

AGENDA
1117th MEETING OF THE BOARD OF TRUSTEES
OF THE ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT
SEPTEMBER 13TH, 2023

TIME: 5:00 P.M.

PLACE: Join in person at the Office of the District
23187 Connecticut Street, Hayward, CA 94545 or
Join remotely via teleconference: <https://us02web.zoom.us/j/84318587859>
see below for additional details.

TRUSTEES: Victor Aguilar, President, City of San Leandro
Cathy Roache, Vice-President, County-at-Large
City of Livermore, vacant
Tyler Savage, City of Alameda: *from 2315 Lincoln Ave, Alameda, CA*
Robin López, City of Albany: *from 1000 San Pablo Ave, Albany, CA*
P. Robert Beatty, City of Berkeley: *from 2052 McGee Avenue Berkeley CA*
Kashef Qaadri, City of Dublin: *from 100 Civic Plaza Dublin, CA*
Courtney Welch, City of Emeryville: *from 6301 Shellmound St, Emeryville CA*
George Young, City of Fremont: *from 35679 Dee Place, Fremont CA*
George Syrop, City of Hayward
Eric Hentschke, City of Newark
Jan O. Washburn, City of Oakland
Hope Salzer, City of Piedmont: *from 76 Cambrian Ave, Piedmont, CA*
Valerie Arkin, City of Pleasanton: *from 3740 Newton Way, Pleasanton, CA*
Subru Bhat, City of Union City

1. Call to order.
2. Roll call.
3. President Aguilar invites any member of the public to speak at this time on any issue relevant to the district (each individual is limited to three minutes).
4. Approval of the minutes of the 1116th Regular Meeting held August 10th, 2023 (**Board action required**).
5. Approve replacement of truck V35, a 2008 Ford Ranger, with a 2023 EV Ford F-150 Lightening PRO, by Mechanical Specialist, Mark Wieland (**Board action required**)
6. Appointment of a nominating committee to identify a candidate for the vacant district Board Secretary position (**Board Action required**).
7. Appointment of an ad-hoc strategic planning committee (**Board Action required**).
 - a. Staff report
 - b. ACMAD 2021-2023 Strategic Plan
 - c. ACMAD 2018-2021 Strategic Plan
8. Financial Reports as of August 31st, 2023: (Information only).
 - a. Check Register
 - b. Income Statement
 - c. Investment, reserves, and cash report

- d. Balance Sheet
- 9. Presentation of the Monthly Staff Report (Information only).
- 10. Presentation of the Manager's Report (Information only).
 - d. Staff Anniversaries
 - e. CDPH Weekly Arbovirus Surveillance Bulletin, WNV update
 - f. CSDA Capitol Tour of ACMAD: September 27th @ 9:00 A.M.
 - g. Training due: AB 1825: Aguilar, Young
- 11. Board President asks for reports on conferences and seminars attended by Trustees.
- 12. Board President asks for announcements from members of the Board.
- 13. Board President asks trustees for items to be added to the agenda for the next Board meeting.
- 14. Adjournment.

ANYONE ATTENDING THE MEETING MAY SPEAK ON ANY AGENDA ITEM AT THEIR REQUEST.

Please Note: Board Meetings are accessible to people with disabilities and others who need assistance. Individuals who need special assistance or a disability-related modification or accommodation (including auxiliary aids or services) to observe and/or participate in this meeting and access meeting-related materials should contact Ryan Clausnitzer at least 48 hours before the meeting at 510-783-7744 or acmad@mosquitoes.org.

IMPORANT NOTICE REGARDING MEETING PARTICIPATION:

All members of the public seeking to observe and/or to address the local legislative body may participate in the meeting by attending in person at the address listed above, telephonically, or otherwise electronically in the manner described below.

HOW TO OBSERVE THE MEETING:

In Person: Attend in person at the Office of the District located at 23187 Connecticut Street, Hayward, CA 94545.

Telephone: Listen to the meeting live by calling Zoom at **(669) 900-6833** Enter the **Meeting ID# 843 1858 7859** followed by the pound (#) key.

Computer: Watch the live streaming of the meeting from a computer by navigating to <https://us02web.zoom.us/j/84318587859>

Mobile: Log in through the Zoom mobile app on a smartphone and enter **Meeting ID# 843 1858 7859**

HOW TO SUBMIT PUBLIC COMMENTS:

Before the Meeting: Please email your comments to acmad@mosquitoes.org, write "Public Comment" in the subject line. In the body of the email, include the agenda item number and title, as well as your comments. If you would like your comment to be read aloud at the meeting (not to exceed three minutes at staff's cadence), prominently write "Read Aloud at Meeting" at the top of the email. All comments received before 12:00 PM the day of the meeting will be included as an agenda supplement on the District's website under the relevant meeting date and provided to the Trustees at the meeting. Comments received after this time will not be read aloud but will be added to the record after the meeting.

During the Meeting: The Board President or designee will announce the opportunity to make public comments. Speakers will be asked to provide their name and city of residence, although providing this is not required for participation. Each speaker will be afforded up to 3 minutes to speak unless another time is specified. Speakers should remain silent and/or will be muted until their opportunity to provide public comment.

In Person: Members of the public may raise their hand and wait to be recognized by the Board President or designee.

Telephone: Press star (*)9, which will alert staff that you have a comment to provide.

Computer or Mobile: Use the "raise hand" feature to alert staff that you have a comment to provide.

PUBLIC RECORDS:

Public records that relate to any item on the open session agenda for a meeting are available for public inspection. Those records that are distributed after the agenda posting deadline for the meeting are available for public inspection at the same time they are distributed to all or a majority of the members of the Board. The Board has designated the District's website located at <https://www.mosquitoes.org/board-of-trustees-regular-meetings> as the place for making those public records available for inspection. The documents may also be obtained by emailing acmad@mosquitoes.org.

CEQA NOTICE:

Unless expressly stated otherwise on the agenda (that an MND or EIR is being considered), discretionary actions taken on agenda items will include a finding by the Board that the action is exempt under CEQA. More information about the CEQA determination can be found in the corresponding staff report.

MINUTES

1116th MEETING OF THE BOARD OF TRUSTEES OF THE ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

August 9th, 2023

TIME: 5:00 P.M.
PLACE: Hybrid Meeting of the Board of Trustees
Physically held at the Office of the District
23187 Connecticut Street, Hayward, CA 94545 and
Teleconferencing at: <https://us02web.zoom.us/j/89290620027>
TRUSTEES: Victor Aguilar, President, City of San Leandro
Cathy Roache, Vice-President, County-at-Large
Steve Cox, Secretary, City of Livermore
Tyler Savage, City of Alameda
Robin López, City of Albany
P. Robert Beatty, City of Berkeley
Kashef Qaadri, City of Dublin: from 100 Civic Plaza, Dublin CA
Courtney Welch, City of Emeryville
George Young, City of Fremont: from 35679 Dee Pl, Fremont CA
George Syrop, City of Hayward
Eric Hentschke, City of Newark
Jan O. Washburn, City of Oakland
Hope Salzer, City of Piedmont: from 76 Cambrian Ave, Piedmont CA
Valerie Arkin, City of Pleasanton: from 3740 Newton Way, Pleasanton CA
Subru Bhat, City of Union City

1. Board President Aguilar called the regularly scheduled board meeting to order at 5:00 pm.
2. Trustees Aguilar, Beatty, Syrop, Hentschke, Washburn, and Bhat were present in-person at the district. Trustees Qaadri, Young, and Arkin attended remotely from the publicly posted locations noted above. Trustee Roache attended remotely under a AB 2449 exemption. Trustee Salzer logged in remotely at 5:07 pm from the publicly posted location noted above. Trustees Cox, Savage, López, and Welch were absent.
3. President Aguilar invited members of the public to speak on any issue relevant to the district. Lab Director, Eric Haas-Stapleton, was present for Item 5. Public Outreach Coordinator, Judith Pierce, was present for Item 6. Vector Biologist, Sarah Lawton, was present to record the minutes. Information & Technology Director, Robert Ferdan, was present remotely for technical support.
4. Approval of the minutes of the 1115th meeting held July 12th, 2023.
Discussion: Trustee Bhat shared his opinion regarding Item 6 from the July Board Meeting. He believes that the General Manager's evaluation process works very well in the way it was designed with participation by the past, current, and future president, as long as it is followed. The core reason why the process did not work is due to the lack of participation this and last year by President Aguilar leading to a last-minute draft by the Past-President, confusion at the

June Board meeting, leading to an investment of time by the General Manager and several Trustees at the July meeting and during their personal time.

Motion: Trustee Arkin moved to approve the minutes

Second: Trustee Washburn

Vote: motion carries: Trustee Beatty abstains

5. Approve expenditure to purchase an unmanned air system, by Lab Director Eric Haas-Stapleton, PhD.

Discussion: Trustee Beatty asked what an RTK is. (Stands for Real-Time Kinematic and it is a system that assists with the positioning system, making the drones location more accurate.) Did we have RTK before? (Yes, but we had to disable it in order for the drone to fly during recent flights. It worked well before the software issues.) President Aguilar asked about the “multi-flight” feature not being available in the recommended drone, will it be an issue? (No, because there are extra legal steps to go through to allow the “multi-drone” feature, and we would not need that feature anyway.) Have we ever flown more than one drone before? (No.) Trustee Salzer asked about the swath width, what if we want to treat something smaller? Also, were the comparisons made “apples-to-apples” for these two drones? Have you heard any feedback from other districts about this drone, particularly regarding maintenance? (Swath width is adjustable on the drone. We mostly treat larger areas, so a large swath width is preferred. A skinny but long source, such as a canal, could be treated by the drone after adjusting the swath width. What we have heard about maintenance is that the PV40X has replacement parts for purchase to repair inhouse or you can mail the drone to get repaired at their facility. We were unable to locate information on AG230 repair policies. Training for PV40X has in-person training, compared to a book and a YouTube video for the AG230.) Trustee Arkin asked what the life-expectancy is of a drone. (The previous one we had for 5 years, similar to a computer, which is about 5 years, we believe this would last about 5 years. The General Manager added that funding for this drone will be coming from the “repair and replace” reserve category. Additionally, we received about \$15,500 from our insurance claim from the previous drone.) Trustee Qaadri asked if 1acre/min compared to 3acre/min is really a big difference, and would we need more than one battery? (Yes, we always use multiple batteries, and we primarily are treating large sites.) Would you need to pay extra for the AgroSol software? (The web site noted the software is free, but it also alluded to a more advanced version, and it was unclear on the question about how much it would cost. The General Manager added that there are obstructions to avoid that LiDAR would be useful for. He also pointed out that ground applications may have a larger impact environmentally). Trustee Hentschke asked when either one would be available to arrive in-house? (AG230 said by December, PV40X said within a couple months.) When it arrives, can we see a presentation of it flying in the parking lot? (Yes, we can set that up when it arrives.) Trustee Roache adds that with the amount of spread area and speed per minute, it will pay off in the long run for time savings (Yes). President Aguilar asks about the fee for software each year. (AG230 does not give clear information about this, but we imagine it will require software updates to be purchased. The PV40X clearly states that the software costs \$1,700 per year.)

Motion: Trustee Beatty moved to approve the expenditure to purchase the PV40X.

Second: Trustee Washburn

Vote: motion carries: unanimous

6. Presentation by Judith Pierce, MPH Education and Outreach Updated, Summer 2023

Discussion: Trustee Beatty asked if you ask the school to present to a certain grade? (Yes, 3rd graders are the preferred target audience.) Trustee Salzer asked if the service request data from the analysis was broken down by geographic area? (Yes, geographically by square mile, but we understand the variety within small areas in our county between high and low densities). Trustee Syrop, asked if Tagalog is being considered as an option for pamphlets to get translated? (Yes, we are trying to do as many as possible but only with someone we trust) As a way to encourage more “brand recognition”, are there any thoughts of a mascot? (A couple other districts have one, and it is successful for them, but we are not sure how impactful this is) Do you have capacity for more classrooms? Can I share your information with my teacher friends? (Yes, we can provide classroom educational materials and give more presentations if desired.) Does ACMAD have a “Peachjar” fund? (No, we do not.) He also added to please email him regarding “promatores” programs, as he knows some people to connect with. Trustee Salzer brought up high costs for translators, can we maybe use Google Translate to save costs? (Luckily, we can share other districts translated materials. Some online translations are incorrect or portray an undesired “tone”.) Trustee Aguilar offered to help connect with San Leandro schools. He also asked if we work with non-profits? (Yes, I have spoken to numerous non-profits, especially related to homeless people, but they tend to have a lot of higher priorities.) Trustee Aguilar recommended a few to reach out to. Trustee Bhat said science fairs are a good way to educate the public. (We have done many science fairs before, but sometimes we prefer a smaller setting where more one-on-one communication can occur.)

7. Financial Reports as of July 31st, 2023:

- a. Check Register
- b. Income Statement
- c. Investment, reserves, and cash report
- d. Balance Sheet

Discussion: Trustee Hentschke asked about KIS for \$600. (New router from “Keep It Simple”.) Trustee Beatty asked if we were able to choose to be on the County Teeter plan? (Yes, we chose to be on this plan in order to have a guaranteed income rather than rely on late fee income.) Trustee Beatty wanted to clarify that the “Repair and Replace” fund will be used for the new drone. (Yes.)

8. Presentation of the Monthly Staff Report.

Discussion: Trustee Syrop asked about Contra Costa’s WNV positive birds? (They had three not near our border. When there was a recent WNV positive mosquito pool in Santa Clara, it was right on our border, and we responded accordingly on our side of the border. The General Manager added that we detected another positive dead bird that was collected yesterday in central Fremont. The Lab Director added that we have mosquito traps out already today, and we will have results tomorrow. The General Manager noted that there are 8 WNV-positive human cases throughout the state.) Trustee Hentschke asked if the traps are separated by species before testing? (Yes.) How are birds tested? (There is a “RAMP” test done right away for crows, then confirmed with PCR. RAMP tests will not work for other birds, so they are tested with only PCR.) How are the samples collected if the bird’s blood has coagulated? (The bird gets swabbed usually in the mouth, but it can also be swabbed in the eye or brain.)

9. Presentation of the Manager’s Report

- a. Training due: AB 1825: Young

10. Board President asks for reports on conferences and seminars attended by Trustees.

Discussion: None

11. Board President asks for announcements from members of the Board.

Discussion: Trustee Hentschke noted that we spent money to renew this building, now we can finally show it off when we host the meeting for HASPA tomorrow.

12. Board President asks Trustees for items to be added to the agenda for the next Board meeting.

Discussion: The General Manager mentioned that we will have a yearly report from CalPERS to review. We are considering adding an electric truck to our fleet. We have been chosen as a host district for the annual CSDA meeting/tour.

13. Adjournment at 6:28 pm.

Respectfully submitted,

Approved as written and/or corrected
at the 1116th meeting of the Board of
Trustees held August 9th, 2023

Cathy Roache, Vice President
BOARD OF TRUSTEES

Victor Aguilar, President
BOARD OF TRUSTEES



23187 Connecticut Street
Hayward, CA 94545

T: (510) 783-7744
F: (510) 783-3903

acmad@mosquitoes.org

Fleet Vehicle Purchase Approval and Capital Asset Disposition

Board of Trustees

President

Victor Aguilar

San Leandro

Vice-President

Cathy Roache

County-at-Large

Tyler Savage

Alameda

Robin López

Albany

P. Robert Beatty

Berkeley

Kashef Qaadri

Dublin

Courtney Welch

Emeryville

George Young

Fremont

George Syrop

Hayward

vacant

Livermore

Jan O. Washburn

Oakland

Eric Hentschke

Newark

Hope Salzer

Piedmont

Valerie Arkin

Pleasanton

Subru Bhat

Union City

Ryan Clausnitzer

General Manager

Background:

After approval from the Board of Trustees at the August regular meeting, the district replaced and upgraded the application UAS. Staff is now recommending replacing truck V-35, a 2008 Ford Ranger, with an EV Ford F-150 Lightning PRO to act as the UAS transportation and battery charging vehicle. This will be the first all-electric truck at the district which will give staff the opportunity to see how it handles under typical conditions. The addition of an electric truck to our electric UAS and existing on-site solar charging system will lead to a more self-sustainable mosquito controlling program.

The truck will be equipped with bedliner coating, a storage shell and sliding truck bed for drone accessibility, a towing package, accessory charging upgrade, and a mobile charging cord.

It is our determination that Ford Motor Company has the best option for an electric, utility-minded vehicle currently on the market. Funds for this purchase would be taken from the repair & replace reserve account.

Pricing from dealerships reflects standard MSRP on vehicles and add-ons with no additional markups. Pricing for after-market items is subject to change.

Quote:

Fremont Ford	2023 F-150 Lightning Pro	\$54,285.00
Livermore Ford	2023 F-150 Lightning Pro	\$54,285.00*
*\$1,100 option deducted from final quote		

Tax, License, Registration fee:

\$6500.00

After-Market Accessories:

Truck bed shell	\$5000.00
Sliding truck bed	\$3000.00

Total: \$68,785.00

Recommendation:

Staff recommends the district replace V-35, which will be auctioned off at a later date, with a Ford F-150 Lightning Pro from **Livermore Ford** based on their established commercial fleet program and availability of the vehicle.

Attachments: quotes from Fremont and Livermore Ford Dealerships

Prepared by Mark Wieland, Mechanical Specialist



Preview Order M105 - W1E - 4x4 SuperCrew: Order Summary Time of Preview: 08/23/2023 14:08:52 Receipt: 8/22/2023

Dealership Name: Livermore Ford

Sales Code : F72435

Dealer Rep.	Misty Holliday	Type	Fleet	Vehicle Line	F-150	Order Code	M105
Customer Name	LIVERMORE FOR	Priority Code	J3	Model Year	2023	Price Level	370

DESCRIPTION	MSRP	DESCRIPTION	MSRP
F150 4X4 SUPERCREW - 145	\$49995	.ELECTRIC DRIVE E-LOCK RR AXLE	\$0
145 INCH WHEELBASE	\$0	8250# GVWR PACKAGE	\$0
OXFORD WHITE	\$0	CA NEW MTR VEHICLE BOARD FEES	\$0
VINYL BUCKETS SEATS	\$0	JOB #2 ORDER	\$0
MEDIUM DARK SLATE	\$0	CV LOT MANAGEMENT	\$0
EQUIPMENT GROUP 110A	\$0	FRONT LICENSE PLATE BRACKET	\$0
.PRO SERIES	\$0	PRO POWER ONBOARD - 9.6 KW	\$1200
.18" MACH BLACK HIGH GLOSS WHL	\$0	MOBILE POWER CORD (120V/240V)	\$500
.ZERO EMISSIONS VEHICLE	\$0	BEDLINER-TOUGHBED SPRAYIN*ACCY	\$595
DUAL EMOTOR-STANDARD BATTERY	\$0	FUEL CHARGE	\$0
SINGLE-SPEED TRANSMISSION	\$0	PRICED DORA	\$0
.275/65R18 BSW ALL-TERRAIN TIRE	\$0	DESTINATION & DELIVERY	\$1995

TOTAL BASE AND OPTIONS	MSRP	\$54285
DISCOUNTS		NA
TOTAL		\$54285

ORDERING FIN: ST999 END USER FIN: ST999

Customer Name:
Customer Address:

Customer Email:

Customer Phone:

Customer Signature

Date

This is not an invoice.

MAJOR PRODUCT CHANGES

To learn more about the features on this vehicle, go to www.fordsourcebook.com

MODEL/SERIES/AVAILABILITY

- **Available Models**

- Pro
- XLT
- Lariat
- Platinum

MECHANICAL

- ★ **New/Changed**

- None

- ★ **Deleted**

- None

EXTERIOR

- ★ **New/Changed**

- None

- ★ **New Colors**

- Avalanche (DR)
- Azure Gray Metallic Tri-Coat (G4)

- ★ **Deleted Paint Colors**

- Iced Blue Silver
- Atlas Blue
- Smoked Quartz Metallic Tinted Clearcoat

INTERIOR/COMFORT

- ★ **New/Changed**

- None

FUNCTIONAL

- ★ **New/Changed**

- LED Warning Beacons by Sound Off Signal – Amber strobe color (94S) – optional on Pro and XLT Fleet only
- LED Warning Beacons by Sound Off Signal – Amber/White strobe color (94W) – optional on Pro and XLT Fleet only
- LED Warning Beacons by Sound Off Signal – Red/Blue strobe color (94R) – optional on Pro Fleet only
- Mobile Power Cord (120V/240V) is now a standalone option instead of standard

- ★ **Deleted**

- AM Radio

SAFETY/SECURITY

- ★ **New/Changed**

- None

FORD CO-PILOT360™ TECHNOLOGY

- ★ **New/Changed**

- None

PACKAGES

- ★ **New/Changed**

- Pro Trailer Hitch Assist included in Tow Technology Package
- PRO SSV (SPECIAL SERVICE VEHICLE) Package (66S) – optional on Pro Fleet only

JOB 2 ORDER GUIDE UPDATES – Effective on all vehicles built on or after Job#2 (03/02/23 – Subject to change)

- None

Product Changes and Features Availability

Features, options and package content subject to change. Please check www.fmcdealer.com for the most current information.

★ = New for this model year

**2023 F-150 LIGHTNING™
SUPERCREW® – PRO SERIES
STANDARD EQUIPMENT**

MECHANICAL

- 98 kWh Usable Capacity Standard Range High-Voltage Battery
- Dual eMotors
- 4x4
- Brakes – 4-Wheel Disc with ABS
- TBD lbs Tow, TBD lbs Payload Capability
- Class IV Hitch
- Rear eLocking Axle
- Electric Engine Cooling Fan
- Electric Parking Brake (Includes Auto Hold)
- Heavy-Duty Dual Front Shocks
- Jack
- Mega Power Frunk
- Power Up/Down Front Hood
- Selectable Drive Modes: Normal, Sport, Tow/Haul, Off-road
- Springs, Front & Rear – Coil
- Independent rear Suspension, Rear Semi Trailing Arm
- Stabilizer Bar, Front & Rear
- Steering – EPAS Power, Rack-and-Pinion

EXTERIOR

- Bumper Front & Rear – Black
- Front Grille – Carbon Black
- Daytime Running Lamps (DRL) (On/Off Cluster Controllable)
- Large Front Trunk Area
- Fully Boxed Steel Frame
- Handles, Black – Door and Tailgate with Black Bezel
- Hooks – Pickup Box Tie-Down, four (4)
- Hooks – Black Front Tow Hooks (2)
- LED Center High-mounted Stop Lamp (CHMSL)
- LED Projector with Dynamic Bending Headlamps
- Spare Tire Carrier – Rear Under Frame
- Spare Tire
- Spare Wheel – 18" Aluminum #2
- Tires – 275/65R 18 all-terrain (A/T)
- Wheels – 18" Machined with Black High Gloss Pockets
- Stone Cuffs, Front & Rear
- Tailgate Lift Assist
- Tailgate – removable with key lock
- Trailer Sway Control
- Wipers – Intermittent speed

INTERIOR/COMFORT

- 12" Digital Productivity Screen
- Black Vinyl Floor Covering
- Compass Display in Instrument Cluster
- Cruise Control
- Dual-Zone Electronic Automatic Temperature Control
- Fade-to-Off Interior Lighting
- Grab Handles
 - Front – A-Pillar, Driver and Passenger Side
 - Rear – B-Pillar
- Horn – Dual-Note
- Outside Temperature Display
- Power Door-Locks with Flip Key and integrated Key Transmitter Keyless-Entry (incl. Autolock)
- Power Windows (Front/Rear) – One-touch Up/Down Driver and Passenger Front Windows
- Rear-window with Fixed Privacy Glass
- Rearview Mirror, Auto-Dimming
- Scuff Plate, Driver and Front-Passenger Doors
- Seat, Front
 - Heated
 - Medium Dark Slate Gray Vinyl Bucket with flow-through console and floor shifter
 - 2-Way manual driver/passenger
- Seat, Rear
 - Medium Dark Slate Gray Vinyl
 - 60/40 flip-up split seat with elongated cushion

INTERIOR/COMFORT (continued)

- Steering Wheel, Black Urethane – Manual Tilt/Telescoping and Manual Locking
- Visor with Driver and Passenger Covered Mirrors

SAFETY/SECURITY

- AdvanceTrac® w/RSC® (Roll Stability Control™)
- Airbags
 - Driver and Passenger Front Airbags
 - Driver and Passenger Seat-Mounted Side Airbags
 - Safety Canopy® Side-Curtain Airbags (1st and 2nd row coverage)
- Audible Vehicle Alert System (Alerts Pedestrians)
- Curve Control
- MyKey®
- Perimeter Alarm
- Seat Belts, Active Restraint System (ARS). Three-point Manual Lap/Shoulder Belts with Height Adjusters, Pretensioners & Energy Mgmt Retractors on Outside Front Positions. Includes Autolock Features for Child Seats
- SOS Post-Crash Alert System™
- Tire Pressure Monitoring System (TPMS)

FORD CO-PILOT360™ TECHNOLOGY

- Autolamp – Auto On/Off Headlamps
- Ford Co-Pilot360™ 2.0
 - Pre-Collision Assist with Automatic Emergency Braking (AEB)
 - Pedestrian Detection
 - Forward Collision Warning
 - Dynamic Brake Support
 - BLIS® with Cross-Traffic Alert
 - Lane-Keeping System
 - Lane-Keeping Alert
 - Lane-Keeping Aid
 - Driver Alert
 - Rear View Camera
 - Auto High Beam
 - Reverse Sensing System
 - Reverse Brake Assist
 - Post-Collision Braking

FUNCTIONAL

- FM Stereo (speakers – six (6))
- 2.4kW Exportable Power – 8 120v Outlets, 8 USB Outlets
 - In-Cab: 2 120v, 6 USB
 - In-Bed: 2 120v
 - Frunk: 4 120v, 2 USB
- FordPass Connect™
 - 4G LTE Wi-Fi hotspot connects up to 10 devices¹
 - Enables FordPass App Features
- One Pedal Driving Mode
- Regenerative Braking System
- Smart Trailer Tow Connection
- Vehicle Charge Capability
 - SAE J1772 CCS (Combo Connector System) Charge Port capable of charging² on 120V, 240V and Direct Current (DC Fast Charge)³

¹ Wi-Fi hotspot includes wireless data trial that begins upon AT&T activation and expires at the end of 3 months or when 3GB of data is used, whichever comes first, but cannot extend beyond the trial subscription period for remote features. To activate, go to www.att.com/ford

² When Vehicle is attached to appropriate EVSE or portable charge cord

³ Two (2)-Year access to Ford Virtual Charging Network

**2023 F-150 LIGHTNING™
SUPERCREW® – PRO SERIES
STANDARD EQUIPMENT**

FUNCTIONAL (continued)

- **FordPass App Features:**
 - Remotely start, lock and unlock vehicle⁴
 - Locate parked vehicle⁴
 - Check vehicle current state of charge and set departure times⁴
 - Schedule times to charge your vehicle and set charge level notifications⁴
 - Set preferences with Remote Vehicle Setup⁴
 - FordPass™ Power My Trip⁴
 - Locate & pay for charging^{4, 5}
 - Set up Plug & Charge
- Note:** *Ford Telematics™ and Data Services Prep included for Fleet ONLY: FordPass Connect™ 4G Wi-Fi Modem provides data to support telematics and data services including but not limited to vehicle location, speed, idle time, fuel, vehicle diagnostics and maintenance alerts. Device enables telematics services through Ford or authorized providers. Activate at www.fleet.ford.com or call 833-FCS-Ford. (833-327-3673)*
- **SYNC® 4 with Enhanced Voice Recognition**
 - 12" LCD Capacitive Touchscreen with Swipe Capability
 - Information On Demand Panel
 - Wireless Phone Connection
 - Cloud Connected
 - AppLink® w/App Catalog
 - 911 Assist®
 - Wireless Apple CarPlay® and Android Auto™ Compatibility
 - Digital Owner's Manual
 - Conversational Voice Command Recognition
 - Connected Built-In Navigation⁶
- **Zone Lighting**

⁴ FordPass Connect (optional on select vehicles), the Ford Pass App., and Complimentary Connected Services are required for remote features (see FordPass Terms for details). Connected Service and features depend on compatible AT&T network availability. Evolving technology/cellular networks/vehicle capability may limit functionality and prevent operation of connected features. Connected services excludes Wi-Fi hotspot.

