



# ENGINEER'S REPORT

## Ventura County Environmental Health Division

Mosquito Control & Vector Borne Disease  
Prevention Assessment

June 2023

Engineer of Work:



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## Ventura County Environmental Health Division

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## Introduction

### Overview

The Ventura County Vector Control Program of the Environmental Health Division (the “Division”) provides vital vector control services for Ventura County residents. The Division monitors mosquito-breeding sources and initiates control measures to reduce mosquito populations on properties within the Assessment boundaries and minimize the spread of mosquito transmitted diseases to those properties. The Division regularly tests for diseases carried by mosquitoes and provides information about how property owners and residents can protect themselves, their pets, and livestock from vector borne diseases. In addition, the Division also conducts surveillance for other vector borne diseases transmitted by ticks and rodents, and responds to service request calls to properties throughout Ventura County (with the exception of the City of Moorpark).

In 1993, the Division established a benefit assessment to provide funding for baseline services throughout much of Ventura County. Additionally, funding was provided by service contracts with the Ventura County Watershed Protection District and the cities of Simi Valley, Oxnard, and Camarillo.

Since 1993 when a fixed benefit assessment of \$1.12 per parcel was established, the Division has witnessed a dramatic increase in service requests and mosquito breeding sources without a proportional increase in the necessary funding to maintain service levels. In other words, as a result of increased demand combined with static funding, the baseline level of services established in 1993 was diminishing significantly. Furthermore, the Division needed to expand service options in response to the emergence of new vector-borne diseases that present a threat to public health. In order to maintain and increase the then-current level of service (as established in 1993) and prepare for future service needs, an increase in the level of funding was necessary.

Accordingly, the Division executed a Proposition 218-compliant mailed balloting in May of 2004, to establish a new assessment throughout Ventura County, except the City of Moorpark. A tabulation of returned ballots, weighted by their proposed assessment showed 70% support with a 36% return rate. Accordingly, on July 27, 2004 the Ventura County Board of Supervisors voted to establish new assessments and to levy these assessments beginning in fiscal year 2004-2005.

## Annual Administration for 2023-24

This Engineer's Report (Report) was prepared to establish the estimated costs for the mosquito vector control and disease surveillance services that would be funded by the proposed assessments in fiscal year 2023-24. Specifically, the Report is to determine the special benefits and general benefits received from the services and to apportion the proposed assessments to lots and parcels depicted in the Assessment Diagram included in this Report. The assessments are based on the estimated special benefit each parcel receives from the services to be funded by the proposed assessments.

Following submittal of this Report to the Board of Supervisors, the Board may, by resolution, authorize levy of assessments.

### Definitions

As used within this Report, 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)).*

Following are excerpts from the Mosquito Abatement and Vector Control District Law of 2002, codified in the Health and Safety Code, Section 2000, et. seq. which serve to 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.*

Further the Health and Safety Code, Section 2082 specifically authorizes the creation of 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

The County of Ventura Vector Control Program benefit assessment was formed consistent 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,” underscoring the fact that the drafters of Proposition 218 and the voters who approved it were satisfied that funding for vector control is an appropriate use of benefit assessments, and therefore confers special benefit to property.

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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”). This ruling is the most significant court case in further legally clarifying the substantive assessment requirements of Proposition 218. Several of the most important elements of the ruling included further emphasis that:

- Benefit assessments are for special benefits 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 within an assessment boundary

This Engineer’s Report, and the process used to establish this assessment are consistent with the SVTA vs. SCCOSA decision.

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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.”

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### **Dahms v. Downtown Pomona Property**

On June 8, 2009, the 4<sup>th</sup> Court of Appeal 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 (i.e. 0% general benefit) on the rationale that the services and improvements funded by the assessments were directly provided to property in the assessment district. The Court also upheld discounts and exemptions from the assessment for certain properties.

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

On December 31, 2009, the 1<sup>st</sup> District Court of Appeal 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.

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### **Beutz v. County of Riverside**

On May 26, 2010, the 4<sup>th</sup> District Court of Appeal 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.

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### **Compliance with Current Law**

This Engineer’s Report is consistent with the requirements of Article XIII C and XIII D of the California Constitution and with the *SVTA* decision because the Services to be funded are clearly defined; the Services are available to and will be directly provided to all benefiting property in the Assessment District; and the Services provide a direct advantage to property in the Assessment District that would not be received in absence of the Assessments.

This Engineer's Report is consistent with *Dahms* because, similar to the Downtown Pomona assessment validated in *Dahms*, the Services will be directly provided to property in the Assessment District. Moreover, while *Dahms* could be used as the basis for a finding of 0% general benefits, this Engineer's Report establishes a more conservative measure of general 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. Finally, the Assessments are consistent with *Beutz* because the general benefits have been explicitly calculated and quantified and excluded from the Assessments.

### Special Note on Benefit throughout Assessment Boundaries

The "Assessment boundaries" are narrowly drawn to include only properties that may request and/or receive direct and more frequent service, that are located within the scope of the vector surveillance area, that are located within flying or traveling distance of potential vector sources monitored by the Division, and that 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 Assessment.

In the winter of 2009, the Division conducted an analysis of levels of service throughout the Assessment boundaries, and confirmed that the special benefit to properties was evenly spread and effectively equivalent.

## General Description of the Proposed Services

### Introduction

Following are the Services, and corresponding level of service, for the Mosquito Control and Vector Borne Disease Prevention Assessment. As previously noted, beginning in 1993 and prior to 2004, the Division provided basic vector control services throughout Ventura County, except within the City of Moorpark. However, funding for the vector control services remained static while demand increased due to new development, as well as emerging public health and nuisance concerns. As a result, the baseline level of service established in 1993 was diminishing and would have continued to diminish had the 2004 assessment not been approved. The services described in this Engineer's Report are over and above the previous (prior to 2004) basic-level baseline level of service. The formula below describes the relationship between the final level of service, the existing baseline level of service, and the enhanced level of service to be funded by the assessment.

