



Solano Local Agency Formation Commission

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(707) 439-3897

www.solanolafco.com

Staff Report

DATE: October 21, 2024

TO: Local Agency Formation Commission

FROM: Tyra Hays, Project Specialist

SUBJECT: **LAFCO Project No. 2024-03 – Municipal Service Review for the Solano County Mosquito Abatement District**

Recommendation:

RECEIVE and CONSIDER the Final Municipal Service Review for the Solano County Mosquito Abatement District Final and any public comment; and

ADOPT the attached LAFCO Resolution adopting the Final Municipal Service Review for the Solano County Mosquito Abatement District

Executive Summary:

At the regularly scheduled August 12, 2024 Solano LAFCO Commission meeting, the Commission:

1. Received and commented on the Draft Municipal Service Review (MSR) for the Solano County Mosquito Abatement District (SCMAD); and
2. Directed LAFCO staff to publish the Draft Municipal Service Review for the Solano County Mosquito Abatement District for a 30-Day public review period that extended from August 12, 2024 to September 12, 2024.

No comments or questions were received by staff during the 30-day public hearing period. However, staff has made some small administrative updates to the Final MSR in order to provide additional clarity. There were no changes to the MSR evaluation.

The conclusion of the Final MSR finds that the SCMAD operates effectively and efficiently, successfully provides its services, and is fiscally set up to continue to do so. The Final MSR also supports the existing SOI, and therefore, recommends reaffirming the sphere of influence (SOI). Attachment A is the detailed staff report from August 12, 2024, for the SCMAD Draft MSR.

Discussion:

On August 12, 2024, the Commission received the SCMAD Public Review Draft MSR and opened a 30-day public review and comment period. As identified in the August 12, 2024 staff report, the purpose of this MSR/SOI review is to provide Solano LAFCO with a comprehensive

Commissioners

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update of the service needs, operational efficiency, financial viability, governance, and service delivery capacity of the SCMAD.

In particular, the Final MSR addresses and includes:

1. The seven Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (CKH) required service determinations (Government Code §56430)
2. The five CKH required SOI considerations (Government Code §56076)
3. Key findings, determinations, and recommendations.

The key findings, determinations, and recommendations are discussed in the Executive Summary within the attached Final MSR.

Conclusion:

In conclusion, the Executive Officer finds that the MSR for the Solano County Mosquito Abatement District is very thorough, informative, and satisfactorily addresses the factors and requirements of Govt. Code §56430. There were no concerns identified by the MSR, and therefore should be adopted.

Attachments:

- | | |
|----------------|---|
| Action Item – | Resolution of The Local Agency Formation Commission of Solano Adopting the Final Municipal Service Review for the Solano County Mosquito Abatement District |
| Attachment A – | August 12, 2024 Project 2024-03 Mosquito Abatement District MSR Staff Report |

RESOLUTION NO. 2024-XX**RESOLUTION OF THE LOCAL AGENCY FORMATION COMMISSION OF SOLANO
ADOPTING THE FINAL MUNICIPAL SERVICE REVIEW
FOR THE SOLANO COUNTY MOSQUITO ABATEMENT DISTRICT
(LAFCO PROJECT # 2024-03)**

WHEREAS, the Cortese-Knox-Hertzberg Local Government Reorganization Act, commencing with Section 56000, *et seq.* of the California Government Code, specifically in accordance with Section 56425 *et seq.* and the Solano Local Agency Formation Commission (LAFCO) adopted Standards requires a periodic review of the sphere of influence (SOI) of each local government agency whose jurisdictions are within Solano County; and,

WHEREAS, the Cortese-Knox-Hertzberg Local Government Reorganization Act, commencing with Section 56000, *et seq.* of the California Government Code, specifically in accordance with Section 56430 *et seq.* and the Solano Local Agency Formation Commission (LAFCO) adopted Standards requires the execution of municipal service review (MSR) reports of each local government agency whose jurisdictions are within Solano County to support the agency's SOI; and,

WHEREAS, Solano LAFCO's FY24/25 Workplan and SOI Review Schedule identified the Solano County Mosquito Abatement District as an agency requiring an municipal service review and sphere of influence update; and

WHEREAS, LAFCO staff has prepared a comprehensive update and review of the services of the District with Findings, Determinations, and Recommendations (Exhibit A); and

WHEREAS, the Solano County Mosquito Abatement District's service boundary is coterminous with the Solano County boundary and the MSR supports the District retaining its current boundary; and

WHEREAS, the Commission received the Draft MSR for the Solano County Mosquito Abatement District on August 12, 2024 and circulated the draft document for a 30-day public review period between August 12, 2024 to September 12, 2024, and;

WHEREAS, no public comments or questions were received on the Draft MSR for the Solano County Mosquito Abatement District during the public review period; and

WHEREAS, the LAFCO Executive Officer has reviewed the MSR documentation and has prepared a report including recommendations and conditions therein within the time required by law and has furnished copies of said report to the Commission and to all other persons required by law to receive it; and,

WHEREAS, the MSR describes and discloses the information required for the review and update of the municipal services of the Solano County Mosquito Abatement District; and,

WHEREAS, at its meeting of August 12, 2024, the Commission received and considered all oral and written testimony related to the MSR, including but not limited to comments, objections, the LAFCO staff's written and oral report and recommendations, the environmental documents and determination, and the MSR (Exhibit B).

NOW, THEREFORE, BE IT HEREBY RESOLVED, DETERMINED, AND ORDERED as follows:

1. The Municipal Services Review for the Solano County Mosquito Abatement District is found to be exempt from the provisions of the California Environmental Quality Act (CEQA) under Class 6 Categorical Exemption, Section 15306, in that the MSR is a basic data collection, research, and resource evaluation that does not result in a serious or major disturbance to an environmental resource.
2. The Municipal Services Review for the Solano County Mosquito Abatement District is found to be adequate and complete pursuant to the requirements of Government Code Section 56430 *et seq.* and the Commission's adopted Standards, determinations, and recommendations regarding services are approved as set forth and described in the attached "Exhibit A" and by this reference incorporated herein.
3. The Executive Officer is hereby directed to file a Notice of Exemption in compliance with the California Environmental Quality Act and local ordinances implementing the same.

The foregoing resolution was duly passed and adopted by the Local Agency Formation Commission of the County of Solano at a regular meeting thereof, held on October 21, 2024, by the following vote:

AYES:

NOES :

ABSENT:

ABSTAIN:

Ron Kott, Chair
Local Agency Formation Commission
County of Solano, State of California

ATTEST:

Christina Love, Deputy Executive Officer

Attachments:

Exhibit A – Findings, Determination, and Recommendations

Exhibit B – Final Municipal Services Review for the Solano County Mosquito Abatement District

EXHIBIT A**FINDINGS, DETERMINATIONS, and RECOMMENDATIONS
for RESOLUTION NO. 2024-XX**

The following section includes key findings, determinations, and recommendations made by the MSR.

Growth and Population Projections Findings, Determinations, and Recommendations	
Findings:	
F.1	Between 2010 and 2020, Solano County grew from 413,963 to 452,698 residents. This represents a 9.4% growth rate. Based on this growth rate, it is estimated that the District's population will reach 491,433 by 2030.
F.2	As growth occurs within Solano County, service demands will increase. Urban areas provide breeding habitats for mosquitoes due to stagnant water, and treatment becomes more difficult and costly as treatment needs occur more on individual private properties.
F.3	Expansion of SCMAD services is facilitated by the increase in tax revenue resulting from few development property tax.
F.4	Mosquitoes are a year-round problem and the District maintains constant surveillance to provide treatment when necessary. SCMAD service demands relating to mosquito control are based on a combination of factors, including seasonal conditions, breeding habits, and the presence of stagnant water.
F.5	The capacity of SCMAD to effectively address future service demands is dependent on its continued ability to adapt and redirect resources as needed.
F.6	On an average month, the District receives approximately 110 service requests, which results in 100 technician visits to properties that are handled by the five technicians.
Determinations:	
D.1	As service demands continue, the District has the financial and administrative resources necessary to hire additional personnel when warranted.

D.2	The District's Reserve Fund Policy and purchasing policy are sufficient to allow the District the flexibility necessary to meet current and future service demands.
Recommendations: None	

Disadvantaged Unincorporated Communities Findings, Determinations, and Recommendations

Findings:	
F.1	The California Office of Environmental Health and Hazard Assessment's "SB 535 Disadvantaged Communities map (2022 Update)" identifies three census tracts within Solano County with disadvantaged unincorporated communities (DUCs). (Census tracts 6095253500, 6095252402, and 6095252502)
F.2	SCMAD's boundaries are coterminous with Solano County's boundary.
F.3	SCMAD provides services to all properties within Solano County.
Determinations:	
D.1	SCMAD provides services to areas identified as disadvantaged unincorporated communities.
Recommendations:	None

Present and Planned Capacity of Public Facilities Findings, Determinations, and Recommendations

Findings:	
F.1	SCMAD is located in an industrial park near Travis Air Force Base. A portion of the property remains vacant and can be used to expand the facilities if needed.
F.2	The District prepares a capital budget each year to plan for the orderly replenishment of equipment and facilities.

F.3	The District's purchasing policy prescribes the procurement procedures for materials, equipment, and general supplies utilized by the District in support of the District mission statement.
F.4	The District purchases capital assets as needed. During fiscal year 2023, the District purchased three pickup trucks and two drones. The drones allow the District to chemically treat areas that cannot be reached with a boat.
F.5	Capital investments are financed internally from operations.
F.6	In FYE 23, the District had \$1,418,971 in total capital assets.
Determinations:	
D.1	The District proactively plans for the replenishment and/or purchase of equipment and facilities as necessary to support its mission statement.
Recommendations: None	

Financial Ability to Provide Services Findings, Determinations, and Recommendations	
Findings:	
F.1	Mosquito Abatement and Vector Control District Law requires that on or before August 1st of each year, that the Board of Trustees adopt a final budget, which shall conform to the accounting and budgeting procedures for special districts.
F.2	This budget contains projected revenues and expenditures, as well as information regarding assets, liabilities, and reserves.
F.3	The FYE 23 financial audit noted that the District was in full compliance with the law.
F.4	Between FYE 19 and 23, the District's revenue ranged between \$2,900,000 and \$3,689,363.

F.5	The District's revenues have exceeded its expenditures for the past 5 years. In FYE 23, the District's revenue exceeded its liabilities by \$8,424,278, and the District had \$7,076,355 in total fund balances.
F.6	The District has maintained a fund balance ranging from \$5.7 million to \$7 million over the past 5 fiscal years.
F.7	The District developed a reserve fund policy to clearly identify specific, designated funds. It is the intent of this policy to clearly identify funds, articulate the purpose of each fund, designate the way the funds are replenished and set target levels that are consistent with the District's mission.
F.8	<p>The District's reserve fund policy's objectives are as follows:</p> <ol style="list-style-type: none"> 1. To assure continued operation and solvency of the District for carrying out its stated mission. 2. To maintain a financially viable District that can preserve adequate levels of service. 3. To maintain financial flexibility in order to continually adapt to change and permit orderly adjustment to unanticipated events. 4. To maintain a diversified, financially flexible, and stable long-term financial plan. 5. To facilitate the accumulation and preservation of District funds in an amount equal to the stated target fund level for each specific reserve fund created by the District. 6. To provide information to the citizens of Solano County on how tax revenues are used and managed. 7. This policy will be reviewed on an annual basis in order to incorporate appropriate changes, additions and/or deletions.
F.9	<p>The District's Reserve Fund Policy includes the following funds:</p> <ul style="list-style-type: none"> • Public Health Emergency Fund • Natural Disaster Emergency Fund • Capital Improvement Fund • Working Capital Fund • Pension Liability Fund
F.10	<p>The District's Reserve Fund Policy is reviewed at a public meeting of the Board of Trustees at a public meeting upon the occurrence of the following:</p> <ul style="list-style-type: none"> • Upon consideration by the Board of Trustees of the annual budget. • Upon any significant change to and/or expenditure(s) from a designated fund. • Upon determination that a fund balance is less than the established target fund level for a designated fund.

F.11	The District prepares a capital budget each year to plan for the orderly replenishment of equipment and facilities. Capital investments are financed internally from operations.
Determinations:	
D.1	The District is fiscally responsible.
D.2	The District's operating revenues and fund balance are trending upwards while its expenditures have remained relatively the same for the past three fiscal years (FYE 21-23).
D.3	The District maintains sufficient reserves for future capital plans and contingencies.
Recommendations: None	

Status of and Opportunities for Shared Facilities Findings, Determinations, and Recommendations	
Findings:	
F.1	The District is a member of the American Mosquito Control Association (AMCA). AMCA provides education, training, and advocacy for mosquito and other related vector issues at a national level.
F.2	The District is a member of the Mosquito and Vector Control Association of California (MVCAC). This organization is comprised of 56 public agencies and provides its members with a number of valuable services, including cost avoidance opportunities relating to training services and publication materials.
F.3	The District, along with the Suisun Resource Conservation District, annually presents information to duck club owners. The major topic at these workshops is Best Management Practices (BMPs) for reducing mosquito populations.
F.4	Due to the specialized nature of mosquito and vector control district, particularly in areas like pesticide storage and handling, the District is subject to several State laws and inspections.
Determinations:	
D.1	The District actively participates in education and practices for cost-saving measures.

D.2	The District shares staff, resources, and facilities when conducting outreach and education when available and appropriate.
D.3	It is not practical for the District to consider sharing their facility with another agency.
Recommendations: None	

Government Structure Findings, Determinations, and Recommendations	
Findings:	
F.1	The Solano County Mosquito Abatement District is empowered under California Health and Safety Code to provide a broad range of services relating to the control of vectors and vector-borne diseases. Based on its principal act, the District could expand its services to include vectors other than mosquitoes without activating a new power or getting prior approval by LAFCO.
F.2	SCMAD is an independent, special district governed by an eight-member board of trustees appointed by the County Board of Supervisors and the city councils of Solano County's seven incorporated cities.
Determinations:	
D.1	The overall management structure of the District is sufficient to account for necessary services and maintain operations in an efficient and effective manner. The District works actively to meet its internal goals.
Recommendations: None	

Local Accountability Findings, Determinations, and Recommendations	
Findings:	
F.1	The District maintains a sufficient level of accountability in its governance, and public meetings are reportedly held in compliance with Brown Act requirements. Information regarding the District is readily available and accessible to members of the public.
Determinations:	

D.1	The District's meetings are consistent with the Brown Act.
D.2	The District is largely consistent with Assembly Bill 434 (AB 434) which requires the District's website to be consistent with Level AA of the Web Content Accessibility Guidelines (WCAG) 2.0 or newer. The website could be brought into full compliance with minor amendments.
D.3	The District's website is largely consistent with the Special Districts Transparency Act. The website could be brought into full compliance with minor amendments
Recommendations:	
R.1	Update the District's website to be consistent with Assembly Bill 434 (AB 434) which requires the District's website to be consistent with Level AA of the Web Content Accessibility Guidelines (WCAG) 2.0 or newer.
R.2	Update the District's website to be consistent with the Special Districts Transparency Act.

LAFCO Policies Affecting Service Delivery	
Findings:	
F.1	The Solano County Mosquito Abatement District's boundary is coterminous with Solano County's boundary. The District is not proposing to amend its current boundary.
F.2	The Solano County Mosquito Abatement District is empowered under California Health and Safety Code to provide a broad range of services relating to the control of vectors and vector-borne diseases.
F.3	Based on its principal act, the District could expand its services to include vectors other than mosquitoes without activating a new power or getting prior approval by LAFCO.
Determinations:	
D.1	The District is successfully providing mosquito abatement to the entirety of Solano County.

D.2	The overall management structure of the District is sufficient to account for necessary services and maintain operations in an efficient and effective manner. The District works actively to meet its internal goals.
Recommendations: None	

Attachment A

Solano County Mosquito Abatement District



Municipal Service Review Public Review Final



SOLANO LAFCO

PROJECT No. 2024-03

OCTOBER 21, 2024

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October 2024

ACKNOWLEDGEMENTS

Solano Local Agency Formation Commission (LAFCO)

Commission Members

Board of Supervisors Representatives

John Vasquez, Vice-Chair
Mitch Mashburn
Wanda Williams (Alternate)

City Mayor Representatives

Ron Kott, Chair
Steve Bird
Alma Hernandez (Alternate)

Public at Large Representatives

- Nancy Shopay
- Jack Batchelor (Alternate)

Staff

Rich Seithel, Executive Officer
Christina Love, Deputy Executive Officer
Aaron Norman, Analyst II
Tova Guevara, Office Administrator/Clerk
Tyra Hays, Project Specialist

This Municipal Service Review was produced BY Solano LAFCO staff with assistance from the Solano County Auditor-Controller Office, Solano County GIS staff, and Mala Subramanian, Solano County Lead Legal Counsel.

