. The Howard Jarvis Taxpayers Association explained this exemption in their Statement of Drafter's Intent:

*"This is the "traditional purposes" exception. These existing assessments do not need property owner approval to continue. However, future assessments for these traditional purposes are covered."*<sup>2</sup>

The drafters of Proposition 218 acknowledged that vector control assessments were a traditionally appropriate and accepted assessment. Therefore, the District's 1996 Assessment ("Assessment 1") did not require voter confirmation.

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<sup>2</sup> Howard Jarvis Taxpayers Association, "Statement of Drafter's Intent", January 1997.

Because all assessments, existing before or after Proposition 218 must be based on special benefit to property, the drafters of Proposition 218 inherently found that vector control services confer a special benefit on property. Moreover, the statement of drafter's intent also acknowledges that any new or increased vector control assessments after the effective date of Proposition 218 would need to comply with the voter approval requirements Proposition 218 established. This requirement is a recognition that additional assessments for such "traditional" purposes would be established after Proposition 218 was in effect. The drafters of Proposition 218 clearly recognized vector assessments as a "traditional" appropriate use of assessments, acknowledged that new vector assessments may be formed after Proposition 218 and inherently were satisfied that vector control services confer special benefit to properties.

The Legislature also made a specific determination after Proposition 218 was enacted that vector control services constitute a proper subject for a special assessment. California Health and Safety Code section 2082, adopted in 2002, provides that a district may levy special assessments consistent with the requirements of Article XIID of the California Constitution to finance vector control projects and programs. The intent of the Legislature to allow and authorize benefit assessments for vector control services after Proposition 218 is shown in the Assembly and Senate analysis the Mosquito Abatement and Vector Control District Law where it states that the law:

*Allows special benefit assessments to finance vector control projects and programs, consistent with Proposition 218.<sup>3</sup>*

Therefore the State Legislature unanimously found that vector control services are a valuable and important public service that can be funded by special benefit assessments. To be funded by assessments, vector control services must confer a proportional special benefit to property.

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<sup>3</sup> Senate Bill 1588, Mosquito Abatement and Vector Control District Law, Legislative bill analysis

## Mosquito and Vector Control Is a Special Benefit to Properties

As described below, this Engineer's Report concludes that mosquito and vector control is a special benefit that provides direct advantages to property in the Assessment Area. For example, the assessment provides reduced levels of mosquitoes and other vectors on property throughout the Assessment Area. Moreover, the assessment reduces the risk of the presence of diseases on property throughout the Assessment Area, which is another direct advantage received by property in the Assessment Area. Moreover, the assessment will fund Services that improve the use of property and reduce the nuisances and harm created by vectors on property throughout the Assessment Area. These are tangible and direct special benefits that will be received by property throughout the specific area covered by the Assessments.

The following section, Benefit Factors, describes how and why vector control services specially benefit properties in the Assessment Area. These benefits are particular, distinct, and direct from its effect on property in general or the public at large.

## Benefit Factors

In order to allocate the proposed assessments, the Engineer identified the types of special benefit arising from the aforementioned Services that would be provided to property within the Assessment Area. These benefit factors are comprehensive and are in support of both the 1996 Assessment and the 2005 Assessment as described below. These types of special benefit are as follows:

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**Reduced mosquito and vector populations on property and as a result, enhanced desirability, utility, usability and functionality of property in the Assessment Area.**

The assessments provide enhanced services for the surveillance and control and abatement of nuisances and disease-carrying mosquitoes. These Services materially reduce the number of vectors on properties throughout the Assessment Area. The lower mosquito and vector populations on property in the Assessment Area is a direct advantage to property that serves to increase the desirability and “usability” of property. Clearly, properties are more desirable and usable in areas with lower mosquito populations and with a reduced risk of vector-borne disease. This is a special benefit to residential, commercial, agricultural, industrial and other types of properties because all such properties will directly benefit from reduced mosquito and vector populations and properties with lower vector populations are more usable, functional and desirable.

Excessive mosquitoes and other vectors in the area can materially diminish the utility and usability of property. For example, prior to the commencement of mosquito control and abatement services, properties in many areas in the State were considered to be nearly uninhabitable during the times of year when the mosquito populations were high.<sup>4</sup> The prevention or reduction of such diminished utility and usability of property caused by mosquitoes is a clear and direct advantage and special benefit to property in the Assessment Area.

The State Legislature made the following finding on this issue:

*“Excess numbers of mosquitoes and other vectors spread diseases of humans, livestock, and wildlife, reduce enjoyment of outdoor living spaces, both public and private, reduce property values, hinder outdoor work, reduce livestock productivity; and mosquitoes and other vectors can disperse or be transported long distances from their sources and are, therefore, a health risk and a public nuisance; and professional mosquito and vector control based on scientific research has made great advances in reducing mosquito and vector populations and the diseases they transmit.”<sup>5</sup>*

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<sup>4</sup> Prior to the commencement of modern mosquito control services, areas in the State of California such as the San Mateo Peninsula, Napa County, Lake County and areas in Marin and Sonoma Counties had such high mosquito populations or other vector populations that they were considered to be nearly unlivable during certain times of the year and were largely used for part-time vacation cottages that were occupied primarily during the months when the natural vector populations were lower.

<sup>5</sup> Assembly Concurrent Resolution 52, chaptered April 1, 2003



Mosquitoes and other vectors emerge from sources throughout the Assessment Area, and with an average flight range of two miles, mosquitoes from known sources can reach all properties in the Assessment Area. These sources include standing water in rural areas, such as marshes, pools, wetlands, ponds, drainage ditches, drainage systems, tree holes and other removable sources such as old tires and containers. The sources of mosquitoes also include numerous locations throughout the urban areas in the Assessment Area. These sources include underground drainage systems, containers, unattended swimming pools, leaks in water pipes, tree holes, flower cups in cemeteries, over-watered landscaping and lawns and many other sources. By controlling mosquitoes at known and new sources, the Services will materially reduce mosquito populations on property throughout the Assessment Area.

A recently increasing source of mosquitoes is unattended swimming pools:

*“Anthropogenic landscape change historically has facilitated outbreaks of pathogens amplified by peridomestic vectors such as Cx. pipiens complex mosquitoes and associated commensals such as house sparrows. The recent widespread downturn in the housing market and increase in adjustable rate mortgages have combined to force a dramatic increase in home foreclosures and abandoned homes and produced urban landscapes dotted with an expanded number of new mosquito habitats. These new larval habitats may have contributed to the unexpected early season increase in WNV cases in Bakersfield during 2007 and subsequently have enabled invasion of urban areas by the highly competent rural vector Cx. tarsalis. These factors can increase the spectrum of competent avian hosts, the efficiency of enzootic amplification, and the risk for urban epidemics.”<sup>6</sup>*

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<sup>6</sup> Riesen William K. (2008). Delinquent Mortgages, Neglected Swimming Pools, and West Nile Virus, California. Emerging Infectious Diseases. Vol. 14(11).

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### **Increased safety of property in the Assessment Area.**

The Assessments results in improved year-round proactive Services to control and abate mosquitoes and other vectors that otherwise would occupy properties throughout the Assessment Area. Mosquitoes and other vectors are transmitters of human disease pathogens, so the reduction of mosquito and vector populations makes property safer for use and enjoyment and reduces the likelihood of human disease. In absence of the assessments, these Services would not be provided, so the Services funded by the assessments make properties in the Assessment Area safer, which is a distinct special benefit to property in the Assessment Area.<sup>7</sup> This is not a general benefit to property in the Assessment Area or the public at large because the Services are tangible mosquito, vector and disease surveillance and control services that are provided directly to the properties in the Assessment Area and the Services are over and above what otherwise would be provided by the District or any other agency.