<b>Final Level of Service</b>	=	<b>Baseline Level of Service<sup>1</sup></b>	+	<b>Enhanced Level of Service<sup>2</sup></b>
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1. Established in 1993 & diminishing through 2004
2. Established in 2004

In this case, the baseline level of service was basic control, and the final level of service is precisely the enhanced level of service funded by the assessment.

### Summary of Services

The purpose of the Environmental Health Division Vector Control Program is to minimize the spread of vector borne diseases such as St. Louis Encephalitis, Western Equine Encephalitis, West Nile Virus, Malaria, Lyme disease, Hanta Virus Pulmonary Syndrome, and Sylvatic Plague. The spread of these diseases are minimized through ongoing vector surveillance activities, source reduction, source treatment, abatement, and educational outreach. These efforts also minimize the nuisance impacts vectors can have on residents. To fulfill this purpose, the Division may take any and all necessary steps to control mosquitoes, and monitor rodents and other vectors and to perform other related vector control services.

Mosquito abatement and vector control projects and programs include, but are not limited to source reduction, larvicide applications, disease monitoring, public education, reporting, accountability, research and interagency cooperative activities, as well as capital costs, maintenance, and operation expenses (collectively “Services”). The cost of these services also includes capital costs comprised of equipment, capital improvements and facilities necessary and incidental to the vector control program. Currently, the Division provides vector control and disease surveillance service as well as general public information.

The Services are further defined as follows:

- Response to mosquito problems as well as other pestiferous or disease carrying organisms.
- Control of mosquito larvae in catch basins, industrial drains, agricultural sources, ditches, drain lines, vaults, wastewater treatment plants, under buildings, residences, horse troughs, freshwater marshes, salt marshes, creeks, and other sources.
- Control of rodents through public education and information dissemination.
- Monitoring of Hanta Virus-bearing rodents, and other harmful vectors, such as Wood Rats, Deer Mice, Harvest Mice, and Meadow Voles, through surveillance, recommendations for exclusion, control, and public education.
- Survey and data analysis of mosquito larvae populations to assess public health risks and allocate control efforts.
- Monitoring of mosquito populations using carbon dioxide baited traps, New Jersey light traps, Reiter Gravid traps, Autocidal Gravid Ovitrap, and BG Sentinel 2s (specifically designed for Invasive Aedes).
- Monitoring for diseases carried and transmitted by mosquitoes and other arthropods, such as Encephalitis, Malaria, West Nile Virus, and plague.
- Deployment of sentinel chicken flocks, virus tested mosquito pools, and blood analytical studies for State and local public health agencies.
- Testing of new insecticide materials and investigation of their efficacy.
- Cooperate with the California Department of Public Health, Vector-Borne Disease Section and State Universities to survey and identify arthropod-borne diseases such as Lyme disease and Plague found in parks, on trails and other locations frequented by the public.
- Facilitate testing and monitoring for diseases carried and transmitted by ticks, such as Lyme disease, Ehrlichiosis, Rocky Mountain Spotted Fever, and Babesiosis.

- Monitoring and/or advice for controlling other nuisance and potentially hazardous organisms and vectors such as ticks, mites, and fleas.
- Education of residents about the risks of diseases carried by insects and small mammals and how to better protect themselves and their pets.
- Assist State and universities in testing for Hanta Virus, Arenavirus, Plague and other diseases carried by small mammal populations.
- Monitoring of new and emerging vectors such as the Invasive Aedes Mosquitoes (*Aedes aegypti*).
- Testing for and control of new and emerging pathogens such as West Nile Virus.
- Participate in the California Department of Public Health, Vector-Borne Disease Section dead wild bird collection and testing program to test for the presence of the West Nile Virus.

### Introduction to Surveillance and Monitoring

Mosquitoes and other vectors most often breed in areas of standing water, including catch basins, vaults, wastewater treatment plants, water under buildings, horse troughs, pools, ponds, gutters, flood control devices, freshwater and saltwater marshes and wetlands, as well as organic waste and debris.

The Division performs surveillance of adult mosquitoes and other vectors in order to uncover new sites of larval development, allocation of control efforts, determine level of public health risk, identify population densities, and determine species composition. The Division primarily uses New Jersey light traps, Autocidal Gravid Ovitrap, BG Sentinel 2s and carbon dioxide traps for this surveillance. Additionally, the Division monitors vector-borne diseases in efforts to prevent human cases. Three pathogenic mosquito-borne Encephalitis viruses occur in California: Western Equine Encephalitis, St. Louis Encephalitis and West Nile virus. All three are carried in birds and can be transferred to horses or humans through the bite of an infected mosquito. There is neither a specific cure nor human vaccine for these diseases, so the Division regularly monitors two flocks of sentinel chickens for the presence of these viruses. Malaria; chikungunya, dengue, and Zika viruses; Lyme Disease, and small-mammal-borne diseases such as Plague, Hanta Virus and Arenavirus can also be monitored.

### Larval Mosquito Surveillance Program

Catch basins, sewage treatment facilities, river estuaries, storm drain systems, and marsh and wetlands areas are the largest mosquito breeding sources in Ventura County. Several types of mosquitoes from these sources are efficient vectors and, therefore are a serious public health concern. To disrupt the larval stages of mosquito development, these sources are regularly inspected and when evidence of mosquito breeding is observed, vector control technicians use biorational materials to prevent the emergence of adult mosquitoes.