⁵ To qualify for complimentary charging offer, modem must be activated within 60 days of purchase through the FordPass App on a smartphone. Complimentary charging expires 2 years from vehicle purchase date. Offer excludes idle fees and parking violations associated with charging.

⁶ Navigation services require SYNC®4 and FordPass Connect (optional on select vehicles), complimentary connect service and the FordPass app (see FordPass Terms for details). Eligible vehicles receive a complimentary 3-year trial of navigation services that begins on the new vehicle warranty start date. Customers must unlock the navigation service trial by activating the eligible vehicle with a FordPass member account. If not subscribed by the end of the complimentary period, the connected navigation service will terminate, and the system will revert to embedded offline navigation.

Connected service and features depend on compatible AT&T network availability. Evolving technology/cellular networks/vehicle capability may limit functionality and prevent operation of connected features.

FordPass App, compatible with select smartphone platforms, is available via a download. Message and data rates may apply.

* = New for this model year

05/08/23

**2023 F-150 LIGHTNING™
SUPERCREW® – PRO SERIES
EQUIPMENT GROUP**

PROPRIETARY

Series	Option Code	F-150 Pro
SuperCrew® 4x4 – 5.5' Box	145"	W1E
Dual eMotor – Standard Battery	99L	S
- 98 kWh Usable Capacity Standard Range High-Voltage Battery		
Single-Speed Transmission	44L	S
Equipment Group	Option Code	Standard 110A
Free Standing Packages (See Packaged Options/Emissions pages for complete content and restrictions)		
On-Board Scales and Smart Hitch Removal Note: Requires Tow Technology Package (17V)	63X	O
Max Trailer Tow Package (req. Pro Power Onboard – 9.6 kW (479) w/ std battery)	53D	O
Tow Technology Package (Incl. 360-Degree Camera, Mirrors, Sideview – Manual-folding, Power Glass with Heat, Turn Signal and Black Skull Caps and LED Sideview Mirror Spotlights) Note: Requires On-Board Scales and Smart Hitch Removal (63X)	17V	O
Free Standing Options		
Pro Power Onboard – 9.6 kW	479	O
Tailgate Step (incl. Tailgate Work Surface)	63T	O
Front License Plate Bracket (standard in states where required by law, opt. to all others)	153	O
Dealer Installed Options (DIO) – Shipped separately from the vehicle for dealer installation		
Bed Cargo Net – Horizontal (NA w/ Bed Divider)		O
Bed Cargo Net – Vertical		O
Bed Mat – Removable (NA w/ Tonneau Pickup Box Cover – Hard/Retractable (96X/96J), Bed Divider and Bed Tray)		O
Bed Tailgate Lock by McGard™		O
Bed Tray (NA w/ Bedliner (96W), Bed Mat and Pivot Storage Box)		O
First Aid Kit with Ford Logo		O
Individual Trailer TPMS/Customer-Placed Trailer Camera (req. Tow Technology Package (17V))		O
In-Vehicle Safe by Console Vault®		O
Pivot Storage Box by UnderCover – Right Hand Side (NA w/ Bed Divider and Tonneau Pickup Box Cover – Hard/Retractable (96X/96J))		O
Wheel Lock Kit, Exposed		O
Wheel Lock Kit, Hidden Lugs		O
Ford Accessories		
Aluminum Crossbed Toolbox by Weather Guard (Defender Series) (NA with Tonneau Pickup Box Cover Hard, Soft or Retractable (96X/96T/96J))	90B	O
Premium Aluminum Crossbed Storage Toolbox by Weather Guard (model # 127-0-02) (NA with Tonneau Pickup Box Cover Hard, Soft or Retractable (96X/96T/96J))	90P	O
Bedliner – Tough Bed® spray-in	96W	O
Tonneau Pickup Box Cover – Hard Folding (NA with Aluminum Crossbed Storage Toolbox by Weather Guard (90B/90P))	96X	O
Tonneau Pickup Box Cover – Soft Folding (NA with Aluminum Crossbed Storage Toolbox by Weather Guard (90B/90P))	96T	O
Tonneau Pickup Box Cover – Retractable (NA with Aluminum Crossbed Storage Toolbox by Weather Guard (90B/90P))	96J	O
Fleet Only Options (req. Valid FIN Code)		
Back-up Alarm System	85H	F
Daytime Running Lamps (DRL) (when selected with Power Equipment Group (85A), the non-controllable Daytime Running Lamps (DRL) (942) replace Daytime Running Lamps (DRL) (On/Off Cluster Controllable))	942	F
Dual eMotor – Extended Range Battery (See charging equipment) – 131 kWh Usable Capacity Extended Range High-Voltage Battery	99V	F
★LED Warning Beacons by Sound Off Signal – Amber strobe color (includes center high-mounted stop light bar and two (2) roof mounted beacons that provide 360 degree visibility)	94S	F
★LED Warning Beacons by Sound Off Signal – Amber/White strobe color (includes center high-mounted stop light bar and two (2) roof mounted beacons that provide 360 degree visibility)	94W	F

★ = New for this model year

I = Included in Equipment Group, S = Standard, O = Optional,
P = Packaged Option, F = Fleet Only Option

05/08/23

**2023 F-150 LIGHTNING™
 SUPERCREW® – PRO SERIES
 EQUIPMENT GROUP**

PROPRIETARY

Equipment Group	Option Code	Standard 110A
Charging Equipment		
Fleet Only Options (req. Valid FIN Code) (continued)		
★LED Warning Beacons by Sound Off Signal – Red/Blue strobe color (includes center high-mounted stop light bar and two (2) roof mounted beacons that provide 360 degree visibility; req. Pro SSV Pkg (66S))	94R	F
Smart Acceleration Truncation	181	F
Speed Limitation – 65 MPH governed top speed	41Z	F
Speed Limitation – 70 MPH governed top speed	41Y	F
Speed Limitation – 75 MPH governed top speed	41X	F
★Pro SSV (Special Service Vehicle) Package	66S	F
Charging Equipment		
Mobile Power Cord (120V/240V)	66A	O
Ford Charge Station Pro Delete (req. Extended Range Battery (99V); Fleet only)		I

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Prepared by: ROBIN RAKOSI

08/31/2023

Fremont Ford | 39700 Balentine Drive Newark California | 945605385

2023 F-150 Lightning AWD SuperCrew Cab 5.5' box 145" WB Pro (W1E)

Price Level: 370

Selected Equip & Specs

Dimensions

- * **Conventional Capacity: 7,700 lbs.**
 - Cargo box length: 66.0"
 - Cargo box volume: 52.8 cu.ft.
 - Cargo box max width: 65.2"
 - Cargo box length feet: 5.5
 - Vehicle body width: 79.9"
 - Wheelbase: 145.0"
 - Front bumper to front axle: 37.8"
 - Rear brake diameter: 13.8"
 - Max interior rear cargo volume: 50.9 cu.ft.
 - Total passenger volume: 131.9 cu.ft.
 - Headroom second-row: 40.4"
 - Leg room second-row: 43.6"
 - Shoulder room second-row: 66.0"
 - Hip room second-row: 62.6"
- * **GCWR: 14,400 lbs.**
 - Cargo box min width: 51.1"
 - Pickup box depth: 21.4"
 - Cargo box tailgate width: 60.3"
 - Vehicle body length: 231.7"
 - Vehicle body height: 77.2"
 - Vehicle turning radius: 23.9'
 - Front brake diameter: 14.0"
 - Interior rear cargo volume with seats folded: 50.9 cu.ft.
 - Front cargo volume: 14.1 cu.ft.
 - Headroom first-row: 40.8"
 - Leg room first-row: 43.9"
 - Shoulder room first-row: 66.7"
 - Hip room first-row: 62.5"

Powertrain

- Horsepower: 426 HP
- Driver selectable drivetrain mode
- Full-time AWD
- Recommended fuel: electric
- Permanent locking hub control
- Bidirectional charging capability
- 10.5 kWh onboard charger
- Traction battery charge time 50kW DC fast charge 1.5 hours
- SAE CCS DC fast charge connector
- DC fast charge (peak rate): 44 minutes
- Radiator
- Automatic
- All-wheel drive
- All-speed ABS and driveline traction control
- Driver selectable rear locking differential
- Plug and charge
- Traction battery charge time @ 240V 14 hours
- All electric range 240 miles
- Peak DC fast charge rate: 150 kW

Fuel Economy and Emissions

- Fuel economy electric equivalent (city/highway/combined): 76 mpge/61 mpge/68 mpge
- Fuel economy highway equivalent: 61 mpge
- Fuel economy combined equivalent: 68 mpge
- ZEV emissions
- Fuel economy city equivalent: 76 mpge
- Electric secondary fuel type
- Electric fuel economy combined: 49 kWh per 100 miles

Suspension and Handling

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Price Level: 370

Selected Equip & Specs (cont'd)

- Standard ride suspension
- Gas-pressurized rear shock absorbers
- Heavy-duty front shock absorbers

Driveability

- 4-wheel disc brakes
- 4-wheel antilock (ABS) brakes
- Electronic parking brake
- Ford Co-Pilot360 - Post Collision Braking automatic post-collision braking system
- Brake assist system
- Independent front suspension
- Front anti-roll bar
- Independent rear suspension
- Rear anti-roll bar
- Electric power-assist steering system
- 2-wheel steering system
- Front and rear ventilated disc brakes
- Four channel ABS brakes
- One-pedal regenerative brakes
- Automatic brake hold
- Hill Start Assist
- Double wishbone front suspension
- Front coil springs
- Trailing arm rear suspension
- Speed sensitive power steering
- Rack-pinion steering

Body Exterior

- Trailer wiring harness
- * **Tough Bed spray-in pickup bed liner**
- Pickup bed-rail protectors
- Monotone paint
- Black door handles
- Black front bumper rub strip
- Black rear bumper
- Black grille
- Standard style side mirrors
- Conventional right rear passenger door
- Active aerodynamics
- 18 x 8.5-inch front and rear machined w/painted accents aluminum wheels
- 4 doors
- Standard style pickup box
- Clearcoat paint
- Black side window trim
- Black front bumper
- 2 front tow hooks
- Rear bumper step
- Black door mirrors
- Conventional left rear passenger door
- Tailgate
- P275/65RS18 AT BSW front and rear tires

Convenience

- SYNC 4 with Enhanced Voice Recognition (Alexa-Built-In) virtual assistant
- Keyfob activated door locks
- Auto-locking doors
- Cruise control with steering wheel mounted controls
- Day/Night rearview mirror
- Power first-row windows
- Power front trunk
- Power door locks with 2 stage unlocking
- All-in-one remote fob and ignition key
- Power tailgate/rear door lock
- Smart device vehicle start control
- Auto-dimming rear view mirror
- Full floor console
- Tailgate Assist easy lift tailgate

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Price Level: 370

Selected Equip & Specs (cont'd)

- Driver foot rest
- Locking glove box
- Rear beverage holders
- Driver and passenger door bins
- Instrument panel bin
- Cabback insulator
- PRND in IP
- Fixed rear windshield
- Front beverage holders
- 8 beverage holders
- Rear door bins
- Dashboard storage
- Retained accessory power
- Over the air updates

Comfort

- Automatic climate control
- Rear under seat climate control ducts
- Rear console climate control ducts
- Cloth headliner material
- Full vinyl floor covering
- Vinyl rear seat upholstery
- Manual tilting steering wheel
- Urethane steering wheel
- Dual-zone front climate control
- SYNC 4 with Enhanced Voice Recognition voice-activated climate control
- FordPass Connect remote-activated interior climate preconditioning
- Full headliner coverage
- Full floor coverage
- Carpet rear seatback upholstery
- Manual telescopic steering wheel

Seats and Trim

- Seating capacity: 5
- Driver seat with 4-way directional controls
- Height adjustable front seat head restraints
- Front seat center armrest
- Manual driver seat fore/aft control
- Manual passenger seat fore/aft control
- Split-bench rear seat
- Vinyl front seat upholstery
- Bucket front seats
- Front passenger seat with 4-way directional controls
- Manual front seat head restraint control
- Manual reclining driver seat
- Manual reclining passenger seat
- Fixed rear seats
- Height adjustable rear seat head restraints
- Heated driver and front passenger seats

Entertainment Features

- 2 total number of 1st row displays
- Primary touchscreen display
- In-vehicle audio
- Seek scan
- Auxiliary input jack
- Internet radio capability
- Standard grade speakers
- SYNC 4 with Enhanced Voice Recognition voice activated audio controls
- Bluetooth wireless audio streaming
- 12 inch primary LCD display
- FM stereo radio
- FM radio
- Radio data system (RDS)
- SYNC 4 external memory control
- Speakers number: 6
- Steering wheel mounted audio controls
- Speed sensitive volume
- Fixed audio antenna

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Price Level: 370

Selected Equip & Specs (cont'd)

Lighting, Visibility and Instrumentation

- Digital instrumentation display
- In-radio display clock
- Exterior temperature display
- Gauge cluster display size (inches): 12.00
- Traction battery level gauge
- Traction battery temperature gauge
- Projector beam headlights
- Ford Co-Pilot360 - Autolamp auto on/off headlight control
- Delay-off headlights
- Ford Co-Pilot360 - Auto High Beam auto high-beam headlights
- Variable intermittent front windshield wipers
- Variable instrument panel light
- High mounted center stop light
- LED brake lights
- Trip odometer
- Compass
- ECO feedback display gauge
- Engine/electric motor temperature gauge
- Electric power/regeneration gauge
- Deep tinted windows
- LED low and high beam headlights
- Multiple enclosed headlights
- Directionally adaptive headlights
- DRL preference setting
- Front reading lights
- LED daytime running lights
- Pickup box cargo light
- Fade interior courtesy lights

Technology and Telematics

- Integrated navigation system with voice activation
- SYNC 4 handsfree wireless device connectivity
- FordPass Connect 4G mobile hotspot internet access
- SYNC 4 911 Assist emergency SOS system via mobile device
- SYNC 4 AppLink/Apple CarPlay/Android Auto smart device wireless mirroring
- 8 USB ports

Safety and Security

- Driver front impact airbag
- Safety Canopy System curtain first and second-row overhead airbags
- Seat mounted side impact front passenger airbag
- 6 airbags
- Front height adjustable seatbelts
- 2 seatbelt pre-tensioners
- Security system
- BLIS (Blind Spot Information System)
- Reverse Brake Assist collision mitigation
- Driver Alert
- MyKey restricted driving mode
- Seat mounted side impact driver airbag
- Passenger front impact airbag
- Airbag occupancy sensor
- Rear seat center 3-point seatbelt
- Front seatbelt pretensioners
- Remote panic alarm
- Lane Keeping Alert
- Pre-Collision Assist with Automatic Emergency Braking (AEB) forward collision mitigation
- Pre-Collision Assist with Pedestrian Detection
- External acoustic pedestrian alert
- Ford Co-Pilot360 - Reverse Camera rear mounted camera

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Price Level: 370

Selected Equip & Specs (cont'd)

- AdvanceTrac w/Roll Stability Control electronic stability control system with anti-roll
- Manual rear child safety door locks
- Reverse Sensing System rear parking sensors

Dimensions

General Weights

Curb weight	6,015 lbs.	Rear curb weight	2,886 lbs.
GVWR	8,250 lbs.	Payload	2,235 lbs.

Trailer Weights

* Conventional capacity	7,700 lbs.	* GCWR	14,400 lbs.
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Front Weights

Front curb weight	3,129 lbs.	GAWR front	3,770 lbs.
Axle capacity front	3,900 lbs.	Spring rating front	3,770 lbs.
Tire/wheel capacity front	4,050 lbs.		

Rear Weights

GAWR rear	4,900 lbs.	Axle capacity rear	4,150 lbs.
Spring rating rear	4,900 lbs.	Tire/wheel capacity rear	4,498 lbs.

Exterior Measurements

Vehicle body length	231.7"	Vehicle body width	79.9"
Vehicle body height	77.2"	Wheelbase	145.0"
Cargo box length	66.0"	Front brake diameter	14.0"
Cargo box min width	51.1"	Rear brake diameter	13.8"
Cargo box volume	52.8 cu.ft.	Pickup box depth	21.4"
Cargo box max width	65.2"	Cargo box tailgate width	60.3"
Cargo box length feet	5.5	Vehicle turning radius	23.9'
Front bumper to front axle	37.8"		

Interior Measurements

Max interior rear cargo volume	50.9 cu.ft.	Interior rear cargo volume with seats folded	50.9 cu.ft.
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Front cargo volume	14.1 cu.ft.
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Interior Volume

Total passenger volume	131.9 cu.ft.
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Headroom

Headroom first-row	40.8"	Headroom second-row	40.4"
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Legroom

Leg room first-row	43.9"	Leg room second-row	43.6"
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Shoulder Room

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Price Level: 370

Selected Equip & Specs (cont'd)

Shoulder room first-row	66.7"	Shoulder room second-row	66.0"
<i>Hip Room</i>			
Hip room first-row	62.5"	Hip room second-row	62.6"

Powertrain

Engine

Engine location	Front and rear mounted engine	Engine mounting direction	Transverse mounted engine
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Engine Power

Horsepower	426 HP
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Battery

Battery type	Lead acid battery	Battery run down protection	Battery run down protection
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Engine Extras

Radiator	Radiator	Drivetrain selectable	Driver selectable drivetrain mode
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Transmission

Transmission	Automatic	Selectable mode transmission	Selectable mode transmission
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Drive Type

4WD type	Full-time AWD	Drive type	All-wheel drive
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Drivetrain

Axle ratio	9.61
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Fuel

Fuel type	electric
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Drive Feature

Traction control	All-speed ABS and driveline traction control	Locking hub control	Permanent locking hub control
Rear locking differential	Driver selectable rear locking differential		

Electric Powertrain

Number of electric motors	2	Electric powertrain	BEV (battery electric vehicle)
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Electric Vehicle Battery Pack

All electric range	All electric range 240 miles	Traction battery type	lithium ion
Traction battery capacity	98.0 kWh traction battery capacity	Traction battery charge time @ 240V	Traction battery charge time @ 240V 14 hours

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Price Level: 370

Selected Equip & Specs (cont'd)

Traction battery charge time 50kW DC fast charge
 Traction battery charge time 50kW DC fast charge 1.5 hours
 DC fast charge connector SAE CCS DC fast charge connector
 DC fast charge (peak rate) 44 minutes

Onboard charger 10.5 kWh onboard charger
 Peak DC fast charge rate (kW) 150 kW

Fuel Economy and Emissions

Fuel Economy

Secondary fuel type Electric secondary fuel type
 Fuel economy city equivalent 76 mpge
 Gasoline equivalent fuel economy measurement Gasoline equivalent fuel economy measurement
 Fuel economy electric equivalent (city/highway/combined) 76 mpge/61 mpge/68 mpge

Fuel economy combined equivalent 68 mpge
 Fuel economy highway equivalent 61 mpge
 Electric fuel economy combined 49 KWh per 100 miles

Fuel economy status Current fuel economy status

Emissions

Emissions ZEV emissions

Emissions tiers Tier 3 Bin 0 emissions

Suspension and Handling

Suspension

Suspension Standard ride suspension
 Rear shock absorbers Gas-pressurized rear shock absorbers

Front shock absorbers Heavy-duty front shock absorbers

Driveability

Brakes

Brake type 4-wheel disc brakes
 ABS brakes Four channel ABS brakes
 ABS brakes 4-wheel antilock (ABS) brakes

Ventilated brakes Front and rear ventilated disc brakes
 Electronic parking brake Electronic parking brake
 Post collision braking system Ford Co-Pilot360 - Post Collision Braking automatic post-collision braking system

Brake Assistance

Hill start assist Hill Start Assist

Brake assist system Brake assist system

Front Suspension

Anti-roll bar front Front anti-roll bar

Suspension ride type front Independent front suspension

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Price Level: 370

Selected Equip & Specs (cont'd)

Suspension type front Double wishbone front suspension

Front Spring

Regular front springs Regular front springs Springs front Front coil springs

Rear Spring

Springs rear Rear coil springs Rear springs Regular grade rear springs

Rear Suspension

Anti-roll bar rear Rear anti-roll bar Suspension type rear Trailing arm rear suspension

Suspension ride type rear Independent rear suspension

Steering

Steering Electric power-assist steering system Steering type Rack-pinion steering
Speed sensitive steering Speed sensitive power steering Steering type number of wheels 2-wheel steering system

Exterior

Front Wheels

Front wheels diameter 18" Front wheels width 8.5"

Rear Wheels

Rear wheels diameter 18" Rear wheels width 8.5"

Front And Rear Wheels

Appearance machined w/painted accents Material aluminum

Front Tires

Aspect	65	Diameter	18"
Sidewalls	BSW	Speed	S
Tread	AT	Type	P
Width	275mm		

Rear Tires

Aspect	65	Diameter	18"
Sidewalls	BSW	Speed	S
Tread	AT	Type	P
Width	275mm		

Body Exterior

Trailer

Towing capability Trailer towing capability Towing class Class IV tow rating
Towing hitch Trailer hitch Towing wiring harness Trailer wiring harness

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Price Level: 370

Selected Equip & Specs (cont'd)

Towing trailer sway Trailer sway control

Exterior Features

Box style Standard style pickup box

Number of doors 4 doors

* **Bed liner** **Tough Bed spray-in pickup bed liner**

* **License plate front bracket** **Front license plate bracket**

Body

Body panels Aluminum body panels with side impact beams

Spare Tire

Spare tire Full-size spare tire with aluminum wheel

Spare tire location Crank-down spare tire

Convenience

Technology

Virtual assistant . SYNC 4 with Enhanced Voice Recognition (Alexa-Built-In) virtual assistant

Door Locks

Door locks Power door locks with 2 stage unlocking

Keyfob door locks Keyfob activated door locks

All-in-one key All-in-one remote fob and ignition key

Auto door locks Auto-locking doors

Tailgate control Power tailgate/rear door lock

Cruise Control

Cruise control Cruise control with steering wheel mounted controls

Key Fob Controls

Fob remote vehicle controls Smart device vehicle start control

Rear View Mirror

Rearview mirror Auto-dimming rear view mirror

Day/Night rearview mirror Day/Night rearview mirror

Exterior Mirrors

Folding door mirrors Manual folding door mirrors

Front Side Windows

First-row windows Power first-row windows

Floor Console

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Price Level: 370

Selected Equip & Specs (cont'd)

Floor console	Full floor console	Floor console storage	Locking floor console storage
<i>Overhead Console</i>			
Overhead console	Mini overhead console	Overhead console storage	Overhead console storage
<i>Driver Visor</i>			
Visor driver mirror	Driver visor mirror		
<i>Passenger Visor</i>			
Visor passenger mirror	Passenger visor mirror		
<i>Power Outlets</i>			
12V power outlets	3 12V power outlets	120V AC power outlets	10 120V AC power outlets
* 240V AC power outlets	1 240V AC power outlet		
<i>Pickup Box</i>			
Easy lift tailgate	Tailgate Assist easy lift tailgate		
<i>Cargo Features</i>			
Cargo tie downs	Cargo area tie downs	Cargo light	Cargo area light
Concealed cargo storage	Cargo area concealed storage		
<i>Cargo Trim</i>			
Cargo floor type	Plastic cargo area floor	Trunk lid trim	Plastic trunk lid trim
<i>Pedals</i>			
Driver foot rest	Driver foot rest		
<i>Rear Windshield</i>			
Rear windshield	Fixed rear windshield		
<i>Storage</i>			
Door bins front	Driver and passenger door bins	Door bins rear	Rear door bins
Number of beverage holders	8 beverage holders	Beverage holders	Front beverage holders
Beverage holders rear	Rear beverage holders	Glove box	Locking glove box
Instrument panel storage	Instrument panel bin	Dashboard storage	Dashboard storage
<i>Windows Feature</i>			
One-touch up window	Driver and passenger one-touch up windows	One-touch down window	Driver and passenger one-touch down windows
<i>Windows Rear Side</i>			

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Price Level: 370

Selected Equip & Specs (cont'd)

Second-row windows Power second-row windows

Miscellaneous

Cabback insulator Cabback insulator
Accessory power Retained accessory power

PRND in IP PRND in IP
Over the air updates Over the air updates

Comfort

Climate Control

Climate control Automatic climate control

Dual-zone front climate control Dual-zone front climate control

Voice activated climate control SYNC 4 with Enhanced Voice Recognition voice-activated climate control

Rear under seat ducts Rear under seat climate control ducts

Rear console climate control ducts Rear console climate control ducts

Preconditioning FordPass Connect remote-activated interior climate preconditioning

Headliner

Headliner material Cloth headliner material

Headliner coverage Full headliner coverage

Door Trim

Door panel insert Metal-look door panel insert

Floor Trim

Floor covering Full vinyl floor covering

Floor coverage Full floor coverage

Second-Row Seat Trim

Rear seat upholstery Vinyl rear seat upholstery

Rear seatback upholstery Carpet rear seatback upholstery

Steering Wheel

Steering wheel telescopic Manual telescopic steering wheel

Steering wheel material Urethane steering wheel

Steering wheel tilt Manual tilting steering wheel

Seats and Trim

Seat Capacity

Seating capacity 5

Front Seats

Driver seat direction Driver seat with 4-way directional controls

Driver seat fore/aft control Manual driver seat fore/aft control

Passenger seat direction Front passenger seat with 4-way directional controls

Split front seats Bucket front seats

Prices and content availability as shown are subject to change and should be treated as estimates only. Actual base vehicle, package and option pricing may vary from this estimate because of special local pricing, availability or pricing adjustments not reflected in the dealer's computer system. See salesperson for the most current information.