This finding was confirmed in 2003 by the State Legislature:

*“Mosquitoes and other vectors, including but not limited to, ticks, Africanized honey bees, rats, fleas, and flies, continue to be a source of human suffering, illness, death, and a public nuisance in California and around the world. Adequately funded mosquito and vector control, monitoring and public awareness programs are the best way to prevent outbreaks of West Nile Virus and other diseases borne by mosquitoes and other vectors.”<sup>8</sup>*

Also, the Legislature, in Health and Safety Code Section 2001, finds that:

*“The protection of Californians and their communities against the discomforts and economic effects of vectorborne diseases is an essential public service that is vital to public health, safety, and welfare.”*

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### **Reductions in the risk of new diseases and infections on property in the Assessment Area.**

Mosquitoes have proven to be a major contributor to the spread of new diseases such as West Nile Virus, among others. A highly mobile population combined with migratory bird patterns can introduce new mosquito-borne diseases into previously unexposed areas.

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<sup>7</sup> By reducing the risk of disease and increasing the safety of property, the proposed Services will materially increase the usefulness and desirability of certain properties in the Assessment Area.

<sup>8</sup> Assembly Concurrent Resolution 52, chaptered April 1, 2003

*“Vector-borne diseases (including a number that are mosquito-borne) are a major public health problem internationally. In the United States, dengue and malaria are frequently brought back from tropical and subtropical countries by travelers or migrant laborers, and autochthonous transmission of malaria and dengue occasionally occurs. In 1998, 90 confirmed cases of dengue and 1,611 cases of malaria were reported in the USA and dengue transmission has occurred in Texas.”<sup>9</sup>*

*“During 2004, 40 states and the District of Columbia (DC) have reported 2,313 cases of human WNV illness to CDC through ArboNET. Of these, 737 (32%) cases were reported in California, 390 (17%) in Arizona, and 276 (12%) in Colorado. A total of 1,339 (59%) of the 2,282 cases for which such data were available occurred in males; the median age of patients was 52 years (range: 1 month--99 years). Date of illness onset ranged from April 23 to November 4; a total of 79 cases were fatal.”<sup>10</sup> (According to the Centers for Disease Control and Prevention on January 19, 2004, a total of 2,470 human cases and 88 human fatalities from WNV have been confirmed).*

A study of the effect of aerial spraying conducted by the Sacramento-Yolo Mosquito and Vector Control District (SYMVCD) to control a West Nile Virus disease outbreak found that the SYMVCD’s mosquito control efforts materially decreased the risk of new diseases in the treated areas:

*After spraying, infection rates decreased from 8.2 (95% CI 3.1–18.0) to 4.3 (95% CI 0.3–20.3) per 1,000 females in the spray area and increased from 2.0 (95% CI 0.1–9.7) to 8.7 (95% CI 3.3–18.9) per 1,000 females in the untreated area. Furthermore, no additional positive pools were detected in the northern treatment area during the remainder of the year, whereas positive pools were detected in the untreated area until the end of September (D.-E.A Elnaiem, unpub. data). These independent lines of evidence corroborate our conclusion that actions taken by SYMVCD were effective in disrupting the WNV transmission cycle and reducing human illness and potential deaths associated with WNV.<sup>11</sup>*

<sup>9</sup> Rose, Robert. (2001). Pesticides and Public Health: Integrated Methods of Mosquito Management. Emerging Infectious Diseases. Vol. 7(1); 17-23.

<sup>10</sup> Center for Disease Control. (2004). West Nile Virus Activity --- United States, November 9--16, 2004. Morbidity and Mortality Weekly Report. 53(45); 1071-1072.

<sup>11</sup> Carney, Ryan. (2008), Efficiency of Aerial Spraying of Mosquito Adulticide in Reducing the Incidence of West Nile Virus, California, 2005. Emerging Infectious Diseases, Vol 14(5)

The Services described elsewhere in this report, funded by the assessments help prevent on a year-round basis the presence of vector-borne diseases on property in the Assessment Area. This is another tangible and direct special benefit to property in the Assessment Area that would not be received in absence of the assessments.

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**Protection of economic activity on property in the Assessment Area.**

As recently demonstrated by the SARS outbreak in China and outbreaks of Avian Flu, outbreaks of pathogens can materially and negatively impact economic activity in the affected area. Such outbreaks and other public health threats can have a drastic negative effect on tourism, business and residential activities in the affected area. The assessments help to prevent the likelihood of such outbreaks in the District.

Mosquitoes hinder, annoy and harm residents, guests, visitors, farm workers, and employees. A vector-borne disease outbreak and other related public health threats would have a drastic negative effect on agricultural, business and residential activities in the Assessment Area.

The economic impact of diseases is well documented. According to a study prepared for the Centers for Disease Control and Prevention, economic losses due to the transmission of West Nile Virus in Louisiana was estimated to cost over \$20 million over approximately one year:

*The estimated cost of the Louisiana epidemic was \$20.1 million from June 2002 to February 2003, including a \$10.9 million cost of illness (\$4.4 million medical and \$6.5 million nonmedical costs) and a \$9.2 million cost of public health response. These data indicate a substantial short-term cost of the WNV disease epidemic in Louisiana.*<sup>12</sup>

Moreover, a study conducted in 1996-97 of La Crosse Encephalitis (LACE), a human illness caused by a mosquito-transmitted virus, found a lifetime cost per human case at \$48,000 to \$3,000,000 and found that the disease significantly impacted lifespans of those who were infected. Following is a quote from the study which references the importance and value of active vector control services of the type that would be funded by the proposed assessments:

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<sup>12</sup> Zohrabian A, Meltzer MI, Ratard R, Billah K, Molinari NA, Roy K, et al. West Nile Virus economic impact, Louisiana, 2002. Emerging Infectious Disease, 2004 Oct. Available from <http://www.cdc.gov/ncidod/EID/vol10no10/03-0925.htm>

*The socioeconomic burden resulting from LACE is substantial, which highlights the importance of the illness in western North Carolina, as well as the need for active surveillance, reporting, and prevention programs for the infection.*<sup>13</sup>

Agriculture, tourism and business properties also benefit from reduced levels of harmful or nuisance mosquitoes and other vectors. For example, reduced vector populations on agricultural properties improve economic activity on the property because employees are more productive. Conversely, any outbreaks of emerging vector-borne pathogens such as West Nile Virus could also materially negatively affect these industries. Diseases transmitted by mosquitoes and other vectors can adversely impact business and recreational functions.

*A study prepared for the United States Department of Agriculture in 2003 found that over 1,400 horses died from West Nile Virus in Colorado and Nebraska and that these fatal disease cases created over \$1.2 million in costs and lost revenues. In addition, horse owners in these two states spent over \$2.75 million to vaccinate their horses for this disease. The study states that "Clearly, WNV has had a marked impact on the Colorado and Nebraska equine industry."*<sup>14</sup>

*Pesticides for mosquito control impart economic benefits to agriculture in general. Anecdotal reports from farmers and ranchers indicate that cattle, if left unprotected, can be exsanguinated by mosquitoes, especially in Florida and other southeast coastal areas. Dairy cattle produce less milk when bitten frequently by mosquitoes*<sup>15</sup>

The Services funded by the assessments help prevent the likelihood of such outbreaks on property in the Assessment Area and reduce the harm to economic activity on property caused by existing mosquito populations. This is another direct advantage received by property in the Assessment Area that would not be received in absence of the assessments.

