Serving Public Health Since 1928

Coachella Valley Mosquito and Vector Control District

43420 Trader Place, Indio, CA 92201 | (760) 342-8287 | cvmosquito.org

Board of Trustees Meeting via Zoom and In-Person

Tuesday, January 10, 2023

6:00 p.m.

AGENDA

The Board of Trustees will take action on all items on the agenda.

Materials related to an agenda item that are submitted to the Board of Trustees after distribution of the agenda packets are available for public inspection in the Clerk of the Board's office during normal business hours and on the District's website.

Pursuant to Assembly Bill 361, this meeting will be conducted by video and/or teleconference as well as in-person public access to the meeting location. To view/listen/participate in the meeting live, please join by calling 1-888-475-4499 (toll-free), meeting ID: 861 7438 6813, or click this link to join: https://us02web.zoom.us/j/86174386813. Those wishing to address the Board should send an email to the Clerk of the Board by 1:30 p.m. on January 10, 2023, at mtallion@cvmosquito.org. This allows time to have the written public comments sent to the Board of Trustees prior to the meeting for review. Any member of the public can appear at the meeting to provide public comments, oral or written. Please note that, as stated above, the meeting will be conducted remotely and in person at the District office located at the address listed above. Any correspondence received during or after the meeting will be distributed to the Board as soon as practicable and retained for the official record.

Assistance for those with disabilities: If you have a disability and need an accommodation to participate in the meeting, please contact the Clerk of the Board at (760) 342-8287 at least 48 hours prior to the meeting to inform us of your needs and to determine if accommodation is feasible. The District will attempt to accommodate you in every reasonable manner.

Before entering the District's facilities, we request that you self-screen for COVID-19 symptoms. We want to work together to help limit the spread of COVID-19.

1. **Call to Order** – Benjamin Guitron, President

2. **Introduction of New Trustees and Oaths of Office (Pg. 6)**

3. **Pledge of Allegiance**

4. **Recognition**
   A. Proclamation in honor of Salvador Becerra, Tony Molina, Ryan Gonzalez, and Jacob Tarango for receiving the District Employee of the Year award – **Benjamin Guitron, Board President, and Jeremy Wittie, General Manager, M.S., CSDM (Pg. 7)**

5. **Roll Call**

6. **Confirmation of Agenda**

7. **Public Comments**
   Those wishing to address the Board should send an email to the Clerk of the Board by 1:30 p.m. on January 10, 2023, at mtallion@cvmosquito.org. This allows time to have the written public comments sent to the Board of Trustees prior to the meeting for review. Any member of the public can appear at the meeting to provide public comments, oral or written. Please note that, as stated above, the meeting will be conducted remotely and in person.

   A. **PUBLIC Comments — NON-AGENDA ITEMS:** This time is for members of the public to address the Board of Trustees on items of general interest (a non-agenda item) within the subject matter jurisdiction of the District. The District values your comments; however, pursuant to the Brown Act, the Board cannot take action on items not listed on the posted Agenda. **Comments are limited to a total of three (3) minutes per speaker for non-agenda items.**

   B. **PUBLIC Comments — AGENDA ITEMS:** This time is for members of the public to address the Board of Trustees on agenda items (Open and Closed Sessions). **Comments are limited to three (3) minutes per speaker per agenda item.**

   All comments are to be directed to the Board of Trustees and shall be devoid of any personal attacks. Members of the public are expected to maintain a professional, courteous decorum during public comments.

8. Board Reports

A. President's Report **– Benjamin Guitron, President**

Executive Committee oral report and Executive Committee minutes from December 16, 2022 **(Pg. 12)**

B. Finance Committee **– Doug Walker, Treasurer**

Finance Committee oral report and Finance Committee minutes from November 8, 2022 **(Pg. 16)**

9. New Business

A. Audit Presentation of Fiscal Year ending June 30, 2022 **– Fedak & Brown, LLP, and David I'Anson, Administrative Finance Manager (Pg. 19)**

10. Staff Informational Reports

A. Live Reports

- General Manager's Report **(Pg. 21)**
- Semi-annual research reports from the University of California, Davis, University of California, Riverside, Mount Sinai School of Medicine, and the USDA for 2022 – **Jennifer Henke, M.S., Laboratory Manager**

Questions and/or comments from Trustees regarding the report

11. Items of General Consent

The following items are routine in nature and may be approved by one blanket motion upon unanimous consent. The President or any member of the Board of Trustees may request an item be pulled from Items of General Consent for a separate discussion.

A. Minutes for November 8, 2022, Board Meeting, Minutes from November 18, 2022, Special Board Meeting and Minutes for December 16, 2022, Special Board Meeting **(Pg. 25)**

B. Approval of expenditures for November 9, 2022, to January 4, 2023 **(Pg. 40)**

C. Informational Items:

- Financials **– David I'Anson, Administrative Finance Manager (Pg. 42)**
- Correspondence **(Pg. 58)**

- Semi-annual research reports from the University of California, Davis, University of California, Riverside, Mount Sinai School of Medicine, and the USDA for 2022 **(Pg. 61)**
- Entomological Society of America Annual Conference held November 13 – November 16, 2022, in Vancouver, British Columbia **(Pg. 106)**
- MVCAC Planning Meeting in Oakland, CA, December 5-7, 2022 **(Pg. 107)**
- CalPERLA Annual Conference **(Pg. 108)**
- Approval of Travel Calendar Update and Training Opportunity for Jennifer Henke, Laboratory Manager, to attend the 18th Arbovirus Surveillance and Mosquito Control Workshop at Anastasia Mosquito Control District, St. Augustine, FL, March 28-30, 2023, in an amount not to exceed $1,500. **Jennifer Henke, M.S., Laboratory Manager (Pg. 109)**
- District Travel **(Pg. 111)**

12. Old Business

A. Approval of Resolution 2023-01 authorizing remote teleconferencing meetings for the period January 11, 2023, to February 9, 2023, and discussion regarding the Boards direction for the February 14, 2023, Finance and Board meeting **– Jeremy Wittie, M.S., CSDM, General Manager (Pg. 112)**

13. New Business-Continued

A. Discussion and/or approval of terms of the General Manager's Employment Agreement following evaluation period ending December 2022 – **ad hoc Negotiations Committee (Pg. 119)**

B. Discuss the appointment of the Abatement Hearing Committee – **Benjamin Guitron, Board President (Pg. 139)**

C. Nomination and election of the Board of Officers for the 2023 Calendar Year **– ad hoc Nominations Committee (Pg. 140)**

14. Comments by General Counsel

15. Trustee Comments, Requests for Future Agendas Items, Travel, and/ or Staff Actions

The Board may not legally take action on any item presented at this time other than to direct staff to investigate a complaint or place an item on a future agenda unless (1) by a majority vote, the Board determines that an emergency exists, as defined by

Government Code Section 54956.5, or (2) by a two-thirds vote, the board determines that the need for action arose subsequent to the agenda being posted as required by Government Code Section 54954.2(a). Each presentation is limited to no more than three minutes.

16. Adjournment

At the discretion of the Board, all items appearing on this agenda, whether or not expressly listed for action, may be deliberated and may be subject to action by the Board.

Certification of Posting

I certify that on January 6, 2023, I posted a copy of the foregoing agenda near the regular meeting place of the Board of Trustees of the Coachella Valley Mosquito & Vector Control District and on the District's website, said time being at least 72 hours in advance of the meeting of the Board of Trustees (Government Code Section 54954.2)

Executed at Indio, California, on January 6, 2023

_____

Melissa Tallion, Clerk of the Board

Serving Public Health Since 1928	**Coachella Valley Mosquito and Vector Control District** **Staff Report**	**January 10, 2023**

Agenda Item: Oath of Office

Background:

The Board of Trustees is the governing body of the District. The Board shall consist of a single representative of each incorporated city within the District's boundaries and two representatives of the County of Riverside.

Trustees shall reside in and be a registered voter in the jurisdiction of their appointing legislative body. Each Trustee shall be appointed for a term of two (2) or four (4) years, as decided by his or her appointing legislative body.

Any person appointed to serve as a Trustee must take the oath of office prior to formally and officially assuming his or her position as a Trustee. The oath of office shall be taken each time a Trustee is appointed for a subsequent term.

Reappointed Trustees:
Clive Weightman, Indian Wells (2 years)
Bio: https://www.cvmosquito.org/people/clive-weightman

Newly appointed Trustees:
Nancy Ross, Cathedral City (2 years)
Bio: https://www.cvmosquito.org/people/nancy-ross

COACHELLA VALLEY MOSQUITO & VECTOR CONTROL DISTRICT

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RECOGNITION

A PROCLAMATION OF THE BOARD OF TRUSTEES OF THE COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT IN RECOGNITION OF SALVADOR BECERRA FOR RECEIVING THE MANAGEMENT EMPLOYEE OF THE YEAR AWARD

WHEREAS, the Coachella Valley Mosquito and Vector Control District ("District") was established in 1928 as an independent special district by the Riverside County Board of Supervisors with the mission of reducing the risk of disease transmission by mosquitoes and other vectors and the protection of residents and visitors of the Coachella Valley; and

WHEREAS, Salvador Becerra received *the Management Employee of the Year award for 2022*; and

WHEREAS, Salvador Becerra has 15 years of service with the District, and

WHEREAS, Salvador Becerra's hard work, support, and dedication have contributed to the District's mission of protecting the public health of residents and visitors of the Coachella Valley.

NOW, THEREFORE, BE IT PROCLAIMED by the Board of Trustees of the Coachella Valley Mosquito and Vector Control District that:

Salvador Becerra is hereby recognized upon this award for his outstanding contributions and dedication to the District and the citizens of the Coachella Valley.

DATED THIS 10th DAY of JANUARY 2023

_____
Benjamin Guitron
President, Board of Trustees

_____
Jeremy Wittie, M.S.
General Manager

A PROCLAMATION OF THE BOARD OF TRUSTEES OF THE COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT IN RECOGNITION OF ANTONIO MOLINA FOR RECEIVING THE ADMINISTRATIVE SUPPORT EMPLOYEE OF THE YEAR AWARD

WHEREAS, the Coachella Valley Mosquito and Vector Control District ("District") was established in 1928 as an independent special district by the Riverside County Board of Supervisors with the mission of reducing the risk of disease transmission by mosquitoes and other vectors and the protection of residents and visitors of the Coachella Valley; and

WHEREAS, Antonio Molina received *the Administrative Support Employee of the Year award for 2022*; and

WHEREAS, Antonio Molina has 14 years of service with the District, and

WHEREAS, Antonio Molina's hard work, support, and dedication have contributed to the District's mission of protecting the public health of residents and visitors of the Coachella Valley.

NOW, THEREFORE, BE IT PROCLAIMED by the Board of Trustees of the Coachella Valley Mosquito and Vector Control District that:

Antonio Molina is hereby recognized upon this award for his outstanding contributions and dedication to the District and the citizens of the Coachella Valley.

DATED THIS 10th DAY of JANUARY 2023

_____ _____

Benjamin Guitron
President, Board of Trustees

Jeremy Wittie, M.S.
General Manager

A PROCLAMATION OF THE BOARD OF TRUSTEES OF THE COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT IN RECOGNITION OF RYAN GONZALEZ FOR RECEIVING THE FIELD OPERATIONS EMPLOYEE OF THE YEAR AWARD

WHEREAS, the Coachella Valley Mosquito and Vector Control District ("District") was established in 1928 as an independent special district by the Riverside County Board of Supervisors with the mission of reducing the risk of disease transmission by mosquitoes and other vectors and the protection of residents and visitors of the Coachella Valley; and

WHEREAS, Ryan Gonzalez received *the Field Operations Employee of the Year award for 2022*; and

WHEREAS, Ryan Gonzalez has 4 years of service with the District, and

WHEREAS, Ryan Gonzalez's hard work, support, and dedication have contributed to the District's mission of protecting the public health of residents and visitors of the Coachella Valley.

NOW, THEREFORE, BE IT PROCLAIMED by the Board of Trustees of the Coachella Valley Mosquito and Vector Control District that:

Ryan Gonzalez is hereby recognized upon this award for his outstanding contributions and dedication to the District and the citizens of the Coachella Valley.

DATED THIS 10th DAY of JANUARY 2023

_____
Benjamin Guitron
President, Board of Trustees

_____
Jeremy Wittie, M.S.
General Manager

A PROCLAMATION OF THE BOARD OF TRUSTEES OF THE COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT IN RECOGNITION OF JACOB TARANGO FOR RECEIVING THE FIELD SUPPORT EMPLOYEE OF THE YEAR AWARD

WHEREAS, the Coachella Valley Mosquito and Vector Control District ("District") was established in 1928 as an independent special district by the Riverside County Board of Supervisors with the mission of reducing the risk of disease transmission by mosquitoes and other vectors and the protection of residents and visitors of the Coachella Valley; and

WHEREAS, Jacob Tarango received *the Field Support Employee of the Year award for 2022*; and

WHEREAS, Jacob Tarango has 2 years of service with the District, and

WHEREAS, Jacob Tarango's hard work, support, and dedication have contributed to the District's mission of protecting the public health of residents and visitors of the Coachella Valley.

NOW, THEREFORE, BE IT PROCLAIMED by the Board of Trustees of the Coachella Valley Mosquito and Vector Control District that:

Jacob Tarango is hereby recognized upon this award for his outstanding contributions and dedication to the District and the citizens of the Coachella Valley.

DATED THIS 10th DAY of JANUARY 2023

_____
Benjamin Guitron
President, Board of Trustees

_____
Jeremy Wittie, M.S.
General Manager

COACHELLA VALLEY MOSQUITO & VECTOR CONTROL DISTRICT

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BOARD REPORTS

Coachella Valley Mosquito and Vector Control District

Executive Committee Meeting Via Zoom

DRAFT - Minutes

TIME AND DATE: 3:00 p.m., Friday, December 16, 2022

LOCATION: 43420 Trader Place, Indio, CA 92201-Via Zoom

TRUSTEES PRESENT:

Indio	Benjamin Guitron, President
Indian Wells	Clive Weightman, Vice President
Palm Desert	Doug Walker, Treasurer

ABSENT:

Palm Springs	Doug Kunz, Secretary

Members of the Public present:
Yes

OTHERS PRESENT:
Jeremy Wittie, M.S., General Manager
Melissa Tallion, Clerk of the Board

Key Decisions

- District Employees of the Year for 2022 will be recognized at the January 2023 Board Meeting.

Tasks and Ownership

- Live presentation of semi-annual research reports being given during January Board Meeting – Jennifer Henke
- Inquire with Legal Counsel about 11B and Closed Session – Melissa Tallion
- Survey to be sent to Board regarding the appointment of ad hoc Abatement Committee in December - Melissa Tallion
- The employee of the Year winners will be highlighted in the January GM report and will receive proclamations from the Board. – Jeremy Wittie and Melissa Tallion.
- Evaluate costs of rehabilitating the District's historic Jeep and report back to the executive committee by February 2023– Jeremy Wittie
- Scheduling of the next executive meeting will be done once the slate of officers is confirmed at the January 2023 meeting - Melissa Tallion

1. **Call to Order**
   President Guitron called the meeting to order at 3:03 p.m.

2. **Roll Call**
   Roll call indicated three (3) of four (4) Committee members were present.

3. **Confirmation of Agenda**
   President Guitron inquired if there were any agenda items to be shifted. Upon no objections by the Committee, the agenda was confirmed.

4. **Public Comments**
   Mr. Anderson commented on non-agenda items only.

5. **Review of January 10, 2023, draft Board meeting agenda**
   The draft November Board meeting agenda was reviewed by the Committee. Changes to the agenda and discussion included adding a brief live report with a summary of the semi-annual research reports to item 8 (staff informational reports). The committee asked staff to contact Legal Counsel about item 11B and Closed Session and make sure they are on the agenda correctly. Mrs. Tallion will send out a survey to the Board regarding the appointment of the ad hoc Abatement Hearing committee before the Board meeting.

6. **Old Business**
   None

7. **New Business**
   A. Special Districts Leadership Academy (SDLA) meeting held February 26 – March 1, 2023.
      Mr. Wittie presented this item and asked if any of the Trustees would like to attend. This item is also in a staff report on the January 10, 2023, Board Agenda Packet.

   B. Discuss the appointment of the ad hoc Abatement Hearing Committee.
      Mrs. Tallion will send out a survey to the Board of Trustees

   C. Discuss the outcome of the ad hoc Negotiations Committee meeting.
      The outcome will be presented during the January 10, 2023, Board Meeting during open session with a report prepared by Legal Counsel.

   D. Discuss the outcome of the ad hoc Nominations Committee meeting.
      The 2023 Nominations Committee met and is presenting their nominations for the 2023 calendar year during the January 10, 2023, Board Meeting.

E. Discussion about the District Employee of the Year award from the Board.
President Guitron asked the committee for input on awards or certificates from the Board of Trustees to be given to the winners of the District Employee of the Year awards. Mr. Wittie will add the winners to his General Manager's report. Mrs. Tallion will draft a certificate of appreciation or proclamation for the winners to be signed by the Board of Trustees.

F. Discussion about renovating the District Jeep for Public Outreach use.
President Guitron inquired about restoring the old jeep for Public Outreach use. Mr. Wittie said that the costs were high but would look into the options and report back t the Executive Committee.

8. Trustee/staff comments

9. Confirmation of next meeting
The next meeting will be scheduled after a survey is sent out to the 2023 slate of officers for confirmation of their schedules.

10. Adjournment
President Guitron adjourned the meeting at 4:04 p.m.

COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

Finance Committee Meeting
DRAFT - Minutes

TIME 4:30 p.m. **DATE:** November 8, 2022

LOCATION: 43420 Trader Place Indio, CA 92201 via zoom and in-person

COMMITTEE MEMBERS PRESENT:

Palm Desert	Doug Walker, Board Treasurer
Indian Wells	Clive Weightman, Board Vice-President
County at Large	Bito Larson, Trustee

COMMITTEE MEMBERS ABSENT:
None

OTHER TRUSTEES PRESENT:
None

STAFF PRESENT:
Jeremy Wittie, General Manager
David I'Anson, Administrative Finance Manager
Melissa Tallion, Executive Assistant/Clerk of the Board

MEMBERS OF THE PUBLIC PRESENT:
No

Tasks and Ownership

- Item 6B: Look into changing the GL name for "mosquito pool testing" to show "virus testing" – David
- Item 6C: Reach out to MBS about the District's current CDs and making changes – David
- Item 7B: CalPERS trust for future pension liabilities – David

1. **Call to Order**
   Treasurer Walker called the meeting to order at 4:32 p.m.

2. **Roll Call**
   Roll call indicated all three (3) Committee members were present.

3. **Confirmation of Agenda**
   The agenda was confirmed as presented.

4. **Public Comments**
   None.

5. Items of General Consent

A. Approval of Minutes from October 11, 2022, Finance Committee Meeting

Trustee Weightman brought to the attention of the Committee an amendment for October 11, 2022, minutes to include: The Finance Committee reviewed the District's CD sitting at .75% interest and asked David l'Anson to look at the investments to see what the penalties would be to pull out of those investments and what rate of interest the District could get. David will come back to the Finance Committee with those options.

On a motion from Trustee Weightman, seconded by Trustee Larson, and passed by the following roll call votes, the Committee approved the minutes as amended.

Ayes: Treasurer Walker, Trustees Larson, Weightman

Noes: None

Abstained: None

Absent: None

6. Discussion, Review, and/or Update

A. Review of Check Report from Abila MIP for the period of October 6, 2022, to November 2, 2022.

The check report was reviewed by Committee members and staff. A discussion ensued regarding a few checks that needed further explanation.

B. CalCard Charges – Statement dated October 23, 2022

The CalCard monthly statement was reviewed by Committee members and staff. Questions regarding specific charges were brought forward by the Committee and staff provided more information. Treasurer Walker asked if the title for the mosquito pool test can be changed. Staff explained what this item was for virus testing. Staff will see if that entry can be changed moving forward.

C. Review of October 2022 Financials and Treasurers Report

The Committee and staff reviewed the Financials and Treasurers Report. David l'Anson said it was business as usual. The Finance Committee reviewed the investment fund balances which shows an improvement in some of the accounts. David will reach out to MBS about the District's current CDs and report back. The General Fund Operational Cash Flow chart shows good budgeting this year.

7. Old Business

A. Discussion about the District's CalCard Procedure

The Committee discussed the District's CalCard procedure. The Committee asked about the limits assigned to each card. David l'Anson is responsible for adding the single purchase and 30-day limits. The Committee and staff discussed the possibility of a central purchasing department

or agent to find a more structured purchasing system. David discussed the control activities to ensure that the CalCards are safe, and purchases are made within the procedural limits. David investigated the option of having text messages sent with purchases to the CalCard and didn't see that as an option.

B. Review the CalPERS Actuarial Valuation reports
The reports were reviewed. David let the Committee know this report is 2 years behind and some items are not listed on this report. The valuation is for June 30, 2021. Staff feels that the District is in a good position in relation to other agencies. Set aside funds for future pension contribution requirements. Treasurer Walker suggested that instead of sending money to CalPERS the District instead sets aside funds in reserves for future pension contribution requirements. David mentioned that there is an option within CalPERS, a trust, that acts like a savings account to pay for these liabilities in the future. David will bring information about this option to the next Finance Committee meeting.

8. New Business

A. Review of finance-related items on the Board agenda
The Board agenda was reviewed.

9. Schedule Next Meeting

The next Finance Committee meeting was scheduled for January 10, 2023, at 4:30 p.m.

10. Trustee and/or Staff Comments/Future Agenda Items

None

11. Adjournment

Treasurer Walker adjourned the meeting at 5:25 p.m.

COACHELLA VALLEY MOSQUITO & VECTOR CONTROL DISTRICT

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NEW BUSINESS

	Coachella Valley Mosquito and Vector Control District **Staff Report**	**January 10, 2023**

Agenda Item: New Business

Audit Presentation of Fiscal Year ending June 30, 2022 **– Fedak & Brown, LLP, and David I'Anson, Administrative Finance Manager**

Background:

Fedak & Brown, LLP is presenting the annual audit of FY 2021-22.

State law requires special districts to annually publish a complete set of financial statements presented in conformity with generally accepted accounting principles (GAAP) and audited in accordance with generally accepted auditing standards by a firm of certified public accountants. Pursuant to that requirement, we hereby issue the comprehensive annual financial statements of the Coachella Valley Mosquito and Vector Control District ("the District") for the fiscal year ended June 30, 2022.

The District's financial statements have been audited by Fedak & Brown LLP, Certified Public Accountants. The goal of the independent audit is to provide reasonable assurance that the financial statements of the District, for the fiscal year ended June 30, 2022, are free of material misstatements. The independent audit involved examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements: assessing the accounting principles used and significant estimates made by management; and evaluating the overall financial statement presentation. The independent auditor concluded, based upon the audit, that there was a reasonable basis for rendering an unmodified opinion that the District's financial statements, for the fiscal year ended June 30, 2022, were fairly presented in conformity with GAAP.

Exhibits:

- Annual Comprehensive Financial Report for the Fiscal Year Ended June 30, 2022, and 2021
  https://www.cvmosquito.org/sites/g/files/vyhlif4551/f/pages/2022_fs_cvmvcd-final.pdf

Serving Public Health Since 1928	**Coachella Valley Mosquito and Vector Control District** **General Manager's Report**	**January 10, 2023**

Each year District staff select four staff members to be recognized for outstanding service to the District and the communities we serve. These awardees fall into four categories, Management (Managers and Supervisors), Administrative Support(HR, Admin, Finance, and IT staff), Field Support Employee (Laboratory, Facilities, and Fleet), and Field Operations Employee (Operations Vector Control Technicians). These awardees receive the award during our end-of-season celebration held in December along with a nice plaque and 4 hours of CTO. This year's Employees of the year awardees are:

Sal Becerra – Management – Sal has been a District employee for 15 years and most recently was promoted to Field Supervisor. Sal has been flourishing and we look forward to supporting him as he grows in this leadership role.

Tony Molina – Administrative Support - Tony has been with the District for 14 years. He started his career in the Operations Department as a Vector Control Technician and in 2014 was promoted to IT/GIS Assistant in the IT Department. Tony has been able to take his knowledge from the field and incorporate it into his new service and passion for information technology and supporting his peers.

Ryan Gonzalez – Field Operations - Ryan has been with the District for 4 years now fulfilling his role as Vector Control Technician. He is part of a team of Technicians who work in our Agricultural and Salton Sea shoreline habitats controlling both vector and nuisance mosquitoes. He enjoys this role as enjoys the outdoors and operating off-road equipment, two things that Ryan can get a day's work serving the rural communities of the Coachella Valley.

Jacob Tarango – Field Support - Jacob has been with the District for 2 years and serves as one of the District's Biologists as part of the Laboratory team. Jacob's duties involve the evaluation of

District control efforts, surveying adult mosquitoes, and testing those mosquitoes for mosquito-borne diseases.

Congratulations to all of the 2022 Employees of the Year. Your contributions to the District and team members did not go unnoticed. I encourage you to continue to strive for the best and keep and share your teamwork enthusiasm and mentality.

2023 Emergency Succession Plan Appointees

Each year the General Manager designates two of the District's management staff to serve as Acting General Manager in the event the that the General Manager has a temporary or unexpected leave of absence greater than two weeks. The 2023 appointees are David l'Anson, Administrative Finance Manager, as Standing Appointee, and Jennifer Henke, Laboratory Manager, as Alternate appointee.

Integrated Vector Management (IVM) Program

The holidays might be over but it's time to celebrate! 2023 marks the 95th anniversary of the Coachella Valley Mosquito and Vector Control District's service to the community! All year long Outreach Department and staff will be highlighting a multitude of innovations and the progression that we have accomplished in 95 years.

Winter temperatures slow down Valley vectors and the viruses they can transmit, and Staff uses the slower period to reflect, plan, and train. During the month of January and February, the staff is training on a various range of topics, and our Vector Control Technician staff focus on continuing education units to maintain their State licenses as certified Vector Control Technicians. Training topics range from Communication and Civility in the workplace to sterile mosquito technique. Jennifer Henke has worked with the rest of the Management team to coordinate the 5 training days that occur through January and February. Training is delivered by various staff based on the topic. I want to thank all staff for their commitment to professional development.

Drone Program Update

The Operations Drone program continues to develop. The Fleet Department recently acquired a 24ft by 8ft box trailer that will house the District's drone equipment for transport into the field to conduct drone surveillance and control applications primarily in the eastern Valley along the Salton Sea and associated wetlands that produce mosquitoes capable of transmitting viruses. Our fleet staff will be building out the trailer and painting the inside to suit the District's drone program needs.

Tammy Gordon, Public Information Manager, recently gained her drone pilot license. Tammy will be able to use this knowledge as part of her service on the Mosquito and Vector Control Association Drone Committee and develop uses for drone photography and video to help tell the District's story and educate the public about vector prevention. The District currently has 6 staff licensed to fly the drone for aerial photography/surveillance and 2 staff members recently licensed with the State to make chemical applications.

Board Packet Summary

Please review the Board packet in its entirety, however, here are a few things of note:

- **Audit FY ending June 30, 2022 –** The District received an unmodified "Clean" Opinion. Jonathan Abadesco, partner with Fedak and Brown LLP will be present virtually to provide an overview of the final audit. Special Thanks to David I'Anson and his staff for facilitating the work with our auditors. **(p. 19)**
- **District Finances –** In December the District received two large receipts of revenue Current Secured Property Tax and Redevelopment Tax Increment. Overall, the District expenses are under budget, Payroll is under mainly due to timing. Administration expenses are showing over budget this is because in December we budgeted for a $75,000 refund from VCJPA Workers Compensation Program, this is postponed pending the membership's review of the workers' compensation equity building plan at the February 24, 2023, Annual Workshop. Operating expenses are under budget however some line items such as Aerial Application are over budget for the period because of the increasing need for aerial larval and adult mosquito control during the 2022 virus season in eastern Coachella Valley. **(p. 42)**
- **Semi-Annual Research Reports –** Jennifer Henke will give a presentation Tuesday night summarizing the District's applied research projects. **(p. 61)**
- **Remote Teleconferencing –** With the Governor's State of Emergency sunsetting at the end of February, remote teleconferencing for the public meeting will come to an end as prescribed by AB 361. The resolution passed at the January meeting will not cover the February Board meeting the Board will need to decide if we hold a special meeting to keep February under AB 361 provisions or decide to return fully to in-person meetings starting in February. **(p. 112)**
- **GM Employment Agreement –** the ad hoc Negotiations committee met with me on December 7, to discuss the terms of my contract. The ad hoc committee is proposing a new 3-year contract term, an annual COLA of 3% (retrospective to July 1, 2022) that aligns with COLA agreed upon with the collective bargaining groups for next 3 years and an annual contribution of 5% to the employee 457 plan. **(p. 119)**
- **Abatement Hearing Committee-** Standing committee that meets potentially throughout the year to conduct nuisance abatement hearings at regular and special meetings. This year's nominations are Trustee Benjamin Guitron, Gary Gardner, and Steve Downs. **(p. 139)**

- **Executive Committee Slate for 2023 –** the ad hoc nominations committee is recommending the following slate of officers for the 2023 calendar year: Trustee John Pena – President, Trustee Benjamin Guitron – Vice-President, Trustee Doug Kunz – Secretary, and Trustee Clive Weightman - Treasurer. **(p. 140)**
- **Welcome our new Trustee - Nancy Ross, Cathedral City**
  Councilmember Nancy Ross was elected to be the first representative for Cathedral City's District 2. Nancy has been involved in her communities including as a Director of the American Civil Liberties Union. **(p. 6)**

MVCAC 91st Annual Conference – January 29-February 1, 2023 – Trustee Session on Sunday, January 29th - The goal of MVCAC is to provide Trustees with a "value-added" experience. During

the session, you will learn the best management practices of boards and gain some field experience, as the staff takes you out for some interactive site visits. For the complete agenda and to register please contact Melissa at mtallion@cvmosquito.org **(p. 111)**

What's happening with the Mosquitoes in the Trustee's neighborhoods?

Trustee Weightman met with me in October at his home to get a sense of what mosquito surveillance and control look like firsthand in his backyard and local neighborhood. During this field day, a mosquito trap was set in his backyard the day prior to our ride-along. Trustee Weightman also rode along with his communities Vector Control Technician to see some sources firsthand. While I don't have a picture of Trustee Weightman I do have a picture of the mosquitoes from his backyard! We discovered he had both Culex and our invasive mosquito *Aedes aegypti* looking for blood in his backyard. Melissa will begin scheduling ride-alongs with Trustees this spring who have not discovered what's happening with mosquitoes in their neighborhood.

Thank you for taking the time to review the Board packet any questions about the contents of the Board packet, feel free to reach out to me directly either at the District office, 760-342-8287 or via email at jwittie@cvmosqito.org

Respectfully submitted,

Jeremy Witte, MS, CSDM
General Manager

COACHELLA VALLEY MOSQUITO & VECTOR CONTROL DISTRICT

95 years

Serving Public Health Since 1928

ITEMS OF GENERAL CONSENT

COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

Board of Trustees Meeting
Summary of Action Items and Future Tasks
November 8, 2022

Board Actions

- The Board of Trustees approved Resolution 2022-26 authorizing remote teleconferencing meetings for the period November 13, 2022 – December 12, 2022.
- The Board of Trustees approved Resolution 2022-27 providing a gift certificate to employees for work performed late November through early December 2022.
- The Board of Trustees approved the 2023 research proposals.
- The Board of Trustees appointed the ad hoc Nominations Committee.
- The Board of Trustees appointed the ad hoc Negotiations Committee.

Tasks and Ownership

- Register and provide information of interested Trustees for the MVCAC Annual meeting to be held in January 2023 in Anaheim, California. - **Melissa Tallion, Clerk of the Board.**

COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

Board of Trustees Meeting
DRAFT-Minutes

MEETING TIME: 6:00 p.m., Tuesday, November 8, 2022

LOCATION: 43420 Trader Place, Indio, CA 92201- ***Via Zoom***

TRUSTEES PRESENT

PRESIDENT: Benjamin Guitron	Indio
VICE PRESIDENT: Clive Weightman	Indian Wells
SECRETARY: Dr. Doug Kunz	Palm Springs (joined after roll call)
TREASURER: Doug Walker	Palm Desert
Steve Downs	Rancho Mirage
Rita Lamb	Cathedral City
Bito Larson	County at Large
John Peña	La Quinta
Janell Percy	County at Large

TRUSTEES ABSENT

Denise Delgado	Coachella
Gary Gardner	Desert Hot Springs

STAFF AND GENERAL COUNSEL PRESENT

Jeremy Wittie, General Manager
Bruce Baur, Legal Counsel, SBEMP
Crystal Moreno, Human Resources Manager
David I'Anson, Administrative Finance Manager
Jennifer Henke, Laboratory Manager
Edward Prendez, Information Technology Manager
Tammy Gordon, Public Information Manager
Melissa Tallion, Executive Assistant/Clerk of the Board

Other staff members joined the meeting as well

MEMBERS OF THE PUBLIC PRESENT

Yes

1. **Call to Order**
   President Guitron called the meeting to order at 6:00 p.m.

2. **Pledge of Allegiance**
   *Trustee Lamb led the Pledge of Allegiance***.**

3. Roll Call

At roll call eight (8) Trustees out of eleven (11) were present

4. Confirmation of Agenda

President Guitron inquired if there were any agenda items to be shifted. Upon no objections by the Board of Trustees, the agenda was confirmed.

5. **Public Comments**

Mr. Anderson made a public comment regarding item 5A – Non-Agenda Items. Mr. Anderson submitted one (1) written comment. The written comment was distributed to the Board of Trustees and Legal Counsel and is attached for the record.

6. Board Reports

A. President's Report **– Benjamin Guitron, President**

President Guitron stated that the Executive Committee met and discussed the Committee appointments later in the meeting and mentioned the upcoming meeting for the General Manager's Annual Evaluation.