Special thanks to Miguel Cardenas, Solano County Mosquito Abatement District Manager, and Tami Wright, Solano County Mosquito Abatement District Administrative Assistant.



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October 2024

Project Name: Municipal Service Review Update for Solano County Mosquito Abatement District

LAFCO Project No.: 2024-03

Prepared By: Solano Local Agency Formation Commission (LAFCO)
601 Texas Street, Second Floor
Fairfield, CA 94533

Date: August 13, 2024

District	District Office Location	District Manager
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Solano County Mosquito Abatement District	2950 Industrial Court Fairfield, CA 94533	Miguel Cardenas
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Date of Last MSR/SOI: November 2006

Adopted by LAFCO:



October 2024

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Solano County Mosquito Abatement District Profile

General Manager: Miguel Cardenas

Address: 2950 Industrial Court
Fairfield, CA 94533

Phone: (707) 437-1116

Website: <https://www.solanomosquito.com/>

Date of Formation: 1930

Governing Body: Eight Member Board of Trustees

2024 Memberships:

Person	Title	Term Expiry	Appointing Authority
Robert C. Meador	President	Expired	Vacaville
Daniel Glaze	Vice President	2/13/28	Vallejo
Marlon Osum	Secretary	2/7/25	Suisun
Ronald Schock	Trustee	Expired	Trustee-at-large
Walter Stanish	Trustee	12/15/25	Rio Vista
Paul Wade	Trustee	12/31/25	Fairfield
Mike White	Trustee	Expired	Benicia
Vacant	Trustee	--	Dixon

Compensation: \$100 per Meeting

Public Meetings: Second Monday of each month at 4:30 p.m. at 2950 Industrial Court, Fairfield, CA 94533

No. of Employees: 9



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Acronyms and Abbreviations

CEQA	California Environmental Quality Act
CKH	Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000
DUC	Disadvantaged Unincorporated Community
FYE	Fiscal Year End
IVM	Integrated Vector Management
GC §	Government Code Section
HS §	Health and Safety Code Section
LAFCO	Local Agency Formation Commission
MVCAC	Mosquito and Vector Control Association of California
MSR	Municipal Service Review
SCMAD	Solano County Mosquito Abatement District
SLE	St. Louis Encephalitis
SOI	Sphere of Influence
WCAG	Web Content Accessibility Guidelines
WNV	West Nile Virus
WEE	Western Equine Encephalitis



Definitions

Abate - To put an end to a public nuisance, or to reduce the degree or the intensity of a public nuisance.

Arbovirus – Arboviral disease is a general term used to describe infections caused by a group of viruses spread to people by the bite of infected arthropods (insects) such as mosquitoes and ticks.

Board of Trustees – The legislative body of a district.

City – Any city, whether general law or chartered, including a city and county, and including any city the name of which includes the word “town.”

Control – To prevent or reduce vectors.

Culex – *Culex* or typical mosquitoes are a genus of mosquitoes, several species of which serve as vectors of one or more important diseases of birds, humans, and other animals. The diseases they vector include arbovirus infections such as West Nile virus, Japanese encephalitis, or St. Louis encephalitis, but also filariasis and avian malaria.

Culex pipiens – A species of mosquito commonly referred to as the common house mosquito or northern house mosquito, as it is the most common mosquito to the northern regions of the US.

Culex tarsalis – A species of mosquito commonly referred to as the Western Encephalitis Mosquito, a major vector for West Nile Virus.

Department – The State Department of Health Services.

District – Any mosquito abatement and vector control district created pursuant to this chapter or any of its statutory predecessors.

Municipal Service Review – A comprehensive study to determine the adequacy of governmental services being provided by the local agencies under LAFCO jurisdiction (Government Code §56430).

Principal County – The county having all or the greater portion of the entire assessed value, as shown on the last equalized assessment roll of the county or counties, of all taxable property within a district at the time of formation.

Property – Land and improvements and includes water.

Public Agency – Any state agency, board, or commission, including the California State University and the University of California, any county, city and county, city, regional agency, school district, special district, redevelopment agency, or other political subdivision.

Nuisance means any of the following:



(1) Any property, excluding water, that has been artificially altered from its natural condition so that it now supports the development, attraction, or harborage of vectors. The presence of vectors in their developmental stages on a property is prima facie evidence that the property is a public nuisance.

(2) Any water that is a breeding place for vectors. The presence of vectors in their developmental stages in the water is prima facie evidence that the water is a public nuisance.

(3) Any activity that supports the development, attraction, or harborage of vectors, or that facilitates the introduction or spread of vectors.

Sphere of Influence – A plan for the probable physical boundaries and service areas of a local agency as defined by the Commission. (Government Code §56076).

Vector – 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 rodents and other vertebrates.

Voter – A voter as defined by Section 359 of the Elections Cod



Executive Summary

The municipal service review (MSR) is intended to provide information and analysis necessary to support a sphere of influence (SOI) review and update. The content of the MSR is governed by requirements of the Cortese-Knox-Hertzberg Local Government Reformation Act of 2000 (CKH) and locally adopted policies.

The requirement for an MSR stems from the identified need for a coordinated and efficient public service structure to support California's anticipated growth. In general, the purpose of an MSR is to provide a comprehensive inventory and analysis of the services provided by local municipalities, service areas, and special districts. A MSR evaluates the structure and operation of the local municipalities, service areas, and special districts and discusses possible areas for improvement and coordination. SCMA's service area is coterminous with Solano County's boundary.

Summary of Areas of Analysis

The Cortese-Knox-Hertzberg Act (CKH) requires LAFCO to evaluate seven factors for the Solano County Mosquito Abatement District within this MSR. A brief summary of staff's analysis has been provided below:

1. *Governance Growth and Population Projections*

The District's boundary is coterminous with the boundary of Solano County. Population within the District grew by 9.4% in ten years and will continue to grow as the cities and county develop.

2. *Proximity to Any Disadvantaged Unincorporated Communities (DUCs)*

As the District's boundary entirely encompasses Solano County. Any potential DUCs within the County are already within the District. No further or future action is necessary.

3. *Capacity and Adequacy of Public Facilities and Services*

The District has adopted and executed necessary and required policies that have ensured adequate public facilities and services. The District is capable of maintaining its facilities and services.

4. *Financial Capability*

Between Fiscal Year End (FYE) 19 and FYE 23, the District received an average of 76% of its revenue from property taxes. Other key sources of income include receiving revenue from aerial application reimbursements, a single property rental, and investment interest. Also, fees are levied upon the property owner for services provided when those properties require regular or frequent treatment for mosquito breeding.

Revenues have consistently exceeded expenses for the last 5 years and are



reasonably expected to continue to do so. In FYE 23, the District had \$3,689,363 in revenue. Additionally, the District's available Fund Balance holds sufficient funds to cover any potential unexpected expenses and long-term liabilities such as CalPERS.

5. *Status of and Opportunities for Shared Facilities*

This section analyzes facility sharing measures currently being implemented and opportunities to share resources in the future to reduce costs and, improve efficiency, and service.

The District does not have any facilities that can reasonably be shared. The District shares staff and educational resources with other agencies, such as the Suisun Resource Conservation District for public education and outreach.

6. *Community Accountability and Operational Efficiencies*

The District's website is easy to access and navigate and contains adequate information for transparency. The District's meeting archives, past audits, education programs, and services offered are available online. There are two minor recommended actions from this MSR that would make the District's website fully compliant with the Special Districts Transparency Act and Level AA of the Web Content Accessibility Guidelines (WCAG) 2.0.

7. *Any Other Matter Related to Effective or Efficient Service Delivery, as Required by Commission Policy*

The District's boundary and SOI is coterminous with the Solano County boundary. The District is not requesting or anticipating any changes to its boundary or SOI. Internal changes in land use and growth are routinely reviewed to ensure continued services and programs.

Key Determinations and Recommendations

Determinations:

1. As service demands continue, the District has the financial and administrative resources necessary to hire additional personnel when warranted.
2. The District's Reserve Fund Policy and purchasing policy are sufficient to allow the District the flexibility necessary to meet current and future service demands.
3. The District maintains sufficient reserves for future capital plans and contingencies.
4. The District has sufficient resources and funding to serve Solano County.
5. The District's operating revenues and fund balance are trending upwards while its expenditures have remained relatively the same for the past three fiscal years (FYE 21-23).



6. The District actively participates in education and practices for cost-saving measures.
7. The District is largely consistent with Assembly Bill 434 (AB 434) which requires the District's website to be consistent with Level AA of the Web Content Accessibility Guidelines (WCAG) 2.0 or newer. The website could be brought into full compliance with minor amendments.
8. The overall management structure of the District is sufficient to account for necessary services and maintain operations in an efficient and effective manner. The District works actively to meet its internal goals.
9. The District is successfully providing mosquito abatement to the entirety of Solano County.

Recommendations:

1. Update the District's website to be consistent with Assembly Bill 434 (AB 434) which requires the District's website to be consistent with Level AA of the Web Content Accessibility Guidelines (WCAG) 2.0 or newer.
2. Update the District's website to be consistent with the Special Districts Transparency Act.

Governance

The Solano County Mosquito Abatement District is an independent district governed by an eight-member board of trustees. The District's boundary and sphere are conterminous with the Solano County boundary. Each city within Solano County appoints a trustee to represent their community, and Solano County appoints a trustee-at-large. Each trustee is appointed for a four-year term. The Board of Trustees meets on the second Monday of each month at 4:30 p.m. in the board room located at SCMAD's office. The Board of Trustees appointed a general manager to manage daily operations.

Compliance with State Laws (Principal Act)

Mosquito abatement districts are organized and have powers under the Health and Safety Code §2000 *et. seq.*, which is also known as the "Mosquito Abatement and Vector Control District Law." Mosquito Abatement and Vector Control District Law provides a broad statutory authority for the class of special districts with the power to conduct effective programs for the surveillance, prevention, abatement, and control of mosquitoes and other vectors. Mosquito abatement districts are necessary to protect public health, safety, and welfare. The Mosquito Abatement and Vector Control District Law provides for the following:

- The formation of new mosquito abatement district
- Defines the selection role and functioning of the mosquito abatement district board of trustees



- Outlines the powers of the district
- Allows the district to cooperate with public agencies and federal agencies to carry out its duties, allows the district to declare public nuisances
- Sets forth authorities relating to district finances, including the ability to raise additional revenue and to provide for zones within district boundaries for different levels of service.
- Financial Capacity

The District receives the majority of its revenue from property tax. Mosquito Abatement and Vector Control District Law §2080-2085 allows the District to seek alternative revenue if the District's revenues are inadequate to meet the costs of providing facilities, programs, projects, and services. The District may levy special taxes in the form of Mello-Roos fees, establish special benefit assessments, and charge additional fees to cover the cost of any service that the district provides.

Organization of this Report

This report is organized into four chapters:

Chapter 1 – This chapter provides an overview of the role and responsibility of LAFCO, and provides information regarding municipal service reviews, spheres of influence, and the principal act that governs mosquito abatement and vector districts.

Chapter 2 – This chapter provides information regarding the Solano County Mosquito Abatement District, mosquitoes, and mosquito borne viruses.

Chapter 3 – This chapter evaluates the Solano County Mosquito Abatement District according to the seven MSR analysis factors.

Chapter 4 – The chapter is a summary of LAFCO's findings, determinations and recommendations.

Methodology

Key information sources for this study includes:

- Annual audits
- Annual budgets and actuals
- Financial reports generated by the Solano County Auditor-Controller Office
- Annual reports
- Purchasing policies
- Fixed asset report
- Meeting with SCMAD's general manager and administrative assistant
- SCMAD website
- Emails with SCMAD's administrative assistant
- Tour of SCMAD's facility



Conclusion

This MSR finds that the Solano County Mosquito Abatement District has been and will continue to operate effectively and efficiently in providing its services within its boundary. The District effectively maintains a balanced budget with a healthy available fund balance.

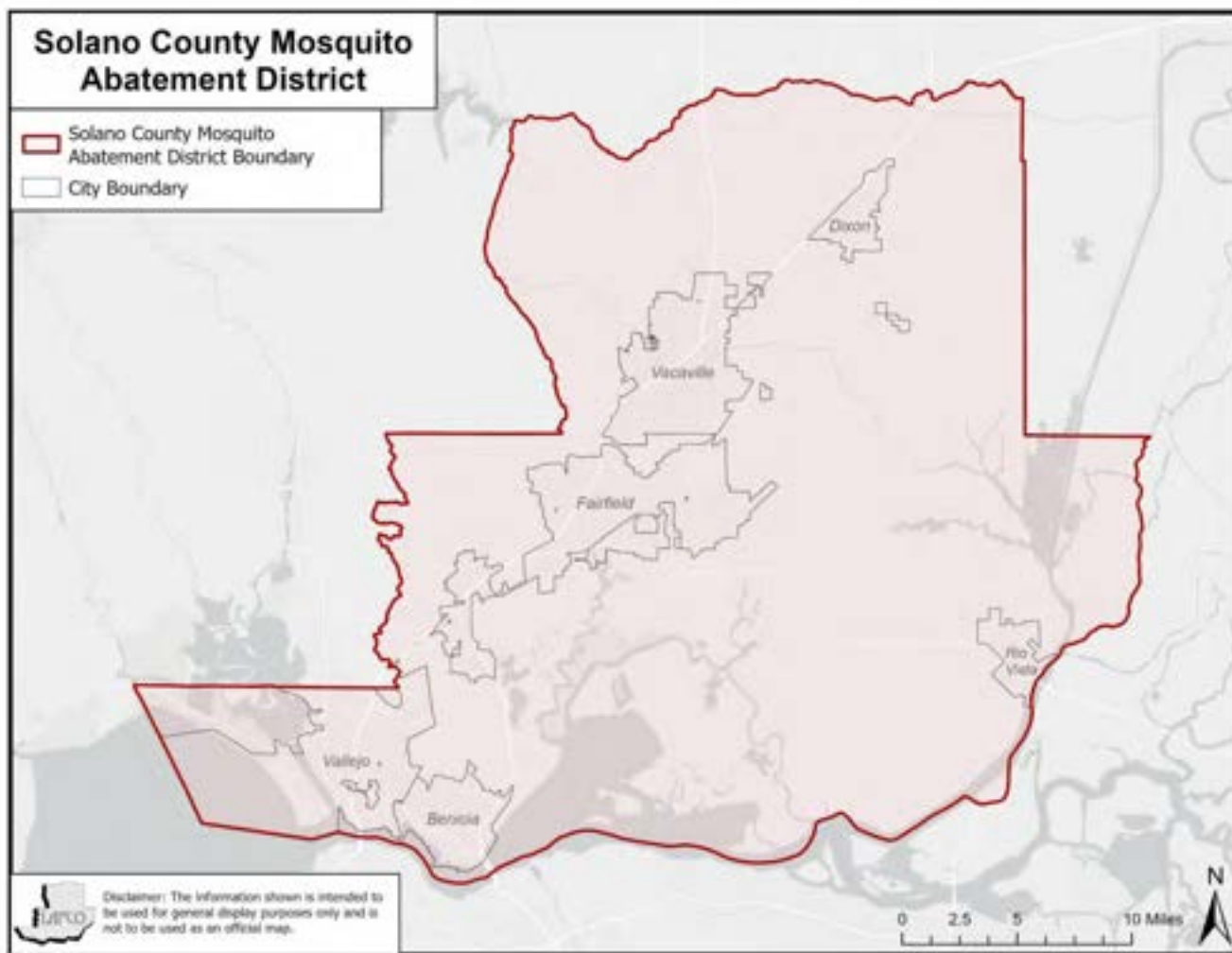
This MSR recommends two minor actions for the District to complete to help ensure its website is in compliance with accessibility regulations.

The District is not requesting or anticipating any changes to its boundary or sphere. Therefore, this MSR supports the current boundary and finds that the District can continue to successfully provide services within.



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California Environmental Quality Act (CEQA)

Public Resources Code Section 21000, et seq., also known as the California Environmental Quality Act (CEQA), requires public agencies to evaluate the potential environmental effects of their actions. This MSR is exempt from CEQA under Class 6 categorical exemption. CEQA Guidelines Section 15306 states that “Class 6 consists of basic data collection, research, experimental management, and resource evaluation activities that do not result in a serious or major disturbance to an environmental resource.” Solano LAFCO finds that this MSR update does not have the potential for causing a significant effect on the environment and is exempt from CEQA.