Prepared by: ROBIN RAKOSI

08/31/2023

Fremont Ford | 39700 Balentine Drive Newark California | 945605385

2023 F-150 Lightning AWD SuperCrew Cab 5.5' box 145" WB Pro (W1E)

Price Level: 370

Selected Equip & Specs (cont'd)

Reclining passenger seat Manual reclining passenger seat
Front head restraints Height adjustable front seat head restraints
Armrests front center Front seat center armrest

Passenger seat fore/aft control Manual passenger seat fore/aft control
Front head restraint control Manual front seat head restraint control
Reclining driver seat Manual reclining driver seat

Rear Seats

Bench seats Split-bench rear seat
Folding second-row seats 60-40 folding rear seats
Rear seat folding position Fold-up rear seat cushion
Rear head restraint control Manual rear seat head restraint control

Rear seats fixed or removable Fixed rear seats
Rear seat direction Front facing rear seat

Rear head restraints Height adjustable rear seat head restraints
Number of rear head restraints 3 rear seat head restraints

Front Seat Trim

Front seat upholstery Vinyl front seat upholstery

Front seatback upholstery Vinyl front seatback upholstery

Heated Front Seats

Heated front seats Heated driver and front passenger seats

Interior Accents

Interior accents Metal-look interior accents

Gearshifter Material

Gearshifter material Urethane gear shifter material

Entertainment Features

LCD Displays

Primary touchscreen display Primary touchscreen display
LCD primary display size 12 inch primary LCD display

Number of first-row LCD displays 2 total number of 1st row displays

Radio Features

Aux input jack Auxiliary input jack
Seek scan Seek scan
Internet radio capability Internet radio capability

External memory control SYNC 4 external memory control
RDS Radio data system (RDS)

Speakers

Speakers Standard grade speakers

Speakers number 6

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2023 F-150 Lightning AWD SuperCrew Cab 5.5' box 145" WB Pro (W1E)

Price Level: 370

Selected Equip & Specs (cont'd)

Audio Features

Steering mounted audio control Steering wheel mounted audio controls

Voice activated audio SYNC 4 with Enhanced Voice Recognition voice activated audio controls

Speed sensitive volume Speed sensitive volume

Wireless streaming Bluetooth wireless audio streaming

Lighting, Visibility and Instrumentation

Instrumentation

Trip odometer Trip odometer

Instrumentation display Digital instrumentation display

Instrumentation Displays

Temperature display Exterior temperature display

Compass Compass

Clock In-radio display clock

Eco feedback ECO feedback display gauge

Instrumentation Gauges

Traction battery level gauge Traction battery level gauge

Traction battery temperature gauge Traction battery temperature gauge

Electric power regeneration gauge Electric power/regeneration gauge

Engine/electric motor temperature gauge Engine/electric motor temperature gauge

Gauge cluster display size (inches) 12.00

Instrumentation Warnings

Low brake fluid warning Low brake fluid warning

Headlights on reminder Headlights on reminder

Door ajar warning Door ajar warning

Low tire pressure warning Tire specific low air pressure warning

Battery charge warning Battery charge warning

Key in vehicle warning Key in vehicle warning

Service interval warning Service interval indicator

Glass

Tinted windows Deep tinted windows

Headlights

Headlights LED low and high beam headlights

Auto headlights Ford Co-Pilot360 - Autolamp auto on/off headlight control

Delay off headlights Delay-off headlights

Headlight type Projector beam headlights

Multiple headlights Multiple enclosed headlights

Adaptive headlights Directionally adaptive headlights

Auto high-beam headlights Ford Co-Pilot360 - Auto High Beam auto high-beam headlights

DRL preference setting DRL preference setting

Front Windshield

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Price Level: 370

Selected Equip & Specs (cont'd)

Wipers Variable intermittent front windshield wipers

Interior Lighting

Variable panel light Variable instrument panel light

Front reading lights Front reading lights

Lights

Running lights LED daytime running lights

Interior courtesy lights Fade interior courtesy lights

LED brake lights LED brake lights

High mount stop light High mounted center stop light

Pickup box cargo light Pickup box cargo light

Technology and Telematics

Navigation

Integrated navigation Integrated navigation system with voice activation

Connectivity

Handsfree SYNC 4 handsfree wireless device connectivity

Smart device integration SYNC 4 AppLink/Apple CarPlay/Android Auto smart device wireless mirroring

Emergency SOS SYNC 4 911 Assist emergency SOS system via mobile device

Internet Access

Internet access FordPass Connect 4G mobile hotspot internet access

USB Ports

USB ports 8 USB ports

Safety and Security

Airbags

Front impact airbag driver Driver front impact airbag

Number of airbags 6 airbags

Front impact airbag passenger Passenger front impact airbag

Front side impact airbag driver Seat mounted side impact driver airbag

Front side impact airbag passenger Seat mounted side impact front passenger airbag

Occupancy sensor Airbag occupancy sensor

Overhead airbags Safety Canopy System curtain first and second-row overhead airbags

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Price Level: 370

Selected Equip & Specs (cont'd)

Seatbelts

3-point seatbelt	Rear seat center 3-point seatbelt	Height adjustable seatbelts	Front height adjustable seatbelts
Seatbelt pretensioners	Front seatbelt pretensioners	Seatbelt pretensioners number	2 seatbelt pretensioners

Security System

Remote panic alarm	Remote panic alarm	Security system	Security system
--------------------	--------------------	-----------------	-----------------

Active Driving Assistance

Lane departure	Lane Keeping Alert	Blind spot	BLIS (Blind Spot Information System)
Forward collision warning with Automatic Emergency Braking (AEB) forward collision mitigation	Pre-Collision Assist	Rear collision warning	Reverse Brake Assist collision mitigation
Pedestrian detection	Pre-Collision Assist with Pedestrian Detection	External acoustic pedestrian alert	External acoustic pedestrian alert
Driver attention monitor	Driver Alert	Restricted driving mode	MyKey restricted driving mode

Cameras

Rear camera	Ford Co-Pilot360 - Reverse Camera rear mounted camera
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Traction Control

Electronic stability control	AdvanceTrac w/Roll Stability Control electronic stability control system with anti-roll
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Parking Sensors

Parking sensors	Reverse Sensing System rear parking sensors
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Occupant Safety

Child door locks	Manual rear child safety door locks
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08/31/2023

Fremont Ford | 39700 Balentine Drive Newark California | 945605385

2023 F-150 Lightning AWD SuperCrew Cab 5.5' box 145" WB Pro (W1E)

Price Level: 370

As Configured Vehicle

Code	MSRP
W1E	\$49,995.00
110A	N/C
99L	Included
44L	Included
STDGV	Included
STDTR	Included
643	Included
V	Included
145WB	STD
PAINT	STD
STDRD	Included
53D	\$1,100.00
479	\$1,200.00
153	N/C
96W	\$595.00
66A	\$500.00
79V	N/A
C09	N/C
YZ_01	N/C
VS_01	N/C
SUBTOTAL	\$53,390.00
Destination Charge	\$1,995.00
TOTAL	\$55,385.00

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Price Level: 370

Warranty

Standard Warranty

Basic Warranty

Basic warranty 36 months/36,000 miles

Powertrain Warranty

Powertrain warranty 60 months/60,000 miles

Corrosion Perforation

Corrosion perforation warranty 60 months/unlimited

Roadside Assistance Warranty

Roadside warranty 60 months/60,000 miles

Hybrid/Electric Components Warranty

Hybrid/electric components warranty 96 months/100,000 miles

Traction Battery Warranty

Traction battery warranty 96 months/100,000 miles

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ACMAD Board Presidents: September 2023

NAME	SEAT	Date Appointed	Presidential year
Jan Washburn	Oakland	12/1/1993	2032
George Young	Fremont	2/1/2013	2033
Eric Hentschke	Newark	1/14/2016	2034
Robert Beatty	Berkeley	4/26/2016	2035
Subru Bhat	Union City	1/9/2018	2036
Victor Aguilar	San Leandro	2/4/2019	2023
Cathy Roache	County at Large	2/11/2019	2024
Courtney Welch	Emeryville	12/7/2021	2025
Tyler Savage	Alameda	1/4/2022	2026
Hope Salzer	Piedmont	3/28/2022	2027
Robin Lopez	Albany	12/19/2022	2028
Valerie Arkin	Pleasanton	12/20/2022	2029
Kashef Qadri	Dublin	3/7/2023	2030
George Syrop	Hayward	5/16/2023	2031
<i>vacant</i>	Livermore		

Applicable ACMAD Policy Sections

105.4 Each year the Board, at its January meeting, or if a vacancy occurs, shall elect a President, Vice President, and Secretary for the calendar year.

109.7 Nominating Committee – There shall be an ad hoc Board committee to nominate Board officers as needed. The Nominating Committee, with a designated Chair, shall be appointed at a posted meeting annually, or when a vacancy occurs, to nominate new officers based on seniority. Nominations will also be taken from the floor. A candidate may decline the officer position.



23187 Connecticut Street
Hayward, CA 94545

T: (510) 783-7744
F: (510) 783-3903

acmad@mosquitoes.org

Appointment of an ad-hoc Strategic Planning Committee

Board of Trustees

President

Victor Aguilar

San Leandro

Vice-President

Cathy Roache

County-at-Large

Tyler Savage

Alameda

Robin López

Albany

P. Robert Beatty

Berkeley

Kashef Qaadri

Dublin

Courtney Welch

Emeryville

George Young

Fremont

George Syrop

Hayward

vacant

Livermore

Jan O. Washburn

Oakland

Eric Hentschke

Newark

Hope Salzer

Piedmont

Valerie Arkin

Pleasanton

Subru Bhat

Union City

Ryan Clausnitzer

General Manager

Background:

Per District policy 109.8, *“There shall be an ad hoc Board Committee to update the District’s strategic plan as needed. The Strategic Planning Committee members shall be appointed to serve through the duration of the specific duties defined below. The duties of the Strategic Planning Committee are:*

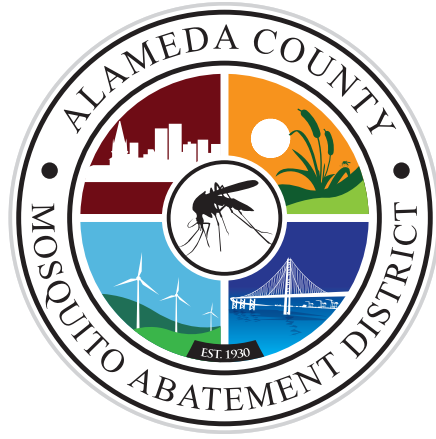
(a) To meet with the General Manager and/or staff to review the mission, vision, values, and goals of the District and make recommendations to the full Board at a special meeting prior to the December posted meeting.

(b) To select a Chair from among its members that will report to the full Board at a posted meeting.

Commitment:

The Strategic Planning Committee will meet either in-person or remotely with staff, as needed, between September and December to discuss proposed goals and changes to existing strategic plan contents: mission, vision, values, and environmental scan. These recommendations will then be presented to the full board at an in-person special meeting workshop on December 13th at 3:00 P.M.

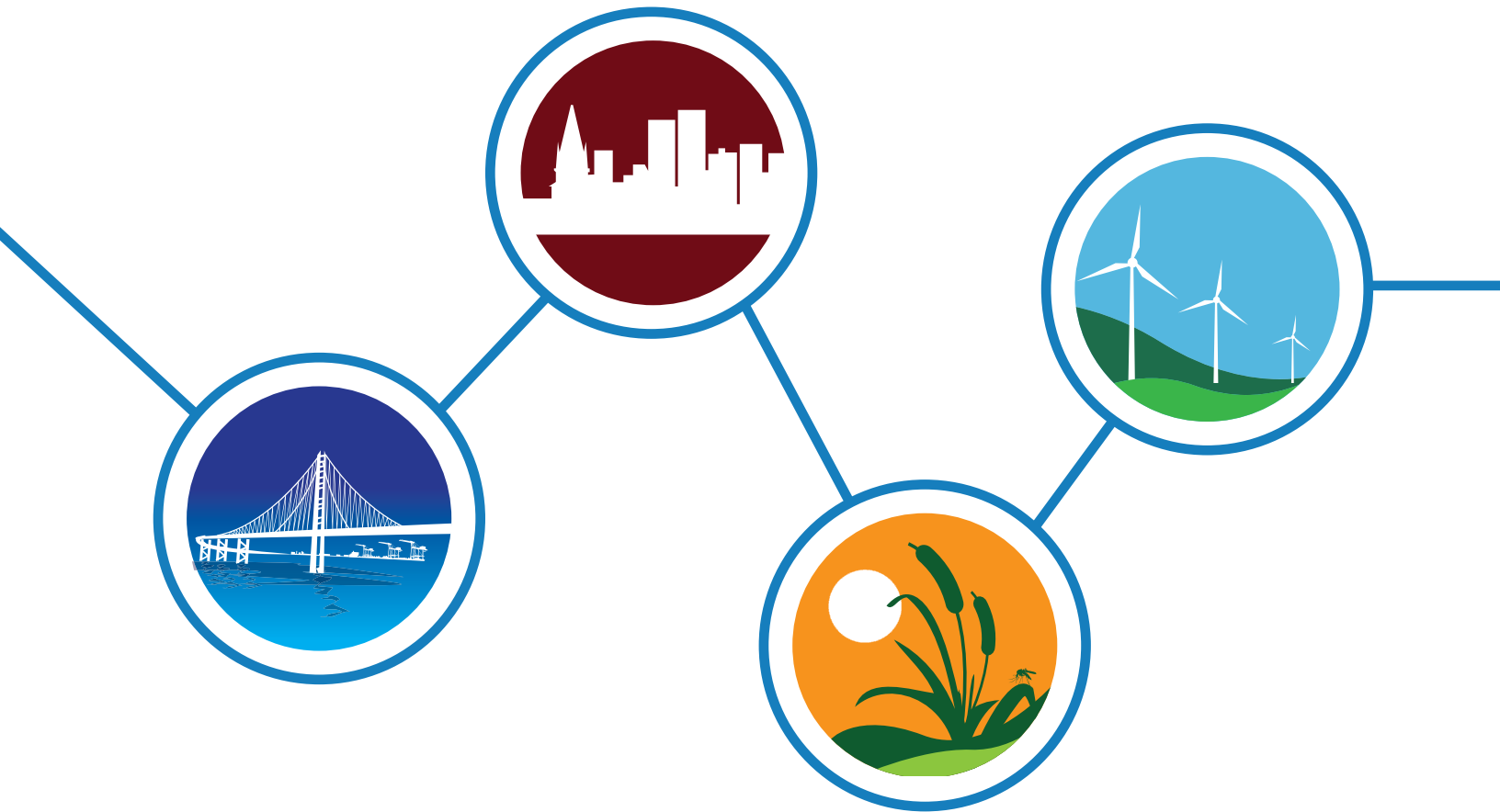
ACTION: Select committee membership and chair



ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

STRATEGIC PLAN

2021-2023



INTRODUCTION

As we look to the future and develop our strategic plan, Alameda County Mosquito Abatement District (ACMAD) is setting goals that will help us maintain the same level of excellence you've come to expect from us. We plan to utilize our existing assets and resources to address future challenges, both known and unforeseen. We aim to align individual performance goals with a comprehensive District strategy that is effective and efficient. In order to realize these goals, we will improve our internal and external communication. Finally, we will formalize performance and accountability measures by documenting improvements to the District's operating procedures.

ACMAD has a proud history of effective and efficient mosquito control through its prudent financial planning, collaborative decision-making, and balanced integration with partner agencies. With our 100-year anniversary of public service approaching in the next decade, it is important for ACMAD to reaffirm its strong relationship with our community. We plan to accomplish this through thoughtful planning that leads to effective allocations of public funds. Through the leadership of the Board of Trustees, District staff will continue to provide high-quality and valuable service to the people of Alameda County, even through unforeseen public health crises like the current global pandemic.



HISTORY OF STRATEGIC THINKING

Prior to the formation of organized control districts, mosquitoes hampered economic development within the Bay Area. During late 1928 and through the early months of 1929, the city councils of Alameda, Berkeley, Emeryville, Hayward, Oakland, Piedmont, and San Leandro passed a resolution endorsing the formation of the Alameda County Mosquito Abatement District (ACMAD). ACMAD was officially formed when the Board of Supervisors passed Ordinance B on March 11th, 1930; three days later, the California Secretary of State filed the certificate of incorporation, thereby formalizing formation of the District.

Initially, ACMAD focused its efforts on ditching in marshes along the San Francisco Bay to promote circulation of water in habitats where salt marsh mosquitoes breed. As residential populations and their use of water changed, freshwater mosquitoes became more prevalent and ACMAD expanded its efforts to counter the rise in their abundance. To fulfill the demands for mosquito control throughout the County, more personnel and equipment were needed to accommodate the increase in services. ACMAD funding from *ad valorem* property taxes was stable until Proposition 13 passed in 1978; after the passage of Prop 13, the District's funding was reduced by half. To provide adequate service to residents, Alameda County's Measure K was introduced in 1982 and approved by over two thirds of Alameda County voters. This allowed for a maximum assessment of \$1.75 per single home as a Special Tax to support the District's operations. Funds generated by this tax enabled the District in 1984 to consolidate its operations from three existing depots in Oakland, Pleasanton, and Union City into a single modern facility in Hayward in 1984.

Mosquito management changed dramatically when West Nile virus was introduced via wild birds into Alameda County during 2003. To control the mosquitoes that transmit the virus, ACMAD increased operation costs by \$280,000 a year. These funds supported additional seasonal staff, pesticides, equipment, and public outreach education programs. Adjusting to the newly introduced threat, ACMAD's Board of Trustees reviewed approaches to augment the District's revenue stream to meet the new needs for mosquito surveillance and control. Property owners approved levying a benefit assessment in the spring of 2008 for this purpose.

On May 14th, 2008, the ACMAD Board of Trustees formally passed the resolution approving the benefit assessment to increase the District's revenue. This allowed the District to provide enhanced services to the residents of Alameda County and to prepare the District for future public health threats caused by mosquitoes. Through sound fiscal policies, the District has not needed to increase the benefit assessment in over twelve years. In 2019, ACMAD expanded its boundary to include Albany, the last remaining city in the county to receive District mosquito control services.

Even though there have been many changes over the past 90 years, including mosquito control techniques and regulations, the dedication and effectiveness of the District have remained the same. ACMAD will continue to provide timely, reliable, professional, and effective service during the current global pandemic and impending introduction of invasive *Aedes* mosquitoes into Alameda County.



OUR STRATEGY

OUR MISSION

Alameda County Mosquito Abatement District is committed to improving the health and comfort of Alameda County residents by controlling mosquitoes and limiting the transmission of mosquito-borne diseases.

OUR VISION

To serve all residents of Alameda County in a transparent and equitable manner by providing knowledge-driven and environmentally-conscious mosquito control. We strive to provide an exemplary model of good government through fiscal transparency and accountability.

OUR BOARD





OUR CORE VALUES

ENVIRONMENTAL STEWARDSHIP

- Ecologically responsible
- Proactive in environmental legislation
- Responsive to environmental changes
- Emphasis on biorational treatments for mosquito control

KNOWLEDGEABLE

- Science-based decision making
- Data-driven
- Technology enabled
- Safety program adherent

PROFESSIONAL

- Honest
- Reliable
- Respectful
- Responsive
- Committed
- Inclusionary
- Accountable

ENVIRONMENTAL SCAN

An Environmental Scan is a self-assessment process that allows organizations to identify their internal and external strengths, weaknesses, and foreseeable changes that may impact service delivery.

STRENGTHS

- Data sharing and integration of laboratory and operations
- Larval-based control program
- Financial stability and accountability
- Timely responses to public request for service
- Public accessibility to staff and District information
- Culture of independence that fosters effective collaboration
- Innovative methods to monitor mosquito abundance

WEAKNESSES

- Limited mosquito control products
- Limited ability to increase scale of operations in short amount of time
- Low diversity of revenue sources

FORESEEABLE CHANGES THAT MAY IMPACT SERVICE DELIVERY

- Climate change
- Insecticide resistance
- Changes in regulations
- Human population growth
- Introduction of invasive mosquito species
- Emerging mosquito borne infectious diseases
- Natural disasters

ACMAD GOALS: 2021-2023



Photo by James Gathany

ENSURE ACMAD HAS THE TRAINING, EQUIPMENT, PERSONNEL, PARTNERSHIPS, AND FINANCIAL SUPPORT TO LIMIT THE INTRODUCTION OF INVASIVE AEDES MOSQUITOES

2021

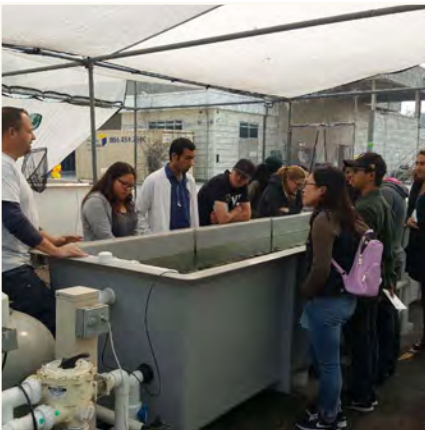
- Deploy a property Parcel Inspection Plan to monitor response efforts
- Create a Community Emergency Response Team forum from county affiliates to engage them in our Invasive *Aedes* Response Plan
- Ensure all field staff can accurately identify invasive *Aedes* mosquitoes

2022

- Provide school age children with mosquito prevention messaging
- Develop a model for pesticide deposition by Wide Area Larvicide System mosquito treatment technique

2023

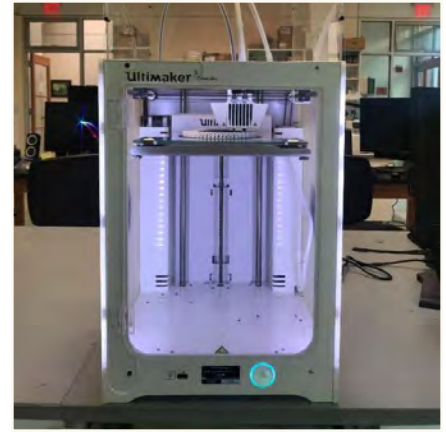
- Improve adult mosquito identification processes
- Develop a simple and rapid assay that discriminates *Aedes* species mosquitoes



LEVERAGE ACMAD ASSETS TOWARDS EFFICIENT APPROACHES TO MOSQUITO CONTROL

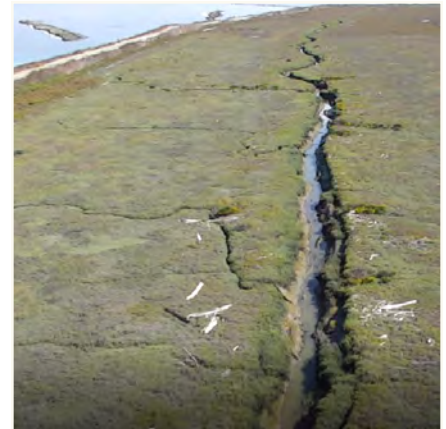
2021

- Improve the credit card process to incorporate updated technology that includes time-saving methods for employees and increased review options by management
- Replace tech room computers with Virtual Desktop Interface or chrome-based devices
- Begin 3-year infrastructure upgrade of network, routers, cable, switches, and firewall
- Improve 3D-printed Encephalitis Virus Survey mosquito traps
- Obtain quotes and coordinate the recoating of the covered parking structures, pesticide shed, vehicle wash rack, and shop exterior
- Obtain quotes and coordinate the recoating of the shop floor
- Reconfigure parking lines with updated spaces



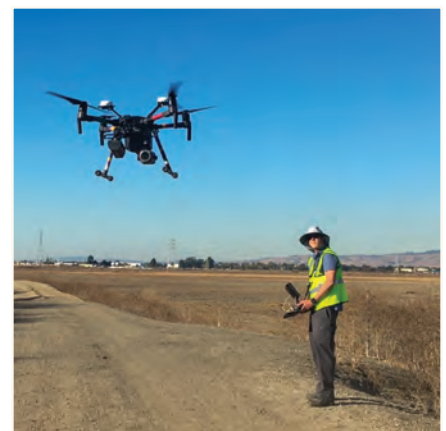
2022

- Rebuild Microsoft SharePoint sites to include Business Intelligence analytics
- Assess District phone contract
- Perform full human resources software audit
- Research and deploy cloud storage and software for research projects
- Digitize fleet and facility preventive maintenance processes
- Improve the physical facilities of the aquaculture program
- Locate cryptic drainage ditches for mosquito source reduction projects
- Update mosquito source reduction project maps
- Allocate time for research projects and professional development
- Evaluate adding a catch basin hotspot layer in the MapVision database and improve color-coding
- Develop a dashboard to analyze field staff workloads and display financial information



2023

- Make progress in funding the Repair and Replace account along with other reserve categories
- Assess alarm contract
- Research new technology to replace Apple iPads
- Fully automate drone information capture methods
- Improve production in the aquaculture program
- Repair or replace the front gate
- Increase the number of fully certified drone pilots and deploy more mosquito inspection and treatment missions





EMPLOY THE BEST PRACTICES FOR MOSQUITO CONTROL DISTRICTS AND LOCAL GOVERNMENTS

2021

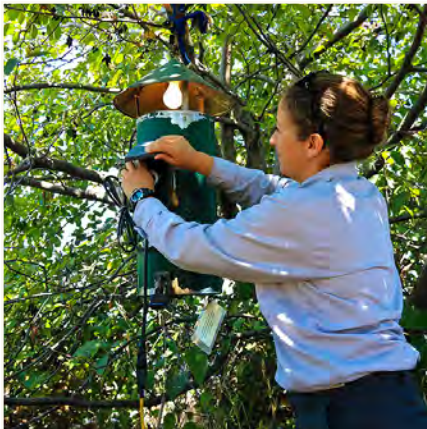
- Improve financial visuals and projections to accompany the annual Comprehensive Annual Financial Report
- Research and improve mosquito source reduction efforts and treatments in cemeteries
- Create new partnerships with organizations within Alameda County that have established community connections
- Connect with city code enforcement departments regarding our aerial pool surveillance program to ensure consistent messaging to property owners
- Establish relationships with new state, county, and local elected officials
- Build relationships with Homeowners Associations near marsh communities

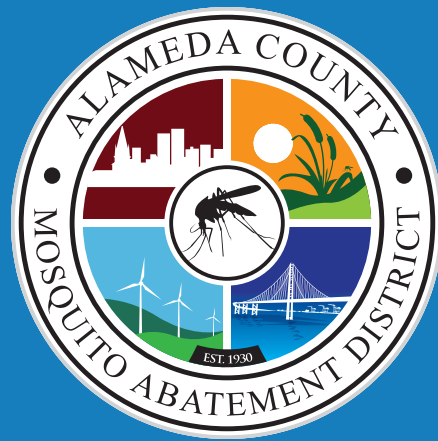
2022

- Convert annual budgets to multi-year with formatting changes that improve readability
- Evaluate Accounting Associate job description and duties
- Evaluate public perception of District services