<sup>13</sup> Utz, J. Todd, Apperson, Charles S., Maccormack, J. Newton, Salyers, Martha, Dietz, E. Jacquelin, Mcpherson, J. Todd, Economic And Social Impacts Of La Crosse Encephalitis In Western North Carolina, Am J Trop Med Hyg 2003 69: 509-518

<sup>14</sup> S. Geiser, A. Seitzinger, P. Salazar, J. Traub-Dargatz, P. Morley, M. Salman, D. Wilmot, D. Steffen, W. Cunningham, Economic Impact of West Nile Virus on the Colorado and Nebraska Equine Industries: 2002, April 2003, Available from [http://www.aphis.usda.gov/vs/ceah/cnabs/nahms/equine/wnv2002\\_CO\\_NB.pdf](http://www.aphis.usda.gov/vs/ceah/cnabs/nahms/equine/wnv2002_CO_NB.pdf)

<sup>15</sup> Jennings, Allen. (2001). USDA Letter to EPA on Fenthion IRED. United States Department of Agriculture, Office of Pest Management Policy. March 8, 2001.

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### **Reduced risk of nuisance and liability on property in the Assessment Area**

In addition to health related factors, uncontrolled mosquito and vector populations create nuisances for the occupants of property in the Assessment Area. Properties in the Assessment Area, therefore, benefit from the reduced nuisance factor that will be created by the Services. Agricultural and rangeland properties also benefit from the reduced nuisance factor and harm to livestock and employees from lower mosquito and vector populations.

Agricultural, range, golf course, cemetery, open space and other such lands in the Assessment Area contain large areas of mosquito and vector habitat and are therefore a significant source of mosquito and vector populations. In addition, residential and business properties in the Assessment Area can also contain significant sources.<sup>16</sup> It is possible that property owners where are sources of mosquitoes are located may be held liable for the transmission of diseases or other harm. For example, in August 2004, the City of Los Angeles approved new fines of up to \$1,000 per day for property owners who don't remove standing water sources of mosquitoes on their property.

The Services protect the business and industry property in the Assessment Area. This is a direct advantage and a special benefit to property in the Assessment Area.

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### **Improved marketability of property.**

As described previously, the Services specially benefit properties in the Assessment Area by making them more useable, livable and functional. The Services also make properties in the Assessment Area more desirable, and more desirable properties also benefit from improved marketability. This is another tangible and direct special benefit to property which will not be enjoyed in absence of the Services.<sup>17</sup>

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<sup>16</sup> Sources of mosquitoes on residential, business, agricultural, range and other types of properties include removable sources such as containers that hold standing water.

<sup>17</sup> If one were to compare two hypothetical properties with similar characteristics, the property with lower mosquito infestation and reduced risk of vector-borne disease will clearly be more desirable, marketable and usable.

## Benefit Finding

In summary, the special benefits described in this Report and the Services in the Assessment Area directly benefit and protect the real properties in the Assessment Area in excess of the assessments for these properties. Therefore, the assessment engineer finds that the cumulative special benefits to property from the Services are reasonably equal to or greater than the annual assessment amount per benefit unit. The special benefits as described above are conferred on property in the Assessment Area and support both the 1996 Assessment and the 2005 Assessment.

## General vs. Special Benefit

Article XIII C of the California Constitution requires any local agency proposing to increase or impose a benefit assessment to “separate the general benefits from the special benefits conferred on a parcel.” The rationale for separating special and general benefits is to ensure that property owners subject to the special benefit assessment are not paying for general benefits. The assessment can fund the special benefits to property in the 2005 Assessment Area but cannot fund any general benefits. Accordingly, a separate estimate of the special and general benefit is given in this section.

In other words:

$$\text{Total Benefit} = \text{General Benefit} + \text{Special Benefit}$$

There is no widely-accepted or statutory formula to determine general benefit from vector control services. General benefits are benefits from improvements or services that are not special in nature, are not “particular and distinct” and are not “over and above” benefits received by other properties. General benefits are conferred to properties located “in the district,<sup>18</sup>” but outside the 2005 Assessment Area and to “the public at large.” SVTA vs. SCCOSA provides some clarification by indicating that general benefits provide “an indirect, derivative advantage” and are not necessarily proximate to the improvements and services funded by the assessments.

A formula to estimate the general benefit is listed below:

<b>General Benefit</b>	<b>=</b>	<b>Benefit to Real Property Outside the 2005 Assessment Area</b>	<b>+</b>	<b>Benefit to Real Property Inside the 2005 Assessment Area that is Indirect and Derivative</b>	<b>+</b>	<b>Benefit to the Public at Large</b>
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Special benefit, on the other hand, is defined in the state constitution as “a particular and distinct benefit over and above general benefits conferred on real property located in the district or to the public at large.” The SVTA v. SCCOSA decision indicates that a special benefit is conferred to a property if it “receives a direct advantage from the improvement (e.g., proximity to a park).” In this proposed special benefit assessment, the overwhelming proportion of the benefits conferred to property is special, since the advantages from the mosquito and disease protection funded by the 2005 Assessments are directly received by the properties in the 2005 Assessment Area and are only minimally received by property outside the 2005 Assessment Area or the public at large.

<sup>18</sup> SVTA vs. SCCOSA explains as follows:

“OSA observes that Proposition 218’s definition of “special benefit” presents a paradox when considered with its definition of “district.” Section 2, subdivision (i) defines a “special benefit” as “a particular and distinct benefit over and above general benefits conferred on real property located in the district or to the public at large.” (Art. XIII D, § 2, subd. (i), italics added.) Section 2, subdivision (d) defines “district” as “an area determined by an agency to contain all parcels which will receive a special benefit from a proposed public improvement or property-related service.” (Art. XIII D, § 2, subd. (d), italics added.) In a well-drawn district — limited to only parcels receiving special benefits from the improvement — every parcel within that district receives a shared special benefit. Under section 2, subdivision (i), these benefits can be construed as being general benefits since they are not “particular and distinct” and are not “over and above” the benefits received by other properties “located in the district.”

We do not believe that the voters intended to invalidate an assessment district that is narrowly drawn to include only properties directly benefiting from an improvement. Indeed, the ballot materials reflect otherwise. Thus, if an assessment district is narrowly drawn, the fact that a benefit is conferred throughout the district does not make it general rather than special.”



Proposition 218 uses the phrase “over and above” general benefits in describing special benefit. (Art. XIID, sections 2(i) & 4(f).) There currently are some mosquito and vector related services being provided to the 2005 Assessment Area. Consequently, there currently are some mosquito control related benefits being provided to the 2005 Assessment Area and any new and enhanced service provided by the District would be over and above this baseline. Arguably, all of the Services proposed to be funded by the assessment therefore would be a special benefit because the additional Services would particularly and distinctly benefit and protect the property in the 2005 Assessment Area over and above the previous baseline benefits and service.

Nevertheless, some of the Services would benefit the public at large and properties outside the 2005 Assessment Area.

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### **Dahms V. Downtown Pomona Property**

On June 8, 2009, the 4th Court of Appeals amended its original opinion upholding a benefit assessment for property in the downtown area of the City of Pomona. On July 22, 2009, the California Supreme Court denied review. On this date, Dahms became good law and binding precedent for assessments. In Dahms the court upheld an assessment that was 100% special benefit on the rationale that the services funded by the assessments were directly provided to property in the assessment district. Similar to Downtown Pomona, the 2005 Assessments fund mosquito, vector and disease control services directly provided to property in the 2005 Assessment Area. Moreover, as noted, the Services directly reduce mosquito and vector populations on all property in the 2005 Assessment Area. Therefore, Dahms establishes a basis for minimal or zero general benefits from the 2005 Assessments. However, in this report, the general benefit is more conservatively estimated and described, and then budgeted so that it is funded by sources other than the 2005 Assessments.

