



**Coachella Valley Mosquito and Vector Control District**

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

**Board of Trustees Meeting Via Zoom**

**Tuesday, January 11, 2022**

**6:00 p.m.**

**UPDATED AGENDA**

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

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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.

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Pursuant to Assembly Bill 361, this meeting will be conducted by video and/or teleconference and there will be no 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: [893 1953 0154](https://us02web.zoom.us/j/89319530154), or click this link to join: <https://us02web.zoom.us/j/89319530154>. Written public comment may also be submitted to the Clerk of the Board by 2:30 p.m. on January 11, 2022, at [mtallion@cvmosquito.org](mailto:mtallion@cvmosquito.org). Transmittal prior to the meeting is required. 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 call the Clerk of the Board at (760) 342-8287 for assistance so the necessary arrangements can be made.
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- 1. Call to Order** – Benjamin Guitron, President
- 2. Moment of Silence in Memory of Former Trustee Franz De Klotz**
- 3. Oaths of Office**

#### 4. Pledge of Allegiance

#### 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 2:30 p.m. on January 11, 2022, at [mtallion@cvmosquito.org](mailto:mtallion@cvmosquito.org) or appear at the meeting to provide public comments. Please note that, as stated above, the meeting will be conducted remotely.

A. **PUBLIC COMMENTS:** This time is for members of the public to address the Board of Trustees on (1) items of general interest (non-agenda item) within the subject matter jurisdiction of the District, and (2) agenda items (Open and Closed Sessions). 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, and three (3) minutes per speaker per item for agenda items.

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 13, 2021 **(Pg. 6)**

B. Finance Committee – **Clive Weightman, Treasurer**

Finance Committee oral report and Finance Committee minutes from November 9, 2021 **(Pg. 11)**

#### 9. Staff Informational Reports

A. Live Reports

- Semi-Annual Research Reports from the University of California, Davis, University of California, Riverside, Mount Sinai School of Medicine, and US Department of Agriculture for 2021– **Jennifer Henke, M.S., Laboratory Manager**
- General Manager's Report – **Jeremy Wittie, M.S., General Manager**

## 10. 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 9, 2021, Board Meeting **(Pg. 13)**
- B. Approval of expenditures for November 3, 2021-January 4, 2022 **(Pg. 29)**
- C. Informational Items:
  - Financials – **David l’Anson, MPA, MBA/ACC., Administrative Finance Manager (Pg. 31)**
  - Board Business Log **(Pg. 46)**
  - Correspondence **(Pg. 47)**
  - Semi-Annual Research Reports from the University of California, Davis, University of California, Riverside, Mount Sinai School of Medicine, and US Department of Agriculture for 2021**(Pg. 61)**
  - MVCAC Planning Meeting December 7-8, 2021, Emeryville, CA **(Pg. 93)**
  - CalPELRA Annual Conference, November 16-18, 2021, in Monterey, CA **(Pg. 94)**
- D. Resolution 2022-01 authorizing remote teleconferencing meetings for the period January 11, 2022 – February 9, 2022 – **Jeremy Wittie, M.S., General Manager, and Lena Wade, District General Counsel (Pg. 95)**

## 11. Old Business

- A. Confirmation of physical or virtual Strategic Planning Workshop – **Jeremy Wittie, M.S., General Manager (Pg. 99)**

## 12. New Business

- A. Approval to enter into an agreement for a Supplemental Mitigated Negative Declaration for CEQA compliance in an amount not to exceed \$35,000 from fund 6095.01.400.000 **Budgeted; Funds Available** – **Jennifer Henke, M.S., Laboratory Manager (Pg. 101)**
- B. Nomination and Election of Board of Officers for the 2022 Calendar Year – **ad hoc Nomination Committee (Pg. 104)**

- C. Discussion and/or approval of a 3% COLA adjustment and a 5% Special Merit Pay for the **General Manager's** evaluation period ending December 2021 - **ad hoc Negotiations Committee (Pg. 107)**

**13. Closed Session (s):**

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

Title: District Legal Counsel

**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.
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**Certification of Posting**

I certify that on January 7, 2022, 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 7, 2022.

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Melissa Tallion, Clerk of the Board



# **BOARD REPORTS**

**Coachella Valley Mosquito and Vector Control District**  
**Executive Committee Meeting Via Zoom**  
**Minutes**

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**TIME AND DATE:** 1:30 p.m. Monday, December 13, 2021

**LOCATION:** 43420 Trader Place, Indio, CA 92201

**TRUSTEES PRESENT:**

Indio	Benjamin Guitron, President
Palm Desert	Doug Walker, Vice President
County at Large	Bito Larson, Secretary
Indian Wells	Clive Weightman, Treasurer

**ABSENT:**

None

Members of the Public present: Yes

**OTHERS PRESENT:**

Jeremy Wittie, M.S., General Manger  
Melissa Tallion, Clerk of the Board

- 1. Call to Order:** *President Guitron called the meeting to order at 1:35 p.m.*
- 2. Roll Call:** *Roll call indicated all four (4) Committee members were present.*
- 3. Confirmation of Agenda:** *There was a consensus to approve the agenda as presented.*
- 4. Public Comments:**  
*One (1) written public comment was received from Mr. Brad Anderson. The written comment was distributed to the Executive Committee and Legal Counsel and is attached for the record.*  
*Mr. Anderson spoke on both agenda and non-agenda items.*
- 5. Review of January 11, 2022, draft Board meeting agenda**

*The draft January Board meeting agenda was reviewed by the Committee. Trustee Weightman asked that the Semi-Annual research report in item 10 (C) also be added to item 9 (A) live reports. Trustee Weighman would like the full Board to hear a summary of the reports. Staff asked the Committee for the ability to add items to the agenda as needed. President Guitron would like to dedicate the January 2022 Board meeting in honor of former Trustee Franz DeKlotz.*

## **6. Old Business**

- A. Continued discussion regarding COVID-19 and returning to in-person meetings  
*Staff proposed the option of having a hybrid meeting. The proposed meeting would have the full Board, Legal Counsel, J. Witte, General Manager, M. Tallion, and the opportunity for the public to be present while key staff and members of the public conduct the meeting via zoom. A discussion ensued and the Executive Committee came to the consensus that given the current state of emergency and to keep everyone safe, Board meetings would continue to be remote under the guidelines of AB-361. A Resolution is on the agenda for the January 2022 Board meeting.*
- B. Continued discussion and final direction regarding Board agenda streamlining  
*Staff and the Executive Committee discussed the outcome of the discussion from the November 9, 2021, Board meeting. The Executive Committee agreed on the following changes:*  
*The public comment section will all take place during one public comment section on the Board agenda. Members of the public will be able to address the board on (1) items of general interest (non-agenda) items and (2) agenda items (open and closed session). Comments will be limited to a total of three (3) minutes per speaker for non-agenda items, and three (3) minutes per agenda item. President Guitron will add this change to his president's report on January 11, 2022.*  
*The Executive Committee also discussed roll call vote alternatives. M. Tallion gave her opinion and the Executive Committee agreed to not make any changes until the Board could meet back in person. President Guitron will summarize the discussion during his president's report on January 11, 2022.*
- C. Recommendation Continued discussion regarding timing and method of the District's Strategic Planning workshop  
*Staff has secured a space for the meeting. The meeting is scheduled to be held at the Indio Community Center using Desert Receptions room. President Guitron asked if staff would investigate an alternative space as the facility mentioned might not be big enough. Staff will report back to the Executive Committee.*

## **7. New Business**

- A. Discussion regarding a potential change of date for the February 8, 2022, Board meeting due to conflict with the 2022 MVCAC Annual Meeting



*The agenda for the MVCAC meeting was published with a start date which means that the conflict no longer exists. February 8, 2022, the Board meeting will not be moved.*

**B. Review Trustee By-Laws section "Eligibility to Hold Office"**

*Trustee Walker summarized a discussion that the ad hoc Nominations committee had regarding the eligibility to hold office. A discussion ensued and the Executive Committee did not recommend making any changes to that section. The eligibility to hold office will remain as stated in the Trustee By-Laws.*

**C. Consideration and discussion regarding the District observing the Federal holiday Juneteenth Nation Independence Day**

*The Executive Committee had a discussion and came to a consensus that this will not be part of the District's recognized holidays at this time.*

**D. Updates**

*J. Wittie commented that Riverside Local Agency Formation Commission (LAFCO) is once again conducting Sphere of Influence surveys. M. Tallion is the point of contact and will forward any information received.*

**8. Trustee/staff comments**

*J. Wittie mentioned some upcoming travel: VCJPA is holding their meeting on February 17 and 18, 2022. Travel information will be sent out to the Executive Committee for their consideration.*

**9. Confirmation of next meeting**

The next meeting was scheduled for Thursday, January 27, 2022, at 1:30 p.m.

**10. Adjournment**

The meeting was adjourned by President Guitron at 2:56 p.m.

## Melissa Tallion

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**From:** [REDACTED]  
**Sent:** Monday, December 13, 2021 1:28 PM  
**To:** Melissa Tallion; Edward Prendez  
**Subject:** Written Public Comments for the CVMVCD Executive committee meeting (12/13/21 - 1:30PM)

December 13, 2021

Coachella Valley Mosquito and Vector Control District (CVMVCD)  
43420 Trader Pl.  
Indio, CA. 92201  
(760) 342-8287  
Attn: Clerk of the Board

Re: Written letter to be entered in to the Public record and made available to the general public for the scheduled CVMVCD Executive committee meeting held on December 13, 2021 - Agenda Items: 6-A and 6-B (Submitted in accordance with California AB361)

Dear CVMVCD appointed members,

Please consider reviewing the written statements in regards to Agenda Items listed below.

Agenda Item: 6-A (Return to full Public service)

Public services have been decreased - Vector activities have been allowed to increase by the CVMVCD administration unwillingness to address how safe and effective tax funded abatement services should be performed by CVMVCD staff. Please consider reviewing external solutions that could educate the CVMVCD current administration on best practices in regards to Public services while not abandoning neighborhoods with active detected Public Health diseases (WNV) that have taken place (Indian Wells/Palm Desert) in prior years.

Agenda Item: 6-B (potential pretext allegations of streamlined public meetings)

Opposed to the CVMVCD continue extreme attack on "Free speech"  
As this panel is well aware of its reductions on the Public's ability to access CVMVCD Public meetings and its elimination of the Public's ability to review the same information that would be submitted to the board for its consideration prior to being required to provide Public testimony.  
Any further restrictions place on the Public's ability to actively participate in the CVMVCD open Public meetings would be a clear and malicious attempt to prevent "Free speech" at CVMVCD Public meetings.  
Reduction of speakers current allotment of time would clearly be an abuse of power by the CVMVCD administration and its Board of Trustees. As you are aware of having very small general public participation (one person) during most of the CVMVCD Public meetings any changes of already best practices to reduce the Public's ability to participate in the people's business would be disgraceful.

Sincerely,

Brad Anderson | Rancho Mirage, CA | [ba4612442@gmail.com](mailto:ba4612442@gmail.com)

**COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT**

**Finance Committee Meeting Via Zoom  
Minutes**

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**TIME** 4:30 p.m. **DATE:** November 9, 2021

**LOCATION:** 43420 Trader Place Indio, CA 92201

**COMMITTEE MEMBERS PRESENT:**

Indian Wells            Clive Weightman  
Rancho Mirage        Isaiah Hagerman

**COMMITTEE MEMBERS ABSENT:**

County at Large        Bito Larson

**STAFF PRESENT:**

Jeremy Wittie, M.S., General Manager  
David l'Anson, MPA, MBA/ACC., Administrative Finance Manager  
Melissa Tallion, Executive Assistant/Clerk of the Board

**MEMBERS OF THE PUBLIC PRESENT:**

*None*

**1. Call to Order**

*Treasurer Weightman called the meeting to order at 4:30 p.m.*

**2. Roll Call**

*Roll call indicated two (2) of the 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**

Approval of Minutes from October 12, 2021, Finance Committee Meeting  
*On a motion from Trustee Hagerman seconded by Trustee Weightman, and passed by the following roll call votes, the Committee approved the minutes as presented.*

Ayes: Treasurer Weightman and Trustee Hagerman

Noes: None

Abstained: None

Absent: Trustee Larson

## **6. Discussion, Review, and/or Update**

- A. Review of Check Report from Abila MIP for the period of October 8, 2021, to November 2, 2021  
*A discussion ensued concerning a few checks that needed further explanation.*
- B. CalCard Charges – September 24, 2021, to November 22, 2021  
*The CalCard monthly statement was reviewed by Committee members and staff. Questions regarding specific charges were brought forward by Trustees and staff provided more information.*
- C. Review of October 2021 Financials and Treasurers Report  
*The documents were reviewed.*

## **7. Old Business**

- A. None

## **8. New Business**

- A. ADA Entrance Improvement discussion  
*The Finance Committee reviewed the staff report and supports the recommendation from staff to move forward with the project.*
- B. Review of finance-related items on Board Agenda  
*The Finance Committee fully supports the Board and all Finance-related items.*

## **8. Schedule Next Meeting**

*The next Finance Committee meeting is scheduled to be in person Tuesday, January 11, 2021, at 4:30 p.m.*

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

*Jeremy Wittie, General Manager mentioned that the VCJPA Board voted to return retrospective adjustments. The district will receive a refund from workers' compensation. Kudos to the staff for being safe.*

## **11. Adjournment**

*The meeting was adjourned by Treasurer Weightman at 4:49 p.m.*



# **GENERAL CONSENT**

**COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT**

**Board of Trustees Meeting Via Zoom  
Minutes**

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MEETING TIME: 6:00 p.m. Tuesday, November 9, 2021