2023

- Analyze future liabilities to determine when the District should withdraw from section 115 fund
- Begin work on predictive mosquito control modeling methods
- Establish mosquito control as a stakeholder in Alameda County development
- Develop new relationships with schools (principals, teachers, PTAs, etc.)
- Hone outreach efforts to incorporate an equity lens into community outreach
- Improve approaches for trapping *Aedes dorsalis* mosquitoes





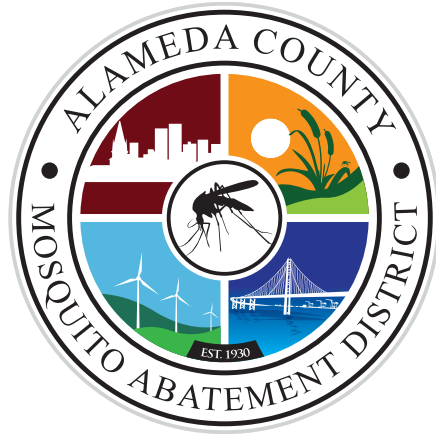
510-783-7744

 www.mosquitoes.org

 [Alameda County Mosquito Abatement District](https://www.facebook.com/AlamedaMosquito)

 [@AlamedaMosquito](https://twitter.com/AlamedaMosquito)

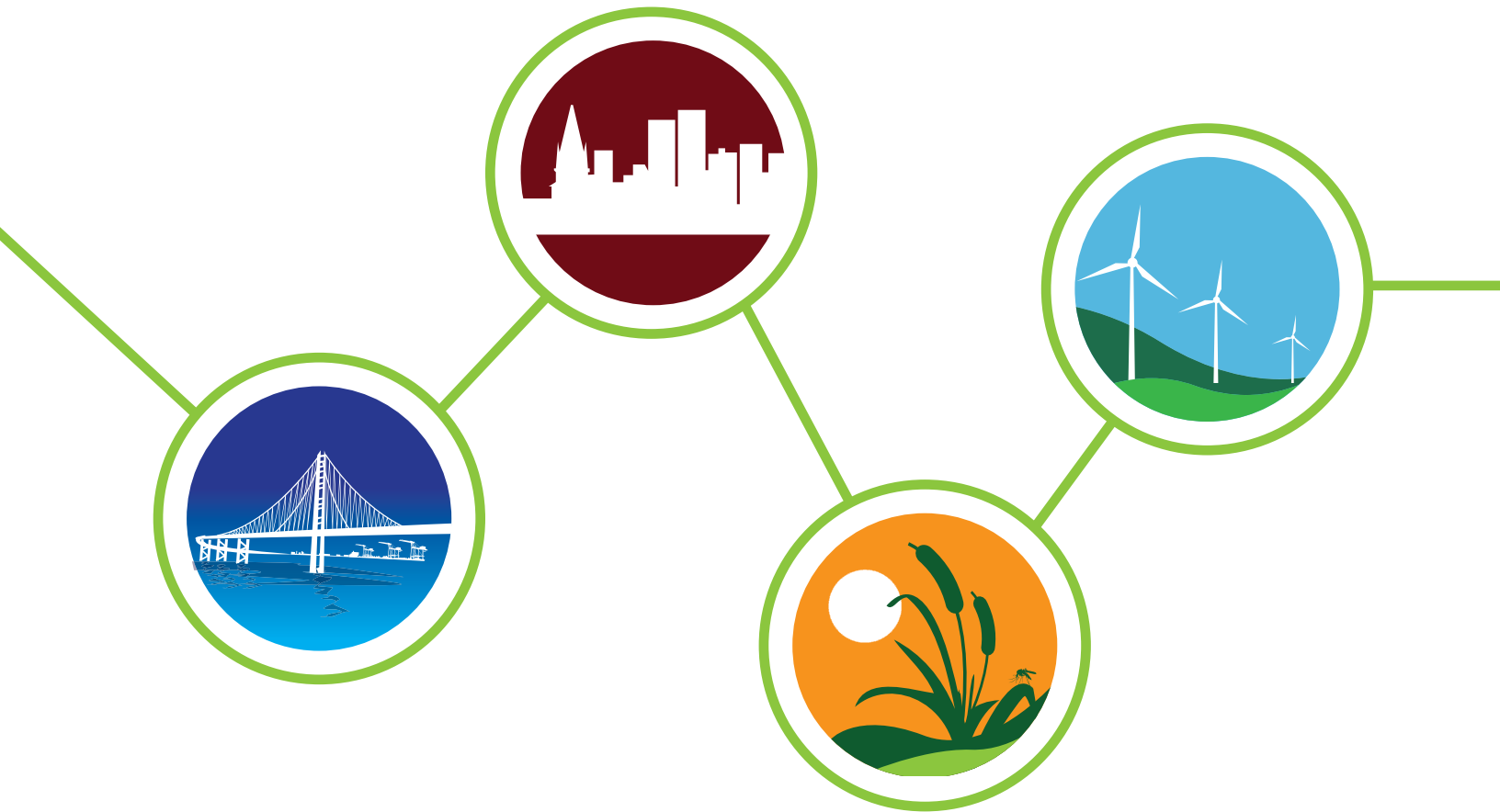
www.mosquitoes.org



ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

STRATEGIC PLAN

2018-2021

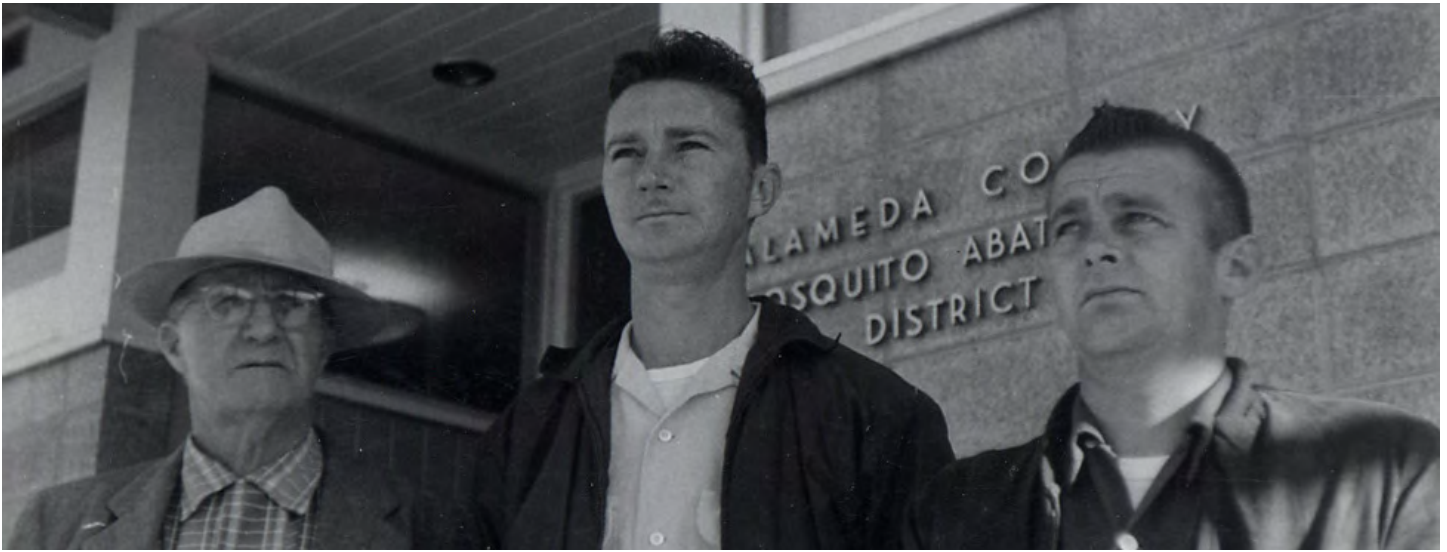


MANAGEMENT STATEMENT

Alameda County Mosquito Abatement District (ACMAD) has a proud history of effective and efficient mosquito control through its prudent financial planning, collaborative decision-making, and balanced integration with partner agencies. The current political, financial, and social climates, combined with the existing staff and Board personnel, offered an ideal opportunity to develop and implement a strategic plan—the first for the District.

The goals of this project are multifaceted. The first is to leverage existing assets towards known and unforeseen future challenges. Secondly, we aim to align individual performance goals into a comprehensive District strategy. Our third goal is to improve communication to realize these goals both internally and externally. Lastly, we will formalize performance and accountability measures by documenting improvements to the District's operating procedures.

With our 100-year anniversary of public service approaching in the next decade, it is important for ACMAD to reaffirm its strong relationship with the community. One method of reaffirming our relationship with the community is through thoughtful planning that leads to effective resource allocations of public funds. District staff, through the leadership of the Board of Trustees, will continue to provide high-quality, and valuable service to the people of Alameda County.



OUR HISTORY

During late 1928 through early 1929, the city councils of Alameda, Berkeley, Emeryville, Hayward, Oakland, Piedmont, and San Leandro passed a resolution endorsing the formation of Alameda County Mosquito Abatement District (ACMAD). Over 32,000 signatures in support of the resolution for establishing ACMAD were collected throughout Alameda County by January 28, 1930. ACMAD was officially formed when the Board of Supervisors passed ordinance B organizing ACMAD on March 11, 1930; three days later, the Secretary of State of California filed the certificate of incorporation.

Initially, ACMAD focused its efforts on ditching in marshes to promote drainage of habitats where salt marsh mosquitoes breed. With the reduction of salt marsh mosquito abundances, citizens started noticing fresh water mosquitoes around their properties and requested service for relief from those mosquitoes as well. To fulfill the demands for mosquito control throughout the county, personnel and equipment were needed to accommodate the increase in services. ACMAD funding from ad valorem property taxes was stable until Proposition 13 passed in 1978. After the passage of Proposition 13, the District's budget was reduced by half. To provide adequate service to Alameda County residents, in 1982 Measure K was approved by over two thirds of Alameda County voters, this allowed for a maximum assessment of \$1.75 per single home as a Special Tax. Around this time, the District consolidated the three depots in Oakland, Pleasanton, and Union City into a single office and shop at the present site in Hayward.

West Nile virus (WMV) was introduced via wild bird transmission into Alameda County during 2003, and control for the mosquitoes that transmit this virus increased ACMAD operation costs by \$280,000 a year. These costs covered additional seasonal staff, pesticides, equipment, and public outreach education programs. ACMAD's Long Range Benefit Committee reviewed methods for adding to the District's revenue stream to meet the increasing financial needs of the District. The Board of Trustees proposed levying a benefit assessment, and a survey was prepared and mailed to 14,500 property owners in Alameda County during the fall of 2007. The survey evaluated the public's support for a benefit assessment, and the results showed greater than 71% approved of the proposed benefit assessment. On May 14, 2008, the ACMAD Board of Trustees passed the resolution approving the benefit assessment.

The approved benefit assessment allows the District to provide enhanced services to the residents of Alameda County while preparing the District for future public health threats caused by mosquitoes. Notably, the District's benefit assessment level has not increased in over ten years. While mosquito control techniques, regulations that monitor our activities, and the public sector financial situation have changed in the past 88 years, the District's dedication and effectiveness has not.



OUR STRATEGY

OUR MISSION

Alameda County Mosquito Abatement District is committed to improving the health and comfort of Alameda County residents by controlling mosquitoes and limiting the transmission of mosquito-borne diseases.

OUR VISION

To serve all residents of Alameda County in a transparent and equitable manner by providing knowledge-driven and environmentally-conscious mosquito control. We strive to provide an exemplary model of good government through fiscal transparency and accountability.



OUR CORE VALUES

ENVIRONMENTAL STEWARDSHIP

- Ecologically responsible
- Proactive in environmental legislation
- Responsive to environmental changes
- Emphasis on biorational treatments for mosquito control

KNOWLEDGEABLE

- Science-based decision making
- Data-driven
- Technology enabled
- Safety program adherent

PROFESSIONAL

- Honest
- Reliable
- Respectful
- Responsive
- Committed
- Inclusionary

ENVIRONMENTAL SCAN

An Environment Scan is a self-assessment process that allows organizations to identify their internal and external strengths, weaknesses, and foreseeable changes that may impact service delivery.

STRENGTHS

- Data sharing and integration of laboratory and operations
- Larval-based control program
- Financial stability and accountability
- Timely responses to public request for service
- Public accessibility to staff and District information
- Culture of independence that fosters effective collaboration
- Innovative methods to monitor mosquito abundance

WEAKNESSES

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- Limited ability to increase scale of operations in short amount of time
- Low diversity of revenue sources

FORESEEABLE CHANGES THAT MAY IMPACT SERVICE DELIVERY

- Climate change
- Insecticide resistance
- Changes in regulations
- Human population growth
- Introduction of invasive mosquito species
- Emerging mosquito borne infectious diseases
- Natural disasters

OUR GOALS FOR 2018-2019

Provide standardized financial reporting to the Board

Improve the credit card purchase process to include management review and application approval

Adjust staffing in the lab to enable the goals outlined in the strategic plan

Develop and implement maintenance and user safety protocols for drone equipment

Phase out old telephone hardware in favor of voice over internet protocol and hosted services

Setup Skype for Business for cross platform integration with desktop and cell phone

Obtain authorization to conduct operations using drone

Review zone workloads utilizing data from field work and service request data.

Determine feasibility of executing a legal abatement proceeding via the Alameda County legal system

Evaluate land use and water conservation strategies in Alameda County as they pertain to existing and potential mosquito breeding sites

Identify mosquito breeding sites that may be controlled using drone applications

Visit home offices of elected officials

OUR GOALS FOR 2019-2020

Run financial models on future revenue and expenditure predictions

Transfer operating funds to an interest earning account

Reevaluate benefit packages during next memorandum of understanding via a 3rd party

Create a staff community outreach full-time position

Implement an electronic data, inventory, and service program for assets

Complete the integration of new adulticide hardware and software to existing spray unit

Research and deploy physical offsite backup plan for District data

Create dashboards and live data analyses of current and future data

Use drone to evaluate water accumulation on land surfaces

Evaluate adult mosquito abundance in catch basins

Evaluate efficacy of supplemental chemical attractants with adult mosquito traps

Conduct review of the ACMAD invasive Aedes response plan

Analyze the field operation's supervisor position and duties and succession planning

Enhance District relations and collaboration with regulatory agencies, wetland restoration groups, and land management agencies

OUR GOALS FOR 2020-2021

Obtain Government Finance Officers Association award in financial reporting

Improve facilities energy efficiency, plumbing fixtures, heating, ventilation, and air conditioning

Use drone to estimate breeding intensity of mosquito larvae in water

Develop and evaluate solar-powered New Jersey Light Trap to improve trap safety and efficacy

Develop and implement models for assessing mosquito resistance to adulticide and larvicide

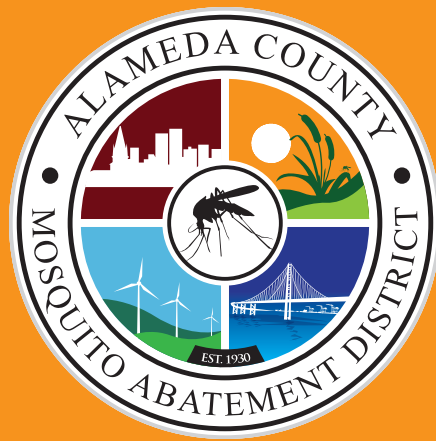
Evaluate correlations between larval and adult mosquito abundance data

Create a Crisis Communications Plan

Update District Control Program document

Develop an education program for Alameda County students

Increase outreach to local school districts to promote education program



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 Alameda County Mosquito Abatement District

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Alameda County Mosquito Abatement Dist.
Check Register
For the Period From Aug 1, 2023 to Aug 15, 2023

Filter Criteria includes: Report order is by Date.

Check #	Date	Payee	Amount
4102	8/9/23	Adapco	2,597.10
4103	8/9/23	Airgas	1,373.06
4104	8/9/23	AT&T	84.73
4105	8/9/23	Bay Alarm	554.81
4106	8/9/23	Beck's Shoes	190.00
4107	8/9/23	Cintas	458.60
4108	8/9/23	Coverall North America, Inc.	495.00
4109	8/9/23	Department of Pesticide Regulation	45.00
4110	8/9/23	Grainger	325.07
4111	8/9/23	Industrial Park Landscape Maintenance	522.00
4112	8/9/23	Mar-Len Supply, Inc.	970.70
4113	8/9/23	PFM Asset Management LLC	1,705.14
4114	8/9/23	PG&E	68.36
4115	8/9/23	Techniclean	269.11
4116	8/9/23	The Regents of U.C	504.00
4117	8/9/23	UMPQUA Bank Commerical Card OPS	22,245.15
4118	8/9/23	VCJPA	245.16
4119	8/9/23	Voya Institutional Trust Company	183.00
ACH	8/9/23	Alameda County Mosquito Abatement Dist (Payroll)	88,963.58
ACH	8/9/23	CalPERS Retirement	18,016.76
ACH	8/9/23	CalPERS 457	3,804.49
Total Expenditures - August 15, 2023			143,620.82

Alameda County Mosquito Abatement Dist.

Check Register

For the Period From Aug 16, 2023 to Aug 31, 2023

Filter Criteria includes: Report order is by Date.

Check #	Date	Payee	Amount
4120	8/29/23	Adapco	27,019.40
4121	8/29/23	Airgas	1,788.37
4122	8/29/23	Alco Sheet Metal and Heating, Inc.	262.00
4123	8/29/23	Bay Alarm	330.64
4124	8/29/23	CentiMark Corporation	3,750.00
4125	8/29/23	Cintas	455.79
4126	8/29/23	Delta Dental	4,746.80
4127	8/29/23	Element One Architecture	5,520.00
4128	8/29/23	F.H Dailey Chevrolet	453.75
4129	8/29/23	Grainger	163.89
4130	8/29/23	Hentschke, Eric Armin	100.00
4131	8/29/23	Industrial Park Landscape Maintenance	261.00
4132	8/29/23	Jarvis Fay LLP	72.00
4133	8/29/23	PC Professional	1,872.00
4134	8/29/23	PG&E	23.82
4135	8/29/23	SCI Consulting Group	23,632.35
4136	8/29/23	Target Specialty Products	71,439.30
4137	8/29/23	The Hartford	238.82
4138	8/29/23	Treds	195.00
4139	8/29/23	Verizon	317.31
4140	8/29/23	Visalia Times Delta	2,675.00
4141	8/29/23	Voya Institutional Trust Company	183.00
4142	8/29/23	VSP	626.02
4143	8/29/23	WEX Bank	538.65
4144	8/29/23	Young, George	100.00
ACH	8/29/23	Alameda County Mosquito Abatement Dist (Payroll)	90,171.97
ACH	8/29/23	Aguilar, Victor	100.00
ACH	8/29/23	Arkin, Valerie	100.00
ACH	8/29/23	Beatty, Robert .P	100.00
ACH	8/29/23	Bhat, Subrahmanya Y	100.00
ACH	8/29/23	CalPERS	700.00
ACH	8/29/23	CalPERS Health	41,238.48
ACH	8/29/23	CalPERS Retirement	17,988.08
ACH	8/29/23	CalPERS 457	3,803.61
ACH	8/29/23	Qaadri, Kashef	100.00
ACH	8/29/23	Roache, Cathy J Pinkerton.	100.00
ACH	8/29/23	Salzer, Hope	100.00
ACH	8/29/23	Syrop, George	100.00
ACH	8/29/23	Washburn, Jan	100.00
Total Expenditures - August 31, 2023			301,567.05

Alameda County Mosquito Abatement District
Income Statement
August 31, 2023. (2 of 12 mth, 17%)

REVENUES	Actual 2021/22	Actual 2022/23	Current Month	Year to Date 2023/24	Budget 2023/24	Actual vs Budget
Total Revenue	\$ 5,386,808.18	\$ 5,584,751.51	\$ 331,820.49	\$ 334,260.96	\$ 5,008,804.00	7%

EXPENDITURES	Actual 2021/22	Actual 2022/23 ¹	Current Month ²	Year to Date 2023/24	Budget 2023/24	Actual vs Budget
Salaries	\$ 2,129,077.24	\$ 2,309,118.48	\$ 199,108.05	\$ 398,934.46	\$2,462,469	16%
CalPERS Retirement	\$ 471,085.19	\$ 525,486.67	\$ 21,263.96	\$ 330,054.79	\$553,955	60%
Medicare & Social Security	\$ 30,025.60	\$ 33,691.96	\$ 2,742.48	\$ 5,594.49	\$40,292	14%
Fringe Benefits	\$ 484,487.10	\$ 604,257.75	\$ 46,850.12	\$ 99,073.08	\$605,491	16%
Total Salaries, Retirement, & Benefits	\$ 3,114,675.13	\$ 3,472,554.86	\$ 269,964.61	\$ 833,656.82	\$3,662,207	23%
Clothing and personal supplies (purchased)	\$ 7,881.80	\$ 7,517.57	\$ 190.00	\$ 190.00	\$9,000	2%
Laundry service and supplies (rented)	\$ 10,417.41	\$ 12,853.29	\$ 914.39	\$ 1,826.68	\$13,000	14%
Utilities	\$ 18,134.35	\$ 19,415.68	\$ 428.36	\$ 454.64	\$23,700	2%
Communications-IT	\$ 74,950.03	\$ 97,157.98	\$ 5,238.15	\$ 5,238.15	\$104,000	5%
Maintenance: structures & improvements	\$ 26,671.36	\$ 18,062.12	\$ 5,759.27	\$ 5,759.27	\$30,000	19%
Maintenance of equipment	\$ 25,354.56	\$ 36,209.89	\$ 1,512.33	\$ 1,649.14	\$30,000	5%
Transportation, travel, training, & board	\$ 120,418.29	\$ 133,124.33	\$ 6,109.19	\$ 13,993.34	\$127,990	11%
Professional services	\$ 97,726.00	\$ 93,114.84	\$ 24,404.35	\$ 25,131.85	\$122,950	20%
Memberships, dues, & subscriptions	\$ 25,103.23	\$ 24,593.62	\$ 153.94	\$ 11,847.94	\$27,000	44%
Insurance - (VCJPA, UAS)	\$ 160,932.64	\$ 177,962.64	\$ -	\$ 209,342.00	\$211,959	99%
Community education	\$ 26,225.45	\$ 28,193.67	\$ 2,748.80	\$ 2,748.80	\$53,000	5%
Operations	\$ 182,575.57	\$ 120,638.42	\$ 28,298.74	\$ 64,760.97	\$261,500	25%
Household expenses	\$ 25,388.02	\$ 18,517.21	\$ 1,649.56	\$ 2,950.76	\$21,350	14%
Office expenses	\$ 7,002.84	\$ 7,247.77	\$ 137.24	\$ 776.50	\$13,000	6%
Laboratory supplies	\$ 82,354.03	\$ 106,783.12	\$ 18,544.22	\$ 20,900.24	\$140,000	15%
Small tools and instruments	\$ 1,963.31	\$ 2,119.69	\$ 16.93	\$ 54.07	\$3,000	2%
Total Staff Budget	\$ 893,098.89	\$ 903,511.84	\$ 96,105.47	\$ 367,624.35	\$1,191,449	31%
Total Operating Expenditures	\$ 4,007,774.02	\$ 4,376,066.70	\$ 366,070.08	\$ 1,201,281.17	\$4,853,656	25%

1 - As of June 30, 2023. Unaudited.

2 - Total Operating Expenditures in current month may not match the check register due to accounts receivable, petty cash transactions, and transactions related to the last fiscal year.

**Alameda County Mosquito Abatement District
Investment, Reserves, and Cash Balance Report
August 31, 2023. (2 of 12 mth, 17%)**

Account #	Investment Accounts	Beginning Balance	Deposits	Withdrawals	Earnings ¹	Ending Balance
1004	LAIF	\$ 107,343.54	\$ -	\$ -	\$ -	\$ 107,343.54
1005	OPEB Fund	\$ 4,724,424.54	\$ -	\$ -	\$ (78,187.62)	\$ 4,646,236.92
1006	VCJPA Member Contingency ²	\$ 353,832.00	\$ -	\$ -	\$ (1,143.00)	\$ 352,689.00
1011	CAMP: Capital Reserve Fund ^{3 6}	\$ 369,420.78	\$ 70,009.00	\$ (5,520.00)	\$ 1,878.50	\$ 435,788.28
1012	PARS: Pension Stabilization ⁴	\$ 2,136,983.36	\$ -	\$ -	\$ 27,131.19	\$ 2,164,114.55
1013	California CLASS: Public Health Emergency Fund ⁵	\$ 550,493.97	\$ -	\$ (26,732.00)	\$ 2,458.92	\$ 526,220.89
1014	California CLASS: Operational Fund ^{3 6}	\$ 3,364,738.52	\$ -	\$ (1,218,767.57)	\$ 12,305.10	\$ 2,158,276.05
1015	California CLASS: Repair and Replace Fund ^{5 6 7}	\$ 2,735,642.55	\$ 537,912.00	\$ (56,020.24)	\$ 14,406.12	\$ 3,231,940.43
1016	California CLASS: Operating Reserve Fund	\$ 2,029,723.23	\$ -	\$ -	\$ 9,390.06	\$ 2,039,113.29
Total		\$ 16,372,602.49	\$ 607,921.00	\$ (1,307,039.81)	\$ (11,760.73)	\$ 15,661,722.95

Account #	Cash Accounts	Beginning Balance	Deposits	Activity	Ending Balance
1001	Bank of America (Payroll Account) *	\$ 147,783.87	\$ -	\$ -	\$ 147,746.46
1003	County Account	\$ 470,585.08	\$ -	\$ 272,681.35	\$ 743,266.43
1017	Five Star Bank (Transfer Account) *	\$ 317,126.31	\$ -	\$ -	\$ 382,333.69
1018	Petty Cash	\$ 404.27	\$ -	\$ (52.81)	\$ 351.46
Total		\$ 935,899.53	\$ -	\$ 272,628.54	\$ 1,273,698.04

1 - Earnings are booked as unrealized gains/losses. These earnings would not be recognized as "realized" gains/losses until the accounts are liquidated.

2 - VCJPA Member Contingency balance is as of June 30, 2023.

3 - \$70,009.00 transferred from CA: CLASS Operational Fund to CAMP: Capital Reserve; \$5,520.00 transferred from CAMP: Capital Reserve to Five Star Bank for expenditures relating to the fish project.

4 - PARS - Pension Stabilization balance is as of July 31, 2023.

5 - \$26,732.00 transferred from CA CLASS: Public Health Emergency to CA CLASS: Repair and Replace.

6 - \$368,228.57 transferred from CA:CLASS Operational Fund to Five Star Bank for August expenditures; \$511,180.00 transferred to CA CLASS: Repair and Replace; \$269,350.00 transferred to PARS (will not reflect until the August statement); \$70,009.00 transferred to CAMP: Capital Reserve.