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### **Bonander v. Town of Tiburon**

On December 31, 2009, the 1st District Court of Appeals overturned a benefit assessment approved by property owners to pay for placing overhead utility lines underground in an area of the Town of Tiburon. The Court invalidated the assessments on the grounds that the assessments had been apportioned to assessed property based in part on relative costs within sub-areas of the assessment district instead of proportional special benefits. The Engineer’s Report is consistent with Bonander because the assessments have been apportioned based on the overall cost of the Services and proportional special benefit to each property.

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**Beutz v. County of Riverside**

On May 26, 2010, the 4<sup>th</sup> District Court of Appeals issued a decision on the Steven Beutz v. County of Riverside (“Beutz”) appeal. This decision overturned an assessment for park maintenance in Wildomar, California, primarily because the general benefits associated with improvements and services were not explicitly calculated, quantified and separated from the special benefits. These assessments are consistent with Beutz because the general benefits have been explicitly calculated and quantified and excluded from the assessments.

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**Golden Hill Neighborhood Association v. City of San Diego**

On September 22, 2011, the San Diego Court of Appeals issued a decision on the Golden Hill Neighborhood Association v. City of San Diego appeal. This decision overturned an assessment for street and landscaping maintenance in the Greater Golden Hill neighborhood of San Diego, California. The court described two primary reasons for its decision. First, like in Beutz, the court found the general benefits associated with services were not explicitly calculated, quantified and separated from the special benefits. Second, the court found that the City had failed to record the basis for the assessment on its own parcels. These assessments are consistent with Greater Golden Hill because the general benefits have been explicitly calculated and quantified and excluded from the assessments.

## Calculating General Benefit

Without this assessment the District would lack the funds to continue to provide the baseline level of service and additional Services to the 2005 Assessment Area. The only additional service that is being provided is the vector control program assessment-funded Services. Consistent with footnote 8 of SVTA v. SCCOSA, and for the reasons described above, the District has determined that all parcels in the 2005 Assessment Area receive a shared direct advantage and special benefit from the Services. The Services directly and particularly serve and benefit each parcel, and are not a mere indirect, derivative advantage. As explained above, Proposition 218 relies on the concept of “over and above” in distinguishing special benefits from general benefits. As applied to an assessment proceeding this concept means that all vector control services, which provide direct advantage to property in the 2005 Assessment Area, are over and above the baseline and therefore are special.

Nevertheless, the proposed Services may provide a degree of general benefit, in addition to the predominant special benefit. This section provides a conservative measure of the general benefits from the 2005 Assessments.

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### Benefit to Property Outside the District

Properties within the 2005 Assessment Area receive almost all of the special benefits from the Services because the Services funded by the 2005 Assessments will be provided directly to protect property within the 2005 Assessment Area from mosquitoes and vector-borne diseases. However, properties adjacent to, but just outside of, the proposed boundaries may receive some benefit from the proposed Services in the form of reduced mosquito populations on property outside the 2005 Assessment Area. Since this benefit, is conferred to properties outside the district boundaries, it contributes to the overall general benefit calculation and will not be funded by the 2005 Assessment.

A measure of this general benefit is the proportion of Services that would affect properties outside of the 2005 Assessment Area. Each year, the District will provide some of its Services in areas near the boundaries of the 2005 Assessment Area. By abating mosquito populations near the borders of the 2005 Assessment Area, the Services could provide benefits in the form of reduced mosquito populations and reduced risk of disease transmission to properties outside the Assessment 2005 Assessment Area. If mosquitoes were not controlled inside the 2005 Assessment Area, more of them would fly from the 2005 Assessment Area. Therefore control of mosquitoes within the Unprotected Areas provides some benefit to properties outside the 2005 Assessment Area but within the normal flight range of mosquitoes, in the form of reduced mosquito populations and reduced vector-borne disease transmission. This is a measure of the general benefits to property outside the 2005 Assessment Area because this is a benefit from the Services that is not specially conferred upon property in the 2005 Assessment Area.

The mosquito potential outside the 2005 Assessment Area is based on studies of mosquito dispersion concentrations. Mosquitoes can travel up to two miles, on average, so this destination range is used. Based on studies of mosquito destinations, relative to parcels in the 2005 Assessment Area average concentration of mosquitoes from the Unprotected Areas on properties within two miles of the 2005 Assessment Area is calculated to be 6%.<sup>19</sup> This relative vector population reduction factor within the destination range is combined with the number of parcels outside the 2005 Assessment Area and within the destination range to measure this general benefit and is calculated as follows:

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<sup>19</sup> Tietze, Noor S., Stephenson, Mike F., Sidhom, Nader T. and Binding, Paul L., "Mark-Recapture of *Culex Erythrothorax* in Santa Cruz County, California", Journal of the American Mosquito Control Association, 19(2):134-138, 2003.

**Criteria:**

Mosquitoes may fly up to 2 miles from their breeding source.

31,218 parcels within 2 miles of, but outside of the District, may receive some mosquito and disease protection benefit

6% portion of relative benefit that is received

479,864 Parcels in the District.

**Calculations:**

Total Benefit = 31,218 \* 6% = 1,874 parcels equivalents

Percentage of overall parcel equivalents =  $1,874 / (479,864 + 1,874) = 0.38\%$

Therefore, for the overall benefits provided by the Services to the 2005 Assessment Area, it is determined that 0.38% of the benefits would be received by the parcels within two miles of the 2005 Assessment Area boundaries. Recognizing that this calculation is an approximation, this benefit will be rounded up to 1.0%.

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**Benefit to Property *Inside* the District that is *Indirect and Derivative***

The “indirect and derivative” benefit to property within the 2005 Assessment Area is particularly difficult to calculate. As explained above, all benefit within the 2005 Assessment Area is special because the mosquito and disease control services in the 2005 Assessment Area would provide direct service and protection that is clearly “over and above” and “particular and distinct” when compared with the level of such protection under current conditions. Further the properties are within the proposed 2005 Assessment Area boundaries and this Engineer’s Report demonstrates the direct benefits received by individual properties from mosquito and disease control services.

In determining the 2005 Assessment Area, the District has been careful to limit it to an area of parcels that will directly receive the Services. All parcels will directly benefit from the surveillance, monitoring and treatment that will be provided on an equivalent basis throughout the 2005 Assessment Area in order to maintain the same improved level of protection against mosquitoes and other vectors and reduced mosquito and vector populations throughout the area. The surveillance and monitoring sites would be spread on a balanced basis throughout the area. Mosquito and vector control and treatment would be provided as needed throughout the area based on the surveillance and monitoring results. The shared special benefit - reduced mosquito levels and reduced presence of vector-borne diseases - would be received on an equivalent basis by all parcels in the 2005 Assessment Area. Furthermore, all parcels in the 2005 Assessment Area would directly benefit from the ability to request service from the District and to have a District field technician promptly respond directly to the parcel and address the owner's or resident's service need. The SVTA vs. SCCOSA decision indicates that the fact that a benefit is conferred throughout the 2005 Assessment Area does not make the benefit general rather than special, so long as the 2005 Assessment Area is narrowly drawn and limited to the parcels directly receiving proportional shared special benefits from the service. This concept is particularly applicable in situations involving a landowner-approved assessment-funded extension of a local government service to benefit lands previously not receiving that particular service. The District therefore concludes that, other than the small general benefit to properties outside the 2005 Assessment Area (discussed above) and to the public at large (discussed below), all of the benefits of the Services to the parcels within the 2005 Assessment Area are special benefits and it is not possible or appropriate to separate any general benefits from the benefits conferred on parcels in the 2005 Assessment Area.