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

**TRUSTEES PRESENT**

PRESIDENT: Ben Guitron	Indio
VICE PRESIDENT: Doug Walker	Palm Desert
TREASURER: Clive Weightman	Indian Wells
Denise Delgado	Coachella
Gary Gardner	Desert Hot Springs
Isaiah Hagerman	Rancho Mirage
Dr. Doug Kunz	Palm Springs
Rita Lamb	Cathedral City
John Pena	La Quinta

**TRUSTEES ABSENT**

SECRETARY: Bito Larson	County at Large
Janell Percy	County at Large

**STAFF AND GENERAL COUNSEL PRESENT**

Jeremy Wittie, General Manager  
Lena Wade, Legal Counsel, SBEMP  
Crystal Moreno, Human Resources Manager  
David I'Anson, Administrative Finance Manager  
Jennifer Henke, Laboratory Manager  
Roberta (Bobbye) Dieckmann, Operations Manager  
Edward Prendez, Information Technology Manager  
Tammy Gordon, Public Information Officer  
Kim Hung, Vector Ecologist  
Melissa Tallion, Executive Assistant/Clerk of the Board

*Other staff members joined the zoom meeting as well.*

**MEMBERS OF THE PUBLIC PRESENT**

Yes

- 1. Call to Order** *President Guitron called the meeting to order at 6:02 p.m. President Guitron introduced newly appointed Trustee John Pena, La Quinta. Melissa Tallion, Clerk of the Board, administered the oath of office for Trustee John Pena.*

**2. Pledge of Allegiance** *Trustee John Pena led the Pledge of Allegiance.*

**3. Roll Call** *At roll call, Nine (9) 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 Board Trustees, the agenda was confirmed.*

**5. Public Comments**

*Mr. Doug Hassett, who had previously been given his award for being a CVMVCD Board member, joined the meeting to say, "thank you." President Guitron thanked Mr. Hassett for his service.*

*Four (4) written public comments were received from Mr. Brad Anderson. The written comments were distributed to the Board of Trustees and Legal Counsel and are attached for the record.*

*A member of the public joined the meeting at 6:51 p.m. after it was brought to our attention that there was a typo in the meeting access code. President Guitron opened the public comment section to allow the member of the public their time to comment.*

*Comments were made on topics including agenda and non-agenda items.*

**6. Board Reports**

President's Report:

*President Guitron stated the Executive Committee had held its meeting on October 28, 2021, reviewed the draft Board agenda, and the Committee revised it as needed. The Executive Committee discussed the streamlining of the Board agenda. This item will be discussed further later in the meeting. The next scheduled meeting is December 13, 2021.*

Treasurer's Report:

*Treasurer Weightman reported 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 2021. As per normal, there were some questions regarding charges. All questions were answered to the Committee's satisfaction.*

**7. Staff Information Reports**

A. Live Reports

- Arbovirus Surveillance and Response update – **Jennifer Henke, M.S., Laboratory Manager; Roberta Dieckmann, Operations Manager; and Tammy Gordon, M.A., Public Information Officer**

*The Integrated Vector Management (IVM) Program consists of three (3) departments working together. Surveillance and Quality Control, Public Outreach, and Operations. The goal of the IVM program is to prevent the transmission of vector-borne diseases. The IVM staff gave a presentation of this year's virus activity and the District's response to it. Trustee Weightman passed on a "thank you" from*

*the Mayor of Indian Wells and congratulated Ms. Henke for her election to the governing board as the Vice President-Elect of the ESA (Entomological Society of America). Trustee Walker asked about the use of drones near and around the Salton Sea. Roberta (Bobbie) Dieckmann commented and mentioned there was an application scheduled, using drones, on Wednesday, November 10, 2021. Trustee Weightman asked staff about the District's policy regarding vaccinations and testing requirements. Jeremy Wittie, General Manager talked through the District's policy.*

## **8. Items of General Consent**

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

A. Minutes for October 12, 2021, Board Meeting, and corrected minutes for September 14, 2021.

B. Approval of expenditures for October 8, 2021-November 4, 2021

C. Informational Items:

- Financials – **David l'Anson, MPA, MBA/ACC., Administrative Finance Manager**
- District Travel
- Board Business Log
- Correspondence
- Departmental Reports: Human Resources; Finance; Information Technology; Laboratory & Surveillance Control; Operations; and Public Outreach
- Entomological Society of America Annual Conference held October 21, 2021-November 3, 2021
- CSDA Clerk of the Board Annual Conference, October 25-27, 2021
- MVCAC Fall Meeting October 26-27, 2021, in Costa Mesa, CA
- 2022 Board of Trustees Meeting Calendar

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

*Ayes: President Guitron; Trustees Gardner, Hagerman, Kunz, Lamb, Walker, Weightman*

*Noes: None.*



*Abstained: Trustee Pena*

*Absent: Trustees Delgado, Larson, Percy*

## **9. Old Business**

- A. Update and discussion regarding the timing and method of the District's Strategic Planning Workshop – **Jeremy Wittie, M.S., General Manager**

*The District will be working with Martin Rauch to develop the 2022 Strategic Plan. Staff was asked to survey the Board of Trustees for a second time to narrow down a date. The Board of Trustees came to a unanimous consensus to hold the Strategic Planning workshop on Thursday, February 3, 2022, at a location to be determined.*

- B. Review and approve Resolution 2021-13 authorizing remote teleconferencing meetings for the period November 13, 2021 – December 13, 2021 - **Jeremy Wittie, M.S., General Manager, and Lena Wade, District General Counsel**

*Lena Wade, General Counsel gave an overview of AB-361 and the current Resolution. The resolution before the Board authorizes the District to continue to operate under the abbreviated teleconferencing procedures. Subsequent Resolutions will need to be approved every 30 days as long as the county is in a current state of emergency. Trustee Gardner asked for clarification about the January Board meeting and the requirements then as well as having this item moved into the consent calendar for future meetings to streamline the meeting. A discussion ensued about this item. The Trustees agreed to move this item to the Consent Calendar.*

*On a motion from Trustee Walker and seconded by Trustee Weightman, and passed by the following roll call votes, the Board of Trustees approved Resolution 2021-13 authorizing remote teleconferencing meetings for the period November 13, 2021-December 13, 2021.*

*Ayes: President Guitron; Trustees Delgado, Gardner, Hagerman, Kunz, Lamb, Pena, Walker, Weightman*

*Noes: None.*

*Abstained: None*

*Absent: Trustees Larson, Percy*

## **10. New Business**

- A. Audit presentation of Fiscal Year Ending June 30, 2021 – **Fedak & Brown, LLP, and David I'Anson, MPA, MBA/ACC., Administrative Finance Manager**

*Andy Beck with Fedak & Brown, LLP gave a presentation of the 2021 Audit results. The overall findings of the Independent Auditor's report were Unmodified "clean" opinion.*

- B. Approval of Resolution 2021-14 providing a gift certificate to employees for work performed late November through early December 2021 in a total collective amount for all certificates not to exceed \$3,000.00 from fund 5300.01.200.000 – Employee Incentive- **Budgeted; Funds Available – Jeremy Wittie, M.S., General Manager**

*Resolution 2021-14 authorizes Jeremy Wittie, General Manager to purchase gift certificates in an amount not to exceed \$40.00 and authorizes providing the gift certificates to each employee who works for the District from November 26, 2021, through December 6, 2021.*

*On a motion from Trustee Hagerman and seconded by Trustee Pena and passed by the following roll call votes, the Board of Trustees approved Resolution 2021-14 providing a gift certificate to employees for work performed late November through early December 2021.*

*Ayes: President Guitron; Trustees Delgado, Gardner, Hagerman Kunz, Lamb, Pena, Walker, Weightman*

*Noes: None.*

*Abstained: None*

*Absent: Trustees Larson, Percy*

- C. Discussion and/or approval to grant a day off in December to all full-time employees in appreciation of their work and dedication in protecting public health during the mosquito virus season – **Jeremy Wittie, M.S., General Manager**

*Staff recognition is very important and serves a legitimate public purpose because it advances the protection of public safety by incentivizing employees. Management staff requests to continue the tradition this year and grant employees an additional day off in December in recognition and appreciation of their contributions, hard work, and dedication to the District. The Employee release day would be Monday, December 27, 2021.*

*On a motion from Trustee Hagerman and seconded by Trustee Delgado and passed by the following roll call votes, the Board of Trustees granted a day off in December to all full-time employees in appreciation of their work and dedication in protecting public health during the mosquito virus season.*

*Ayes: President Guitron; Trustees Delgado, Gardner, Hagerman Kunz, Lamb, Pena, Walker, Weightman*

*Noes: None.*

*Abstained: None*

*Absent: Trustees Larson, Percy*

- D. Contract with Three Peaks Corp. for ADA Grading and Paving of the entrance walkway and front parking areas at the District headquarters in an amount not to exceed \$48,421.00 from Capital Facility Replacement Fund – **David I'Anson, MPA, MBA/ACC., Administrative Finance Manager**

*This project is a result of an ADA site evaluation conducted in 2019. The District hired a Civil Engineer to do the work, the RFP was issued, and the District received 3 bids. The lowest bid was below budget. This item was also discussed during the Finance Committee meeting.*

*On a motion from Trustee Kunz and seconded by Trustee Walker and passed by the following roll call votes, the Board of Trustees approved the District to contract with Three Peaks Corp. for ADA Grading and Paving of the entrance walkway and front parking areas at the District headquarters in an amount not to exceed \$48,421.00*

*Ayes: President Guitron; Trustees Delgado, Gardner, Hagerman Kunz, Lamb, Pena, Walker, Weightman*

*Noes: None.*

*Abstained: None*

*Absent: Trustees Larson, Percy*

- E. Approval of Resolution 2021-17 Revising the Annual Budget for Fiscal Year 2021-22 – **David I'Anson, MPA, MBA/ACC., Administrative Finance Manager**

*The District received a refund from the University of Miami. This Resolution revises the budget so that these funds can be used during this Fiscal Year. The Finance Committee also approved the revised budget.*

*On a motion from Trustee Hagerman and seconded by Trustee Weightman and passed by the following roll call votes, the Board of*

*Trustees approved Resolution 2021-17 Revising the Annual Budget for Fiscal Year 2021-22*

*Ayes: President Guitron; Trustees Delgado, Gardner, Hagerman Kunz, Lamb, Pena, Walker, Weightman*

*Noes: None.*

*Abstained: None*

*Absent: Trustees Larson, Percy*

- F. Approval of 2022 research proposals in an amount not to exceed \$137,120.50; \$68,560.25 will be expensed in Fiscal Year (FY) 2021/22 the balance will be expensed FY 2022/23 from Fund 8510.01.600.000 – Research Projects *Budgeted; Funds Available* – **Jennifer A. Henke, M.S., Laboratory Manager**  
*The District received 4 (four) research proposals that were included in the Board packet.  
The Research Committee and staff are recommending the funding of three (3) of the projects.*

*On a motion from Trustee Pena and seconded by Trustee Kunz and passed by the following roll call votes, the Board of Trustees Approves the 2022 research proposals in an amount not to exceed \$137,120.50; \$68,560.25 will be expensed in Fiscal Year (FY) 2021/22 the balance will be expensed FY 2022/23*

*Ayes: President Guitron; Trustees Delgado, Gardner, Hagerman Kunz, Lamb, Pena, Walker, Weightman*

*Noes: None.*

*Abstained: None*

*Absent: Trustees Larson, Percy*

- G. Appointment of the ad hoc Nominations Committee - **Benjamin Guitron, President**  
*President Guitron asked if any Trustees would be interested. Trustee John Pena volunteered to sit on the committee.  
The Committee members are Trustees Hagerman, Pena, and Walker*

- H. Appointment of the ad hoc Negotiations Committee - **Benjamin Guitron, President**

*A discussion ensued and it was decided that the Committee will stay with the members it currently has.*

*The Committee members are President Guitron and Trustee Hagerman. Trustee Walker will serve as an alternate.*

## **11. Closed Session Public Comments**

*A written public comment was received for item B. The written comment was distributed to the Board of Trustees and Legal Counsel and is attached for the record.*

### **Closed Session (s):**

- A. **Conference with Labor Negotiators pursuant to Government Code Section 54957.6**

Agency Designated Representatives: Lena D. Wade, Crystal Moreno, and David I' Anson.

Employee Organizations: California School Employees Association and Teamsters Local 911.

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

Title: General Manager

Title: District Legal Counsel

***Upon return from closed session, Lena Wade, General Counsel informed those in attendance there was no reportable action.***

## **10. New Business (continued)**

- I. Discussion and/or approval of Resolution 2021-15 Approving the ratification of the Tentative Agreement by and between the District and employees in the Bargaining Unit represented by CSEA, Chapter 2001 - **Jeremy Wittie, M.S., General Manager, and Lena D. Wade, Legal Counsel**

*On a motion from Trustee Hagerman and seconded by Trustee Gardner and passed by the following roll call votes, the Board of Trustees Resolution 2021-15 approving the ratification of the Tentative Agreement by and between the District and employees in the Bargaining Unit represented by CSEA, Chapter 2001*

*Ayes: President Guitron; Trustees Delgado, Gardner, Hagerman Kunz, Lamb, Pena, Walker, Weightman*

Noes: None.

Abstained: None

Absent: Trustees Larson, Percy

- J. Discussion and/or approval of Resolution 2021-16 Approving the ratification of the Tentative Agreement by and between the District and employees in the Clerical, Professional, and Supervisory Bargaining Units represented by Teamsters Local 911 – **Jeremy Wittie, M.S., General Manager, and Lena D. Wade, Legal Counsel**

*On a motion from Trustee Hagerman and seconded by Trustee Delgado and passed by the following roll call votes, the Board of Trustees Resolution 2021-16 approving the ratification of the Tentative Agreement by and between the District and employees in the Clerical, Professional, and Supervisory Bargaining Units represented by Teamsters Local 911*

*Ayes: President Guitron; Trustees Delgado, Gardner, Hagerman Kunz, Lamb, Pena, Walker, Weightman*

Noes: None.