In fiscal year 2010-11 the Environmental Health Division devoted additional staff resources to monitor and control mosquito breeding at these large sources. The purpose of this effort was to determine the cost benefit and efficacy of controlling mosquitoes at these sources through an increase in personnel and mosquito control activities. As a result of the increase in monitoring and control activities, there was a noticeable reduction in the number of public complaints received from areas surrounding these mosquito breeding sources. The levy assessments proposed in this report reflect the continuation of additional mosquito monitoring and control efforts.

The Division will monitor insect resistance levels and determine the efficacy of available larvicides for local mosquito populations.

Mosquito fish are also used to control mosquito larvae in large containers of water and are available for residents to use in their backyard ponds.

### Adult Mosquito Surveillance Program

Vector control personnel will monitor mosquito populations to assess the level of public health risk and effectiveness of control measures.

A variety of adult mosquito surveillance traps are regularly deployed to monitor adult mosquito populations. Encephalitis surveillance traps are collected after one night and their contents are identified, counted, and may be sent for virus testing. Other trap types are deployed throughout the year to obtain information about species present and population density. Information obtained from traps is maintained in a statewide database and used to track long-term trends in mosquito prevalence and relative disease risks.

Division personnel will monitor abnormal spring rainfall patterns and preexisting sources. These are early seasonal environmental precursors for adult mosquito populations.

## West Nile Virus Surveillance Program

The Division maintains two sentinel chicken flocks to detect the presence of West Nile virus and other mosquito transmitted viruses. Blood samples are collected from these flocks every two weeks from April to November and the samples are submitted to the California Department of Public Health, Vector-Borne Disease Section laboratory for analysis. Vector control staff also use specialized traps to collect live adult mosquitoes for testing. Collected mosquitoes are anesthetized, identified, and shipped on dry ice the same day to the State laboratory.

The Division participates in a statewide program to collect and test dead wild birds for the West Nile Virus. Dead birds are picked up within 24 hours, samples collected and sent to the California Department of Public Health, Vector-Borne Disease Section for testing. The Division will assist other participating agencies with shipping and transportation of collected specimens to the State laboratory.

If a wild bird, mosquito sample, or chicken blood specimen tests positive for the West Nile Virus, the Division conducts additional surveillance and control measures when appropriate in the area around a WNV positive specimen and issues a press release informing the public that a West Nile Virus positive specimen was collected. The press release also describes what actions homeowners can take to eliminate mosquito breeding sources from around their houses, and precautions individuals can take to protect themselves from mosquitoes.

## Introduction to Treatment and Control

Strategically, the Division controls mosquitoes through an Integrated Mosquito Management approach that is based on eliminating or reducing mosquito breeding sources as well as controlling mosquitoes during the larval stage of development. Thus, preventing the emergence of adult mosquitoes that have the ability to transmit diseases and create nuisance conditions. Mosquito larval control has the following benefits:

Less toxic: Larval control uses biological agents that are target specific and environmentally safe. Mosquito fish are provided to residents free of charge to be used in on-site pools and ornamental ponds. Pesticides containing bacteriological agents are used to disrupt larval development and prevent the emergence of adult mosquitoes.

Fewer pesticides: Biological pesticides are applied to specific mosquito breeding sources that are much smaller than areas that would be impacted as a result of aerial spraying for controlling adult mosquitoes. Larvicides are the most efficient and cost effective method of mosquito control.

Minimize the spread of mosquito transmitted diseases: Minimizing the emergence of adult mosquitoes through larval control significantly reduces the potential for transmission of mosquito borne diseases.

The end result is a program that protects public health, is more cost effective than other methods, and has low impact on the environment. Currently, the Division primarily uses pesticides with seven biorational materials as the active ingredient; *Bacillus thurengiensis israelensis* (Bti), *B. sphaericus*, Spinosad, *Beauveria bassiana*, methoprene, mineral oil, and pyriproxyfen. These materials have been shown to have minimal effects on non-target species and are regulated by the US EPA and the California Department of Pesticide Regulation. They are approved for use in aquatic habitats. Furthermore, the Environmental Health Division has filed a Notice of Intent and Pesticide Application Plan/Statement of Best Management Practices for application of aquatic pesticides with the State Water Resources Control Board, in conformance with National Pollutant Discharge Elimination System (NPDES) requirements.

### Larval Mosquito Control Program

Catch basins, sewage treatment plants, and storm drain systems are the largest sources of common house mosquitoes in Ventura County. These mosquitoes are efficient vectors of West Nile Virus and therefore a serious public health concern. To control the larval stage of the common house mosquito, catch basins are inspected and when mosquito breeding is observed, vector control technicians use biorational materials to prevent the emergence of adult mosquitoes.

The Division will monitor insect resistance levels and determine the efficacy of available larvicides for local mosquito populations.

Mosquito fish are also used to control mosquito larvae in large containers of water and are available for residents to use in their backyard ponds.

## Adult Mosquito Control Program

In the event of a declared public health emergency, the Division may conduct application of adulticide materials after consultation with state health officials, the county health officer, and at the direction of the county Board of Supervisors. In addition, an expanded and intensified larvicide program may be implemented to interrupt the mosquito development cycle and reduce the emergence of adult mosquitoes.

The Division will monitor insect resistance levels and determine the efficacy of available adulticide for local mosquito populations. Any additional descriptions and plans for the services will be filed with the Vector Control Program Manager of the Ventura County.