Introduction

This chapter provides an overview of Solano Local Agency Formation Commission's (LAFCO's) role and responsibilities as defined by the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000), under California Government Code Section 56000 *et seq.* (GC §56000, *et seq.*) establishes procedures for local government changes of organization, including city incorporations, annexations to a city or special district, and city and special district reorganizations.

1.1 Role and Responsibility of LAFCO

After World War II, California experienced dramatic growth in population and economic development. With this boom came a demand for housing, jobs, and public services. To accommodate this demand, the state approved the formation of many new local government agencies, often with little forethought as to the ultimate governance structures in a given region. The lack of coordination and adequate planning led to a multitude of overlapping, inefficient jurisdictional and service boundaries, and the premature conversion/loss of California's agricultural and open-space lands. In 1959, Governor Edmund G. Brown, Sr. recognized this problem and appointed the Commission on Metropolitan Area Problems to consider the matter. The Commission's charge was to study and make recommendations on the "misuse of land resources" and the growing complexity of local governmental jurisdictions. The Commission's recommendations on local governmental reorganization were introduced in the Legislature in 1963, resulting in the creation of Local Agency Formation Commissions, or "LAFCOs," operating in each county except San Francisco.

LAFCO serves as an arm of the State that is responsible for the preparation and review of municipal service reviews (MSRs) and spheres of influence (SOIs) for cities and special districts.

LAFCO's are governed by the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000¹ (CKH). CKH establishes procedures for local government changes of organization, including city incorporations, annexations to a city or special district, and city and special district reorganizations.

LAFCOs were created in 1963 to preserve agricultural land, discourage urban sprawl, and encourage orderly and efficient provision of governmental services such as water, sewer, fire protection, etc.

¹ California Government Code §56000, *et seq.*



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MSRs and SOIs are tools created to empower LAFCOs to satisfy CKH's legislative charge of:

“discouraging urban sprawl, preserving open-space and prime agricultural lands, efficiently providing government services, and encouraging the orderly formation and development of local agencies based upon local conditions and circumstances.” (GC §56301)

LAFCOs do not regulate land use, dictate internal operations or administration of local agencies, or set service rates. However, LAFCOs are empowered to enact policies that indirectly affect land use decisions. On a regional level, LAFCOs promote communities' logical and orderly development as they consider and decide individual proposals. LAFCOs have a role in reconciling differences between agency plans so that the most efficient urban service arrangements are created for the benefit of current and future area residents and property owners.

1.2 Purpose of A Municipal Service Review

The municipal service review (MSR) is a means of identifying and evaluating public services that serve to inform the governmental entity, LAFCO, the public, district property owners, and other interested parties about actions that could be taken to improve the efficient delivery of public services. An MSR must be conducted prior to or, in conjunction with, the update of a sphere of influence (SOI).² The MSR process does not require a LAFCO to initiate changes of organization based on the service review. It only requires that LAFCOs make determinations regarding the provision of public services. LAFCOs may subsequently use the determinations and related analysis to consider whether to pursue changes to service delivery and/or government organization. The form and content of the MSR is governed by the CKH Act (Government Code Section 56430). This MSR evaluates the structure and operation of the Solano County Mosquito abatement District.

The MSR analysis informs the preparation of an agency's sphere of influence (SOI). It helps identify if the agency needs to expand its SOI.

The requirement for MSRs stems from the identified need for a coordinated and efficient public service structure to support California's anticipated growth. In general, the purpose of an MSR is to provide a comprehensive inventory and analysis of the services provided by local municipalities, service areas, and special districts. An MSR evaluates the structure and operation of the local municipalities, service areas, and special districts and discusses possible areas for improvement and coordination. The MSR is intended to provide information and analysis to support a SOI update. A written statement of the study's determinations from the analysis must be made in the following seven areas³:

1. Growth and population projections for the affected area;

² California Government Code §56430

³ California Government Code §56430



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2. The location and characteristics of any disadvantaged unincorporated communities (DUCs) within or contiguous to the sphere of influence;
3. Present and planned capacity of public facilities, adequacy of public services, and infrastructure needs or deficiencies including needs or deficiencies related to sewers, municipal and industrial water, and structural fire protection in any disadvantaged, unincorporated communities within or contiguous to the sphere of influence;
4. Financial ability of agencies to provide services;
5. Status of, and opportunities for, shared facilities;
6. Accountability for community service needs, including governmental structure and operational efficiencies; and
7. Any other matter related to effective or efficient service delivery, as required by commission policy.

1.3 MSR Analysis Factors

The Cortese-Knox-Hertzberg Act (CKH) requires LAFCO to evaluate seven factors for the Solano County Mosquito Abatement District within this MSR. A brief explanation of the seven factors has been provided below:

1. Growth and Population Projections

Changes in demand for services can be based on a variety of factors including future changes in population. This section addresses questions such as:

- *Is the district's territory or surrounding area expected to experience any significant population change or development over the next 5-10 years?*
- *Will projected growth require a change in the district's service and/or sphere of influence boundary?*

2. Proximity to Any Disadvantaged Unincorporated Communities

This section determines if there are any disadvantaged unincorporated communities within or contiguous to the Sphere of Influence and, if so, evaluates the possibility of extending services to that community. This section addresses questions such as:

- *Are there any "inhabited unincorporated communities" within or adjacent to the subject district's sphere of influence that are considered "disadvantaged?"*



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- *If there are disadvantaged unincorporated communities within or adjacent to the district, is it feasible for the district to be reorganized such that it can extend service to the disadvantaged unincorporated community?*

3. Capacity and Adequacy of Public Facilities and Services

This section evaluates the present and planned capacity of public facilities, adequacy of public services, and infrastructure needs or deficiencies including needs or deficiencies related to sewers, municipal and industrial water, and structure fire protection in any disadvantaged unincorporated communities within or contiguous to the Sphere of Influence. This section addresses questions such as:

- *Are there any deficiencies in agency capacity to meet service needs of existing development within its existing territory?*
- *Are there any significant infrastructure needs or deficiencies to be addressed for which the agency has not yet appropriately planned?*

4. Financial Capability

This section discusses the financial ability of agencies to provide services. This section addresses questions such as:

- *Does the organization engage in budgeting practices that may indicate poor financial management, such as overspending its revenues, using up its fund balance or reserve over time, or adopting its budget late?*
- *Is the organization's rate/fee schedule sufficient to fund an adequate level of service, and/or is the fee consistent with the schedules of similar service organizations?*

5. Status of and Opportunities for Shared Facilities

This section analyzes facility sharing measures currently being implemented and opportunities to share resources in the future to reduce costs and, improve efficiency, and service. This section addresses questions such as:

- *Are there any opportunities for the organization to share services or facilities with neighboring or overlapping organizations that are not currently being utilized?*
- *Are there any recommendations to improve staffing efficiencies or other operational efficiencies to reduce costs?*

6. Community Accountability and Operational Efficiencies

This section includes an evaluation of the district's compliance with public meeting and public record laws. It also analyzes the existing government infrastructure for efficiency and effectiveness. This section addresses questions such as:

- *Does the organization need to improve its public transparency via a website?*
- *Are there any issues with meetings being accessible and well publicized?*



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7. Any Other Matter Related to Effective or Efficient Service Delivery, as Required by Commission Policy

This section analyzes Solano LAFCO policies related to service delivery. This section addresses questions such as:

- *Are there any other service delivery issues that can be resolved by the MSR/SOI process?*

1.4 Sphere of Influence

The form and content of the sphere of influence (SOI) is governed by CKH.⁴ The SOI is defined as "a plan for the probable physical boundaries and service areas of a local agency as defined by the Commission" (GC §56076). The purpose of the SOI is to ensure the efficient provision of services, discourage urban sprawl and premature conversion of agricultural and open space lands, and prevent overlapping jurisdictions and duplication of services. The SOI analysis is typically prepared following the approval of an agency's MSR analysis. The MSR informs the need, size, and location of an agency's SOI which is prepared as a separate document.

The SOI is one of the most important tools used by LAFCO to ensure the agency is consistent with CKH. Land cannot be annexed to an agency unless it is within that agency's SOI and that agency's MSR has demonstrated that that territory can be served efficiently by that agency. CKH requires Solano LAFCO to review and update the SOI for each city and special district in the County every five years, as necessary.⁵

The SOI is defined as "a plan for the probable physical boundaries and service areas of a local agency as defined by the (LAFCO) Commission."

LAFCO is required to make the five written determinations identified by CKH⁶ when establishing, amending, or updating an SOI for a local agency. Those five determinations are as follows:

1. **Present and planned land uses in the area.** This consists of a review of current and planned land uses, including agricultural and open space, based on planning documents.
2. **Present and probable need for public facilities and services.** This includes a review of the services available in the area and the need for additional services.
3. **Present Capacity of Public Facilities.** This section includes an analysis of the capacity of public facilities and the adequacy of public services that the agency

provides or is authorized to provide.

⁴ California Government Code §56425(h)

⁵ California Government Code §56425(g)

⁶ California Government Code §56425(e)



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4. **Social or economic communities of interest.** This section discusses the existence of any social or economic communities of interest in the area if the Commission determines that they are relevant to the agency. These are areas that may be affected by current services provided by the Agency or areas that may receive services in the future.
5. **Present and probable need for services to disadvantaged communities.** The Commission must also consider services to disadvantaged communities which are defined as inhabited areas within the SOI whose median household income is less than or equal to 80 percent of the statewide median income.

1.5 Compliance with State Laws (Principal Act)

Mosquito abatement districts are organized and have powers under the Health and Safety Code §2000 *et. seq.*, which is also known as the “Mosquito Abatement and Vector Control District Law.” Mosquito Abatement and Vector Control District Law provides a broad statutory authority for the class of special districts with the power to conduct effective programs for the surveillance, prevention, abatement, and control of mosquitoes and other vectors. Mosquito abatement districts are necessary to protect public health, safety, and welfare.⁷

Mosquito Abatement and Vector Control District Law provides broad statutory authority for class of special districts with the power to conduct effective programs for the surveillance, prevention, abatement, and control of mosquitoes and other vectors.

The Mosquito Abatement and Vector Control District Law provides for the following:

- The formation of new mosquito abatement district
- Defines the selection role and functioning of the mosquito abatement district board of trustees
- Outlines the powers of the district
- Allows the district to cooperate with public agencies and federal agencies to carry out its duties, allows the district to declare public nuisances
- Sets forth authorities relating to district finances, including the ability to raise additional revenue and to provide for zones within district boundaries for different levels of service.
- The District has a board of trustees that review and approve the District’s budget and financial policies. District staff, not including the administrative assistant, are certified by the California Department of Public Health as State of California

⁷ Health and Safety Code §2004



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Department of Public Health Vector Control Technicians. The District works together with the Solano County Public Health Department.

1.6 Findings

1. The Solano County Mosquito Abatement District is empowered under California Health and Safety Code to provide a broad range of services relating to the control of vectors and vector-borne diseases. Based on its principal act, the District could expand its services to include vectors other than mosquitoes without activating a new power or getting prior approval by LAFCO.
2. SCMAD's boundaries are coterminous with Solano County's boundary.
3. Between 2010 and 2020, Solano County grew from 413,963 to 452,698 residents. This represents a 9.4% growth rate. Based on this growth rate, it is estimated that the District's population will reach 491,433 by 2030.
4. As growth occurs within Solano County, service demands will increase. Urban areas provide breeding habitats for mosquitoes due to stagnant water, and treatment becomes more difficult and costly as treatment needs occur more on individual private properties.
5. District officials discuss new developments, the potential need for hiring more personnel and obtaining more equipment at their monthly safety meetings.
6. In an average month, the District receives approximately 110 service requests, which results in 100 technician visits to properties.
7. The District's reserve fund policy's objectives are as follows:
 - a. To assure continued operation and solvency of the District for carrying out its stated mission.
 - b. To maintain a financially viable District that can preserve adequate levels of service.
 - c. To maintain financial flexibility in order to continually adapt to change and permit orderly adjustment to unanticipated events.
 - d. To maintain a diversified, financially flexible, and stable long-term financial plan.
 - e. To facilitate the accumulation and preservation of District funds in an amount equal to the stated target fund level for each specific reserve fund created by the District.
 - f. To provide information to the citizens of Solano County on how tax revenues are used and managed.



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- g. This policy is reviewed on an annual basis in order to incorporate appropriate changes, additions and/or deletions.
8. The District's Reserve Fund Policy is reviewed at a public meeting of the Board of Trustees at a public meeting upon the occurrence of the following:
 - Upon consideration by the Board of Trustees of the annual budget.
 - Upon any significant change to and/or expenditure(s) from a designated fund.
 - Upon determination that a fund balance is less than the established target fund level for a designated fund.
9. The District is a member of the American Mosquito Control Association (AMCA). AMCA provides education, training, and advocacy for mosquito and other related vector issues at a national level.
10. The District, along with the Suisun Resource Conservation District, annually presents information to duck club owners. The major topic at these workshops is Best Management Practices (BMPs) for reducing mosquito populations.
11. The overall management structure of the District is sufficient to account for necessary services and maintain operations in an efficient and effective manner. The District works actively to meet its internal goals.



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Solano County Mosquito Abatement District

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(707) 437-1116
<https://www.solanomosquito.com/>

2.1 District Profile

The Solano County Mosquito Abatement District (SCMAD or District) is an independent, special district that is responsible for mosquito abatement throughout the incorporated and unincorporated areas of Solano County which total 909 square miles. Figure 1 illustrates the District's boundary which is conterminous with Solano County's boundary. Solano County includes an extremely diverse range of aquatic habitats and temperature regimes. The county's topography includes over 1,200 acres of tidal marshlands, ideal habitat for the promulgation of mosquitoes.

SCMAD originally formed in 1930 under the Mosquito Abatement District Act of 1915⁸ to control the pestiferous *Aedes* mosquitoes that were originating in the 184 square mile Suisun Marsh. This Act was amended in 2002 and is now referred to as the Mosquito Abatement and Vector Control District Law.

There are 24 mosquito species in Solano County. Of these, 15 are known as significant disease vectors (i.e., capable to transmitting disease), or as nuisance pests.

The *Aedes* genus of mosquito includes some species that are serious biting nuisances and vectors of disease that sometimes transmit potentially deadly pathogens (disease-causing organisms) to humans and other animals.