Abstained: None

Absent: Trustees Larson, Percy

- K. Discussion and/or approval of Resolution 2021-18 Adopting Employee Pay Schedule, in conformance with California Code of Regulations, Title 2, Sections 570.5 and 571 – **Crystal Moreno, M.S., Human Resources Manager**

*On a motion from Trustee Kunz and seconded by Trustee Gardner and passed by the following roll call votes, the Board of Trustees Resolution 2021-18 adopting Employee Pay Schedule in conformance with California Code of Regulations, Title 2, Sections 570.5 and 571*

*Ayes: President Guitron; Trustees Delgado, Gardner, Hagerman Kunz, Lamb, Pena, Walker, Weightman*

Noes: None.

Abstained: None

Absent: Trustees Larson, Percy

**12. Comments by General Counsel**

*The Executive Committee met with Legal Counsel to look for opportunities to streamline the Board agenda concerning public comments. Lena Wade reiterated the Brown Act requirements. The Executive Committee is recommending the following:*

*Public Comment for Agenda items will be five (5) minutes per speaker*

*Public Comment for Non-agenda items will be three (3) minutes per speaker*

*A discussion ensued between the Trustees. President Guitron took note of all the comments from the Board and will take this matter to the Executive Committee in December. Trustee Gardner suggested changing the roll call vote to "any objections". This will be an item moved to the Executive Committee meeting. Ms. Wade had no objections to the way that votes were recorded as long as Ms. Tallion, Clerk of the Board could accurately record the votes.*

*Legal Counsel commented that the minutes of the Board meetings do not need to be verbatim, and the minutes are accurately recording the meetings.*

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

**14. Adjournment** *President Guitron adjourned the meeting at 8:16 p.m.*

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Benjamin Guitron  
President

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Bito Larson  
Secretary

## Melissa Tallion

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**From:** [REDACTED]  
**Sent:** Tuesday, November 9, 2021 2:25 PM  
**To:** Melissa Tallion; Edward Prendez  
**Cc:** Jeremy Wittie  
**Subject:** Verbal Public Comment(s) for the CVMVCD Board of Trustees meeting (11/9/21 - 6:PM)  
Required Remotely performed format

November 9, 2021

Dear Coachella Valley Mosquito and Vector Control District (CVMVCD),  
Attn: Clerk of the Board

Please allow for Public testimony on several agenda Items listed on the CVMVCD Board of Trustees meeting scheduled for today (11/9/2021 -6:PM) (Remotely performed meeting)

Due to the CVMVCD refusal to perform the People's business with complete transparency, listing the requested Agenda Items to speak on wouldn't be deemed as necessary by this Resident.

I'm planning on completing and submitting written statements in regards to tonights meeting on certain topics (agenda Items and other) to be distributed within the guidelines of California's AB361 - which the CVMVCD claims to have Implemented.

As you should be aware of the CVMVCD potentially Illegal actions of requirements placed of Citizens that contradicts with California State laws written on the CVMVCD meeting agendas.

Please be aware that at a prior CVMVCD Board of Trustees meeting I was drectly chosen to be denied the opportunity to access the remotely performed meeting. It's unclear why the meeting host and potentially others that were aware of my many "request to speak" (host will be notified) attempts were dismissed? Please consider performing the CVMVCD administration business in an ethical matter without the corruption of status quo administrators and their potential Influences.

Sincerely,



## Melissa Tallion

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**From:** [REDACTED]  
**Sent:** Tuesday, November 9, 2021 5:55 PM  
**To:** Melissa Tallion; Edward Prendez  
**Cc:** Jeremy Wittie  
**Subject:** Written Public Comment(s) for the CVMVCD Board of Trustees meeting of November 9, 2021 - 6:PM

November 9, 2021

Coachella Valley Mosquito and Vector Control District (CVMVCD)  
43420 Trader Pl  
Indio, CA. 92201  
(888) 343-9399 - [www.cvmvcd.org](http://www.cvmvcd.org)  
Attn: Clerk of the Board/Trustees/General Public

Re: Written letter to be entered into the Public record and made available to the general public for the scheduled CVMVCD Board of Trustees meeting of November 9, 2021 (Required to be performed remotely)

Dear CVMVCD appointed Trustees,

The following comments are listed to reflect true facts and opinions in regards to the listed agenda Items below:

1) Item: 5-B, Non-Agenda Public comment

The mosquito populations have been noticeably higher near my private property located within the City of Rancho Mirage. My neighbors and me have endured the lack of accountability from the CVMVCD for this invasion of Vectors for a number of years. Its clear that the CVMVCD administration is unable and or unwilling to perform their mission and duty to the Coachella Valley Resident's (Taxpayers)

At prior CVMVCD Public meeting the CVMVCD Board of Trustees chairman was allowed to verbally Intimidate and potentially abuse the forum of Public comment (speaker) that may of sent a "chilling effect" to other people that witnessed those events and future potential speakers. Please consider reviewing the current board members for similar negitivity toward the Public.

The CVMVCD written minutes of past meeting have been dreadful and lacks any credible accurate information in regards to verbal Public testimony and details related to agenda Items spoken about.

By deleting speakers names and comments and the relationship to each agenda Item - the CVMVCD have removed the opportunity for the Public to gain accessibility for participation and potential legal recourse by themselves and or others. Please correct this puposely performed actions of CVMVCD staff to limit Public participation by censoring spoken words.

The CVMVCD legal counsel made misleading statements at a prior CVMVCD Board of Trustees meeting in regards to the CVMVCD prior contacted legal firm prior to the employment of SBEMP. Of course the CVMVCD administration written minutes refused to detail the legal counsel's statements. Please consider reviewing the poor performance of the legal counsel SBEMP and how the taxpayers of the Coachella Valley have been required to fund a Special District that employs poor quality sub-contractors.

2) Item: 9-B, Resolution 2021-13 Remote meeting format (Required)

Social distancing (main characteristic of CA AB361) could easily be obtained by CVMVCD Board of Trustees and its administration. Member Citys offer many different venues that could be used for CVMVCD Public meeting. By continuing with requiring Non-In- Person Public meeting, the CVMVCD is clearly abusing the New law of AB361 that was originally drafted in February 2020 before the March 2020 California State of Emergency and our Governors mandates to allow for political representatives and unelected bureaucrats to not be approachable by Residents. The CVMVCD have written language that dictates requirements for Public members that contradicts California's AB361. The CVMVCD have repeatedly shown that Public participation is discouraged in it's preceived Public meetings, please allow for Public testimony and details recorded accurate.

3) Item: 11-B, Closed session

The current CVMVCD General Manager (Jeremy Wittie) and the still retained legal counsel (L. Wade - SBEMP) both have performed poorly and should be considered for non-renewal of employment contracts. The Coachella Valley will ONLY continue to suffer with out-of-control Vector population and taxpayers resources being wasted.

Sincerely,

Brad Anderson | Rancho Mirage, CA,

## Melissa Tallion

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**From:** [REDACTED]  
**Sent:** Tuesday, November 9, 2021 6:17 PM  
**To:** Edward Prendez; Melissa Tallion; Jeremy Wittie  
**Subject:** CVMVCD meeting access code doesn't work

November 9, 2021

Dear CVMVCD,  
Attn: Clerk of the Board/General Manager/Trustees

As you should be aware, the CVMVCD Board of Trustees meeting scheduled for "Now" (November 9, 2021 - 6:PM) has a non-operational meeting access code.

The CVMVCD written agenda listed the used access code (see agenda)

Not being allowed to access the remotely performed meeting of the Coachella Valley Mosquito and Vector Control District (CVMVCD) in a timely manner has placed my participation in that meeting at risk of being denied the opportunity to listen to and submit my public testimony.

Please reply to this as soon as possible - and please consider cancellation of this evening CVMVCD Board of Trustees meeting.

Sincerely,

Brad Anderson | Rancho Mirage, CA. | 760.324.9637

## Melissa Tallion

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**From:** [REDACTED]  
**Sent:** Tuesday, November 9, 2021 7:30 PM  
**To:** Melissa Tallion; Edward Prendez  
**Subject:** Public Records Request

November 9, 2021 (after business hours)

Coachella Valley Mosquito and Vector Control District (CVMVCD)  
43420 Trader Pl  
Indio, CA. 92201  
Attn: Clerk of the Board/administration department Manager

Re: Request for Public Records

Dear CVMVCD,

Please make the requested record's listed below to the Address listed at the bottom of this e-mail in an easily to access format (PDF)

- 1) All known CVMVCD recording (video/audio) of the CVMVCD Board of Trustees meeting held on the date of November 9, 2021
- 2)

Thank you in advance -

Brad Anderson | 37043 Ferber Dr. Rancho Mirage, CA. 92270  
[Ba4612442@gmail.com](mailto:Ba4612442@gmail.com)

**Coachella Valley Mosquito and Vector Control District**

Checks Issued for the Period of:  
November 3 -December 15, 2021

Check No	Payable To	Description	Check Amount	Total Amount
	Payroll Disbursement	November 12, 2021	217,378.16	
	Payroll Disbursement	November 24, 2021	270,953.95	
	Payroll Disbursement	December 10, 2021	247,605.07	<b>735,937.18</b>
<b>Pre-Approved Expenditures Utilities/Benefits:</b>				
43736	CalPERS Healthcare Acct	Healthcare Retired/Active 12/2021	81,406.15	
43737	CalPERS-Retirement Acct	Retirement Fees 11/12/2021PP	29,742.22	
43738	ICMA Retirement Trust	Deferred Compensation: 11/12/2021PP	9,746.13	
43741	Principal Life Insurance Co.	Dental/Life Insurance 12/2021	23,459.67	
43742	Standard Insurance Company	LTD Premium 12/2021	3,114.14	
43743	Vision Service Plan (CA)	Vision Care Plan 12/2021	857.56	
				<b>148,325.87</b>
<b>Pre-Approved Expenditures less than \$10,000.00:</b>				
43739	Marlin Business Bank	Contract Services	705.79	
43740	Pitney Bowes Global Financial Svcs	Contract Services	310.82	
43744	Abila	Cloud Computing Services	1,664.50	
43745	Adapco, Inc.	Capital Outlay	9,875.45	
43746	Advance Imaging Systems	Contract Services	663.11	
43747	Airgas USA, LLC	Dry Ice	986.43	
43748	Burrtec Waste Industries	Repair & Maintenance	134.26	
43749	CarQuest Auto Parts	Vehicle Parts & Supplies	240.95	
43751	Cintas Corporation #3	Safety Expense	4,674.19	
43752	CleanExcel	Janitorial Services	6,751.00	
43753	CSI Ceja Security International	Security Patrol Services	2,150.00	
43754	Del Valle Informador Inc.	Advertising	880.00	
43755	Desert Alarm, Inc.	Repair & Maintenance	5,512.91	
43756	Desert Electric Supply	Repair & Maintenance	202.71	
43757	Desert Sun Publishing Co	Recruitment/Advertising	411.40	
43758	Eisenhower Occupational Health Serv	Physician Fees	165.00	
43759	Employee Relations Inc.	Recruitment/Advertising	62.77	
43760	Equipment Direct, Inc.	Safety Expense	1,293.44	
43761	Fedak & Brown, LLP	Professional Services	4,596.00	
43762	Ferguson Enterprises	Repair & Maintenance	100.48	
43763	G & C Smog and Auto Repair	Offsite Vehicle Maintenance & Repair	233.25	
43764	Hypertec USA Inc	Cloud Computing Services	24.23	
43765	Indio Emergency Medical Group	Physician Fees	270.00	
43766	Jernigan's Sporting Goods, Inc.	Safety Expense	1,007.13	
43767	Johnson Controls, Inc.	Repair & Maintenance	6,184.00	
43768	Koch Filter	Repair & Maintenance	116.35	
43769	Linde Gas & Equipment Inc.	Cylinder Rentals	114.56	
43770	NAPA Auto & Truck Parts	Vehicle Parts & Supplies	2,198.92	
43772	Puretec Industrial Water	Equipment Parts & Supplies	315.51	
43773	Slovak Baron Empey Murphey & Pinkney LLP	Attorney Fees	9,172.00	
43775	Veolia ES Technical Solutions, LLC	Operating Supplies	510.43	
43776	Verizon Wireless	Equipment Parts & Supplies	637.49	
43777	Waterlogic Americas LLC	Employee Support	106.57	
43778	Waxie Sanitary Supply	Field Supplies	58.20	
43780	Jennifer Henke	Professional Development	211.37	
43781	Juan Carlos Herrera	Professional Development	128.00	
43782	Graciela Morales	Professional Development	506.80	
43783	Melissa Tallion	Professional Development	124.88	
<b>Cash - California Bank &amp; Trust Checking</b>				<b>63,300.90</b>
<b>Cash - California Bank &amp; Trust Checking</b>				
43771	Ocean Air Helicopters Inc.	Aerial Larvicide Rural	10,455.00	
43774	SC Commercial LLC dba SC Fuels	Motor, Fuel & Oils	14,469.54	
43779	U.S. Bank	Calcard Payment For November Statement	80,692.29	
43784	Blue Violet Networks LLC	Capital Outlay	20,873.84	
<b>Cash - California Bank &amp; Trust Check Run Total to be Approved</b>				<b>126,490.67</b>
<b>Total Expenditures: November 3 -December 15, 2021</b>				<b>1,074,054.62</b>