## Assessment

WHEREAS, the Ventura County Board of Supervisors contracted with the undersigned Engineer of Work to prepare and file a report presenting an estimate of costs of Services, a diagram for an assessment and an assessment of the estimated costs of Services, and the special benefit conferred thereby, upon all assessable parcels within the County, except for parcels within the City of Moorpark, as depicted in the Assessment Diagram included in this report;

NOW, THEREFORE, the undersigned in accordance with the provisions of Article XIIID of the California Constitution, the Government Code and the Health and Safety Code and the order of the Ventura County Board of Supervisors, hereby make the following determination of an assessment to cover the portion of the estimated cost of said Services, and the costs and expenses incidental thereto to be paid by the Ventura County Environmental Health Division.

The amount to be paid for said services and improvements and the expenses incidental thereto, to be paid by the Ventura County Environmental Health Division for the fiscal year 2023-24 is generally as follows:

**Table 1 - Summary Cost Estimate**

<b>SUMMARY COST ESTIMATE</b>	
Vector Control Services and Related Expenditures	<b>\$1,117,069</b>
Vector Control and Disease Prevention Services and Supplies	<b>\$356,025</b>
Administrative	<b>\$143,305</b>
Total Costs	<b>\$1,616,399</b>
<i>Cost reduction funded by Vector Control Trust Account, penalties and investment income</i>	<b>(\$78,111)</b>
<b>NET AMOUNT TO ASSESSMENT</b>	<b>\$1,538,288</b>

An Assessment Diagram is hereto attached and made a part hereof showing the exterior boundaries. The distinctive number of each parcel or lot of land 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 said Services, including the costs and expenses incidental thereto, upon the parcels and lots of land within said County, 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.

Said assessment determination is made upon the parcels or lots of land within said County in proportion to the special benefits to be received by said parcels or lots of land, from said Services.

The Division may finance the cost of acquiring or constructing capital facilities over time and pledge a portion of assessment revenues received in any fiscal year towards the repayment of the principal amount of such borrowed funds together with interest over the repayment period.

The assessment is subject to an annual adjustment tied to the Consumer Price Index (CPI) for the Los Angeles-Riverside Area as of December of each succeeding year with a maximum annual adjustment not to exceed 3%. The assessment may be continued to be levied annually and may be adjusted by the maximum annual adjustment without any additional assessment ballot proceeding. The rate approved by the property owners in 2004 was \$4.00 per single family equivalent plus a CPI increase. The actual CPI increase for last year, fiscal year 2022-23, was 4.926%. Based on an annual maximum CPI adjustment not to exceed 3% per year since 2004, and considering the use of excess CPI of 6.96% from previous years, the assessment rate for fiscal year 2023-24 can be as high as \$6.32 per single family equivalent. The assessment for 2023-24 will increase by 3.00% to \$6.32 per Single Family Equivalent, based upon the total required budget to perform the Services divided by the total Single Family Equivalent benefit units. There remains 8.89% CPI banked for use in future years as allowable.

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 Ventura for the fiscal year 2023-24. For a more particular description of said property, reference is hereby made to the deeds and maps on file and of record in the office of the County Recorder of the County of Ventura.

I hereby place opposite the Assessor Parcel Number for each parcel or lot within the Assessment Roll, the proposed amount of the assessment for the fiscal year 2023-24 for each parcel or lot of land within the said County.

Dated: June 6, 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. C052091

## Costs and Budget

**Table 2 - Estimate of Costs**

VENTURA COUNTY ENVIRONMENTAL HEALTH DIVISION Mosquito Control & Disease Prevention Program		<i><b>Total Budget</b></i>
Vector Control Services and Related Expenditures		
Vector Control and Disease Prevention Salaries and Benefits	\$	1,117,069
Vector Control and Disease Prevention Services and Supplies	\$	356,025
<b>Total Services and Operation</b>		<b>\$1,473,094</b>
Administrative		
Agency Costs	\$	100,000
County Costs	\$	43,305
		<b>\$ 143,305</b>
<b>Net Cost of Vector Control, Fixed Asset Equipment, Operation</b>		<b>\$1,616,399</b>
Cost reduction funded by Vector Control Trust Account, penalties and investment income.		<b>(78,111)</b>
<b>Total Vector Control Services and Incidental Expenses (Net Amount to be Assessed)</b>		<b>\$1,538,288</b>
Budget Allocation to Property		
Total SFE Units <sup>1</sup>	Assessment per SFE	Total Assessment
243,400	\$6.32	\$1,538,288

## Method of Assessment

### Overview

This section of the Report includes an explanation of the benefits to be derived from the Services provided by the Division, and the methodology used to apportion the total assessment to properties within the County.

The Assessment boundaries consist of all Assessor Parcels within the boundaries of Ventura County, excluding the City of Moorpark, as defined by the attached assessment diagram. The assessments will allow the Division to provide mosquito abatement, disease control and other enhanced vector control services at current service levels throughout the serviced areas within Ventura County.

The method used for apportioning the assessment is based upon the proportional special benefits to be derived by the Ventura County properties over and above general benefits conferred on real property or to the public at large. The apportionment of special benefit is a multi-step process as listed below:

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 within the Assessment boundaries
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,

### Benefit Factors

The below benefit factors, when applied to property in the Assessment boundaries, confer special benefits to property and ultimately improve the safety, utility, functionality and usability of property in the Assessment boundaries. These are special benefits to property in the Assessment boundaries in much the same way that storm drainage, sewer service, water service, sidewalks and paved streets enhance the 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.