2.2 District Mission

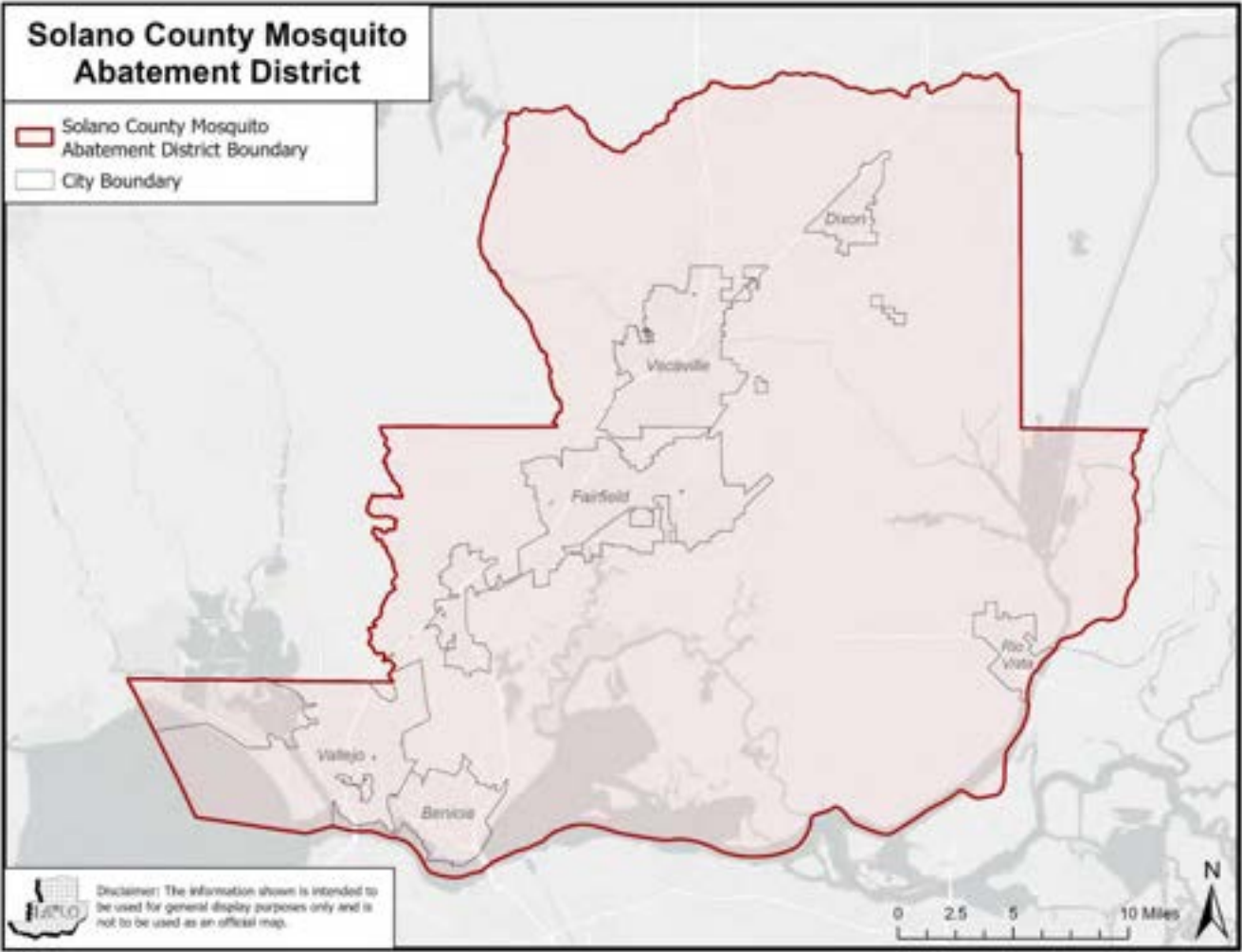
SCMAD's mission is to control all mosquitoes that may bring disease or harassment to humans and domestic animals. SCMAD performs their function by evaluating and selecting the most effective and economical management techniques that result in the least possible damage to non-target organisms or to the environment. The District deploys a variety of preventive management techniques to control mosquitoes, including natural, physical, and chemical control measures. It also emphasizes preventive measures, principally natural and physical control methods. However, chemical control is also integrated with other measures when necessary.⁹

⁸Health and Safety Code §2000-2093

⁹ Solano County Mosquito Abatement District Mission Statement. (2024)
<https://www.solanomosquito.com/our-mission>



Figure 1. Solano County Mosquito Abatement District





2.3 Summary of Services

The Solano County Mosquito Abatement District provides comprehensive control services of all mosquitoes which may bring disease or harassment to humans or domestic animals. District activities include public education, larval control, adult control, trapping, and monitoring. Activities are conducted year-round; however, the highest level of activity is in the spring and summer months when insect growth and activity is greatest.

Surveillance is performed throughout the District. Mosquito specimens are collected at many sites for virus testing and to evaluate mosquito concentrations, breeding data, and species. Surveillance also includes routine inspections of areas known to breed high concentrations of mosquitoes and collection and evaluation of dead birds that may be infected with vector borne diseases. Based on this information, the District develops a response, mitigation, and education program designed to reduce mosquito populations and to educate property owners and residents about risk reduction. The District's surveillance program largely determines its service needs.

The program for providing comprehensive control services is broad and includes a variety of overlapping programs and practices to eliminate mosquitoes. The following programs and practices are implemented as appropriate and necessary to address mosquito breeding within Solano County:

- Deployment to and treatment on properties upon request by a property owner or resident.
- Routine inspection and treatment of known mosquito breeding sources every 7-10 days during breeding season.
- Aerial treatments of State-owned lands within the Suisun Marsh, private duck clubs, and other areas, as needed.
- Hosting annual workshops for duck club owners to educate them about Best Management Practices for reducing mosquito populations.
- Provides mosquito fish free of charge for use in mosquito-breeding waters.
- Monitoring and trapping of mosquitoes throughout the County.
- Testing of adult populations of mosquitoes for diseases with the potential to harm humans and domestic animals.
- Biological and chemical treatments of waters and mosquito grounds to control populations and reduce future adult mosquito emergence.
- Provides recommendations to landowners on physical modifications to their land in order to reduce mosquito breeding.



- Summation of findings and distribution of mosquito statistics to the California Department of Health Services.
- Education of private property owners regarding mosquito breeding and risks of mosquitoes to human and animal health.
- Collection of dead birds to be tested at other facilities for a variety of diseases, including several forms of encephalitis.
- Public outreach and public awareness through media forms: such as public bus signage, online advertising, radio messaging, local magazine and newspaper advertising.
- Attending public events to spread public awareness.
- Testing of dead birds for West Nile virus.

The implementation of these programs and practices is intensive and requires significant resources, including allocation of staff hours in the field for testing and monitoring, use of vehicles, testing and monitoring equipment, testing and storage facilities, significant quantities of pesticides, insecticides, and other chemicals to kill mosquito larvae and adults, and protective gear for District personnel. Mosquito fish and guppies are bred and grown on site for use and distribution, requiring ponds and supporting resources to ensure adequate growth and harvesting ability.

In addition, the District is required to maintain and operate the District consistent with State laws governing special districts, including applicable provisions of the Health and Safety Code, Government Code, and other statutes.

2.4 2023 Disease Surveillance

In 2023, SCMD used a variety of surveillance techniques to monitor and lower the mosquito population for both public nuisance and public health reasons. Mosquito surveillance yields an abundance of data that is useful for district staff.

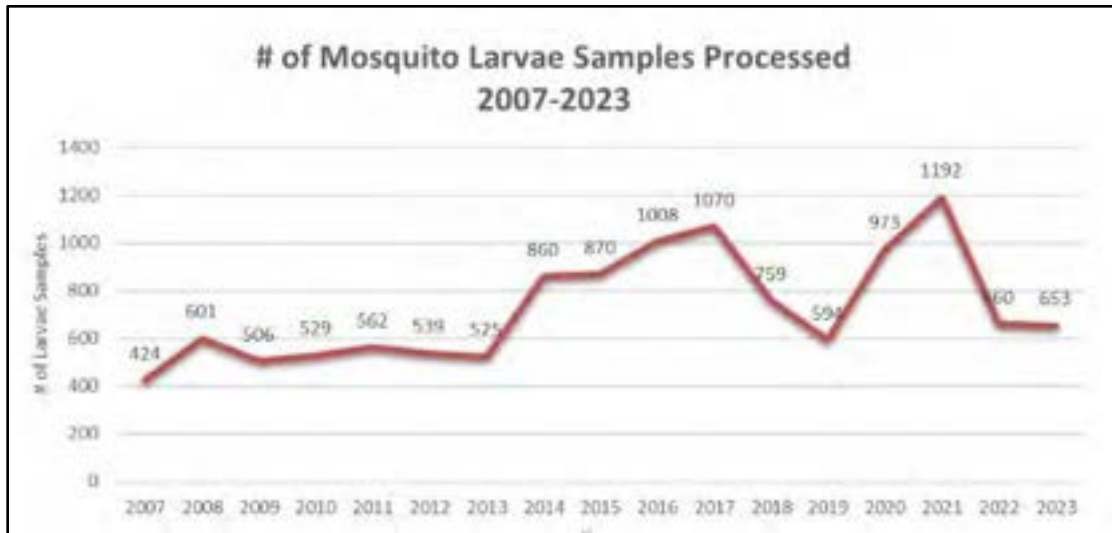
SCMD technicians collect larval samples from aquatic habitats as a response to service requests or from known breeding sources. These samples are brought back to SCMD laboratory where the specimens are inspected, and all mosquito larvae are identified to species. This population data allows SCMD to assess the upcoming risk to the public and the future adult mosquito population if unabated. Larval surveillance is crucial to not only achieving mosquito control before the mosquito population emerges as biting adults, but it also allows us to monitor our pesticides' effectiveness. In 2023, SCMD laboratory processed 653 mosquito larvae samples as shown in Figure 2.

Figure 2. Mosquito Samples Processed by SCMD (2007–2023)



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Source: Solano County Mosquito Abatement District. Annual Report 2023

The District also collect adult mosquitoes. Light traps are used to measure the mosquito population. These traps attract a wide range of mosquito species. These traps are also useful in measuring the male adult mosquito population. The number of male mosquitoes captured in a light trap provides useful information in terms of source proximity to the trap site.

In general, male mosquitoes do not fly far from their source of origin. Male mosquitoes do not need to fly great distances in the way female mosquitoes may to attain a blood meal. Interpreting both the species and sex ratio of the trapped mosquitoes' aids technicians in determining where a particular type of source may be located. In 2023, 22 light traps were collected and reset on a weekly basis from March through November. These light traps were dispersed throughout the County.

The District also uses traps that contain a battery-powered motor that pulls in mosquitoes flying near the top of the trap. These traps are known as BG Sentinel traps. Mosquitoes are attracted to the octenol, carbon dioxide, and BG-Lure with which this trap is baited. The overall black and white design of the BG Sentinel trap is attractive to *Aedes* mosquitoes. BG Sentinel traps attract female mosquitoes in search of a host and are used mainly to monitor for invasive *Aedes aegypti* and *Aedes albopictus*. In 2023, the most abundant species this trap collected was *Culex tarsalis*. *Culex* mosquitoes captured in BG Sentinel traps were pooled and tested for arbovirus, making this trap useful for the SCMD arbovirus surveillance program.



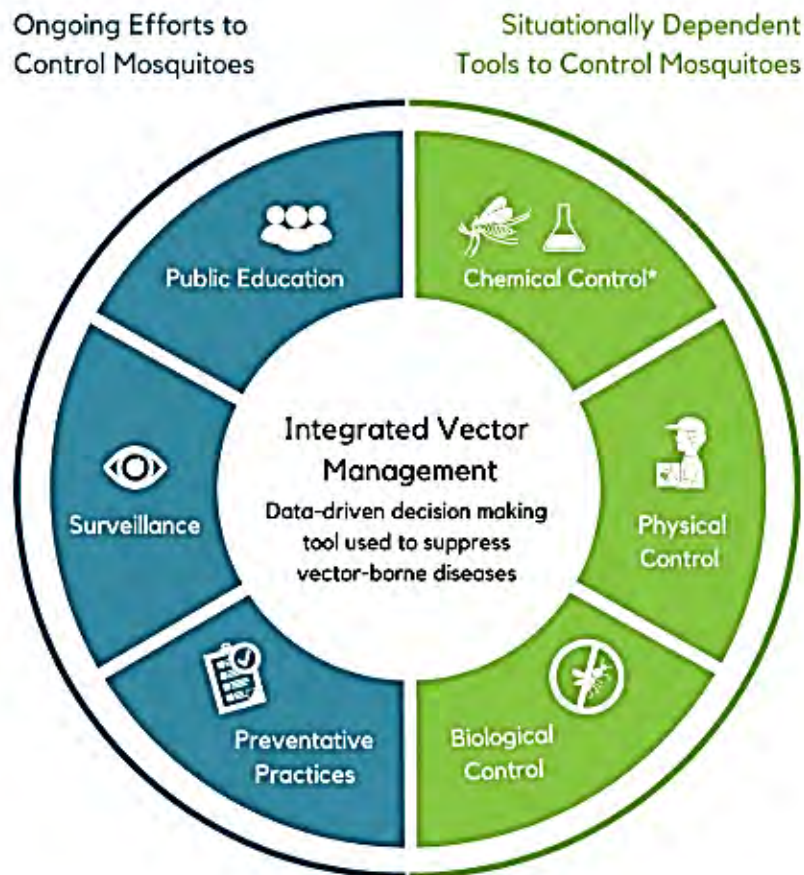
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2.5 Integrated Vector Management

SCMAD controls mosquito populations by utilizing the Integrated Vector Management (IVM) Program.¹⁰ IVM is a rational decision-making process for the optimal use of resources for vector control. Figure 3. provides an overview of the IVM program. The goal of IVM is to improve the efficacy, cost-effectiveness, ecological soundness and sustainability of disease-vector control. Additionally, when compared to traditional pest control methods IVM is a more environmentally conscious method of mosquito control. The Solano County Mosquito Abatement District's IVM program integrates biological and disease surveillance information into selecting the appropriate abatement method.

Figure 3. Overview of the Integrated Vector Management Program



A. Physical Control

¹⁰ Solano County Mosquito District. (2024). *Integrated Vector Management*. <https://www.solanomosquito.com/integrated-vector-management>.



According to SCMAD, the most effective method of controlling mosquitoes is to drain any stagnant standing water where mosquitoes breed. This method of physically manipulating mosquito breeding habitat is referred to as “physical control.” Physical controls utilized by the SCMAD can be broken into two different types:

1. Source Elimination/Reduction

Source elimination/reduction eliminates a larval habitat by modifying the landscape to allow for better drainage of precipitation or stopping a source of regular precipitation. Habitat modification or elimination can be as complex as adding drainage canals to a marsh or as simple as cleaning gutters, flushing dog water bowls weekly or covering a pool/spa that is in disrepair.

2. Source Maintenance

When a source of mosquitoes cannot be eliminated completely, source maintenance can reduce the population of mosquitoes. Source management often includes water management, vegetation management, as well as infrastructure maintenance such as flood gate maintenance. This method of habitat reduction is often employed at duck clubs when lowlands are flooded to create a desirable duck habitat prior to duck hunting season. This method of habitat reduction does require more labor hours to monitor for mosquito breeding and to apply a chemical treatment when necessary.

Physical control may not always be a practical method of mosquito abatement because of the practical limitations due to size, logistical hurdles, or cost. For this reason, the SCMAD utilizes biological and chemical methods to reduce mosquitoes to complete their life cycle and reproduce.

B. Biological Control

SCMAD uses biological control for both short- and long-term abatement wherever possible. This method involves stocking stagnant water sources with mosquito fish, which feed on larvae. SCMAD breeds and purchases live mosquitofish which are dispensed to the public free of charge for use on private property, in places such as ornamental ponds, cattle troughs, broken swimming pools, and large fountains. SCMAD also stocks mosquito fish in environments such as golf courses, country club ponds, water treatment facilities, and stock ponds which do not have a population of predatory fish. In 2023 the SCMAD distributed an estimated 29.15 pounds of mosquitofish throughout Solano County providing long-lasting, pesticide-free mosquito abatement. Mosquito fish do not work in salty or shallow waters or polluted water. No other biological control methods are currently employed by the district.



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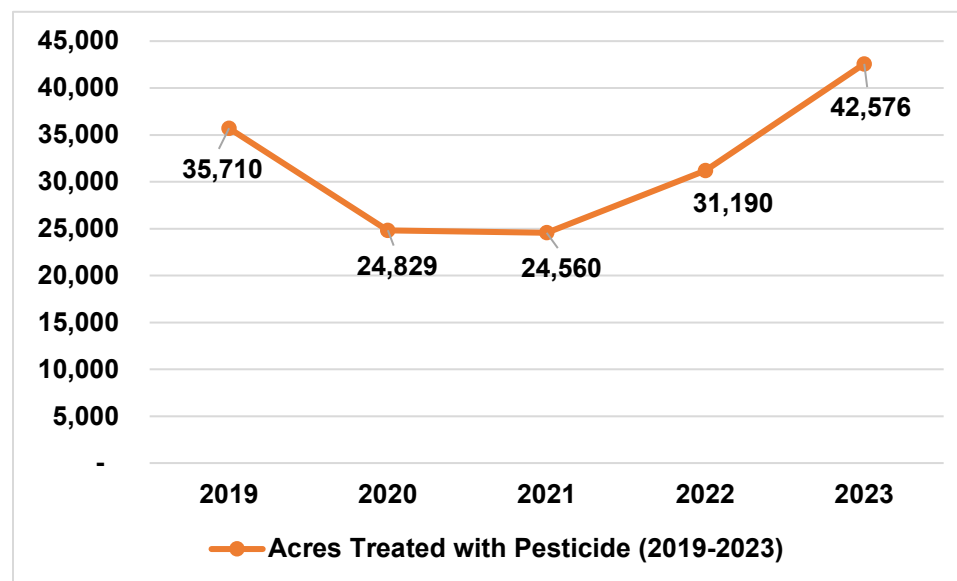
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C. Chemical Control

When physical and biological control methods are not viable options to reduce the mosquito population, the District may elect to use a chemical control method. SCMD works diligently to select and use chemical pesticides in a manner that poses the lowest possible risk to both the public and the environment. The chemical pesticides used by the Solano County Mosquito Abatement District can be classified into two different categories: larvicides and adulticides.