Benjamin Guitron, President

Clive Weightman, Treasurer

**Coachella Valley Mosquito and Vector Control District**

Checks Issued for the Period of:

December 16 -January 4, 2022

Check No	Payable To	Description	Check Amount	Total Amount
	Payroll Disbursement	December 23, 2021	209,429.11	<b>209,429.11</b>
<b>Pre-Approved Expenditures Utilities/Benefits:</b>				
43787	CalPERS Healthcare Acct	Healthcare Retired/Active 01/2022	87,483.38	
43800	Vision Service Plan (CA)	Vision Care Plan 01/2022	935.52	<b>88,418.90</b>
<b>Pre-Approved Expenditures less than \$10,000.00:</b>				
43785	Advance Imaging Systems	Contract Services	197.29	
43786	Airgas USA, LLC	Dry Ice	197.03	
43789	Cintas Corporation #3	Safety Expense	4,848.28	
43790	CleanExcel	Janitorial Services	6,891.00	
43791	C&R Wellness Works	Employee Assistance Services	324.00	
43792	CSI Ceja Security International	District Security Services	5,265.00	
43793	Daniel's Tire Service	Tire Services	1,990.38	
43794	Desert Fire Extinguisher Co., Inc.	Repair & Maintenance	397.45	
43795	Linde Gas & Equipment Inc.	Cylinder Rentals	59.60	
43796	Marlin Business Bank	Contract Services	705.79	
43797	Pitney Bowes Purchase Power	Contract Services	364.09	
43798	RM Broadcasting LLC	Advertising	1,410.00	
43799	SC Commercial LLC dba SC Fuels	Motor,Fuel, Oil	6,295.50	
43801	Waterlogic Americas LLC	Employee Support	106.57	
<b>Cash - California Bank &amp; Trust Checking</b>				<b>29,051.98</b>
<b>Cash - California Bank &amp; Trust Checking</b>				
43802	U.S. Bank	Calcard Payment For December Statement	138,374.80	
<b>Cash - California Bank &amp; Trust Check Run Total to be Approved</b>				<b>138,374.80</b>
<b>Total Expenditures:December 16 -January 4, 2022</b>				<b>465,274.79</b>
Benjamin Guitron, President		Clive Weightman, Treasurer		



# FINANCE REPORTS

Coachella Valley Mosquito and Vector Control District  
**FINANCES AT A GLANCE**  
**ALL FUNDS COMBINED**  
For the Month Ended December 31, 2021

	Beginning of the Month	Change During the Month	End of the Month
INVESTMENTS	9,541,979	3,464,601	13,006,580
CASH	147,453	11,556	159,009
INVESTMENTS & CASH	9,689,432	3,476,157	13,165,589
CURRENT ASSETS	1,642,956	113,000	1,755,956
FIXED ASSETS	9,632,595	-	9,632,595
OTHER ASSETS	4,995,513	-	4,995,513
TOTAL ASSETS	25,960,497	3,589,157	29,549,654
TOTAL LIABILITIES	5,411,065	(184,725)	5,226,340
TOTAL DISTRICT EQUITY	20,549,497	3,773,817	24,323,313
TOTAL LIABILITIES & EQUITY	25,960,561	3,589,092	29,549,654
RECEIPTS		\$ 4,272,973	
CASH DISBURSEMENTS			
Payroll	\$ 458,444		
General Admin	\$ 338,372		
Total Cash Disbursements		\$ (796,816)	
NON-CASH ENTRIES:		\$ 113,000	
Accrual Modifications -			
Changes in A/P, A/R & Pre-paid insurance			
Change during Month - Excess of Cash over		\$ 3,589,157	
Receipts & Non-Cash Adjustments			



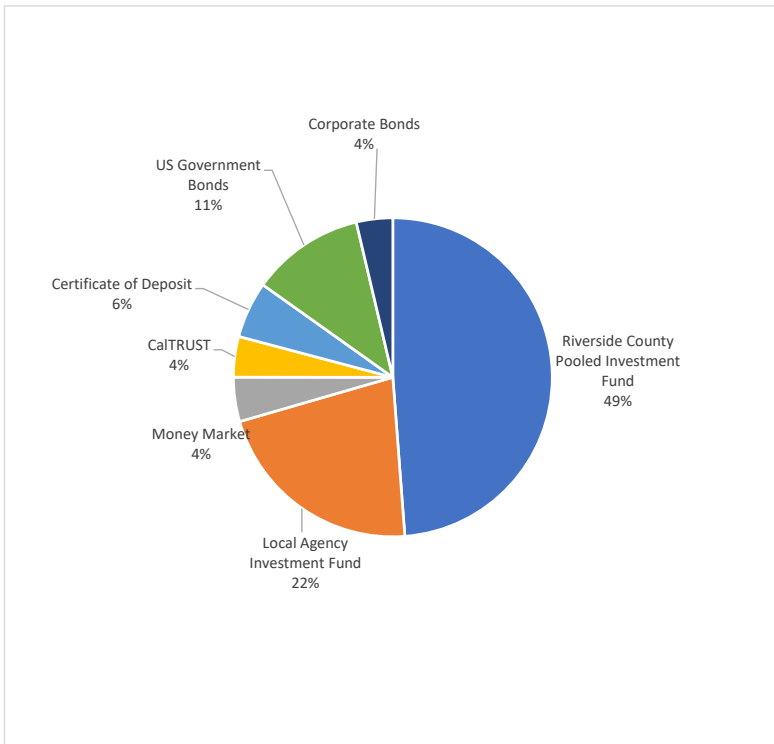
**CVMVCD**  
 Cash Journal - deposits  
 From 12/1/2021 Through 12/31/2021

<u>Effective ...</u>	<u>Transaction Description</u>	<u>Deposits</u>	<u>Payee/Recipient Name</u>
12/9/2021	December Receipts	14.65	California Bank & Trust
12/9/2021	December Receipts	5,651.70	Riverside County
12/9/2021	December Receipts - Property Tax Current Secured	1,257,131.09	Riverside County
12/22/2021	December Receipts	64.89	
12/22/2021	December Receipts	329.00	Pace Butler
12/22/2021	December Receipts	4,527.30	US Bank
12/27/2021	December Receipts	3,002,384.87	Riverside County
12/31/2021	December Receipts	<u>2,869.90</u>	Riverside County
Report Total		<u><u>4,272,973.40</u></u>	

**COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT  
INVESTMENT FUND BALANCES AS OF DECEMBER 31, 2021**

INSTITUTION	IDENTIFICATION	Issue Date	Maturity Date	YIELD	General Fund	Thermal Capital Fund	Capital Equipment Replacement Fund	Capital Facility Replacement Fund	BALANCE
LAIF	Common Investments			0.21%	2,552,379	19,698	30,283	223,092	\$ 2,825,452
Riverside County	Funds 51105 & 51115			0.33%	5,733,478	44,249	68,025	501,138	\$ 6,346,890
CalTRUST	Medium Term Fund			0.21%	483,266	3,730	5,734	42,240	\$ 534,970
CA Bank & Trust	Market Rate			0.02%	514,356	3,970	6,103	44,958	\$ 569,385
Pershing	Market Rate			0.00%	13,767	106	163	1,203	\$ 15,240
BMW Bank	Certificate of Deposit	11/20/2020	11/20/2025	0.50%			59,440	188,226	\$ 247,665
State BK of India	Certificate of Deposit	11/23/2020	11/24/2025	0.55%			59,557	188,597	\$ 248,153
Goldman Sachs	Certificate of Deposit	9/21/2021	9/22/2026	1.05%		37,736	50,474	159,833	\$ 248,043
Federal Home Ln	US Government Bonds	11/24/2020	11/24/2025	0.63%			179,402	568,108	\$ 747,510
Federal Natl Mtg Assn	US Government Bonds	11/25/2020	11/25/2025	0.63%			178,461	565,127	\$ 743,588
Bank Amer Corp	Corporate Bonds	11/25/2020	11/25/2025	0.65%			115,124	364,561	\$ 479,685
<b>Total Investments</b>					9,297,246	109,489	752,765	2,847,081	<b>\$ 13,006,580</b>

**PORTFOLIO COMPOSITION AS OF DECEMBER 31, 2021  
WEIGHTED YIELD 0.35%**



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 anticipated 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, 2021

		YTD	Current		YTD	Current	Current	Annual	Percent	
		Budget	Period	Variance	Budget	Period	Period	Budget	Annual	
		Annual Budget	YTD Budget	YTD Actual		Current Period Actual	Variance	Variance	Budget	
<b>Revenues</b>										
4000	Property Tax - Current	4,121,655	1,193,744	<b>1,257,131</b>	63,387	1,193,744	<b>1,257,131</b>	63,387	(2,864,524)	(69)%
4010	Property Tax - Curr. Su	30,561	0	<b>0</b>	0	0	<b>0</b>	0	(30,561)	(100)%
4020	Property Tax - Curr. Un	170,821	165,780	<b>171,136</b>	5,355	9,160	<b>0</b>	(9,160)	315	0 %
4030	Homeowners Tax Relie	36,430	18,215	<b>5,652</b>	(12,563)	12,693	<b>5,652</b>	(7,042)	(30,778)	(84)%
4070	Property Tax - Prior Suj	23,736	0	<b>0</b>	0	0	<b>0</b>	0	(23,736)	(100)%
4080	Property Tax - Prior Un	9,069	0	<b>0</b>	0	0	<b>0</b>	0	(9,069)	(100)%
4090	Redevelopment Pass-TI	5,406,064	2,703,032	<b>3,002,448</b>	299,416	2,703,032	<b>3,002,385</b>	299,353	(2,403,616)	(44)%
4520	Interest Income - LAIF,	42,000	21,000	<b>13,816</b>	(7,184)	10,500	<b>4,438</b>	(6,062)	(28,184)	(67)%
4530	Other Miscellaneous Re	63,000	31,500	<b>7,970</b>	(23,530)	5,250	<b>4,921</b>	(329)	(55,030)	(87)%
4551	Benefit Assessment Inc	2,299,810	0	<b>0</b>	0	0	<b>0</b>	0	(2,299,810)	(100)%
	<b>Total Revenues</b>	<b>12,203,146</b>	<b>4,133,271</b>	<b>4,458,152</b>	<b>324,881</b>	<b>3,934,379</b>	<b>4,274,527</b>	<b>340,148</b>	<b>(7,744,994)</b>	<b>(63)%</b>

**Expenditures**

**Payroll Expenses**

5101	Payroll - FT	5,373,288	2,618,955	<b>2,461,818</b>	157,136	436,492	<b>427,531</b>	8,961	2,911,469	54 %
5102	Payroll Seasonal	203,400	101,700	<b>151,935</b>	(50,235)	16,950	<b>22,491</b>	(5,541)	51,465	25 %
5103	Temporary Services	6,900	6,900	<b>0</b>	6,900	0	<b>0</b>	0	6,900	100 %
5105	Payroll - Overtime Expe	45,120	22,560	<b>2,453</b>	20,107	3,760	<b>67</b>	3,693	42,667	95 %
5150	CalPERS State Retireme	1,873,120	1,613,102	<b>1,485,251</b>	127,851	41,680	<b>9,833</b>	31,847	387,869	21 %
5155	Social Security Expense	331,680	161,780	<b>161,845</b>	(65)	26,963	<b>26,533</b>	430	169,835	51 %
5165	Medicare Expense	77,570	37,836	<b>39,020</b>	(1,185)	6,306	<b>6,693</b>	(387)	38,550	50 %
5170	Cafeteria Plan	1,141,827	553,873	<b>563,513</b>	(9,640)	92,312	<b>4,590</b>	87,722	578,313	51 %
5172	Retiree Healthcare	372,588	186,294	<b>191,774</b>	(5,480)	31,049	<b>26,035</b>	5,014	180,814	49 %
5180	Deferred Compensator	108,010	53,380	<b>25,874</b>	27,506	8,897	<b>(2,849)</b>	11,745	82,137	76 %
5195	Unemployment Insuran	34,236	16,355	<b>4,992</b>	11,363	2,726	<b>512</b>	2,214	29,244	85 %
	<b>Total Payroll Expenses</b>	<b>9,567,740</b>	<b>5,372,734</b>	<b>5,088,476</b>	<b>284,258</b>	<b>667,135</b>	<b>521,436</b>	<b>145,699</b>	<b>4,479,263</b>	<b>47 %</b>