## Mosquito Control is a Special Benefit to Properties

As described below, this Engineer's Report concludes that mosquito control is a special benefit that provides direct advantages to property in the Assessment boundaries. For example, the assessment provides for 1) surveillance throughout the Assessment boundaries to measure and track the levels and sources of mosquitoes impacting property in the area and the people who live and work on the property, 2) mosquito and mosquito source control, treatment and abatement throughout the Assessment boundaries such that all property in the area benefits from a comparable reduction of mosquito levels, 3) monitoring throughout the Assessment boundaries to evaluate the effectiveness of Division's treatment and control and to ensure that all properties are receiving the equivalent level of mosquito reduction benefits, and 4) the properties in the Assessment boundaries that are eligible for service requests which result in Division staff directly visiting, inspecting and treating property. Moreover, the Services funded by the assessments reduce the level of mosquitoes and vectors arriving at and negatively impacting properties within the Assessment boundaries.

The following section, Benefit Factors, describes how the Services specially benefit properties in the Assessment boundaries. These benefits are particular and distinct from its effect on property in general or the public at large.

## Description of Special Benefits

In order to allocate the assessments, the Engineer identified the types of special benefit arising from the Services and that are provided to property within the Assessment boundaries. 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 boundaries.**

The assessments provide a continuation of proactive services for the control and abatement of nuisance and disease-carrying mosquitoes (*over and above the pre-2004 service level*). These Services materially reduce the number of vectors on properties throughout the Assessment boundaries. The lower mosquito and vector populations on property in the Assessment boundaries 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 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 materially diminish the utility and usability of property. For example, prior to the commencement of mosquito control and abatement services by agencies and districts, 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>2</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 boundaries.

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>3</sup>*

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<sup>2</sup> Anecdotal evidence indicates that prior to the commencement of modern mosquito control services, areas in the State of California such as the San Mateo Peninsula, Napa County and areas in Marin and Sonoma Counties had such high mosquito 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 mosquito populations were lower.

<sup>3</sup> Assembly Concurrent Resolution 52, chaptered April 1, 2003

Mosquitoes emerge from sources throughout the Assessment boundaries, and with an average flight range of two miles, mosquitoes from known sources can reach all properties in the Assessment boundaries. 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 boundaries. 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 materially reduce mosquito populations on property throughout the Assessment boundaries.

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>4</sup>*

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<sup>4</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 boundaries.**

The assessments will allow the continuation of year-round proactive Services, over and above the pre-2004 service level, to control and abate mosquitoes and other vectors that otherwise would occupy properties throughout the Assessment boundaries. Mosquitoes and other vectors are transmitters of diseases, so the reduction of mosquito populations makes property in the Assessment boundaries safer for use and enjoyment. In absence of the assessments, these Services would not be provided, so the Services funded by the assessments make properties in the Assessment boundaries safer, which is a distinct special benefit to property in the Assessment boundaries.<sup>5</sup> This is not a general benefit to property in the Assessment boundaries or the public at large because the Services are tangible mosquito and disease control services that are provided directly to the properties in the Assessment boundaries and the Services are over and above what otherwise would be provided by the Division 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>6</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 boundaries.**

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>5</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>6</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>7</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>8</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).*

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

The first West Nile Virus positive bird in Ventura County was discovered in April 2004. The dead crow was found near El Paseo Road and Ojai Avenue in Ojai during the week of April 2, 2004. The following chart identifies the number of humans, birds, horses, mosquitoes, and sentinel chickens that have tested positive for the West Nile Virus in Ventura County since 2004. As a result of increased surveillance activity by EHD since fiscal year 2004/2005, approximately 995 mosquito breeding sources have been added to the Division’s source inventory. The EHD routinely monitors and treats approximately 2,121 breeding sources. These West Nile Virus cases and an increase in the number of mosquito breeding sources confirm the need for comprehensive mosquito control and disease surveillance services.

### Table 3 – West Nile Virus Cases

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

<sup>8</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.

Year	Human	Bird	Equine	Mosquito Pools*	Chickens**
2004-05	2	24	3	0	1
2005-06	1	62	8	2	7
2006-07	3	62	0	2	1***
2007-08	1	15	0	0	1
2008-09	0	24	1	0	4
2009-10	0	3	0	0	0
2010-11	0	2	0	0	0
2011-12	0	4	0	0	0
2012-13	7	56	0	2	2***
2013-14	2	8	0	0	0
2014-15	1	7	0	0	0
2015-16	6	26	1	0	11
2016-17	7	34	2	0	0
2017-18	1	3	0	3	0
2018-19	1	0	0	0	0
2019-20	2	2	1	1	3
2020-21	0	0	0	0	1***
2021-22	0	1	0	0	0
2022-23	0	1	0	0	0

\* Each mosquito pool consists of approximately 50 mosquitoes.

\*\* Sentinel chickens maintained by the Environmental Health Division

\*\*\*WNV positive chickens were from sentinel chicken flock maintained by the City of Moorpark

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### **Protection of economic activity on property in the Assessment boundaries.**

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 boundaries.

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>9</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 assessments:

*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>10</sup>

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

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### **Protection of the Assessment boundaries' agriculture, tourism, and business industries.**

The agriculture, tourism and business industries in the Assessment boundaries benefit from reduced levels of harmful or nuisance mosquitoes and other vectors. Conversely, any outbreaks of emerging vectorborne 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*

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<sup>9</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>

<sup>10</sup> Utz, J. Todd, Apperson, Charles S., McCormack, 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

*their horses for this disease. The study states that “Clearly, WNV has had a marked impact on the Colorado and Nebraska equine industry.”<sup>11</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>12</sup>*

The assessments serve to protect the businesses and industries in the Assessment boundaries. This is a direct advantage and special benefit to property in the Assessment boundaries.

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

In addition to health related factors, uncontrolled mosquito and vector populations create a nuisance for residents, employees, customers, tourists, farm workers and guests in the Assessment boundaries. Properties in the Assessment boundaries benefit from the reduced nuisance factor that are 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 boundaries 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 boundaries can also contain significant sources.<sup>13</sup> It is conceivable that sources of mosquitoes could 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.