7 - \$56,020.24 transferred from CA CLASS: Repair and Replace to Five Star Bank for the purchase of the drone (the total purchase price was \$71,439.30, the insurance check for \$15,419.06 was deposited into Five Star Bank in August).

* - Ending balance differs from beginning balance due to checks clearing the account.

Alameda County Mosquito Abatement
Balance Sheet Comparison
August

ASSETS	8/31/2023	8/31/2022	8/31/2021
Current Assets			
Bank of America payroll	\$ 147,746.05	\$ 156,552.15	\$ 98,613.85
Bank of the West ¹	-	418,903.88	182,622.49
County	743,266.43	655,601.70	617,995.27
Cash with LAIF	107,343.54	1,730,406.42	3,193,540.40
VCJPA- Member Contingency	352,689.00	351,141.00	373,610.00
CAMP - Repair and Replace ²	-	2,647,008.20	1,041,075.78
CAMP - Public Health Emergency ³	-	425.52	526,266.48
CAMP - Operating Reserve ⁴	-	1,955,923.71	1,944,499.41
CAMP - Capital Reserve Fund	435,788.28	370,936.25	19,994.27
PARS	2,433,464.55	2,071,498.58	1,872,269.25
Five Star Bank	236,943.78	-	-
California CLASS: Public Health Emergency Fund	526,220.89	528,830.66	-
California CLASS: Operational Fund	2,158,276.05	-	-
California CLASS: Repair and Replace Fund	3,231,940.43	-	-
California CLASS: Operating Reserve Fund	2,039,113.29	-	-
Accounts Receivable	533.54	-	22,459.56
Petty cash	351.46	364.11	321.04
Total Current Assets	12,413,677.29	10,887,592.18	9,893,267.80
Property and Equipment			
Acc Dep - equipment	(1,709,382.00)	(1,709,382.00)	(1,594,225.00)
Acc Dep - stru & improv	(2,723,997.00)	(2,723,997.00)	(2,604,632.00)
Construction in progress	31,647.93	-	-
Equipment	1,901,614.99	1,830,175.69	1,769,859.00
Structure/improvement	4,760,618.00	4,760,618.00	4,760,618.00
Land	61,406.00	61,406.00	61,406.00
Total Property and Equipment	2,321,907.92	2,218,820.69	2,393,026.00
Other Assets			
Net OPEB Asset	1,225,311.00	1,225,311.00	2,522,763.00
Total Other Assets	1,225,311.00	1,225,311.00	2,522,763.00
Total Assets	\$ 15,960,896.21	\$ 14,331,723.87	\$ 14,809,056.80
LIABILITIES AND CAPITAL			
Current Liabilities			
Accounts payable	\$ 98,710.41	\$ 157,342.02	\$ 145,157.29
Acc payroll/vacation	210,892.93	201,023.94	208,228.89
Def inflow - 75	1,046,869.00	1,046,869.00	1,254,695.00
Def inflow pen defer GASB 68	1,941,395.00	1,941,395.00	208,602.00
Defer outflow pen cont GASB 68	(822,206.00)	(822,206.00)	(936,411.00)
Net pension liability GASB 68	2,034,280.00	2,034,280.00	3,603,091.00
Total Current Liabilities	\$ 4,509,941.34	\$ 4,558,703.96	\$ 4,483,363.18
Total Liabilities	4,509,941.34	4,558,703.96	4,483,363.18
Capital			
Designated fund balances	3,044,832.55	3,044,832.55	4,412,645.55
Investment in general fixed as	9,156,991.89	7,642,845.18	6,677,881.96
Net Income	(750,869.57)	(914,657.82)	(764,833.89)
Total Capital	11,450,954.87	9,773,019.91	10,325,693.62
Total Liabilities & Capital	\$ 15,960,896.21	\$ 14,331,723.87	\$ 14,809,056.80

1 - Bank of the West account was closed June 2023.

2 - CAMP: Repair and Replace Fund was closed February 2023.

3 - CAMP: Public Health Emergency Fund was closed September 2022.

4 - CAMP: Operating Reserve Fund was closed February 2023.



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MONTHLY STAFF REPORT –1117

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OPERATIONS REPORT

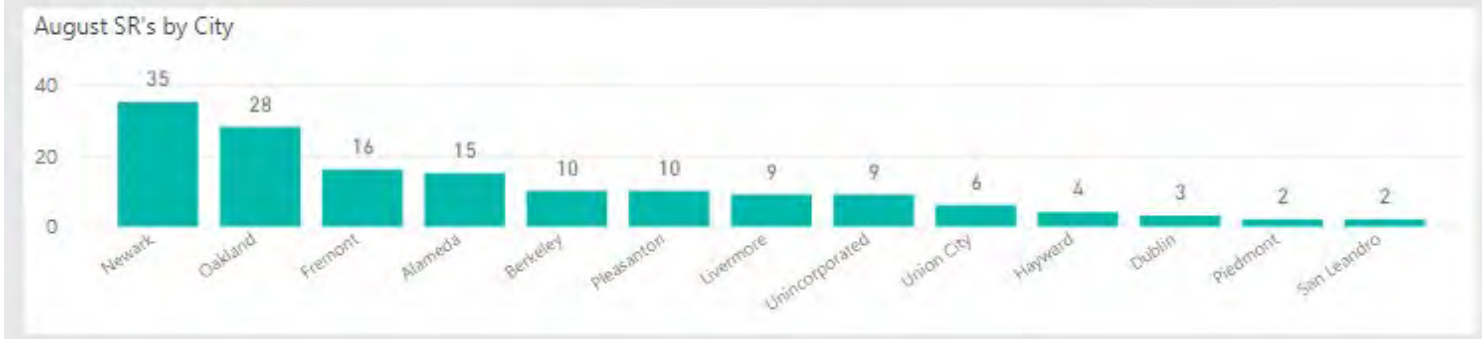
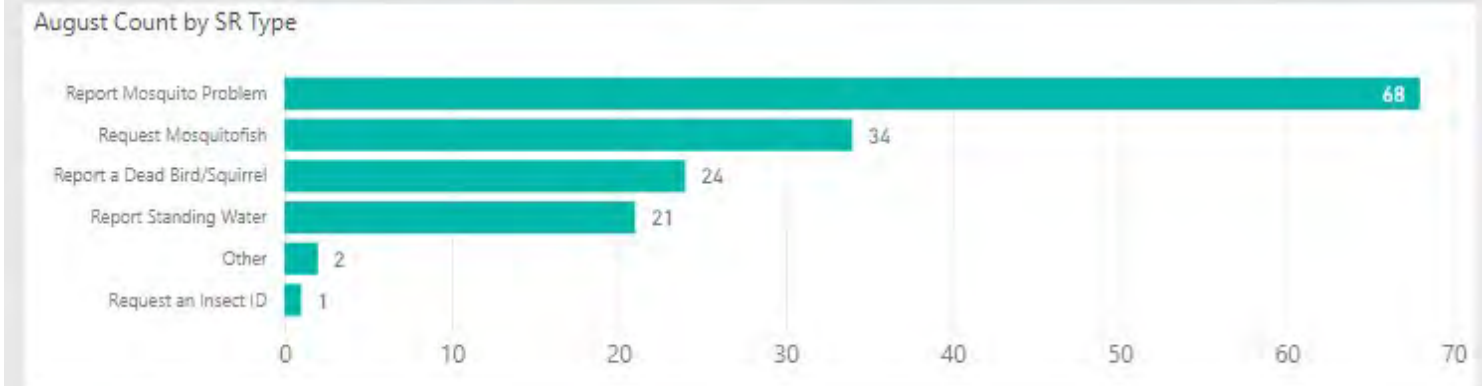
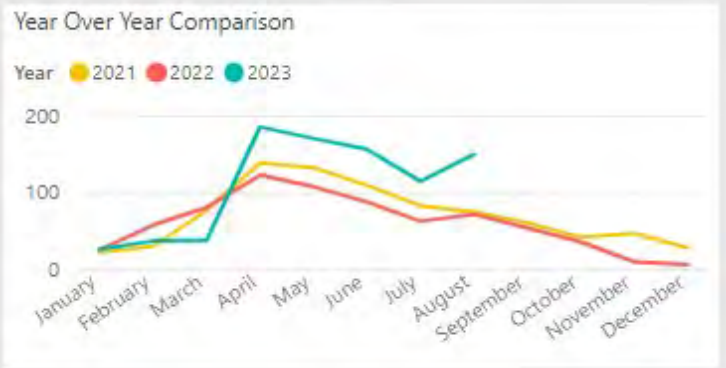
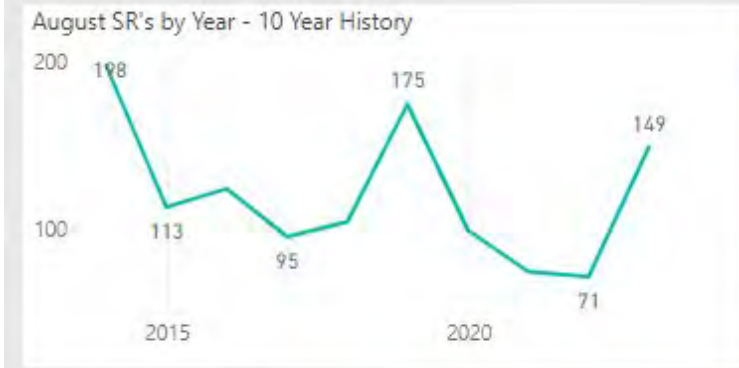
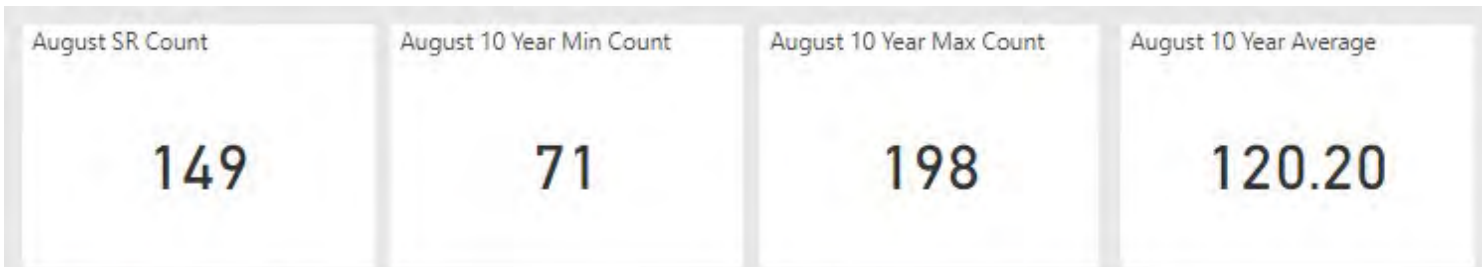
August was one of the most complex months for ACMAD's West Nile virus control program since the virus was first detected in California in 2003. The district collected and lab tested twelve WNV positive birds and four groups of mosquitoes from several regions of the county. In each instance, several members of the operations team responded to the collection locations to inspect and treat for any locatable sources for *Culex spp.* mosquitoes. Focus on catch basins, canals, creeks, sanitation treatment facilities, unmaintained pools, and nearby fresh-water marshes has long been part of ACMAD's WNV program. However, this level of virus activity, in numerous regions of the county, required a significant number of intensive, localized efforts to control larvae of our main WNV vector species: *Culex pipiens*, *Culex tarsalis*, and *Culex erythrothorax*. It is not uncommon to have several WNV detections in our county in a given season, the difference this year has been the detection of the virus in so many cities in such a brief period. To date this season, WNV has been detected in Alameda, Oakland, Union City, Newark, Fremont, Livermore, and Pleasanton. Operations staff are fully cognizant that virus activity will likely persist at least until the shift of the season and the onset of the first significant rainfall events.

Each of the three aforementioned *Cx. spp.* mosquitoes are competent vectors of WNV. All three will readily feed on birds and will also feed on humans, hence their importance in the WNV transmission cycle. To date, this year the virus has been detected in all three species in Alameda County. Though in the same genera of mosquitoes, each of these species have quite different biology, behaviors, flight/dispersal patterns, and habitat preferences. The fact that there are many areas of our county that have suitable habitats for all three species in proximity makes comprehensive and focused treatments of numerous larval sources imperative to limiting the number of adult mosquitoes entering the environment. Intensive daily efforts on the part of operations to focus on these potential vectors will continue in the months to come.

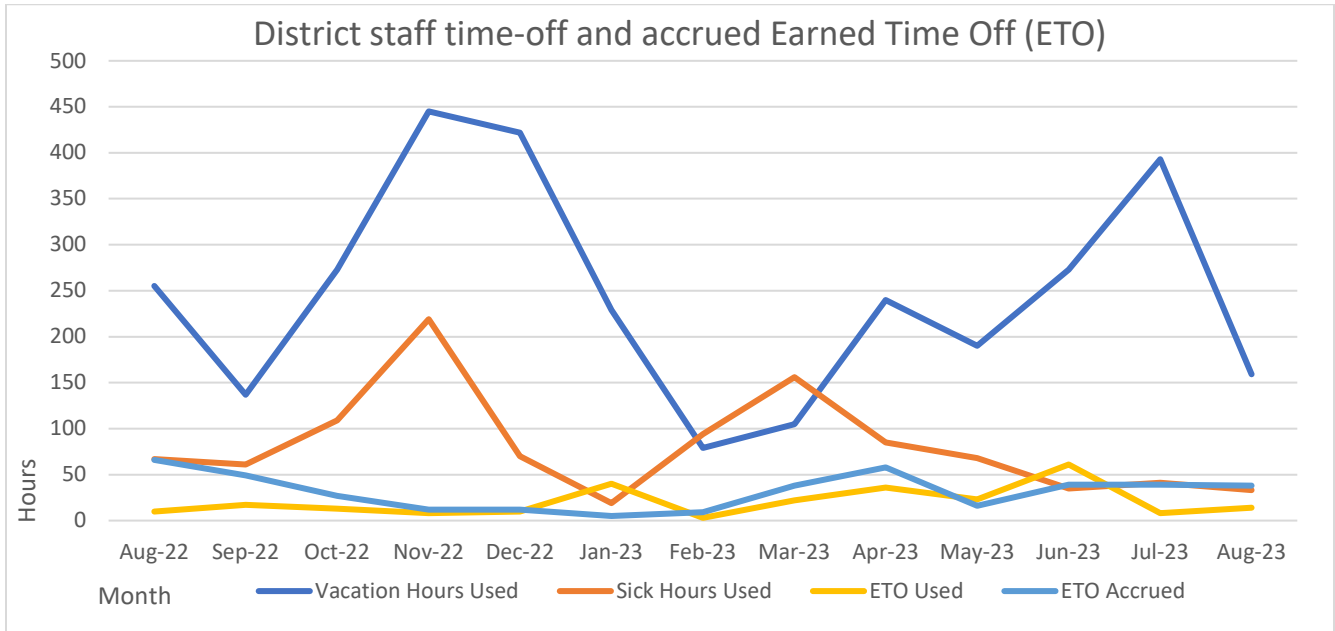
In August, several high tide events required operations to also carve out time and resources to address *Aedes dorsalis*. Though not a significant vector of mosquito-borne disease, this mosquito is a very aggressive day-biter that can fly many miles from tidal-marsh emergence sites. Even in small numbers, this mosquito can generate many calls from the public. This was demonstrated in calls to "report a mosquito problem." Of the sixty-eight calls of this type received, over half were attributable to this species. Most of these calls were from two relatively new housing developments close to tidal marshes in Newark. Surprisingly, the likely high tide event that resulted in emergence generating these calls was at the lowest height we would expect to see hatching of eggs of this species at 6'1" as measured at the Golden Gate. Operations staff was able to successfully control hundreds of acres of tidal marshes while navigating numerous WNV-driven inspections and treatments through a combination of hand treatments and by utilizing the ACMAD A-1 Super-Duty mist blower.

Field Operations Supervisor
Joseph Huston

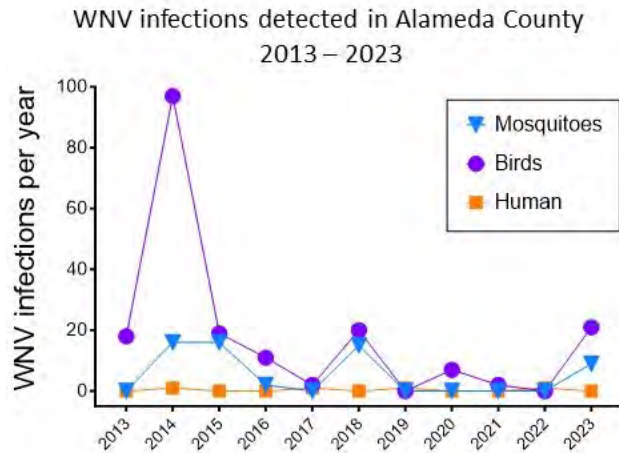
Service Requests August 2023



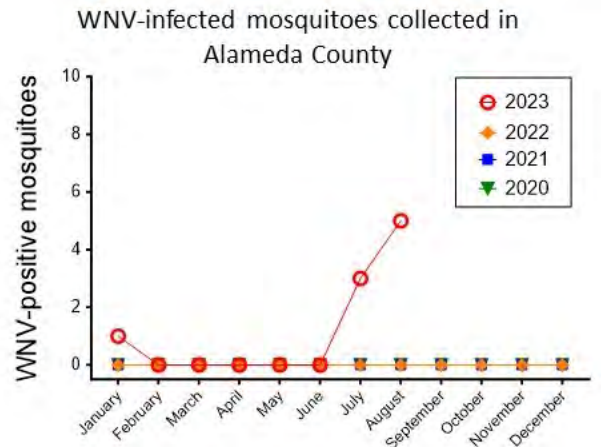
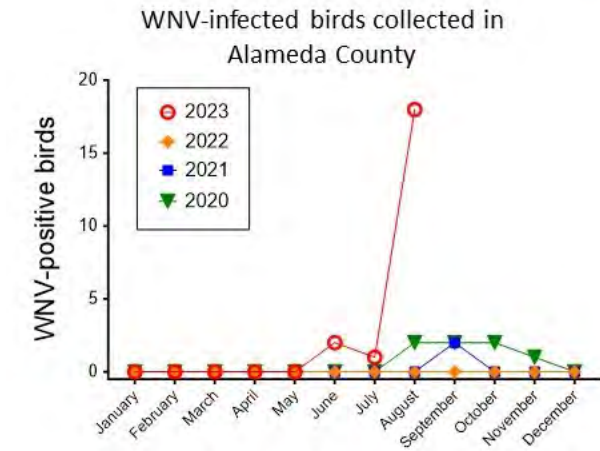
Activity Report



WNV Activity



Locations of WNV-infected mosquitoes and birds in Alameda County during 2023



A. LAB

Summary

- *Arboviruses in mosquitoes.* Five traps from August contained mosquitoes that were infected with West Nile virus (WNV). Four were from Livermore and the infected species were *Culex tarsalis* (two traps), *Culex erythrothorax*, and *Culex pipiens*. One trap from Coyote Hills Regional Park in Fremont contained *Cx. tarsalis* that were infected with WNV. Please see the figures above for WNV Activity.
- *Arboviruses in birds.* 18 birds tested positive for WNV this month. There were collected from the cities of Alameda, Fremont, Newark, Oakland, Livermore and Pleasanton. Saint Louis encephalitis virus (SLEV) and Western equine encephalitis virus (WEEV) have not been detected in birds from Alameda County this year. Please see the figures above for WNV Activity.
- *Native mosquitoes.* A total of 627 encephalitis virus survey (EVS) traps were placed during August, catching 27,457 adult female mosquitoes (43.5 mosquitos per trap). One-third of the EVS traps were placed in response to WNV detections in birds or mosquitoes.
- Sentinel chicken flocks did not seroconvert in August (*until recent serconversions to be reported in the October staff report*).
- *Human cases.* One human WNV case from the City of Alameda was reported to us during August. This person had traveled to a city outside of California that had high WNV activity. Thus, the health department has not attributed this case to Alameda County. Because Alameda has environmental WNV detections, the lab conducted an entomological investigation but found no WNV-infected mosquitoes in the area where the case resided.
- Invasive *Aedes* mosquitoes have not been detected in Alameda County during 2023.

Arbovirus Monitoring

- 328 pools of vector species from EVS traps were tested using PCR this month and five contained mosquitoes that were infected with WNV. Four were from Livermore and the infected species were *Culex tarsalis* (two traps), *Culex erythrothorax*, and *Culex pipiens*. One trap from Coyote Hills Regional Park in Fremont contained *Cx. tarsalis* that were infected with WNV. So far this year, 9 mosquito pools have tested positive for WNV.
- 18 birds tested positive for WNV this month. There were collected from the cities of Alameda, Fremont, Newark, Oakland, Livermore and Pleasanton. 21 birds have tested positive for WNV so far this year.
- This year has produced the greatest number of WNV detections in the county since 2014 (see above for WNV Activity statistics and maps). However, relative to our neighboring counties, WNV activities for Alameda County remains relatively low (Figure 1)
- SLEV and WEEV have not been detected in the County for over a decade.
- One human WNV case was reported to us by Alameda County Public Health Department (ACPHD). The case resides in the City of Alameda near to where WNV-positive birds have been detected. However, the case reported out-of-state travel to a city with high WNV activity. Thus, ACPHD is not attributing this case to Alameda County. However, the lab detected WNV-infected crows in the area where the case resided and conducted an entomological investigation in response. While mosquito species that can transmit WNV were collected in EVS traps, none were infected with the virus.
- Test results from the blood samples collected from the sentinel chicken flocks in Livermore and Union City showed they had not been exposed to WNV, SLEV, or WEEV (*until recent exposures to be reported in the October staff report*).

Native Mosquito Abundance

- In California, the main transmitters of WNV, SLEV, and WEEV are: *Culex pipiens* (typically in urban settings), *Culex tarsalis* (associated with marsh and peri-urban areas), and *Culex erythrothorax* (occurs exclusively in marsh but adults can disperse into nearby communities).
- This month, 627 EVS traps collected 27,457 female mosquitoes (43.5 mosquitoes per trap), a 43% decrease from last month. However, much of the trapping effort was focused in the eastern region of the county where much of the WNV was detected and mosquito abundance is substantially lower than the western Bayside region. Adult mosquito abundance for August remained higher than 2021 and 2022 (Figure 2). Higher numbers of *Culex tarsalis* and *Culex erythrothorax* in marsh habitats drove the higher overall abundance in the county (Figure 3, left panels and Figure 4). Fortunately, *Culex pipiens* and *Culiseta incidens* remained low (Figure 3, right panels).

- Most mosquitoes in the western part of the county were *Culex tarsalis* and *Culex erythrorhox* (Figure 5A, 5B). Mosquito abundance in the eastern region of the county was higher than the prior month, but lower overall relative to the bayside region of the county (Figure 5C). Nine EVS traps did not collect any mosquitoes (1% of all EVS traps for the month; Figure 5A, insert). Notably, EVS traps in the western Bayside region of the county collected substantially more mosquitoes than prior years. While the majority of the species are not effective vectors for malaria (of the *Anopheles* species found in Alameda County, only *Anopheles freeborni*, the western malaria mosquito, is known to vector malaria). However, *An. freeborni* is often collected in traps with other *Anopheles* mosquitoes. Thus, the lab has increased out malaria mosquito monitoring efforts.
- The BG-Counter trap near Sea Breeze Park captured 12,219 adult mosquitoes during the month, most of which were likely *Culex tarsalis* and *Culex erythrorhox*.

LAB FIGURES

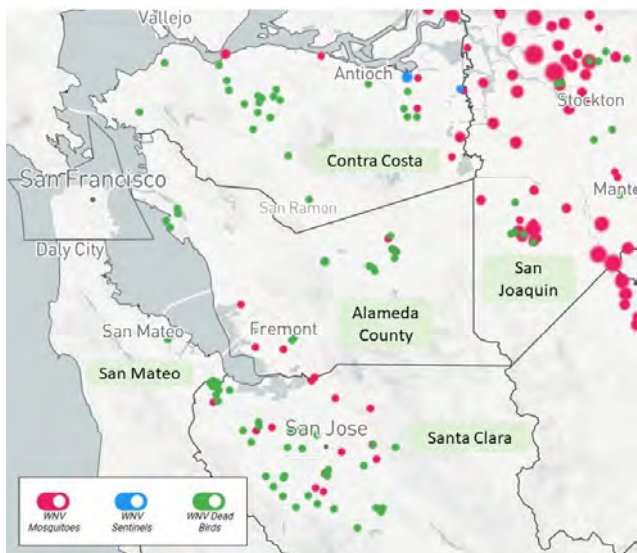


Figure 1. The location of WNV detections in birds, mosquitoes and sentinel chickens for 2023.

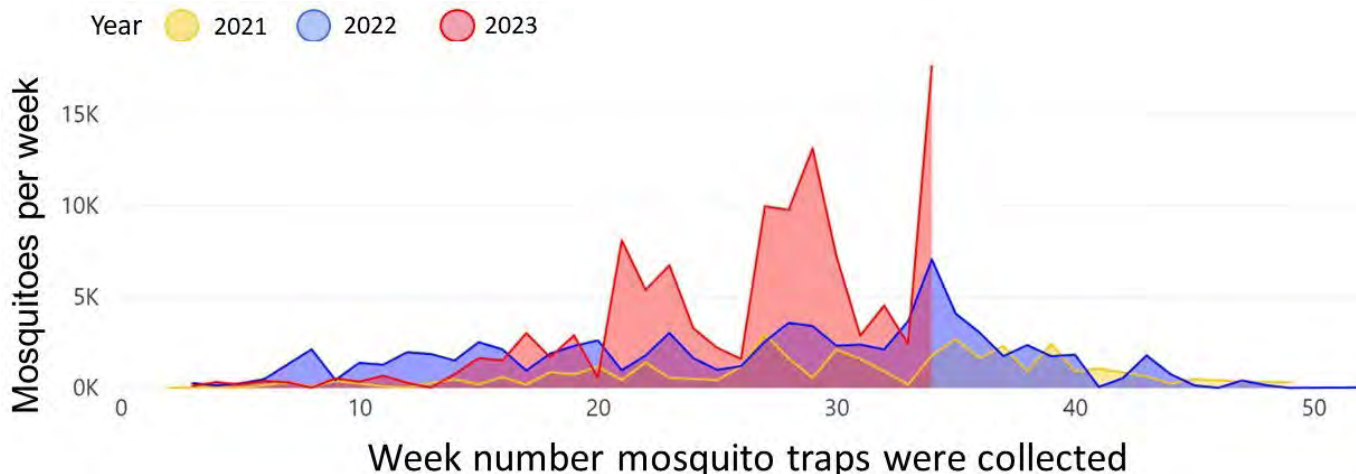


Figure 2. Mosquitoes captured in EVS CO₂ traps from 2021 – 2023. A total of 27,457 adult female mosquitoes were captured in CO₂-baited traps during the month and identified to species. Week 24 of 2021 was excluded from the graph because the high anomalous abundance that week skewed the y-axis.