CVMVCD  
Statement of Revenue and Expenditures  
December 31, 2021

	YTD Budget	Current Period	Current Period	Current Period	Annual Budget	Percent Annual			
Annual Budget	YTD Budget	YTD Actual	Variance	Budget	Period Actual	Variance	Variance	Budget	
<b>Administrative Expenses</b>									
525C Tuition Reimbursement	20,000	10,000	480	9,520	1,667	0	1,667	19,520	98 %
530C Employee Incentive	15,500	7,750	3,196	4,554	1,292	0	1,292	12,304	79 %
5301 Employee Support	0	0	533	(533)	0	107	(107)	(533)	0 %
5302 Wellness	5,600	2,800	570	2,230	467	0	467	5,030	90 %
5305 Employee Assistance Program	3,200	1,600	1,278	322	267	0	267	1,922	60 %
600C Property & Liability Insurance	156,406	68,203	82,803	(14,600)	(5,300)	(4,569)	(731)	73,603	47 %
6001 Workers' Compensation Insurance	181,607	53,303	(15,892)	69,196	(53,616)	(122,617)	69,001	197,499	109 %
605C Dues & Memberships	42,816	24,685	21,060	3,626	2,774	0	2,774	21,756	51 %
606C Reproduction & Printing	7,950	3,975	1,910	2,065	246	126	120	6,040	76 %
6065 Recruitment/Advertising	7,500	3,750	2,512	1,238	625	63	562	4,988	67 %
607C Office Supplies	17,111	8,555	3,996	4,559	1,426	102	1,324	13,115	77 %
6075 Postage	5,750	2,875	381	2,494	479	0	479	5,369	93 %
608C Computer & Network Systems	8,199	4,100	1,150	2,949	683	0	683	7,049	86 %
6085 Bank Service Charges	200	100	139	(39)	17	15	2	61	31 %
609C Local Agency Formation Comm.	2,400	2,400	2,243	157	0	0	0	157	7 %
6095 Professional Fees	192,000	91,000	65,877	25,123	6,750	4,638	2,112	126,123	66 %
610C Attorney Fees	68,000	34,000	23,118	10,882	5,667	4,000	1,667	44,882	66 %
6105 Legal Services / Filing Fees	1,000	500	0	500	83	0	83	1,000	100 %
6106 HR Risk Management	6,000	3,000	1,500	1,500	500	0	500	4,500	75 %
611C Conference Expense	44,400	12,900	1,837	11,063	2,283	0	2,283	42,563	96 %
6115 In-Lieu	13,200	6,600	6,000	600	1,100	1,200	(100)	7,200	55 %
612C Trustee Support	7,600	3,800	694	3,106	633	0	633	6,906	91 %
620C Meetings Expense	4,890	2,445	487	1,958	407	0	407	4,403	90 %
621C Promotion & Education	5,000	2,500	1,072	1,428	0	0	0	3,928	79 %
622C Public Outreach Advertising	46,000	23,000	18,695	4,305	0	1,410	(1,410)	27,305	59 %
650C Benefit Assessment Expenses	86,000	14,333	13,778	556	0	0	0	72,222	84 %
<b>Total Administrative Expenses</b>	<b>948,329</b>	<b>388,175</b>	<b>239,418</b>	<b>148,757</b>	<b>(31,551)</b>	<b>(115,525)</b>	<b>83,975</b>	<b>708,911</b>	<b>75 %</b>
<b>Utilities</b>									
640C Utilities	106,000	53,000	35,571	17,429	8,833	0	8,833	70,429	66 %
641C Telecommunications	1,824	912	688	224	152	0	152	1,136	62 %
<b>Total Utilities</b>	<b>107,824</b>	<b>53,912</b>	<b>36,259</b>	<b>17,653</b>	<b>8,985</b>	<b>0</b>	<b>8,985</b>	<b>71,565</b>	<b>66 %</b>

CVMVCD  
Statement of Revenue and Expenditures  
December 31, 2021

		YTD	Current		Current	Current	Annual	Percent		
		Budget	Period		Period	Variance	Budget	Annual		
		Annual Budget	YTD Budget	YTD Actual	Variance	Budget	Period Actual	Variance	Budget	
<b>Operating</b>										
7000	Uniform Expense	44,727	22,756	<b>22,367</b>	389	3,608	<b>3,794</b>	(186)	22,360	50 %
7050	Safety Expense	32,375	16,188	<b>11,727</b>	4,461	2,669	<b>465</b>	2,204	20,648	64 %
7100	Physican Fees	5,000	2,500	<b>2,095</b>	405	417	<b>110</b>	307	2,905	58 %
7150	IT Communications	56,860	28,430	<b>19,258</b>	9,172	4,738	<b>0</b>	4,738	37,602	66 %
7200	Household Supplies	3,000	1,500	<b>1,887</b>	(387)	250	<b>0</b>	250	1,113	37 %
7300	Repair & Maintenance	42,000	21,000	<b>26,368</b>	(5,368)	3,500	<b>436</b>	3,064	15,632	37 %
7310	Maintenance & Calibrat	6,170	0	<b>0</b>	0	0	<b>0</b>	0	6,170	100 %
7350	Permits, Licenses & Fee	8,273	4,520	<b>5,978</b>	(1,459)	762	<b>0</b>	762	2,295	28 %
7360	Software Licensing	22,305	2,255	<b>0</b>	2,255	0	<b>0</b>	0	22,305	100 %
7400	Vehicle Parts & Supplie	44,720	22,360	<b>18,960</b>	3,400	3,727	<b>2,155</b>	1,572	25,760	58 %
7420	Offsite Vehicle Maint &	17,343	8,671	<b>1,628</b>	7,043	1,445	<b>233</b>	1,212	15,715	91 %
7450	Equipment Parts & Sup	28,620	17,170	<b>8,215</b>	8,955	2,225	<b>174</b>	2,051	20,405	71 %
7500	Small Tools Furniture &	4,400	2,200	<b>884</b>	1,316	367	<b>0</b>	367	3,516	80 %
7550	Lab Supplies & Expense	36,700	19,050	<b>9,301</b>	9,749	2,258	<b>299</b>	1,959	27,399	75 %
7570	Aerial Pool Surveillance	26,000	0	<b>0</b>	0	0	<b>0</b>	0	26,000	100 %
7575	Surveillance	60,360	33,705	<b>32,577</b>	1,128	1,759	<b>0</b>	1,759	27,783	46 %
7600	Staff Training	85,824	41,562	<b>12,704</b>	28,858	5,685	<b>846</b>	4,839	73,120	85 %
7650	Equipment Rental	1,000	500	<b>219</b>	281	83	<b>0</b>	83	781	78 %
7675	Contract Services	109,720	55,200	<b>55,487</b>	(287)	10,908	<b>9,185</b>	1,723	54,233	49 %
7680	Cloud Computing Servis	101,370	42,522	<b>26,901</b>	15,621	1,334	<b>2,306</b>	(972)	74,469	73 %
7700	Motor Fuel & Oils	80,000	40,000	<b>59,746</b>	(19,746)	6,667	<b>12,489</b>	(5,822)	20,254	25 %
7750	Field Supplies	14,600	7,300	<b>2,003</b>	5,297	1,217	<b>0</b>	1,217	12,597	86 %
7800	Control Products	711,280	488,190	<b>326,519</b>	161,671	37,182	<b>0</b>	37,182	384,761	54 %
7850	Aerial Applications	209,213	104,606	<b>61,137</b>	43,470	17,434	<b>0</b>	17,434	148,076	71 %
7860	Unmanned Aircraft App	40,000	20,000	<b>0</b>	20,000	3,333	<b>0</b>	3,333	40,000	100 %
8415	Capital Outlay	46,343	30,071	<b>21,965</b>	8,107	2,712	<b>9,875</b>	(7,164)	24,378	53 %
8510	Research Projects	150,000	119,266	<b>87,173</b>	32,093	14,523	<b>14,529</b>	(6)	94,920	52 %
9000	Contingency Expense	109,750	54,875	<b>0</b>	54,875	9,146	<b>0</b>	9,146	109,750	100 %
<b>Total Operating</b>		2,097,953	1,206,398	<b>815,100</b>	391,298	137,950	<b>56,899</b>	81,051	1,314,946	62 %
<b>Contribution to Capital Reserves</b>										
	890C Transfer to other funds	481,300	240,650	<b>240,650</b>	0	40,108	<b>40,108</b>	0	240,650	50 %
<b>Total Contribution to Capital Reserves</b>		481,300	240,650	<b>240,650</b>	0	40,108	<b>40,108</b>	0	240,650	50 %

CVMVCD  
Statement of Revenue and Expenditures  
December 31, 2021

	Annual Budget	YTD Budget	YTD Actual	YTD Budget Variance	Current Period Budget	Current Period Actual	Current Period Variance	Annual Budget Variance	Percent Annual Budget
<b>Total Expenditures</b>	13,203,146	7,261,870	<b>6,419,904</b>	841,966	822,628	<b>502,918</b>	319,710	6,815,335	51 %
<b>Net revenue over/(under) expenditures</b>	<b>(1,000,000)</b>	<b>(3,128,598)</b>	<b>(1,961,752)</b>	1,166,847	3,111,751	<b>3,771,609</b>			

CVMVCD  
Balance Sheet  
As of 12/31/2021

		Current Year
Assets		
Cash and Investments		
1000	Cash - Investments	13,006,580.10
1012	Cash - Clearing Account	150.00
1016	Petty Cash	500.00
1017	Petty Cash Checking	1,500.00
1035	CB&T General Checking	4,399.77
1036	CB&T Payroll Checking	152,458.95
	Total Cash and Investments	13,165,588.82
Current Assets		
1080	Interest Receivable	2,200.63
1085	Inventory	633,981.76
1168	Prepaid Insurance	234,911.99
1169	Deposits	884,862.00
	Total Current Assets	1,755,956.38
Fixed Assets		
1170	Construction in Progress	4,925.00
1300	Equipment/Vehicles	2,055,955.14
1310	Computer Equipment	488,713.68
1311	GIS Computer Systems	301,597.91
1320	Office Furniture & Equipment	1,300,099.10
1330	Land	417,873.30
1335	Oleander Building	5,665,861.83
1336	Signage	23,651.39
1340	Structures & Improvements	3,026,125.52
1341	Bio Control Building	6,849,603.74
1342	Bio Control Equip/Furn	43,986.77
1399	Accumulated Depreciation	(10,545,798.38)
	Total Fixed Assets	9,632,595.00
Other Assets		
1520	Resources to Be Provided	3,514,102.32

**CVMVCD**  
Balance Sheet  
As of 12/31/2021

		<b>Current Year</b>
1525	Deferred Outflows of Resources	1,068,928.00
1530	Deferred Outflows of Resources - OPEB	412,483.00
1900	Due to/from	0.12
	Total Other Assets	4,995,513.44
	Total Assets	29,549,653.64
Liabilities		
Short-term Liabilities		
Accounts Payable		
2015	Credit Card Payable	(19,109.60)
2020	Accounts Payable	182,822.88
2030	Accrued Payroll	0.03
2040	Payroll Taxes Payable	84.54
2175	Claims/Judgements Payable	(426.30)
2185	Employee Dues	426.30
	Total Accounts Payable	163,797.85
	Total Short-term Liabilities	163,797.85
Long-term Liabilities		
2100	Pollution Remediation Obligation	2,100,000.00
2200	Net Pension Liability	1,612,919.00
2210	Deferred Inflows of Resources	85,158.00
2230	Deferred Inflows - OPEB	16,118.00
2300	Net OPEB Liability	453,746.00
2500	Compensated Absences Payable	794,601.32
	Total Long-term Liabilities	5,062,542.32
	Total Liabilities	5,226,340.17
Fund Balance		
Non Spendable Fund Balance		
3920	Investment in Fixed Assets	10,698,793.35
3945	Reserve for Prepaids & Deposit	1,041,259.68



CVMVCD  
Balance Sheet  
As of 12/31/2021

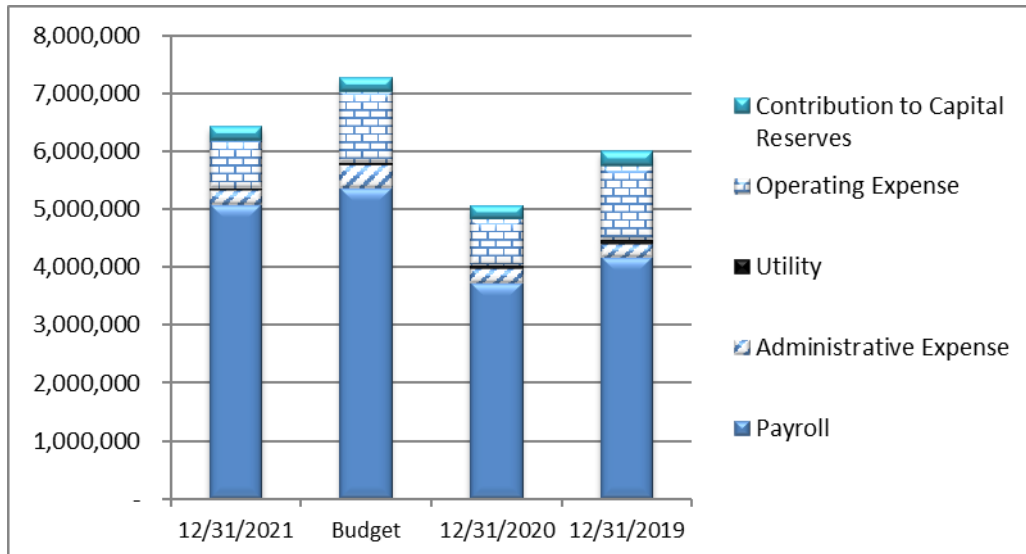
		Current Year
3960	Reserve for Inventory	459,270.86
	Total Non Spendable Fund Balance	12,199,323.89
	Committed Fund Balance	
3965	Public Health Emergency	4,309,674.00
	Total Committed Fund Balance	4,309,674.00
	Assigned Fund Balance	
3910	Reserve for Operations	4,800,000.00
3925	Reserve for Future Healthcare Liabilities	547,704.00
3955	Thermal Remediation Fund	463,724.00
3970	Reserve for IT Replacement	277,991.00
3971	Reserve for Vehicle Replacement	344,376.00
	Total Assigned Fund Balance	6,433,795.00
	Unassigned Fund Balance	
3900	Fund Equity	1,342,365.90
3999	P&L Summary	1,899,554.34
	Total Unassigned Fund Balance	3,241,920.24
	Current YTD Net Income	(1,861,399.66)
	Total Current YTD Net Income	(1,861,399.66)
	Total Fund Balance	24,323,313.47
	Total Liabilities and Net Assets	29,549,653.64

## FINANCE

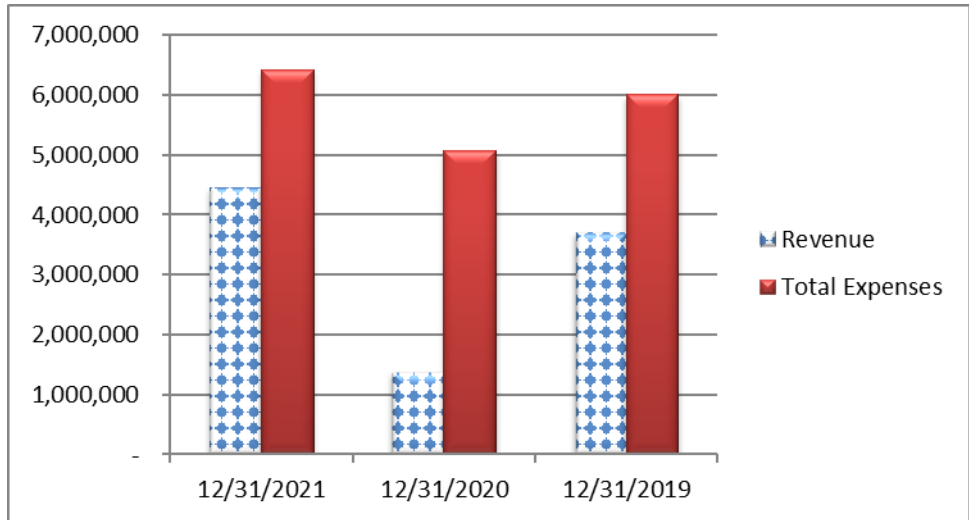
The financial reports show the preliminary balance sheet, receipts, and revenue and expenditure reports for the month ending December 31, 2021. The revenue and expenditure report shows that the operating budget expenditure for July 1, 2021, to December 31, 2021, is \$6,419,903; total revenue is \$4,458,152 resulting in excess revenue over (under) expenditure for the year to December 31, 2021, of (\$1,961,751).