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### **Benefit To The Public At Large**

With the type and scope of Services provided to the 2005 Assessment Area, it is very difficult to calculate and quantify the scope of the general benefit conferred on the public at large. Because the Services directly serve and benefit all of the property in the 2005 Assessment Area, any general benefit conferred on the public at large would be small. Nevertheless, there would be some indirect general benefit to the public at large.

The public at large uses the public highways, streets and sidewalks, and when traveling in and through the 2005 Assessment Area they will benefit from the Services. A fair and appropriate measure of the general benefit to the public at large therefore is the amount of highway, street and sidewalk area within the 2005 Assessment Area relative to the overall land area. An analysis of maps of the 2005 Assessment Area shows that approximately 1.11% of the land area in the 2005 Assessment Area is covered by highways, streets and sidewalks. This 1.11% therefore is a fair and appropriate measure of the general benefit to the public at large within the 2005 Assessment Area.

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### Summary of General Benefits

Using a sum of the measures of general benefit for the public at large and land outside the 2005 Assessment Area, we find that approximately 2.11% of the benefits conferred by the proposed 2005 Assessment may be general in nature and should be funded by sources other than the 2005 Assessment.

#### General Benefit Calculation

	<b>1.0%</b>	<b>(Outside the 2005 Assessment Area)</b>
<b>+</b>	<b>0.0%</b>	<b>(Property within the 2005 Assessment Area)</b>
<b>+</b>	<b>1.11%</b>	<b>(Public at Large)</b>
<b>=</b>	<b>2.11%</b>	<b>(Total General Benefit)</b>

Although this analysis supports the findings that 2.11% of the 2005 Assessment may provide general benefit only, this number is increased by the Assessment Engineer to 4% to conservatively ensure that no assessment revenue is used to support general benefit. This additional amount allocated to general benefit also covers general benefit to parcels in the 2005 Assessment Area if it is later determined that there is some general benefit conferred on those parcels.



The proposed 2005 Assessment total budget for mosquito and vector abatement, disease control, and capital improvement is \$10,379,830. Of this total budget amount, the District will contribute \$3,567,184 or 34.4% of the total budget from sources other than the 2005 Assessment. This contribution offsets any general benefits from the Mosquito, Vector and Disease Control Assessment Services. For fiscal year 2023-24 it is anticipated that the 1996 Assessment will generate approximately \$2,883,021 and the 2005 Assessment will generate approximately \$4,887,487 in assessment revenue (Please note that the above discussion of special and general benefit applies only to the 2005 Assessment.)

### Proportionality - Zones of Benefit

The District's mosquito, vector, and disease control programs, projects and services that will be funded by the proposed 2005 Assessment will be provided in all areas within the County boundaries. However, areas east of the westernmost ridgeline of the Diablo Range are more remotely located and receive a reduced level of Services and corresponding benefits relative to other parcels in the District. These areas are hereinafter referred to as Zone of Benefit B or Zone B and are depicted on the Assessment Diagram included with this Report. All other parcels within the County boundaries are within Zone A.

Using District estimates for the amount of Services provided to parcels east of the ridgeline (Zone B), we find that parcels in Zone B receive approximately one-half of the average level of Services and benefits provided to other parcels in the District (Zone A). Therefore, parcels in Zone B receive 50% of the assessment rate per benefit unit.

The SVTA vs. SCCOSA decision indicates:

*“In a well-drawn district — limited to only parcels receiving special benefits from the improvement — every parcel within that district receives a shared special benefit. Under section 2, subdivision (i), these benefits can be construed as being general benefits since they are not “particular and distinct” and are not “over and above” the benefits received by other properties “located in the district.”*

*We do not believe that the voters intended to invalidate an assessment district that is narrowly drawn to include only properties directly benefiting from an improvement. Indeed, the ballot materials reflect otherwise. Thus, if an assessment district is narrowly drawn, the fact that a benefit is conferred throughout the district does not make it general rather than special. In that circumstance, the characterization of a benefit may depend on whether the parcel receives a direct advantage from the improvement (e.g., proximity to*

*park) or receives an indirect, derivative advantage resulting from the overall public benefits of the improvement (e.g., general enhancement of the district's property values)."*

In the assessment, the advantage that each parcel receives from the proposed Services is direct, and the boundaries for each Zone of Benefit are narrowly drawn so each Zone includes parcels that receive the similar levels of benefit from the Services. Therefore, the even spread of assessment for similar properties in each of the narrowly drawn Zones of Benefit within the District is indeed consistent with the OSA decision and establishes proportionality of the assessments to property. (Please note that the above discussion of zones of benefit applies only to the 2005 Assessment.)

### Method of Assessment background on 1996 Assessment

The following method of assessment and apportionment sections apply to the 2005 Assessment only. Refer to the Engineer's Report for the 1996 Assessment for a description of the 1996 Assessments proportionality and method of assessment. For quick reference, the 1996 Assessment Methodology table is included below:

**Table 2 – 1996 Assessment Method Table (For Reference only)**

Table "F"		
FY 1996/97 Assessments for Vector Control Services		
Land Use	West of Ridge Line	East of Ridge Line
Single Family Residential (SFR)	\$5.08	\$1.02
Condominiums, Townhouses & Mobile Homes	\$5.08	\$1.02
General Industrial Non Manufacturing	\$14.83	\$2.97
General Manufacturing	\$17.62	\$3.52
Vacant Manufacturing Buildings	\$6.81	\$1.36
Regional Shopping Centers	\$27.02	\$5.40
Community Shopping Centers	\$22.52	\$4.50
Neighborhood Shopping Centers	\$18.01	\$3.60
Offices, Banks & Clinics	\$14.83	\$2.97
Service Stations	\$10.39	\$2.08
Agricultural	\$10.75	\$2.15

## 2005 Assessment Method of Assessment

As previously discussed, the 2005 Assessments fund enhanced, comprehensive, year-round mosquito and vector control, disease surveillance and control Services that will reduce mosquito and vector populations on property and will clearly confer special benefits to properties in the 2005 Assessment Area. These benefits can also partially be measured by the occupants on property in the Improvement District because such parcel population density is a measure of the relative benefit a parcel receives from the Improvements. Therefore, the apportionment of benefit is partially based the population density of parcels.

It should be noted that many other types of “traditional” assessments also use parcel population densities to apportion the assessments. For example, the assessments for sewer systems, roads and water systems are typically allocated based on the population density of the parcels assessed. Moreover, assessments have a long history of use in California and are in large part based on the principle that any benefits from a service or improvement funded by assessments that is enjoyed by tenants and other non-property owners ultimately is conferred directly to the underlying property.<sup>20</sup>

With regard to benefits and source locations, the assessment engineer determined that since mosquitoes and other vectors readily fly from their breeding locations to all properties in their flight range and since mosquitoes are actually attracted to properties occupied by people or animals, the benefits from mosquito and vector control extend beyond the source locations to all properties that would be a “destination” for mosquitoes and other vectors. In other words, the control and abatement of mosquito and vector populations ultimately confers benefits to all properties that are a destination of mosquitoes and vectors, rather than just those that are sources of mosquitoes.

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<sup>20</sup> For example, in *Federal Construction Co. v. Ensign* (1922) 59 Cal.App. 200 at 211, the appellate court determined that a sewer system specially benefited property even though the direct benefit was to the people who used the sewers: “Practically every inhabitant of a city either is the owner of the land on which he resides or on which he pursues his vocation, or he is the tenant of the owner, or is the agent or servant of such owner or of such tenant. And since it is the inhabitants who make by far the greater use of a city’s sewer system, it is to them, as lot owners or as tenants, or as the servants or agents of such lot owners or tenants, that the advantages of actual use will redound. But this advantage of use means that, in the final analysis, it is the lot owners themselves who will be especially benefited in a financial sense.”