B. Finance Committee **– Doug Walker, Treasurer**

Treasurer Walker reported that the Finance Committee had held its meeting before the Board meeting to review the check report, CalCard charges, and financials for the period ending October 2022. As per normal, there were some questions regarding the charges. All questions were answered to the Committee's satisfaction. A discussion ensued regarding the District's CalCard procedures. The Committee was satisfied with the procedure. The Committee reviewed the CalPERS report.

7. Staff Informational Reports

A. Live Reports

- General Manager's Report

  Jeremy Wittie wanted to commend the District Staff on their hard work during the virus season.

8. Items of General Consent

The following items are routine in nature and may be approved by one blanket motion upon unanimous consent. The President or any member of the Board of Trustees may request an item be pulled from Items of General Consent for a separate discussion.

A. Approval of Resolution 2022-26 authorizing remote teleconferencing meetings for the period November 13 – December 12, 2022 – **Jeremy Wittie, M.S., CSDM, General Manager**

B. Amended Minutes for September 13, 2022, Board Meeting and Minutes for October 11, 2022, Board Meeting

C. Approval of expenditures for October 7, 2022-November 2, 2022

D. Informational Items:

- Financials **– David I'Anson, Administrative Finance Manager**
- Correspondence
- Departmental Reports: Human Resources; Finance; Information Technology; Laboratory & Surveillance Control; and Public Outreach
- MVCAC Fall Meeting November 1-3, 2022, in Visalia, CA
- Transfer of mosquitofish to Orange County Mosquito and Vector Control District
- Donation of TIFA Power Fogging/ULV machine to East Side Mosquito Abatement District
- 2023 Board of Trustees Meeting Calendar
- District Travel

President Guitron asked if any member of the Board would like to pull any specific item for discussion. There was no further discussion.

On a motion from Trustee Lamb, seconded by Trustee Peña, and passed by the following roll call votes, the Board of Trustees approved all items of General Consent.

Ayes: President Guitron, Trustees Downs, Kunz, Lamb, Larson, Peña, Percy, Walker, Weightman

Noes: None

Abstained: None

Absent: Trustees Delgado, Gardner

9. Old Business – None

10. New Business

A. Approval of Resolution 2022- 27 providing a gift certificate to employees for work performed late November through early December 2022 in a total collective amount for all certificates not to exceed $2,800 from fund 5300.01.202.000 – Employee Incentive- Budgeted; Funds Available – **Jeremy Wittie, M.S., CSDM, General Manager**

On a motion from Trustee Kunz, seconded by Trustee Lamb, and passed by the following roll call votes, the Board of Trustees approved Resolution 2022- 27 providing a gift certificate to employees for work performed late November through early December 2022 in a total collective amount for all certificates not to exceed $2,800 from fund 5300.01.202.000

Ayes: President Guitron, Trustees Downs, Kunz, Lamb, Larson, Peña, Percy, Walker, Weightman

Noes: None

Abstained: None

Absent: Trustees Delgado, Gardner

B. Approval of 2023 research proposals in an amount not to exceed $202,470.52; $101,235.26 will be expensed in Fiscal Year (FY) 2022/23 the balance will be expensed FY 2023/24 from Fund 8510.01.600.000 – Research Projects, Budgeted; Funds Available – **Ad Hoc Research Committee and Jennifer A. Henke, M.S., Laboratory Manager**
Jennifer Henke introduced this agenda item and provided a summary and background information.

On a motion from Trustee Walker, seconded by Trustee Peña, and passed by the following roll call votes, the Board of Trustees approved the 2023 research proposals in an amount not to exceed $202,470.52; $101,235.*26 will be expensed in Fiscal Year (FY) 2022/23 the balance will be expensed FY 2023/24 from Fund 8510.01.600.000.*

Ayes: President Guitron, Trustees Downs, Kunz, Lamb, Larson, Peña, Percy, Walker, Weightman

Noes: None

Abstained: None

Absent: Trustees Delgado, Gardner

C. Appointment of the ad hoc Nominations Committee – **Benjamin Guitron, Board President**
President Guitron introduced this agenda item and provided a summary.

On a motion from Trustee Kunz, seconded by Trustee Lamb, and passed by the following roll call votes, the Board of Trustees appointed the ad hoc Nominations Committee. The Committee members are Trustees Guitron, Peña, and Walker.

Ayes: President Guitron, Trustees Downs, Kunz, Lamb, Larson, Peña, Percy, Walker, Weightman

Noes: None

Abstained: None

Absent: Trustees Delgado, Gardner

D. Appointment of the ad hoc Negotiations Committee – **Benjamin Guitron, Board President**
President Guitron introduced this agenda item and provided a summary.

On a motion from Trustee Downs, seconded by Trustee Peña, and passed by the following roll call votes, the Board of Trustees appointed the ad hoc Negotiations Committee. The Committee members are Trustees Guitron, Weightman, and Walker.

Ayes: President Guitron, Trustees Downs, Kunz, Lamb, Larson, Peña, Percy, Walker, Weightman

Noes: None

Abstained: None

Absent: Trustees Delgado, Gardner

11. Closed Session (s)

Closed Session (s):

A. **Public Employee Performance Evaluation pursuant to Government Code Section 54957 (b)(1)**

Title: General Manager

No Closed Session. This item has been postponed.

12. **Comments by General Counsel** – *No comments.*

13. Trustee Comments, Requests for Future Agendas Items, Travel, and/ or Staff Actions

Secretary Kunz would like to attend the MVCAC conference and encouraged his fellow Trustees to attend the annual conference. Trustee Peña would like more information. President Guitron encouraged the Trustees to reach the correspondence included in the Board packet.

The Board may not legally take action on any item presented at this time other than to direct staff to investigate a complaint or place an item on a future agenda unless (1) by a majority vote, the Board determines that an emergency exists, as defined by Government Code Section 54956.5, or (2) by a two-thirds vote, the board determines that the need for action arose subsequent to the agenda being posted as required by Government Code Section 54954.2(a). Each presentation is limited to no more than three minutes.

14. Adjournment

President Guitron adjourned the meeting at 6:26 p.m.

November 8, 2022

Coachella Valley Mosquito and Vector Control District (CVMVCD)

43420 Trader Pl

Indio, CA. 92201

760.342.8287 – www. cvmvcd.org

Attn: Clerk of the Board/ Board of Trustees/General Public

Re: Public Comment(s) for the CVMVCD Board of Trustees meeting of November 8, 2022

Dear CVMVCD appointed board members,

Please review my written statements listed below prior to discussing and or consideration of each agenda Item for the scheduled CVMVCD Board of Trustees of November 8, 2022.

1) Non-Agenda Public comment:

Please discontinue the procedure of limitations set on the Public by CVMVCD administrators deliberate subversion of California's best practices in regards to Public testimony at California open Public meetings. The act of purposely disallowing the Public all CVMVCD known and potentially yet undiscovered Information (verbal reports and or videos/written statements) pertaining to meeting agenda Items prior to Public comment is unlawful and morally corrupted. Resume California's long and well established method of public testimony at all CVMVCD open Public meetings.

Please consider re-establishing California's best practices and protocols in regards to CVMVCD written recorded meeting minutes. As this organizations is well aware, Coachella Valley Resident's and Guests verbal testimony is not reflected (recorded accurate) in CVMVCD written recorded meeting minutes. The deliberate actions of the CVMVCD to denied the Public accuracy of recorded meeting minutes of their spoken testimony at California's open Public meetings is problematic for potential future claims that maybe made in regards to CVMVCD board actions. The CVMVCD have continued to demonstrate a dislike for transparency of its true operations and have acted to shield it from Public scrutinizing with actions to subvert the ability of the Public to fully monitor and or participate in the Peoples business by limiting/hampering free speech at their events.

2) Agenda Item: 8-A (Resolution 2022-26)
Opposed

Discontinue the re-enlistment of Resolution 2022-26 that allows CVMVCD appointed members of the board of trustees to avoid CVMVCD Public venues while purposely attending other public event's with No noticeable concerns of the potential fraud being conducted against the State of California and it's population in clear violation of the good intentions of California's AB361. Resume only In-person Public meeting for All CVMVCD Board of Trustees members and be accountable to residents of the Coachella Valley while following the regulations of the long established California's Brown Act requirements.

3) Agenda Item: 8-D (Informational Items) unnumbered sub Items listed below
   Opposed

Bullet point: Correspondence

Discontinue the unverifiable method of letters/emails/telephone/word of mouth that the CVMVCD organization has generated. Consider allowing all Public Comment(s) (statements) which includes praise and idea's for improvement and criticism of the CVMVCD operations to be unedited and entered in the Public record and made available for review by all that wish to truly see how the CVMVCD organization impacts the Coachella Valley/State of California with customers (taxpayer's) feedback.

Bullet point: Transferring of living creatures (Mosquito fish) out of CVMVCD boundaries

All CVMVCD services and products (property) are resources of the property owners/stakeholders of the Coachella Valley (Benefit assessment revenue produces)

If CVMVCD resources are sold – (ONLY if those resources are expendable) and only when fair market value can be obtained to reimburse the taxpayers that supported its original procurement. It's well known that the CVMVCD organization has defrauded Coachella Valley with the building and operations of Mosquito fish breeding grounds plus most importantly the carelessness of releasing that Invasive species into our sensitive environment.

Bullet point: Donation of TIFA power flogging ULV machine to East Side Mosquito Abatement District (out of CVMVCD service boundaries)

CVMVCD resources are obtained by local Residents through special taxes and those Items shouldn't be given away to other Interests (ex-employee of CVMVCD) that will profit from it's use. Please consider smarter purchases in the future and avoid using tax inquired goods to gain personal favor of other governmental agencies, Retain that equipment in the Coachella Valley.

4) Agenda Item: 10-B (New Business) 2023 research proposals
   Opposed

The continued activities of funding "studies" have been uneventful and unproductive for the CVMVCD service boundaries. Discontinue the gross overreach of the CVMVCD organization to use benefit assessment revenue and other tax collected dollars in ways that don't benefit the Coachella Valley and surrounding areas.

5) Agenda Item: 11-A (Closed session – Board ONLY employee performance evaluation of CVMVCD current General Manager (GM): Jeremy Wittie
Opposed

The CVMVCD management have been allowed to become increasingly unmanaged – CVMVCD administration (Operation supervisors) have been compromised and unable and or (unwilling) to operate with integrity. That behavior has been sponsored by the current GM's lack of experience and or unwillingness to engage potential criminal elements within the network of that special district.

Please consider that the year 2022 have been the worst I've ever seen in the Coachella Valley for uncontrolled Vector (Mosquito) activity. The misused of the CVMVCD obtained Inspection warrant and the poorly constructed abatement protocols have allowed Valley Resident's and Guests to potential be harmed by disease(s) while in the Coachella Valley.

Brad Anderson | [redacted]

Cc:

COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

SPECIAL MEETING - Board of Trustees Meeting
DRAFT-Minutes

MEETING TIME: 2:00 p.m., Friday, November 18, 2022

LOCATION: 43420 Trader Place, Indio, CA 92201- ***Via Zoom***

TRUSTEES PRESENT

PRESIDENT: Benjamin Guitron	Indio
VICE PRESIDENT: Clive Weightman	Indian Wells
TREASURER: Doug Walker	Palm Desert
Denise Delgado	Coachella
Steve Downs	Rancho Mirage
Gary Gardner	Desert Hot Springs
John Peña	La Quinta
Janell Percy	County at Large

TRUSTEES ABSENT

SECRETARY: Dr. Doug Kunz	Palm Springs
Rita Lamb	Cathedral City
Bito Larson	County at Large

STAFF AND GENERAL COUNSEL PRESENT
Jeremy Wittie, General Manager
Lena Wade, Legal Counsel, SBEMP
Sabrina Pinkney, Assistant to Legal Counsel, SBEMP
Melissa Tallion, Executive Assistant/Clerk of the Board

MEMBERS OF THE PUBLIC PRESENT
No

1. **Call to Order**
   President Guitron called the meeting to order at 2:01 p.m.

2. **Pledge of Allegiance**
   *Trustee Delgado led the Pledge of Allegiance***.**

3. **Roll Call**
   At roll call eight (8) Trustees out of eleven (11) were present

4. **Public Comments**

Mr. Anderson submitted one (1) written comment. The written comment was distributed to the Board of Trustees and Legal Counsel and is attached for the record.

5. Closed Session (s)

Closed Session (s):

A. **Public Employee Performance Evaluation pursuant to Government Code Section 54957 (b)(1)**

Title: General Manager

6. **Comments by General Counsel**

No Reportable Action

7. Adjournment

President Guitron adjourned the meeting at 3:05 p.m.

Melissa Tallion

From: [redacted]
Sent: Thursday, November 17, 2022 10:23 PM
To: Melissa Tallion
Subject: Public Comment - CVMVCD Special meeting of November 18, 2022/2:PM

November 17, 2022

Coachella Valley Mosquito and Vector Control District (CVMVCD)
Indio, CA.
Attn: Clerk of the Board/General Public/Trustees

Re: Written Public Comment (Agenda Item: 5-A, closed session)

Dear CVMVCD appointed members,

This written statement is in response to CVMVCD Special Public meeting announcement for November 18, 2022 at the unusual time of 2:PM.
As you are aware, the CVMVCD organization have denied access to the November 18, 2022 "Open Public meeting" for In-person participation and monitoring of CVMVCD Board of Trustees members by the Public in a reasonable matter (in person) the CVMVCD administration have continued to demonstrate a reckless and potentially Illegal missused of California's AB361 (conducting Public meetings remotely)

Please be mindful that California Special meeting should only be called when business matters are unusually urgent and can't be addressed at a later scheduled regular Public meeting without potential negative effect on said topic if not scheduled earlier than the next regular meeting of that organization.

Please explain the actions that would illustrate why a "close session" topic, such as actions of conducting an existing CVMVCD Board of Trustees employment review of the current General Manager (Jeremy Wittie) wouldn't be able to be discussed/considered at a regular scheduled CVMVCD Board of Trustees meeting in the future.

Please re-scheduled (cancel the November 18, 2022 Meeting) for the simple and non urgent matter of reviewing the current CVMVCD general manager's employment performance.

Please take noticed of this written statement being submitted prior to 11:AM on November 18, 2022. The act of demanding Public testimony (written documents) be delivered at a certain time and or date while operating under California's AB361 continues to demonstrate the CVMVCD questionable conduct to follow California law.

Sincerely,

Brad Anderson | [redacted]

Cc:

COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

SPECIAL MEETING - Board of Trustees Meeting
DRAFT-Minutes

MEETING TIME: 2:30 p.m., Friday, December 16, 2022

LOCATION: 43420 Trader Place, Indio, CA 92201- ***Via Zoom***

TRUSTEES PRESENT

PRESIDENT: Benjamin Guitron	Indio
VICE PRESIDENT: Clive Weightman	Indian Wells
TREASURER: Doug Walker	Palm Desert
Steve Downs	Rancho Mirage
Gary Gardner	Desert Hot Springs
Rita Lamb	Cathedral City
John Peña	La Quinta

TRUSTEES ABSENT

Denise Delgado	Coachella
SECRETARY: Dr. Doug Kunz	Palm Springs
Bito Larson	County at Large
Janell Percy	County at Large

STAFF AND GENERAL COUNSEL PRESENT
Jeremy Wittie, General Manager
Lena Wade, Legal Counsel, SBEMP
Melissa Tallion, Executive Assistant/Clerk of the Board

MEMBERS OF THE PUBLIC PRESENT
Yes

1. **Call to Order**
   President Guitron called the meeting to order at 2:31 p.m.

2. **Pledge of Allegiance**
   *Trustee Peña led the Pledge of Allegiance***.**

3. **Roll Call**
   At roll call seven (7) Trustees out of eleven (11) were present.

4. **Public Comments**
   Mr. Anderson commented on agenda items.

5. **Discussion and/or approval of Resolution 2022-28 authorizing remote teleconferencing meetings for the period December 16, 2022 – January 14, 2023**

On a motion from Trustee Gardner, seconded by Trustee Downs, and passed by the following roll call votes, the Board of Trustees approved Resolution 2022-28 authorizing remote teleconferencing meetings for the period December 16, 2022 – January 14, 2023.

Ayes: President Guitron, Trustees Downs, Gardner, Lamb, Peña, Walker, Weightman

Noes: None

Abstained: None

Absent: Trustees Delgado, Kunz, Larson, Percy

6. Adjournment

President Guitron adjourned the meeting at 2:43 p.m.

Coachella Valley Mosquito and Vector Control District
Checks Issued for the Period of:
November 9 - December 15, 2022

Check No	Payable To	Description	Check Amount	Total Amount
	Payroll Disbursement	November 10, 2022	228,319.13	
	Payroll Disbursement	November 23, 2022	229,988.99	
	Payroll Disbursement	December 9, 2022	264,589.78	
				722,897.90
Pre-Approved Expenditures Utilities/Benefits:				
44284	CalPERS - Retirement Acct	Retirement Contributions: 10/28/2022PP	102,103.25	
44285	ICMA Retirement Trust	Deferred Compensation: 10/14/2022PP	35,718.98	
44286	Imperial Irrigation District	District Electricity Services	2,785.30	
44287	Imperial Irrigation Dist-Lab Acct	District Electricity Services	5,073.81	
44288	Indio Water Authority	District Water Services	1,125.89	
44289	Principal Life Insurance Co.	Life Insurance	14,007.17	
44309	Burrtec Waste & Recycling Svcs.	District Waste Services	454.56	
44310	CalPERS Healthcare Acct	Healthcare Coverage 12/2022	90,166.91	
44311	Frontier Communications-Internet	District Internet Services	451.09	
44312	Frontier Communications-Toll/POTS	District Phone Services	184.21	
44313	Principal Life Insurance Co.	Life Insurance	14,007.17	
44314	SoCalGas	District Gas Services	331.35	
44343	CalPERS - Retirement Acct	Retirement Contributions 11/23/2022PP	69,082.27	
44344	MissionSquare (Plan# 302318)	Deferred Compensation Contributions: 12/09/2022PP	23,265.78	
				358,757.74
Pre-Approved Expenditures less than $10,000.00:				
44290	Abila	Cloud Computing Services	873.86	
44291	CleanExcel	Janitorial Services	3,811.00	
44292	Cockrell Electric	Repair & Maintenance	455.48	
44293	CSI Ceja Security International	Security Patrol Services	1,456.00	
44294	Desert Air Conditioning	Repair & Maintenance	1,963.32	
44295	Jennifer Henke	Staff Training	414.30	
44296	Kim Hung-Lyu	Professional Development	261.28	
44297	Inova Holding III, LLC dba Inova Payroll of Southern CA LLC	HRIS Cloud Services: October 2022	509.74	
44298	Izzy Motors Inc. dba La Quinta Chevrolet	Offsite Vehicle Maintenance & Repair	497.79	
44299	Graciela Morales	Tuition Reimbursement	1,377.07	
44300	NAPA Auto & Truck Parts	Vehicle Parts & Supplies	807.59	
44301	Russell E. Patterson DBA R.E. Patterson and Associates	Professional Fees	6,500.00	
44302	Veolia ES Technical Solutions, LLC	Lab Supplies and Expense	113.48	
44303	Tops N Barricades, Inc.	Repair Maintenance	131.15	
44304	The Regents of U.C.	Cloud Computing Services	2,520.00	
44305	Vector Control Joint Powers Agency	Property & Liability Insurance	2,478.00	
44306	Verizon Business	IT Communications	1,646.85	
44307	Willdan Financial Services	Benefit Assessment	7,480.78	
44308	Petty Cash Custodian Crystal Moreno	Employee Incentive	2,800.00	
44315	Advance Imaging Systems	Contract Services	634.67	
44316	Airgas USA, LLC	Lab Supplies	2,932.05	
44317	CarQuest Auto Parts	Vehicle Parts & Supplies	160.19	
44319	Cintas Corporation #3	Uniform Expense	4,351.36	
44320	CleanExcel	Janitorial Services	3,811.00	
44321	Desert Electric Supply	Repair & Maintenance	544.17	
44322	Employee Relations Inc.	Recruitment/Advertising	231.57	
44323	Equipment Direct, Inc.	Safety Supplies	964.43	
44324	Jennifer Henke	Professional Development	789.10	
44325	Hypertec USA Inc	Cloud Computing Services	30.62	
44326	Jauregui & Culver, Inc.	Capital Equipment	2,409.62	
44327	Jernigan's Sporting Goods, Inc.	Safety Expense	304.48	
44328	Linde Gas & Equipment Inc.	Cylinder Rentals	60.99	
44329	Marlin Leasing Corporation	Contract Services	705.79	
44330	Veronica Montoya	Professional Development	143.13	
44331	Graciela Morales	Professional Development	553.75	
44332	NAPA Auto & Truck Parts	Building & Grounds Maintenance	354.69	
44333	Pitney Bowes Global Financial Services LLC	Contract Services	310.82	
44334	Puretec Industrial Water	Equipment Parts & Supplies	324.98	
44335	Quench USA Inc.	Employee Support	106.57	
44337	Slovak Baron Empey Murphey & Pinkney LLP	Attorney Fees	7,291.64	
44339	Veolia ES Technical Solutions, LLC	Lab Supplies and Expense	113.57	
44340	Abelina Torres	Professional Development	142.54	
44341	Verizon Wireless	IT Communications	2,696.73	
44345	Inova Holding III, LLC dba Inova Payroll of Southern CA LLC	HRIS Services for November 2022	504.17	
Cash - California Bank & Trust Checking				**66,570.32**
Cash - California Bank & Trust Checking				
44336	Salton Sea Air Service	Aerial ULV	41,441.46	
44338	SC Commercial LLC dba SC Fuels	Motor, Fuel, Oil	14,968.90	
44342	U.S. Bank	Calcard - 11/22 Statement	115,857.07	
Cash - California Bank & Trust Check Run Total to be Approved				**172,267.43**
Total Expenditures: November 9 - December 15, 2022				**1,320,493.39**

Benjamin Guitron IV, President

Douglas Walker, Treasurer

Coachella Valley Mosquito and Vector Control District
Checks Issued for the Period of:
December 16 - January 4, 2023

Check No	Payable To	Description	Check Amount	Total Amount
	Payroll Disbursement	December 22, 2022	230,738.11	
				230,738.11
Pre-Approved Expenditures Utilities/Benefits:				
44349	CalPERS Healthcare Acct	Healthcare 1/2023	97,524.44	
44350	Imperial Irrigation District	District Electricity Charges	1,945.99	
44351	Imperial Irrigation Dist-Lab Acct	District Electricity Charges	4,987.57	
44352	Verizon Business	District Landline Charges	1,650.15	
				106,108.15
Pre-Approved Expenditures less than $10,000.00:				
44353	A & B FENCING	Repair & Maintenance	9,980.00	
44354	Abila	Cloud Computing Services	873.86	
44355	Burrtec Waste Industries	Repair & Maintenance	30.97	
44356	Burrtec Waste & Recycling Svcs.	District Waste Disposal	454.56	
44357	CarQuest Auto Parts	Vehicle Parts & Supplies	581.08	
44358	Carrot Top Industries	Repair & Maintenance	1,370.21	
44359	City of Indio Alarm Program	Permits, Licenses, Fees	14.00	
44360	CleanExcel	Janitorial Services	3,811.00	
44361	Consolidated Electrical Distributors, Inc.	Repair & Maintenance	473.95	
44362	C&R Wellness Works LLC dba Wellness Works	Employee Assistance Services	607.50	
44363	CSI Ceja Security International	Security Patrol Services	1,456.00	
44364	Daniel's Tire Service	Vehicle Parts & Supplies	1,813.94	
44365	Desert Fire Extinguisher Co., Inc.	Repair & Maintenance	382.45	
44366	Eisenhower Occupational Health Serv	Physician Fees	55.00	
44367	Fedak & Brown, LLP	Professional Fees	2,053.00	
44368	Ferguson Enterprises	Repair & Maintenance	74.69	
44369	Fiesta Ford-Lincoln-Mercury	Vehicle Parts & Supplies	512.61	
44370	Friends of the Indio Senior Center	Promotion & Education	95.00	
44371	G/M Business Interiors	Safety Expense	1,156.49	
44372	High Tech Irrigation, Inc.	Repair & Maintenance	198.69	
44373	Kim Hung-Lyu	Professional Development	74.00	
44374	Indio Emergency Medical Group	Physician Fees	135.00	
44375	Jernigan's Sporting Goods, Inc.	Safety Expense	392.48	
44376	Izzy Motors Inc. dba La Quinta Chevrolet	Vehicle Parts & Supplies	87.70	
44377	Linde Gas & Equipment Inc.	Cylinder Rentals	63.54	
44378	NAPA Auto & Truck Parts	Vehicle Parts & Supplies	147.85	
44379	Pickering Events LLC	Promotion & Education	1,025.00	
44380	Quench USA Inc.	Employee Support	106.57	
44381	Refrigeration Supplies Distributor	Repair & Maintenance	320.59	
44382	SC Commercial LLC dba SC Fuels	Motor, Fuel, Oil	6,378.30	
44383	Spark Creative Design	Professional Fees	375.00	
44384	Veolia ES Technical Solutions, LLC	Lab Supplies and Expense	566.08	
44385	Waxie Sanitary Supply	Repair & Maintenance	344.89	
Cash - California Bank & Trust Checking				**36,012.00**
Cash - California Bank & Trust Checking				
44348	U.S. Bank	Calcard 12/22 Statement	56,401.46	
44386	Chief Services	Capital Outlay	80,987.00	
Cash - California Bank & Trust Check Run Total to be Approved				**137,388.46**
Total Expenditures: December 16 - January 4, 2023				**510,246.72**

Benjamin Guitron IV, President

Douglas Walker, Treasurer

COACHELLA VALLEY MOSQUITO & VECTOR CONTROL DISTRICT

95 years

Serving Public Health Since 1928

FINANCE REPORTS

Coachella Valley Mosquito and Vector Control District
FINANCES AT A GLANCE
ALL FUNDS COMBINED
For the Month Ended December 31, 2022

	Beginning of the Month	Change During the Month	End of the Month
INVESTMENTS	10,158,305	3,918,426	14,076,731
CASH	168,516	4,168	172,684
INVESTMENTS & CASH	10,326,821	3,922,594	14,249,415
CURRENT ASSETS	1,694,944	(40,309)	1,654,636
FIXED ASSETS	9,286,644	-	9,286,644
OTHER ASSETS	7,564,490	-	7,564,490
TOTAL ASSETS	28,872,900	3,882,285	32,755,186
TOTAL LIABILITIES	3,686,546	(177,184)	3,509,362
TOTAL DISTRICT EQUITY	25,186,355	4,059,469	29,245,824
TOTAL LIABILITIES & EQUITY	28,872,900	3,882,285	32,755,186

RECEIPTS		$ 4,818,605
CASH DISBURSEMENTS		
Payroll	$ 495,328	
General Admin	$ 400,683	
Total Cash Disbursements		$ (896,011)
NON-CASH ENTRIES: Accrual Modifications - Changes in A/P, A/R & Pre-paid insurance		$ (40,309)
Change during Month - Excess of Cash over Receipts & Non-Cash Adjustments		$ 3,882,285

CVMVCD

Cash Journal - deposits

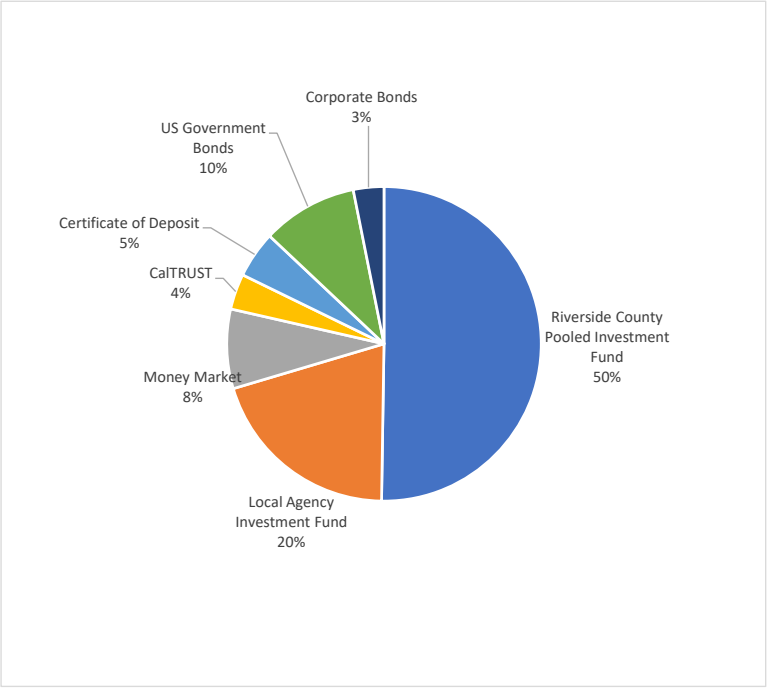
From 12/1/2022 Through 12/31/2022

Effective ...	Transaction Description	Deposits	Payee/Recipient Name
12/1/2022	December receipts - pesticide rebate	825.00	Syngenta Corp Protection LLC
12/1/2022	December receipts - remibursment	116.19	Luz Moncada
12/31/2022	December receipts	99.11	California Bank & Trust
12/31/2022	December receipts - Calcard Reimbursement	3,534.96	US Bank
12/31/2022	December receipts - CY Unsecured	7,133.56	Riverside County
12/31/2022	December receipts - Homeowners Exemption	5,502.28	Riverside County
12/31/2022	December receipts - Property Tax	1,364,126.73	Riverside County
12/31/2022	December receipts - RDA Tax Increment	3,435,863.42	Riverside County
12/31/2022	Testing Reimbursement	1,404.00	Riverside County Department of Environmental Health
Report Total		4,818,605.25	

COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT
INVESTMENT FUND BALANCES AS OF DECEMBER 31, 2022

INSTITUTION	IDENTIFICATION	Issue Date	Maturity Date	YIELD	General Fund	Thermal Capital Fund	Capital Equipment Replacement Fund	Capital Facility Replacement Fund	Capital Project Insectory Fund	BALANCE
LAIF	Common Investments			2.16%	2,215,607	30,380	57,039	356,821	184,402	$ 2,844,248
Riverside County	Funds 51105 & 51115			2.08%	5,524,234	75,747	142,216	889,671	459,774	$ 7,091,642
CalTRUST	Medium Term Fund			1.84%	402,326	5,517	10,358	64,794	33,485	$ 516,480
CA Bank & Trust	Market Rate			0.15%	871,769	11,953	22,443	140,397	72,556	$ 1,119,119
Pershing	Market Rate			0.00%	25,771	353	663	4,150	2,145	$ 33,083
BMW Bank	Certificate of Deposit	11/20/2020	11/20/2025	0.50%			54,282	171,892		$ 226,174
State BK of India	Certificate of Deposit	11/23/2020	11/24/2025	0.55%			54,361	172,144		$ 226,505
Goldman Sachs	Certificate of Deposit	9/21/2021	9/22/2026	1.05%		37,736	45,057	142,681		$ 225,474
Federal Home Ln	US Government Bonds	11/24/2020	11/24/2025	0.63%			166,936	528,629		$ 695,565
Federal Natl Mtg Assn	US Government Bonds	11/25/2020	11/25/2025	0.63%			166,009	525,694		$ 691,703
Bank Amer Corp	Corporate Bonds	11/25/2020	11/25/2025	0.65%			106,360	336,805		$ 443,165
	Total Investments				9,039,708	161,686	825,723	3,333,680	752,362	**$ 14,113,157**

PORTFOLIO COMPOSITION AS OF DECEMBER 31, 2022
WEIGHTED YIELD 1.68%



In compliance with the California Code Section 53646; the Finance Administrator of the Coachella Valley Mosquito and Vector Control District hereby certifies that sufficient liquidity and anticpated revenue are available to meet the District's budgeted expenditure requirements for the next six months.