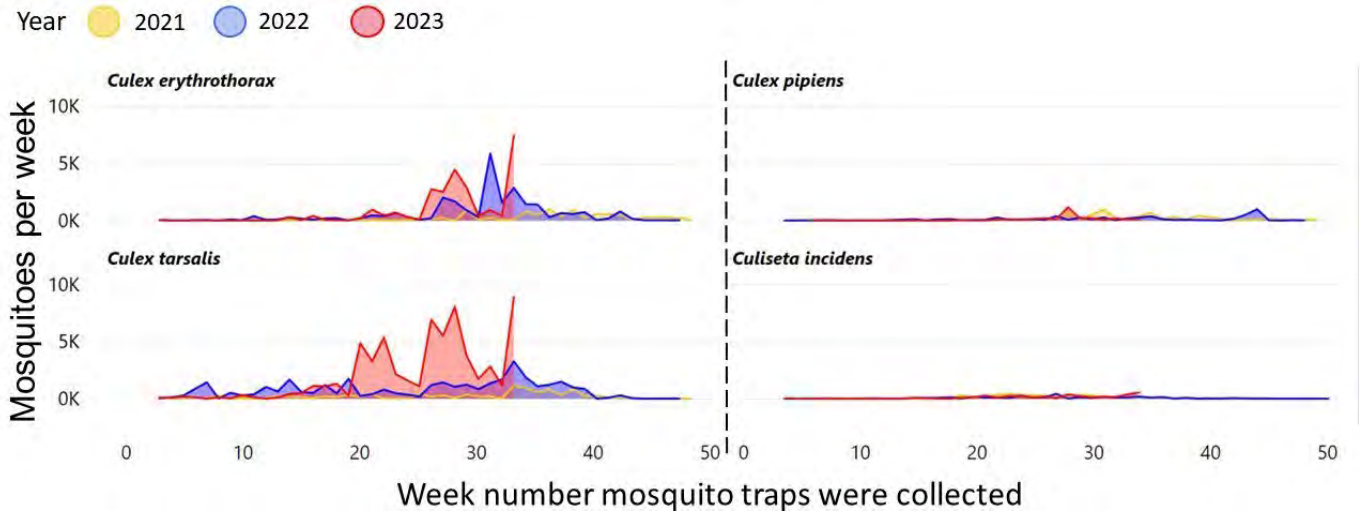


Figure 3. Weekly abundance of important mosquito species during 2021, 2022 and 2023.

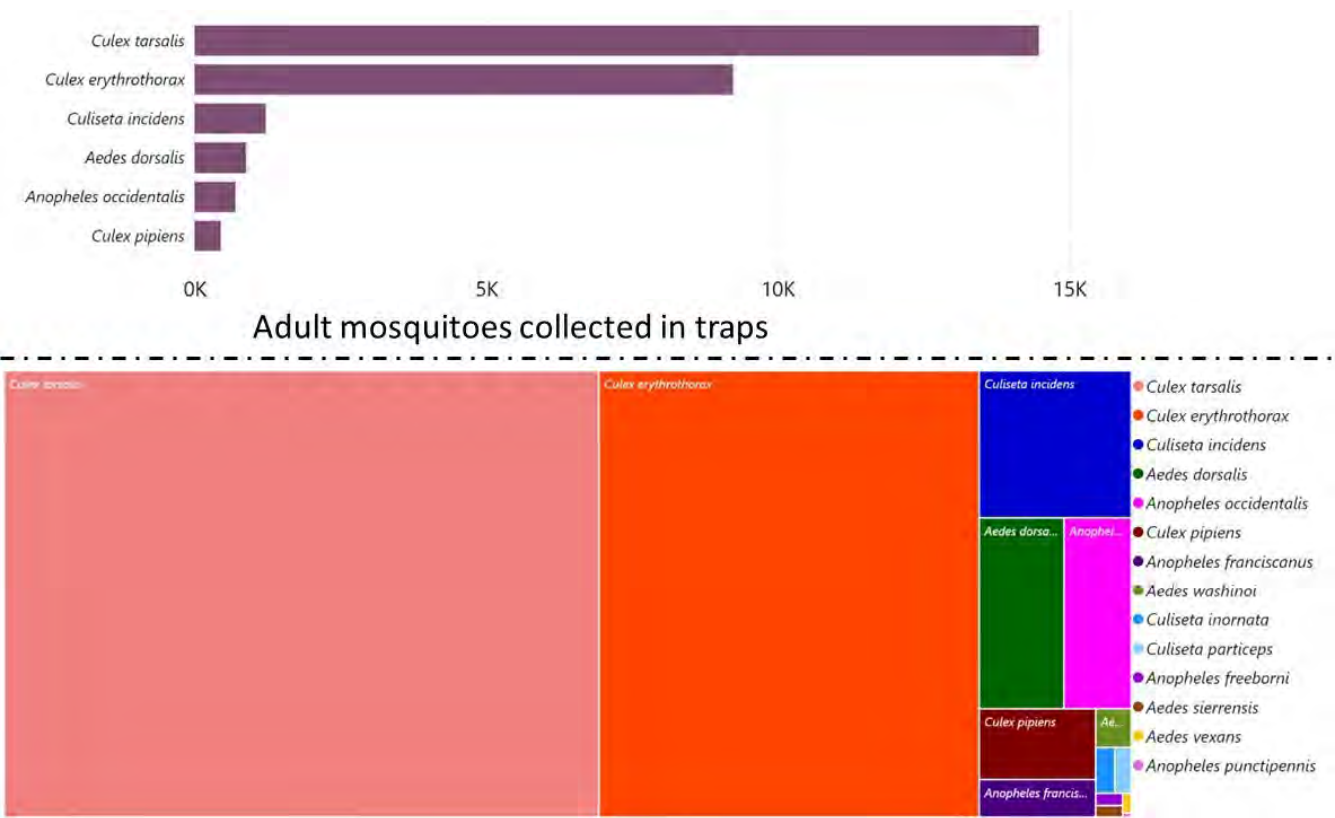


Figure 4. The most abundant species of mosquito captured using EVS CO₂ traps during the month of this report. Larger squares and rectangles indicate higher abundance of that species.

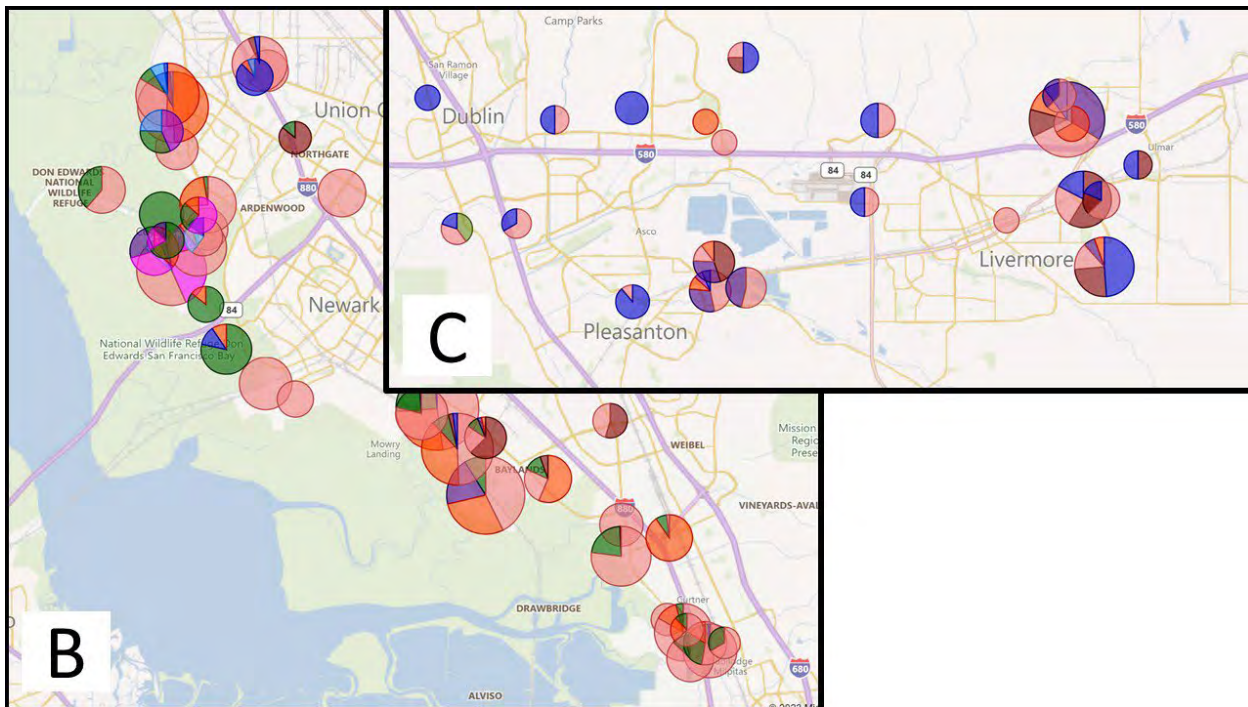
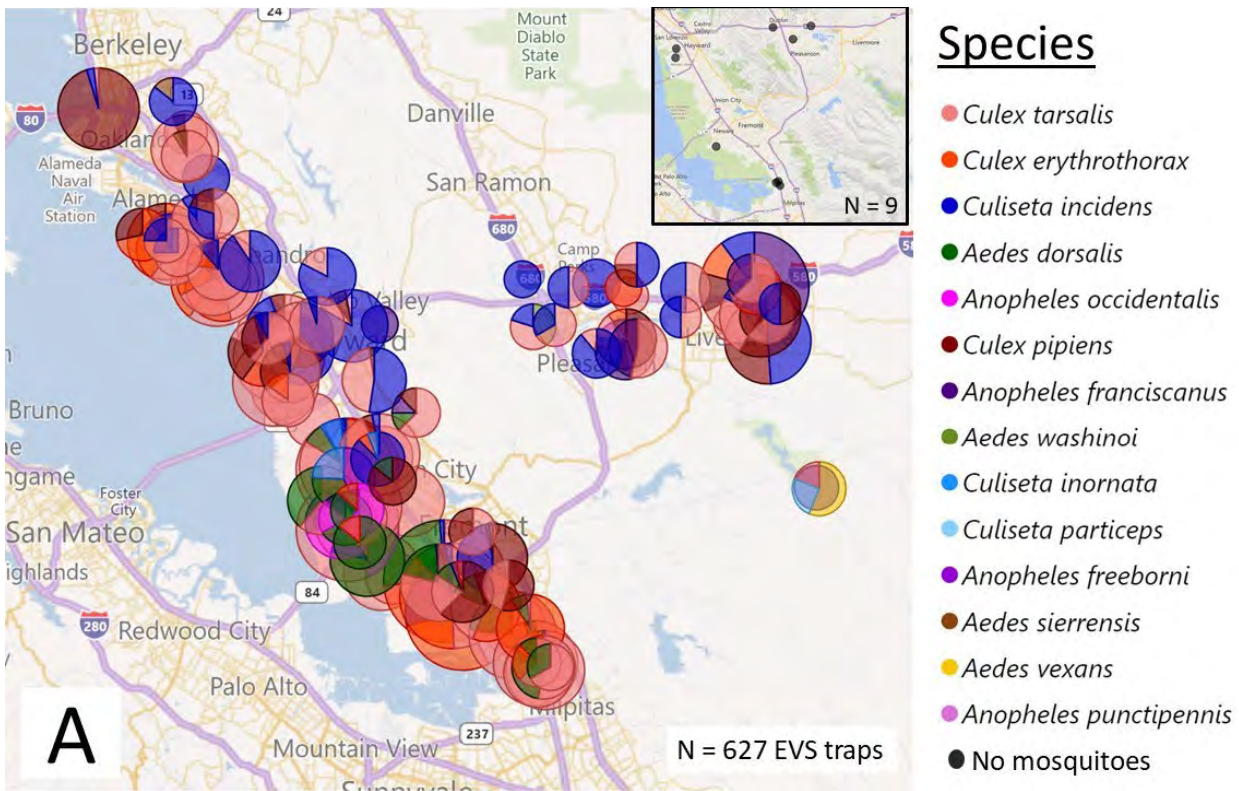


Figure 5. Mosquito abundance by trap site evaluated using EVS CO₂ traps. Pie charts over trap sites indicate the distribution of mosquito species collected at the trap site. The size of each pie chart indicates the relative number of mosquitoes at each site during the month in (A) Alameda County (insert shows traps that were placed but did not collect mosquitoes), (B) the central and southern bayside region, and (C) the eastern region of the county.

Analysis and report by Eric Haas-Stapleton, PhD, Laboratory Director

B. PUBLIC EDUCATION

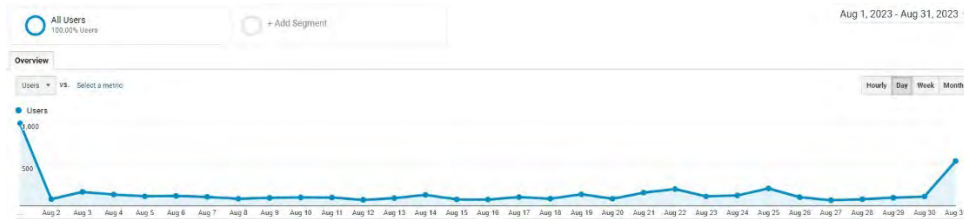
Events and Education

The district did not attend public education events in August.

Google Analytics

August Data: 4,564 users

Bot activity still occurs on the first day of the month. Otherwise, the average number of site users is 100 a day with one exception. The day our press release went out about adult mosquito control in Livermore, the number of site users was 531.



Social media

Top Facebook Post



Posts: 14
Reach: 919
Followers: 440

Top Twitter Post



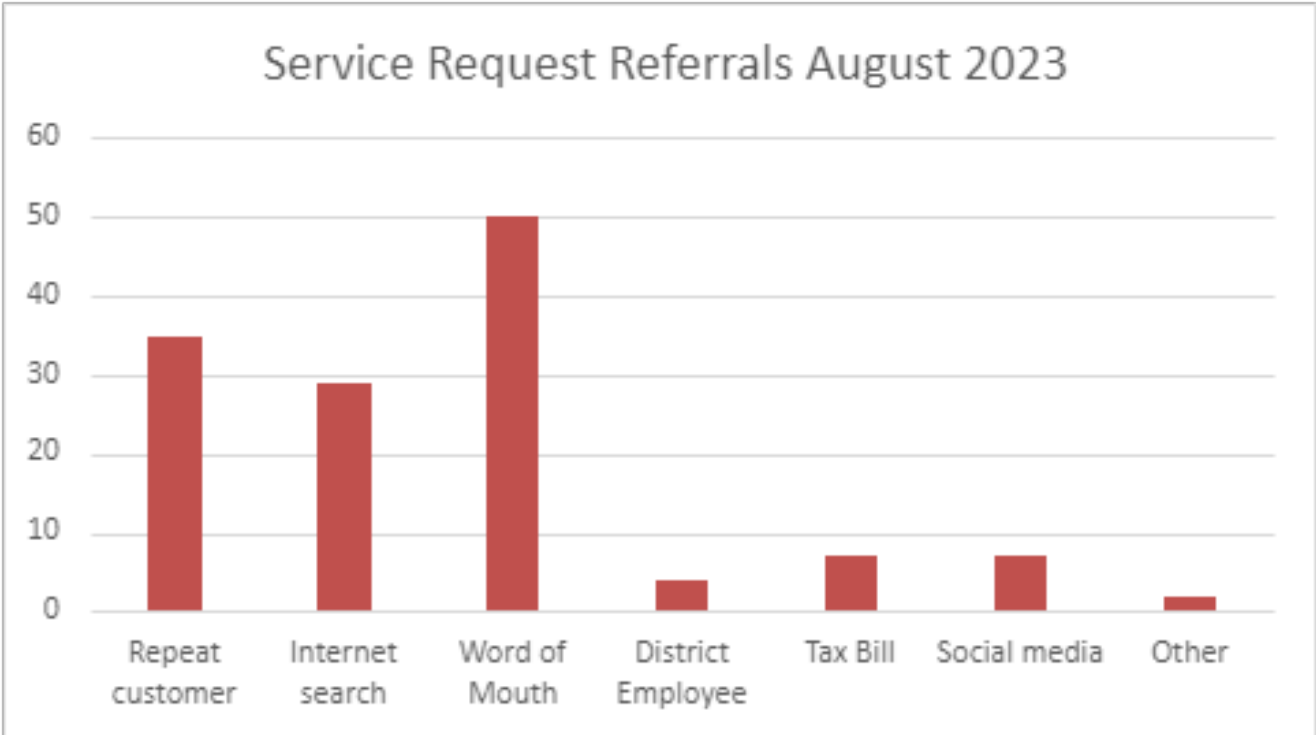
Posts: 12
Reach: 1,015
Followers: 804

Service Request Referral Summary for August



Calls: 58 Email: 13 Online submissions: 75

Channels Used by Residents to Request Service





23187 Connecticut Street
Hayward, CA 94545

T: (510) 783-7744
F: (510) 783-3903

acmad@mosquitoes.org

Staff Anniversary Recognitions:

Board of Trustees

President

Victor Aguilar

San Leandro

Vice-President

Cathy Roache

County-at-Large

Tyler Savage

Alameda

Robin López

Albany

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George Young

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George Syrop

Hayward

vacant

Livermore

Jan O. Washburn

Oakland

Eric Hentschke

Newark

Hope Salzer

Piedmont

Valerie Arkin

Pleasanton

Subru Bhat

Union City

Ryan Clausnitzer

General Manager

Background:

ACMAD is pleased to recognize and thank the following employees on their anniversaries in August/September.

Employee	Job Title	Years of Service	Anniversary Date
Miguel Barretto*	Assoc. Vector Scientist	5	August 1 st
Sarah Lawton	Vector Biologist	8	September 14 th
Ben Rusmiser	Vector Biologist	8	September 28 th

** Per District Policy §107.1, Staff and Trustees are awarded a pewter belt buckle engraved with the district logo for their 5-year anniversary.*

California Arbovirus Surveillance Bulletin #21

Week 35 Friday, September 1, 2023



WEEKLY UPDATE

Humans

West Nile virus

A total of 20 human cases of West Nile virus (WNV) were reported this week from 9 counties: Butte (4), Kings (1), Orange (1), Riverside (2), Sacramento (1), San Joaquin (4), Shasta (1), Sutter (2), and Yolo (4). **These are the first human cases of WNV reported from Orange, Shasta, and Sutter counties this year.** In 2023, a total of 75 human cases of WNV have been reported from 21 counties: Butte (10), El Dorado (1), Glenn (2), Kern (1), Kings (2), Lake (4), Los Angeles (2), Madera (1), Merced (2), Orange (1), Riverside (3), Sacramento (10), San Bernardino (7), San Joaquin (6), Santa Clara (1), Shasta (1), Stanislaus (1), Sutter (2), Tulare (8), Yolo (8), and Yuba (2). Of the 75 cases, 53 (71%) had neuroinvasive disease and 5 (7%) were fatal. The median age of the case-patients was 57 years and 46 (61%) of the case-patients were male. The dates of symptom onset ranged from June 30 to Aug 18. In addition to the 75 WNV human cases, 9 asymptomatic WNV-positive blood donors have been reported from 7 counties: Amador (1), Butte (1), Fresno (2), Los Angeles (2), Riverside (1), San Bernardino (1), and Yolo (1). At this time last year, 35 WNV human cases had been reported from 12 counties.

St. Louis encephalitis virus

No cases of St. Louis encephalitis virus (SLEV) were reported this week. In 2023, 1 SLEV human case has been reported from 1 county. At this time last year, 4 SLEV human cases had been reported from 3 counties.

Dead Birds

A total of 89 new WNV positive dead birds were reported this week from 16 counties: Alameda (5), Contra Costa (12), Fresno (1), Lake (1), Los Angeles (5), Nevada (1), Placer (7), Riverside (6), Sacramento (23), San Bernardino (2), San Joaquin (3), Santa Clara (9), Solano (3), Sonoma (2), Stanislaus (1), and Yolo (8). **These are the first WNV positive dead birds reported from Fresno and Nevada counties this year.** In 2023, 443 WNV positive dead birds have been reported from 25 counties. At this time last year, 113 WNV positive dead birds had been reported from 19 counties.

Mosquito Pools

West Nile virus

A total of 364 new WNV positive mosquito pools were identified from 23 counties: Butte (4), Contra Costa (3), Fresno (17), Inyo (1), Kern (4), Lake (7), Los Angeles (38), Madera (52), Merced (11), Orange (15), Placer (12), Riverside (6), Sacramento (25), San Bernardino (15), San Joaquin (51), Santa Clara (4), Shasta (14), Solano (2), Stanislaus (27), Sutter (7), Tulare (29), Yolo (16), and Yuba (4). **This is the first WNV activity reported from Inyo County this year.** In 2023, 3,161 WNV positive mosquito pools have been reported from 29 counties. At this time last year, 2,136 WNV positive mosquito pools had been reported from 25 counties.

St. Louis encephalitis virus

A total of 40 new SLEV positive mosquito pools were identified from 7 counties: Fresno (9), Kern (4), Madera (7), Merced (1), San Joaquin (1), Tulare (17), and Yolo (1). **This is the first SLEV activity reported for Yolo County this year.** In 2023, 302 SLEV positive mosquito pools have been reported from 12 counties. At this time last year, 69 SLEV positive mosquito pools had been reported from 6 counties.

Sentinel Chickens

A total of 21 new WNV positive chickens were reported this week from 8 counties: Butte (5), Colusa (1), Contra Costa (2), Sacramento (3), San Benito (2), Shasta (3), Solano (4), and Yolo (1). In 2023, 119 WNV positive chickens have been reported from 14 counties. At this time last year, 78 WNV positive chickens had been reported from 11 counties.

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2022 & 2023 YTD West Nile Virus Comparisons		
	2022	2023
Total No. Dead Bird Reports	3,644	4,679
No. Positive Counties	28	37
No. Human Cases	35	75
No. Positive Dead Birds / No. Tested	113 / 963	443 / 1,358
No. Positive Mosquito Pools / No. Tested	2,136 / 27,682	3,161 / 36,583
No. Seroconversions / No. Tested	78 / 3,691	119 / 2,752

YTD WNV Activity by Element and County, 2023					
County	Humans*	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Alameda			17	6	
Butte	10	1		56	34
Colusa			2	2	2
Contra Costa			22	11	5
El Dorado	1		1		
Fresno		1	1	154	
Glenn	2			1	
Imperial				3	
Inyo				1	
Kern	1	2		87	
Kings	2	1		47	
Lake	4		3	20	
Los Angeles	2		19	270	
Madera	1		1	155	
Merced	2	1		36	22
Napa		1	1	4	
Nevada			1		1
Orange	1	1		40	
Placer			38	166	
Riverside	3		44	39	
Sacramento	10	1	153	283	5
San Benito					3
San Bernardino	7	1	8	110	
San Joaquin	6		18	504	
San Luis Obispo		2			
San Mateo			1		
Santa Clara	1	1	40	12	
Shasta	1		1	113	3
Solano			11	19	9
Sonoma			4		
Stanislaus	1	2	5	203	
Sutter	2		6	63	17
Tehama					2
Tulare	8		5	456	10
Ventura			3		
Yolo	8		38	275	1
Yuba	2	1		25	5
Totals	75	16	443	3,161	119

*Asymptomatic human infections are not included.