Larvicides are insecticides that target mosquitoes in the larval stage of their life cycle. Larvicides are by far the most heavily used form of insecticide used by SCMD. In 2023 these larvicides were deployed by ATV, hand, and aircraft. Adulticides are chemical pesticides that target mosquitoes in their adult life stage. Adulticides utilized by the SCMD are effective in rapidly reducing the adult mosquito population in a specific area for a short period of time, however, if the mosquito habitat is not eliminated or treated an adulticide treatment will not provide long-lasting results. To date in Solano County adulticides are only deployed by ground vehicles or using a hand applicator or truck-mounted equipment. The Solano County Mosquito Abatement has never applied adulticides using aircraft.

Table 4. Acres Treated with Pesticide (2019-2023)¹¹



¹¹ Solano County Mosquito Abatement District. (2023). *Annual Report 2023*. . <https://www.solanomosquito.com/files/09ba3b141/2023+Annual+Report.pdf>.



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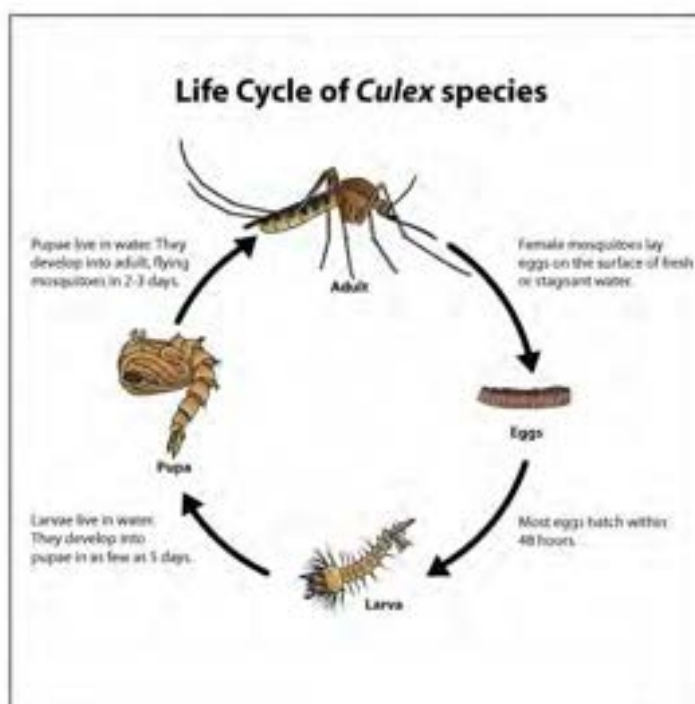
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In addition to operations, District management and employees receive regular training in methods of treatment, new products and practices, and related changes in the field. The District Manager attends the four meetings of the Mosquito and Vector Control Association of California (MVCAC) held each year and updates its practices and policies according to available information and resources. Employee training is conducted as needed and required under State and federal laws.

2.6 The Mosquito Life Cycle

Most mosquitoes lay their eggs in standing water, where they hatch. This may be along creek margins, in containers, gutters, tires, and ponds. Any location where water stands for over one week may become suitable for mosquito breeding. Some species have eggs that stick to the sides of containers, objects, or water holding plants, and can remain viable for very long periods until they get wet and hatch.

The mosquito eggs hatch into the larval stage. Where the larva wiggle through the water feeding on minute particles. The larva then changes into the pupal stage. This stage is where the larva changes into the adult mosquito. When the adult mosquito is ready to emerge, the skin of the pupa splits open and the adult mosquito climbs out.



How quickly a mosquito goes through its life cycle varies on several factors like species, time of year, and temperature. For the most part, mosquitoes can go through their life cycle very rapidly in hotter conditions. In some cases, during the hottest summer months mosquitoes can go through their life cycle in a few days.

Adult mosquitoes usually live for two weeks but may survive the winter in the adult stage. They frequently rest in grasses, shrubbery or other foliage, and in shaded, secluded or protected areas, for example; doghouses, chicken coops, under eaves, etc. The adult mosquito will feed on flower nectar, which is used for food and energy. The female

mosquito may need blood meals for their egg development. This is when potential



diseases are transmitted. The male mosquito does not bite or need a blood meal.

2.7 Mosquito Species

The main species of concern are the *Culex pipiens* and *Culex tarsalis*. In Solano County, these species are the primary vectors of West Nile Virus (WNV), St. Louis encephalitis (SLE) and Western Equine encephalitis (WEE) viruses. However, a new invasive species of mosquito was detected and collected in Dixon in late 2023 that has caused concern.

Encephalitis Mosquito (*Culex tarsalis*)

This mosquito species is one of the most significant vectors of encephalitis in California. This species is also one of the most significant carriers of the West Nile Virus.

These mosquitoes breed in rain pools, marshes, reservoirs, pools, rice fields, irrigation tailwaters, ditches, and domestic sources. Although this species prefers clear, standing waters, it is sometimes found in vegetation along streams and in polluted waters. This breed reaches maximum populations in the late summer. During the hot summer months, they can live for two or three weeks. During the cooler months, the females of this species may live for several months.

House mosquito (*Culex pipiens*)

These mosquitoes keep close ties with humans. Common breeding grounds for these mosquitoes include standing waters such as street drainage, septic tanks and cesspools, sewage, and backyard sources like unused swimming pools and stale-water ornamental ponds. Like the Encephalitis mosquitoes, the house mosquitoes are at peak populations during the summers and live for 2-3 weeks during hot months. This species is also a secondary vector of Western Equine Encephalitis, St. Louis Encephalitis, and the West Nile Virus. Additionally, house mosquitoes may also transmit the organisms causing bird malaria, fowl pox, and canine heartworm.

"We plan to do everything possible to suppress and try to eliminate this invasive mosquito in order protect residents from potential risks associated with this new mosquito."

*- Miguel Cardenas,
Manager of SCMD*

Yellow Fever Mosquito (*Aedes aegypti*)

According to the Solano County Health Department, a new invasive species of mosquito was detected and collected in Dixon in April 2024. This new mosquito, *Aedes aegypti* mosquito, is not native to California and is a known vector of several viruses including yellow fever, dengue, Zika, chikungunya, and other viruses.¹²

These mosquitoes can be recognized by black and white markings on its legs and a marking in the form of a lyre on the upper surface of its thorax. Unlike most mosquitoes,

¹² California Department of Public Health. (May 2024). *Aedes Aegypti and Aedes Albopictus Mosquitoes*. <https://www.cdph.ca.gov/Programs/CID/DCDC/pages/Aedes-aegypti-and-Aedes-albopictus-mosquitoes.aspx>



this mosquito is most active during the day. They can lay eggs in any small artificial or natural container that holds water. According to the National Institutes of health, this mosquito is attracted to humans because it has evolved to have a strong preference for human body odor.

2.8 Mosquito Borne Viruses

As previously noted, SCMD is most concerned about controlling the common house mosquito (*Culex pipiens* and *Culex tarsalis*) because they are primary vectors of West Nile Virus, St. Louis encephalitis (SLE) and Western Equine encephalitis (WEE) viruses.

3. West Nile Virus¹³

West Nile virus (WNV) is the leading cause of mosquito-borne disease in the continental United States. It is most commonly spread to people by the bite of an infected mosquito. Cases of WNV occur during mosquito season, which starts in the summer and continues through fall. There are no vaccines to prevent or medications to treat WNV in people. Fortunately, most people infected with WNV do not feel sick. However not everyone who gets infected is so fortunate.

- About 1 in 5 people who are infected develop a fever and other symptoms.
- About 1 out of 150 infected people develop a serious, sometimes fatal, illness.
- Since the summer of 2004, West Nile virus has been detected in Solano County. This virus is carried by mosquitoes and presents a threat to the public health. The District monitors surveillance results from other disease control agencies in California and around the country and conducts its own surveillance activities for this virus. Table 5 shows the number of cases reported by year.

¹³ Centers for Disease Control and Prevention. (June 2023). *West Nile Virus*.
<https://www.cdc.gov/westnile/index.html>.



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Table 5. Number of West Nile Virus Cases

Year	Human ¹	Dead Birds	Mosquito Samples	Sentinel Chickens	Horses
2022	2	9	12	-	-
2021	2	2	22	-	-
2020	1	3	8	4	1
2019	1	-	5	4	-
2018	-	-	3	7	-
2017	1	4	9	11	-
2016	4	13	16	10	-
2015	1	10	6	7	-
2014	5	33	11	23	-
2013	1	15	1	12	-
2012	2	28	3	2	-

Source: Solano County Mosquito Abatement District. Annual Financial Report. June 30, 2023.
<https://www.solanomosquito.com/files/343ddd1dc/SOLANO+COUNTY+MOSQUITO+ABATEMENT+DIST+ISSUED+FINANCIAL+STATEMENTS+%281%29.pdf>

Note: ¹ There were no fatal human cases.

4. St. Louis encephalitis¹⁴

St. Louis encephalitis (SLE) virus is spread to people by the bite of an infected mosquito. Most people infected with SLE virus do not have symptoms. Those people who do become ill may experience fever, headache, nausea, vomiting, and tiredness. Some people may develop neuroinvasive disease, such as encephalitis (inflammation of the brain) or meningitis (inflammation of the membranes that surround the brain and spinal cord). In rare cases, long-term disability or death can occur. There are no vaccines to prevent or medicines to treat SLE. Fortunately, most people infected with the SLE virus do not have symptoms. However, for people with symptoms, the time from infected mosquito bite to feeling sick (incubation period) ranges from 4 to 14 days.

- Symptoms usually start abruptly, with fever, headache, dizziness, nausea, and generalized weakness. They symptoms typically get worse over a period of several days to a week. Some patients recover after this period.
- Some people develop signs of central nervous system infections, including infection of the brain (encephalitis) or the membranes around the brain and spinal cord (meningitis). Symptoms can include stiff neck, confusion, disorientation, dizziness, tremors, and unsteadiness. Coma can develop in severe cases.
- Among patients diagnosed with SLE, 5 to 20% die. The risk of dying increases with age.

¹⁴ Center for Disease Control and Prevention. (June 2023). *St. Louis Encephalitis Virus*.
<https://www.cdc.gov/sle/index.html>.



5. Western Equine encephalitis¹⁵

Western Equine Encephalitis is a viral illness that is transmitted to people and horses through the bite of an infected mosquito. Most people infected with this virus will have either no symptoms or a mild flu-like illness. Symptoms usually show up suddenly within 1-2 weeks of being bitten by an infected mosquito. A small percentage of people, especially infants and elderly persons, may develop encephalitis (inflammation of the brain).

Most severe human cases begin with a sudden onset of fever, headache, stiff neck, vomiting, or weakness. The illness may progress to disorientation, irritability, seizures, and coma. Approximately 5-15% of these encephalitis cases are fatal, and about 50% of surviving infants will have permanent brain damage. There is no treatment for Western Equine Encephalitis other than supportive care. Hospitalization may be needed for severe cases.

2.9 Public Outreach

SCMAD staff works diligently to monitor and suppress mosquito populations within Solano County's 909 square miles boundary. However, SCMAD relies on information and assistance provided by the public, which assists it in allocating resources to respond effectively and efficiently. In 2023, SCMAD's mosquito control technicians responded to approximately 1,020 service requests. During a service request, SCMAD mosquito control technicians conduct habitat

The public may make a service request by calling SCMAD at (707) 437-1116 or by visiting SolanoMosquito.com.

evaluations and make treatment applications if necessary. District offers a variety of outreach tools for educating residents about the need to help prevent and reduce local mosquito populations. In addition to raising public awareness about the disease potential of mosquitoes, the District also offers advice on home abatement techniques. The District maintains a website, which includes links for online reporting of dead birds. Public workshops, such as educational meetings of duck club owners, are also held to provide information and resources for reducing mosquito populations in the County.

In 2023, the District placed ads on buses in Fairfield, Suisun, and Vacaville. In addition to bus ads, newspaper ads were printed in The Reporter and the Vallejo Times Herald. Informational advertisements were also placed in the following periodicals and at the following events:

- Daily Republic Sunday newspaper ads ran March through July (pictured below)
- Solano Life half-page advertisement
- Solano Senior Living magazine spring, summer, and fall issues

¹⁵ Minnesota Department of Health. (March 2018). *Western Equine Encephalitis Fact Sheet*. <https://www.health.state.mn.us/diseases/weencephalitis/wee.html>.



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- Benicia Times Herald
- Vacaville Reporter & Vallejo Times Herald Monthly Package ran March 26 through September 3 (6-month campaign) included both a Fight the Bite advertisement and a Report Dead Birds advertisement.
- Spring Home & Garden Show (April) Dixon May Fair (May)
- Solano County Fair (June)
- How To Guide (July)
- Fairfield Tomato & Vine Festival (August)
- Vallejo Waterfront Weekend (October)
- Holidays in Vallejo (December)
- Merriment on Main (December)



According to SCMAD, early detection provides the best change of eradication. Residents should eliminate all sources of standing water on their property to control the species, including turning over flowerpots, eliminating spare tires, treating swimming pools and drainage ditches, which are common breeding sources for mosquitoes. For additional tips visit [Prevention - Solano County Mosquito Abatement District \(solanomosquito.com\)](http://Prevention - Solano County Mosquito Abatement District (solanomosquito.com)).



3. Municipal Service Review Factors

This chapter provides a detailed look at the Solano County Mosquito Abatement District and evaluates the seven factors required by the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (CKH or CKH Act) for preparing a municipal service review.

3.1 Growth and Population Projections

This section evaluates whether SCMD can meet the existing and future demand for service based on population and other factors. As previously noted, SCMD's boundary is coterminous with Solano County's boundary. In 2010, Solano County had a population of 413,968 people. In 2020, the County had a population of 452,698. The difference between 2010 and 2020 represents a population growth rate of 9.4% in 10 years. Based on this growth rate, LAFCO projects the population of the County to grow as shown in Table 6.

Table 6. Solano County Population Projection

	2010	2020	2030	2040
Solano County	413,963	452,698	491,433	530,168
Source: USA Facts: https://usafacts.org/data/topics/people-society/population-and-demographics/our-changing-population/state/california/county/solano-county/?endDate=2020-01-01&startDate=2010-01-01				

Service Demands

SCMD service demands relating to mosquito control are based on a combination of factors, including seasonal conditions, breeding habits, and the presence of stagnant water. Mosquitoes are a year-round problem and the District maintains constant surveillance to provide treatment when necessary.

The overall greatest peak in demand occurs during mid-June to mid-October, with some areas having peak demands outside the normal mid-June to mid-October period. Outside of the greatest peak demand period, District personnel spend the rest of the year treating other major problem areas, treating the Suisun marsh, performing maintenance, and getting equipment ready for peak demand.

To track service demands, the SCMD implemented a database data collection system in 2005. The database includes the name and address of the requestor, dates of activity (prior, request, action), technician visits, treatment type, acres treated, and hours spent on the service request. According to District records, in an average month, the District receives approximately 110 service requests; this results in approximately 3-4 service requests per day. However, in addition to service requests, District staff also regularly monitor public and private properties that serve as mosquito sources. These sources vary in size, which affects the number of property visits each day.



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which results in 100 technician visits to properties, or roughly 3-4 calls per day. Additionally, staff regularly monitors public and private properties that serve as mosquito sources.

In addition to responding daily to service requests made by Solano County residents, Control technicians routinely inspect known mosquito sources within the SCMD on a 7 to 10-day cycle and independently check areas for new sources of mosquitoes. Samples are identified and findings are sent to the California Department of Health Services.

As population increases, and growth occurs within Solano County, service demands will increase. Urban areas provide breeding habitats for mosquitoes (stagnant water), and treatment becomes more difficult and costly, as treatment needs occur more on individual private properties. District officials note that at monthly safety meetings, new developments are discussed, and the need for hiring more personnel/obtaining more equipment is discussed. Expansion of services is facilitated by increases in revenues due to increases in property tax income from new development.

Growth and Population Projections Findings, Determinations, and Recommendations	
Findings:	
F.1	Between 2010 and 2020, Solano County grew from 413,963 to 452,698 residents. This represents a 9.4% growth rate. Based on this growth rate, it is estimated that the District's population will reach 491,433 by 2030.
F.2	As growth occurs within Solano County, service demands will increase. Urban areas provide breeding habitats for mosquitoes due to stagnant water, and treatment becomes more difficult and costly as treatment needs occur more on individual private properties.
F.3	Expansion of SCMD services is facilitated by the increase in tax revenue resulting from new development property tax.
F.4	Mosquitoes are a year-round problem and the District maintains constant surveillance to provide treatment when necessary. SCMD service demands relating to mosquito control are based on a combination of factors, including seasonal conditions, breeding habits, and the presence of stagnant water.