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<sup>11</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>12</sup> . Jennings, Allen. (2001). USDA Letter to EPA on Fenthion IRED. United States Department of Agriculture, Office of Pest Management Policy. March 8, 2001.

<sup>13</sup> . Sources of mosquitoes on residential, business, agricultural, range and other types of properties include removable sources such as containers that hold standing water.

The Services provided by the Division reduce the mosquito and vector related nuisance and health liability to properties in the Assessment boundaries. The reduction of that risk of liability constitutes a special benefit to property in the Assessment boundaries and this special benefit would not be received in absence of the Services funded by the assessments.

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

As described previously, the Services specially benefit properties in the Assessment boundaries by making them more useable, livable and functional. The Services also make properties in the Assessment boundaries more desirable, and more desirable properties also benefit from improved marketability. This is another tangible special benefit to certain property in the Assessment boundaries which will not be enjoyed in absence of the Services.<sup>14</sup>

## **Zones of Benefit**

The Assessment boundaries have been carefully drawn to include the properties in Ventura County (not including Moorpark) that previously only received baseline mosquito and disease control services and that would materially benefit from the Services. The current and future population of property is a conduit of benefit to property because people, pets and livestock are ultimately affected by mosquitoes and vector-borne diseases and the special benefit factors of desirability, utility, usability, livability and marketability are ultimately determined by the population and usage potential of property. The boundaries of the Assessment have been narrowly drawn to include only properties that specially benefit from the mosquito control services, and only received baseline services from the Division through 2004.

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.”*

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<sup>14</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.

*We do not believe that the voters intended to invalidate an assessment district that is narrowly drawn to include only properties directly benefitting 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 mosquito control services is direct, and the boundaries are narrowly drawn to include only parcels that benefit from the assessment. Therefore, the even spread of assessment throughout the narrowly drawn Assessment boundaries is indeed consistent with the OSA decision. Within the Assessment boundaries, zones of benefit are not justified or needed because the Services are provided relatively evenly across the entire area and for all parcels within the Assessment boundaries, and the surveillance, monitoring and treatment are applied in such a manner as to attain a relatively even level of mosquito control throughout the area. As previously described, the even spread of benefit was confirmed by an analysis, conducted by the Division, in the winter of 2010

### General vs. Special Benefit

Article XIIC 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 benefit assessment are not paying for general benefits. The assessment can fund the special benefits to property in the Assessment boundaries 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 for 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 Assessment District,<sup>15</sup>” but outside the narrowly-drawn Assessment boundaries 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>Benefit to Real Property outside the Assessment boundaries</b>	+	<b>Benefit to Real Property inside the Assessment boundaries that is Indirect and Derivative</b>	+	<b>Benefit to the Public at Large</b>
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<sup>15</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.

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 these assessments, the overwhelming proportion of the benefits conferred to property is special, since the advantages from the mosquito and disease protection funded by the assessments are directly received by the properties in the Assessment boundaries and are only minimally received by property outside the Assessment boundaries or the public at large. Arguably, all of the Services funded by the assessment therefore are special benefit because the Services particularly and distinctly benefit and protect the Assessment boundaries over and above the baseline benefits and service which were established in 1994 and were diminishing significantly prior to this assessment in 2004.

Nevertheless, arguably some of the Services benefit the public at large and properties outside the Assessment boundaries. In this report, the general benefit is conservatively estimated and described, and then budgeted so that it is funded by sources other than the assessment.

## Calculating General Benefit

### Benefit to Property Outside the Assessment Boundaries

Properties within the Assessment boundaries effectively receive virtually all of the special benefits from the Services because the Services funded by the assessments are provided directly to protect property within the Assessment boundaries from mosquitoes and vector-borne disease. However, properties adjacent to, but just outside of, the Assessment boundaries may receive some benefit from the Services in the form of reduced mosquito populations on property outside the Assessment boundaries. Since this benefit is conferred to properties outside the assessment boundaries, it contributes to the overall general benefit calculation and will not be funded by the assessment. However, in this case, populated areas within the City of Moorpark, and Santa Barbara and Los Angeles counties, which lie adjacent to Ventura County, also have sophisticated mosquito and vector control programs. Therefore, any general benefit to properties just outside of the Assessment boundaries is offset by general benefit received by properties within the Assessment boundaries. Therefore, the general benefit contribution to property just outside of the Assessment boundaries is negligible.

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**Benefit to Property *Inside the Assessment boundaries that is Indirect and Derivative***

The “indirect and derivative” benefit to property within the Assessment boundaries is particularly difficult to calculate. As explained above, all benefit within the Assessment boundaries is special because the mosquito and disease control services in the Assessment boundaries would provide direct service and protection that is clearly “over and above” and “particular and distinct” when compared with the lack of such protection if there were no mosquito control or mosquito transmitted disease surveillance program. Further the properties are within the Assessment boundaries and this Engineer’s Report demonstrates the direct benefits received by individual properties from mosquito and disease control services.

In determining the Assessment boundaries, the Division has been careful to limit it to an area of parcels that directly receive the Services. All parcels directly benefit from the surveillance, monitoring and treatment that are provided on an equivalent basis throughout the Assessment boundaries in order to maintain the same improved level of protection against mosquitoes and reduced mosquito populations throughout the area. The surveillance and monitoring sites are spread on a balanced basis throughout the area. Mosquito 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 - are received on an equivalent basis by all parcels in the Assessment boundaries. Furthermore, all parcels in the Assessment boundaries would directly benefit from the ability to request service from the Division and to have a Division 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 Assessment boundaries does not make the benefit general rather than special, so long as the Assessment boundaries is narrowly drawn and limited to the parcels directly receiving 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 level of service. The Division therefore concludes that, other than the negligible general benefit to properties outside the Assessment boundaries (discussed above) and to the public at large (discussed below), all of the benefits of the Services to the parcels within the Assessment boundaries are special benefits and it is not possible or appropriate to separate any general benefits from the benefits conferred on parcels in the Assessment boundaries.