California Arbovirus Surveillance Bulletin #21

Week 35 Friday, September 1, 2023

YTD SLEV Activity by Element and County, 2023			
County	Humans	Mosquito Pools	Sentinel Chickens
Fresno		62	
Imperial		2	
Inyo		1	
Kern	1	42	
Kings		7	
Madera		13	
Merced		4	
Riverside		101	
San Joaquin		3	
Stanislaus		4	
Tulare		62	
Yolo		1	
Totals	1	302	0

TESTING SUMMARIES

		WNV	SLEV	WEEV
Human Cases	Week	20	0	0
	YTD	75	1	0

		Positive / Total Tested					
		WNV	SLEV	WEEV	CHIK	DENV	ZIKA
Dead Birds	Week	89 / 121					
	YTD	443 / 1,358					
Chicken Sera	Week	21 / 135	0 / 135	0 / 135			
	YTD	119 / 2,752	0 / 2,752	0 / 2,752			
Mosquito Pools	Week	364 / 1,697	40 / 1,557	0 / 1,557	0 / 38	0 / 38	0 / 38
	YTD	3,161 / 36,583	302 / 33,067	0 / 33,067	0 / 424	0 / 424	0 / 424

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Week 35 Friday, September 1, 2023

NEW POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Alameda	Alameda Co MAD	Alameda	94501	American Crow	8/30/2023	WNV
Alameda	Alameda Co MAD	Livermore	94550	American Crow	8/28/2023	WNV
Alameda	Alameda Co MAD	Livermore	94550	American Crow	8/29/2023	WNV
Alameda	Alameda Co MAD	Livermore	94550	American Crow	8/30/2023	WNV
Alameda	Alameda Co MAD	newark	94560	American Crow	8/30/2023	WNV
Contra Costa	Contra Costa MVCD	Alamo	94507	Red-shouldered Hawk	8/28/2023	WNV
Contra Costa	Contra Costa MVCD	Brentwood	94513	American Crow	8/11/2023	WNV
Contra Costa	Contra Costa MVCD	Concord	94520	American Crow	8/25/2023	WNV
Contra Costa	Contra Costa MVCD	Concord	94521	American Crow	8/26/2023	WNV
Contra Costa	Contra Costa MVCD	Concord	94520	American Crow	8/28/2023	WNV
Contra Costa	Contra Costa MVCD	Concord	94518	California Scrub-Jay	8/28/2023	WNV
Contra Costa	Contra Costa MVCD	Concord	94520	American Crow	8/28/2023	WNV
Contra Costa	Contra Costa MVCD	El Cerrito	94530	California Scrub-Jay	8/26/2023	WNV
Contra Costa	Contra Costa MVCD	Martinez	94553	American Crow	8/25/2023	WNV
Contra Costa	Contra Costa MVCD	Pleasant Hill	94523	American Crow	8/26/2023	WNV
Contra Costa	Contra Costa MVCD	Walnut Creek	94598	American Crow	8/28/2023	WNV
Contra Costa	Contra Costa MVCD	Walnut Creek	94596	American Crow	8/28/2023	WNV
Fresno	Fresno MVCD	Fresno	93704	Great Horned Owl	8/21/2023	WNV
Lake	Lake Co VCD	Lakeport	95453	Green Heron	8/28/2023	WNV
Los Angeles	Greater Los Angeles Co VCD	Canoga Park	91303	House Finch	8/22/2023	WNV
Los Angeles	Greater Los Angeles Co VCD	Tujunga	91042	American Crow	8/25/2023	WNV
Los Angeles	San Gabriel Valley MVCD	Covina	91724	American Crow	8/21/2023	WNV
Los Angeles	San Gabriel Valley MVCD	Glendora	91741	Unknown - Crow or Raven	8/31/2023	WNV
Los Angeles	San Gabriel Valley MVCD	San Dimas	91773	Lesser Goldfinch	8/31/2023	WNV
Nevada	Nevada Co Env Health - Nevada City	Grass Valley	95945	American Crow	8/21/2023	WNV
Placer	Placer MVCD	Lincoln	95648	Red-shouldered Hawk	8/22/2023	WNV
Placer	Placer MVCD	Loomis	95650	Other	8/28/2023	WNV
Placer	Placer MVCD	Roseville	95747	House Finch	8/23/2023	WNV
Placer	Placer MVCD	Roseville	95747	Mourning Dove	8/23/2023	WNV
Placer	Placer MVCD	Roseville	95747	House Finch	8/27/2023	WNV
Placer	Placer MVCD	Roseville	95747	House Finch	8/27/2023	WNV
Placer	Placer MVCD	Roseville	95678	Western Wood Pewee	8/28/2023	WNV
Riverside	Northwest Mosquito VCD	Corona	92881	European Starling	8/25/2023	WNV
Riverside	Northwest Mosquito VCD	Murrieta	92562	American Crow	8/22/2023	WNV
Riverside	Northwest Mosquito VCD	Murrieta	92562	American Crow	8/22/2023	WNV
Riverside	Northwest Mosquito VCD	Norco	92860	American Crow	8/21/2023	WNV
Riverside	Northwest Mosquito VCD	Norco	92860	Brewer's Blackbird	8/22/2023	WNV
Riverside	Northwest Mosquito VCD	Norco	92860	Common Raven	8/24/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Antelope	95843	Northern Mockingbird	8/26/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	House Finch	8/23/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95758	American Crow	8/21/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	American Crow	8/21/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Elverta	95626	California Scrub-Jay	8/21/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Galt	95632	American Crow	8/28/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Orangevale	95662	California Scrub-Jay	8/28/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Rancho Cordova	95670	American Robin	8/26/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Rio Linda	95673	Yellow-billed Magpie	8/22/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95819	American Crow	8/21/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95819	American Crow	8/22/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95816	Mourning Dove	8/23/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95841	California Scrub-Jay	8/24/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95842	House Finch	8/28/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95825	American Crow	8/28/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95831	American Crow	8/28/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95832	California Scrub-Jay	8/28/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95818	American Crow	8/28/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95818	American Crow	8/28/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95822	California Scrub-Jay	8/28/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95818	American Crow	8/29/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95818	American Crow	8/29/2023	WNV
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	White-breasted Nuthatch	8/29/2023	WNV
San Bernardino	West Valley MVCD	Rancho Cucamonga	91739	American Crow	8/30/2023	WNV
San Bernardino	West Valley MVCD	Rancho Cucamonga	91739	American Crow	9/1/2023	WNV

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San Joaquin	San Joaquin Co MVCD	Stockton	95215	Yellow-billed Magpie	8/28/2023	WNV
San Joaquin	San Joaquin Co MVCD	Stockton	95212	American Crow	8/28/2023	WNV
San Joaquin	San Joaquin Co MVCD	Tracy	95376	American Crow	8/28/2023	WNV
Santa Clara	Santa Clara Co VCD	Monte Sereno	95030	American Crow	8/24/2023	WNV
Santa Clara	Santa Clara Co VCD	Palo Alto	94301	American Crow	8/28/2023	WNV
Santa Clara	Santa Clara Co VCD	San Jose	95125	American Crow	8/26/2023	WNV
Santa Clara	Santa Clara Co VCD	San Jose	95139	American Crow	8/28/2023	WNV
Santa Clara	Santa Clara Co VCD	San Jose	95124	American Crow	8/29/2023	WNV
Santa Clara	Santa Clara Co VCD	San Jose	95125	American Crow	8/29/2023	WNV
Santa Clara	Santa Clara Co VCD	San Jose	95121	California Scrub-Jay	8/29/2023	WNV
Santa Clara	Santa Clara Co VCD	Santa Clara	95051	House Wren	8/24/2023	WNV
Santa Clara	Santa Clara Co VCD	Santa Clara	95050	American Crow	8/29/2023	WNV
Solano	Solano Co MAD	Davis	95618	American Crow	8/28/2023	WNV
Solano	Solano Co MAD	Fairfield	94534	California Scrub-Jay	8/30/2023	WNV
Solano	Solano Co MAD	Vacaville	95688	American Crow	8/22/2023	WNV
Sonoma	Marin-Sonoma MVCD	Petaluma	94954	American Crow	8/27/2023	WNV
Sonoma	Marin-Sonoma MVCD	Santa Rosa	95401	American Crow	8/24/2023	WNV
Stanislaus	East Side MAD	Riverbank	95367	Yellow-billed Magpie	8/24/2023	WNV
Yolo	Sacramento-Yolo MVCD	Capay	95607	House Finch	8/25/2023	WNV
Yolo	Sacramento-Yolo MVCD	Davis	95618	American Crow	8/21/2023	WNV
Yolo	Sacramento-Yolo MVCD	Davis	95616	American Crow	8/24/2023	WNV
Yolo	Sacramento-Yolo MVCD	Davis	95616	American Crow	8/25/2023	WNV
Yolo	Sacramento-Yolo MVCD	Davis	95616	American Crow	8/28/2023	WNV
Yolo	Sacramento-Yolo MVCD	Davis	95616	American Crow	8/28/2023	WNV
Yolo	Sacramento-Yolo MVCD	West Sacramento	95691	California Scrub-Jay	8/29/2023	WNV
Yolo	Sacramento-Yolo MVCD	Woodland	95695	Northern Mockingbird	8/25/2023	WNV

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap	Collected	Virus
Butte	BUCO 123	422	Cx tarsalis	Oroville	50	CO2	8/23/2023	WNV
Butte	BUCO 141	417	Cx tarsalis	Oroville	50	CO2	8/21/2023	WNV
Butte	BUCO 141	418	Cx tarsalis	Oroville	50	CO2	8/21/2023	WNV
Butte	BUCO 37	416	Cx tarsalis	Honcut	49	CO2	8/21/2023	WNV
Contra Costa	CNTR 2302	1083	Cx tarsalis	Martinez	50	CO2	8/29/2023	WNV
Contra Costa	CNTR 8152	1101	Cx tarsalis	Knightsen	11	CO2	8/29/2023	WNV
Contra Costa	CNTR 8202	1062	Cx tarsalis	Discovery Bay	31	CO2	8/29/2023	WNV
Fresno	CNSL 1068	712	Cx tarsalis	Fresno	50	CO2	8/23/2023	SLEV
Fresno	CNSL 1242	251	Cx quinquefasciatus	Fresno	32	GRVD	8/23/2023	SLEV
Fresno	CNSL 1791	709	Cx quinquefasciatus	Fresno	43	GRVD	8/23/2023	WNV
Fresno	CNSL 2291	714	Cx tarsalis	Del Rey	32	CO2	8/25/2023	WNV
Fresno	CNSL 2291	714	Cx tarsalis	Del Rey	32	CO2	8/25/2023	SLEV
Fresno	CNSL 3524	246	Cx quinquefasciatus	Kingsburg	50	GRVD	8/22/2023	WNV
Fresno	CNSL 3524	246	Cx quinquefasciatus	Kingsburg	50	GRVD	8/22/2023	SLEV
Fresno	CNSL 4064	245	Cx quinquefasciatus	Selma	50	GRVD	8/22/2023	WNV
Fresno	CNSL 4088	244	Cx quinquefasciatus	Selma	22	GRVD	8/22/2023	WNV
Fresno	CNSL 4129	257	Cx quinquefasciatus	Selma	31	GRVD	8/25/2023	WNV
Fresno	CNSL 4298	242	Cx quinquefasciatus	Fresno	25	GRVD	8/22/2023	WNV
Fresno	CNSL 4298	243	Cx tarsalis	Fresno	50	CO2	8/22/2023	WNV
Fresno	CNSL 4298	243	Cx tarsalis	Fresno	50	CO2	8/22/2023	SLEV
Fresno	CNSL 4358	241	Cx quinquefasciatus	Fowler	44	GRVD	8/22/2023	SLEV
Fresno	CNSL 5029	708	Cx quinquefasciatus	Kingsburg	25	GRVD	8/23/2023	WNV
Fresno	CNSL 5029	708	Cx quinquefasciatus	Kingsburg	25	GRVD	8/23/2023	SLEV
Fresno	CNSL 5044	247	Cx quinquefasciatus	Kingsburg	50	GRVD	8/23/2023	WNV
Fresno	CNSL 9194	710	Cx quinquefasciatus	Clovis	34	GRVD	8/23/2023	WNV
Fresno	CNSL 9242	254	Cx quinquefasciatus	Clovis	50	GRVD	8/24/2023	SLEV
Fresno	FRWS 1101	361	Cx tarsalis	Dos Palos	50	CO2	8/29/2023	WNV
Fresno	FRWS 1202	360	Cx tarsalis	Dos Palos	50	CO2	8/29/2023	WNV
Fresno	FRWS 300031	357	Cx tarsalis	Firebaugh	31	CO2	8/29/2023	WNV
Fresno	FRWS 300034	352	Cx tarsalis	Firebaugh	50	BGSENT	8/24/2023	WNV
Fresno	FRWS 300064	355	Cx tarsalis	Firebaugh	50	BGSENT	8/24/2023	WNV
Fresno	FRWS 4102	366	Cx tarsalis	Kerman	38	CO2	8/29/2023	SLEV
Fresno	FRWS 4110	362	Cx tarsalis	Mendota	20	CO2	8/29/2023	WNV
Inyo	INYO 1035	61	Cx tarsalis	Bishop	50	CO2-EVS	8/29/2023	WNV
Kern	DLNO 102	294	Cx quinquefasciatus	Mcfarland	43	GRVD	8/29/2023	WNV
Kern	DLNO 149	296	Cx quinquefasciatus	Delano	17	GRVD	8/29/2023	WNV
Kern	DLNO 166	293	Cx quinquefasciatus	Delano	15	GRVD	8/29/2023	SLEV
Kern	DLNO 28	288	Cx quinquefasciatus	Mcfarland	30	BGSENT	8/24/2023	WNV
Kern	DLNO 34	287	Cx quinquefasciatus	Mcfarland	21	BGSENT	8/24/2023	SLEV

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Kern	KERN 1011	1172	Cx tarsalis	Bakersfield	50	CO2	8/25/2023	SLEV
Kern	KERN 1160	1170	Cx quinquefasciatus	Shafter	37	CO2	8/24/2023	WNV
Kern	WEST 6208	58	Cx tarsalis	Bakersfield	15	CO2	8/23/2023	SLEV
Lake	LAKE 201	333	Cx tarsalis	Cobb	8	CO2	8/23/2023	WNV
Lake	LAKE 225	334	Cx tarsalis	Lower Lake	29	CO2	8/24/2023	WNV
Lake	LAKE 250	352	Cx tarsalis	Lakeport	50	CO2	8/29/2023	WNV
Lake	LAKE 293	349	Cx tarsalis	Lakeport	50	CO2	8/29/2023	WNV
Lake	LAKE 328	353	Cx tarsalis	Upper Lake	24	CO2	8/29/2023	WNV
Lake	LAKE 367	354	Cx tarsalis	Kelseyville	50	CO2	8/29/2023	WNV
Lake	LAKE 80	361	Cx tarsalis	Upper Lake	36	CO2	8/29/2023	WNV
Los Angeles	GRLA 2007	5645	Cx quinquefasciatus	Toluca Lake	40	GRVD	8/24/2023	WNV
Los Angeles	GRLA 2017	5646	Cx quinquefasciatus	Studio City	40	GRVD	8/24/2023	WNV
Los Angeles	GRLA 2101	635	Cx quinquefasciatus	Santa Fe Springs	16	GRVD	8/24/2023	WNV
Los Angeles	GRLA 2194	626	Cx quinquefasciatus	South El Monte	50	GRVD	8/23/2023	WNV
Los Angeles	GRLA 2247	648	Cx quinquefasciatus	Pico Rivera	47	GRVD	8/24/2023	WNV
Los Angeles	GRLA 2268	643	Cx quinquefasciatus	Cerritos	48	GRVD	8/24/2023	WNV
Los Angeles	GRLA 2383	634	Cx quinquefasciatus	Whittier	45	GRVD	8/23/2023	WNV
Los Angeles	GRLA 2476	5657	Cx quinquefasciatus	Sunland	50	GRVD	8/25/2023	WNV
Los Angeles	GRLA 2478	5661	Cx quinquefasciatus	Sunland	39	GRVD	8/25/2023	WNV
Los Angeles	GRLA 2547	5654	Cx quinquefasciatus	Sylmar	34	GRVD	8/25/2023	WNV
Los Angeles	GRLA 2550	5663	Cx quinquefasciatus	Mission Hills	33	GRVD	8/25/2023	WNV
Los Angeles	GRLA 2952	636	Cx quinquefasciatus	South Whittier(La County)	18	GRVD	8/24/2023	WNV
Los Angeles	GRLA 2953	639	Cx quinquefasciatus	Santa Fe Springs	45	GRVD	8/24/2023	WNV
Los Angeles	GRLA 3027	5643	Cx quinquefasciatus	Studio City	50	GRVD	8/24/2023	WNV
Los Angeles	GRLA 3038	5649	Cx quinquefasciatus	Valley Village	50	GRVD	8/24/2023	WNV
Los Angeles	GRLA 3040	638	Cx quinquefasciatus	La Mirada	50	GRVD	8/24/2023	WNV
Los Angeles	GRLA 3041	642	Cx quinquefasciatus	Artesia	36	GRVD	8/24/2023	WNV
Los Angeles	GRLA 3060	640	Cx quinquefasciatus	Norwalk	12	BGSENT	8/24/2023	WNV
Los Angeles	GRLA 3061	650	Cx quinquefasciatus	Los Angeles	50	GRVD	8/25/2023	WNV
Los Angeles	GRLA 3066	5651	Cx quinquefasciatus	Valley Glen	50	GRVD	8/24/2023	WNV
Los Angeles	GRLA 3069	5648	Cx quinquefasciatus	Valley Village	33	GRVD	8/24/2023	WNV
Los Angeles	GRLA 3079	5653	Cx quinquefasciatus	Sun Valley	44	GRVD	8/24/2023	WNV
Los Angeles	GRLA 3080	5650	Cx quinquefasciatus	North Hollywood	50	GRVD	8/24/2023	WNV
Los Angeles	GRLA 3102	5647	Cx quinquefasciatus	Studio City	50	GRVD	8/24/2023	WNV
Los Angeles	SGVA 1070	612	Cx quinquefasciatus	Bradbury	20	GRVD	8/29/2023	WNV
Los Angeles	SGVA 1077	593	Cx quinquefasciatus	La Puente	50	GRVD	8/30/2023	WNV
Los Angeles	SGVA 1119	617	Cx quinquefasciatus	La Verne	39	GRVD	8/30/2023	WNV
Los Angeles	SGVA 1291	615	Cx quinquefasciatus	West Covina	50	GRVD	8/31/2023	WNV
Los Angeles	SGVA 1292	624	Cx quinquefasciatus	Covina	23	GRVD	8/31/2023	WNV
Los Angeles	SGVA 1293	614	Cx quinquefasciatus	West Covina	43	GRVD	8/31/2023	WNV
Los Angeles	SGVA 1294	616	Cx quinquefasciatus	West Covina	37	GRVD	8/31/2023	WNV
Los Angeles	SGVA 1299	606	Cx quinquefasciatus	Glendora	29	GRVD	8/30/2023	WNV
Los Angeles	SGVA 448	596	Cx quinquefasciatus	La Verne	28	GRVD	8/29/2023	WNV
Los Angeles	SGVA 477	592	Cx quinquefasciatus	West Covina	21	GRVD	8/30/2023	WNV
Los Angeles	SGVA 650	602	Cx quinquefasciatus	Pomona	31	GRVD	8/29/2023	WNV
Los Angeles	SGVA 7	600	Cx quinquefasciatus	Claremont	29	GRVD	8/29/2023	WNV
Los Angeles	SGVA 915	609	Cx quinquefasciatus	San Dimas	38	GRVD	8/30/2023	WNV
Los Angeles	SGVA 965	598	Cx quinquefasciatus	Claremont	50	GRVD	8/29/2023	WNV
Madera	MADR 1057	364	Cx quinquefasciatus	Chowchilla	50	CO2	8/18/2023	WNV
Madera	MADR 1057	365	Cx tarsalis	Chowchilla	49	CO2	8/18/2023	WNV
Madera	MADR 12	406	Cx tarsalis	Madera	49	CO2	8/24/2023	WNV
Madera	MADR 195	410	Cx quinquefasciatus	Madera	25	CO2	8/24/2023	WNV
Madera	MADR 195	410	Cx quinquefasciatus	Madera	25	CO2	8/24/2023	SLEV
Madera	MADR 195	411	Cx tarsalis	Madera	50	CO2	8/24/2023	WNV
Madera	MADR 198	409	Cx tarsalis	Madera	50	CO2	8/24/2023	WNV
Madera	MADR 208	352	Cx quinquefasciatus	Madera	50	CO2	8/17/2023	WNV
Madera	MADR 208	353	Cx tarsalis	Madera	50	CO2	8/17/2023	WNV
Madera	MADR 208	416	Cx quinquefasciatus	Madera	50	CO2	8/24/2023	WNV
Madera	MADR 227	386	Cx quinquefasciatus	Madera	23	CO2	8/22/2023	WNV
Madera	MADR 227	387	Cx tarsalis	Madera	27	CO2	8/22/2023	WNV
Madera	MADR 259	354	Cx quinquefasciatus	Madera	35	CO2	8/17/2023	WNV
Madera	MADR 259	355	Cx tarsalis	Madera	40	CO2	8/17/2023	WNV
Madera	MADR 259	356	Cx quinquefasciatus	Madera	48	CO2	8/17/2023	WNV
Madera	MADR 259	357	Cx tarsalis	Madera	50	CO2	8/17/2023	WNV
Madera	MADR 259	395	Cx tarsalis	Madera	13	CO2	8/23/2023	WNV
Madera	MADR 259	396	Cx quinquefasciatus	Madera	20	CO2	8/23/2023	WNV
Madera	MADR 259	396	Cx quinquefasciatus	Madera	20	CO2	8/23/2023	SLEV
Madera	MADR 298	367	Cx tarsalis	Chowchilla	50	CO2	8/18/2023	WNV
Madera	MADR 299	370	Cx quinquefasciatus	Chowchilla	50	CO2	8/18/2023	WNV

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Madera	MADR 311	421	Cx tarsalis	Madera	5	CO2	8/25/2023	WNV
Madera	MADR 3334	383	Cx tarsalis	Madera	50	CO2	8/22/2023	WNV
Madera	MADR 3334	383	Cx tarsalis	Madera	50	CO2	8/22/2023	SLEV
Madera	MADR 581	359	Cx quinquefasciatus	Madera	28	CO2	8/17/2023	WNV
Madera	MADR 581	360	Cx tarsalis	Madera	39	CO2	8/17/2023	WNV
Madera	MADR 581	361	Cx quinquefasciatus	Madera	50	CO2	8/17/2023	WNV
Madera	MADR 581	362	Cx tarsalis	Madera	50	CO2	8/17/2023	WNV
Madera	MADR 581	388	Cx quinquefasciatus	Madera	50	CO2	8/23/2023	WNV
Madera	MADR 581	389	Cx tarsalis	Madera	50	CO2	8/23/2023	WNV
Madera	MADR 581	390	Cx quinquefasciatus	Madera	50	CO2	8/23/2023	WNV
Madera	MADR 581	391	Cx tarsalis	Madera	50	CO2	8/23/2023	WNV
Madera	MADR 688	358	Cx tarsalis	Madera	50	CO2	8/17/2023	WNV
Madera	MADR 688	392	Cx quinquefasciatus	Madera	50	CO2	8/23/2023	WNV
Madera	MADR 688	393	Cx quinquefasciatus	Madera	25	CO2	8/23/2023	WNV
Madera	MADR 688	394	Cx tarsalis	Madera	18	CO2	8/23/2023	WNV
Madera	MADR 688	398	Cx tarsalis	Madera	41	CO2	8/23/2023	WNV
Madera	MADR 688	398	Cx tarsalis	Madera	41	CO2	8/23/2023	SLEV
Madera	MADR 690	347	Cx quinquefasciatus	Madera	30	CO2	8/16/2023	WNV
Madera	MADR 697	373	Cx tarsalis	Firebaugh	38	CO2	8/18/2023	WNV
Madera	MADR 704	348	Cx quinquefasciatus	Madera	50	CO2	8/16/2023	WNV
Madera	MADR 704	349	Cx tarsalis	Madera	50	CO2	8/16/2023	WNV
Madera	MADR 704	351	Cx tarsalis	Madera	50	CO2	8/16/2023	WNV
Madera	MADR 704	413	Cx tarsalis	Madera	40	CO2	8/24/2023	WNV
Madera	MADR 704	414	Cx quinquefasciatus	Madera	46	CO2	8/24/2023	WNV
Madera	MADR 704	415	Cx tarsalis	Madera	50	CO2	8/24/2023	WNV
Madera	MADR 706	407	Cx tarsalis	Madera	19	CO2	8/24/2023	WNV
Madera	MADR 714	427	Cx quinquefasciatus	Madera	27	BGSENT	8/24/2023	WNV
Madera	MADR 714	429	Cx quinquefasciatus	Madera	16	BGSENT	8/25/2023	WNV
Madera	MADR 714	432	Cx quinquefasciatus	Madera	38	BGSENT	8/18/2023	SLEV
Madera	MADR 725	379	Cx tarsalis	Madera	24	CO2	8/22/2023	WNV
Madera	MADR 726	399	Cx quinquefasciatus	Madera	41	CO2	8/23/2023	WNV
Madera	MADR 726	399	Cx quinquefasciatus	Madera	41	CO2	8/23/2023	SLEV
Madera	MADR 726	400	Cx tarsalis	Madera	50	CO2	8/23/2023	WNV
Madera	MADR 726	401	Cx quinquefasciatus	Madera	41	CO2	8/23/2023	WNV
Madera	MADR 726	401	Cx quinquefasciatus	Madera	41	CO2	8/23/2023	SLEV
Madera	MADR 726	402	Cx tarsalis	Madera	50	CO2	8/23/2023	WNV
Madera	MADR 726	403	Cx quinquefasciatus	Madera	11	CO2	8/23/2023	WNV
Madera	MADR 967	385	Cx tarsalis	Madera	18	CO2	8/22/2023	WNV
Merced	MERC 201502	698	Cx tarsalis	Los Banos	50	CO2	8/30/2023	WNV
Merced	MERC 201502	699	Cx tarsalis	Los Banos	26	CO2	8/30/2023	WNV
Merced	MERC 201740	691	Cx tarsalis	Los Banos	50	CO2	8/30/2023	WNV
Merced	MERC 201740	692	Cx tarsalis	Los Banos	18	CO2	8/30/2023	WNV
Merced	MERC 332727	694	Cx tarsalis	Los Banos	50	CO2	8/30/2023	WNV
Merced	MERC 434962	700	Cx tarsalis	Los Banos	50	CO2	8/30/2023	WNV
Merced	MERC 434962	702	Cx tarsalis	Los Banos	13	CO2	8/30/2023	SLEV
Merced	MERC 596126	701	Cx tarsalis	Los Banos	46	CO2	8/30/2023	WNV
Merced	MERC 596334	693	Cx tarsalis	Los Banos	19	CO2	8/30/2023	WNV
Merced	MERC 858252	679	Cx tarsalis	Dos Palos	12	BGSENT	8/24/2023	WNV
Merced	MERC 964123	688	Cx tarsalis	Gustine	50	BGSENT	8/25/2023	WNV
Merced	MERC 964123	689	Cx tarsalis	Gustine	13	BGSENT	8/25/2023	WNV
Orange	ORCO 1015	3353	Cx quinquefasciatus	Orange	14	GRVD	9/1/2023	WNV
Orange	ORCO 1020	3322	Cx quinquefasciatus	Seal Beach	36	GRVD	8/30/2023	WNV
Orange	ORCO 1042	3328	Cx quinquefasciatus	Yorba Linda	7	GRVD	8/31/2023	WNV
Orange	ORCO 170	3254	Cx quinquefasciatus	Anaheim	33	GRVD	8/29/2023	WNV
Orange	ORCO 217	3262	Cx quinquefasciatus	Santa Ana	9	GRVD	8/29/2023	WNV
Orange	ORCO 218	3255	Cx quinquefasciatus	Anaheim	45	GRVD	8/29/2023	WNV
Orange	ORCO 218	3256	Cx quinquefasciatus	Anaheim	34	GRVD	8/29/2023	WNV
Orange	ORCO 218	3329	Cx quinquefasciatus	Anaheim	9	GRVD	8/31/2023	WNV
Orange	ORCO 29	3319	Cx quinquefasciatus	Santa Ana	25	GRVD	8/30/2023	WNV
Orange	ORCO 29	3320	Cx quinquefasciatus	Santa Ana	26	GRVD	8/30/2023	WNV
Orange	ORCO 306	3279	Cx quinquefasciatus	Villa Park	9	GRVD	8/29/2023	WNV
Orange	ORCO 332	3265	Cx quinquefasciatus	Fullerton	28	GRVD	8/29/2023	WNV
Orange	ORCO 335	3278	Cx quinquefasciatus	Orange	7	GRVD	8/29/2023	WNV
Orange	ORCO 338	3282	Cx quinquefasciatus	Anaheim	32	GRVD	8/29/2023	WNV
Orange	ORCO 365	3318	Cx quinquefasciatus	Huntington Beach	13	GRVD	8/30/2023	WNV
Placer	PLCR 1113	1347	Cx tarsalis	Pleasant Grove	50	CO2	8/30/2023	WNV
Placer	PLCR 139	1325	Cx tarsalis	Roseville	50	CO2	8/29/2023	WNV
Placer	PLCR 139	1328	Cx tarsalis	Roseville	22	CO2	8/29/2023	WNV
Placer	PLCR 17	1311	Cx tarsalis	Sheridan	50	CO2	8/29/2023	WNV