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F.5	The capacity of SCMAD to effectively address future service demands is dependent on its continued ability to adapt and redirect resources as needed.
F.6	The District receives approximately 110 service requests monthly; resulting in approximately 3-4 service requests per day. However, in addition to service requests, District staff also regularly monitor public and private properties that serve as mosquito sources. These sources vary in size, which affects the number of property visits each day.
Determinations:	
D.1	As service demands continue, the District has the financial and administrative resources necessary to hire additional personnel when warranted.
D.2	The District's Reserve Fund Policy and purchasing policy are sufficient to allow the District the flexibility necessary to meet current and future service demands.
Recommendations: None	

3.2 Disadvantaged Unincorporated Communities

Pursuant to the State's passage of Senate Bill 244, LAFCOs are required to make determinations regarding disadvantaged unincorporated communities (DUCs) for an update of a sphere of influence. The law defines a DUC as a community with an annual median household income that is less than eighty percent (80%) of the statewide annual median household income. The law also requires that LAFCOs consider "the location and characteristics of any disadvantaged communities within or contiguous to the sphere of influence" when preparing an MSR.

The California Office of Environmental Health and Hazard Assessment's "SB 535 Disadvantaged Communities map (2022 Update)" identifies three census tracts within Solano County with DUCs. These communities are served by the Mosquito Abatement District. No further action is necessary.

Disadvantaged Unincorporated Communities Findings, Determinations, and Recommendations



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Findings:	
F.1	The California Office of Environmental Health and Hazard Assessment's "SB 535 Disadvantaged Communities map (2022 Update)" identifies three census tracts within Solano County with disadvantaged unincorporated communities (DUCs). (Census tracts 6095253500, 6095252402, and 6095252502)
F.2	SCMAD's boundaries are coterminous with Solano County's boundary.
F.3	SCMAD provides services to all properties within Solano County.
Determinations:	
D.1	SCMAD provides services to areas identified as disadvantaged unincorporated communities.
Recommendations:	None

3.3 Present and Planned Capacity of Public Facilities

This section assesses the adequacy and quality of infrastructure for the District. Infrastructure refers to the physical facilities in use by each district, including land, offices, mechanical equipment, computers, maintenance equipment, and water or sewer facilities.

Capital Assets

SCMAD is located in an industrial park near Travis Air Force Base. The District's facilities include an office, a boardroom, a laboratory, two large pond containing mosquito-eating fish, and a large garage used to house vehicles, equipment and insecticides. A portion of the property remains vacant and can be used to expand the facilities if needed. In addition, the District has satellite offices in Dixon and Rio Vista. Currently the District has centralized all operations to the Fairfield location for cost efficiency. Should the need arise, the District could utilize the satellite sites. Currently, these satellite sites are leased to others.

The District's onsite laboratory serves as the hub for all surveillance activities including the coordination of trapping routes. The laboratory also:

- Counts and sorts all mosquitoes collected by Staff
- Pools and prepares specimens for the Davis Arbovirus Research and Training (DART) lab for further processing;
- Conducts internal efficacy tests;
- Checks for pesticide resistance;
- Performs larval identification; and



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- Maintains a mosquito colony for larval studies and pesticide resistance testing

Capital Budget

The District prepares a capital budget each year to plan for the orderly replenishment of equipment and facilities.¹⁶ Capital investments are financed internally from operations. During fiscal year 2023, the District purchased three pickup trucks and one drone. The drones allow the District to chemically treat areas that cannot be reached via land methods. The District plans to continue replacing equipment on an as-needed basis. Table 7 identifies the totals of the District's assets between fiscal year (FYE) 19-23.

The District's purchasing policy has been included in Appendix A. This policy prescribes the procurement procedures for materials, equipment, and general supplies utilized by the District in support of the District mission statement.

Future Strategic Plan

The District is planning on developing its first strategic plan next year. The plan will focus on the following:

- Infrastructure Improvements – Proposed infrastructure improvement include building storage facilities with solar panels to support the District's energy needs and transitioning part of its fleet to electric vehicles. The District needs a system that allows for up to five days of off-grid operation.
- Administrative Improvements – Proposed administrative improvements include digitalizing District documents; upgrading the District's website with a .gov domain; improving the website user experience; and expanding digital media campaigns to include multiple languages.
- Operational Goals – Proposed operational goals include expanding the District's drone program by introducing new active mosquito abatement ingredients; and enhancing surveillance efforts with the use of seasonal help for trapping and invasive species monitoring.

¹⁶ Solano County Mosquito Abatement District. Annual Financial Report. June 30, 2023.
<https://www.solanomosquito.com/files/343ddd1dc/SOLANO+COUNTRY+MOSQUITO+ABATEMENT+DIST-ISSUED+FINANCIAL+STATEMENTS+%281%29.pdf>



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Table 7. Mosquito District Capital Assets (FYE 19-23)

	FYE 19	FYE 20	FYE 21	FYE 22	FYE 23
Buildings and Improvements	\$2,704,720	\$2,704,720	\$2,704,720	\$2,704,720	\$2,704,720
Automotive Equipment	\$373,295	\$459,333	\$414,371	\$440,388	\$554,016
Equipment	\$195,546	\$195,546	\$195,546	\$178,902	\$204,825
Office Equipment	\$51,720	\$51,720	\$51,720	\$61,890	\$64,046
Total Capital Assets being Depreciated	\$3,325,281	\$3,411,319	\$3,366,357	\$3,385,900	\$3,527,607
Accumulated Depreciation	\$2,356,124	\$2,461,212	\$2,521,338	\$2,574,230	\$2,610,440
Land	\$501,803	\$501,803	\$501,803	\$501,804	\$501,804
Total Capital Assets	\$1,470,960	\$1,451,910	\$1,346,822	\$1,313,474	\$1,418,971

Source: Solano County Mosquito Abatement District Annual Financial Reports with Independent Auditor's Report Thereon (FYE 19-23)

The District's capital assets in FYE 23 were \$1,418,971. Capital assets, increased by \$105,497 in FYE 23 following the purchase of drone technology, pick-ups, and other equipment netted against current year depreciation expense of \$173,668. The District plans to continually replace equipment when the need arises.



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Present and Planned Capacity of Public Facilities Findings, Determinations, and Recommendations	
Findings:	
F.1	SCMAD is located in an industrial park near Travis Air Force Base. A portion of the property remains vacant and can be used to expand the facilities if needed.
F.2	The District prepares a capital budget each year to plan for the orderly replenishment of equipment and facilities.
F.3	The District's purchasing policy prescribes the procurement procedures for materials, equipment, and general supplies utilized by the District in support of the District mission statement.
F.4	The District purchases capital assets as needed. During fiscal year 2023, the District purchased three pickup trucks and two drones. The drones allow the District to chemically treat areas that cannot be reached with a boat.
F.5	Capital investments are financed internally from operations.
F.6	In FYE 23, the District had \$1,418,971 in total capital assets.
Determinations:	
D.1	The District proactively plans for the replenishment and/or purchase of equipment and facilities as necessary to support its mission statement.
Recommendations: None	

3.4 Financial Ability to Provide Services

This section reviews the District's financial documents to determine its viability and ability to meet service demands. It also addresses funding for capital improvement projects. Annual audits from fiscal year 2019 through 2023 were reviewed to determine the fiscal status of the District.

Mosquito Abatement and Vector Control District Law¹⁷ requires that on or before August 1st of each year, that the Board of Trustees adopt a final budget, which shall conform to

the accounting and budgeting procedures for special districts. The Board of Trustees is

¹⁷ Health and Safety Code §2000 *et. seq.*



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required to forward a copy of the final budget to the auditor of each county in which the district is located. The District's budget is submitted to Solano County by June 30th each year and approved by the District in September. This budget contains projected revenues and expenditures, as well as information regarding assets, liabilities, and reserves. An overview of the District's finances has been provided in Table 8. The District's FY 19 through FY 2023 actuals have been included in Table 14 located at the end of this chapter.

Table 8. Mosquito Abatement District Finances At-a-Glance (FYE 19-23)

Fiscal Year	Total Revenue	Total Expenditures	Excess of Revenues over Expenditures	Fund Balance¹	Total Net Position
FYE 19	\$2,900,000	\$2,889,607	\$10,393	\$5,756,078	\$5,117,787
FYE 20	\$3,017,880	\$2,541,232	\$476,648	\$6,643,344	\$6,165,834
FYE 21	\$3,214,921	\$3,092,365	\$122,556	\$6,355,282	\$6,643,345
FYE 22	\$3,427,242	\$3,187,876	\$239,366	\$6,587,612	\$10,638,424
FYE 23	\$3,689,363	\$3,200,643	\$488,720	\$7,076,355	\$8,424,278
Source: Solano County Mosquito Abatement District Annual Financial Reports with Independent Auditor's Report Thereon (FYE 19-23)					
¹ Additional information pertaining to the Fund Balance is addressed in Table 11.					

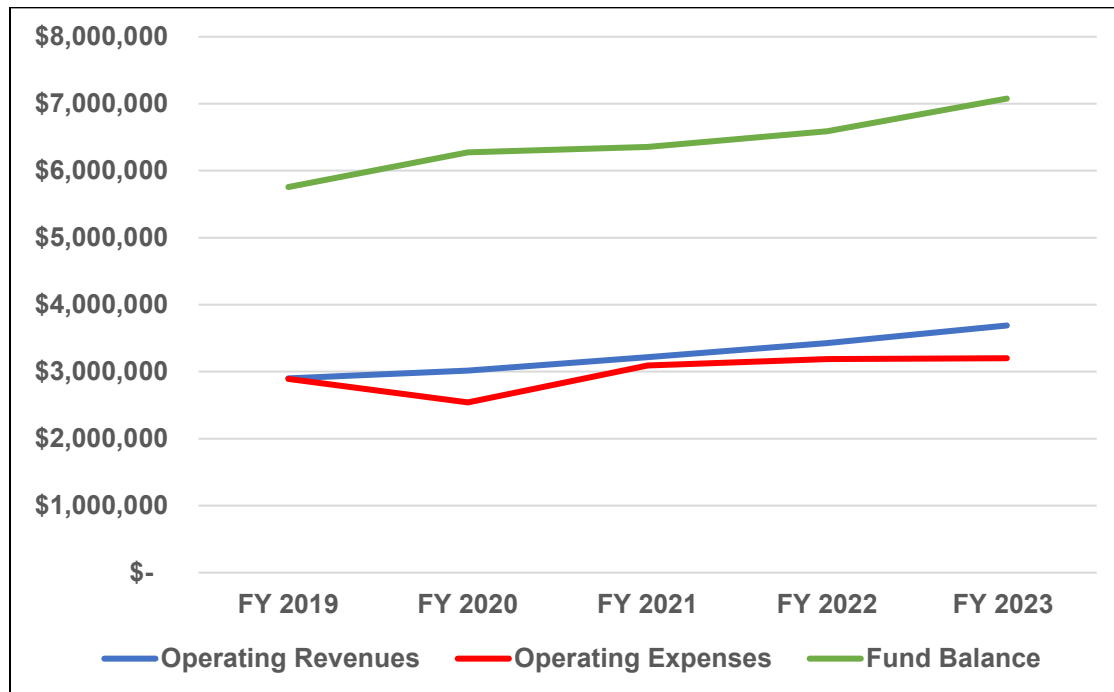
Figure 9 is an illustration of the District's financial health. The table shows that the District is financially solvent, supported by the following facts:

- The District has maintained a total net position of \$5.1 million or greater over the past five fiscal years.
- The District's revenues have consistently exceeded its expenditures over the past five fiscal years.
- The District's expenses have remained relatively the same for the past three fiscal years.
- The District has maintained a fund balance ranging from \$5.7 million to \$7 million over the past 5 fiscal years.
- The District's fund balance has been assigned responsibility. (See Table 11)



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Figure 9. Mosquito Abatement District Revenue and Expenses by Fiscal Year

Sources: Solano County Mosquito Abatement District Annual Financial Reports with Independent Auditor's Report Thereon (FYE 19-23)

Operating Revenue

The District receives the majority of its revenue from property taxes, which is their primary funding source. It receives \$0.52 per \$10,000 of property tax revenue collected by the County. Property tax revenues for FYE 2023 totaled \$2,744,123. Between FYE 19 and FYE 23, the District received an average of 76% of its revenue from property taxes.

In addition to receiving revenue from property taxes, the District receives revenue from aerial application reimbursements, a single property rental, and investment interest. Also, fees are levied upon the property owner for services provided when those properties require regular or frequent treatment for mosquito breeding.



Table 10. Mosquito Abatement District Revenue Sources by Fiscal Year (FYE 19-23)

	FYE 19	FYE 20	FYE 21	FYE 22	FYE 23
Property Taxes	\$2,247,826	\$2,350,902	\$2,426,387	\$2,559,759	\$2,744,123
Other Tax Revenue	\$515,525	\$513,121	\$708,323	\$823,416	\$791,338
Charges for Services	--	\$24,798	--	--	--
Use of Money and Property	\$133,271	\$130,252	\$63,101	\$33,932	\$151,188
Miscellaneous	\$3,378	(\$1,193)	\$17,110	\$10,135	\$2,714
Total Revenue	\$2,900,000	\$3,017,880	\$3,214,921	\$3,427,242	\$3,689,363

Source: Solano County Mosquito Abatement District Annual Financial Reports with Independent Auditor's Report Thereon (FYE 19-23)

Operating Expenses

As shown in Table 11 at the end of this chapter, the majority of the District's expenditures are paid toward salaries and employee benefits (64% on average). The District employs a manager, a supervisor, an administrative assistant, a biologist, and five mosquito control technicians. By comparison, Napa County Mosquito Abatement District employs nine full-time employees to serve 797 square miles, and Contra Costa Mosquito & Vector Control District employs 16 full-time and one seasonal employees who are responsible for 716 square miles of mosquito abatement. In addition to employees, the District's eight board of trustees receive a \$100 stipend for each monthly board meeting.

The District's second largest expense is the purchase of pesticides. On average, 15% of the District's expenditures between FYE 19 and 23 were paid toward the purchase of pesticides. As discussed previously, when physical and biological control methods are not viable options to reduce the mosquito population SCMD can select a chemical control method that will reduce the number of mosquitoes to acceptable levels.

The District prepares a capital budget each year to plan for the orderly replenishment of equipment and facilities. Capital investments are financed internally from operations.

Fund Balance

A fund balance is the accumulated difference of a district's operating surpluses and deficits. In general, it is the accumulated available cash balance remaining after the budgetary revenues have been used to satisfy the operating expenses. A district's fund balance can be a good barometer for its overall financial health when the fund balance



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stays consistent or possibly increases. If the fund balance consistently decreases, this would indicate that expenses consistently exceed revenues and therefore the district relies on past surpluses to cover ongoing deficits.

SCMAD has a reserve fund balance policy, included as Appendix B, that addresses the District's long-term financial goals. The objectives of this policy are as follows:

1. To assure continued operation and solvency of the District for carrying out its stated mission.
2. To maintain a financially viable District that can preserve adequate levels of service.
3. To maintain financial flexibility in order to continually adapt to change and permit orderly adjustment to unanticipated events.
4. To maintain a diversified, financially flexible, and stable long-term financial plan.
5. To facilitate the accumulation and preservation of District funds in an amount equal to the stated target fund level for each specific reserve fund created by the District.
6. To provide information to the citizens of Solano County on how tax revenues are used and managed.
7. This policy will be reviewed on an annual basis in order to incorporate appropriate changes, additions and/or deletions.

The reserve fund balance policy follows the guidelines set by the Governmental Accounting Standards Board (GASB) Statement 54 regarding fund balance reporting and governmental fund type definitions. GASB 54 identifies that fund balances for governmental funds should be reported in classifications that comprise a hierarchy based primarily on the extent to which the government is bound to honor constraints on the specific purposes for which amounts in those funds can be spent. Fund balances are broken out into five categories:

1. **Non-spendable Fund Balance** – This fund balance classification includes amounts that cannot be spent because they are either not in spendable form (i.e. prepaid expenses) or legally or contractually required to be maintained intact.
2. **Restricted Fund Balance** – this fund balance classification should be reported when there are constraints placed on the use of resources externally (by creditors, grant sources, contributors, etc.) or imposed by law or enabling legislation.