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### Benefit To The Public At Large

With the type and scope of Services provided to the Assessment boundaries, 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 Assessment boundaries, any general benefit conferred on the public at large would be small. Nevertheless, there may be some indirect general benefit to the public at large.

The public at large uses the regional facilities when traveling in and through the Assessment boundaries and they benefit from the Services. A fair and appropriate measure of the general benefit to the public at large therefore is the amount of regional facilities area within the Assessment boundaries relative to the overall land area. An analysis of maps of the Assessment boundaries shows that a negligible portion of the land area in the Assessment boundaries is covered by regional facilities.

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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

#### General Benefit Calculation

	<b>Negligible (Outside the Assessment District)</b>
<b>+ 0.0%</b>	<b>(Property within the Assessment Boundary– indirect and derivative)</b>
<b>+ Negligible</b>	<b>(Public at Large)</b>
<b>= Negligible</b>	<b>(Total General Benefit)</b>

the Assessment boundaries, we find that an insignificant portion of the benefits conferred by the Mosquito Control & Vector Borne Disease Prevention Assessment may be general in nature and should be funded by sources other than the assessment.

This analysis supports the finding that a negligible amount of the benefit may provide general benefit. Hence, effectively 100% of the benefit is special.

In the 2009 Dahms case, 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 the assessments in Pomona that were validated by Dahms, the Assessments described in this Engineer's Report fund mosquito, and disease control services directly provided to property in the assessment area. Moreover, as noted in this Report, the Services directly reduce mosquito populations on all property in the assessment area. Therefore, Dahms establishes a basis for minimal or zero general benefits from the Assessments.

## Method of Assessment

The third step in apportioning assessments is to determine the relative special benefit for each property. 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 Equivalents (SFE). This SFE methodology is commonly used to distribute assessments in proportion to estimated special benefit and is generally recognized as providing the basis for a fair and appropriate distribution of assessments. For the purposes of this Engineer's Report, all properties are designated a SFE value, which is each property's relative benefit in relation to a single family home on an average sized residential parcel. The "benchmark" property is the single family detached dwelling which is one Single Family Equivalent or one SFE.

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 because the sources of mosquitoes and vectors are generally located on such property. However, other types of property, such as residential and commercial, also receive the special benefit factors listed above from reduced mosquito and vector populations that would otherwise fly or migrate to these properties and/or to the inhabited community areas. Furthermore, residential properties can and do generate their own populations of mosquito and vector organisms.

A fixed or flat assessment was deemed to be inappropriate because larger 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 0.20 acre site because 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 parcels, therefore, receive an increased benefit from the assessments.

Therefore, the Engineer determined that the appropriate method of assessment should be based on the type and potential use of property and the relative size of the property. This method is further described below.

## Assessment Apportionment

### Residential Properties

All improved residential properties that represent a single residential dwelling unit are assigned one Single Family Equivalent or 1.0 SFE. Traditional houses, zero-lot line houses, and townhomes are included in this category.

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 Ventura County. This Report analyzed Ventura 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 0.40 per dwelling unit for multifamily residential properties applies to such properties with 20 or fewer units. Properties in excess of 20 units typically offer on-site management, monitoring and other control services that tend to offset some of the benefits provided by the Division. Therefore the benefit for properties in excess of 20 units is determined to be 0.40 SFE per unit for the first 20 units and 0.10 SFE per each additional unit in excess of 20 dwelling units.

**Table 4 - 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	517,701	156,288	3.31	1.00	1.00	<b>1.00</b>
Condominium	69,449	26,376	2.63	0.80	0.73	<b>0.60</b>
Multi-Family Residential	128,209	48,989	2.62	0.79	0.51	<b>0.40</b>
Mobile Home on Separate Lot	23,999	11,202	2.14	0.65	0.30	<b>0.20</b>

Source: 2000 Census, Ventura County and property dwelling size information from the Ventura County Assessor

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### **Commercial/Industrial Properties**

The 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 Ventura 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 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 below lists the benefit assessment factors for business properties.

**Table 5 - Commercial/Industrial Benefit Assessment Factors**

<i>Type of Commercial/Industrial Land Use</i>	<i>Average Employees 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	0.50
Office	68	1.420	1.42
Shopping Center	24	0.500	0.50
Industrial	24	0.500	0.50
Self Storage or Parking Lot	1	0.021	0.02
Agriculture	0.05	0.002	0.002

1. Source: San Diego Association of Governments Traffic Generators Study.

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 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. 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 Ventura found that 40% of the assessed value of improved properties is classified as land value. It is reasonable to assume, therefore, that approximately 40% of the benefits are related to the underlying land and 60% are related to the day-to-day use of the property. Using this ratio, the SFE factor for vacant parcels is 0.40 per parcel.

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### **Other Properties**

Article XIID stipulates that publicly owned properties must be assessed unless there is clear and convincing evidence that those properties receive no special benefit from the assessment.

All properties that are specially benefited are assessed. Public right-of-way parcels, well, reservoir or other water rights parcels that cannot be developed into other improved uses, limited access open space parcels, watershed parcels and common area parcels typically do not generate employees, residents, customers or guests. Moreover, many of these parcels have limited economic value and, therefore, do not benefit from specific enhancement of property value. Such parcels are, therefore, not specially benefited and are not assessed.