### THREE YEAR FINANCIALS

	Actual	Budget	Actual	Actual
	12/31/2021	Budget	12/31/2020	12/31/2019
<b>Revenue</b>	4,458,152	<b>4,133,271</b>	1,381,036	3,710,017
<b>Expenses</b>				
Payroll	5,088,476	<b>5,372,734</b>	3,718,468	4,178,695
Administrative Expen	239,418	<b>388,175</b>	252,066	221,658
Utility	36,259	<b>53,912</b>	58,159	70,224
Operating Expense	815,100	<b>1,206,398</b>	797,668	1,277,033
Contribution to Capital R	240,650	<b>240,650</b>	236,741	251,774
<b>Total Expenses</b>	6,419,903	7,261,869	5,063,102	5,999,384
<b>Profit (Loss)</b>	(1,961,751)	(3,128,598)	(3,682,066)	(2,289,367)



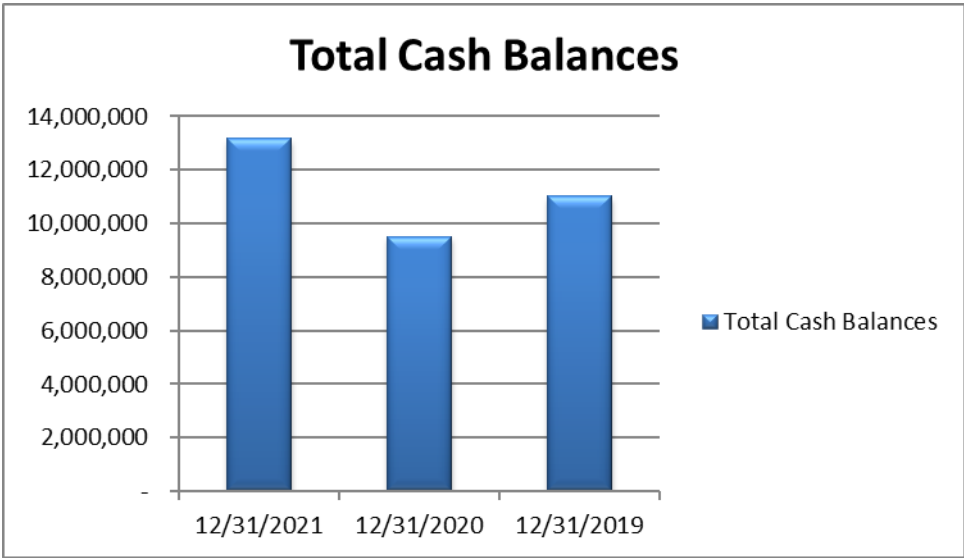
**Figure 1 - Three Year Expenditure**



**Figure 2 - Three Year Revenue & Expenditure**

**THREE YEAR CASH BALANCE**

Cash Balances	12/31/2021	12/31/2020	12/31/2019
Investment Balance	13,006,580	9,368,024	10,876,121
Checking Accounting	4,400	6,518	28,334
Payroll Account	152,609	132,634	118,508
Petty Cash	2,000	2,000	2,000
<b>Total Cash Balances</b>	<b>13,165,589</b>	<b>9,509,175</b>	<b>11,024,963</b>



**Figure 3 - Cash Balances**

**DISTRICT INVESTMENT PORTFOLIO 12/31/2021**

The District’s investment fund balance for the period ending December 31, 2021 is \$13,006,580. The portfolio composition is shown in the pie chart. Local Agency Investment Fund (LAIF) accounts for 22% of the District’s investments; the Riverside County Pooled Investment Fund is

49% of the total. The LAIF yield for the end of April was 0.21% and the Riverside County Pooled Investment Fund was 0.33% this gives an overall weighted yield for District investments of 0.35%.

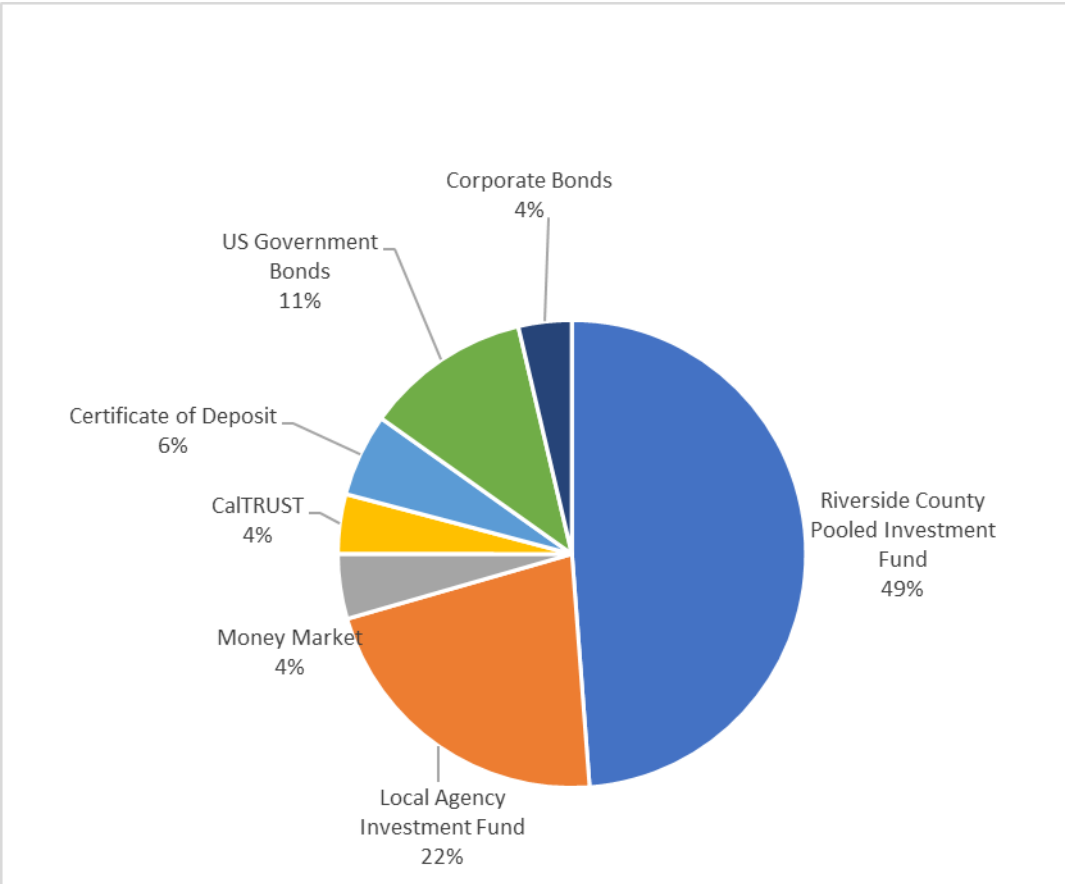


Figure 4 - Investment Portfolio 12/31/21

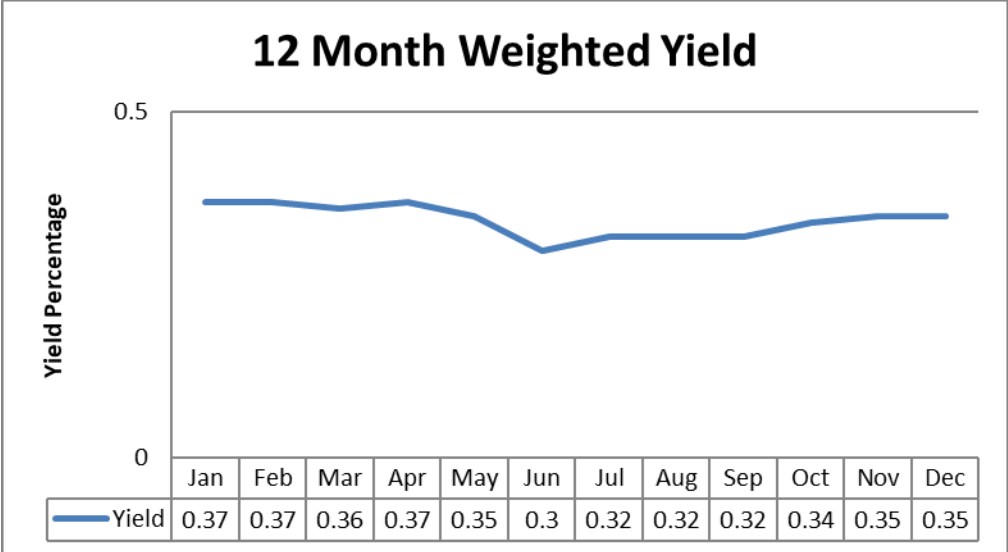
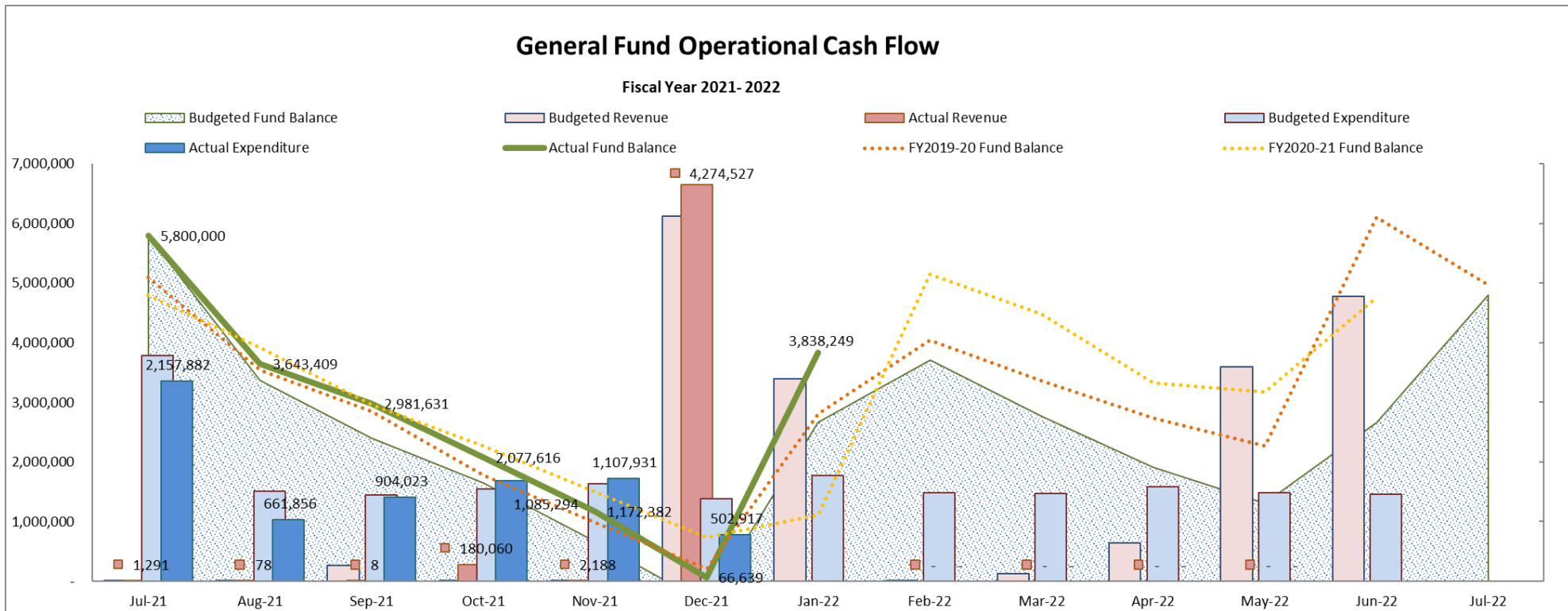


Figure 5 - District Investments Weighted Yield



The **General Fund Operational Cash Flow** graph outlines the District’s working capital for the fiscal year July 1, 2021, to June 30, 2022. The beginning fund balance is \$5.8 million and the ending fund balance is \$4.8 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 \$1.3 million for CalPERS unfunded liability. 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**. FY2019-2020 Fund Balance is the orange dash line. FY2020-2021 Fund Balance is the yellow dash line.