Although some primary mosquito and vector sources may be located outside of residential areas, residential properties can and do generate their own, often significant, populations of mosquitoes and vector organisms. For example, storm water catch basins in residential areas are a common source of mosquitoes. Since the typical flight range for a female mosquito, on average is 2 miles, most homes in the Assessment Area are within the flight zone of many mosquito sources. Moreover, there are many other common residential sources of mosquitoes, such as miscellaneous backyard containers, neglected swimming pools, leaking water pipes and tree holes. Clearly, there is a potential for mosquito sources on virtually all types of property. More importantly, all properties in the Assessment Area are within the destination range of mosquitoes and most properties are actually within the destination range of multiple mosquito source locations.

Because the Services are provided throughout the 2005 Assessment Area with the same level of control objective in each zone, mosquitoes can rapidly and readily fly from their breeding locations to other properties over a large area, and because there are current or potential breeding sources literally everywhere in the 2005 Assessment Area, the Assessment Engineer determined that all similar properties in the 2005 Assessment Area have generally equivalent mosquito “destination” potential and, therefore, receive equivalent levels of benefit within areas in a same Zone of Benefit.

In the process of determining the appropriate method of assessment, the Engineer considered various alternatives. For example, a fixed assessment amount per parcel for all residential improved property was considered but was determined to be inappropriate because agricultural lands, commercial property and other property also receive benefits from the assessments. Likewise, an assessment exclusively for agricultural land was considered but deemed inappropriate because other types of property, such as residential and commercial, also receive the special benefit factors described previously.

A fixed or flat assessment was deemed to be inappropriate because larger residential, commercial and industrial properties receive a higher degree of benefit than other similarly used properties that are significantly smaller. (For two properties used for commercial purposes, there is clearly a higher benefit provided to a property that covers several acres in comparison to a smaller commercial property that is on a 0.25 acre site. The larger property generally has a larger coverage area and higher usage by employees, customers, tourists and guests that would benefit from reduced mosquito and vector populations, as well as the reduced threat from diseases carried by mosquitoes and other vectors. This benefit ultimately flows to the property.) Larger commercial, industrial and apartment parcels, therefore, receive an increased benefit from the assessments.

In conclusion, the assessment engineer determined that the appropriate method of assessment apportionment should be based on the type and use of property, the relative size of the property its relative population and usage potential, and its destination potential for mosquitoes. This method is further described below.

### Assessment Apportionment

The following Assessment Apportionment sections applies to the 2005 Assessment only. Refer to the Engineer's Report for the 1996 Assessment for a description of the 1996 Assessments assessment apportionment.

The special benefits derived from the 2005 Assessment are conferred on property and are not based on a specific property owner's occupancy of property or the property owner's demographic status, such as age or number of dependents. However, it is ultimately people who do or could use the property and who enjoy the special benefits described above. The opportunity to use and enjoy property within the 2005 Assessment Area without the excessive nuisance, diminished "livability" or the potential health hazards brought by mosquitoes, vectors and the diseases they carry is a special benefit to properties in the 2005 Assessment Area. This benefit can be in part measured by the number of people who potentially live on, work at, visit or otherwise use the property, because people ultimately determine the value of the benefits by choosing to live, work and/or recreate in the area, and by choosing to purchase property in the area.<sup>21</sup>

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<sup>21</sup> It should be noted that the benefits conferred upon property are related to the average number of people who could potentially live on, work at or otherwise could use a property, not how the property is currently used by the present owner.

In order to apportion the cost of the Services to property, each property in the 2005 Assessment Area is assigned a relative special benefit factor. This process involves determining the relative benefit received by each property in relation to a single family home, or, in other words, on the basis of Single Family Equivalent (SFE). This SFE methodology is commonly used to distribute assessments in proportion to estimated special benefit. For the purposes of this Engineer's Report, all properties are designated an SFE value, which is each property's relative benefit in relation to a "benchmark" parcel in the 2005 Assessment Area. The "benchmark" property is the single family detached dwelling on a parcel of less than one acre. This benchmark parcel is assigned one Single Family Equivalent benefit unit or one SFE.

The calculation of the special benefit apportionment and relative benefit to properties in the Assessment Area from the Services is summarized in the following equation:

$$\text{Special Benefit (per property)} = \sum f(\text{Special Benefits}) * \sum f(\text{Property Specific Attributes}^1)$$

1. Such as use, property type, size, as well as vector-specific attributes such as destination potential and population potential.

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### Residential Properties

Certain residential properties in the 2005 Assessment Area that contain a single residential dwelling unit and are on a lot of less than one acre are assigned one Single Family Equivalent or 1.0 SFE. Traditional houses, zero-lot line houses, and townhomes are included in this category.

Single family residential properties in excess of one acre receive additional benefit relative to a single family home up to one acre, because the larger parcels provide more area for mosquito sources and the mosquito, vector and disease control Services. Therefore, such larger parcels receive additional benefits relative to a single family home on less than one acre and are assigned 1.0 SFE for the residential unit and an additional rate equal to the agricultural rate described below of 0.002 SFE per one-fifth acre of land area in excess of one acre. Mobile home parcels on a separate parcel and in excess of one acre also receive this additional acreage rate.

Other types of properties with residential units, such as agricultural properties, are assigned the residential SFE rates for the dwelling units on the property and are assigned additional SFE benefit units for the agricultural-use land area on the property.

Properties with more than one residential unit are designated as multi-family residential properties. These properties, along with condominiums, benefit from the services and improvements in proportion to the number of dwelling units that occupy each property, the average number of people who reside in each property, and the average size of each property in relation to a single family home in Santa Clara County. This Report analyzed Santa Clara County population density factors from the 2000 US Census as well as average dwelling unit size for each property type. After determining the Population Density Factor and Square Footage Factor for each property type, an SFE rate is generated for each residential property structure, as indicated in Table 3 below.

The SFE factor of 0.43 per dwelling unit for multifamily residential properties applies to such properties with two to four units (duplex, triplex, fourplex). Properties in excess of 5 units typically offer on-site management, monitoring and other control services that tend to offset some of the benefits provided by the 2005 Assessment. Therefore the benefit for properties in excess of 5 units is determined to be 0.28 SFE per unit for the first 20 units and 0.10 SFE per each additional unit in excess of 20 dwelling units.

**Table 3 - Santa Clara County Residential Assessment Factors**

	<i>Total Population</i>	<i>Occupied Households</i>	<i>Persons per Household</i>	<i>Pop. Density Equivalent</i>	<i>SqFt Factor</i>	<i>Proposed Rate</i>
Single Family Residential	1,036,439	319,230	3.25	1.00		<b>1.00</b>
Condominium	145,582	51,822	2.81	0.87	0.70	<b>0.60</b>
Duplex, Triplex, Fourplex	132,770	45,423	2.92	0.90	0.48	<b>0.43</b>
Multi-Family Residential, 5+ Units	290,499	130,362	2.23	0.69	0.40	<b>0.28</b>
Mobile Home on Separate Lot	46,256	18,503	2.50	0.77	0.38	<b>0.29</b>

Source: 2000 Census (the most recent data available when the 2005 Assessment was established), Santa Clara County and property dwelling size information from the Santa Clara County Assessor data and other sources.

### **Commercial/Industrial Properties**

Commercial and industrial properties are generally open and operated for more limited times, relative to residential properties. Therefore, the relative hours of operation can be used as a measure of benefits, since residents and employees also provide a measure of the relative benefit to property. Since commercial and industrial properties are typically open and occupied by employees approximately one-half the time of residential properties, it is reasonable to assume that commercial land uses receive one-half of the special benefit on a land area basis relative to single family residential property.