Other 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.

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 receive minimal benefit and are assessed an SFE factor of 1.

## Appeals and Interpretation

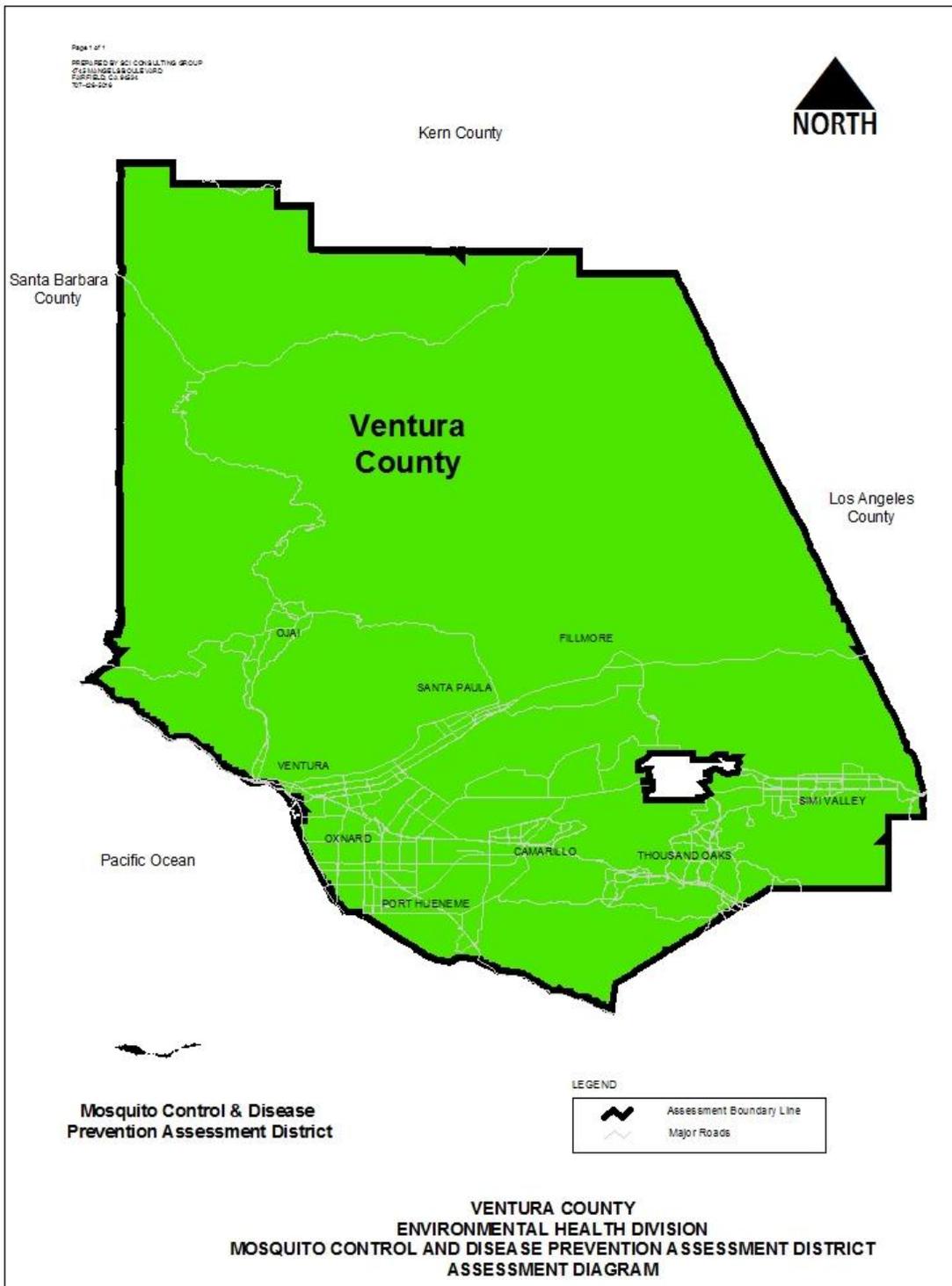
Any property owner who feels that the assessment levied on the subject property is in error as a result of incorrect information being used to apply the foregoing method of assessment, may file a written appeal with Vector Control Program Manager of the Ventura County Environmental Health Division or 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 Vector Control Program Manager or his or her designee will promptly review the appeal and any information provided by the property owner. If the Vector Control Program 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 County of Ventura for collection, the Vector Control Program 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 Vector Control Program Manager, or his or her designee, shall be referred to the Ventura County Board of Supervisors. The decision of the Board shall be final.

### Duration of Assessment

It is proposed that the assessments continued to be levied for fiscal year 2023-24 and every year thereafter, so long as mosquitoes and other vectors remain in existence and the Ventura County Environmental Health Division requires funding from the assessments for its Services in the Assessment boundaries. As noted previously, if the assessment and the duration of the assessment are approved by property owners in an assessment ballot proceeding, the Assessment can be levied annually after the Ventura County Board of Supervisors approves an annually updated Engineer's Report, budget for the Assessment, Services to be provided, and other specifics of the Assessment. In addition, the Ventura County Board of Supervisors must hold an annual public meeting to continue the Assessment.

# Assessment Diagram

The proposed assessment includes all properties within the boundaries of Ventura County, excluding the City of Moorpark and are displayed on the following Assessment Diagram.



Vent  
Mosc  
Engir

## Assessment Roll

Reference is hereby made to the Assessment Roll in and for said assessment proceedings on file in the office of the Vector Control Manager for the Ventura County Environmental Health Division, as said Assessment Roll is too voluminous to be bound with this Engineer's Report.