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3. **Committed Fund Balance** – amounts that can be used only for specific purposes determined by a formal action of Board of Directors. The Board of Directors is the highest level of decision-making authority for the District. Commitments may be established, modified, or rescinded only through ordinances or resolutions approved by the Board of Directors.
4. **Assigned Fund Balance** – This fund balance classification includes amounts that are constrained by the government's intent to be used for specific purposes but are neither restricted nor committed.
5. **Unassigned Fund Balance** – This fund balance classification is the residual classification for the general fund. The general fund is the general operating fund of the District. It is used to account for all financial resources except those required to be accounted for in another fund.

Table 11. Solano County Mosquito Abatement District Fund Balances (FYE 19-23)

	Target Fund Levels	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Non-Spendable	--	\$102,966	\$134,898	\$122,179	\$213,161	\$520,337
Public Health Emergency Fund (Committed Fund)	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Natural Disaster Emergency Fund (Committed Fund)	\$1,200,000	--	--	--	--	--
Capital Improvement Fund (Committed Fund)	\$1,000,000	\$1,100,000	\$1,032,000	\$1,000,000	\$1,000,000	\$1,000,000
Working Capital Fund (Assigned Fund)	Min. 60% Budgeted Expenditures	\$1,836,583	\$1,908,587	\$1,632,997	\$2,160,133	\$2,160,133
Pension Expense (Committed Fund)	\$1,000,000 ¹	\$500,000	\$500,000	\$1,000,000	\$1,000,000	\$1,250,000
Unassigned Funds	--	\$1,216,529	\$1,657,241	\$1,600,106	\$1,214,318	\$1,145,885



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Total Fund Balances	--	\$5,756,078	\$6,232,726	\$6,355,282	\$6,587,612	\$7,076,355
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Source: Solano County Mosquito Abatement District Annual Financial Reports with Independent Auditor's Report Thereon (FYE 19-23)

¹The District desires to maintain a funded ratio of 85% to 95% of the pension account with CalPERS.

California Public Employees Retirement System (CalPERS)

The District contributes to the California Public Employees Retirement System (CalPERS). All full-time District employees are eligible to participate in CalPERS. The District currently has nine full time employees. CalPERS requires an employee contribution of 7% of annual salary. However, the District pays the employee 7% retirement contribution for classic PERS members.¹⁸ Employees subject to the Public Employee's Pension Reform Act (PEPRA) pay their portion of retirement. The District has four classic members and five PEPRA members.

The amortization schedule shown in Table 12 shows the minimum annual contributions required according to the CalPERS amortization policies.

Table 12. Solano County Mosquito District CalPERS payments FYE 24-28

CalPERS Miscellaneous Current Amortization Schedule			CalPERS PEPRA Miscellaneous Current Amortization Schedule		
Fiscal Year	Balance	Payment	Fiscal Year	Balance	Payment
FYE 24	\$907,533	\$31,324	FYE 24	\$37,166	\$1,076
FYE 25	\$936,873	\$47,119	FYE 25	\$38,581	\$1,788
FYE 26	\$951,886	\$62,915	FYE 26	\$39,356	\$2,500
FYE 27	\$951,595	\$78,710	FYE 27	\$39,449	\$3,211
FYE 28	\$934,961	\$94,504	FYE 28	\$38,813	\$3,923

Source: Actual Valuation as of June 30, 2022 for the Miscellaneous and PEPRA Miscellaneous Plans for the Solano County Mosquito Abatement District (CalPERS ID: 2912637909)

Other Post-Employment Benefits

Other post-employment benefits (OPEB) are the benefits, other than pension distributions, that employees may begin to receive from their employer once they retire. Other post-employment benefits can include life insurance, health insurance, and deferred compensation.

¹⁸ A CalPERS "classic" member is a member who first established their CalPERS membership or in a CalPERS reciprocal agency prior to January 1, 2013. A PEPRA CalPERS member is member who joined CalPERS after January 1, 2013 without prior CalPERS service.



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The District provides post-employment health care benefits to certain employees who are eligible to retire with the California Public Employees Retirement System (CalPERS) and have a retirement date within 120 days of separation of employment. The District pays the premiums for these post-employment health benefits. As of June 30, 2023, the District paid \$68,780 in health care premiums for eight retirees.

Financial Ability to Provide Services Findings, Determinations, and Recommendations	
Findings:	
F.1	Mosquito Abatement and Vector Control District Law requires that on or before August 1st of each year, that the Board of Trustees adopt a final budget, which shall conform to the accounting and budgeting procedures for special districts.
F.2	This budget contains projected revenues and expenditures, as well as information regarding assets, liabilities, and reserves.
F.3	The FYE 23 financial audit noted that the District was in full compliance with the law.
F.4	Between FYE 19 and 23, the District's revenue ranged between \$2,900,000 and \$3,689,363.
F.5	The District's revenues have exceeded its expenditures for the past 5 years. In FYE 23, the District's revenue exceeded its liabilities by \$8,424,278, and the District had \$7,076,355 in total fund balances.
F.6	The District has maintained a fund balance ranging from \$5.7 million to \$7 million over the past 5 fiscal years.
F.7	The District developed a reserve fund policy to clearly identify specific, designated funds. It is the intent of this policy to clearly identify funds, articulate the purpose of each fund, designate the way the funds are replenished and set target levels that are consistent with the District's mission.



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F.8	<p>The District's reserve fund policy's objectives are as follows:</p> <ol style="list-style-type: none"> 1. To assure continued operation and solvency of the District for carrying out its stated mission. 2. To maintain a financially viable District that can preserve adequate levels of service. 3. To maintain financial flexibility in order to continually adapt to change and permit orderly adjustment to unanticipated events. 4. To maintain a diversified, financially flexible, and stable long-term financial plan. 5. To facilitate the accumulation and preservation of District funds in an amount equal to the stated target fund level for each specific reserve fund created by the District. 6. To provide information to the citizens of Solano County on how tax revenues are used and managed. 7. This policy will be reviewed on an annual basis in order to incorporate appropriate changes, additions and/or deletions.
F.9	<p>The District's Reserve Fund Policy includes the following funds:</p> <ul style="list-style-type: none"> • Public Health Emergency Fund • Natural Disaster Emergency Fund • Capital Improvement Fund • Working Capital Fund • Pension Liability Fund
F.10	<p>The District's Reserve Fund Policy is reviewed at a public meeting of the Board of Trustees at a public meeting upon the occurrence of the following:</p> <ul style="list-style-type: none"> • Upon consideration by the Board of Trustees of the annual budget. • Upon any significant change to and/or expenditure(s) from a designated fund. • Upon determination that a fund balance is less than the established target fund level for a designated fund.
F.11	<p>The District prepares a capital budget each year to plan for the orderly replenishment of equipment and facilities. Capital investments are financed internally from operations.</p>



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Determinations:	
D.1	The District is fiscally responsible.
D.2	The District's operating revenues and fund balance are trending upwards while its expenditures have remained relatively the same for the past three fiscal years (FYE 21-23).
D.3	The District maintains sufficient reserves for future capital plans and contingencies.
Recommendations: None	

3.5 Status of and Opportunities for Shared Facilities

This section reviews current sharing arrangements with other agencies, if any, and whether opportunities exist to improve the efficiency and effectiveness of services through sharing, collaboration, or functional consolidation.

The District annually presents information, along with the Suisun Resource Conservation District, to educate duck club owners. A major topic at these workshops is best management practices (BMPs) for reducing mosquito populations. The District is a member of the American Mosquito Control Association (AMCA). AMCA provides education, training, and advocacy for mosquito and other related vector issues at a national level.

The District is a member of the Mosquito and Vector Control Association of California (MVCAC). This organization is comprised of 56 public agencies and provides its members with a number of valuable services, including cost avoidance opportunities relating to training services and publication materials. Other notable services offered by this organization include serving as a legislative advocate for statewide vector control and abatement issues and facilitating the exchange of service information between member agencies.

Due to the specialized nature of mosquito and vector control district, particularly in areas like pesticide storage and handling, it is not practical for the District to consider sharing their facility with another agency.

The District uses the Davis Arbovirus Research and Training (DART) to help process its samples. It allows the District to limit the resources, particularly manpower, dedicated to internal testing of the District's samples. Manpower is one of the District's major determining factors when allocating resources.

However, we recognize the need for a contingency plan. Should the DART lab no longer be available, we would need to immediately scale up our internal operations to perform testing in-house. Therefore, we prioritize maintaining the flexibility to scale up our lab as needed, which ensures that we can continue our work without disruption.



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Status of and Opportunities for Shared Facilities Findings, Determinations, and Recommendations	
Findings:	
F.1	The District is a member of the American Mosquito Control Association (AMCA). AMCA provides education, training, and advocacy for mosquito and other related vector issues at a national level.
F.2	The District is a member of the Mosquito and Vector Control Association of California (MVCAC). This organization is comprised of 56 public agencies and provides its members with a number of valuable services, including cost avoidance opportunities relating to training services and publication materials.
F.3	The District, along with the Suisun Resource Conservation District, annually presents information to duck club owners. The major topic at these workshops is Best Management Practices (BMPs) for reducing mosquito populations.
F.4	Due to the specialized nature of mosquito and vector control district, particularly in areas like pesticide storage and handling, the District is subject to several State laws and State inspections.
Determinations:	
D.1	The District actively participates in education and practices for cost-saving measures.
D.2	The District shares staff, resources, and facilities when conducting outreach and education when available and appropriate.
D.3	It is not practical for the District to consider sharing their facility with another agency.
Recommendations: None	

3.6 Government Structure

LAFCO is required to identify governance options. However, LAFCO is not required to initiate changes and, in many cases, is not empowered to initiate these options. LAFCO is required by the State to act on SOI updates. The Commission may choose to recommend governmental reorganizations to particular agencies in the county, using the spheres of influence as the basis for those recommendations (Government Code §56425 (g)).



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The Health and Safety Code currently permits few types of government entities to perform mosquito abatement services. Cities and counties, as well as mosquito abatement and vector control districts, have the authority to provide these services. In review of the provision of this service across Solano County, the need to ensure that service is provided comprehensively is essential, thus the agency providing service must be able to serve the entire County. The only other service provider legally permitted and structurally able to provide the service at this scale is the County of Solano.

SCMAD is an independent, special district governed by an eight-member board of trustees appointed by the County Board of Supervisors and the city councils of Solano County's seven incorporated cities. The Board of Trustees receive a stipend of \$100 per meeting. District administration. The District manager is hired by the appointed Board of Trustees to manage the operation of the District. The District manager oversees nine full-time employees including a Biologist, Supervisor, administrative assistant, and five mosquito control technicians. Each technician is assigned one particular zone within the service boundary of the District. The Department of Health Services mandates certification of all technicians.

SCMAD's jurisdictional boundary is coterminous with its Sphere of Influence and includes all lands within the contiguous 909 square miles of Solano County. SCMAD does not overlap any other jurisdictions providing the same or similar services, and it does not serve any land outside its boundaries.

Government Structure Findings, Determinations, and Recommendations	
Findings:	
F.1	The Solano County Mosquito Abatement District is empowered under California Health and Safety Code to provide a broad range of services relating to the control of vectors and vector-borne diseases. Based on its principal act, the District could expand its services to include vectors other than mosquitoes without activating a new power or getting prior approval by LAFCO.
F.2	SCMAD is an independent, special district governed by an eight-member board of trustees appointed by the County Board of Supervisors and the city councils of Solano County's seven incorporated cities.
Determinations:	
D.1	The overall management structure of the District is sufficient to account for necessary services and maintain operations in an efficient and effective manner. The District works actively to meet its internal goals.
Recommendations: None	



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3.7 Local Accountability

The District has an eight-member board of trustees that serves as its decision-making body. The Board consists of appointees from the seven city councils in Solano and one member appointed by the County Board of Supervisors. Trustee board meetings are on the second Monday of each month in the District's administrative office in Fairfield at 7:30 p.m. Meeting notice is posted on the window next to the District's front door. These meetings are open to the public and are held in compliance with the Brown Act.

The District offers a variety of outreach tools for educating residents about the need to help prevent and reduce local mosquito populations. In addition to raising public awareness about the disease potential of mosquitoes, the District also offers advice on home abatement techniques. The District maintains a website, which includes links for online reporting of dead birds. Public workshops, such as educational meetings of duck club owners, are also held to provide information and resources for reducing mosquito populations in the County.

The District provides annual financial statements, annual reports, and information regarding an environmental impact report prepared for its integrated mosquito management program. This information can be found online at:
<https://www.solanomosquito.com/notices-links-and-other-documents>.

As previously noted, the District has a reserve fund balance policy that has been included as Appendix B that addresses the District's long-term financial goals. The objectives of this policy contribute to the District's accountability. The objectives of this policy are as follows:

1. To assure continued operation and solvency of the District for carrying out its stated mission.
2. To maintain a financially viable District that can preserve adequate levels of service.
3. To maintain financial flexibility in order to continually adapt to change and permit orderly adjustment to unanticipated events.
4. To maintain a diversified, financially flexible, and stable long-term financial plan.
5. To facilitate the accumulation and preservation of District funds in an amount equal to the stated target fund level for each specific reserve fund created by the District.
6. To provide information to the citizens of Solano County on how tax revenues are used and managed.
7. This policy will be reviewed on an annual basis in order to incorporate appropriate changes, additions and/or deletions.

Website Accountability



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Passed in late 2018, Senate Bill 929 (SB 929) is a law requiring all independent special districts in California to create and maintain a website by January 2020. This law is known as the Special Districts Transparency Act. In summary, special districts are required to comply with the following:¹⁹

1. Establish and maintain a website that is accessible to visitors with disabilities by January 2020.
2. Post contact information for the district on the website.
3. Post agendas to the website at least 72 hours in advance of each regular meeting, in a format that is searchable, indexable, and platform independent. A direct link to the most recent agenda on the home page is also required under AB 2257.
4. Post a link to the State Controller's Public Pay website (or include the district's most recent Compensation Report on the site).
5. Post a link to the State Controller's By The Numbers website (or include the district's most recent Financial Transaction Report on the site).
6. Post a link to the district's Enterprise System Catalog in a "prominent location" on the website as required by SB 272.

In addition, special districts are required to have this content on a website that is ADA-compliant and complies with Assembly Bill 434 (AB 434). AB 434 went into effect in 2018 and was added to the California Government Code as Section 11546.7 (GC §11546.7). GC §11546.7 requires all websites of all state agencies and entities to be accessible to users of all abilities. Specifically, websites must conform (at a minimum) to Level AA of the Web Content Accessibility Guidelines (WCAG) 2.0.

WCAG defines how to make Web content more accessible to people with disabilities. Accessibility involves a wide range of disabilities, including visual, auditory, physical, speech, cognitive, language, learning, and neurological disabilities. Although these guidelines cover a wide range of issues, they are not able to address the needs of people with all types, degrees, and combinations of disability. These guidelines also make Web content more usable by older individuals with changing abilities due to aging and often improve usability for users in general.

To ensure compliance with WCAG, the website was scanned using a free WCAG scanner online. In addition, all videos online must include closed captioning, and all PDF attachments must be accessible. Table 13 provides an overview of the District's website transparency compliance.

¹⁹ CSDA. (2022, October 14). *Website best practices & legal Requirements*. Higher Logic, LLC. <https://www.csdanet/blogs/kristin-withrow1/2022/10/14/website-best-practices-legal-requirements>



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Table 13. Solano County Mosquito Abatement District Website		
https://www.solanomosquito.com/		
Access on May 14, 2024		
Required		
	Yes	No
Agency maintains a website with current contact information for the district manager and key staff		Partial
Agency's website has a link to State Controller's Government Compensation Public Pay website. (GC §53908)	X	
Agency's website provides a link to the State Controller's By The Numbers website (GC §53891(a))	X	
Agency has created an Enterprise System Catalog and posted it to website? (GC §6270.5)	X	
Agency has current agenda posted to website homepage and is accessible through a prominent, direct link. (Government Code §54957.5)	X	
Compliant with web content accessibility guidelines (WCAG) 2.0 Level AA (GC § 7405 and GC §11546.7)		Partial
Americans with Disabilities (ADA) accessible PDF attachments (Section 508 of the Rehabilitation Act)		n/a
ADA closed captioning on videos (Section 508 of the Rehabilitation Act)		n/a

Recommended		
<i>The following is recommended by the California Special Districts Association and other organizations to increase the awareness, accessibility, and transparency of special districts.</i>		
	Yes	No
Mission Statement	X	
Description of Services	X	



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Service Area Map	X	
Board member list, length in office, and titles	Partial	
Authorizing statute/Enabling Act (Principle Act or Special Act)	X	
Board policies and procedures		X
Current bylaws (or formation act)	X	
Archive of agendas and minutes	X	
District Budgets (current and past 3 years)	X	
District Audits (past 3 years)	X	

According to a free WCAG online scanner²⁰ the District's website is semi-compliant with web content accessibility guidelines (WCAG) 2.0 Level AA requirements. The scanner evaluated 49 criteria and identified 15 issues. The majority of the issues (8) involved graphics, five involved menus, one involved orientation and one involved readability. A few of the areas that failed to meet WCAG guidelines were as follows:

- Background images that are not just for decoration purposes and should have the same treatment as standard images and include a "role" attribute that equals to "img" and an alternative text description in an "aria-label" attribute.
- Font sizes should be at least 11 pt. in size in order to stay readable in the majority of font families. This should be verified also when using dynamic units such as REM or percentage.
- Interactive elements that can be navigated using the keyboard should be surrounded by a visual outline whenever they are focused.