Investments in the report meet the requirements of the Coachella Valley Mosquito and Vector Control District's adopted investment policy

Respectfully submitted

NOTED AND APPROVED

CVMVCD
Statement of Revenue and Expenditures
December 31, 2022

		Annual Budget	YTD Budget	**YTD Actual**	YTD Budget Variance	Current Period Budget	**Current Period Actual**	Current Period Variance	Annual Budget Variance	Percent Annual Budget
Revenues										
4000	Property Tax - Current Secured	4,438,762	1,285,587	**1,364,186**	78,599	1,285,587	**1,364,127**	78,540	(3,074,576)	(69)%
4010	Property Tax - Curr. Supplmntl	31,172	0	**0**	0	0	**0**	0	(31,172)	(100)%
4020	Property Tax - Curr. Unsecured	199,247	193,369	**194,244**	875	10,700	**7,134**	(3,566)	(5,003)	(3)%
4030	Homeowners Tax Relief	36,924	18,462	**5,502**	(12,960)	12,866	**5,502**	(7,363)	(31,422)	(85)%
4070	Property Tax - Prior Supp.	53,097	0	**0**	0	0	**0**	0	(53,097)	(100)%
4080	Property Tax - Prior Unsecured	9,069	0	**0**	0	0	**0**	0	(9,069)	(100)%
4090	Redevelopment Pass-Thru	6,305,008	3,152,504	**3,435,863**	283,359	3,152,504	**3,435,863**	283,359	(2,869,145)	(46)%
4520	Interest Income - LAIF/CDs	42,000	21,000	**20,314**	(686)	10,500	**1,678**	(8,822)	(21,686)	(52)%
4530	Other Miscellaneous Receipts	63,000	31,500	**14,358**	(17,142)	5,250	**4,360**	(890)	(48,642)	(77)%
4551	Benefit Assessment Income	2,299,810	0	**15**	15	0	**0**	0	(2,299,795)	(101)%
	Total Revenues	13,478,089	4,702,422	**5,034,483**	332,061	4,477,406	**4,818,664**	341,258	(8,443,606)	(63)%
Expenditures										
Payroll Expenses										
5101	Payroll - FT	5,910,271	2,955,136	**2,714,330**	240,806	492,523	**486,326**	6,197	3,195,941	54 %
5102	Payroll Seasonal	142,020	79,020	**52,611**	26,409	10,500	**2,792**	7,708	89,409	63 %
5103	Temporary Services	6,900	0	**0**	0	0	**0**	0	6,900	100 %
5105	Payroll - Overtime Expense	34,120	15,060	**14,011**	1,049	2,510	**909**	1,601	20,109	59 %
5150	CalPERS State Retirement	752,856	471,440	**420,114**	51,326	46,903	**44,641**	2,262	332,742	44 %
5155	Social Security Expense	360,143	180,568	**171,784**	8,785	29,929	**28,110**	1,819	188,359	52 %
5165	Medicare Expense	84,227	42,230	**41,572**	657	7,000	**7,293**	(293)	42,655	51 %
5170	Cafeteria Plan	1,263,700	631,850	**611,323**	20,527	105,308	**3,895**	101,413	652,377	52 %
5172	Retiree Healthcare	392,420	196,210	**187,681**	8,529	32,702	**26,035**	6,667	204,739	52 %
5180	Deferred Compensation	121,857	60,929	**46,159**	14,769	10,155	**10,742**	(587)	75,698	62 %
5195	Unemployment Insurance	32,066	16,068	**818**	15,250	2,667	**285**	2,382	31,248	97 %
	Total Payroll Expenses	9,100,581	4,648,510	**4,260,403**	388,107	740,196	**611,028**	129,168	4,840,178	53 %

CVMVCD
Statement of Revenue and Expenditures
December 31, 2022

		Annual Budget	YTD Budget	YTD Actual	YTD Budget Variance	Current Period Budget	Current Period Actual	Current Period Variance	Annual Budget Variance	Percent Annual Budget
Administrative Expenses										
5250	Tuition Reimbursement	20,000	10,000	**2,652**	7,348	1,667	**0**	1,667	17,348	87 %
5300	Employee Incentive	15,500	7,750	**3,639**	4,111	1,292	**256**	1,035	11,861	77 %
5302	Wellness	5,600	2,800	**293**	2,507	467	**0**	467	5,307	95 %
5305	Employee Assistance Program	4,000	2,000	**1,544**	457	333	**0**	333	2,457	61 %
6000	Property & Liability Insurance	193,570	86,785	**115,700**	(28,915)	(2,203)	**7,535**	(9,738)	77,870	40 %
6001	Workers' Compensation Insurance	206,753	65,876	**120,428**	(54,551)	(51,521)	**20,071**	(71,592)	86,325	42 %
6050	Dues & Memberships	43,495	35,340	**32,340**	3,000	382	**0**	382	11,155	26 %
6060	Reproduction & Printing	27,360	13,680	**12,323**	1,357	2,280	**9,583**	(7,303)	15,037	55 %
6065	Recruitment/Advertising	7,500	3,750	**3,019**	731	625	**481**	144	4,481	60 %
6070	Office Supplies	21,121	10,560	**5,734**	4,826	1,760	**224**	1,536	15,387	73 %
6075	Postage	5,750	2,875	**1,417**	1,458	479	**0**	479	4,333	75 %
6080	Computer & Network Systems	8,199	4,100	**1,549**	2,551	683	**0**	683	6,650	81 %
6085	Bank Service Charges	250	125	**91**	34	21	**0**	21	159	64 %
6090	Local Agency Formation Comm.	2,400	1,200	**2,541**	(1,341)	200	**0**	200	(141)	(6)%
6095	Professional Fees	45,100	22,550	**33,289**	(10,739)	3,758	**1,583**	2,175	11,811	26 %
6100	Attorney Fees	68,000	34,000	**20,651**	13,349	5,667	**7,292**	(1,625)	47,349	70 %
6105	Legal Services / Filing Fees	1,000	500	**0**	500	83	**0**	83	1,000	100 %
6106	HR Risk Management	4,500	4,500	**7,819**	(3,319)	0	**0**	0	(3,319)	(74)%
6110	Conference Expense	54,335	17,000	**10,150**	6,850	3,433	**1,094**	2,339	44,185	81 %
6115	In-Lieu	13,200	6,600	**6,774**	(174)	1,100	**1,100**	0	6,426	49 %
6120	Trustee Support	7,600	3,800	**1,613**	2,187	633	**0**	633	5,987	79 %
6200	Meetings Expense	7,010	2,505	**422**	2,083	418	**10**	407	6,588	94 %
6210	Promotion & Education	28,000	14,000	**7,944**	6,056	2,333	**4,045**	(1,711)	20,056	72 %
6220	Public Outreach Advertising	56,000	28,000	**7,700**	20,300	4,667	**44**	4,623	48,300	86 %
6500	Benefit Assessment Expenses	86,000	14,333	**15,249**	(916)	0	**0**	0	70,751	82 %
Total Administrative Expenses		932,243	394,630	**414,881**	(20,251)	(21,442)	**53,319**	(74,761)	517,361	55 %
Utilities										
6400	Utilities	114,383	57,191	**56,926**	265	9,532	**455**	9,077	57,457	50 %
6410	Telecommunications	1,824	912	**1,111**	(199)	152	**184**	(32)	713	39 %
Total Utilities		116,207	58,103	**58,037**	67	9,684	**639**	9,045	58,170	50 %

CVMVCD
Statement of Revenue and Expenditures
December 31, 2022

		Annual Budget	YTD Budget	**YTD Actual**	YTD Budget Variance	Current Period Budget	**Current Period Actual**	Current Period Variance	Annual Budget Variance	Percent Annual Budget
Operating										
7000	Uniform Expense	54,985	28,455	**19,852**	8,603	4,422	**4,338**	83	35,133	64 %
7050	Safety Expense	32,170	16,085	**9,667**	6,418	2,647	**1,961**	687	22,503	70 %
7100	Physican Fees	5,000	2,500	**1,030**	1,470	417	**0**	417	3,970	79 %
7150	IT Communications	56,500	28,250	**23,337**	4,913	4,708	**451**	4,257	33,163	59 %
7200	Household Supplies	3,000	1,500	**1,209**	291	250	**0**	250	1,791	60 %
7300	Repair & Maintenance	42,000	21,000	**26,044**	(5,044)	3,500	**3,575**	(75)	15,956	38 %
7310	Maintenance & Calibration	6,170	0	**609**	(609)	0	**0**	0	5,561	90 %
7350	Permits, Licenses & Fees	6,427	3,449	**5,403**	(1,954)	503	**0**	503	1,025	16 %
7360	Software Licensing	31,335	8,980	**11,216**	(2,236)	0	**1,450**	(1,450)	20,119	64 %
7400	Vehicle Parts & Supplies	44,720	22,360	**25,713**	(3,353)	3,727	**6,147**	(2,420)	19,007	43 %
7420	Offsite Vehicle Maint & Repair	16,882	8,441	**14,413**	(5,972)	1,407	**571**	836	2,469	15 %
7450	Equipment Parts & Supplies	26,940	14,040	**14,241**	(201)	2,483	**5,460**	(2,976)	12,699	47 %
7500	Small Tools Furniture & Equip	4,700	2,350	**766**	1,584	392	**0**	392	3,934	84 %
7550	Lab Supplies & Expense	35,720	18,910	**18,055**	855	1,777	**345**	1,432	17,665	49 %
7570	Aerial Pool Surveillance	6,000	0	**0**	0	0	**0**	0	6,000	100 %
7575	Surveillance	72,510	51,005	**59,764**	(8,759)	19,317	**768**	18,550	12,746	18 %
7600	Staff Training	85,700	45,325	**23,074**	22,251	6,404	**1,616**	4,787	62,626	73 %
7650	Equipment Rental	1,000	500	**53**	447	83	**0**	83	947	95 %
7675	Contract Services	164,827	74,286	**55,033**	19,253	9,953	**2,272**	7,681	109,794	67 %
7680	Cloud Computing Services	104,499	21,434	**28,389**	(6,955)	1,802	**699**	1,103	76,110	73 %
7700	Motor Fuel & Oils	130,300	65,150	**63,736**	1,414	10,858	**0**	10,858	66,564	51 %
7750	Field Supplies	14,600	7,300	**1,182**	6,118	1,217	**289**	928	13,418	92 %
7800	Control Products	573,616	431,918	**389,112**	42,806	23,616	**1,099**	22,517	184,504	32 %
7850	Aerial Applications	231,000	115,500	**225,510**	(110,010)	19,250	**41,441**	(22,191)	5,490	2 %
7860	Unmanned Aircraft Application Servic	40,000	20,000	**561**	19,439	3,333	**0**	3,333	39,439	99 %
8415	Capital Outlay	62,442	44,535	**12,320**	32,215	8,351	**4,570**	3,782	50,122	80 %
8510	Research Projects	150,000	68,660	**68,560**	100	11,439	**11,427**	12	81,440	54 %
9000	Contingency Expense	110,000	55,000	**0**	55,000	9,167	**0**	9,167	110,000	100 %
Total Operating		2,113,043	1,176,931	**1,098,849**	78,082	151,023	**88,478**	62,545	1,014,193	49 %

CVMVCD
Statement of Revenue and Expenditures
December 31, 2022

		Annual Budget	YTD Budget	YTD Actual	YTD Budget Variance	Current Period Budget	Current Period Actual	Current Period Variance	Annual Budget Variance	Percent Annual Budget
Contribution to Capital Reserves										
8900	Transfer to other funds	2,216,016	1,608,008	**1,608,008**	0	101,335	**101,335**	0	608,008	27 %
Total Contribution to Capital Reserves		2,216,016	1,608,008	**1,608,008**	0	101,335	**101,335**	0	608,008	27 %
Total Expenditures		14,478,089	7,886,183	**7,440,178**	446,005	980,795	**854,798**	125,998	7,037,911	49 %
Net revenue over/(under) expenditures		(1,000,000)	(3,183,761)	**(2,405,696)**	778,066	3,496,611	**3,963,866**	467,256		

CVMVCD

Balance Sheet

As of 12/31/2022

		Current Year
	Assets	
	Cash and Investments	
1000	Cash - Investments	14,076,731.30
1016	Petty Cash	500.00
1017	Petty Cash Checking	1,500.00
1035	CB&T General Checking	28,618.90
1036	CB&T Payroll Checking	142,065.12
	Total Cash and Investments	14,249,415.32
	Current Assets	
1051	Lease Payments Receivable	11,227.54
1080	Interest Receivable	2,342.86
1085	Inventory	546,950.85
1166	Prepaid IT Service	4,350.00
1167	Prepaid Research Proposals	(0.02)
1168	Prepaid Insurance	244,285.33
1169	Deposits	845,479.00
	Total Current Assets	1,654,635.56
	Fixed Assets	
1201	Leased Copier Asset #1 Ops Copier	14,694.42
1202	Leased Copier Asset #2 Admin Copier	19,670.89
1300	Equipment/Vehicles	2,117,915.50
1310	Computer Equipment	566,629.49
1311	GIS Computer Systems	301,597.91
1320	Office Furniture & Equipment	1,307,594.90
1330	Land	417,873.30
1335	Oleander Building	5,665,861.83
1336	Signage	23,651.39
1340	Structures & Improvements	3,244,697.72
1341	Bio Control Building	6,923,882.74
1342	Bio Control Equip/Furn	43,986.77
1398	Amortization Leased Equipment	(32,179.65)

CVMVCD

Balance Sheet

As of 12/31/2022

		Current Year
1399	Accumulated Depreciation	(11,329,232.93)
	Total Fixed Assets	9,286,644.28
	Other Assets	
1520	Resources to Be Provided	3,514,102.32
1525	Deferred Outflows of Resources	2,842,951.00
1530	Deferred Outflows of Resources - OPEB	1,207,437.00
1900	Due to/from	0.12
	Total Other Assets	7,564,490.44
	Total Assets	32,755,185.60
	Liabilities	
	Short-term Liabilities	
	Accounts Payable	
2015	Credit Card Payable	39,901.18
2020	Accounts Payable	156,284.64
2030	Accrued Payroll	(5,314.42)
2040	Payroll Taxes Payable	396.30
2175	Claims/Judgements Payable	54.61
2185	Employee Dues	473.42
2402	Leased Copier Asset # 2	2,191.49
	Total Accounts Payable	193,987.22
	Deferred Revenue	
2025	Deferred Revenue	11,250.00
	Total Deferred Revenue	11,250.00
	Total Short-term Liabilities	205,237.22
	Long-term Liabilities	
2100	Pollution Remediation Obligation	2,100,000.00
2200	Net Pension Liability	(750,483.00)
2210	Deferred Inflows of Resources	84,159.00
2230	Deferred Inflows - OPEB	880,545.00
2235	Deferred Inflow of Resources - Leases	15,436.75

CVMVCD

Balance Sheet

As of 12/31/2022

		Current Year
2300	Net OPEB Liaibility	87,247.00
2500	Compensated Absences Payable	887,219.76
	Total Long-term Liabilities	3,304,124.51
	Total Liabilities	3,509,361.73
	Fund Balance	
	Non Spendable Fund Balance	
3920	Investment in Fixed Assets	10,673,170.66
3945	Reserve for Prepaids & Deposit	1,041,259.68
3960	Reserve for Inventory	459,270.86
	Total Non Spendable Fund Balance	12,173,701.20
	Committed Fund Balance	
3965	Public Health Emergency	4,851,276.00
	Total Committed Fund Balance	4,851,276.00
	Assigned Fund Balance	
3910	Reserve for Operations	5,800,000.00
3925	Reserve for Future Healthcare Liabilities	453,746.00
3955	Thermal Remediation Fund	63,688.00
3970	Reserve for Equipment	726,018.00
3971	Reserve for Facility & Vehicle Replacement	2,659,312.00
	Total Assigned Fund Balance	9,702,764.00
	Unassigned Fund Balance	
3900	Fund Equity	(568,650.76)
3991	Prior Year Adjustment GASB87	20,909.82
3999	P&L Summary	4,005,097.29
	Total Unassigned Fund Balance	3,457,356.35
	Current YTD Net Income	
		(939,273.68)
	Total Current YTD Net Income	(939,273.68)
	Total Fund Balance	29,245,823.87

CVMVCD

Balance Sheet

As of 12/31/2022

	Current Year
Total Liabilities and Net Assets	32,755,185.60

The financial reports show the preliminary balance sheet, receipts, and revenue and expenditure reports for the month ending December 31, 2022. The revenue and expenditure report shows that the operating budget expenditure for July 1, 2022, to December 31, 2022, is $7,440,178 total revenue is $5,034,483 resulting in excess revenue over (under) expenditure for the year to December 31, 2022, of ($2,405,695).

THREE YEAR FINANCIALS

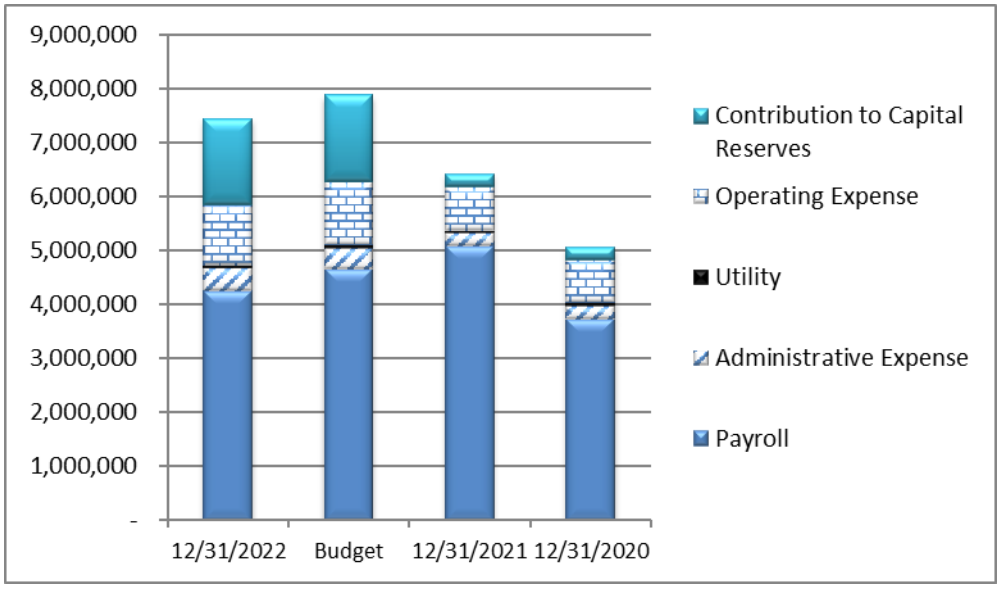


Figure 1 - Three Year Expenditure

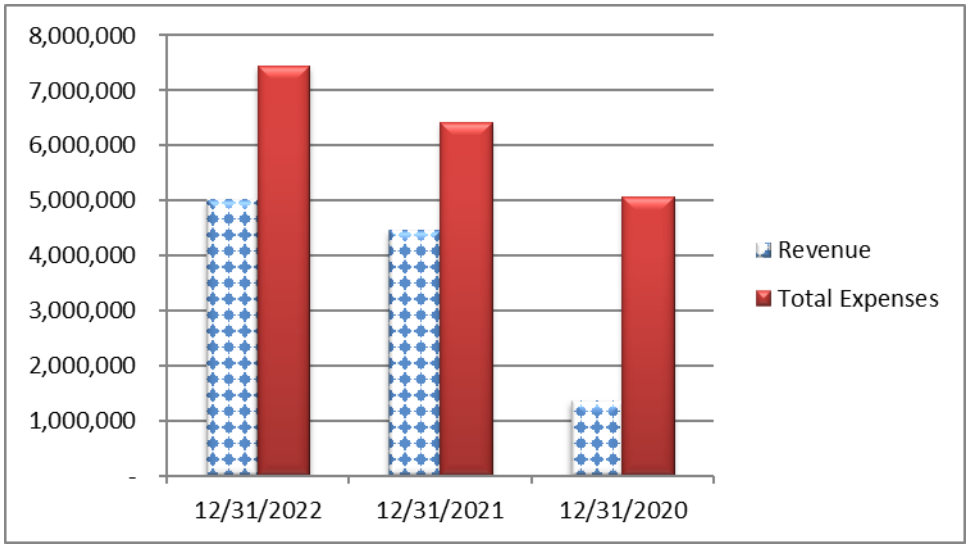


Figure 2 - Three Year Revenue & Expenditure

THREE-YEAR CASH BALANCE

Cash Balances	12/31/2022	12/31/2021	12/31/2020
Investment Balance	14,076,731	13,006,580	9,368,024
Checking Accounting	28,619	4,400	6,518
Payroll Account	142,065	152,609	132,634
Petty Cash	2,000	2,000	2,000
Total Cash Balances	14,249,415	13,165,589	9,509,175

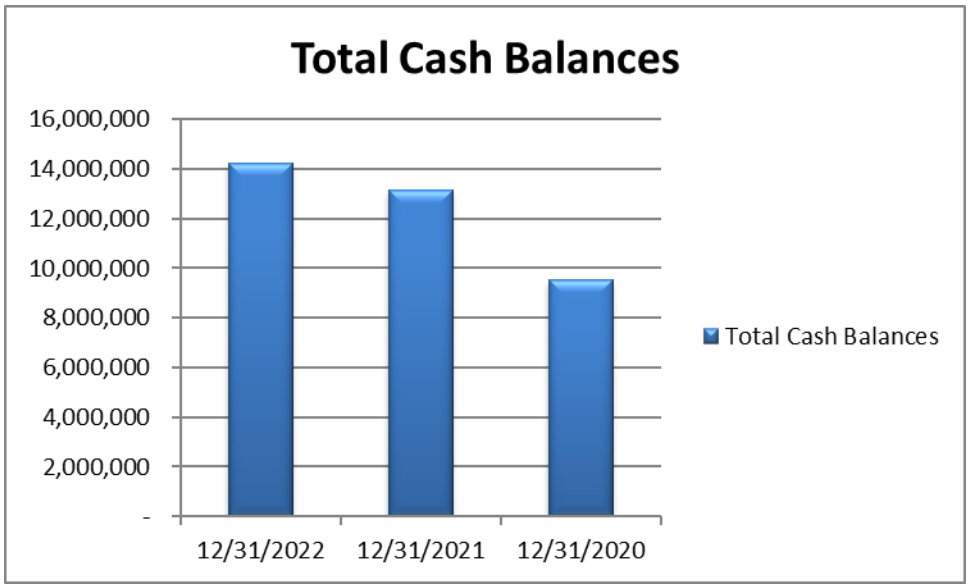


Figure 3 - Cash Balances

DISTRICT INVESTMENT PORTFOLIO 12/31/2022

The District's investment fund balance for the period ending December 31, 2022, is $14,076,731. The portfolio composition is shown in the pie chart. Local Agency Investment Fund (LAIF) accounts for 20% of the District's investments; the Riverside County Pooled Investment Fund is 50% of the total. The LAIF yield for the end of December was 2.16% and the Riverside County Pooled Investment Fund was 2.08% this gives an overall weighted yield for District investments of 1.68%.

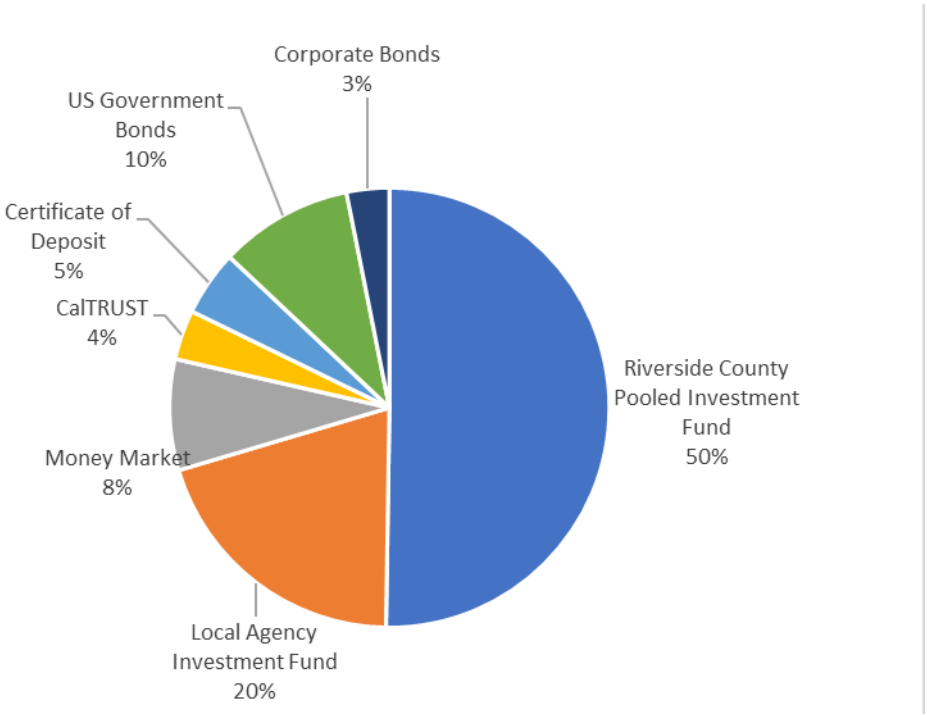


Figure 4 - Investment Portfolio 12/31/22

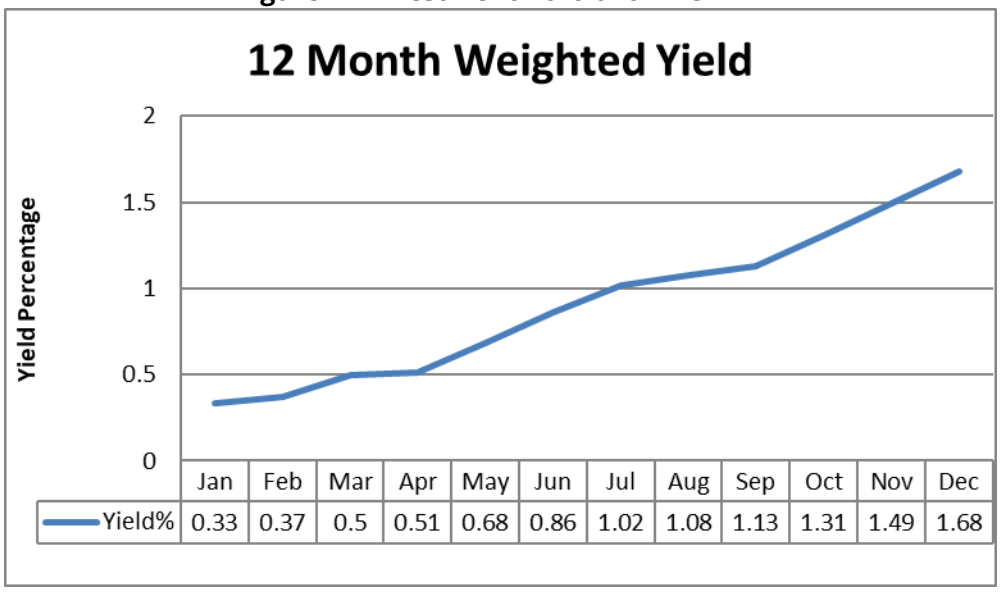
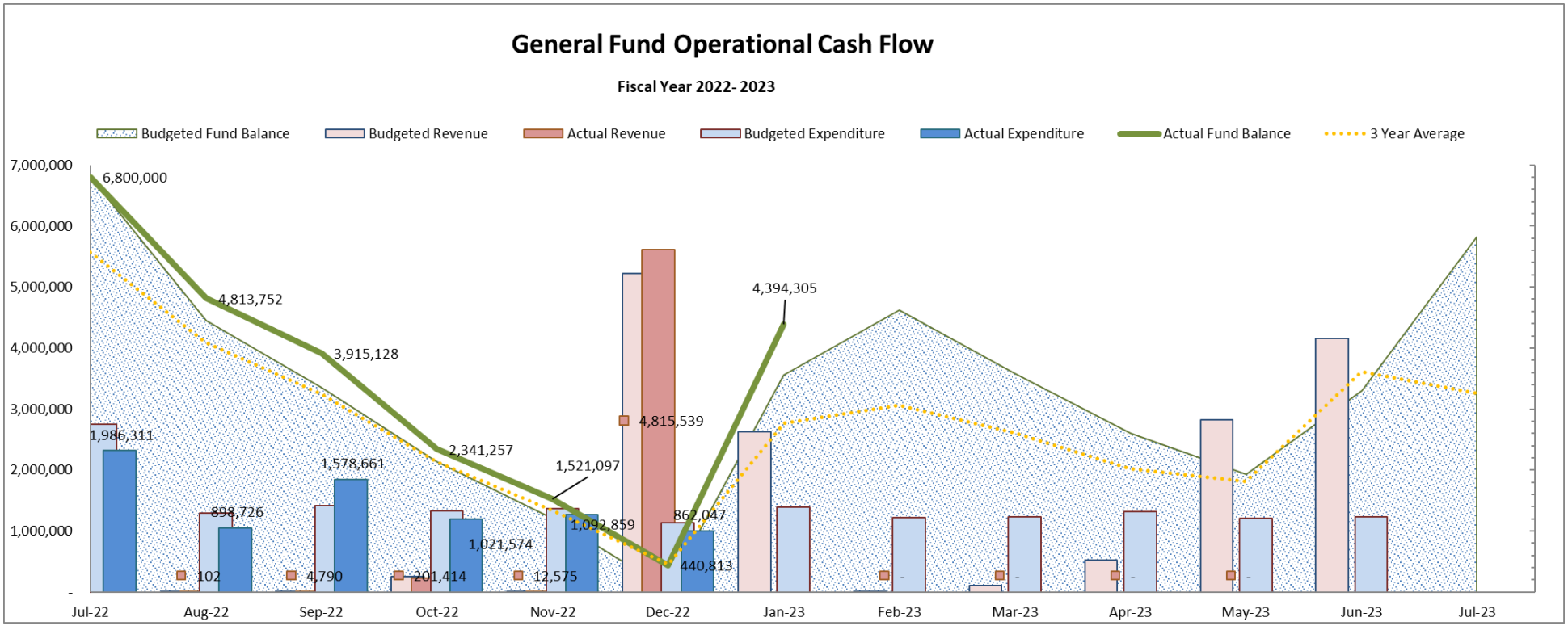


Figure 5 - District Investments Weighted Yield



The **General Fund Operational Cash Flow** graph outlines the District's working capital for the fiscal year July 1, 2022, to June 30, 2023. The beginning fund balance is $6.8 million and the ending fund balance is $5.8 million. Expenditure is approximately divided by 12 equal months, with some differences accounting for the seasonality of the program for example control products and seasonal employment which are greater in the mosquito breeding season. July expenditure is higher than average because of the prefunding lump sum of $0.3 million for CalPERS unfunded liability and the transfers to the capital reserves. The budget also accounts for prepayments. The revenue follows a different pattern, Riverside County distributes the property tax revenue in January and May with advancements in December and April. The *shaded area* represents the **Budgeted Fund Balance** which has a formula of (beginning) **Fund Balance** plus **Revenue** minus **Expenditure**. The *green line* represents the **Actual Fund Balance** and is graphed against the *shaded area* **Budgeted Fund Balance**. The *Three Year Average* Fund Balance is the orange dash line.

The graph shows a $6.8 million **Fund Balance** plus total Revenue for July 1 to December 31, 2022, of $5,034,483 minus total Expenses of $7,440,178 is $4,394,305. Revenue shows a favorable variance of $332,061, Tax Increment and Property Tax Current Secured are higher than budgeted. Payroll expenses show a favorable variance of $388,107, this is due to timing. Administrative expenses show variance of ($20,251) this is because the Workers Comp retrospective adjustment is being held until February VCJPA Board meeting. For planning purposes, the District expenses are under budget by $446,005 and revenue is over budget by $332,061 giving a favorable variance of $778,066. As long as the green line stays out of the shaded area the District is within budget, as of December 31, 2022, the line is outside the shaded area.

COACHELLA VALLEY MOSQUITO & VECTOR CONTROL DISTRICT

95 years

Serving Public Health Since 1928

CORRESPONDENCE

Melissa Tallion

From: Diana Reyes
Sent: Thursday, November 10, 2022 3:37 PM
To: District Wide Group
Subject: Employee Recognition

Hello,

I received a call from a Larry in La Quinta wanting to give recognition to **Ricardo Serna**, on a job well done. He was at Larry's home today for an Aedes Inspection and he was excellent! Very knowledgeable on mosquitoes, he felt like he received a lot of good education on mosquitoes and breeding habitats. Ricardo was also very professional and friendly. We (the district) should be proud to have him as an employee.

Outstanding job, Ricard!! Keep it up!!

Thank you,

Diana Reyes
Administration Clerk
Public Outreach Department
(760) 342-8287 Ext. 325
www.cvmosquito.org
Coachella Valley MVCD

Melissa Tallion

From: Diane Greeman
Sent: Thursday, November 17, 2022 10:58 AM
To: District Wide Group
Subject: Compliment

I just spoke with Mike [redacted] from Indio whereby he said he could not believe the caliber of professionalism and knowledge shared by Trini Haro. He was particularly amazed that after his property was inspected and treated, Trini left and returned to show him the mosquito specimens he found elsewhere by his home. He said, "I am in awe because never have I experienced such dedication and care shown to me about a problem".

Great representation Trini, keep up the good work!

Diane Greeman
Administrative Clerk
Office (760) 342-8287
www.cvmosquito.org
Coachella Valley MVCD

Serving Public Health Since 1928	**Coachella Valley Mosquito and Vector Control District** **Staff Report**	**January 10, 2023**

Agenda Item: Informational Item

Semi-annual research reports from the University of California, Davis, University of California, Riverside, Mount Sinai School of Medicine and the USDA for 2022 – **Jennifer A. Henke, M.S., Laboratory Manager**

Background:

The Research Department (Department 600) supports cooperative work with the University of California system and other research institutions for conducting mosquito-borne disease and vector research, optimizing control measures for vectors, and understanding of vector biology. The proposals include examining control interventions to predict when to better time future applications; using mosquito excreta as another method of virus testing for remote locations; using biological control organisms to target adult mosquitoes in storm water systems; examining control strategies for house flies; and examining impacts of irrigation on fire ant control methods. Each of the proposals was approved by the Research Committee and later approved by the full Board of Trustees at the November 2021 Meeting (with two exceptions noted below).

As described in District's Research Funding Policy and Procedure, researchers are to provide semiannual progress reports. The COVID-19 pandemic delayed the work of some researchers funded in earlier cycles, which is being shared in the reports. The reports are from the following proposals:

1. **Icahn School of Medicine at Mount Sinai (Dr. N. DeFelice)**
    - Adaptive policy pathways for West Nile virus management
2. **UC Davis (Dr. L. Coffey and Dr. A. Ramírez)** – funded Nov. 2020
    - Evaluate mosquito excreta as an early warning system for arbovirus surveillance in remote locations
3. **UC Riverside (Dr. A. Gerry)** – funded Nov. 2019
    - Examine the use of attractive toxic sugar bait stations for house flies associated with melons and peppers
4. **UC Riverside (Dr. A. Gerry and Mr. D. Popko)**

- Examine the use of attractive toxic sugar bait stations with fungi and pyriproxifen as the toxic agents in storm drains

5. USDA (Dr. D. Oi)

- Examine the impacts of irrigation on fire ant baits and monitor fire ant mating flight activity

Attachments:

- Reports from Dr. DeFelice, Dr. Coffey, Dr. Gerry, Mr. Popko, and Dr. Oi

Adaptive policy pathways for West Nile virus management

Nicholas DeFelice, Meytar Sorek-Hamer, Krishna Vemuri, Mathew J. Ward

Narrative

West Nile Virus (WNV) is the leading domestically acquired arbovirus in the United States, and ecologically informed forecast applications hold promise to help improve management decisions for abatement and public health entities. Here, we expand our current research of developing a WNV forecast system by integrating meteorological indicators to identify the key environmental conditions that facilitate and accelerate this cycle. Ideally this information can be used to inform effective vector control early in the transmission cycle reducing the likelihood of a human spillover event. We hypothesize that integrating different spatial scale environmental data from 13 km^2 grids down to the micro-ecology at the watershed level (i.e., hydrology and temperature indicators) will provide new insight into vector population development and potential risk of WNV spillover, allowing vector abatement districts to enhance their current monitoring network. We have constructed an environmental database and have generated statistical models.