The graph shows for June 1 the \$5.8 million **Fund Balance** plus total Revenue for July 1 to December 31, 2021, of \$4,458,152 minus total Expenses of \$6,419,904 is \$3,838,249. Revenue shows an almost \$300,000 favorable variance in Pass Thru revenue, December receipt for this revenue is \$3million, the property tax portion of this receipt is 5% more than prior year, while the residual is 20% higher than prior year. Payroll favorable variance of \$284,258 is due to timing, payroll expenses are approximately a month behind. Operating expenses have a favorable variance of \$391,298, expenses for Aerial Applications, Unmanned Aircraft application and Contingency budget are variable depending on mosquito abundance and virus prevalence. Other operating expenses such as Staff Training are to do with timing for example expense occurs later in year but expense budgeted annually rather than a specific month. Calcard Statement for December totaling approximately \$140,000 is not reflected as of date report printed. Overall the District is showing a favorable variance of \$1.2 million mainly due to timing of expenses. For planning purposes, the District is under budget. As long as the green line stays out of the shaded area the District is within budget, as of December 31, 2021, the line is outside the shaded area.

**Board Business Status Log 2022**

<b>Board Action Item / Description</b>		<b>Month</b>	<b>Status</b>	<b>Comments</b>
<b>Agreements</b>				
	Approval to enter into an agreement for a Supplemental Mitigated Negative Declaration for CEQA compliance in an amount not to exceed \$35,000 from fund 6095.01.400.000 Budgeted; Funds Available	January	In Process	
<b>Resolutions And Proclamations</b>				
	Approval of Resolution 2022-01 authorizing remote teleconferencing meetings for the period January 11, 2022 - February 9, 2022	January	In Process	
<b>Other</b>				
	Yearly Training for Trustees: Ethics and Sexual Harassment Prevention	January-February	In Process	



# **CORRESPONDENCE**

## Melissa Tallion

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**From:** Sarah Crenshaw  
**Sent:** Monday, November 8, 2021 1:20 PM  
**To:** District Wide Group  
**Subject:** Compliment Call

Hi everyone,

I just spoke to a resident who called to say what a great experience she had with her service request. She said that Carlos did a great job and was very thorough with the mosquito inspection/treatment. They were able to locate the mosquito source, so she wanted to say thank you to Carlos and the District.

Great job Carlos!



Sarah Crenshaw  
Administrative Clerk  
Operations Department  
[www.cvmosquito.org](http://www.cvmosquito.org)  
Coachella Valley MVCD



## Melissa Tallion

---

**From:** Erica Frost  
**Sent:** Tuesday, November 9, 2021 11:14 AM  
**To:** District Wide Group  
**Subject:** Compliment

Caller left message stated Josie was helpful, educational, and friendly.

Thanks for the great work!



Thank you,  
**Erica V. Frost**  
Administrative Clerk  
Office (760) 342-8287  
Fax (760) 775- 0196  
[www.cvmosquito.org](http://www.cvmosquito.org)  
**Coachella Valley MVCD**

## Melissa Tallion

---

**From:** Roberta Dieckmann  
**Sent:** Tuesday, November 9, 2021 12:02 PM  
**To:** District Wide Group  
**Subject:** Compliment Josie

Hi all,

I saw this on the La Quinta Cove Next Door feed. Great job Josie!! Keep up the great work.

Thank-you,  
Bobbye



### La Quinta NEWS

Dee Smith · 8h ·

I really want to be able to enjoy my yard and the incredible views we have here in the cove. We had Josie from Vector Control come out to our home for mosquitoes and any noticeable water. She is so informative and let me know encourage my La Quinta Cove neighbors to refer to them. Like the saying goes "It takes a village" all do our part to help keep the mosquito problem down.



**Dee Smith** Author

She didn't find any in our yard but came to tell us she did find a source in another yard close by and corrected the problem.



**Dee Smith**

[Jessica May](#) Please call and ask for Josie she is so helpful. She told me she works mostly in the cove area.

2h Like Reply

1



**Jessica May**

[Dee Smith](#) Will do, thanks so much!



## Melissa Tallion

---

**From:** Erica Frost  
**Sent:** Friday, November 12, 2021 4:03 PM  
**To:** District Wide Group  
**Subject:** Compliment

Received an email about Aaron!! Way to go keep up the good work!!

Hello Diana & Erica,

We wanted to pass on that Aaron just completed our mosquito inspection and he is fabulous! He did a great job educating us and he really cared about what he was doing. Thank you for sending out such a professional, kind and intelligent inspector.

Have a great weekend,

Jennifer Johnson



Thank you,  
**Erica V. Frost**  
Administrative Clerk  
Office (760) 342-8287  
Fax (760) 775- 0196  
[www.cvmosquito.org](http://www.cvmosquito.org)  
**Coachella Valley MVCD**



## Melissa Tallion

---

**From:** Diana Reyes  
**Sent:** Monday, November 15, 2021 2:55 PM  
**To:** District Wide Group  
**Subject:** Compliment Call

Hello,

A resident from Sun City PD, Sheri Share called in to give compliments, first to the technician who went out today, Chris Lawrence, she said he showed up at the time promised, was very pleasant and explained everything clearly and did a great job and she enjoyed his visit.

Second, she also gave thanks to the call center for being so nice, funny, and pleasant when she called the first time and spoke with Erica and while speaking with me today, she appreciates all the positive experiences she has had so far with the district.

Great job to us all. 😊

Keep up the Great Service and Positive Impact Chris and Erica!!



**Diana Reyes**

Administration Clerk  
Call Center/Public Outreach  
(760) 342-8287 Ext. 325

[www.cvmosquito.org](http://www.cvmosquito.org)

**Coachella Valley MVCD**



## Melissa Tallion

---

**From:** Diane Greeman  
**Sent:** Thursday, November 18, 2021 12:25 PM  
**To:** District Wide Group  
**Subject:** Compliment

Mr. Jack Riska called to report on an “Excellent technician that performed an inspection and treated. He is a great person to work with-he’s a keeper”. That technician is Carlos Herrera!  
Love these calls - Good work Carlos!!



**Diane Greeman**  
Administrative Clerk  
Office (760) 342-8287  
[www.cvmosquito.org](http://www.cvmosquito.org)  
**Coachella Valley MVCD**

## Melissa Tallion

---

**From:** Diane Greeman  
**Sent:** Thursday, November 18, 2021 1:52 PM  
**To:** District Wide Group  
**Subject:** Message

GREAT DAY – I just spoke with another satisfied resident: Robert called to compliment Jess Lucia. This gentleman said he worked for 30 years in a “customer service” business and he just experienced a most professional and excellent customer service from Jess. He explained in detail his treatment and left reading material. Another super District technician – great work Jess!!



**Diane Greeman**  
Administrative Clerk  
Office (760) 342-8287  
[www.cvmosquito.org](http://www.cvmosquito.org)  
**Coachella Valley MVCD**

## Melissa Tallion

---

**From:** Diane Greeman  
**Sent:** Tuesday, November 23, 2021 3:05 PM  
**To:** District Wide Group  
**Subject:** Compliment

Hello all,

Judy Price from DHS called to express her thanks and gratitude to Technician Rene. He was there last week and had to share the following: "This technician knows his stuff, he checked everything not only on my property but in my neighborhood and found a breeding source and treated. I have not had a mosquito issue since. Rene is very knowledgeable and exemplifies what customer service truly means".

She went on and told me our District should be very proud of our staff – from the phone service when making an appointment till the service is completed.

WOW!! Great job everyone and until the next compliment comes in, - - - - - have a safe and wonderful Thanksgiving Holiday weekend!



**Diane Greeman**  
Administrative Clerk  
Office (760) 342-8287  
[www.cvmosquito.org](http://www.cvmosquito.org)  
**Coachella Valley MVCD**



## Melissa Tallion

---

**From:** Diana Reyes  
**Sent:** Friday, December 3, 2021 9:54 AM  
**To:** District Wide Group  
**Subject:** Compliment Call

Good morning,

I received a call from Elizabeth, a resident in Sun City PD. She wanted to give **Jess Lucia** a big "Thank you" for his RIFA services today.

Jess gave the best job they have ever had on their property, he explained things very well and even gave some advice on rodent maintenance.

She felt he did such a Great Job and was extremely happy with the services.

Awesome job, Jess!!! 😊

Continue with your great customer service!

Thank you,



**Diana Reyes**

Administration Clerk  
Call Center/Public Outreach  
(760) 342-8287 Ext. 325

[www.cvmosquito.org](http://www.cvmosquito.org)

**Coachella Valley MVCD**



## Melissa Tallion

---

**From:** Diane Greeman  
**Sent:** Wednesday, December 15, 2021 2:40 PM  
**To:** District Wide Group  
**Subject:** Compliment

I just received a call from homeowner in Palm Desert – Bill Biegel. He wanted to thank the District for sending someone with a lot of patience, very knowledgeable, and willing to educate him. A true gentleman. That technician is Rafael Solorzano.

Good work Rafael – you make us all proud!



**Diane Greeman**  
Administrative Clerk  
Office (760) 342-8287  
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**Coachella Valley MVCD**

## Melissa Tallion

---

**From:** Erica Frost  
**Sent:** Monday, December 20, 2021 12:18 PM  
**To:** District Wide Group  
**Subject:** Compliment

Sandy Flyer from Indio called to schedule a RIFA appointment and said that our technician Victor was out that way and requested to check her back yard for water and was so helpful and knowledgeable and she appreciated his work!!! Great job Victor!



Thank you,  
**Erica V. Frost**  
Administrative Clerk  
Office (760) 342-8287  
Fax (760) 775- 0196  
[www.cvmosquito.org](http://www.cvmosquito.org)  
**Coachella Valley MVCD**

## Melissa Tallion

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**From:** Erica Frost  
**Sent:** Thursday, December 23, 2021 12:38 PM  
**To:** District Wide Group  
**Subject:** Compliment

I received a call from Rosemarie Fredericks who wanted to let us know that Marina Espejo did a great job. She said "Marina was very informative, thorough, answered all questions courteously. She is very kind and promised to follow up. Best of all Marina found the problem!! "

KOODOS MARINA!!! Keep up the great work!!



Thank you,

**Erica V. Frost**

Administrative Clerk

Office (760) 342-8287

Fax (760) 775- 0196

[www.cvmosquito.org](http://www.cvmosquito.org)

**Coachella Valley MVCD**





**Coachella Valley Mosquito and  
Vector Control District**

**January 11, 2022**

**Staff Report**

**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 2021 – **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 2020 Meeting (with one exception noted below).

As described in District’s Research Funding Policy and Procedure, researchers are to provide semiannual progress reports. Due to COVID-19, the researchers have adjusted their work. Two researchers from 2020 have not been able to complete their funded work as they wait for their institutions to re-open. 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)**
  - 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, Mathew J. Ward, Krishna Vemuri

### **Narrative**

West Nile Virus (WNV) is the leading domestically acquired arbovirus, and ecologically informed forecast applications hold promise to help improve management decisions for abatement and public health. 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 spillover event. We hypothesize that integrating different spatial scale environmental data from 13 km<sup>2</sup> grids down to the micro-ecology at the watershed level (i.e., hydrology and temperature indicators) will provide new insight into vector 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 begun generating statistical models.

**Aim 1.** 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.

**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.

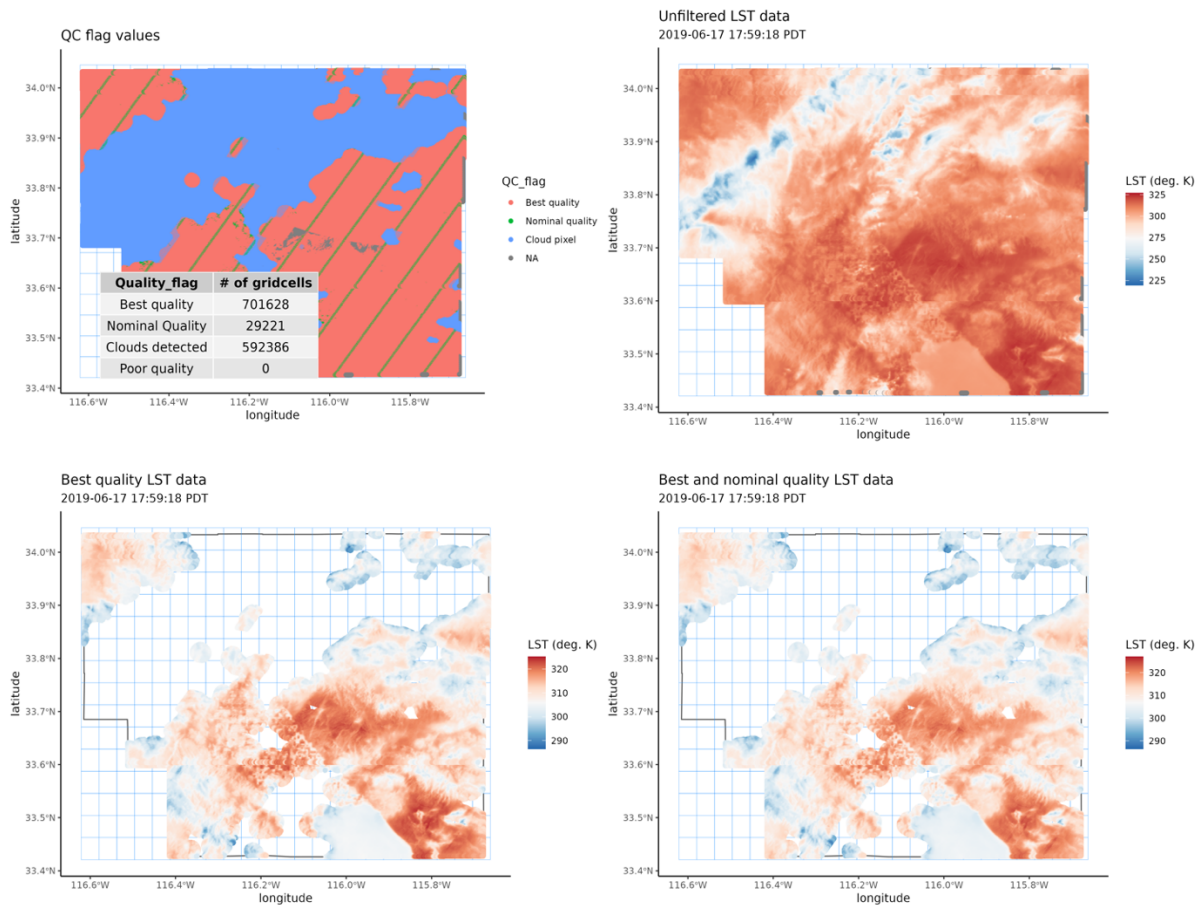
### **Status**

**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 as described below, Table 1. The three major data sets are ECOSTRESS (70m resolution), GRIDMET 4km resolution and NLDAS (13km resolutions).