It is recommended that the District use a free WCAG online scanner and hire a professional to help it bring its website into compliance with the WCAG guidelines.

²⁰ AccessScan - Website Accessibility Checker - Free & Instant - AccessiBe. (n.d.). <https://accessibe.com>



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Local Accountability Findings, Determinations, and Recommendations	
Findings:	
F.1	The District maintains a sufficient level of accountability in its governance, and public meetings are reportedly held in compliance with Brown Act requirements. Information regarding the District is readily available and accessible to members of the public.
Determinations:	
D.1	The District's meetings are consistent with the Brown Act.
D.2	The District is largely consistent with Assembly Bill 434 (AB 434) which requires the District's website to be consistent with Level AA of the Web Content Accessibility Guidelines (WCAG) 2.0 or newer. The website could be brought into full compliance with minor amendments.
D.3	The District's website is largely consistent with the Special Districts Transparency Act. The website could be brought into full compliance with minor amendments
Recommendations:	
R.1	Update the District's website to be consistent with Assembly Bill 434 (AB 434) which requires the District's website to be consistent with Level AA of the Web Content Accessibility Guidelines (WCAG) 2.0 or newer.
R.2	Update the District's website to be consistent with the Special Districts Transparency Act.

3.8 LAFCO Policies Affecting Service Delivery

Sphere of Influence

The SOI is the agency's plan for the probable growth of its boundary. The SOI analysis is typically prepared following the approval of an agency's MSR analysis and approved concurrently or subsequently to the MSR approval. The MSR informs the need, size, and location of an agency's SOI which is usually prepared as a separate document.

In the case of the Solano County Mosquito Abatement District, the District's boundary is coterminous with Solano County's boundary. The District is not proposing to amend their SOI. LAFCO considered the District's existing SOI while preparing this MSR. While an official SOI analysis will be prepared separately, this MSR supports the District retaining its current SOI based on the following:



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1. The District routinely reviews changes to land uses within the County at their monthly meetings. These discussions help the District determine whether they need to hire more personnel and/or purchase more equipment.
2. The District successfully serves the entire County which includes an extremely diverse range of aquatic habitats and temperature regimes. The County's topography includes over 1,200 acres of tidal marshlands which is the ideal habitat for the promulgation of mosquitoes.
3. The District serves the entire County. There are no disadvantaged unincorporated communities with the District's service boundary
4. The District offers a variety of outreach tools for educating residents about the need to help prevent and reduce local mosquito populations. In addition to raising public awareness about the disease potential of mosquitoes, the District also offers advice on home abatement techniques. The District also provides free mosquito fish to residents.
5. The District is financially solvent with strong general fund policies that support the District's long term financial and operational goals.

LAFCO Policies Affecting Service Delivery	
Findings:	
F.1	The Solano County Mosquito Abatement District's boundary is coterminous with Solano County's boundary. The District is not proposing to amend its current boundary.
F.2	The Solano County Mosquito Abatement District is empowered under California Health and Safety Code to provide a broad range of services relating to the control of vectors and vector-borne diseases.
F.3	Based on its principal act, the District could expand its services to include vectors other than mosquitoes without activating a new power or getting prior approval by LAFCO.
Determinations:	
D.1	The District is successfully providing mosquito abatement to the entirety of Solano County.
D.2	The overall management structure of the District is sufficient to account for necessary services and maintain operations in an efficient and effective manner. The District works actively to meet its internal goals.



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Recommendations: None



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Table 14. Mosquito Abatement District Expenses by Fiscal Year (FYE 19-23)

	FYE 19 Actuals	FYE 20 Actuals	FYE 21 Actuals	FYE 22 Actuals	FYE 23 Actuals	Average	Average % of Actuals FYE 19-23
Salaries and Wages	\$985,329	\$929,570	\$978,548	\$936,343	\$1,038,252	\$973,608	33%
Employee Benefits	\$1,065,944	\$703,804	\$1,299,172	\$1,289,376	\$336,882	\$939,036	31%
Pesticides	\$268,540	\$343,946	\$354,776	\$311,929	\$947,784	\$445,395	15%
Aircraft Services	\$166,515	\$114,380	\$55,635	\$75,800	\$152,232	\$112,912	4%
Insurance	\$53,800	\$59,140	\$85,028	\$74,612	\$93,086	\$73,133	2%
Structure and Grounds Maintenance	\$32,843	\$20,022	\$54,435	\$51,873	\$36,247	\$39,084	1%
Property Tax Administration	\$30,977	\$31,103	\$34,298	\$39,817	\$34,948	\$33,539	1%
Utilities	\$27,403	\$35,571	\$36,272	\$42,236	\$46,682	\$37,633	1%
Motor Vehicles and Equipment Maintenance	\$27,868	\$16,856	\$25,777	\$37,502	\$29,864	\$27,573	1%
Gas and Oil	\$22,739	\$21,525	\$21,922	\$37,577	\$28,885	\$26,530	1%
Materials and Supplies	\$35,319	\$39,041	\$28,899	\$42,017	\$48,577	\$38,771	1%
Office Supplies	\$11,443	\$16,926	\$8,717	-	-	\$12,362	0%
Professional Services	\$26,167	\$50,302	\$45,995	\$88,659	\$47,296	\$51,684	2%
Shop Supplies	-	-	\$2,641	-	-	\$2,641	0%
Memberships	\$16,759	\$16,675	\$17,550	\$18,704	\$19,215	\$17,781	1%
Publishing	\$31,571	\$37,165	\$27,393	\$36,559	\$32,765	\$33,091	1%
Conference	\$4,124	\$4,959	\$1,716	\$7,297	\$13,662	\$6,352	0%
Communications	\$7,511	\$11,510	\$12,590	\$9,794	\$13,530	\$10,987	0%
Continuing Education	\$2,709	\$2,080	\$1,186	\$1,704	\$1,130	\$1,762	0%
Travel	\$834	\$619	\$88	\$750	\$442	\$547	0%
Capital Outlay	\$71,212	\$86,038	-	\$85,327	\$279,164	\$130,435	4%
Total Expenditures	\$2,889,607	\$2,541,232	\$3,092,365	\$3,187,876	\$3,200,643	\$2,982,345	101%

Source: Solano County Mosquito Abatement District Annual Financial Reports (FYE 19-23)

Note: Total exceeds 100% due to rounding.



4. Summary of Findings, Recommendations, and Determinations

The following section includes findings, determinations, and recommendations made by the MSR.

4.1 Growth and Population Projections Findings, Determinations, and Recommendations	
Findings:	
F.1	Between 2010 and 2020, Solano County grew from 413,963 to 452,698 residents. This represents a 9.4% growth rate. Based on this growth rate, it is estimated that the District's population will reach 491,433 by 2030.
F.2	As growth occurs within Solano County, service demands will increase. Urban areas provide breeding habitats for mosquitoes due to stagnant water, and treatment becomes more difficult and costly as treatment needs occur more on individual private properties.
F.3	Expansion of SCMD services is facilitated by the increase in tax revenue resulting from few development property tax.
F.4	Mosquitoes are a year-round problem and the District maintains constant surveillance to provide treatment when necessary. SCMD service demands relating to mosquito control are based on a combination of factors, including seasonal conditions, breeding habits, and the presence of stagnant water.
F.5	The capacity of SCMD to effectively address future service demands is dependent on its continued ability to adapt and redirect resources as needed.
F.6	On an average month, the District receives approximately 110 service requests, which results in 100 technician visits to properties.
Determinations:	
D.1	As service demands continue, the District has the financial and administrative resources necessary to hire additional personnel when warranted.



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D.2	The District's Reserve Fund Policy and purchasing policy are sufficient to allow the District the flexibility necessary to meet current and future service demands.
Recommendations: None	

4.2 Disadvantaged Unincorporated Communities Findings, Determinations, and Recommendations	
Findings:	
F.1	The California Office of Environmental Health and Hazard Assessment's "SB 535 Disadvantaged Communities map (2022 Update)" identifies three census tracts within Solano County with disadvantaged unincorporated communities (DUCs). (Census tracts 6095253500, 6095252402, and 6095252502)
F.2	SCMAD's boundaries are coterminous with Solano County's boundary.
F.3	SCMAD provides services to all properties within Solano County.
Determinations:	
D.1	SCMAD provides services to areas identified as disadvantaged unincorporated communities.
Recommendations:	None

4.3 Present and Planned Capacity of Public Facilities Findings, Determinations, and Recommendations	
Findings:	
F.1	SCMAD is located in an industrial park near Travis Air Force Base. A portion of the property remains vacant and can be used to expand the facilities if needed.
F.2	The District prepares a capital budget each year to plan for the orderly replenishment of equipment and facilities.



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F.3	The District's purchasing policy prescribes the procurement procedures for materials, equipment, and general supplies utilized by the District in support of the District mission statement.
F.4	The District purchases capital assets as needed. During fiscal year 2023, the District purchased three pickup trucks and two drones. The drones allow the District to chemically treat areas that cannot be reached with a boat.
F.5	Capital investments are financed internally from operations.
F.6	In FYE 23, the District had \$1,418,971 in total capital assets.
Determinations:	
D.1	The District proactively plans for the replenishment and/or purchase of equipment and facilities as necessary to support its mission statement.
Recommendations: None	

4.4 Financial Ability to Provide Services Findings, Determinations, and Recommendations	
Findings:	
F.1	Mosquito Abatement and Vector Control District Law requires that on or before August 1st of each year, that the Board of Trustees adopt a final budget, which shall conform to the accounting and budgeting procedures for special districts.
F.2	This budget contains projected revenues and expenditures, as well as information regarding assets, liabilities, and reserves.
F.3	The FYE 23 financial audit noted that the District was in full compliance with the law.
F.4	Between FYE 19 and 23, the District's revenue ranged between \$2,900,000 and \$3,689,363.
F.5	The District's revenues have exceeded its expenditures for the past 5 years. In FYE 23, the District's revenue exceeded its liabilities by \$8,424,278, and the District had \$7,076,355 in total fund balances.



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F.6	The District has maintained a fund balance ranging from \$5.7 million to \$7 million over the past 5 fiscal years.
F.7	The District developed a reserve fund policy to clearly identify specific, designated funds. It is the intent of this policy to clearly identify funds, articulate the purpose of each fund, designate the way the funds are replenished and set target levels that are consistent with the District's mission.
F.8	<p>The District's reserve fund policy's objectives are as follows:</p> <ol style="list-style-type: none"> 1. To assure continued operation and solvency of the District for carrying out its stated mission. 2. To maintain a financially viable District that can preserve adequate levels of service. 3. To maintain financial flexibility in order to continually adapt to change and permit orderly adjustment to unanticipated events. 4. To maintain a diversified, financially flexible, and stable long-term financial plan. 5. To facilitate the accumulation and preservation of District funds in an amount equal to the stated target fund level for each specific reserve fund created by the District. 6. To provide information to the citizens of Solano County on how tax revenues are used and managed. 7. This policy will be reviewed on an annual basis in order to incorporate appropriate changes, additions and/or deletions.
F.9	<p>The District's Reserve Fund Policy includes the following funds:</p> <ul style="list-style-type: none"> • Public Health Emergency Fund • Natural Disaster Emergency Fund • Capital Improvement Fund • Working Capital Fund • Pension Liability Fund
F.10	<p>The District's Reserve Fund Policy is reviewed at a public meeting of the Board of Trustees at a public meeting upon the occurrence of the following:</p> <ul style="list-style-type: none"> • Upon consideration by the Board of Trustees of the annual budget. • Upon any significant change to and/or expenditure(s) from a designated fund. • Upon determination that a fund balance is less than the established target fund level for a designated fund.
F.11	The District prepares a capital budget each year to plan for the orderly replenishment of equipment and facilities. Capital investments are financed internally from operations.



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Determinations:	
D.1	The District is fiscally responsible.
D.2	The District's operating revenues and fund balance are trending upwards while its expenditures have remained relatively the same for the past three fiscal years (FYE 21-23).
D.3	The District maintains sufficient reserves for future capital plans and contingencies.
Recommendations: None	

4.5 Status of and Opportunities for Shared Facilities Findings, Determinations, and Recommendations	
Findings:	
F.1	The District is a member of the American Mosquito Control Association (AMCA). AMCA provides education, training, and advocacy for mosquito and other related vector issues at a national level.
F.2	The District is a member of the Mosquito and Vector Control Association of California (MVCAC). This organization is comprised of 56 public agencies and provides its members with a number of valuable services, including cost avoidance opportunities relating to training services and publication materials.
F.3	The District, along with the Suisun Resource Conservation District, annually presents information to duck club owners. The major topic at these workshops is Best Management Practices (BMPs) for reducing mosquito populations.
Determinations:	
D.1	The District actively participates in education and practices for cost-saving measures.
D.2	The District shares staff, resources, and facilities when conducting outreach and education when available and appropriate.
Recommendations: None	
4.6 Government Structure Findings, Determinations, and Recommendations	



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Findings:	
F.1	The Solano County Mosquito Abatement District is empowered under California Health and Safety Code to provide a broad range of services relating to the control of vectors and vector-borne diseases. Based on its principal act, the District could expand its services to include vectors other than mosquitoes without activating a new power or getting prior approval by LAFCO.
F.2	SCMAD is an independent, special district governed by an eight-member board of trustees appointed by the County Board of Supervisors and the city councils of Solano County's seven incorporated cities.
Determinations:	
D.1	The overall management structure of the District is sufficient to account for necessary services and maintain operations in an efficient and effective manner. The District works actively to meet its internal goals.
Recommendations: None	

4.7 Local Accountability Findings, Determinations, and Recommendations	
Findings:	
F.1	The District maintains a sufficient level of accountability in its governance, and public meetings are reportedly held in compliance with Brown Act requirements. Information regarding the District is readily available and accessible to members of the public.
Determinations:	
D.1	The District's meetings are consistent with the Brown Act.
D.2	The District is largely consistent with Assembly Bill 434 (AB 434) which requires the District's website to be consistent with Level AA of the Web Content Accessibility Guidelines (WCAG) 2.0 or newer. The website could be brought into full compliance with minor amendments.
D.3	The District's website is largely consistent with the Special Districts Transparency Act. The website could be brought into full compliance with minor amendments
Recommendations:	



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R.1	Update the District's website to be consistent with Assembly Bill 434 (AB 434) which requires the District's website to be consistent with Level AA of the Web Content Accessibility Guidelines (WCAG) 2.0 or newer.
R.2	Update the District's website to be consistent with the Special Districts Transparency Act.

4.8 LAFCO Policies Affecting Service Delivery	
Findings:	
F.1	The Solano County Mosquito Abatement District's boundary is coterminous with Solano County's boundary. The District is not proposing to amend its current boundary.
F.2	The Solano County Mosquito Abatement District is empowered under California Health and Safety Code to provide a broad range of services relating to the control of vectors and vector-borne diseases.
F.3	Based on its principal act, the District could expand its services to include vectors other than mosquitoes without activating a new power or getting prior approval by LAFCO.
Determinations:	
D.1	The District is successfully providing mosquito abatement to the entirety of Solano County.
D.2	The overall management structure of the District is sufficient to account for necessary services and maintain operations in an efficient and effective manner. The District works actively to meet its internal goals.
Recommendations: None	



5. Conclusion and Recommendation

This MSR evaluates potential governmental structure and operational efficiencies. This section discusses options for the current organization of Solano County's Mosquito Abatement District (SCMAD).

The general conclusion of this MSR is that the SCMAD district is operating efficiently and effectively. Its revenues cover or exceed their expenses. Its available budgetary fund balances are healthy enough to cover additional or unexpected expenses. SCMAD is liquid enough to cover liabilities, such as CalPERS payments.

It is recommended that the SCMAD SOI be reaffirmed.