Aim 1. Create a geographic database of remote sensing, land use, and environmental variables that influence the mosquito life cycle. This environmental database may be linked to mosquito monitoring data and adulticide and pesticide use.

Aim 2. Develop a probabilistic model using the environmental database and mosquito monitoring data to quantify risk and identify environmental drivers of WNV transmission in the Coachella Valley.

Aim 3. Develop high-resolution risk maps of the probability of WNV-infected mosquitoes, to help guide the timing of two key mosquito control interventions: larviciding—insecticide applications targeting mosquito larvae—and adulticiding— insecticide applications targeting adult mosquitoes.

Status

Aim 1. We will create a geographic database of remote sensing, land use, and environmental variables that influence mosquito life cycle. This environmental database will be linked to mosquito monitoring data and adulticide and pesticide use. Additionally, we have downloaded a suite of environmental variables to be used in an environmentally forced forecast model. The two major data sets are ECOSTRESS (70m resolution), and NLDAS (13km resolution).

Obtaining Data: Our primary data source for environmental data was ECOSTRESS. We obtained ECOSTRESS data for trap abatement areas in Coachella Valley, CA, for the period between July 18th, 2018 and April 30th, 2022. We obtained approximately 15,500 ECOSTRESS raster files of data over these trap sites from the AppEEARS LPDAAC data repository in the GeoTIFF format. This included Cloudmask data, Land Surface Temperature (LST) data, Evapotranspiration (ET) data, Evaporative Stress Index (ESI) data, Water Use Efficiency data and Emissivity data, and the associated error files and quality control files for levels 2 and 3. For this period, ECOSTRESS had 787 overpasses over Coachella Valley, CA. These two data sets have been used to develop and identify environmental drivers of WNV transmission in the Coachella Valley.

Aim 2. Develop a probabilistic model using the environmental database and mosquito monitoring data to quantify risk and identify environmental drivers of WNV transmission in the Coachella Valley.

Building on Aim 1, we have generated environmental groupings from a combination of hydrology and meteorological conditions to identify the most relevant combination of environmental conditions for viral amplification. Furthermore, we have developed a robust inference system able to improve our current understanding of how meteorological and hydrological conditions over time influence WNV activity. Ideally this will improve the effectiveness of public health interventions. Mosquito trapping data was used to calculate the WNV infection rate at the annual time step using the maximum likelihood estimate (MLE) and different remote sensing platform scales (NLDAS 13km^2, Figure 1). Model testing is currently underway using remote sensing

variables including surface temperature and evapotranspiration from the ECOSTRESS platform (70m resolution) to develop even higher resolution risk predictions of when a trap 1st tests positive. Here we present results for the larger spatial scales NLDAS (13km^2) using evapotranspiration and atmospheric temperature. *Culex* species are currently aggregated. While historically, we see *Cx. tarsalis is of greater abundance than Cx. quinquefasciatus* Figure 2. We have employed a multi-model average prediction of different combinations of meteorological and hydrological data (i.e., temperature and evapotranspiration). By developing a multimodel inference system we are providing formal probabilistic interpretation across the disparate individual model predictions, determining which models align; with the ensemble indicating an association between environmental conditions and the increased risk of WNV infection rates. Figures 3 and 4 show the environmental conditions that are associated with the increased risk of WNV infection rates. The model results show that a dry winter followed by a warm spring followed by a cooler than normal summer increase the risk of WNV.

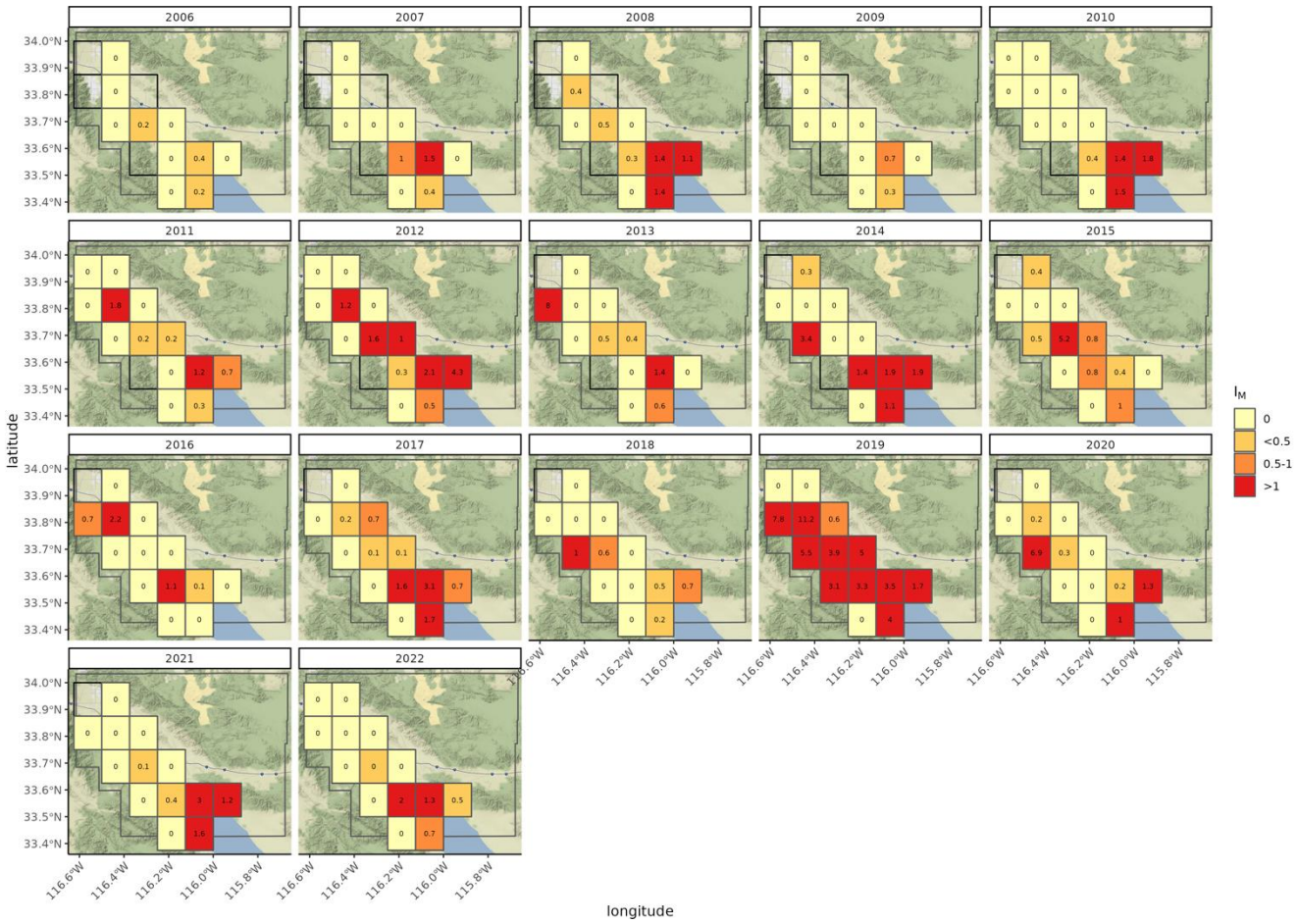


Figure 1. Annual WNV infection rate (per 1,000 *Culex* mosquitoes tested) at the NLDAS scale (13 km^2 grid) in the Coachella Valley, CA.

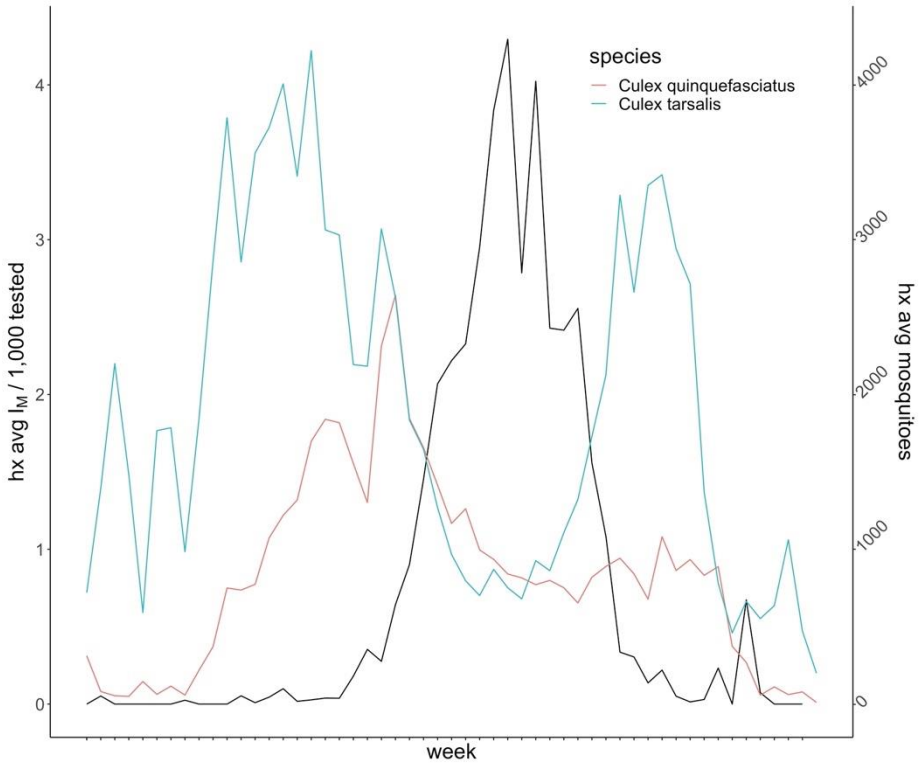


Figure 2. Weekly infections per 1,000 of *Culex* mosquitoes tested (black), the number of female *Culex quinquefasciatus* (red). *and Culex tarsalis* (green) mosquitoes trapped in the Coachella Valley, CA; 2006 - 2022. *Cx. quinquefasciatus* and *Cx. tarsalis* are combined for the infection rate (black).

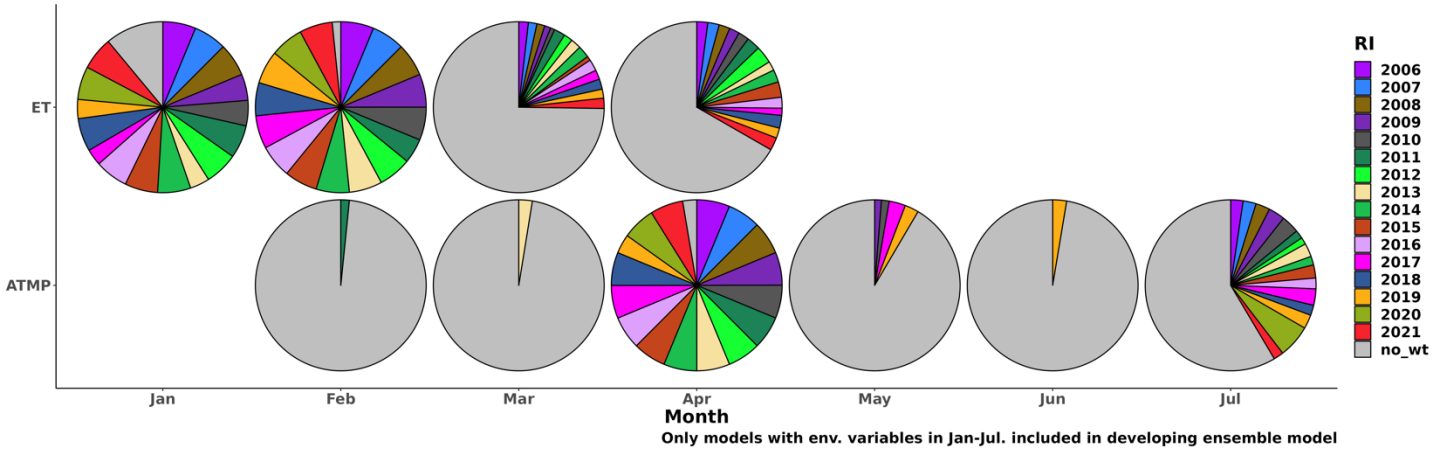


Figure 3. Scatter-pie of four predictor model ensemble indicating the relative importance of each variable of evapotranspiration (ET) and atmospheric temperature (ATMP) per month at the NLDAS scale in the Coachella Valley, CA; 2006 – 2022 when an outbreak year is removed. Here we see the early season hydrology and April and July ATMP temperature plays a large role in transmission.

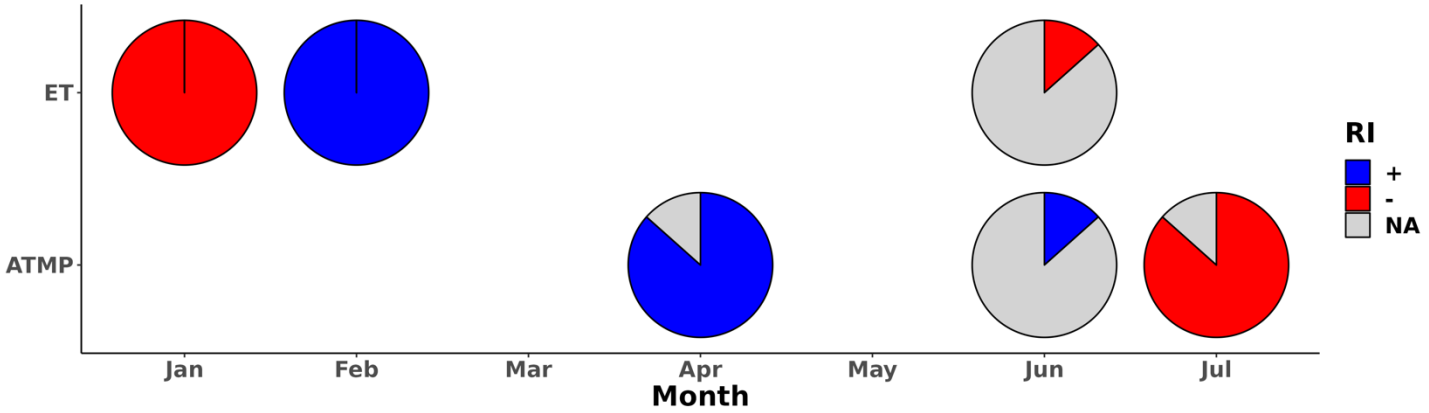


Figure 4. Scatter-pie of four predictor model ensemble indicating proportion and effect (positive or negative) of evapotranspiration (ET) and atmospheric temperature (ATMP) per month at the NLDAS scale in the Coachella Valley, CA; 2006 - 2018.

Aim 3. Develop high-resolution risk maps of the probability of WNV infected mosquitoes, to help guide the timing and location of two key mosquito control interventions: larviciding—insecticide applications targeting mosquito larvae—and adulticiding— insecticide applications targeting adult mosquitoes.

Building on Aims 1 & 2 we have used our ensemble model results and results and both seasonal and geographical (NLDAS) scales to map the infection risk of WNV in the CV (Figures 5 and 6 were seasonal spatial forecasts). Generally, these models indicate that a dry winter followed by a wetting period and a warm spring followed by a cooler-than-normal summer increase the risk of WNV and are the best predictors of WNV rates in CV. Furthermore, we have mapped these forecasts and their prediction rates for NLDAS and evaluated the forecast accuracy by grid cell and year for 2019 to 2022 (Figure 5). Forecasts were deemed accurate if a prediction was above or below 1 infected mosquito per 1,000 tested in each grid cell. One infected mosquito per 1,000 tested annually represents around the 80th percentile and where we defined high risk for transmission.

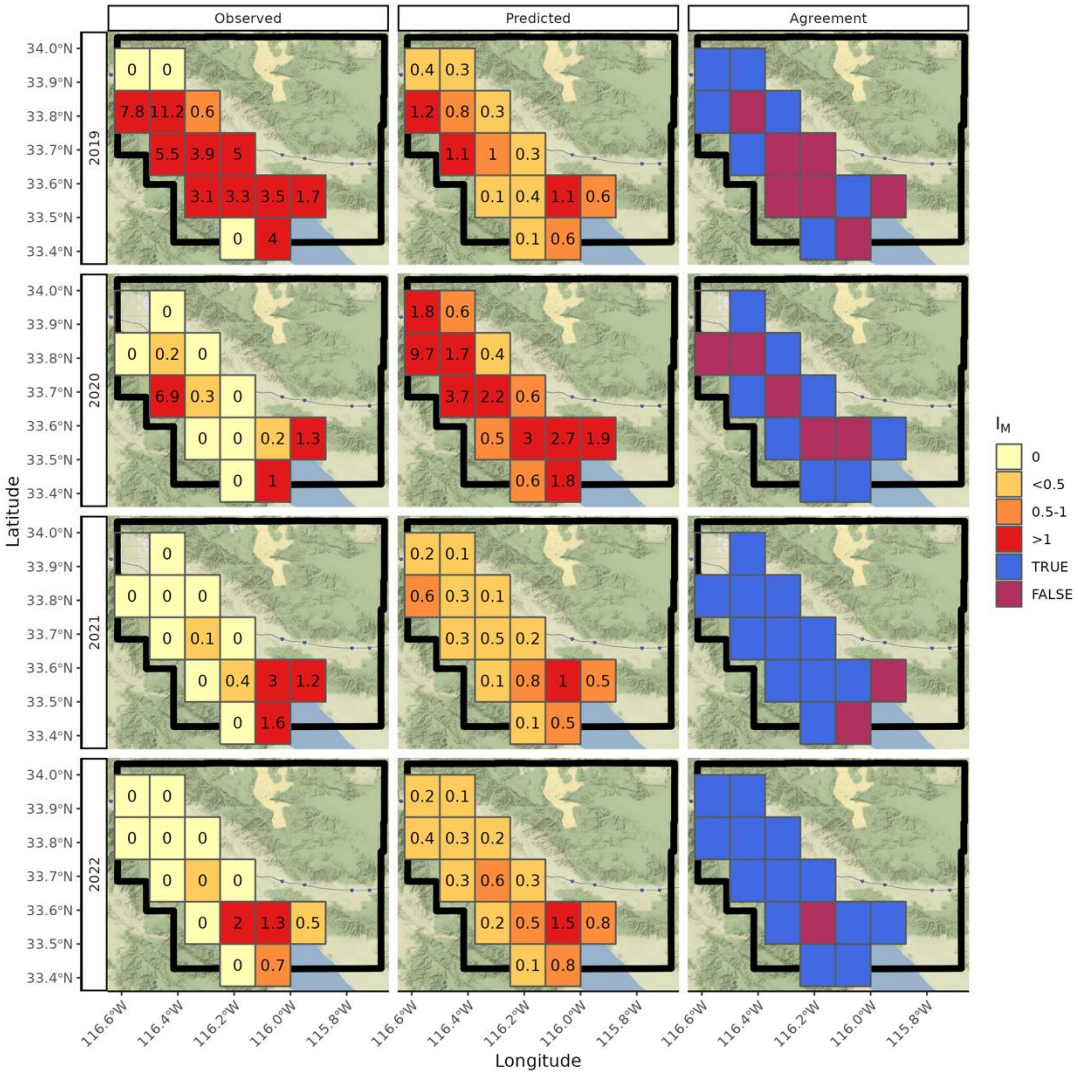


Figure 5. Left; observed infection rate (infected mosquitoes/1,000 mosquitoes) in 2019 - 2022. Center; predicted infection rate of mosquitoes in 2019 - 2022 using four predictor model. Right; proportion of cells agreeing with 4-predictor ensemble model using a ≤ 1 mosquito/1000 tested cutoff at the NLDAS spatial scale for the Coachella Valley, CA.

Real-Time Forecast for 2022

Here we present an environmentally informed ensemble forecast of the annual *Culex* mosquito West Nile virus (WNV) annual infection rates at a 13 km^2 resolution for 2022 generated in May of 2022. This forecast was generated for Coachella Valley, CA using a multi-model inference system that was calibrated using data from 2006 to 2018.

The multimodal inference system was generated using a 4-parameter model, which accounted for all monthly combinations of evapotranspiration and atmospheric temperature from January to July. We used a combination of the best fitting models based on their goodness of fit (Akaike Information Criteria [AICc]), where all models with all parameters statistically significant were included. The Akaike weights are calculated to include the top 95% of models. Two models were identified to provide a combination of environmental events to help explain the environmental factors that are associated with WNV mosquito infection rate amplification. These factors were a drier than normal January, flowed by a wetter than normal February or march with a warm April. This inference system was calibrated using data from 2006 to 2018, then forecasts were generated to identify areas of concern in 2019 - 2021. Areas of concern were defined as an annual infection rate greater

than 1 infectious mosquito per 1,000 tested. Retrospectively this 4-predictor ensemble forecast was able to correctly predict if the area was above or below the annual infection rate greater than 1 infectious mosquito per 1,000 tested 85% of the time from 2019 to 2022. Here we generated environmentally informed forecasts using environmental data through April 2022, Figure 8, where 4 NLDAS grids are above 1 and 10 are below.

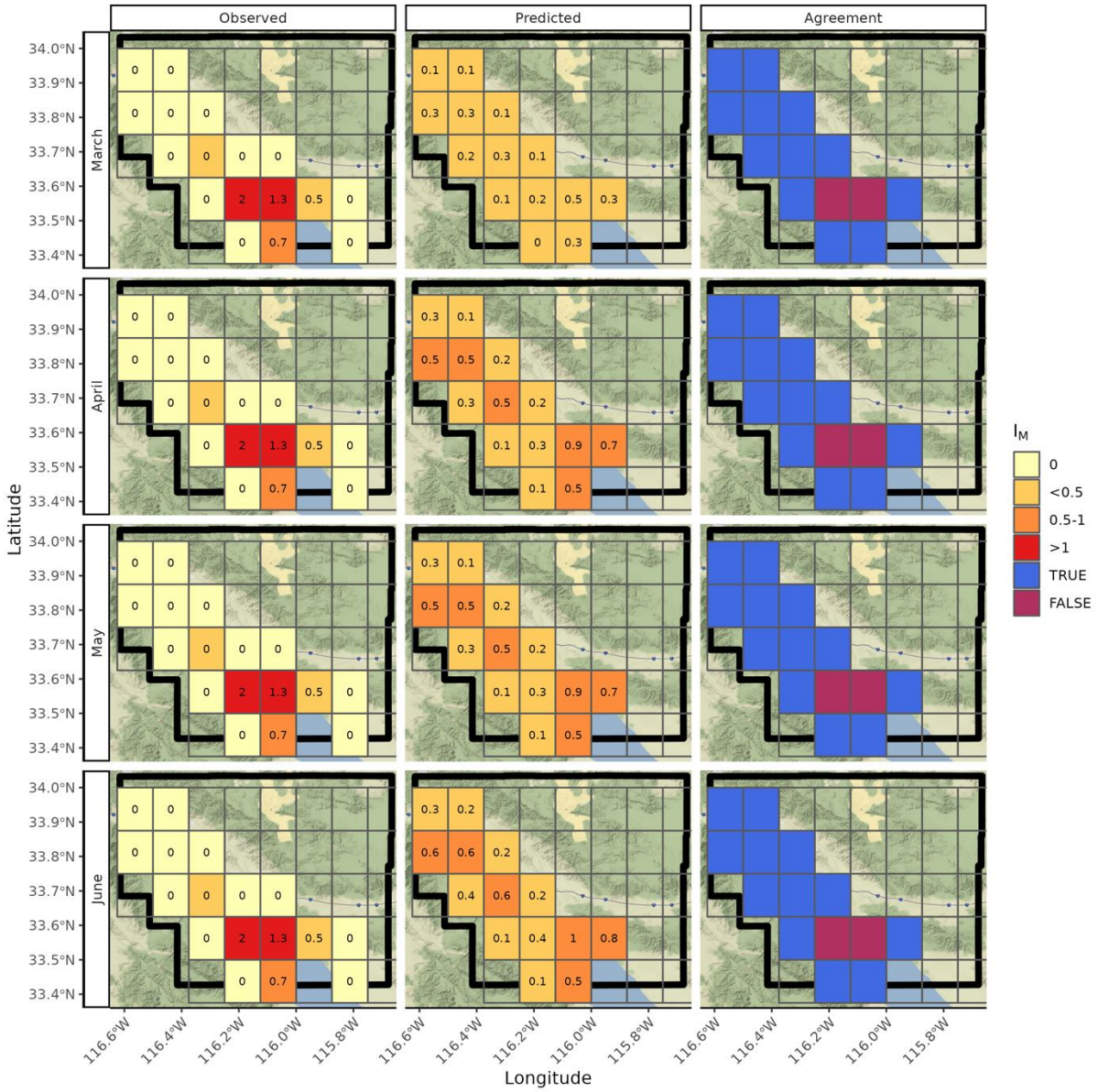


Figure 6. A 13km^2 monthly forecast of annual infectious mosquitoes for 2022, using available NLDAS data. Left; observed infection rate (infected mosquitoes/1,000 mosquitoes) in 2022. Center; predicted infection rate of mosquitoes in March - June using four predictor model and available environmental data. Right; proportion of cells agreeing with 4-predictor ensemble model using a 1 mosquito/1000 tested cutoff at the NLDAS spatial scale for the Coachella Valley, CA.

Here we present the June 18, 2022, CDC week 24, real-time ensemble forecast of *Culex* mosquito West Nile virus (WNV) infection rates and human cases of West Nile illness. This forecast was generated for Coachella Valley, CA using mosquito infection and human case observations during 2022. Two forecasting systems are presented: 1) a baseline model-inference forecasting system; and 2) a temperature-forced model-inference forecasting system. Both systems assimilate all reported observations to date prior to generating a forecast.

Due to the often-large reporting lag between the onset of illness and health department confirmation of a human case of WNV, we advise users that the current forecast system is a *beta* version under development. More work is being done to understand the impact associated with and how to account this reporting lag. Historically confirming human cases of WNV has taken from 2 to 14 weeks. This delay in data provision appears to degrade the real time forecasting accuracy of human WNV cases; however, the system still provides robust forecasts for infectious mosquitoes. In this report we will present a prediction range for human cases and an expected probability for infected mosquitoes.

The baseline forecast model predicts that mosquito infection rates will peak the week of 16-Jul-2022 (week 28, -5 weeks in the future), and during this peak week 4 mosquitoes per 1,000 tested will be infected. The model also forecasts 1 human cases (50 % PI: 0 - 1) in total during all of 2019 in Coachella Valley. The prediction interval over the next 4 weeks indicates a 50% likelihood there will be between 0 and 1 human cases. There is a 59% chance mosquito infection rates will peak within 1 week of 16-Jul-2022, week 28, and a 53% chance peak infection rates will be within ±25% of 4 mosquitoes per 1,000 tested. These low probabilities indicate high uncertainty in the current forecast, Figure 7.

The temperature forced forecast model predicts a 71% chance that mosquito infections rates will peak within ±1 week of 16-Jul-2022 (week 28, -5 weeks in the future) and an 58% chance that peak mosquito infection rates will fall within ±25% of 5 infected mosquitoes per 1,000 tested. The model also predicts 1 human cases (50% PI: 0 - 2) will be reported during 2019 and in the next 4 weeks a 50% chance of between 0 and 1 human WNV cases, Figure 8.

As the season progresses and more observations recording activity become available, it is expected that the ensemble forecasts will converge and provide greater certainty, Figure 9. This year the forecast system provided began to provide accurate forecasts at CDC week 29, 1 week past the peak. The data assimilation was able to capture the dynamics and provide insight into how the outbreak would progress and estimated that there would be a low number of human cases.

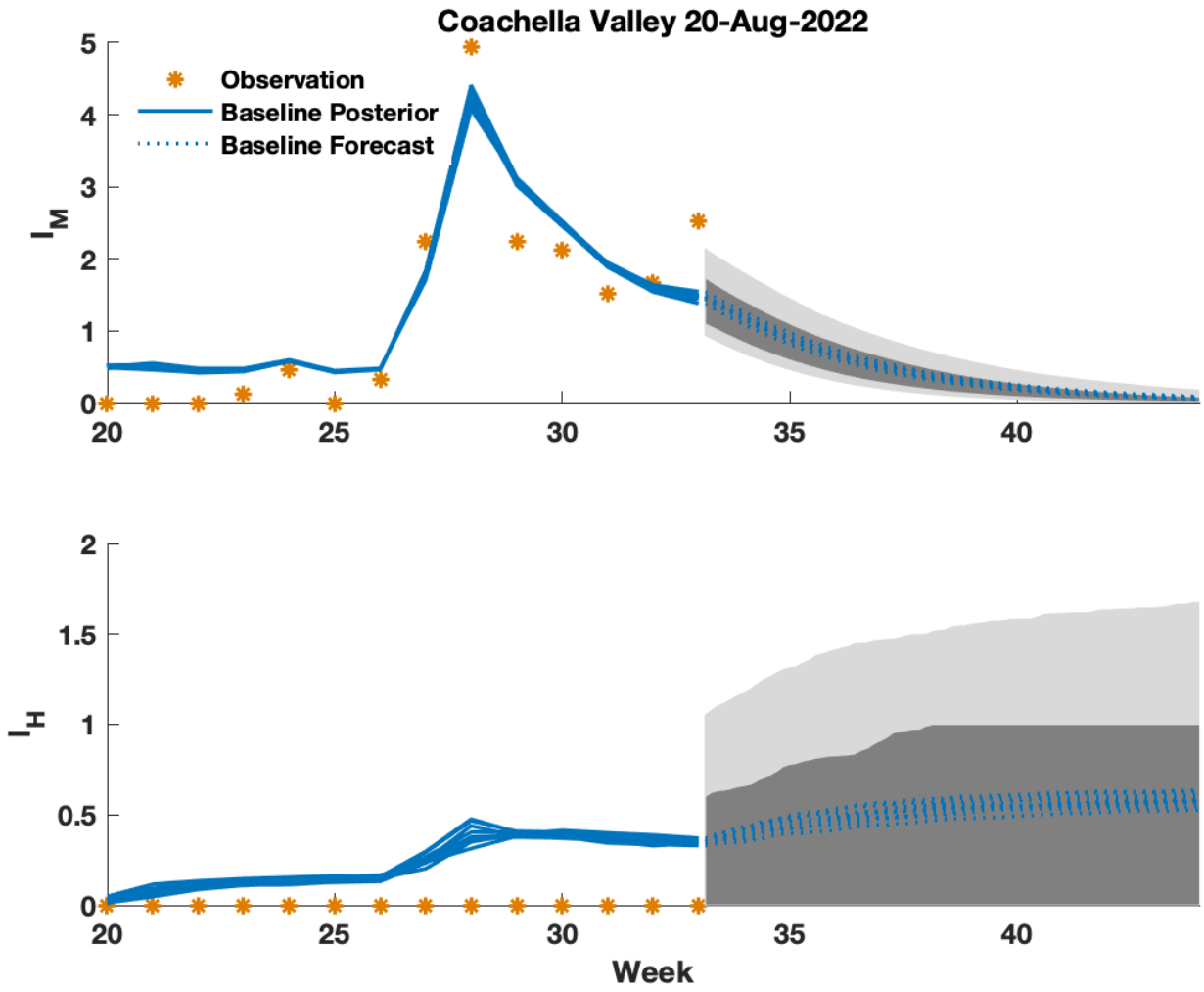


Figure 7. Baseline model forecasts of mosquito infection rates, I_M, and human WNV cases, I_H. The solid blue lines are the ensemble mean posterior distribution and the dotted blue lines are the ensemble mean forecasts. The grey area is the spread of the ensemble forecast (light grey represents the area between the 10th and 90th percentiles and the darker grey area represents the spread between the 25th and 75th percentiles, i.e. the 50% prediction interval); gold *'s are data points assimilated into the model.