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Placer	PLCR 191218	1304	Cx tarsalis	Roseville	50	CO2	8/29/2023	WNV
Placer	PLCR 191218	1305	Cx tarsalis	Roseville	50	CO2	8/29/2023	WNV
Placer	PLCR 191218	1306	Cx tarsalis	Roseville	49	CO2	8/29/2023	WNV
Placer	PLCR 191998	1302	Cx tarsalis	Lincoln	50	CO2	8/29/2023	WNV
Placer	PLCR 194232	1319	Cx tarsalis	Pleasant Grove	32	CO2	8/29/2023	WNV
Placer	PLCR 198710	1307	Cx tarsalis	Lincoln	30	CO2	8/29/2023	WNV
Placer	PLCR 678519	1314	Cx tarsalis	Elverta	50	CO2	8/29/2023	WNV
Placer	PLCR 678519	1316	Cx tarsalis	Elverta	45	CO2	8/29/2023	WNV
Riverside	COAV 46	4471	Cx tarsalis	Mecca	50	CO2	8/29/2023	WNV
Riverside	COAV 46	4472	Cx tarsalis	Mecca	50	CO2	8/29/2023	WNV
Riverside	NWST 122	190	Cx quinquefasciatus	Corona	50	BGSENT	8/24/2023	WNV
Riverside	NWST 349	182	Cx quinquefasciatus	Corona	50	BGSENT	8/11/2023	WNV
Riverside	NWST 350	186	Cx quinquefasciatus	Riverside	47	GRVD	8/17/2023	WNV
Riverside	NWST 92	188	Cx quinquefasciatus	Lake Elsinore	26	GRVD	8/17/2023	WNV
Sacramento	SAYO 201006	5902	Cx tarsalis	Sacramento	50	CO2	8/29/2023	WNV
Sacramento	SAYO 203011	5776	Cx pipiens	Antelope	13	GRVD	8/25/2023	WNV
Sacramento	SAYO 203027	5778	Cx tarsalis	Sacramento	25	CO2	8/25/2023	WNV
Sacramento	SAYO 212004	5990	Cx pipiens	Sacramento	12	GRVD	8/29/2023	WNV
Sacramento	SAYO 212033	6006	Cx pipiens	Sacramento, Ca	18	CO2	8/29/2023	WNV
Sacramento	SAYO 213009	5982	Cx pipiens	Sacramento	2	CO2	8/29/2023	WNV
Sacramento	SAYO 214049	5980	Cx tarsalis	Carmichael	27	CO2	8/29/2023	WNV
Sacramento	SAYO 215005	5798	Cx pipiens	Folsom	1	CO2	8/25/2023	WNV
Sacramento	SAYO 215005	5800	Cx pipiens	Folsom	37	GRVD	8/25/2023	WNV
Sacramento	SAYO 223044	5772	Cx tarsalis	Sacramento	2	CO2	8/25/2023	WNV
Sacramento	SAYO 224012	5794	Cx tarsalis	Rancho Cordova	2	GRVD	8/25/2023	WNV
Sacramento	SAYO 232012	6011	Cx tarsalis	Elk Grove	3	CO2	8/29/2023	WNV
Sacramento	SAYO 232031	5709	Cx tarsalis	Elk Grove	40	CO2	8/25/2023	WNV
Sacramento	SAYO 242003	5724	Cx pipiens	Elk Grove	11	GRVD	8/25/2023	WNV
Sacramento	SAYO 242004	5712	Cx pipiens	Elk Grove	2	CO2	8/25/2023	WNV
Sacramento	SAYO 242004	5714	Cx tarsalis	Elk Grove	8	CO2	8/25/2023	WNV
Sacramento	SAYO 243009	5997	Cx pipiens	Elk Grove	18	GRVD	8/29/2023	WNV
Sacramento	SAYO 253014	5732	Cx tarsalis	Galt	46	CO2	8/25/2023	WNV
Sacramento	SAYO 255007	5762	Cx pipiens	Herald	49	CO2	8/25/2023	WNV
Sacramento	SAYO 271007	5755	Cx tarsalis	Isleton	29	CO2	8/25/2023	WNV
Sacramento	SAYO 366381	5812	Cx pipiens	Sacramento	1	BGSENT	8/25/2023	WNV
Sacramento	SAYO 390941	5921	Cx tarsalis	South Sacramento	50	CO2	8/29/2023	WNV
Sacramento	SAYO 413916	5823	Cx pipiens	Sacramento	12	BGSENT	8/25/2023	WNV
Sacramento	SAYO 413918	5824	Cx pipiens	Elk Grove	19	BGSENT	8/25/2023	WNV
Sacramento	SAYO 413918	5825	Cx tarsalis	Elk Grove	12	BGSENT	8/25/2023	WNV
San Bernardino	SANB 150	268	Cx quinquefasciatus	Colton	14	CO2	8/22/2023	WNV
San Bernardino	SANB 37	263	Cx tarsalis	San Bernardino	50	CO2	8/19/2023	WNV
San Bernardino	SANB 37	264	Cx tarsalis	San Bernardino	50	CO2	8/19/2023	WNV
San Bernardino	SANB 37	274	Cx tarsalis	San Bernardino	50	CO2	8/24/2023	WNV
San Bernardino	SANB 37	275	Cx tarsalis	San Bernardino	50	CO2	8/24/2023	WNV
San Bernardino	SANB 37	277	Cx tarsalis	San Bernardino	50	CO2	8/24/2023	WNV
San Bernardino	SANB 37	278	Cx tarsalis	San Bernardino	31	CO2	8/24/2023	WNV
San Bernardino	SANB 37	281	Cx tarsalis	San Bernardino	50	CO2	8/25/2023	WNV
San Bernardino	SANB 37	283	Cx tarsalis	San Bernardino	24	CO2	8/25/2023	WNV
San Bernardino	WVAL 1089	1847	Cx quinquefasciatus	Montclair	9	BGSENT	8/31/2023	WNV
San Bernardino	WVAL 1116	1874	Cx quinquefasciatus	Rancho Cucamonga	5	BGSENT	8/31/2023	WNV
San Bernardino	WVAL 4564	1794	Cx quinquefasciatus	Ontario	13	BGSENT	8/29/2023	WNV
San Bernardino	WVAL 4932	1870	Cx quinquefasciatus	Ontario	5	BGSENT	8/31/2023	WNV
San Bernardino	WVAL 5456	1850	Cx quinquefasciatus	Chino	16	BGSENT	8/31/2023	WNV
San Bernardino	WVAL 6013	1876	Cx quinquefasciatus	Ontario	39	BGSENT	8/31/2023	WNV
San Joaquin	SJCM 7021	2411	Cx pipiens	Stockton	15	GRVD	8/29/2023	WNV
San Joaquin	SJCM 7028	2488	Cx tarsalis	Lodi	16	CO2	8/31/2023	WNV
San Joaquin	SJCM 7028	2489	Cx pipiens	Lodi	17	CO2	8/31/2023	WNV
San Joaquin	SJCM 8004	2454	Cx tarsalis	Lodi	37	CO2	8/29/2023	WNV
San Joaquin	SJCM 8004	2455	Cx pipiens	Lodi	20	CO2	8/29/2023	WNV
San Joaquin	SJCM 8008	2401	Cx tarsalis	Manteca	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8008	2402	Cx tarsalis	Manteca	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8008	2403	Cx tarsalis	Manteca	30	CO2	8/29/2023	WNV
San Joaquin	SJCM 8009	2436	Cx tarsalis	Stockton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8010	2386	Cx pipiens	Ripon	20	CO2	8/29/2023	WNV
San Joaquin	SJCM 8018	2423	Cx tarsalis	Stockton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8018	2424	Cx tarsalis	Stockton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8018	2425	Cx tarsalis	Stockton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8027	2440	Cx tarsalis	Stockton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8027	2442	Cx tarsalis	Stockton	22	CO2	8/29/2023	WNV

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San Joaquin	SJCM 8032	2522	Cx pipiens	Escalon	50	CO2	8/31/2023	WNV
San Joaquin	SJCM 8047	2503	Cx pipiens	Stockton	8	CO2	8/31/2023	WNV
San Joaquin	SJCM 8076	2457	Cx pipiens	Stockton	5	CO2	8/29/2023	WNV
San Joaquin	SJCM 8083	2412	Cx tarsalis	Escalon	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8083	2413	Cx tarsalis	Escalon	16	CO2	8/29/2023	WNV
San Joaquin	SJCM 8083	2414	Cx pipiens	Escalon	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8083	2415	Cx pipiens	Escalon	27	CO2	8/29/2023	WNV
San Joaquin	SJCM 8160	2475	Cx tarsalis	Lodi	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8160	2476	Cx tarsalis	Lodi	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8160	2477	Cx tarsalis	Lodi	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8161	2397	Cx tarsalis	Ripon	48	CO2	8/29/2023	WNV
San Joaquin	SJCM 8161	2398	Cx pipiens	Ripon	51	CO2	8/29/2023	WNV
San Joaquin	SJCM 8161	2398	Cx pipiens	Ripon	51	CO2	8/29/2023	SLEV
San Joaquin	SJCM 8199	2393	Cx tarsalis	Manteca	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8204	2462	Cx tarsalis	Stockton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8204	2463	Cx tarsalis	Stockton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8204	2464	Cx tarsalis	Stockton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8204	2465	Cx tarsalis	Stockton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8204	2466	Cx tarsalis	Stockton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8204	2467	Cx pipiens	Stockton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8206	2469	Cx tarsalis	Lodi	100	CO2	8/29/2023	WNV
San Joaquin	SJCM 8206	2470	Cx tarsalis	Lodi	100	CO2	8/29/2023	WNV
San Joaquin	SJCM 8206	2471	Cx tarsalis	Lodi	100	CO2	8/29/2023	WNV
San Joaquin	SJCM 8206	2472	Cx tarsalis	Lodi	34	CO2	8/29/2023	WNV
San Joaquin	SJCM 8208	2499	Cx tarsalis	Lodi	50	CO2	8/31/2023	WNV
San Joaquin	SJCM 8208	2501	Cx pipiens	Lodi	42	CO2	8/31/2023	WNV
San Joaquin	SJCM 8209	2507	Cx tarsalis	Lodi	50	CO2	8/31/2023	WNV
San Joaquin	SJCM 8209	2508	Cx tarsalis	Lodi	37	CO2	8/31/2023	WNV
San Joaquin	SJCM 8209	2509	Cx pipiens	Lodi	50	CO2	8/31/2023	WNV
San Joaquin	SJCM 8209	2510	Cx pipiens	Lodi	50	CO2	8/31/2023	WNV
San Joaquin	SJCM 8209	2511	Cx pipiens	Lodi	38	CO2	8/31/2023	WNV
San Joaquin	SJCM 8222	2493	Cx pipiens	Stockton	20	CO2	8/31/2023	WNV
San Joaquin	SJCM 8230	2480	Cx tarsalis	Thornton	100	CO2	8/29/2023	WNV
San Joaquin	SJCM 8230	2481	Cx tarsalis	Thornton	100	CO2	8/29/2023	WNV
San Joaquin	SJCM 8230	2484	Cx pipiens	Thornton	50	CO2	8/29/2023	WNV
San Joaquin	SJCM 8253	2519	Cx tarsalis	Linden	54	CO2	8/31/2023	WNV
San Joaquin	SJCM 8253	2520	Cx pipiens	Linden	32	CO2	8/31/2023	WNV
Santa Clara	STCL 31206	2769	Cx pipiens	San Jose	1	CO2-EVS	8/24/2023	WNV
Santa Clara	STCL 31524	2607	Cx pipiens	San Jose	1	CO2-EVS	8/22/2023	WNV
Santa Clara	STCL 31671	2670	Cx tarsalis	San Jose	47	GRVD	8/23/2023	WNV
Santa Clara	STCL 32150	2797	Cx tarsalis	Milpitas	1	GRVD	8/25/2023	WNV
Shasta	SHAS 10020	1767	Cx pipiens	Anderson	30	CO2	8/29/2023	WNV
Shasta	SHAS 1009	1723	Cx tarsalis	Bella Vista	50	CO2	8/29/2023	WNV
Shasta	SHAS 10130	1736	Cx tarsalis	Cottonwood	21	CO2	8/29/2023	WNV
Shasta	SHAS 204	1777	Cx pipiens	Redding	18	CO2	8/30/2023	WNV
Shasta	SHAS 410	1742	Cx pipiens	Cottonwood	26	CO2	8/29/2023	WNV
Shasta	SHAS 459	1784	Cx pipiens	Redding	50	CO2	8/30/2023	WNV
Shasta	SHAS 459	1785	Cx pipiens	Redding	41	CO2	8/30/2023	WNV
Shasta	SHAS 549	1722	Cx pipiens	Anderson	45	BGPRO-SENT	8/28/2023	WNV
Shasta	SHAS 618	1730	Cx tarsalis	Anderson	27	CO2	8/29/2023	WNV
Shasta	SHAS 620	1780	Cx pipiens	Redding	50	CO2	8/30/2023	WNV
Shasta	SHAS 629	1757	Cx pipiens	Anderson	50	CO2	8/29/2023	WNV
Shasta	SHAS 629	1759	Cx pipiens	Anderson	50	CO2	8/29/2023	WNV
Shasta	SHAS 634	1750	Cx pipiens	Anderson	50	CO2	8/29/2023	WNV
Shasta	SHAS 635	1754	Cx pipiens	Anderson	46	CO2	8/29/2023	WNV
Solano	SOLA 252	350	Cx tarsalis	Fairfield	50	CO2	8/30/2023	WNV
Solano	SOLA 252	352	Cx tarsalis	Fairfield	34	CO2	8/30/2023	WNV
Stanislaus	EAST 2021	23200	Cx pipiens	Modesto	15	GRVD	8/15/2023	WNV
Stanislaus	EAST 2050	23205	Cx pipiens	Modesto	30	GRVD	8/22/2023	WNV
Stanislaus	TRLK 1107	1408	Cx pipiens	Denair	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 1107	1409	Cx pipiens	Denair	35	CO2	8/29/2023	WNV
Stanislaus	TRLK 1202	1416	Cx tarsalis	Hughson	32	CO2	8/29/2023	WNV
Stanislaus	TRLK 1209	1361	Cx pipiens	Ceres	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 1302	1359	Cx pipiens	Turlock	30	CO2	8/29/2023	WNV
Stanislaus	TRLK 1308	1389	Cx pipiens	Turlock	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 1308	1390	Cx pipiens	Turlock	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 1309	1415	Cx pipiens	Hughson	37	CO2	8/29/2023	WNV
Stanislaus	TRLK 17152	1391	Cx pipiens	Denair	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 17152	1395	Cx pipiens	Denair	50	CO2	8/29/2023	WNV

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Stanislaus	TRLK 17152	1396	Cx pipiens	Denair	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 17152	1399	Cx pipiens	Denair	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 1904	1369	Cx pipiens	Turlock	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 1966	1419	Cx pipiens	Hughson	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 408	1373	Cx pipiens	Turlock	14	CO2	8/29/2023	WNV
Stanislaus	TRLK 410	1366	Cx tarsalis	Ceres	13	CO2	8/29/2023	WNV
Stanislaus	TRLK 432	1381	Cx pipiens	Turlock	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 432	1383	Cx pipiens	Turlock	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 432	1384	Cx pipiens	Turlock	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 432	1386	Cx pipiens	Turlock	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 432	1387	Cx pipiens	Turlock	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 432	1388	Cx pipiens	Turlock	36	CO2	8/29/2023	WNV
Stanislaus	TRLK 526	1402	Cx pipiens	Denair	50	CO2	8/29/2023	WNV
Stanislaus	TRLK 526	1403	Cx pipiens	Denair	31	CO2	8/29/2023	WNV
Stanislaus	TRLK 526	1404	Cx tarsalis	Denair	46	CO2	8/29/2023	WNV
Sutter	SUYA 132	515	Cx tarsalis	Live Oak	16	CO2	8/29/2023	WNV
Sutter	SUYA 14	501	Cx tarsalis	Sutter	39	REST	8/21/2023	WNV
Sutter	SUYA 24	512	Cx tarsalis	Yuba City	7	REST	8/21/2023	WNV
Sutter	SUYA 44	493	Cx tarsalis	Pleasant Grove	50	CO2	8/22/2023	WNV
Sutter	SUYA 44	517	Cx tarsalis	Pleasant Grove	50	CO2	8/29/2023	WNV
Sutter	SUYA 44	519	Cx tarsalis	Pleasant Grove	50	CO2	8/29/2023	WNV
Sutter	SUYA 68	508	Cx tarsalis	Sacramento, Ca	16	REST	8/22/2023	WNV
Tulare	DLNO 145	289	Cx tarsalis	Earlimart	44	CO2	8/25/2023	WNV
Tulare	DLNO 212	291	Cx quinquefasciatus	Pixley	31	CO2	8/25/2023	WNV
Tulare	DLTA 632144	5473	Cx quinquefasciatus	Delft Colony	13	CO2	8/29/2023	WNV
Tulare	DLTA 632144	5474	Cx tarsalis	Delft Colony	50	CO2	8/29/2023	WNV
Tulare	DLTA 632144	5474	Cx tarsalis	Delft Colony	50	CO2	8/29/2023	SLEV
Tulare	DLTA 632144	5475	Cx tarsalis	Delft Colony	47	CO2	8/29/2023	WNV
Tulare	DLTA 632144	5475	Cx tarsalis	Delft Colony	47	CO2	8/29/2023	SLEV
Tulare	DLTA 632144	5476	Cx tarsalis	Delft Colony	10	CO2	8/29/2023	SLEV
Tulare	DLTA 632263	5470	Cx quinquefasciatus	Delft Colony	37	CO2	8/29/2023	WNV
Tulare	DLTA 633024	5471	Cx quinquefasciatus	Kingsburg	19	CO2	8/29/2023	WNV
Tulare	DLTA 64071	5497	Cx quinquefasciatus	Dinuba	50	BGSENT	8/29/2023	WNV
Tulare	DLTA 64071	5498	Cx quinquefasciatus	Dinuba	50	BGSENT	8/29/2023	WNV
Tulare	DLTA 64071	5499	Cx quinquefasciatus	Dinuba	50	BGSENT	8/29/2023	WNV
Tulare	DLTA 64071	5500	Cx quinquefasciatus	Dinuba	43	BGSENT	8/29/2023	WNV
Tulare	DLTA 6408	5504	Cx quinquefasciatus	Dinuba	50	BGSENT	8/29/2023	WNV
Tulare	DLTA 6408	5504	Cx quinquefasciatus	Dinuba	50	BGSENT	8/29/2023	SLEV
Tulare	DLTA 64084	5465	Cx quinquefasciatus	Dinuba	20	BGSENT	8/25/2023	WNV
Tulare	DLTA 6416	5353	Cx quinquefasciatus	Dinuba	13	BGSENT	8/22/2023	WNV
Tulare	DLTA 64161	5528	Cx quinquefasciatus	Dinuba	50	GRVD	8/29/2023	WNV
Tulare	DLTA 64161	5528	Cx quinquefasciatus	Dinuba	50	GRVD	8/29/2023	SLEV
Tulare	DLTA 6417	5523	Cx quinquefasciatus	Dinuba	50	BGSENT	8/29/2023	WNV
Tulare	DLTA 6417	5525	Cx quinquefasciatus	Dinuba	10	BGSENT	8/29/2023	WNV
Tulare	DLTA 6420	5462	Cx quinquefasciatus	Dinuba	29	GRVD	8/25/2023	SLEV
Tulare	DLTA 6420	5463	Cx stigmatosoma	Dinuba	10	GRVD	8/25/2023	WNV
Tulare	DLTA 6420	5463	Cx stigmatosoma	Dinuba	10	GRVD	8/25/2023	SLEV
Tulare	DLTA 6518	5457	Cx quinquefasciatus	Cutler	15	GRVD	8/25/2023	WNV
Tulare	DLTA 6518	5457	Cx quinquefasciatus	Cutler	15	GRVD	8/25/2023	SLEV
Tulare	DLTA 6520	5435	Cx quinquefasciatus	Cutler	26	BGSENT	8/24/2023	SLEV
Tulare	DLTA 7	5449	Cx stigmatosoma	Dinuba	32	CO2	8/25/2023	SLEV
Tulare	DLTA 73161	5494	Cx quinquefasciatus	Traver	42	BGSENT	8/29/2023	SLEV
Tulare	DLTA 8324	5466	Cx quinquefasciatus	Goshen	43	BGSENT	8/25/2023	SLEV
Tulare	DLTA 8413	5492	Cx quinquefasciatus	Visalia	50	BGSENT	8/29/2023	SLEV
Tulare	DLTA 8413	5493	Cx quinquefasciatus	Visalia	50	BGSENT	8/29/2023	WNV
Tulare	DLTA 8414	5484	Cx quinquefasciatus	Visalia	12	BGSENT	8/29/2023	WNV
Tulare	DLTA 841543	5445	Cx quinquefasciatus	Visalia	49	CO2	8/25/2023	WNV
Tulare	DLTA 84191	5477	Cx quinquefasciatus	Visalia	43	GRVD	8/29/2023	WNV
Tulare	DLTA 84191	5522	Cx quinquefasciatus	Visalia	46	BGSENT	8/29/2023	SLEV
Tulare	DLTA 84193	5426	Cx quinquefasciatus	Visalia	29	GRVD	8/24/2023	SLEV
Tulare	DLTA 842122	5444	Cx quinquefasciatus	Visalia	47	CO2	8/25/2023	WNV
Tulare	DLTA 8422	5447	Cx quinquefasciatus	Goshen	13	GRVD	8/25/2023	WNV
Tulare	DLTA 8422	5487	Cx quinquefasciatus	Goshen	50	BGSENT	8/29/2023	WNV
Tulare	DLTA 8422	5488	Cx quinquefasciatus	Goshen	50	BGSENT	8/29/2023	SLEV
Tulare	DLTA 8425	5450	Cx quinquefasciatus	Visalia	11	GRVD	8/25/2023	WNV
Tulare	DLTA 8426	5413	Cx quinquefasciatus	Visalia	38	BGSENT	8/24/2023	WNV
Tulare	DLTA 84344	5438	Cx quinquefasciatus	Visalia	13	BGSENT	8/25/2023	SLEV
Tulare	DLTA 9411	5424	Cx quinquefasciatus	Visalia	15	BGSENT	8/24/2023	WNV
Yolo	SAYO 103007	5939	Cx tarsalis	Dunnigan	3	GRVD	8/29/2023	WNV

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Yolo	SAYO 116002	5942	Cx tarsalis	Knights Landing	46	CO2	8/29/2023	WNV
Yolo	SAYO 123005	5729	Cx tarsalis	Madison	4	CO2	8/25/2023	WNV
Yolo	SAYO 124007	5741	Cx tarsalis	Woodland	12	CO2	8/25/2023	WNV
Yolo	SAYO 125016	5893	Cx tarsalis	Woodland	21	CO2	8/29/2023	WNV
Yolo	SAYO 125018	5544	Cx tarsalis	Woodland	50	CO2	8/23/2023	SLEV
Yolo	SAYO 125018	5916	Cx tarsalis	Woodland	50	CO2	8/29/2023	WNV
Yolo	SAYO 125033	5895	Cx tarsalis	Woodland	50	CO2	8/29/2023	WNV
Yolo	SAYO 125033	5896	Cx tarsalis	Woodland	50	CO2	8/29/2023	WNV
Yolo	SAYO 135006	5748	Cx tarsalis	Woodland	50	CO2	8/25/2023	WNV
Yolo	SAYO 143008	5733	Cx pipiens	Winters	11	CO2	8/25/2023	WNV
Yolo	SAYO 145005	5849	Cx tarsalis	Davis	50	CO2	8/29/2023	WNV
Yolo	SAYO 145009	5870	Cx pipiens	Davis	8	GRVD	8/29/2023	WNV
Yolo	SAYO 145018	5842	Cx tarsalis	Davis	28	CO2	8/29/2023	WNV
Yolo	SAYO 146	5884	Cx tarsalis	Woodland	42	CO2	8/29/2023	WNV
Yolo	SAYO 146017	5853	Cx tarsalis	Davis	50	CO2	8/29/2023	WNV
Yolo	SAYO 146017	5854	Cx tarsalis	Davis	50	CO2	8/29/2023	WNV
Yuba	SUYA 10	529	Cx tarsalis	Olivehurst	31	CO2	8/30/2023	WNV
Yuba	SUYA 108	494	Cx tarsalis	Plumas Lake	18	CO2	8/23/2023	WNV
Yuba	SUYA 4	496	Cx tarsalis	Wheatland	17	CO2	8/23/2023	WNV
Yuba	SUYA 4	526	Cx tarsalis	Wheatland	28	CO2	8/30/2023	WNV

Sentinel Chickens

County	Site Code	Nearest City	Date Bled	Virus	Band 01	Band 02	Band 03
Butte	BUCO 1	Chico	8/29/2023	WNV	2128	2129	
Butte	BUCO 6	Chico	8/29/2023	WNV	2157		
Butte	BUCO 7	Chico	8/29/2023	WNV	2165	2167	
Colusa	CLSA 0	Colusa	8/22/2023	WNV	1857		
Contra Costa	CNTR 7402	Oakley	8/28/2023	WNV	1903	1904	
Sacramento	SAYO 261013	Isleton	8/31/2023	WNV	2661	2662	2664
San Benito	SBVC 0	Hollister	8/29/2023	WNV	1965	1968	
Shasta	SHAS 9704	Redding	8/28/2023	WNV	2733	2736	2739
Solano	SOLA 148	Fairfield	8/28/2023	WNV	2753	2757	
Solano	SOLA 15	Winters	8/28/2023	WNV	2746		
Solano	SOLA 50	Fairfield	8/28/2023	WNV	2762		
Yolo	SAYO 103013	Dunnigan	8/28/2023	WNV	2678		

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TEST PROTOCOLS

Humans:

Specimens are tested by local laboratories with an IgM or IgG immunofluorescent assay (IFA) and/or an IgM enzyme immunoassay (EIA). Specimens with inconclusive results are forwarded to the California Department of Public Health Viral and Rickettsial Disease Laboratory (VRDL) for further testing with a plaque reduction neutralization test (PRNT).

Dead Birds

Oral swab samples collected from bird carcasses are tested at the UC Davis Arbovirus Research and Training laboratory (DART) or at a local agency for West Nile virus by RT-qPCR.

Sentinel Chickens:

Dried blood spot samples from sentinel chickens are tested at the California Department of Public Health Vector-Borne Disease Laboratory for IgG antibodies to West Nile, St. Louis encephalitis, and western equine encephalomyelitis viruses by an EIA. Positive samples are confirmed by IFA, western-blot, or PRNT.

Mosquito Pools:

Mosquito pools are tested at DART or at a local agency for West Nile, western equine encephalomyelitis, and St. Louis encephalitis viral RNA using a multiplex RT-qPCR. Invasive *Aedes* mosquitoes (*Ae. aegypti* and *Ae. albopictus*) are also tested at DART for chikungunya, dengue, and Zika viral RNA by a separate RT-qPCR.

Website Information: For updated information on WNV in California, please visit the California WNV website, <https://westnile.ca.gov>, or the California Vector-Borne Disease Surveillance System website, <https://maps.vectorsurv.org>.

Prepared by the Vector-Borne Disease Section (Infectious Diseases Branch), California Department of Public Health, 850 Marina Bay Parkway, Richmond, CA 94804. Questions concerning this bulletin should be addressed to Hannah Romo: Hannah.romo@cdph.ca.gov