The average size of a single family home with 1.0 SFE factor in Santa Clara County is 0.20 acres. Therefore, a commercial property with 0.20 acres receives one-half the relative benefit, or a 0.50 SFE factor.

The SFE values for various commercial and industrial land uses are further defined by using average employee densities because the special benefit factors described previously are also related to the average number of people who work at commercial/industrial properties.

To determine employee density factors, this Report utilizes the findings from the San Diego County Association of Governments Traffic Generators Study (the "SANDAG Study") because these findings were approved by the State Legislature which determined the SANDAG Study to be a good representation of the average number of employees per acre of land area for commercial and industrial properties. As determined by the SANDAG Study, the average number of employees per acre for commercial and industrial property is 24. As presented in Table 4, the SFE factors for other types of businesses are determined relative to their typical employee density in relation to the average of 24 employees per acre of commercial property.

Commercial and industrial properties in excess of 5 acres generally involve uses that are more land intensive relative to building areas and number of employees (lower coverage ratios). As a result, the benefit factors for commercial and industrial property land area in excess of 5 acres is determined to be the SFE rate per fifth acre for the first 5 acres and the relevant SFE rate per each additional acre over 5 acres. Institutional properties that are used for residential, commercial or industrial purposes are also assessed at the appropriate residential, commercial or industrial rate.

Table 4 on the following page lists the benefit assessment factors for business properties.

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### **Agricultural, Rangeland, Golf and Cemetery Properties**

Utilizing research and agricultural employment reports from UC Davis and the California Employment Development Department and other sources, this Report calculated an average usage density of 0.05 people per acre for agriculture property, 3.0 for golf courses, 0.01 for rangelands and timber and 1.2 for cemeteries. Since these properties typically are a source of mosquitoes and/or are typically closest to other sources of mosquitoes and other vectors, it is reasonable to determine that the benefit to these properties is twice the usage density ratio of commercial properties. The SFE factors per 0.20 acres of land area are shown in the following Table 4.

Table 4 - Commercial/Industrial Benefit Assessment Factors

<i>Type of Commercial/Industrial Land Use</i>	<i>Average Usage Per Acre <sup>1</sup></i>	<i>SFE Units per Fraction Acre <sup>2</sup></i>	<i>SFE Units per Acre After 5</i>
Commercial	24	0.500	0.500
Office	68	1.420	1.420
Shopping Center	24	0.500	0.500
Industrial	24	0.500	0.500
Self Storage or Parking Lot	1	0.021	
Golf Course	3.00	0.13	
Cemetery	1.20	0.05	
Agriculture	0.05	0.0021	
Rangelands/Timber	0.010	0.00042	

1. Source: San Diego Association of Governments Traffic Generators Study, University of California, Davis and other studies and sources.

2. The SFE factors for commercial and industrial parcels indicated above are applied to each fifth acre of land area or portion thereof. (Therefore, the minimum assessment for any assessable parcel in these categories is the SFE Units listed herein.)

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### Vacant Properties

The benefit to vacant (unimproved) properties is determined to be proportional to the corresponding benefits for similar type developed properties. However, vacant properties are assessed at a lower rate due to the lack of active benefits, as measured by use by residents, employees, customers and guests. A measure of the benefits accruing to the underlying land is the average value of land in relation to improvements for developed property. An analysis of the assessed valuation data from the County of Santa Clara found that 50% of the assessed value of improved properties is classified as land value. Since vacant properties have very low to zero population/use densities until they are developed, a 50% benefit discount is applied to the valuation factor of 0.50 to account for the current low use density and potential for harm or nuisance to the property owner or his residents, employees, customers and guests. The combination of these measures results in a 0.25 factor. It is reasonable to assume, therefore, that approximately 25% of the benefits are related to the underlying land and 75% are related to the day-to-day use of the property. Using this ratio, the SFE factor for vacant parcels is 0.25 per parcel.

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### Other Properties

Article XIIID stipulates that publicly owned properties must be assessed unless those properties are reasonably determined to receive no special benefit from the 2005 Assessment.

All properties that are specially benefited are assessed. Publicly owned property that is used for purposes similar to private residential, commercial, industrial or institutional uses is benefited and assessed at the same rate as such privately owned property. Other public properties such as watershed parcels, parks, open space parcels are determined to, on average, receive similar benefits as a single family home. Therefore such parcels are assessed an SFE benefit factor of 1. Miscellaneous, small and other parcels such as roads, right-of-way parcels, and common areas typically do not generate significant numbers of employees, residents, customers or guests and have limited economic value. These miscellaneous parcels receive minimal benefit from the Services and are assessed an SFE benefit factor of 0.

Church parcels, institutional properties, and property used for educational purposes typically generate employees on a less consistent basis than other non-residential parcels. Therefore, these parcels are determined to, on average, receive similar benefits as a single family home. Therefore such parcels are assessed an SFE benefit factor of 1.

### Parcel Analysis of 1996 Assessment and 2005 Assessment

Regarding benefit assessments, Proposition 218 requires that “no assessment shall be imposed on any parcel which exceeds the reasonable cost of the proportional special benefit conferred on that parcel.” Since parcels within the District are subject to the sum of the 1996 assessment and 2005 Assessment, additional discussion and analysis is warranted to ensure that this critical requirement of Proposition 218 is satisfied.

Both assessment were individually designed, developed and formed subject to the standard that individual costs do not exceed individual special benefit and individual assessed amount for the individual assessment – therefore the sum of the two assessments also does not exceed the sum of the special benefit and assessments.

Further, Table 5 on the following page shows the sum of the two assessments for several key property use types.

**Table 5 – Sum of 1996 Assessment and 2005 Assessments**

<b>Property Type</b>	<b>Sum of 1996 Assessment and 2005 Assessment</b>
Single Family Residential	<b>\$14.36</b>
Condominium	<b>\$10.65</b>
Duplex	<b>\$18.14</b>
Multi-Family Residential, 5 Units	<b>\$38.39</b>
Mobile Home on Separate Lot	<b>\$7.77</b>
Commercial / General Manufacturing on 1/2 acre	<b>\$29.22</b>
Office on 1/2 acre	<b>\$47.77</b>
Industrial on 1/2 acre	<b>\$26.43</b>

A reasonable review of the tabulated total assessment costs for various property uses in Table 5 confirms that these totals do not exceed the cost-benefits of the actual services provided and described in this report. Finally, although admittedly an imperfect reference comparison, these costs are far below even one service call from a private pest control service which typically exceeds \$100.

### **Duration of Assessment**

It is proposed that the 1996 Assessment and the 2005 Assessment be levied for fiscal year 2023-24 and continued every year thereafter, so long as mosquitoes and vectors remain in existence and the Santa Clara County Vector Control District requires funding from the Assessments for its Services. As noted previously, the 2005 Assessment can continue to be levied annually after the Santa Clara County Vector Control District Board of Supervisors/Board of Trustees approves an annually updated Engineer's Report, budget for the Assessment, Services to be provided, and other specifics of the Assessment. In addition, the District Board of Supervisors/Board of Trustees must hold an annual public hearing to continue the 2005 Assessment.