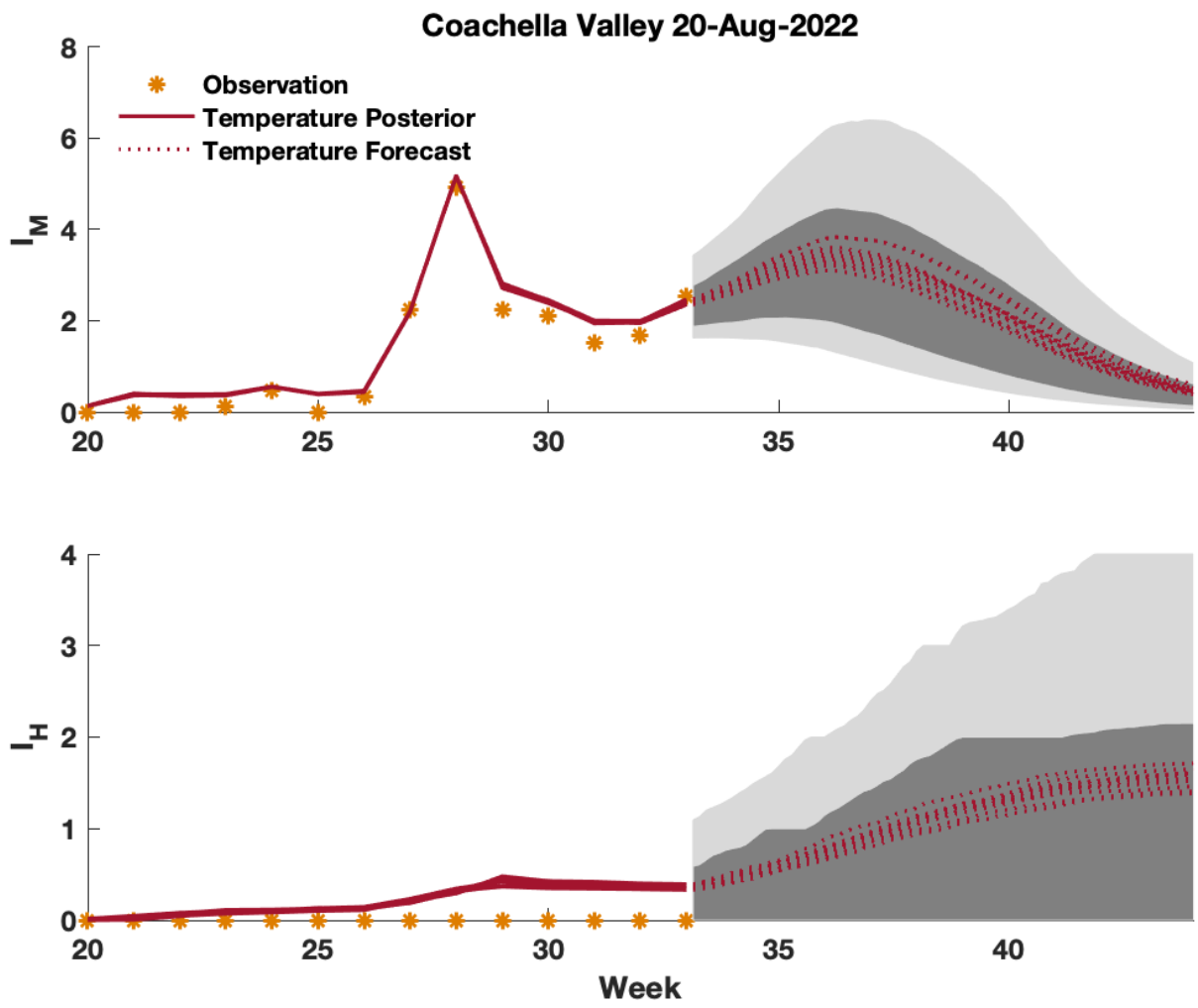


Figure 8. Temperature-forced forecasts of mosquito infection rates, I_M, and human WNV cases, I_H. The solid red lines are the ensemble mean posterior distribution and the dotted red lines are the ensemble mean forecasts. The grey area is the spread of the ensemble forecast (light grey represents the area between the 10th and 90th percentiles and the darker grey area represents the spread between the 25th and 75th percentiles, i.e. the 50% prediction interval); gold *'s are data points assimilated into the model.

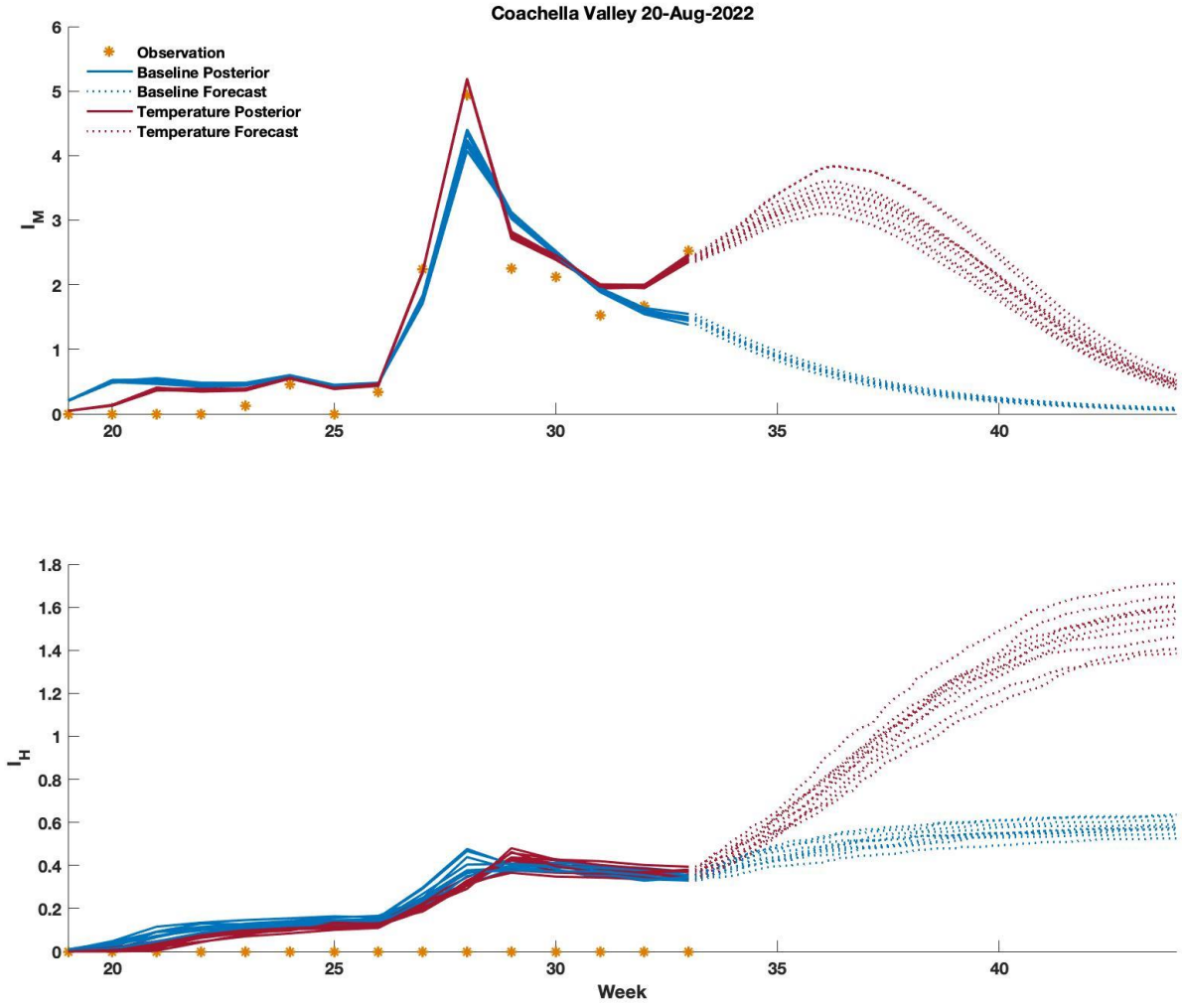


Figure 9. Forecasts generated for August 20th 2022. Both the temperature-forced forecast (red) and a baseline model forecast (blue) are shown. The solid red lines are ensemble mean posterior distribution and the dotted red lines are the ensemble mean forecasts for the temperature-forced model. The solid blue lines are ensemble mean posterior distribution and the dotted blue lines are the ensemble mean forecasts for the non-temperature forced model. The gold *'s are data points assimilated into the model.

General Outcomes

This work has resulted in six conference presentations, one co-authorship PNTD paper, a published preceding's paper, a book chapter, and a manuscript that we intend to submit in the next month.

Deliverables and accomplishments

Year 2:

- Downloaded and processed 925 overpasses (through December 2021) for Coachella Valley, CA
- Downloaded and processed 512 best observations for Coachella Valley, CA during the West Nile virus outbreak season
- Processed mosquito trapping and pesticide data
- Presented research at ESA
- Presenting research at the Ecological Society of America
- Presented research at AMCA meetings
- Awarded the PacVec COE training award
- Accepted for presentation at annual MVCAC & AMCA meetings
- Weekly forecasts were generated for Coachella Valley for 2022
- Develop 13 km^2 environmentally informed forecasts and compared to annual WNV infection observations in real time in 2022
- The forecast model was accurate for 85% of predictions
- Develop 13 km^2 environmentally informed forecasts provides inference on meteorological and hydrological conditions influence WNV transmission and trap positivity

Publications, Submitted Manuscripts, Manuscripts in Preparation, Presentations

- Ward, M.J., Sorek-Hamer, M., Vemuri, K.K., DeFelice, N.B. (2023). Statistical Tools for West Nile Virus Disease Analysis. In: Bai, F. (eds) West Nile Virus. Methods in Molecular Biology - Springer Nature, vol 2585. Humana, New York, NY. https://doi.org/10.1007/978-1-0716-2760-0_16. November 5, 2022.
- Holcomb, K. M., Mathis, S., Staples, J. E., Fischer, M., Barker, C. M., Beard, C. B., DeFelice, N., ... & Johansson, M. A. 2022. Evaluation of an open forecasting challenge to assess skill of West Nile virus neuroinvasive disease prediction.
- DeFelice, N. B. M. Sorek-Hamer, MJ. Ward, K. Vemuri, J. Henke,. An ECOSTRESS environmentally informed statistical model for West Nile virus infection rates among mosquitoes in the Coachella Valley, CA. ESA. Montreal CA, August 18, 2022.
- Ward, Matthew J., Meytar Sorek-Hamer, Jennifer Henke, Krishna Vemuri, Nicholas DeFelice. *Developing high-resolution risk maps of West Nile virus in Coachella Valley using ECOSTRESS data.* AMCA Annual meeting. March 5, 2021.
- Ward, Matthew J., Meytar Sorek-Hamer, Jennifer Henke, Krishna Vemuri, Nicholas DeFelice. *Developing high-resolution risk maps of West Nile virus in Coachella Valley using ECOSTRESS data.* PacVec Annual meeting. February 17, 2021.
- Ward, Matthew J., Meytar Sorek-Hamer, Jennifer Henke, Krishna Vemuri, Nicholas DeFelice. *Developing high-resolution risk maps of West Nile virus in Coachella Valley using ECOSTRESS data.* MVCAC Annual meeting. February 1, 2021.
- Keyel, Alexander C., Morgan E. Gorris, Ilia Rochlin, Johnny A. Uelmen, Luis F. Chaves, Gabriel L. Hamer, Imelda K. Moise, Marta Shocket, A. Marm Kilpatrick, Nicholas B. DeFelice, Justin K. Davis, Eliza Little, Patrick Irwin, Andrew J. Tyre, Kelly Helm Smith, Chris L. Fredregill, Oliver Elison Timm, Karen M. Holcomb, Michael C. Wimberly, Matthew J. Ward, and Rebecca L. Smith. *A qualitative evaluation of West Nile virus models and their application to local public health decision-making.* Accepted, PNTD. August 2021.
- Ward, Matthew J., Meytar Sorek-Hamer, Jennifer Henke, Krishna Vemuri, Nicholas DeFelice. *Using space based high resolution remote sensing data to forecast WNV in Coachella Valley, CA.* PacVec Fall seminar seeries. November 9, 2021.
- DeFelice N.B., 2021 Forecasting West Nile Virus AMCA Annual meeting. March 3, 2021.

- DeFelice, N; Sorek-Hamer, M; Ward, M; Vemuri, K; Henke, J; Campbell, S; Romano, C; Santoriello M. An environmentally informed statistical model and forecast system for West Nile virus infection rates among mosquitoes in the Coachella Valley, CA. AGU Fall Meeting 12/15/2021.
- Ward, Matthew J., Meytar Sorek-Hamer, Jennifer Henke, Krishna Vemuri, Nicholas DeFelice. *Developing high-resolution risk maps of West Nile virus in Coachella Valley using ECOSTRESS data.* Proceedings and Papers of the Mosquito and Vector Control Association of California, 89(1):000–000.
- Ward, Matthew J., Meytar Sorek-Hamer, Jennifer Henke, Krishna Vemuri, Nicholas DeFelice. *A spatially resolved ensemble forecast model of West Nile virus transmission in the Coachella Valley, CA.* In preparation.

Prospects

We are in the final phase of running models to developing an environmentally forced forecasts system for WNV that maximizes our understanding how meteorological conditions are most appropriate for WNV amplification in Coachella Valley. Over the next year (Table 1) we will finalize our probabilistic models using environmental indicators, specifically shifting to incorporate ECOSTRESS data at the hyper-fine spatial scale of 70m; then, we will generate environmentally informed spatial risk maps forecasting early in the WNV season our understanding of the temporal role climatic and hydrological parameters influence disease transmission at a micro-climate scale. Additionally, we will continue development of a web-based tool allowing for real time visualization of risk driven by our ensemble model system.

Table 1. Proposed timeline, years 2 – 3 (Jan 1, 2022 – December 31, 2023).

	Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Task #1								
Download and process environmental data								
Task #2								
Develop downscaled observations of WNV								
Feasibility study								
Feasibility study Complete								
Task #3								
Forecast at fine spatial scale								

Verify decision support system

Verify decision support system Complete implement in real time

Task #4

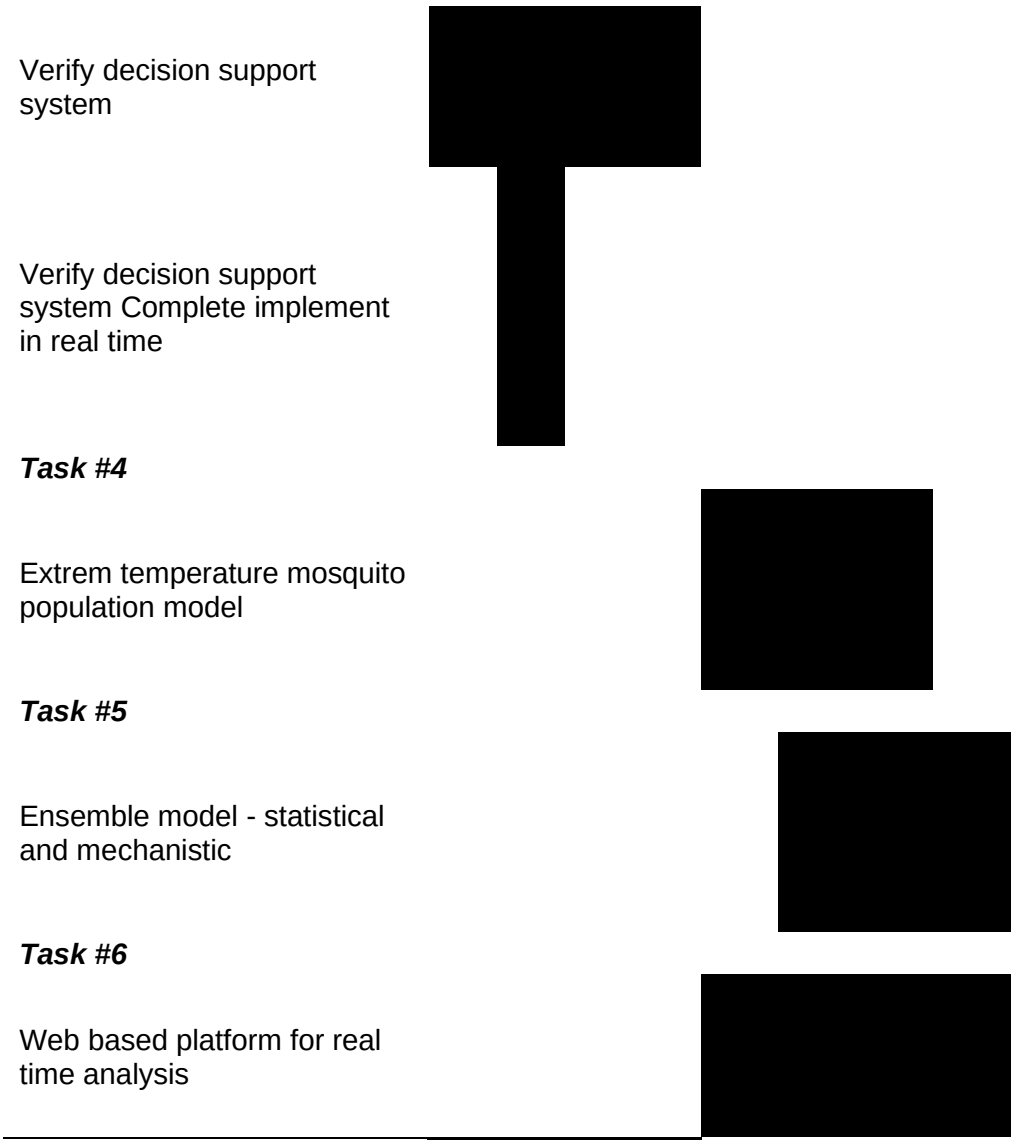
Extrem temperature mosquito population model

Task #5

Ensemble model - statistical and mechanistic

Task #6

Web based platform for real time analysis



Evaluating mosquito excreta as an early warning system for arbovirus surveillance in remote locations

CVMVCD 2020 project / 2022 year-end research report

A. Ramírez and L. Coffey

Aim 1: *Develop a robust protocol for the collection of mosquito excreta and saliva on nucleic-acid preservation cards using passive box traps suitable for long term deployment in remote and arid locations.*

The evaluation of detection of viral RNA in mosquito excreta deposited on FTA® nucleic-acid preservation cards stored in arid conditions of high heat and low humidity will inform 1) if using the method for remote surveillance in the Coachella Valley is feasible and 2) the optimum deployment schedule of the traps to avoid RNA degradation. Following some setbacks due to high *Cx. tarsalis* mortality in our insectary, we designed an experiment mimicking excreta deposited on FTA® cards under field conditions. For this, cards were inoculated with 10 µL serially diluted St. Louis encephalitis virus (SLEV) at dilutions of 10-1000 plaque forming units (PFU) in triplicate and assigned to 3 treatment groups: baseline (24 h), incubation for 7 days, or incubation for 14 days. Cards were stored in the incubator at 40°C and 50% humidity to simulate field conditions. Samples were then eluted in ddH_2O, RNA was extracted and tested for SLEV RNA by RT-rtPCR. Our results indicate that viral RNA deposited on FTA® cards can be detected for up to 2 weeks under field conditions at all tested inoculum titers (Figure 1). Although there is a significant difference in SLEV RNA titers detected from higher inoculum samples at baseline (stored for 24 h) vs samples incubated to simulate field deployment, no significant decrease was observed between samples that were incubated for 7 or 14 days. These results are like observations for West Nile virus by us and others. Based on these results, we recommend that the traps are deployed for up to 2 week intervals to ensure RNA stability.

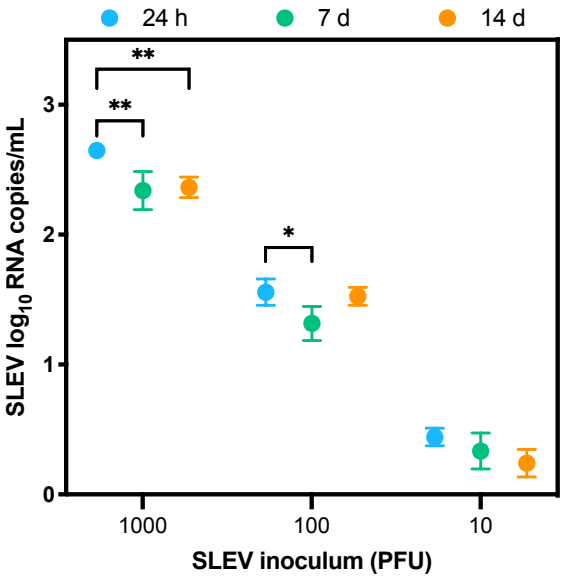


Figure. SLEV RNA stability in FTA® cards stored for 24 hours, 7 and 14 days at 40°C and 50% humidity to simulate field conditions. Asterisks indicate significant differences between groups (two-way ANOVA with post hoc Tukey test, *$p \leq 0.05$, **$p \leq 0.01$).

Aim 2: *Deploy traps developed in Aim 1 in remote locations around the Salton Sea in COAV for arbovirus surveillance and perform a cost benefit analysis.*

After encountering some supply chain setbacks, we shipped the excreta collection kits to CVMVCD in summer 2002. These kits include the following supplies: 1) 4 modified PBT traps for excreta collection, 2) 5 Biogents CO_2 regulators, 3) 5 Biogents timers, 4) 4 humidity chambers, 5) Pre-cut FTA® cards for excreta collection, 6) Pre-cut FTA® cards for feeding substrate, 7) Green honey, 8) Ziploc bags for transport, 9) Labels, 10) Extra supplies: sponges, containers, rope, tubing, and 11) Trap manual with instructions to facilitate trap deployment by CVMVCD personnel.

Unanticipated delays impacted the ability to deploy the traps until September 2022. As a result, we requested and obtained a no cost extension to the project so that remaining funds can be preserved to complete testing of the samples from the traps in the 2023 season.

Annual Report (December 2022): Attractive Toxic Sugar Bait (ATSB) to Control House Flies near Crop Fields

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Project Aims: Develop attractive toxic bait stations (ATSB) for targeted control of house flies associated with agricultural crop fields. Use of ATSBs can reduce dispersal of flies from field crops or other fly-producing sites to neighboring properties including residential areas, schools, hospitals, or other sensitive sites.

Background: Attractive Toxic Sugar Bait (ATSB) stations rely on use of volatile compounds (attractive odors) to draw pest flies to a food source containing sugar (bait) and an insecticide (or toxicant) to kill flies feeding on the bait. ATSB methods have been explored primarily for control of blood-feeding insects such as mosquitoes and sandflies but may be applicable for control of a range of pest insects, including the house fly (*Musca domestica*). Sugar baits containing insecticide have been commercially available and used to manage flies for over 40 years. These "fly baits" are typically dry granular formulations comprised of sucrose, an insecticide, and often a putative fly sex pheromone.

Following many years of using fly baits, it is evident that these dry granular baits are not particularly attractive to house flies. Flies do not appear to make directed movements toward fly baits even over short distances. Rather, flies appear to simply encounter the bait as they move about foraging for food. Once encountered, the bait is usually fed upon by flies due to the presence of sucrose with fly death due to ingestion of the insecticide also formulated into the fly bait. Fly bait efficacy could therefore be improved by 1) increasing the distance of volatile attraction [the distance over which flies will detect and move toward the fly bait], and 2) increasing the feeding rate

Previous Work Reported:

During winter and spring 2022, laboratory studies demonstrated that adult house flies were more attracted to fermented guava juice than to other fermenting fruit juices or to molasses. Flies responded most rapidly and in greater numbers to guava juice amended with brown sugar and yeast that was fermented for 96 hours, relative to other treatments. Guava juice was therefore selected as the preferred attractant to use with ATSB stations in the summer field trial. An ATSB field trial was performed at a commercial pepper production field in the Coachella Valley. ATSB stations were deployed within a treatment plot of the pepper field when adult flies were first reported present in sufficient numbers (mid-June). A control plot received no ATSB stations. Adult fly activity was recorded using sticky traps placed in both the treatment and control plots. This field trial was not completed before the mid-year progress report was prepared and therefore is more fully described in the "new work" section below.

The work described briefly above is reported in full in the 2022 Mid-year Progress Report..

New Work:

ATSB Field Trial (year 1)

Field trials were conducted at a large commercial pepper field just north of the Salton Sea. The field trial was scheduled to occur following the start of pepper harvesting and after field managers reported sufficient fly activity. During an initial site visit (April 2022) field managers anticipated that peppers would be harvested from early June through mid-July after pepper plants had reached maturity (Figure 2). However, harvesting began later than field managers anticipated (mid-June) due to slower pepper development pushing the start time of the field trial to late June after field personnel reported fly activity.

Figure 2. Mature pepper plants at commercial field in the Coachella Valley. Flies were found developing in the old fruit that was discarded on the ground within the rows of pepper plants.

Treatment and control plots were arbitrarily assigned to the 12 rows of pepper plants at the SW and SE corners of the field, respectively (Figure 3). Each field plot was approx. 20 m wide (12 rows) by 50 m long (from the edge of each crop row).

In both treatment and control plots, adult house fly activity was monitored using fly traps (RESCUE! TrapStik for Flies) placed in rows 5 and 7 (two traps in each row; 4 traps per plot). Traps were replaced 2x per week on Mondays and Fridays. Fly activity was recorded for each trap with the mean fly count for all four traps within each field plot (treatment or control) determined for analysis.

Figure 3. Commercial pepper field. Treatment (orange) and Control (green) plots are 12 planted rows wide (20 m) x 50 m in row length.

ATSB stations (n=32) were placed only within the treatment plot where they were positioned on the ground in rows 3, 4, 6, 8, and 9 (6-7 ATSB stations per row) of the treatment plot. Traps were placed at 5 m intervals starting at 20 m from the southern field edge through the end of the plot (50 m from the field edge). Each ATSB station was constructed from a plastic shoe box with holes cut into the lid to hold two 16 oz deli food containers (First Street). One food container held fermented guava juice (attractant) and was covered with mesh to allow odors to escape freely but prevent flies from reaching the fermenting liquid within the container. The second food container held water and was covered with a plastic lid with a single hole, and which was fitted with 12 in water wicking cord that drew water from the deli container to the top of the lid where a commercial fly bait (QuikStrike) placed on the lid and accessible to attracted flies was moistened by the wick to increase fly feeding (Figure 4).

Figure 4. ATSB station containing fermenting guava juice and QuikStrike Fly Bait (with dinotefuran; a neonicitinoid insecticide). Note dead flies on top of deli container with the fly bait.

The intended study plan was to last 4 weeks including a pre-treatment week (fly trapping only), 2 weeks of treatment (ATSB stations present in treatment plot) and end with a post-treatment week (fly trapping only). This design was anticipated to best demonstrate whether the presence of the ATSB stations during weeks 2-3 impacted fly numbers within the treatment plot relative to the control plot. Unfortunately, the full study plan was cut short because of the late start to harvesting pushing our project start date into late June, and to a poor harvest causing the field managers to abandon the crop in early July at the end of the first treatment week. Thus, only fly counts for the pre-treatment week and the first treatment week were available for analysis.

Results of the Field Trial:

Fly activity within the pepper field was surprisingly high. Initially, the 2x per week trapping schedule was sufficient to record fly activity but by the first treatment week the number of flies on individual traps reached 700-1400 flies per trap essentially reaching trap saturation. In future studies traps will need to be replaced at intervals not exceeding 48 hours to ensure that traps continue to offer plenty of sticky surface for fly capture throughout the trapping period.

Fly activity in treatment (ATSB) and control plots was similar at the start of the study with mean fly counts of 62 and 82 flies/trap/day for the control and treatment plots, respectively (Figure 5). In the control plot, fly counts increased linearly with time to reach a high of 154 flies/trap/day for traps placed on July 8th. In contrast, the mean fly count in the treatment plot decreased through July 8th to reach a low of 42 flies/trap/day.

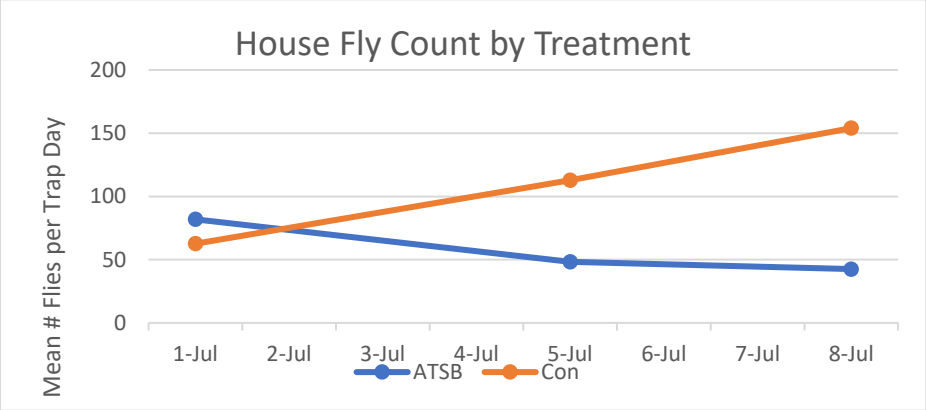

Figure 5. Mean house fly count for treatment (ATSB) and control plots within a pepper field in the Coachella Valley.

While the data certainly suggests that the presence of the ATSB stations is associated with lower fly counts, the truncated field trial prevents a robust analysis. Anecdotally, it was noted that many dead flies were present on the top of and around each ATSB station in the treatment plot. However, while fly counts in the treatment plot were reduced by half during treatment relative to the 2.5x increase in fly counts in the control plot, the lowest achieved mean fly count in the treatment plot (42 flies/trap/day) is still substantial and likely negatively impacted field worker comfort during harvesting. In addition, the high density of ATSB stations used in this study is likely impractical for fly control on a commercial scale, particularly as the attractive fermenting

juice must be replaced each week. Furthermore, ground deployment of ATSB stations required farm workers to step carefully around the ATSB stations during harvesting. Future studies should look at improvements to trap design and/or trap placement to increase trap effectiveness while reducing impacts on field workers.

Annual Report, December 2022: Attractive Toxic Bait Station for Mosquito Control in Underground Storm Drain Systems of the Coachella Valley

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Objectives:

The goal of this project is to investigate the efficacy of attractive toxic sugar bait (ATSB) stations to reduce the abundance of mosquitoes inhabiting underground storm drain systems (USDS). We proposed (i) to develop an ATSB design that effectively attracts adult *Culex quinquefasciatus* mosquitoes and exposes them to control agents via contact and/or ingestion under laboratory conditions, (ii) to assess lethal and sublethal effects on mosquito life stages in laboratory exposure assays with an ATSB-based entomopathogenic fungus, biocidal/reproductive sterilizing agent, or insect growth regulator (IGR), and (iii) to determine the efficacy of multiple ATSB-based control agents against mosquito adults and immature stages at developmental sites under laboratory and field conditions.

Previous USDS Field Trial: Spring 2022

The spring 2022 trial revealed the number of ATSB stations per unit of area was not a key factor impacting mosquito production trends within USDS of two adjacent HOA properties in Palm Desert, CA. ATSB constructed as disc-shaped bait reservoirs inside covered floating washtubs were arranged into three density treatment patterns (high, low, and none), each located in a separate section of the USDS. The first ATSB deployment occurred for several weeks, after which stations were removed and, after a several-week period without ATSB, a second ATSB deployment with new bait dispensers was arranged and monitored as before. Adult CDC-UV traps (no CO_2), dipper samples of immature mosquitoes in standing water reservoirs, and floating washtubs with fermented solutions to attract oviposition were processed weekly in select USDS before, during, and after ATSB placement. The low-density treatment (1 ATSB per 3 USDS) often produced more adults and immatures than the high-density treatment (1 ATSB per 1 USDS) or control treatment (0 ATSB per USDS); however, large variances around averages masked any significant differences among treatments. HOBO probes that measured hourly temperature and relative humidity suggested conditions within USDS were less extreme than conditions outside USDS as recorded by a nearby weather station. This trend confirmed similar previous findings and suggested USDS may be key refuge for adult mosquitoes, especially during the daytime when the prevailing aboveground weather conditions are stressful.

A full report on the spring 2022 field trial can be reviewed with the Mid-Season Progress Report and Research Proposal: Year 2 from 2022.

USDS Field Trial: Autumn 2022

Methods

ATSB Deployment and Design

A total of six ATSB were deployed, one in each of six USDS chambers, at a Homeowner Association site in Palm Desert during autumn 2022 (Figure 1). Closely paired ATSB-USDS were across the street from each other and separated from similar pairs down the street by about 100 meters. An adjacent Homeowner Association used as a control area without ATSB was separated, at its center, by about 300 meters from the center of the ATSB treatment area. Weekly trapping data was collected over one month, beginning the night before ATSB deployment (pre-treatment), on three consecutive weeks during ATSB deployment, and one week after ATSB removal.

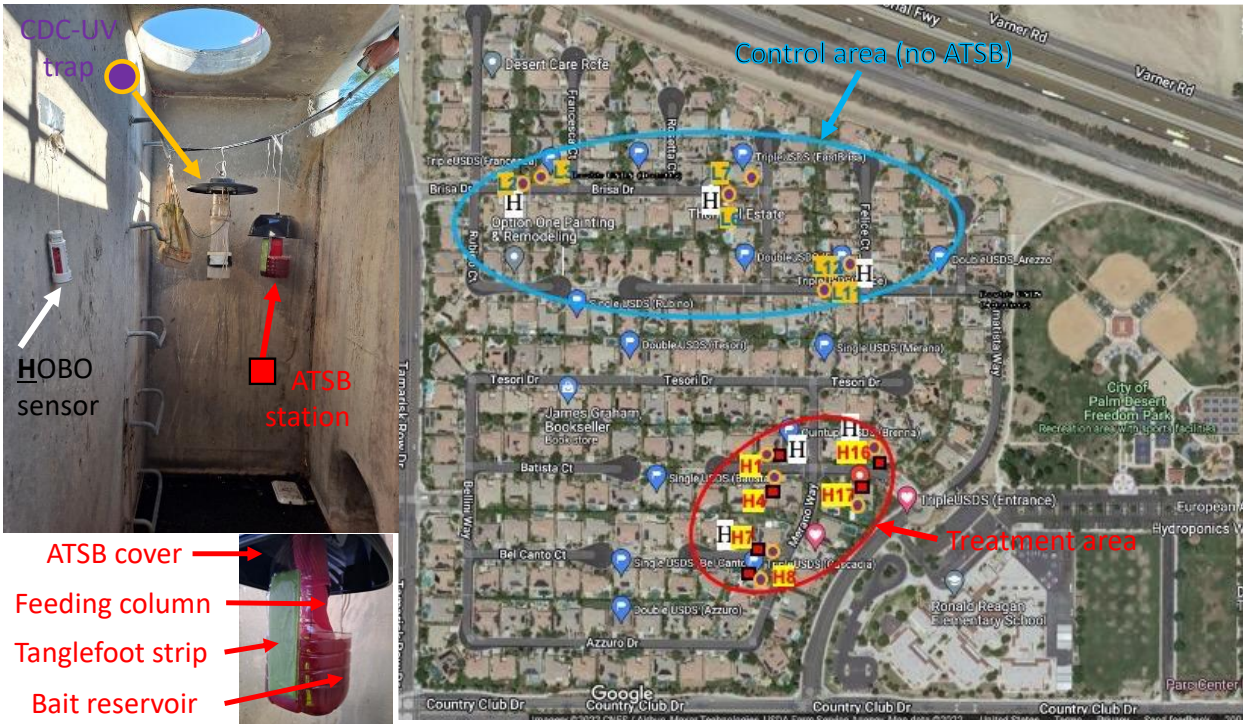

Figure 1. USDS-ATSB trial at Palm Desert, CA during autumn 2022. A hanging ATSB station and CDC-UV trap were located in each of six USDS in the treatment area. CDC-UV traps without ATSB stations were distributed in the control area. Six HOBO sensors recorded hourly temperature and relative humidity in treatment (3) and control (3) USDS.

Attractive toxic bait consisted of boric acid (1% w/v), table sugar (25% w/v), a guava-based attractant (5% v/v), red dye (1% v/v), and potassium sorbate (0.1% w/v). The guava attractant consisted of guava nectar (Jumex® Guava Nectar, 25% juice) with brown sugar (10% w/v) and brewer's yeast (0.4% w/v) mixed together and then fermented at 37°C for 4 days. The fermented

guava solution was combined with all other bait components into a single stock bait solution the day before it was added to ATSB stations at the field sites. This guava-based attractant was selected because previous studies in our lab indicated house flies preferred this fermentation to other similar fruit-based fermentations (2022 Mid-year Progress Report to CVMVCD on ATSB for house flies). Follow-up mosquito assays suggested female *Culex quinquefasciatus* prefer this guava additive over the larval food powder additive used as an attractant in previous baits (Figure 2).

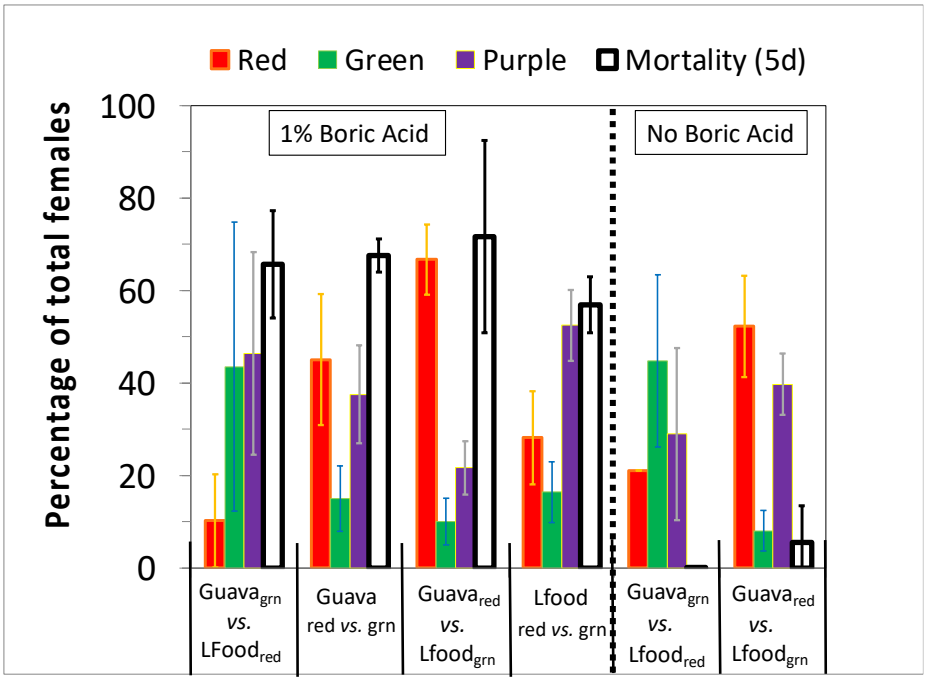

Figure 2. Comparison of adult mosquito preference for baits with two types of attractive fermentation, with and without boric acid toxin. Guava = 5% fermented guava mixture. Lfood = 5% fermented larval food (mouse chow + yeast). Sugar-starved, nulliparous *Culex quinquefasciatus* females (*n* = 20) were offered the choice of two bait-saturated sock pouches, one green- and one red-colored, in weigh boats in each cage for 24 hours. Mosquitoes were transferred from treatment cages to vials with sugar water and daily mortality was monitored for five days.

Each bait station contained an external shell with access windows and a sticky strip, an inner bait-saturated hanging column bathed in a bait reservoir, and a top cover (Figure 1). The shell was composed of 1 G water bottle with two openings (height = 13-14 cm x width = 12 cm) cut out of the top half in front and back for mosquito access. The front opening was cut 1 cm lower than the back opening and contained a 1 cm tall fence of lumite mesh across the base. This design directed bait overflows to the front of the station and prevented loss of drowned or developing mosquitoes if the reservoir overflowed. A single sticky strip to trap adult mosquitoes landing on the outer ATSB shell consisted of Velcro tape (length = 17 cm, width = 2 cm) mounted vertically on one side. A removable top strip was coated with Tanglefoot and attached to a non-removable base strip without Tanglefoot. Tanglefoot could be re-applied or the entire strip removed and replaced and was intended to be a built-in surveillance tool monitoring adult mosquito attraction to each ATSB. Inside the shell, a bait-saturated feeding surface was

comprised of two white cotton socks, one folded inside the other, filled with plastic water absorbing crystals (dry weight = 40g), and pierced with rope to hang from the top of the bottle. Bait-saturated crystals expanded to increase the total feeding surface area, provide additional moisture, and weigh down the socks for continuous immersion in bait reservoirs. Socks with crystals were allowed to fully saturate in about 1300 mL of bait the day before station deployment. Each ATSB was filled to its maximal bait volume (about 2000 mL) after fully secured in USDS to minimize bait losses during transport and handling. The protective cover was an inverted square black plastic container that reached down to the top of the access openings of the bait dispensing shell. Rope was threaded through the entire structure, starting from the top of the socks upward through holes made in the water bottle cap and protective cover, and cinched together with a sliding lace lock above the cover.

Rope above the sliding lock was looped and treated with insecticide to repel ants before hanging the station from a hook attached to a perforated rubber strap stretched over the 1-meter gap between USDS ladder and street-side grate (Figure 1). ATSB were positioned in the middle of the strap at an average resting height of 1 meter above the USDS water surface. Each ATSB was moved closer to the street grate once a week during overnight adult sampling, but was spaced evenly to avoid direct contact with the CDC-UV trap and USDS walls.

The physical condition of each ATSB station was assessed weekly after deployment (Table 3). The bait reservoir was re-filled with freshly prepared bait and the amount of volume loss noted. Contamination from dirt, debris, mold, etc. and moisture of the bait feeding surface (sock) were given a subjective rating from 1 (least) to 5 (most). Adult mosquitoes trapped on Tanglefoot strips were identified by gender, female reproductive state, presence of bait color, species, and removed with a tweezer. When large numbers of adults could not be easily assessed on-site, the Tanglefoot strip was removed, placed in a vial to be processed later in the laboratory, and replaced with a freshly treated strip. Dead adult mosquitoes floating within bait reservoirs were removed with a mesh scoop and placed within a vial of 70% ethanol for later identification. Dead adults that evaded mesh scoop collection during the 3-week deployment were collected after USDS removal by filtering the final volume of each bait reservoir in the laboratory.

Environmental Conditions within USDS

Six HOBO sensor units (Onset Computer Corp., Bourne, MA) measured temperature and humidity every hour inside six USDS chambers, starting on the first week of CDC-UV trap deployment (October 20) until the final sample day (November 18). Three HOBO units were located in the ATSB treatment area and three units in the control area (Fig. 1 and Table 3). HOBO probes were deployed in non-adjacent USDS with diverse characteristics (Table 3) to record a variety of conditions inherent to treatment areas. Each HOBO was hung at the horizontal center of vertical walls on the same side as the manhole access cover, approximately one meter below the chamber ceiling. Sensors were placed at dry spots without evidence of past water flows to minimize direct contact with street run-off. USDS measurements were compared to those of an aboveground weather station in relative proximity to all sites (CIMIS: La Quinta II, www.cimis.water.ca.gov, accessed November 29, 2022).

Once-weekly water reservoir surveys included water depths recorded with a meter stick, the predominate type of solid debris present, and relative debris amounts subjectively rated from 1 (no debris) to 5.

Adult Mosquito Monitoring

Adult mosquito abundance was assessed weekly using a CDC-style suction trap with an UV light (no CO_2) to attract an abundance of gravid and bloodfed females, plus males, in addition to host-seeking females. Each trap and battery bag were connected with two hooks spaced about 6 inches apart on the perforated rubber strap stretched across the width of each USDS (Figure 1). The bottoms of trap containers were on average 1 meter in vertical distance from the water surface of each USDS. A total of 6 traps, each adjacent to a hanging ATSB, were deployed in 6 treated USDS and 6 traps were hung without an ATSB in 6 control USDS. The battery powered traps were run ~ 18 hours overnight and containers with captured adult mosquitoes were transported to the lab on ice. Specimens were then frozen and differentiated by species, sex, female reproductive state, and presence/absence of red dye associated with bait stations in dissection microscope enumerations.

Appropriate statistical methods in Systat (SPSS, 1998) were used to analyze patterns of adult trap counts in relation to experimental variables in the field trial that were inherently discrete (e.g. sample date, the presence/absence of ATSB and HOBO probes, and USDS chamber orientation) or quantitative (e.g. temperature, relative humidity, water depth).

Results:

Adult Mosquitoes in CDC Traps

Culex quinquefasciatus adults comprised more than 99% of USDS-CDC trap counts, which totaled an average of 177 mosquitoes per night (N = 10,443). Comparatively rare mosquito species found were *Culex tarsalis* (N = 34), *Culiseta inornata* (N = 11), *Aedes aegypti* (N = 8), and *Culiseta incidens* (N = 1). Females were composed of 76% non-gravid, 18% gravid, 4% bloodfed, and 2% abdomen-lacking individuals. Females were overall nearly twice as abundant as males (62% vs. 38% of total mosquitoes).

Experimental trends in adult mosquito abundance are detailed in Figure 3, Table 1, and Table 2. Across all sample dates, mosquito numbers generally did not differ statistically between sites with bait stations (USDS+ATSB) and those lacking bait stations (USDS-ATSB). Averages were generally higher in USDS+ATSB compared to USDS-ATSB for the majority of the sample dates; however, high sample variances often masked this average differential. Male mosquito abundance was significantly greater at the USDS+ATSB sites relative to control sites on the first two collection dates (before and 1 week after ATSB placement: Figure 3) with male abundance decreasing at these sites in later weeks so that they were no longer significantly greater than at control sites. Overall collection periods, male abundance at USDS+ATSB sites was on average more than 2x greater than at USDS-ATSB control sites.

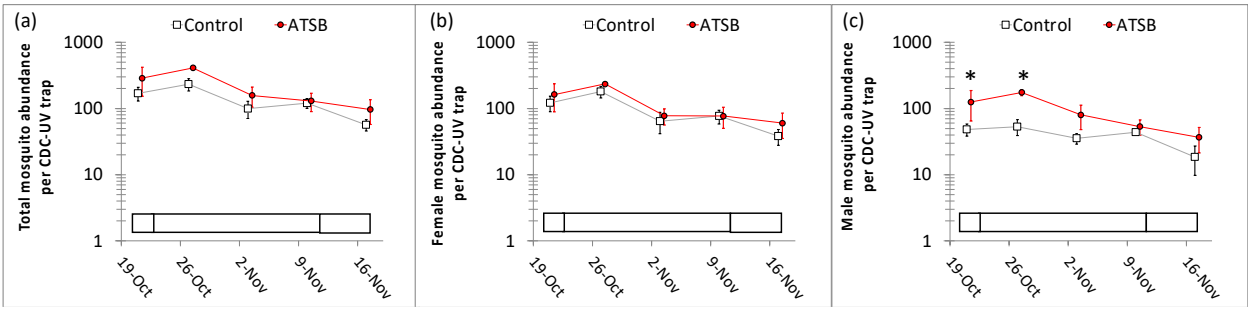

Figure 3. Mean (±SE) log10 scale abundance of (a) total, (b) female, and (c) male adult mosquitoes from overnight CDC-USDS traps deployed weekly in 2022 at Palm Desert, CA. ATSB = sites with ATSB when deployed. Control = sites without ATSB. * $P < 0.06$, Kruskal-Wallis ANOVA. The bar on bottom of graph indicates the duration of ATSB deployment (red-shaded middle region) and the sample periods when ATSB were excluded altogether (clear regions on either end).

Sample date was a significant factor associated with adult mosquito abundance, especially related to physiological status of captured female mosquitoes (Table 1). In general, mosquito abundance declined throughout the study, peaking around 300 adults per trap in the first 2 weeks and ending at around 80 adults per trap by the last week. The decline in mosquitoes coincided with a cooling trend and therefore air temperature recorded by HOBO-USDS was positively associated with and strongly predictive of all adult mosquito abundance (Table 2).

Table 1. Repeated measures ANOVA of adult abundance in USDS-CDC traps. Data was Log10 (1+x) transformed.

RM-ANOVA Grouping Variable (s)		Total Adult Mosquitoes		*Culex quinquefasciatus* Females								Males	
				Total		Empty		Gravid		Bloodfed			
		Statistic	P-value	Statistic	P-value	Statistic	P-value	Statistic	P-value	Statistic	P-value	Statistic	P-value
Sample Date		$F_{4,55} = 3.171$	**0.020**	$F_{4,55} = 3.815$	**0.008**	$F_{4,55} = 3.536$	**0.012**	$F_{4,55} = 2.488$	0.054	$F_{4,55} = 5.647$	**0.001**	$F_{4,55} = 1.939$	0.117
USDS Sites over all dates	ATSB +/-	$F_{1,10} = 2.148$	0.173	$F_{1,10} = 1.081$	0.323	$F_{1,10} = 1.140$	0.311	$F_{1,10} = 0.481$	0.504	$F_{1,10} = 0.216$	0.652	$F_{1,10} = 2.148$	0.068
	HOBO +/-	$F_{1,10} = 0.042$	0.842	$F_{1,10} = 0.141$	0.715	$F_{1,10} = 0.103$	0.754	$F_{1,10} = 0.682$	0.428	$F_{1,10} = 0.123$	0.733	$F_{1,10} = 0.002$	0.969
	ATSB x HOBO	$F_{1,8} = 0.108$	0.751	$F_{1,8} = 0.195$	0.670	$F_{1,8} = 0.098$	0.762	$F_{1,8} = 0.879$	0.376	$F_{1,8} = 2.294$	0.168	$F_{1,8} = 0.175$	0.687
	Cardinal Direction	$F_{3,8} = 4.570$	**0.038**	$F_{3,8} = 4.656$	**0.036**	$F_{3,8} = 5.731$	**0.022**	$F_{3,8} = 1.817$	0.222	$F_{3,8} = 1.077$	0.412	$F_{3,8} = 3.307$	0.078

The cardinal direction of each USDS street-opening (as viewed from inside each chamber) was statistically linked to total mosquito captures, especially females without eggs/blood, and averages were generally stratified as: West > South > East > North, though USDS orientation

was not explicitly controlled for in the experimental design and the only West-facing site was H8. Adult mosquito numbers did not differ significantly between USDS with HOBO sensors compared to USDS without HOBO sensors.

Overall, red bait dye was found in only one dead specimen from CDC traps, a male mosquito taken from ATSB+USDS (H16-entrance) one week after bait station deployment.

Table 2. Stepwise (α = 0.05) linear regression analysis of environmental conditions and adult mosquito production from USDS-CDC traps.

Stepwise Regression Variable (s)		Total Adult Mosquitoes		*Culex quinquefasciatus* Females								Males	
				Total		Empty		Gravid		Bloodfed			
		Statistic(s)	P-value	Statistic(s)	P-value	Statistic(s)	P-value	Statistic(s)	P-value	Statistic(s)	P-value	Statistic(s)	P-value
Model		$F_{1,28} = 40.1$ $R^2 = 0.589$	< 0.001	$F_{1,28} = 53.7$ $R^2 = 0.657$	< 0.001	$F_{1,28} = 50.9$ $R^2 = 0.645$	< 0.001	$F_{2,27} = 13.5$ $R^2 = 0.500$	< 0.001	$F_{2,27} = 11.3$ $R^2 = 0.455$	< 0.001	$F_{1,28} = 17.6$ $R^2 = 0.386$	< 0.001
USDS	Avg Air Temp	t = 6.334	< 0.001	t = 7.329	< 0.001	t = 7.136	< 0.001	t = 4.214	< 0.001	t = 3.860	0.001	t = 4.194	< 0.001
	SD Air Temp	NS		NS		NS		NS		NS		NS	
	Avg Rh %	NS		NS		NS		NS		NS		NS	
	SD Rh %	NS		NS		NS		t = 2.554	0.017	NS		NS	
	Water Depth	NS		NS		Ns		NS		t = -2.323	0.028	NS	

Adult Mosquitoes Trapped within ATSB Stations

A total of 90 adult mosquitoes (50 females, 40 males) were removed from the six ATSB stations (they drowned in bait reservoirs) and 22 adults were snared on tanglefoot strips (10 females, 12 males: no bait dye evident). The ATSB station in USDS-H8 accounted for the bulk (65%) of dead specimens collected weekly and at the end of the deployment period. *Culex quinquefasciatus* was the only species found within the bait reservoir of an ATSB station, based on sight-identifiable features confirmed by microscope when necessary.

Environmental Conditions

Measurements from HOBO probes, observations of USDS chambers, and regional weather trends are summarized in Figure 3 and Table 3. HOBO measurements (single probe: $N = 687$) indicated USDS were on average 5 °C warmer and 5% more humid compared to aboveground weather conditions (La Quinta station). Even so, there was a general cooling trend during the study during which USDS temperatures dropped an average of 9 °C and mean relative humidity declined 5% between the first and last sample days. Extreme conditions were more common aboveground than in USDS, and this was especially true for minimum air temperatures (< 13°C), which were common aboveground (25% of all recordings) but relatively rare in USDS (2% of all recordings). Interestingly, nearly 80% of all HOBO air temperatures < 13°C were detected in a

single chamber (L6, no ATSB) where 9-fold fewer mosquitoes were captured compared to the combined average of the other 5 USDS with a HOBO.

Table 3. Environmental characteristics of USDS chambers, including regional surface weather, during the autumn field trial in 2022. Predominate debris types: O = open water, F = floating foliage, S = sediment at bottom. Subscript indicates a mixture of debris types.

HOA	ATSB Deployed	USDS Site	Total Mosquito Number per CDC trap (Mean ± SE)	Orientation / Size of chamber			Water Depth (cm) Mean ± SD	Debris:		HOBO (USDS wall)				CIMIS daily (La Quinta weather station)	
				Direction to Street	Volume (m^3)	Height (m)		Type	Mean Density ranked (1-5)	Air Temperature °C		Relative Humidity (%)			
										Mean ± SD	MAX / MIN	Mean ± SD	MAX / MIN	Mean ± SD	MAX / MIN
Brenna	Yes	H1	137 ± 48	East	10.4	2.3	15	F	4.4	20 ± 3	30 / 12	40 ± 2	76 / 13	Air Temperature °C	
		H4	315 ± 109	East	7.6	2.3	24 ± 0.7	O	2.4						
		H7	206 ± 33	East	11.3	2.5	28 ± 0.5	O	2.3	22 ± 2	29 / 17	51 ± 3	82 / 15	17 ± 4	35 / 3
		H8	369 ± 146	West	7.9	1.8	33 ± 0.8	F_O	2.7					Relative Humidity (%)	
Entrance		H16	121 ± 39	South	7.8	2.5	24 ± 0.5	O	1.4	24 ± 3	37 / 17	47 ± 3	72 / 11		
		H17	167 ± 62	North	6.2	2.0	12 ± 0.8	O	2.6					39 ± 9	79 / 11
Amatista	No	L2	131 ± 14	South	6.3	2.5	33 ± 0.5	O	1.9	23 ± 3	32 / 15	36 ± 2	71 / 12	Wind speed (m/s)	
		L3	51 ± 12	East	5.6	1.7	18 ± 1	O_S	2.6						
		L6	19 ± 13	North	9.6	2.8	23 ± 0.4	S	5.0	18 ± 3	27 / 10	43 ± 3	82 / 15	1.5 ± 0.6	3.1 / 0.8
		L7	318 ± 59	South	6.9	2.3	23	F	4.6					Precipitation (Total = 3.3 mm)	
		L11	26 ± 18	North	8.0	1.7	18 ± 4.5	S	4.6						
		L12	273 ± 93	South	8.0	1.7	12 ± 0.5	S	4.9	25 ± 2	34 / 18	46 ± 2	70 / 15	0.1 ± 0.1	0.9 / 0

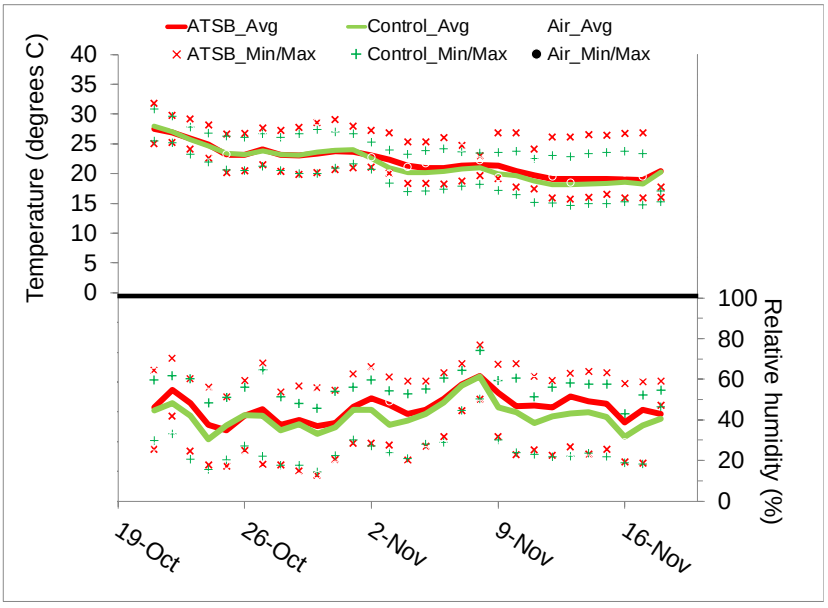

Figure 3. Daily mean air temperature (top) and relative humidity (bottom) with minimum/maximum values from the field study in autumn 2022. ATSB = HOBO sensors in USDS with bait stations. Control = HOBO sensors in USDS without bait stations. Air = regional conditions at ground level (CIMIS, La Quinta II station).

Discussion

Autumn 2022 field tests of a new hanging design and guava fermentation-based attractive toxic sugar bait (ATSB) appeared to have minimal impact on native adult mosquito populations dominated by *Culex quinquefasciatus* at underground storm drain system (USDS) sites. Total CDC trap numbers did not appear to respond to the 3-week long introduction of ATSB stations when compared to control sites and considering pre- and post-deployment mosquito levels. The lack of ATSB efficacy was perplexing given laboratory assays demonstrated adults readily fed on the hanging model, preferred the bait with guava fermentation over the previously used bait with fermented mouse chow powder, and ingested sufficient amounts to cause 70% or higher mortality in female *Culex quinquefasciatus* cohorts (laboratory data 2022, not shown). It is suspected that wild adults either were not attracted to the stations and/or did not ingest sufficient amounts of bait to cause significant mortality and depress USDS populations. This is supported by the lack of captured mosquitoes in CDC-UV traps that contained any red dye in their abdomen. Laboratory trials show bait efficacy against female mosquitoes can be significantly reduced if a water source is provided in addition to the ATSB, and this type of scenario may be typical of what wild adults encounter within the USDS environment. The attractiveness of the ATSB station as designed may simply be overcome by other odors associated with the USDS. Laboratory choice assays with water samples taken from a wide variety of USDS reservoirs and allowed to compete with attractive bait for adult mosquito attention may give insight into this topic of interest.

Adult mortality was directly observed within bait reservoirs and on tanglefoot strips; however, most of the total number of dead were due to a single chamber (USDS-H8) that contained more dead mosquitoes than the remaining 5 chambers combined. Overall, the number of dead specimens in ATSB from passive means were lower than expected given adult mosquitoes had ample opportunity to visit the continuously deployed stations, relatively large numbers were clearly present given CDC trap deployment next to each ATSB, and live mosquito activity was consistently observed in most chambers.

Of the measured variables, mean air temperature was most strongly linked to adult mosquito sample trends over time and space. Decreased adult mosquito activity and slower larval growth rates in cooler temperatures would have been expected and could have explained declining trap counts as the autumn season progressed and within select USDS chambers more exposed to cooler weather trends. Monitoring weather conditions, especially the prevailing air temperatures, inside and/or outside USDS may be one way to predict spatial distribution patterns and sample date productivity to best allocate resources in underground abatement strategies. Deployment of greater numbers of HOBO sensors and/or additional environmental measurements related to water physiochemical measurement (Mid-year Report 2022) may continue to resolve environmental connections to mosquitoes in future experimental trials.

From an operational standpoint, the new design was clearly the most user-friendly ATSB tested to date and the preparation, storage, transport, and handling of stations was far easier than in previous models. Bait recharge was performed weekly, and yet this process could have been performed less often during the autumn study, perhaps every two weeks, without loss of ATSB

efficacy, since cooler weather seemed to lessen evaporation rates from bait reservoirs. Bait stations were easily placed within USDS on the overhanging perforated rubber strap from street level and could be removed/recharged without climbing down inside each chamber. In general, the perforated rubber strap stretched across the USDS was an easy way to mount hooked traps, battery bags, and stations at customizable intervals and heights; however, the rubber straps were pliable and began to sag when holding heavier weights and could be replaced with less pliable rope if desired.

Aedes aeqypti continues to be a rare mosquito species in the ATSB field trials, with only a few scattered adults found in CDC trap catches, and follow-up surveys of immature habitats will be on the lookout for spread of larvae, pupae, and/or eggs of this and other invasive species into USDS water reservoirs.

Studies of the interplay of multiple control agents deployed simultaneously in an integrated mosquito management scenario continue to be of keen research interest. Adulticidal baits in ATSB or alternative delivery methods such as sprays could be applied to a USDS treatment area and compared to a second USDS control area (or alternative treatment area). Treatments to consider in the future could be both adulticidal baits and slow-release granules of an insect growth regulator such as pyriproxyfen.

Semiannual Research Progress Report #6 for CVMVCD grant:

Improving fire ant IPM in the Coachella Valley: Effects of irrigation on bait efficacy. mating flight phenology, and the status of biocontrol agents.

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December 30, 2022

Summary of Activity January 2020 through December 2022.

The objective of the proposed research for 2020-2021 is to improve the integrated pest management (IPM) of fire ants in the Coachella Valley by: 1). Evaluating the effect of irrigation on bait efficacy to determine the need to withhold irrigation after bait application; 2) Identifying periods of peak mating flight activity to improve timing of bait applications; and 3) Determining the spread of fire ant biocontrol agents released in the Coachella Valley to assess their further utilization for fire ant IPM. Due to COVID-19 restrictions, a 1-year no-cost extension (ending March 31, 2023) was granted to provide more time to complete the objectives. USDA-ARS travel restrictions for COVID-19 were eased in the spring of 2022 which allowed Rachel Atchison (Biological Science Technician) and David Oi to make three trips to the District which resulted in significant progress on the proposed research.

1) To evaluate the effect of irrigation on fire ant bait efficacy in the field, two field sites, located at Lake Cahuilla Veterans Regional Park and Lake La Quinta Recreation Area, were surveyed for red imported fire ants on Feb. 25-26, 2020, and were determined to be suitable for the study. However, because the study was suspended for over 2 years due to COVID, a new study site was located by the CVMVCD (District) staff. With significant support from the District, the field study to evaluate effect of irrigation on fire ant bait efficacy was conducted in May and June 2022 at the Palm Desert Greens Country Club. Initial data analysis indicated that reductions in fire ant activity was not significantly different when bait was applied regardless of whether irrigation was withheld or not withheld (i.e., normal irrigation schedule was maintained). Fire ant activity after bait applications under both irrigation regimes was significantly lower than the untreated controls.

2) Research on monitoring fire ant mating flight activity resumed in May 2022. The prototype fire ant alate traps that successfully caught alates in Gainesville, Florida and in Palm Desert, CA in 2021 was partially redesigned to simplify transport and assembly. Eight traps were installed with District assistance in May 2022 at two sites (4 traps each at the Eldorado wash and at Arnold Palmer Restaurant). Alates were trapped at both of these irrigated sites in May through October, but none in November and December. In addition, temperature and humidity sensors were installed at both trap sites to correlate weather conditions to mating flights.

3) Surveys for the spread of fire ant biocontrol agents released and established in Palm Desert and La Quinta in 2014/2015 were conducted in May and June 2002. Fire ant decapitating

phorid flies were collected on sticky traps at the Monterey Country Club release site as well as 748.95 meters (ca. 0.46 miles) west and 650.14 meters (0.4 miles) east of the release site. A total of 41 flies were collected within the wash area. Both released species, *Pseudacteon curvatus* and *P. obtusus* were found.

The fire ant virus, Solenopsis invicta virus 3 (SINV-3) was detected in the Eldorado wash area where it was introduced into fire ant nests in 2014. Of the 19 nests sampled, five (26%) were infected with the farthest detection about 0.26 miles east of the release site. SINV-3 was not detected (n=7) at the successful, 2015 inoculation at the La Quinta Medical Center.

##########

Due to the COVID-19 pandemic, USDA-ARS labs were closed on March 19, 2020 and all personnel were placed in mandatory telework status. In July 2020, the CVMVCD project was approved for limited research activity to allow progress toward meeting objectives of extramural agreements. However, the pace of research was slow as the USDA labs were only permitted 25% occupancy (1 person per lab) and air travel was prohibited. In late March 2022 USDA labs began to transition to full occupancy and domestic air travel was allowed in mid-April 2022.

1) Irrigation effects on bait efficacy.

We proposed to compare the efficacy of standard fire ant bait on fire ant populations in field sites where irrigation is withheld after baiting and in sites that follow a normal, daily irrigation schedule. We hypothesized that fire ant bait efficacy will be similar at the irrigated and non-irrigated sites, based on the results of the 2019 Coachella Valley field study and observations of fire ants foraging on wet bait (Oi et al. 2022).

Site selection and preliminary fire ant sampling was completed on February 25-26, 2020. Two field sites, located at Lake Cahuilla Veterans Regional Park and Lake La Quinta Recreation Area, were determined to be suitable for the study. Because the study was suspended for over 2 years due to COVID restrictions, a new site was located by the CVMVCD (District) staff. With significant support from the District, the field study was conducted in May and June 2002 at Palm Desert Greens Country Club. The course was previously treated with Extinguish Plus fire ant bait about a year ago and standard fire ant surveillance by the district indicated 61% of the hotdog lures had fire ants on May 20, 2022.

Eight golf course holes and an alcove off the #4 hole fairway, which was used as a practice chipping area and dog park, were used in the study. Hole #1, #2, #4, #6, and the alcove received the standard withholding of irrigation the night before the day of fire ant bait application, and the resumption of irrigation in the evening of the day, bait was applied. Hole #10, #12, #14, and #16 received bait application the morning after evening irrigation was resumed. Overnight/early morning irrigation was measured with rain gauges at 7 holes and averaged 1.1 cm (range, 0.9 – 1.4). All holes received the label rate of Avion® Fire Ant Bait (0.045% indoxacarb), except holes #1, #16, and the alcove, which were untreated controls. Bait was applied in the mornings of May 24 and 25, 2022 by the District Operations personnel using a herd seeder (Fig. 1.). Hence, treatment applications reflected District bait application methods.

Fig. 1. CVMVCD fire ant bait application equipment and operator.

The study utilized a completely randomized design with each course hole serving as a replicate. Thus, there were three treatments (a) bait-with irrigation, (b) bait with irrigation withheld, and (c) a control without bait [1 hole each with and withheld irrigation, plus the alcove where irrigation was withheld]. Assessment of fire ant activity was determined by counting the number of fire ants on nickel diameter-sized dollops of peanut butter lures (21 mm, ≈1 – 1.5 ml) placed on three transects per hole that were located along the edge of tee boxes, along one side of a fairway rough, and along the edge around a putting green. For the alcove, three transects were set about 50 ft apart. Ten lures per transect were placed at ≈15 ft intervals and examined for ants 45 – 60 minutes after lures were applied. Peanut butter was dispensed directly onto the turf using syringes (60, 100 ml). Sun exposed lures were shaded with a wooden placard (≈3 x 4 in.) supported by a landscape staple. Sampling was conducted at 0 (pretreatment), 2, and 4 weeks after bait application. For each sampling date, the number of fire ants per lure was averaged across each tee, fairway, and green transect per hole (n=90 lures) then compared among treatments by analysis of variance and Tukey's HSD test.

Results. Initial data analysis indicated that the reduction in fire ant activity was not significantly different when bait was applied with irrigation (i.e., normal irrigation schedule was maintained) or without irrigation. Fire ant activity after bait applications under both irrigation regimes was significantly lower than the untreated controls (Table 1). These results are consistent with reports of fire ant bait efficacy not being negatively affected when applied in the presence heavy dew that dries during the day (Collins et al. 1993), and baits wetted after application in field plots in the Coachella Valley (Oi et al. 2022). Fire ants will feed on wet bait and water-soaked baits that have dried (Oi et al. 2022). It is likely that fire ant baits applied before or after irrigation in the arid climate of the Coachella Valley will not be compromised and will be foraged by fire ants if the baits are accessible (i.e., not washed away or submerged in standing water).

Table 1. Average number of fire ants per peanut butter lure (n=90 lures per hole) from golf course holes (n=3 per treatment) at specified weeks after application of Advion Fire Ant Bait (0.045% indoxacarb) with or without irrigation.

	Average (± SEM, n=3) number of fire ants		
Treatment	**Week 0 (pretrt.)**	**Week 2**	**Week 4**
Irrigation & bait	44.4 (± 9.6) a	21.1 (± 7.6) a	41.8 (± 9.8) a
Irrigation withheld & bait	32.5 (± 3.0) a	21.0 (± 5.6) a	35.5 (± 8.3) a
Control (no bait)[a]	32.6 (± 8.4)[b] a	50.8 (± 7.2) b	81.3 (± 5.1) b

Averages followed by the same letter within a column are not significantly different ($P > 0.05$) by analysis of variance and Tukey's HSD test.

[a] Control had 1 hole each with or withheld irrigation plus the alcove with irrigation.

[b] n=2 holes.