## Appeals and Interpretation

Any property owner who feels that the assessment levied on the subject property is in error as a result of incorrect information being used to apply the foregoing method of assessment, may file a written appeal with the District Manager of the Santa Clara County Vector Control District or his or her designee. Any such appeal is limited to correction of an assessment during the then current Fiscal Year or, if before July 1, the upcoming fiscal year. Upon the filing of any such appeal, the District Manager or his or her designee will promptly review the appeal and any information provided by the property owner. If the District Manager or his or her designee finds that the assessment should be modified, the appropriate changes shall be made to the assessment roll. If any such changes are approved after the assessment roll has been filed with the Santa Clara County for collection, the District Manager or his or her designee is authorized to refund to the property owner the amount of any approved reduction. Any dispute over the decision of the District Manager, or his or her designee, shall be referred to the Board. The decision of the Board shall be final.

## Assessment Diagram

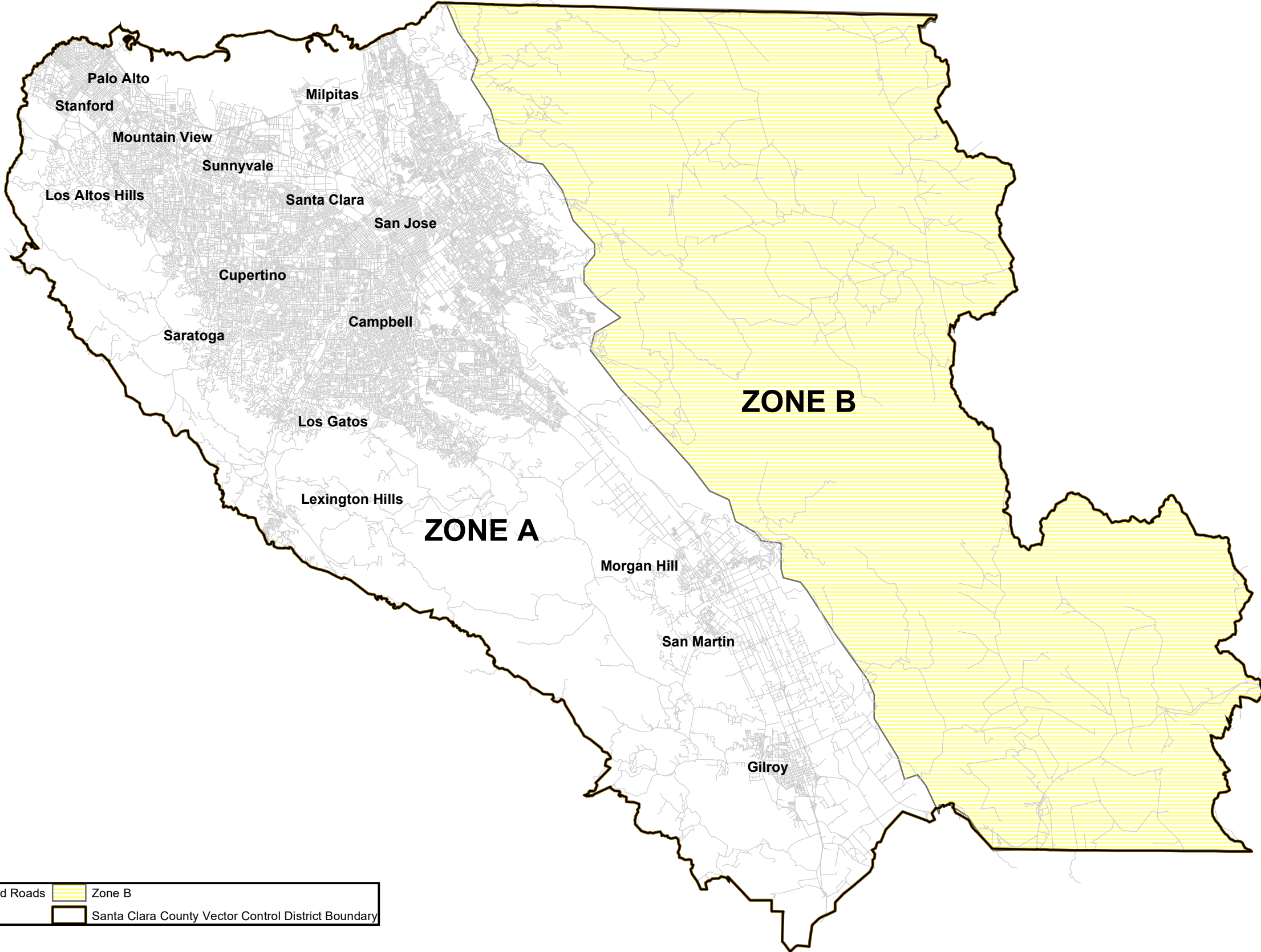
The 2005 Assessment Area includes all properties within the boundaries of the Santa Clara County.

The boundaries of the 2005 Assessment Area are displayed on the following Assessment Diagram.

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# SANTA CLARA COUNTY VECTOR CONTROL DISTRICT



FILED IN THE OFFICE OF THE DISTRICT MANAGER OF THE SANTA CLARA COUNTY VECTOR CONTROL DISTRICT, COUNTY OF SANTA CLARA, CALIFORNIA, THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2023.

\_\_\_\_\_  
DISTRICT MANAGER

RECORDED IN THE OFFICE OF THE DISTRICT MANAGER OF THE SANTA CLARA COUNTY VECTOR CONTROL DISTRICT, COUNTY OF SANTA CLARA, CALIFORNIA THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2023.

\_\_\_\_\_  
DISTRICT MANAGER

AN ASSESSMENT WAS CONFIRMED AND LEVIED BY THE BOARD OF THE SANTA CLARA COUNTY VECTOR CONTROL DISTRICT, COUNTY OF SANTA CLARA, ON THE LOTS, PIECES AND PARCELS OF LAND ON THIS ASSESSMENT DIAGRAM ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 2023 FOR THE FISCAL YEAR 2023-24 AND SAID ASSESSMENT DIAGRAM AND THE ASSESSMENT ROLL FOR SAID FISCAL YEAR WERE FILED IN THE OFFICE OF THE COUNTY AUDITOR OF THE COUNTY OF SANTA CLARA ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 2023.

REFERENCE IS HEREBY MADE TO SAID RECORDED ASSESSMENT ROLL FOR THE EXACT AMOUNT OF EACH ASSESSMENT LEVIED AGAINST EACH PARCEL OF LAND.

\_\_\_\_\_  
DISTRICT MANAGER

FILED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2023 AT THE HOUR OF \_\_\_\_\_ O'CLOCK \_\_\_\_\_ M. IN THE OFFICE OF THE COUNTY TAX COLLECTOR OF THE COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, AT THE REQUEST OF THE BOARD OF THE SANTA CLARA COUNTY VECTOR CONTROL DISTRICT.

\_\_\_\_\_  
COUNTY TAX COLLECTOR, COUNTY OF SANTA CLARA

Note:  
REFERENCE IS HEREBY MADE TO THE MAPS AND DEEDS OF RECORD IN THE OFFICE OF THE ASSESSOR OF THE COUNTY OF SANTA CLARA FOR A DETAILED DESCRIPTION OF THE LINES AND DIMENSIONS OF ANY PARCEL SHOWN HEREIN. THOSE MAPS SHALL GOVERN FOR ALL DETAILS CONCERNING THE LINES AND DIMENSIONS OF SUCH PARCELS. EACH PARCEL IS IDENTIFIED IN SAID MAPS BY ITS DISTINCTIVE ASSESSOR'S PARCEL NUMBER

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	Streets and Roads		Zone B
	Santa Clara County Vector Control District Boundary		

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## Assessment Roll

Reference is hereby made to the Assessment Roll in and for said assessment proceedings on file in the office of the District Manager of the District and the Clerk of the Board of Supervisors/Board of Trustees, as said Assessment Roll is too voluminous to be bound with this Engineer's Report.