2) **Peak mating flight activity.**

With the resumption of limited research activity in July 2020 at CMAVE, we focused on the development of equipment (traps/cameras) for fire ant alate flight monitoring. Wildlife cameras partially recorded alate flights but were difficult to deploy and did not provide consistent, useable surveillance footage. Thus, we redesigned alate traps used in the past (Morrill and Whitcomb 1972) to make them less cumbersome to transport and service. More recent trap modifications (J. Oliver TN State Univ.) utilized an inverted root ball basket with screening to collect alates in a covered bunt pan (Fig. 2). Utilizing the fire ant alate behavior of crawling up blades of grass or other elevated perches from a nest before taking flight, the trap was redesigned with the following modifications (Fig. 3):

1) Dowel rods are used to guide alates into the covered collecting pan. Alates will crawl to the top of the rods and then take flight. The cover confines the alates which drop into the collecting pan filled with liquid preservative (propylene glycol solution).
2) Screening is not used since the dowel rod technique collects enough alates.
3) Root ball baskets were replaced with legs that can be disassembled from the collecting pan which allows for easier transport.

Fig. 2. Previous fire ant alate trap with inverted wire basket and screening that funnels alates initiating flights into a pan filled with collecting fluid.


Fig. 3. Redesigned fire ant alate trap with dowel rods that guide alates into a collecting pan. Alates typically crawl to a high perch when they initiate mating flights.

Traps were sent in March 2021 to the District for field testing under Coachella Valley conditions. Alates were caught in traps set in Gainesville, FL and Palm Desert, CA (Table 2.) Below is a link for a video of fire ant alates being trapped in Gainesville:

https://drive.google.com/file/d/1KQGp2oP86L-PP6gpfcQFQShrdqDBjfr0/view?usp=sharing

Table 2. Number and month fire ant alates caught in traps set in Gainesville, FL and Palm Desert, CA 2021.

Location	Trap 1	Trap 2	Trap 3	Trap 4	Trap 5
Gainesville, FL	57, April	35, May	37, May	49, June	548, June
Palm Desert, CA	87, June	–	–	–	–

Fig. 4. Dec.2021 trap design with a plywood base that provided more secure attachment points for the legs.

The trap design was later modified in Dec.2021 with a plywood base that simplified assembly and made the traps easier to ship (Fig. 4).

To correlate temperature and humidity with the occurrence of alate flights, radiation shields were constructed to protect temperature and humidity recorders (iButtons) that were installed near alate traps (Fig. 5.).

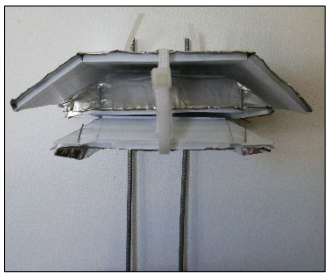

Fig. 5. Interior view of a radiation shield that houses temperature and humidity recorders.

Eight traps (Dec. 21 design) were installed with District assistance in May 2022. Individual traps were installed over four nests in the irrigated, stormwater wash of the Whitewater River located near Eldorado Drive and Fred Waring Drive (Eldorado wash) in Indian Wells, CA. Most of the traps were placed over large nests adjacent to the concrete bases of irrigation gun sprinklers. The other four traps were placed over nests located on the grounds of Arnold Palmer Restaurant in La Quinta. In addition, temperature and humidity sensors were installed at both trap sites to correlate weather conditions to mating flights. All the colonies with traps were the polgyne social form as determined by Gp-9 genotyping (Valles and Porter 2003). The District is graciously servicing the alate traps and downloading the weather data.

Results. Table 3 shows the number of alates captured through Dec. 12, 2022. Alates were caught in all traps at both irrigated sites from May through October, 2022. Flight activity, indicated by the frequency of at least one alate caught per trap, was more prevalent from June through September with 10 – 17 occurrences of flights (Table 4). If 10 trapped alates is an indication of an intensive flight (Morrill 1974), five nests (A, B, E, G, H) had more than one intensive flight in June and July (Table 5). Average (±SD) minimum and maximum daily temperatures and relative humidity for the weeks (May – August) when 10 or more alates were trapped suggest that intensive flight activity occurs during hot summer conditions (Table 6). Further data collection is scheduled through winter and spring of 2023. Thus far, seasonal flight activity described in this study are similar to fire ant alate flight activity reported by Morrill (1974) in studies conducted in unirrigated, northern Florida sites.

Table 3. The number and gender of red imported fire ant alates caught in traps placed over eight nests at sites in the Eldorado wash (traps A – D) and Arnold Palmer Restaurant (traps E – H) in the Coachella Valley, CA. Traps were examined weekly 31May – 14Dec 2022.

	May		Jun		Jul		Aug		Sep		Oct[a]		Nov		Dec		**Sum by trap**		
Trap	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀♂
A	0	0	30	4	36	16	0	0	0	0	0	0	0	0	0	0	**66**	**20**	**86**
B	25	6	32	56	87	114	17	9	83	51	0	0	0	0	0	0	**244**	**236**	**480**
C	8	0	0	0	0	0	1	0	38	7	0	2	0	0	0	0	**47**	**9**	**56**
D	1	0	0	0	3	3	1	0	0	0	0	0	0	0	0	0	**5**	**3**	**8**
E	0	0	41	5	45	0	0	0	3	0	0	0	0	0	0	0	**89**	**5**	**94**
F	0	0	3	0	0	2	1	1	8	5	0	0	0	0	0	0	**12**	**8**	**20**
G	0	0	125	8	18	4	4	0	4	2	2	2	0	0	0	0	**153**	**16**	**169**
H	0	0	117	25	5	0	0	1	0	0	0	0	0	0	0	0	**122**	**26**	**148**
Sum	**34**	**6**	**348**	**98**	**194**	**139**	**24**	**11**	**136**	**65**	**2**	**4**	**0**	**0**	**0**	**0**	**738**	**323**	**1061**

[a] Traps were not examined the week of Oct. 24, 2022.

Table 4. Mating flight activity as indicated by the frequency of **≥1 red imported fire ant alate** (female or male) caught in traps placed over eight nests at sites in the Eldorado wash (traps A – D) and Arnold Palmer Restaurant (traps E – H) in the Coachella Valley, CA. Traps were examined weekly from 31May – 14Dec 2022.

	May	Jun	Jul	Aug	Sep	Oct[a]	Nov	Dec	
Trap	♀ ♂	♀ ♂	♀ ♂	♀ ♂	♀ ♂	♀ ♂	♀ ♂	♀ ♂	**Sum**
A	--	2	4	--	--	--	--	--	**6**
B	1	4	3	3	2	--	--	--	**13**
C	1	--	--	1	2	2	--	--	**6**
D	1	--	2	1	--	--	--	--	**4**
E	--	1	2	--	1	--	--	--	**4**
F	--	1	2	2	3	--	--	--	**8**
G	--	2	2	2	2	2	--	--	**10**
H	--	4	2	1	--	--	--	--	**7**
Sum	**3**	**14**	**17**	**10**	**10**	**4**	**0**	**0**	**58**

[a] Traps were not examined the week of October 24, 2022.

Table 5. Number of weeks where **≥10 red imported fire ant alates** (female or male) were caught in traps placed over eight nests at sites in the Eldorado wash (traps A – D) and Arnold Palmer Restaurant (traps E – H) in the Coachella Valley, CA. Traps were examined weekly from 31May – 14Dec 2022.

	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Trap	♀ ♂	♀ ♂	♀ ♂	♀ ♂	♀ ♂	♀ ♂	♀ ♂	♀ ♂	**Sum**
A		1	2						**3**
B	1	2	3	1	1				**8**
C					1				**1**
D									**0**
E		1	1						**2**
F									**0**
G		2	1						**3**
H		2							**2**
sum	**1**	**8**	**7**	**1**	**2**	**0**	**0**	**0**	**19**

Table 6. Mean (±SD) daily minimum and maximum temperatures and relative humidity per week where **≥10 red imported fire ant alates** (female or male) were trapped (May-Aug. 2022) at the Eldorado wash and Arnold Palmer Restaurant sites.

	Temp. °C ($\bar{x}$ ±SD)		RH % ($\bar{x}$ ±SD)	
Site	Min.	Max.	Min.	Max.
Eldorado wash (traps A – D)	22.0 (3.0)	42.2 (2.1)	20.4 (6.9)	79.8 (3.2)
Arnold Palmer (traps E – H)	24.1 (3.0)	41.0 (3.0)	19.3 (6.4)	67.4 (5.1)

3) **Status of fire ant biocontrol agents.**
Surveys were conducted in May and June 2022 to determine the spread of fire ant biocontrol agents, released in 2014/2015. The 2022 surveys focused mainly on the irrigated wash areas. We are planning to conduct further sampling north and south of the wash in the first quarter of 2023.

Phorid flies. Two species of fire ant decapitating phorid flies, *Pseudacteon obtusus* and *Pseudacteon curvatus*. were collected on sticky traps at the Monterey Country Club release site as well as 749 meters (ca. 0.46 miles) west and 650 meters (0.4 miles) east of the release site. A total of 41 flies (30 female *P. curvatus*; 6 female *P. obtusus*; 5 unidentified - possibly males) were collected and all were trapped within the wash area (Fig. 6). Survey dates for phorids were May 25-26, June 8-9, and June 23-24, 2022.

Solenopsis invicta virus 3. The fire ant virus, Solenopsis invicta virus 3 (SINV-3) was detected in the Eldorado wash area where it was introduced into fire ant nests in 2014. Of the 19 nests sampled, five (26%) were infected with the farthest detection about 417 m (0.26 miles) east of the release site. This was farther than the detection from the May 2017 survey where it was detected 103 m away. At the other successful, 2015 inoculation located at the La Quinta Medical Center, SINV-3 was not detected (n=7). Part of the La Quinta site is undergoing construction and an adjacent natural garden area is not being maintained. Thus, fire ant habitat was diminished which limited sampling.

Additional fire ant samples for SINV-3 were obtained at the phorid fly and fire ant alate traps at Palm Desert Greens (dog walk area off hole #4 fairway), Monterey and Rancho Las Palmas Country Clubs wash area, and Arnold Palmer Restaurant. SINV-3 was detected at Monterey (2/2), Las Palmas (1/4), and Arnold Palmer (3/4). SINV-3 was not detected at Palm Desert Greens (0/6). While SINV-3 has been reported from other locations in the Coachella Valley (Oi et al. 2019), we wanted to use the opportunity to obtain an indication of prevalence at other sites. For all samples collected in May and June 2022, SINV3 was found in 24% of the samples (11/45). Specific dates for SINV3 sampling were May 23, 24, 26, and June 8 & 24, 2022.

It may be of interest to the District that the first documentation of a fire ant virus eliminating fire ant colonies under field conditions was published by Valles et al. (2022). In this small field study conducted in Florida, field introductions of this virus into fire ant nests (n=12) resulted in significant reductions of 57% in the size of nests and in the number of nests (7-fold decrease compared to controls) after 77days. SINV-3 also persisted for over 20 months and spread to adjacent uninoculated colonies.

Fig. 6. Phorid fly and SINV3 sampling sites in the wash area near the 2014 phorid fly release site in the Monterey Country Club (just east of Monterey Ave.). Red squares are phorid trap and SINV3 locations sampled in May and June 2022. Additional SINV3 sampling sites are indicated by the red teardrops. Traps with phorid flies are indicated by red squares with a black “fly” shape, and SINV3 positive samples have the blue and white “virus” symbol. Figures are the irrigated wash area west (top) and east (bottom) of Monterey Ave.

Table 7. Revised milestones for fire ant bait efficacy in irrigated landscapes, mating flight activity, and determining the spread of fire ant biocontrol agents in the Coachella Valley.

Year / Quarter	CA field efficacy test of irrigated bait	Mating flight activity:	Biocontrol spread
2022 Jan-Mar	~~Site re-selection; Treat & sample~~	~~Site selection; Install alate traps~~	~~Sample & map~~
2022 Apr-Jun*	Site re-selection; Treat & sample Completed	Alate traps installed; Trapping In Progress	Sample & map Completed for June
2022 Jul-Sep		Completed	
2022 Oct-Dec		Completed	Postponed (weather)
2023 Jan-Mar		In Progress	Schedule pending

*avoid Coachella Fest 2022 April 15-24; Stagecoach April 29-May 1.

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Valles, S. M., D. H. Oi, R. D. Weeks, K. M. Addesso, and J. B. Oliver. 2022. Field evaluation of Solenopsis invicta virus 3 against its host *Solenopsis invicta*. J Invertebr Pathol 191: 107767.

Semiannual Research Progress Report #2 for CVMVCD grant:

Determining fire ant bait specificity to extend fire ant control by conserving non-target ants.

David H. Oi
USDA Agricultural Research Service,
Center for Medical, Agricultural, and Veterinary Entomology
1600 SW 23rd Drive, Gainesville, FL 32605

December 30, 2022

Summary of Activity January 2022 through December 2022.

The goal of the proposed 2022-23 research is to extend red imported fire ant (RIFA) control by conserving non-target ants. Maintaining populations of non-RIFA ants should provide biotic resistance to RIFA reinfestation in areas cleared of fire ants. Specific aims are to determine which fire ant baits are not foraged upon by non-RIFA ant species found in the Coachella Valley.

Year 1: Identify fire ant baits that are not accepted, or foraged, by non-RIFA ants in FL in anticipation they will be indicators of bait specificity applicable to ants in the Coachella Valley.

Methods. Bait acceptance tests were conducted with laboratory colonies of bicolor trailing ants, *Monomorium floricola*, and field colonies of pyramid ants, *Dorymyrmex bureni*; big-headed ants, *Pheidole megacephala*; harvester ants, *Pogonomyrmex badius*; and rover ants *Brachymyrmex sp.* Each species was tested for bait acceptance among eight, commercial fire ant baits containing various active ingredients (Table 1).

Table 1. Commercial fire ant baits used in non-target ant bait acceptance tests.

Bait	**% Active Ingredient**	**Manufacturer**
Advion	0.045 % indoxacarb	Syngenta
Siesta	0.063% metaflumizone	BASF
Clinch	0.011% abamectin	Syngenta
Antixx	0.015% spinosad	Neudorff
Amdro Pro	0.73% hydramethylnon	BASF
Esteem	0.5% pyriproxyfen	Valent
Extinguish Pro	0.5% (S)-methoprene	Zoecon
Extinguish Plus	0.0365% hydramethylnon, 0.250% (S)-methoprene	Wellmark

For the first replicate of the laboratory bait acceptance conducted on *M. floricola*, colony fragments (≥2000 workers + a small amount of brood) from 1 lab colony, were separated into shoebox-sized trays, starved for 48 hr and then given access to 0.5 g (~1 tsp) of one of each of the 8 baits. Number of ants at bait were counted every 10 minutes up to 60 minutes. For reps 2

and 3, tests were conducted in full-size trays, thus allowing greater spatial separation of the baits. In addition, sausage lures were placed adjacent to baits with low recruitment after 60 min and ants at sausage were counted after 10 minutes to demonstrate that the ants would forage to a readily accepted lure.

For the field bait acceptance tests with *Dorymyrmex bureni* (6 reps), *Pogonomyrmex badius* (3 reps) and *Pheidole megacephala* (3 reps). We located 3 colonies (reps) and placed 0.5 g (~ 1 tsp) of each bait in a circle about 3 ft apart and about 4.5 ft from the nest entrance. Each bait was placed in a large weigh boat with 1 side cut off to facilitate ant access to baits and counting ants (Fig. 1). The number of ants on a bait were counted every 10 minutes for up to 60 minutes. Sausage lures were placed at baits with low recruitment after 60 minutes and the number of ants at a sausage was counted at 10 minutes.

Fig. 1 Field bait acceptance test. Pink flag marks a *P. megacephala* nest entrance encircled by bait in weigh boats.

Potential non-target ants to be tested in Coachella Valley that were collected in Palm Desert Greens and the Eldorado wash area were identified as *Dorymyrmex bicolor*, *Pogonomyrmex californicus* spp. group, *Brachymyrmex patagonicus*, and *Pheidole* spp.

Results. Most of the baits were accepted by the ants tested in Florida. However, the Siesta and the Extinguish Pro baits had very low counts of *P. megacephala* which suggests they should be tested further on non-target ants found in the Coachella Valley. Laboratory and field tests (3 reps total) with *Brachymyrmex sp.* had extremely low counts for all baits, but test colony fragments were very small and may had limited foraging.

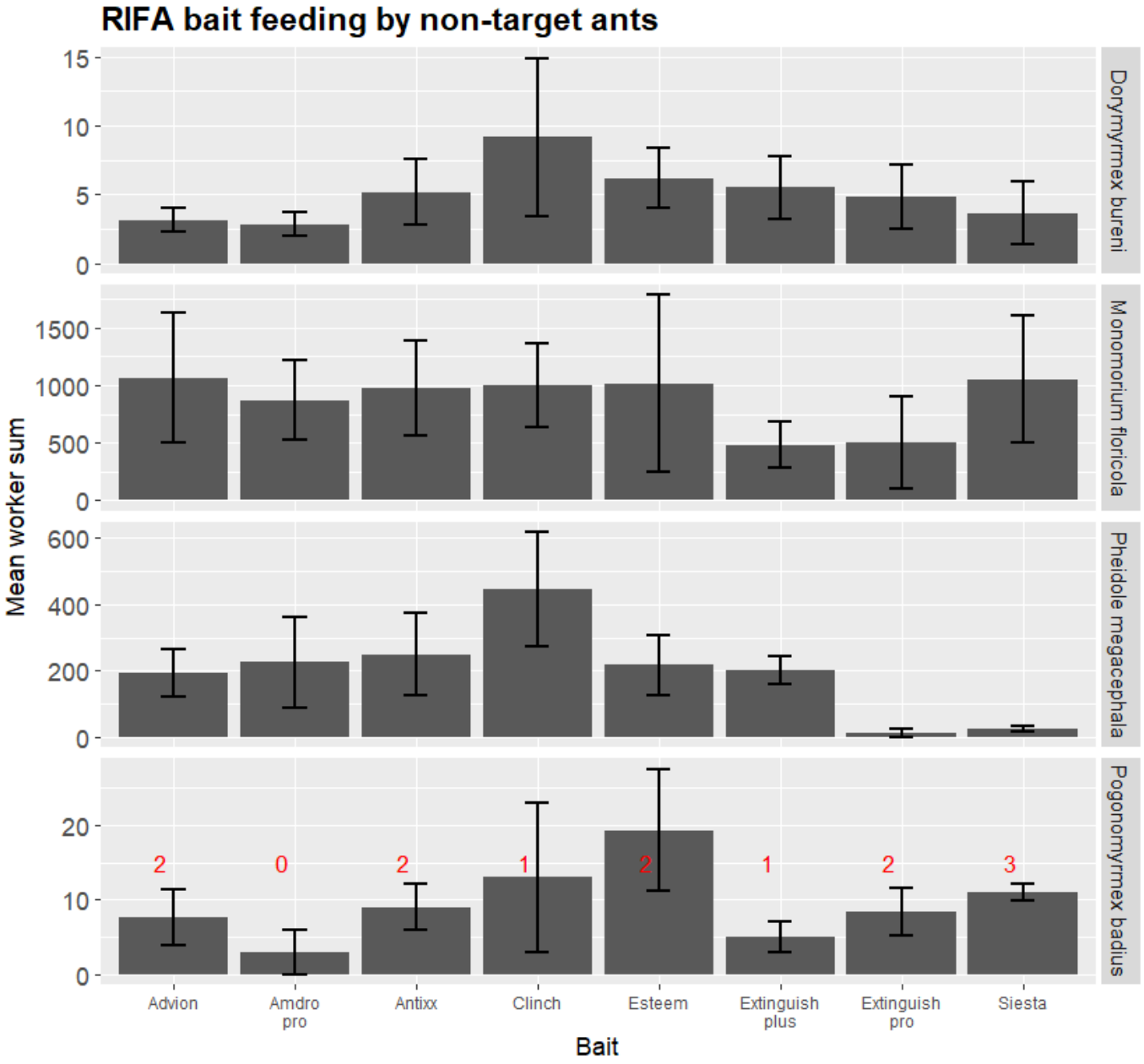

Fig. 2. Total sum of workers feeding on baits by species. Workers were counted every 10 minutes for 1 hour. Numbers in red for *Pogonomyrmex badius* indicate the number of reps (out of 3) where all the bait was consumed. Error bars are +/- 1 SEM. Data represents means across 3 reps, except *Dorymyrmex bureni* for which 6 reps were completed.

Due to COVID-19 restrictions at USDA-ARS labs were in place through March 2022. First quarter objectives were rescheduled to the third and fourth quarters.

Revised milestones for fire ant bait acceptance studies on non-target ants.

Year / Quarter	FL bait acceptance tests	CA bait acceptance tests
2022 Jan-Mar	~~Lab acceptance tests~~	
2022 Apr-Jun	Field surveys & lab acceptance tests	
2022 Jul-Sep	Field surveys &lab acceptance tests	
2022 Oct-Dec	Field surveys & tests in progress	
2023 Jan-Mar		Field surveys & tests
2023 Apr*-Jun		Field surveys & tests
2023 Jul-Sep		
2023 Oct-Dec		

*avoid Coachella and Stagecoach Festivals in April

Serving Public Health Since 1928	**Coachella Valley Mosquito and Vector Control District** **Staff Report**	**January 10, 2023**

Agenda Item: Informational Item

Staff report from:
Entomological Society of America Annual Conference held November 13 – November 16, 2022, in Vancouver, British Columbia

Background:
The Entomological Society of America held a Joint Annual Meeting with the Entomological Society of Canada and the Entomological Society of British Columbia on November 13-16 in Vancouver, British Columbia. The theme "Entomology as Inspiration: Insects through art, science, and culture" allowed for organizers to gather a variety of presentations on the latest advances in entomology and science communication for the four-day meeting.

We attended a variety of presentations. The Medical, Urban, and Veterinary Entomology section of ESA had presentations highlighting the latest research completed on mosquitoes and other arthropods of importance to public health. Some of the topics that were covered were the risks of expanding vector-borne disease transmission in North America; the latest control techniques, including pyrethroid resistance and transmission of transgenic fungi for mosquito control; seasonal patterns in mosquito abundance and composition; repellent efficacy; forest management to control tick-borne disease; tick and tickborne pathogen surveillance; bed bug surveillance using pitfall traps; One Health at the Wildlife-Arthropod Interface; transforming data to dance and music; and student presentations on their research about mosquito insecticide resistance; mosquito ecology; the interaction of soil composition and mosquito development; ants; ticks; and flies.

Jennifer Henke was elected to the Governing Board as the Vice President-Elect of the ESA in 2021; she has transitioned to the role of Vice President at the end of the conference.

ATTENDEES:
Jennifer A. Henke, M.S., Laboratory Manager
Kim Hung, Ph.D., Vector Ecologist
Gabriela Perezchica-Harvey, M.S., Vector Ecologist

	Coachella Valley Mosquito and Vector Control District **Staff Report**	**January 10, 2023**

Agenda Item: Informational Item

Staff report from:
MVCAC Planning Meeting, December 5-7, 2022, in Oakland, CA

Background:
The focus of the MVCAC Planning Session was to review the work accomplished in 2022 and to set the priorities for 2023. This year, attendees participated in strategic planning for MVCAC, reviewing political, economic, social, and technological areas of concern that may or could impact mosquito control, districts, or the association. This fed into discussions of the top areas that the association needed to consider in the next three years. Goals will be shared at the Governing Board meeting in February (following the MVCAC Annual Conference).

The committee chairs were charged with setting their goals for the coming year and updating their rosters. The planned charges were discussed with feedback from the Board.

Additional items of interest include:

- Legislative activities – MVCAC Legislative Day will be in-person in 2023
- Plans to conduct a grassroots advocacy aimed at districts hosting visits by legislators and their staff.
- California Mosquito and Vector Control Awareness Week
- Organize request for funding for emergency response for dengue
- MVCAC review of contracts with service providers (AMG and KP) for the Association

Attendees also provided their input on the committees including Information Technology, Integrated Vector Management, Laboratory Technologies, Legislative, Public Relations, Regulatory Affairs, SIT, Training and Certification, UAS, Vector Control Research, and Vector and Vector-borne Disease.

Attendees:
Jennifer A. Henke, Laboratory Manager, MVCAC representative to Vector-Borne Disease Network
Kim Hung, Vector Ecologist, Laboratory Technologies Chair

	Coachella Valley Mosquito and Vector Control District **Staff Report**	**January 10, 2023**

Agenda Item: Informational Item

Staff report from:
CalPELRA Annual Conference, November 15-18, 2022, in Monterey, CA

Background:

The annual CalPELRA Annual Conference offered education in the areas of labor relations and human resources. Sessions were tailored for professionals who are seasoned or new in their role and provided useful information with breakout sessions focused on:

- Diversity, equity, and inclusion
- Classification and compensation surveys
- Leadership resilience
- Conflict resolution
- Career development
- Preparing for union negotiations
- HR practices in a post-COVID world
- Performance management

ATTENDEE:
Graciela Morales, HR Specialist

Strategic Business Plan Alignment:

Objective 2.3 – Provide Opportunities for employees to grow into promotions**.**

Serving Public Health Since 1928	**Coachella Valley Mosquito and Vector Control District** **Staff Report**	**January 10, 2023**

Agenda Item: Consent Calendar

Approval of Travel Calendar Update and Training Opportunity for Jennifer Henke, Laboratory Manager, to attend the 18th Arbovirus Surveillance and Mosquito Control Workshop at Anastasia Mosquito Control District, St. Augustine, FL, March 28-30, 2023, in an amount not to exceed $1,500. **Jennifer Henke, M.S., Laboratory Manager**

Background:

The Anastasia Mosquito Control District of St. Johns County Florida has held an annual employee training workshop covering arbovirus surveillance and mosquito control practices. In 2023, the workshop coincides with the opening of the District's mass-rearing facility for sterile mosquito releases.

Jennifer Henke has been asked to present on the Coachella Valley Mosquito and Vector Control District's use of large-area applications to control *Aedes* mosquitoes. The agenda includes national and international leaders of mosquito control. Seeing Anastasia MCD's layout of its new facility is expected to be beneficial as the District continues the planning of its own rearing facility.

Staff Recommendation:

Staff recommends the approval to attend the 18th Arbovirus Surveillance and Mosquito Control Workshop at Anastasia Mosquito Control District by the Laboratory Manager in an amount not to exceed $1,500.

Strategic Business Plan Alignment:
Objective 1.1 – Explore long-term solutions to the health and nuisance impacts of Aedes aegypti mosquitoes

WP 1.1.1 - Create a needs assessment and commission a feasibility study for establishing a sterile mosquito program.

Fiscal Impact:			
FY2022-23 Budget **GL # 7600.01.400.027**	Current Available Funds	Proposed Expense Fiscal Year 2022-23	Remaining Available Funds
Amount budgeted $18,650.00	**$6,063.47**	**$18,586.53**	**$4563.47**

Serving Public Health Since 1928	**Coachella Valley Mosquito and Vector Control District** **Staff Report**	**January 10, 2023**

Agenda Item: Informational Item

District Travel

Background:

Virtual Workshop: Board Member Best Practices (CSDA), January 18 and 19, 2023
This virtual workshop is fast paced and informative and covers all of the essential best practices of serving as a board trustee of a special district. The roles of Trustees and staff, policies and procedures your district should consider, and general ethics principles related to special districts.
Requests to attend must be made by January 13, 2023, VIA EMAIL: MTALLION@CVMOSQUITO.ORG.

Special District Leadership Academy (SDLA), February 26-March 1, 2023, La Quinta, CA
This conference is a curriculum-based continuing education program designed to help Board's and General Manager's work closely towards a common goal. Attendees will learn about teamwork, how culture, norms, values, and operating styles influence the District, the Board's role in setting direction for the District, and much more.
Requests to attend must be made by January 13, 2023, VIA EMAIL: MTALLION@CVMOSQUITO.ORG.

American Mosquito Control Association (AMCA) 89th Annual Conference, February 27, March 3, 2023, Reno, NV
This conference is an excellent education and networking event for vector control professionals, educators, and researchers in mosquito control. Since 1938 hundreds have gathered to hear the latest research, share ideas, and form collaborations.
Requests to attend must be made by January 23, 2023, VIA EMAIL: MTALLION@CVMOSQUITO.ORG.

Strategic Business Plan Alignment:
Goal 2 – Governance and HR – A strong culture supports the Board and staff team that grows in skill, teamwork, and experience.
Objective 2.4 – Establish conditions that ensure the Board of Trustees are engaged and productive and possess a deep understanding of the District.

COACHELLA VALLEY MOSQUITO & VECTOR CONTROL DISTRICT

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OLD BUSINESS

Serving Public Health Since 1928	**Coachella Valley Mosquito and Vector Control District** **Staff Report**	**January 10, 2023**

Agenda Item: Old Business

Approval of Resolution 2023-01 authorizing remote teleconferencing meetings for the period January 11, 2023, to February 9, 2023, and discussion regarding the Boards direction for the February 14, 2023, Finance and Board meeting – **Jeremy Wittie, M.S., CSDM, General Manager**

Background:

The Board of Trustees met on December 16, 2022, and adopted Resolution 2022-28 proclaiming a local emergency, ratifying the proclamation of a state of emergency by Executive Order N-09-21, and authorizing remote teleconferencing meetings of the Legislative bodies of the Coachella Valley Mosquito and Vector Control District for the period of December 16, 2022, to January 14, 2023, pursuant to the provisions of the Ralph M. Brown act.

If a local agency passes a resolution by majority vote that meeting in person during the state of emergency would present imminent risks to the health or safety of attendees, the resolution will permit meeting under the provisions of AB 361 for a maximum period of 30 days. After 30 days, the local agency would need to renew its resolution, consistent with the requirements of AB 361, if the agency desires to continue meeting under the modified Brown Act requirements or allow the resolution to lapse.

This Resolution will cover all meetings of the Legislative Bodies.

- Board of Trustees Meetings
- Executive Committee Meetings
- Finance Committee Meetings

AB 361 provides that it will sunset on January 1, 2024.

Staff Recommendation:

1. Approve Resolution 2023-01 authorizing remote teleconferencing meetings for the period January 11, 2023, to February 9, 2023.

Doing so will continue to allow Trustees, staff, and the public to attend and participate in meetings both in person or virtually which will enhance access to public meetings and maintain a safer meeting environment as we continue to conduct District business and navigate COVID-19 in the coming months.

2. Resolution 2023-01 if approved expires on February 9, 2023. The next Board meeting is February 14, 2023. The Board will need to decide to either:

- hold a special meeting to approve a new Resolution set to expire 30 days after the adoption or the expiration of the Emergency Order
  OR
- The Finance Committee and Board of Trustee meetings must meet in-person on February 14, 2023.

Exhibits:

- Resolution 2023-01

RESOLUTION NO. 2023-01

A RESOLUTION OF THE BOARD OF TRUSTEES OF THE COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT PROCLAIMING A LOCAL EMERGENCY, RATIFYING THE PROCLAMATION OF A STATE OF EMERGENCY BY EXECUTIVE ORDER N-09-21, AND AUTHORIZING REMOTE TELECONFERENCE MEETINGS OF THE LEGISLATIVE BODIES OF THE COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT FOR THE PERIOD JANUARY 11, 2023, TO FEBRUARY 9, 2023, PURSUANT TO PROVISIONS OF THE RALPH M. BROWN ACT

WHEREAS, the Coachella Valley Mosquito And Vector Control District (the "District") is committed to preserving and nurturing public access and participation in meetings of the Board of Trustees; and

WHEREAS, all meetings of the District's legislative bodies are open and public, as required by the Ralph M. Brown Act (Cal. Gov. Code §§ 54950 – 54963) (the "Brown Act"), so that any member of the public may attend, participate, and watch the District's legislative bodies conduct their business; and

WHEREAS, the Brown Act, Government Code section 54953(e), makes provisions for remote teleconferencing participation in meetings by members of a legislative body, without compliance with the requirements of Government Code section 54953(b)(3), subject to the existence of certain conditions; and

WHEREAS, a required condition is that a state of emergency is declared by the Governor pursuant to Government Code section 8625, proclaiming the existence of conditions of disaster or of extreme peril to the safety of persons and property within the state caused by conditions as described in Government Code section 8558; and

WHEREAS, a proclamation is made when there is an actual incident, threat of disaster, or extreme peril to the safety of persons and property within the jurisdictions that are within the District's boundaries, caused by natural, technological, or human-caused disasters; and

WHEREAS, it is further required that state or local officials have imposed or recommended measures to promote social distancing, or, the legislative body meeting in person would present imminent risks to the health and safety of attendees; and

WHEREAS, such conditions now exist in the District, specifically, on March 4, 2020, the Governor of the State of California proclaimed a State of Emergency to exist in California as a result of the threat of COVID-19; despite sustained efforts, the virus continues to spread and is impacting nearly all sectors of California; and

WHEREAS, on February 28, 2022, the California Department of Public Health website was updated and strongly recommends that all persons, regardless of vaccine status, continue indoor masking; and

WHEREAS, given the continued heightened risks of the predominant variant of COVID-19 in the community, holding meetings with all members of the legislative body, staff, and the public in attendance in person in a shared indoor meeting space would pose an unnecessary and immediate risk to the attendees; and

WHEREAS, the Board of Trustees does hereby find that the ongoing risk posed by the highly transmissible COVID-19 virus will continue to cause conditions of peril to the safety of persons within the District which are likely to be beyond the control of services, personnel, equipment, and facilities of the District, and the Board of Trustees desires to proclaim a local emergency and ratify the proclamation of a state of emergency by the Governor of the State of California; and

WHEREAS, as a consequence of the local emergency, the Board of Trustees does hereby find that the legislative bodies of the District shall conduct the District's meetings without compliance with Government Code section 54953(b)(3), as authorized by Government Code section 54953(e), and that such legislative bodies shall comply with the requirements to provide the public with access to the meetings as prescribed in Government Code section 54953(e)(2); and

WHEREAS, all meeting agendas stating meeting dates, times, and the manner in which the public may attend and offer public comment by call-in option or internet-based service option shall be posted, at a minimum, on the District's website, and at the District's main office.

NOW, THEREFORE, THE BOARD OF TRUSTEES OF THE COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. Recitals.

The recitals set forth above are true and correct and are incorporated into this Resolution by this reference.

Section 2. Proclamation of Local Emergency.

The Board of Trustees hereby proclaims that a local emergency now exists throughout the District, and the ongoing risk posed by the highly transmissible COVID-19 virus has caused and will continue to cause, conditions of peril to the safety of persons within the District; furthermore, the guidance of Riverside County Public Health recommends physical distancing and face coverings.

Section 3. Ratification of Governor's Proclamation of a State of Emergency.

The Board of Trustees hereby ratifies the Governor of the State of California's Proclamation of a State of Emergency, effective as of its issuance date of March 4, 2020.

Section 4. Remote Teleconference Meetings.

The President of the Board of Trustees, the District's General Manager, and legislative bodies of the District are hereby authorized and directed to take all actions necessary to carry out the intent and purpose of this Resolution including conducting open and public meetings in accordance with Government Code section 54953(e) and other applicable provisions of the Brown Act.

Section 5. Effective Date.

This Resolution shall take effect immediately upon its adoption and shall be effective until the earlier of (i) February 9, 2023, or such time the Board of Trustees adopts a subsequent resolution in accordance with Government Code section 54953(e)(3) to extend the time during which the legislative bodies of the District may continue to teleconference without compliance with Government Code section 54953(b)(3).

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

Section 6. Certification.

The Clerk of the Board of Trustees shall certify as to the adoption of this Resolution and shall cause the same to be processed in the manner required by law.

PASSED, ADOPTED, AND APPROVED, this 10th day of JANUARY 2023, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____

Benjamin Guitron, President
Board of Trustees

ATTEST:

_____

Melissa Tallion, Clerk of the Board

APPROVED AS TO FORM:

_____

Lena D. Wade, General Counsel

REVIEWED:

_____

Jeremy Wittie, M.S., General Manager

COACHELLA VALLEY MOSQUITO & VECTOR CONTROL DISTRICT

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NEW BUSINESS

	Coachella Valley Mosquito and Vector Control District **Staff Report**	**January 10, 2023**

Agenda Item: New Business

Discussion and/or approval of terms of the General Manager's Employment Agreement following evaluation period ending December 2022 - **ad hoc Negotiations Committee**

Background:

At the November 18, 2022, Special Meeting of the Board of Trustees, the Board completed the General Manager's annual evaluation. On December 7, 2022, the General Manager met with the ad hoc Negotiations Committee comprised of President Benjamin Guitron and Trustee Clive Weightman to negotiate the terms of the General Manager's Employment Agreement. The ad hoc Negotiations Committee and Mr. Wittie reached an agreement subject to approval by the Board of Trustees.

Listed below are the proposed revisions to the General Manager's Employment Agreement:

- 3-year contract term – January 1, 2023, through December 31, 2025. (§ 1.1)
- Annual COLA increase equal to the COLAs approved between the District and the collective bargaining groups.
  1. 3% COLA retroactive to July 1, 2022 ($2,300.00 increase). The new annual base salary will be $170,768.16. (§ 4.1)
  2. 3% COLA effective July 1, 2023.
  3. For July 1, 2024, and July 1, 2025, the COLA shall be equal to the COLA to be agreed upon by the District and the collective bargaining groups. (§ 4.2)
- District shall make an annual contribution of 5% to employee's 457 plan. The District's annual contribution, therefore, will be $8,537.46 which is an increase of $2,006.46. (§ 5.8.1)
- Upon resignation by employee, employee shall provide District with sixty (60) days' notice. In the prior agreement, the notice requirement was 30 days. (§ 6.1)
- All other terms of the January 14, 2020, Employment Agreement shall remain substantially the same. Please note, a correction was made to the Employment Agreement regarding Special Merit/Performance Bonus pay. There was a typographical error which stated, "…Employee may be eligible for a one-time lump sum payment

separate and apart from Employee's then current base pay in an amount not to exceed five percent (3%) percent of Employee's total annual compensation…" This was corrected to read: five percent (5~~3~~%) as originally intended.

Committee Recommendation:

That the Board take whatever action deemed appropriate

EMPLOYMENT AGREEMENT
GENERAL MANAGER
(Jeremy Wittie)

This Employment Agreement ("Agreement") is made and entered into effective this 10th day of January 2023, by and between the Coachella Valley Mosquito and Vector Control District ("District"), a special district operating under the Mosquito Abatement and Vector Control District Law (California Health and Safety Code §2000 et seq.), and Jeremy Wittie ("Employee"), and is made in consideration of the mutual promises contained herein. The District and Employee accordingly agree as follows:

RECITALS

WHEREAS, on November 10, 2015, at a duly noticed public meeting, the Board approved to retain the services of Employee as the District's General Manager.

WHEREAS, the term of Employee's current employment agreement is January 1, 2020 through December 31, 2022.

WHEREAS, with the consensus of the Board of Trustees, Employee desires to continue serving as General Manager of the District pursuant to the terms and conditions set forth in this Agreement.

AGREEMENT

NOW THEREFORE, in consideration of the covenants, conditions and promises contained herein and for such other good and valuable consideration, the receipt of which is hereby acknowledged, the Parties hereto agree as follows:

ARTICLE 1. TERM OF EMPLOYMENT

1.1 Position and Term of Employment. This Agreement shall be for three (3) years term commencing on January 1, 2023 and continuing through and including December 31, 2025, unless terminated pursuant to Article 1.2 or Articles 6 and 7 as set forth below. As General Manager, Employee agrees to perform all of the duties and functions of the General Manager position, as described in the General Manager Job Description attached hereto as Exhibit "A," and any such other duties as the Board of Trustees may assign from time to time during the term of this Agreement, or any extensions thereof. Employee hereby agrees to perform the functions and duties of General Manager to the best of his ability and in an efficient, competent and professional manner, consistent

with the standards in the industry and in compliance with all applicable laws, statutes and regulations.

1.2 Employment Status. The District has the right to terminate this Agreement and the employment of Employee at any time upon notice to Employee, with or without cause, but only in accordance with Articles 6 and 7 hereof. Employee has the right to terminate this Agreement and his employment as General Manager at any time upon notice to the District, with or without cause. The rights and duties set forth in this paragraph may not be modified in any way except by written agreement approved by the Board of Trustees and signed by the President of the Board of Trustees and Employee.

1.3 Acknowledgment. Employee hereby acknowledges and certifies he understands the termination rights of the District and that his employment by the District is at will as provided in Article 1.2 above and Articles 6 and 7 as set forth below.

1.4 Performance Reviews. During the term of this Agreement, Employee will be evaluated by the Board of Trustees in November. Provided that the District continues this Agreement, the District's Board of Trustees will use its good faith efforts to evaluate Employee's performance annually every November.

ARTICLE 2. DUTIES AND OBLIGATIONS OF EMPLOYEE

2.1 Title and Description of Duties. Employee shall perform services as General Manager for the District, as described in the General Manager's Job Description attached hereto as Exhibit "A," subject to direction of the Board of Trustees. In that capacity, Employee shall do and perform all services, acts, or things necessary or advisable to fulfill the duties of General Manager and any other related duties as may be assigned from time to time, in an efficient, competent and professional manner, consistent with the standards in the industry and in compliance with all applicable laws, statutes and regulations.

(a) Employee shall at all times under this Agreement act in the best interests of District and shall perform all of his duties hereunder in an efficient, competent and professional manner, consistent with the standards in the industry and in compliance with all applicable laws, statutes and regulations.

(b) Employee acknowledges that the position of General Manager is a full-time position and agrees to devote all the necessary time and attention to the District during the term of this Agreement. Accordingly, Employee shall not engage in any other business pursuits whatsoever, directly or indirectly, or render any services of a business,

commercial or professional nature to any other person or organization, whether for compensation or otherwise, without the prior written consent of the Board of Trustees.

2.2 Variance of Duties. The District, by and through the Board of Trustees, expressly reserves the right to assign duties other than those set forth in the Job Description attached hereto as Exhibit "A" or to otherwise change the duties pertaining to the position of General Manager.

2.3 Return of Property. Upon the termination of Employee's employment under this Agreement, Employee shall immediately deliver to the District, all property in Employee's possession or control belonging to the District or to any of its constituents, in good condition.

2.4 Compliance with District Policies and Rules. In performing the functions and duties pursuant to this Agreement, unless specifically provided otherwise in this Agreement, Employee shall adhere to the District's Personnel Policy and Procedures Manual as it currently exists and as it may be modified from time to time.

2.5 Suspension. Employee may be suspended with or without pay at any time and for any reason, including for disciplinary reasons or for other just cause including, but not limited to inefficiency, incompetence, or mental incapacity, during the term of this Agreement at the direction of the Board of Trustees. Employee acknowledges that he has no rights to any appeal or hearing after a suspension by the District pursuant to this Article and to the extent that any such rights might apply as a matter of law or contract, hereby waives all of such rights.

ARTICLE 3. OBLIGATIONS OF THE DISTRICT

3.1 General Description. The District shall provide Employee with the compensation and benefits specified in this Agreement.

3.2 Auto Allowance. Employee's duties require that Employee have transportation readily available for his unrestricted use during his employment with Employer, and, to the end of assuring that Employee has a vehicle available, Employee shall receive an automobile allowance of $6,000.00 per year, payable in monthly installments in the regular payroll process.

3.3 Bonding. The District shall bear the full cost of any fidelity or other bonds required of Employee pursuant to this Agreement or any applicable law, rule, regulation or policy.

ARTICLE 4. COMPENSATION OF EMPLOYEE

4.1 Annual Salary. As compensation for the services to be rendered by Employee hereunder, the District shall pay Employee bi-weekly an annual salary of One Hundred and Seventy Thousand Seven Hundred Sixty Eight Dollars and 61/100 ($170,768.16) payable in twenty six (26) equal installments per calendar year (less any tax or other required payroll deductions) during the period of employment, prorated for any partial employment period, retroactive to July 1, 2022. Employee's salary may be reviewed on an annual basis as a part of the performance evaluation process. Employee's salary shall be identified in a publicly available pay schedule in accordance with the specific requirements of Title 2, California Code of Regulations, section 570.5.

4.2 Cost of Living Adjustment (COLA). Annual COLA increase shall be equal to the annual COLA approved by the District for the District's collective bargaining groups during the term of this Agreement: (a) 3% COLA effective July 1, 2023; (b) for July 1, 2024 and July 1, 2025, the COLA shall be equal to the COLA to be agreed upon with the collective bargaining groups for the respective periods.

ARTICLE 5. EMPLOYEE BENEFITS

5.1 Holidays. Employee shall be entitled to nationally recognized holidays and one floating holiday as paid holidays annually as identified in the District's Personnel Policy and Procedures Manual.

5.2 Vacation. Employee is eligible to receive vacation earned at the rate of twenty five (25) days or two hundred (200) hours per year. In the event Employee has not utilized all earned vacation by December 31st of each year, Employee may carry over the unused vacation to the following calendar year, provided Employee does not accrue more than forty (40) days or three hundred twenty (320) hours of vacation in any given calendar year. Employee may also cash out accrued vacation in excess of eighty (80) hours at any time per District policy. Employee will be paid for all earned Vacation upon termination of this Agreement.

5.3 Sick Leave. Employee is eligible to accrue sick leave earned at the rate of eight (8) hours monthly. Sick leave is accrued without limit. If Employee accumulates at least four hundred (400) hours of sick leave, Employee may cash out at a fifty percent (50%) reimbursement rate all sick leave hours in excess of four hundred (400) hours. After five years of continuous employment commencing with Employee's date of employment, Employee will be paid for fifty percent (50%) of earned sick leave upon termination of this Agreement. Upon Employee's retirement, Employee may convert

accrued and unused sick leave to service credits pursuant to the applicable policies and regulations of the California Public Employees Retirement System.

5.4 Health Insurance. Employee shall be entitled to the highest level of health insurance coverage under the same terms that have been provided to either the California Teamsters Local 911, California School Employees Association or management level employees, provided that any change in such benefits are approved by the Board of Trustees.

5.5 Hours of Work; Administrative Leave. Employee shall be entitled to the benefits described in this section, provided that Employee complies with the obligations set forth herein. Employee is generally expected to be present at his place of employment during regular District office hours and Employee shall receive no overtime pay for any time or work beyond the regular or customary District business office hours or workdays. In consideration of this obligation, Employee shall be allowed to take time off, with pay, as "Administrative Leave" equivalent to a cumulative total of ten (10) days per year, to be used at his discretion.

5.6 Longevity Pay. In addition to Employee's base pay, Employee shall be entitled to additional pay on an annual basis for each full year of employment with the District, beginning after the fifth full year of service. The payment eligibility schedule will be as follow:

1) 1-5 years = $00.00 per year
2) 6-10 years = $700.00 per year
3) 11-15 years = $1,400.00 per year
4) 16-20 years = $2,100.00 per year
5) 21-25 years = $2,800.00 per year
6) 26-30 years = $3,500.00 per year
7) Over 30 years = $4,200.00 per year

5.7 Special Merit/Performance Bonus Pay. For any extraordinary or outstanding performance or service, as determined by the Board of Trustees, Employee may be eligible for a one-time lump sum payment separate and apart from Employee's then current base pay in an amount not to exceed five percent (5%) of Employee's total annual compensation as set forth in Article 4 of this Agreement.

For his 2022 performance, the Board of Trustees determined that employee is eligible for Special Merit Pay of five percent (5%) which is equal to Eight Thousand Five Hundred Thirty Eight and 41/100 Dollars ($8,538.41).

5.8 Pension. Employee shall be entitled to the highest level of pension benefits currently afforded to management employees provided that any change in such benefits is approved by the Board of Trustees.

5.8.1 Deferred Compensation. The District shall contribute 5% of Employee's salary into the District's 457 plan on Employee's behalf, in equal proportionate amounts each pay period. Employee is solely responsible for compliance with maximum limitations on contributions.

5.9 Life Insurance. Employee shall be entitled to the highest level of life insurance benefits afforded to any District employee union or management level employee, provided that any change in such benefits is approved by the Board of Trustees.

ARTICLE 6. TERMINATION OF EMPLOYMENT

6.1 This Agreement and the employment of Employee shall terminate under the following conditions:

(a) The death of Employee.

(b) The permanent disability of Employee so that Employee is unable to perform the essential duties of the job, with or without reasonable accommodation.

(c) Upon receipt by Employee of twenty four (24) hours prior written notice from the Board of Trustees or its designee that the District intends to terminate Employee's employment for "good cause." The District has "good cause" to terminate the employment of Employee if:

1) Employee fails or refuses to faithfully and diligently perform the usual and customary duties of employment;

2) Employee fails or refuses to comply with the policies, standards and/or rules of the District which from time to time may be changed;

3) Employee violates any term or condition of this Agreement; or

4) It is determined that Employee has been convicted of a felony, acted in an unethical or fraudulent manner, or has engaged in an act which would constitute bribery, perjury, embezzlement, fraud, or other such malfeasance or has acted in such a manner as to bring discredit to the District.

(d) Upon receipt by Employee of twenty four (24) hours prior written notice from the Board of Trustees or its designee that Employee's employment is being terminated without good cause.

(e) Employee resigns. Employee may resign at any time upon giving sixty (60) days written notice to the President of the Board of Trustees. Upon such resignation, Employee shall only be entitled to salary and benefits through the completion of the thirty (30) day notice period.

(f) Employee acknowledges that he has no rights to any appeal or hearing after a termination of this Agreement by the District pursuant to this Article and to the extent that any such rights might apply as a matter of law or contract, hereby waives all of such rights.

ARTICLE 7. COMPENSATION UPON TERMINATION

7.1 Termination Without Good Cause. In the event Employee's employment is terminated without good cause, the District agrees to pay Employee as severance an amount equal to the monthly base salary of Employee for three months, in accordance with Government Code sections 3511.2 and 53260. In addition, Employee shall be entitled to receive COBRA (Consolidated Omnibus Budget Reconciliation Act of 1985) coverage at District expense for the same duration as the severance payment pursuant to Government Code section 53261, and thereafter for a combined total of 18 months at Employee's expense or until such time as Employee is re-employed in any capacity, whichever occurs first. In consideration of the above, Employee agrees to execute a comprehensive release of all claims and agrees that there shall not be any entitlement to any other compensation or payment of any kind from the District (other than unused Vacation or Sick Leave as outlined in Section 5.2) in connection with the termination of Employee's employment without cause.

7.2 Termination of Employment for Good Cause. In the event the District believes Employee's employment should be terminated for good cause, the District shall pay

Employee whatever salary is due up to Employee's date of discharge plus the value of any accrued but unused vacation and sick leave Employee may have up to the date of termination. Employee's sole remedy in such event is to meet with the Board in open or closed session upon Employee's request for a non-evidentiary name clearing which cannot result in Employee's reinstatement.

7.3 Termination of Employment as a Result of Death or Permanent Disability. If Employee dies or is permanently disabled as that phrase is defined in Articles 6.1(a) and (b), Employee's employment terminates immediately. Except for payment of unpaid wages and payment for accrued and unused sick leave in accordance with Sections 5.2 and 5.3, and for any benefits that may continue by law as payable to Employee's spouse or dependents, Employee is not entitled to receive any further wages or benefits.

ARTICLE 8. PROVISIONS OF GOVERNMENT CODE SECTIONS 53243.3-53243.4

8.1 In the event that the District provides paid leave to Employee pending an investigation of a crime involving abuse of his office or position covered by Government Code section 53243.4, and should that investigation lead to a conviction, the Employee shall fully reimburse District for any salary provided for that purpose.

8.2 In the event that the District provides funds for the legal criminal defense of Employee pending an investigation of a crime involving an abuse of his office or position covered by Government Code section 53243.4, and should that investigation lead to a conviction, the Employee shall fully reimburse the District for any funds provided for that purpose.

8.3 In the event that the District provides a cash settlement related to the termination of Employee as defined in the terms of this Agreement and Employee subsequently is convicted of a crime involving abuse of office or position covered by Government Code section 53243.4, Employee shall fully reimburse the District for any funds provided for that purpose.

8.4 "Abuse of office or position" is defined in Government Code section 53243.4 to mean either of the following:

(a) An abuse of public authority, including, but not limited to, waste, fraud, and violation of the law under color of authority.

(b) A crime against public justice, including, but not limited to, a crime described in Title 5 (commencing with Section 67), Title 6

(commencing with Section 85) or Title 7 (commencing with Section 92) of Part 1 of the Penal Code.

ARTICLE 9. GENERAL PROVISIONS

9.1 Notices. Any notices to be given by either party to the other shall be in writing and may be transmitted either by personal delivery or by mail, registered or certified, postage prepaid with return receipt requested. Mailed notices shall be addressed to the last known address for each of the parties, but each party may change that address by written notice in accordance with this section. Notices delivered personally shall be deemed communicated as of the date of actual receipt; mailed notices shall be deemed communicated as of five (5) days after posting, if by mail.

9.2 Attorney's Fees and Costs. If any legal action is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees, costs, and necessary disbursements in addition to any other relief to which that party may be entitled. This provision shall be construed as applicable to the entire Agreement.

9.3 Entire Agreement. This Agreement supersedes any and all other agreements, either oral or in writing, between the parties hereto with respect to the employment of Employee by the District and contains all of the covenants and agreements between the parties with respect to Employee's employment in any manner whatsoever. Each party to this Agreement acknowledges that no representations, inducements, promises, or agreements, orally or otherwise, have been made by any party, or anyone acting on behalf of any party, which are not embodied herein, and that no other agreement, statement, or promise not contained in this Agreement shall be valid or binding.

9.4 Modifications. Any modification of this Agreement will be effective only if it is in writing, is approved by the District and Employee, and signed by each of parties to this Agreement.

9.5 Review by Legal Counsel. Employee acknowledges the opportunity for review and has been advised to seek review of this Agreement by legal counsel prior to its execution.

9.6 Effect of Waiver. The failure of either party to insist on strict compliance with any of the terms, covenants, or conditions of this Agreement by the other party shall not be deemed a waiver of that term, covenant, or condition, nor shall any waiver or

relinquishment of any right or power at any one time or times be deemed a waiver or relinquishment of that right or power for all or any other times.

9.7 Partial Invalidity. If any provision in this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions shall nevertheless continue in full force without being impaired or invalidated in any way.

9.8 Law Governing Agreement. This agreement shall be governed by and construed in accordance with the laws of the State of California.

9.9 Compliance with Laws. Employee shall comply with all local, state and federal laws and regulations applicable to the services required hereunder.

9.10 Non-Discrimination. Employee acknowledges and agrees to comply with the District's nondiscrimination policies which are set forth in the District's Personnel Policies, Procedures & Regulations Manual, as they may be amended from time to time.

9.11 Ownership of Documents. Upon completion of any document or report required to be provided by Employee in the course of performing any of the services described in this Agreement, or upon earlier termination of this Agreement, all completed original documents and/or reports and any designs, drawings, calculations, diskettes, computer files, notes, and other related materials prepared or produced in connection with such documents or reports shall become the sole property of the District and may be used and/or reused on any other project by the District without the permission of Employee.

9.12 Confidential Employee Status.

(a) Employee shall be deemed a "confidential employee" since Employee will be privy to information leading to decisions of management that relate to employer-employee relations at the District and Employee will have access to certain confidential information that will be used to contribute to the development of official positions of management.

(b) Any and all documents and information obtained from the District by Employee in the performance of services under this Agreement shall be kept strictly confidential by Employee unless public disclosure of same is otherwise required by law.

(c) The reports, records, documents and other materials prepared by Employee in the performance of services under this Agreement shall not be publicly disclosed by Employee unless such disclosure is otherwise required by law.

(d) Employee shall not disclose to any other entity or person any information regarding the activities of the District except as required by law or as authorized by the Board of Trustees.

9.13 Non-Liability of District Officers and Employees. No officer or employee of the District shall be personally liable to Employee in the event of any default or breach by the District for any amount which may become due to Employee or for any breach of any obligation of the terms of this Agreement.

9.14 Interpretation. This Agreement shall not be interpreted against either party on the grounds that one of the parties was solely responsible for preparing it or caused it to be prepared as both parties were involved in drafting it.

9.15 Captions and Headings. The captions and headings contained in this Agreement are provided for identification purposes only and shall not be interpreted to limit or define the content of the provisions described under the respective caption or heading.

9.16 Rights and Remedies. Except with respect to rights and remedies expressly declared to be exclusive in this Agreement, the rights and remedies of the parties are cumulative and the exercise by either party of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default of any other default by the other party.

9.17 Venue. All proceedings involving disputes over the terms, provisions, covenants or conditions contained in this Agreement and all proceedings involving any enforcement action related to this Agreement shall be initiated and conducted int he applicable court or forum in Riverside County, California.

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9.17 Recitals. The Recitals set forth above are true and correct and are hereby incorporated into this Agreement by this reference, as though set forth in full herein.

IN WITNESS WHEREOF, this Agreement was approved by the Governing Board of the Coachella Valley Mosquito and Vector Control District in open session at a Regular meeting of the Board pursuant to Government Code sections 53262 and 54956(b). The parties hereto have caused this Agreement to be executed as of the date first written above.

DISTRICT: **COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT** _____ By: Benjamin Guitron, President **ATTEST:** _____ Melissa Tallion, Clerk of the Board **APPROVED AS TO FORM:** _____ Lena D. Wade, General Counsel		Dated: _____ Dated: _____

EMPLOYEE:

JEREMY WITTIE

_____ Dated: _____
By: Jeremy Wittie

EXHIBIT A
GENERAL MANAGER
JOB DESCRIPTION

COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT
43-420 Trader Place, Indio, CA 92201 • (760) 342-8287 • FAX (760) 342-8110

GENERAL MANAGER
JOB DESCRIPTION

TITLE: General Manager
DEPARTMENT: Administration
REPORTS TO: Board of Trustees

JOB SUMMARY: Under the general direction of the Board of Trustees, this confidential and exempt position plans, organizes, directs, and administers the operations and staff of the Coachella Valley Mosquito and Vector Control District ("District"). The General Manager represents the District and the Board to public and private entities and other stakeholders, and manages a wide variety of administrative, operational, and technical programs. Considerable independent judgment and initiative is required.

ESSENTIAL JOB FUNCTIONS

- Acts as administrator and executive of the Board of Trustees.
- Provides leadership, program development, administration and coordination of the District's Administration and Operations departments.
- Organizes the planning and preparation of District operations to meet evolving vector control needs.
- Monitors trends and changes in population distribution, land utilization, water projects development, and local, state and federal regulations.
- Determines and develops operating policies. Defines the organizational structure, divisions and assignment of functions and lines of authority to carry out the District's mission, including business, technical, scientific, and operating functions.
- Recommends salary structure and working conditions. Maintains an employee relations program. Recruits, selects, and assigns employees to positions. Plans, directs, and conducts a training program for District personnel. Instructs employees. Reviews and evaluates work and takes appropriate action to maintain an effective workforce and workplace standards.

- Coordinates and administers the annual budget, including analysis and justifications, and presents it to the Board of Trustees for consideration and approval. Coordinates with the Finance Manager establishment and maintenance of an accounting system, and budgetary control over expenditures.
- Sees that effective use is made of District property. Keeps or directs the keeping of records of operations. Reviews records and takes appropriate action as needed. Oversees maintenance of facilities and equipment, expenditures, and program areas.
- Confers with the District's legal counsel and secures legal assistance as needed. Prepares complaints, including documentation and evidence on public nuisances for action by the Board of Trustees and the District's General Counsel.
- Periodically surveys for and directs the studies of public health threats caused by vector-borne diseases. Confers with professional personnel and develops recommendations on programs and priorities for District's operational program.
- Keeps informed of the latest developments in vector control and related fields. Participates and cooperates with public agencies and private organizations to stimulate projects favorable to the prevention and control of vectors. Reads related professional literature and participates in the activities of related professional organizations.

KNOWLEDGE, ABILITIES, AND SKILLS

- Thorough knowledge of administrative practices, principles of organization and personnel management.
- Excellent oral and written communication skills.
- General knowledge of entomology, biology, and other scientific and technical fields that contribute to the development of effective vector control programs.
- Thorough knowledge of local, state and federal laws and regulations that govern vector control activities.
- Working knowledge of the programs of public health, agriculture, reclamation districts, irrigation districts and other public and private organizations whose functions are related to vector control.
- The ability to plan, direct, organize, delegate and review the work of the District.
- The ability to supervise and coordinate the operational and administrative functions of the District.
- The ability to speak effectively before public groups.

- The ability to prepare comprehensive reports and correspondence.
- The ability to establish and maintain effective working relationships with city, county and state officials, officials of other government jurisdictions, District employees, and the general public.
- The ability to pass the physical examination prescribed by the District and be rated as able to perform clerical and light physical activity.

EXPERIENCE AND EDUCATION

- Master's degree in biology, entomology or related life science field or public and/or business administration from an accredited university is required. A PhD in biology, entomology or related life science field is preferred.
- Five years of experience in the vector control field or related fields is required, including three or more years of supervisory/management work. This experience must include program planning and evaluation.

MENTAL AND PHYSICAL ABILITIES

- The ability to demonstrate measurable visual depth perception, color vision, and see details at close range.
- The ability to have a minimum of single ear aided hearing.
- The ability to occasionally* stand for extended periods of time and sit for extended periods of time.
- The ability to coordinate eye, hand and foot. The ability to bend, twist, reach, balance, climb, lift, and carry. The ability to perform gross manipulation by hand and simple grasping. The ability to perform fine manipulation by hand.
- The ability to regularly* walk on even surfaces. The Ability to periodically* walk on uneven surfaces.

* Periodically — Activity or condition exists up to 25 percent of the time. Occasionally — Activity or condition exists from 25 to 50 percent of the time. Regularly — Activity or condition exists from 50 to 75 percent of the time. Frequently — Activity or condition exists 75 percent or more of the time.

LICENSES AND CERTIFICATIONS

- Possession of a valid California Driver's license and driving record acceptable to the District's insurance carrier.
- Possession of, or ability to obtain within one (1) year of employment, valid certification by the State of California as a Certified Technician in mosquito control, terrestrial invertebrate control, and vertebrate control.

Other relevant knowledge and abilities may be considered in-lieu of, or in addition to, the foregoing.

Serving Public Health Since 1928	**Coachella Valley Mosquito and Vector Control District** **Staff Report**	**January 10, 2023**

Agenda Item: New Business

Discuss the appointment of the Abatement Hearing Committee – **Benjamin Guitron, Board President**

Background:

Abatement Hearing Committee – The Abatement Hearing Committee conducts nuisance abatement hearings at regular or special meetings of the Committee in compliance with the Ralph M. Brown Act. The Committee is composed of three (3) Trustees, with one alternate, appointed by the Board annually each January, or whenever a vacancy occurs.

On December 22, 2022, Melissa Tallion, Clerk of the Board surveyed the Board of Trustees. Those who expressed interest are listed below.

2023 Committee Members

- *Benjamin Guitron*
- *Gary Gardner*
- *Steve Downs*

Serving Public Health Since 1928	**Coachella Valley Mosquito and Vector Control District** **Staff Report**	**January 10, 2023**

Agenda Item: New Business

Nomination and Election of Board Officers for the 2023 Calendar Year – **ad hoc Nominations Committee**

Background:

The Nominations Committee (Trustees Benjamin Guitron, John Peña, and Doug Walker) was appointed at the November 8, 2022, Board Meeting by the Board President under the District's Bylaws to recommend a slate of Board officers for the 2023 calendar year.

Pursuant to Health and Safety Code section 2027(a), the Board is required to elect its officers at the first meeting in January each year or every other year. The Board's Bylaws currently provide officer terms of one year, and each officer shall serve not more than four (4) consecutive full terms in the office to which elected. To be eligible to hold office, the Trustee must have served as a Trustee for one calendar year.

The four officer positions are tasked with the following duties pursuant to the Bylaws:

President – When necessary, the President shall be the official representative of the District. He/she shall have the power to appoint committees and such other powers, as may be delegated by the Board, from time to time. The President is encouraged to appoint ad hoc committees whenever appropriate. The President shall be responsible for opening meetings promptly and for administering the business of the day, expediently and with appropriate order and decorum. The President shall sign all acts, orders, resolutions, and proceedings of the Board.

Vice-President – In the absence of the President, the Vice President shall assume the duties of the President.

Secretary – The Secretary shall assist the President as necessary. In the absence of the President and Vice-President, the Secretary shall assume the duties of the President. It shall be the duty of the Secretary to authenticate, by his/her signature, when necessary,

all the acts, orders, and proceedings of the Board.

Treasurer – The Treasurer shall assist the President as necessary. In the absence of the President, Vice-President and Secretary, the Treasurer shall assume the duties of the President. The Treasurer shall also be responsible for the management of the District's financial affairs.

To facilitate the process of electing new officers, the Nominating Committee has developed a slate of candidates for the offices of the President, Vice-President, Secretary, and Treasurer to be considered by the Board of Trustees, as follows:

President:	***Trustee John Peña***
Vice-President:	***Trustee Benjamin Guitron***
Secretary:	***Trustee Doug Kunz***
Treasurer:	***Trustee Clive Weightman***

(Attached is information regarding the background of each of the candidates).

Each Board Member will have the opportunity to nominate other candidates from the floor. This slate, if elected, would serve for the 2023 calendar year. Under the Brown Act, the votes must be taken in open session since secret ballots are not permitted.

Committee Recommendation:

The ad hoc Nominations Committee recommends that the Board approve the nominated slate as presented.

To: Board of Trustees

Subject: Nominations for Officers of the CVMVCD Board of Trustees-2023

The Nominations Committee (Trustees: Benjamin Guitron, John Peña, and Doug Walker) reviewed the possible candidates for the officer positions for the Coachella Valley Mosquito and Vector Control Board for 2023. A survey was sent out to all qualifying Trustees to see who was interested in serving in an executive position.

As a result, we recommend the following slate of Trustees to fill the officer positions for 2023:

President: John Peña
Trustee Peña was appointed by the City of La Quinta and has served on the Board of Trustees since 2021. Trustee Peña is a lifelong Coachella Valley resident and is involved in his community serving on several Boards and Commissions throughout the Coachella Valley. He was first elected to the La Quinta City Council in 1984 and served on the Council until his retirement in 2022. He came out of his public service retirement and was again elected to the City Council in 2014. The Nominating Committee is nominating Trustee Peña for President.

Vice President: Benjamin Guitron
Trustee Guitron was appointed by the City of Indio and has served on the Board of Trustees since 2018. Trustee Guitron is a Police Administrative Officer with the Indio Police Department and has been a member of the police department for over 35 years. Trustee Guitron is involved with community work serving on Boards across the Coachella Valley. This has allowed him to gain experience with budgets, management, risk management, community relations, public safety, and civic government. The Nominating Committee is nominating Trustee Guitron for Vice President.

Secretary: Doug Kunz
Trustee Kunz was appointed by the City of Palm Springs and has served on the Board of Trustees since 2016. Trustee Kunz has practiced small animal medicine and surgery in Palm Springs for the past 45 years. He currently serves as Medical Director at VCA Desert Animal Hospital in Palm Springs. Dr. Kunz is involved in his community and is a leader for 40 years in the Boy Scouts. The Nominating Committee is nominating Trustee Kunz for Secretary.

Treasurer: Clive Weightman
Trustee Weightman was appointed by the City of Indian Wells and has served on the Board since 2017. He held the Treasurer's role for 4 years and is eager to serve again. Trustee Weightman is an active volunteer in his community including the Living Desert Zoo and Gardens and the BNP Paribas Tennis Tournament. He spent 40 years in industry and consulting with roles covering various management positions in manufacturing and information technology. The Nominating Committee is nominating Trustee Weightman for Treasurer.

Respectfully submitted by the Nominations Committee:

- Benjamin Guitron
- John Peña
- Doug Walker