**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 18<sup>th</sup>, 2018 and May 31<sup>st</sup>, 2021. We obtained approximately 13,000 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 564 overpasses over Coachella Valley, CA.

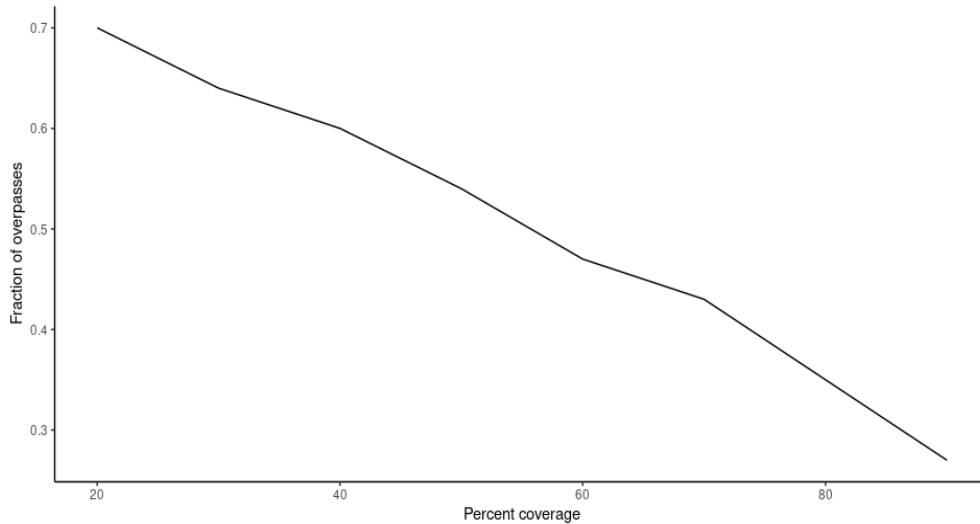
We constructed a standard grid for Coachella Valley, CA. We observed that for each ECOSTRESS overpass, a raster file with CloudMask data was always available, as opposed to LST raster files, which were only available for some overpasses. For Coachella Valley, CA, we identified the overpass date and time with the CloudMask file which had the maximum coverage over our area of interest and set the centroids of the pixels of this CloudMask file as the standard grid. Thus, for each area of interest, we were able to obtain a standard grid which had the same spatial resolution as the ECOSTRESS raster files. The standard grid for Coachella Valley had 1,329,503 pixels. We extracted data from the remaining raster files with this standard grid as reference. The data for a given ECOSTRESS product from all overpasses was saved as a CSV flat file and an FST file. We focused on LST and ET data as these are the sources of the environmental state variables for our forecasting model. Occasional extreme values for LST were observed on preliminary plotting, suggesting errors in the GeoTIFF files. To minimize these implausible observations, we tested applying various quality control

parameters, including: 1) applying the SDS QC flag for L2 products, 2) selecting for only those pixels which also have an ET value identified, and 3) selecting for pixels with an emissivity value in band 5 greater than or equal to 0.95, which ensured selecting only cloud-free pixels (Figure 1).



**Figure 1.** Spatial variability of data quality.

We found that selecting for the pixels which had a QC flag of “best quality”, or “nominal quality” attached to them eliminated a large proportion of the implausible values of LST that were observed, while also retaining most of the data. For ET, we focused on processing and using the instantaneous ET product, since this also incorporated soil ET and canopy ET observations in any given overpass (Table 1). Additionally, we evaluated the proportion of the region of interest that each filtered figure captured (Figure 2). From the ECOSTRESS mission we can obtain an updated image of the environmental conditions approximately every 10 days.



**Figure 2.** The fraction of overpass observations and the proportion of the observed abatement district that was captured with a best or nominal quality observation.

**Table 1.** ISS overpasses of Coachella Valley, CA between July 18<sup>th</sup>, 2018 and May 31<sup>st</sup>, 2021 containing the ECOSTRESS product of interest.

Product	All Years	2018 - 19	2020	2021 <sup>*</sup>
LST	557	229	210	118
LST Error	564	235	211	118
QC	564	235	211	118
ET	257	110	95	52
Emis. 5	556	228	210	118

\* The values for the Landsat 8 Quality Flags (Landsat8\_QC) for the ECO3ANCQA data product were determined to be invalid starting on August 22, 2021. To ensure the distribution of quality data, all ECOSTRESS Level 3 and 4 data products (ECO3ANCQA, ECO3ETPTJPL, ECO4ESIPTJPL, and ECO4WUE) as of August 22, 2021 to present are currently unavailable and will be reprocessed as soon as the necessary code fix has been implemented.

**Critical Periods of Viral Amplification:** WNV vector population amplification coincides with rising atmospheric temperature and relative humidity. Traps positive for infected vectors in Coachella Valley are traditionally observed from July through September. The critical period of viral amplification has been documented to be early in the season (April – July) where environmental conditions have been correlated with the overall total number of infectious mosquitoes observed for a season. For this reason, we separately examined data availability between the first half of the WNV season, April – July, and second half, July – September, to see if we can identify changes in environmental conditions during the pre-amplification period of WNV for each of the three years of available ECOSTRESS data (Table 2).

**GRIDMET Data & NLDAS Data - Different Spatial Scales:** As secondary data sources, we also downloaded gridMET (METDATA) data and National Land Data Assimilation System phase 2 (NLDAS-2) data from NASA GES DISC. NLDAS-2 is a Land Surface Model dataset, at an hourly timestep and is available at ~13 km resolution. The variables obtained from NLDAS-2 were: Modelled LST, modelled atmospheric temperature, soil

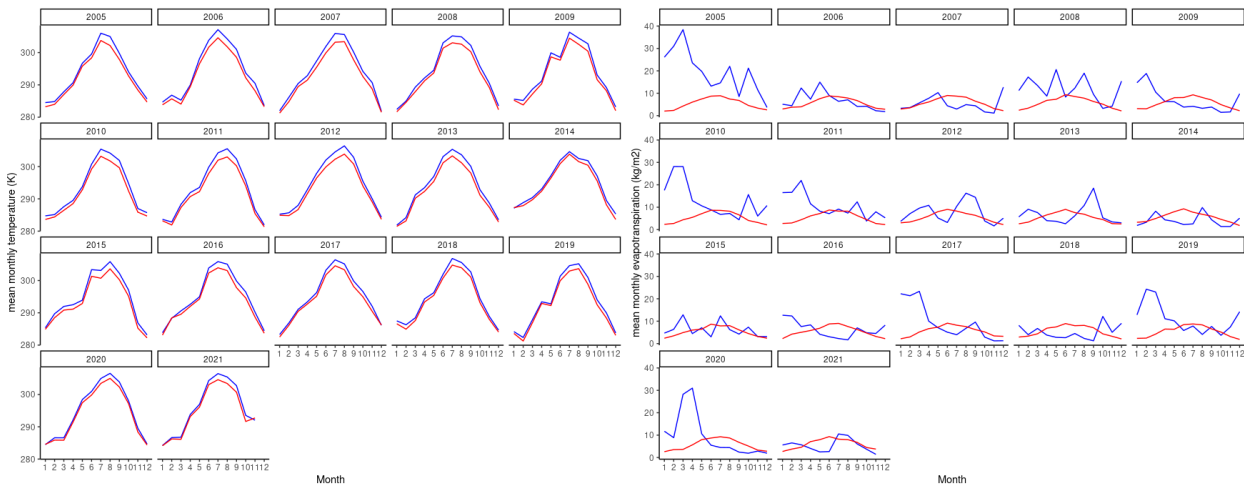


moisture at 10 cm depth, specific humidity, potential evapotranspiration (ET) and hourly precipitation. NLDAS-2 data is available from 1979 onwards. Data from 1980 to 2000 was downloaded to define the climatology of the region; then, 2006 through 2020 was downloaded to look at the current meteorological conditions and vector infection prevalence/population dynamics. GridMET is a high spatial resolution modelled dataset output by the Climatology lab of John Abatzoglou at the University of California, Merced. GridMET assimilates inputs from PRISM and NLDAS-2 outputs using climatological aided interpolation to output data on climatological variables at a spatial resolution of 1/24<sup>th</sup> of a degree (~4KM) and at a temporal resolution of 1 day and data on the following variables was downloaded: daily maximum and minimum temperature, daily precipitation, daily maximum and minimum relative humidity, daily specific humidity and the 5-day Palmer Drought Severity Index. Data for Coachella valley is displayed in Figure 3. Figure 4 shows the spatial location of GridMET and NLDAS across Coachella valley.

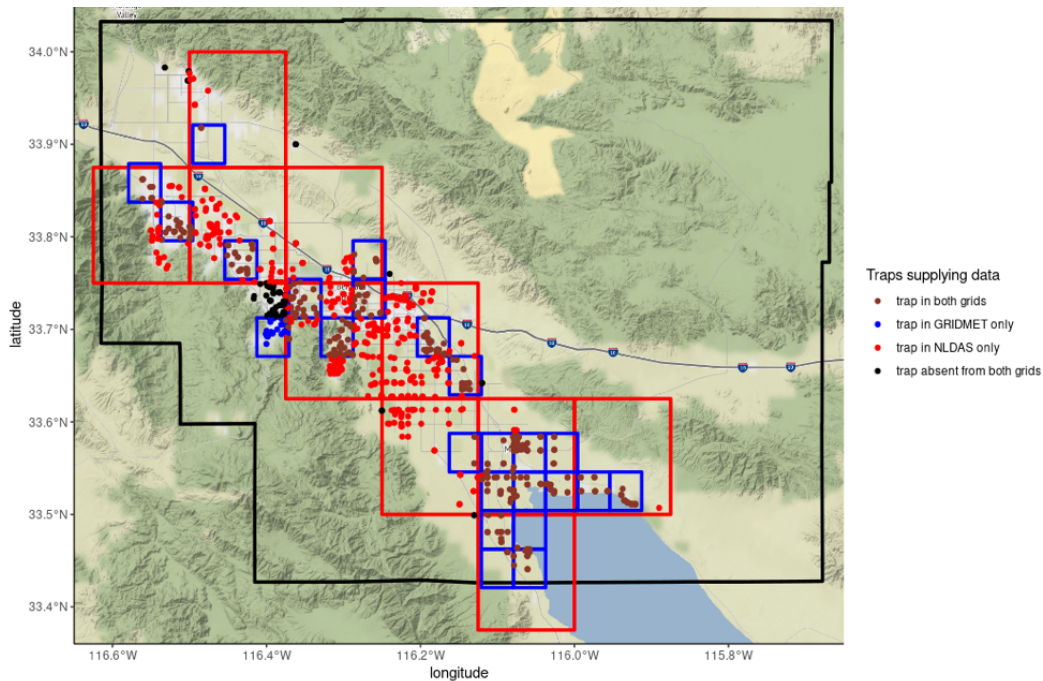
**Table 2.** ECOSTRESS overpasses available in the 1<sup>st</sup> and 2<sup>nd</sup> halves of the mosquito amplification season for Coachella Valley, CA, from 2018 to 2020.

Year	Early season <sup>&amp;</sup>			Late season <sup>@</sup>		
	All LST images	LST images <sup>#</sup>	ET inst	All LST images	LST images <sup>#</sup>	ET inst
2018 <sup>*</sup>	3	3	1	44	44	20
2019 <sup>%</sup>	38	37	19	53	49	18
2020	63	17	33	41	29	22
2021 <sup>^</sup>	51	48	26	-	-	-

<sup>&</sup>(April 1<sup>st</sup> – July 15<sup>th</sup>); <sup>@</sup>(July 16<sup>th</sup> – October 1<sup>st</sup>); <sup>#</sup>QC = Best quality/Nominal quality; <sup>\*</sup>Data in 2018 for the critical period is limited since the ECOSTRESS instrument was launched on June 29, 2018; <sup>%</sup>Data in 2019 is limited due to instrument malfunction between March 15<sup>th</sup> and May 24<sup>th</sup>; <sup>^</sup>Data in 2021 is only up until May 31<sup>st</sup> 2021.



**Figure 3.** Monthly average temperature (left) and evapotranspiration (right) as measured by NLDAS (red) and gridMET (blue), in the Coachella Valley, CA; 2006 - 2021. NLDAS ET is Potential Evapotranspiration and gridMet ET is a measure of Reference Evapotranspiration.



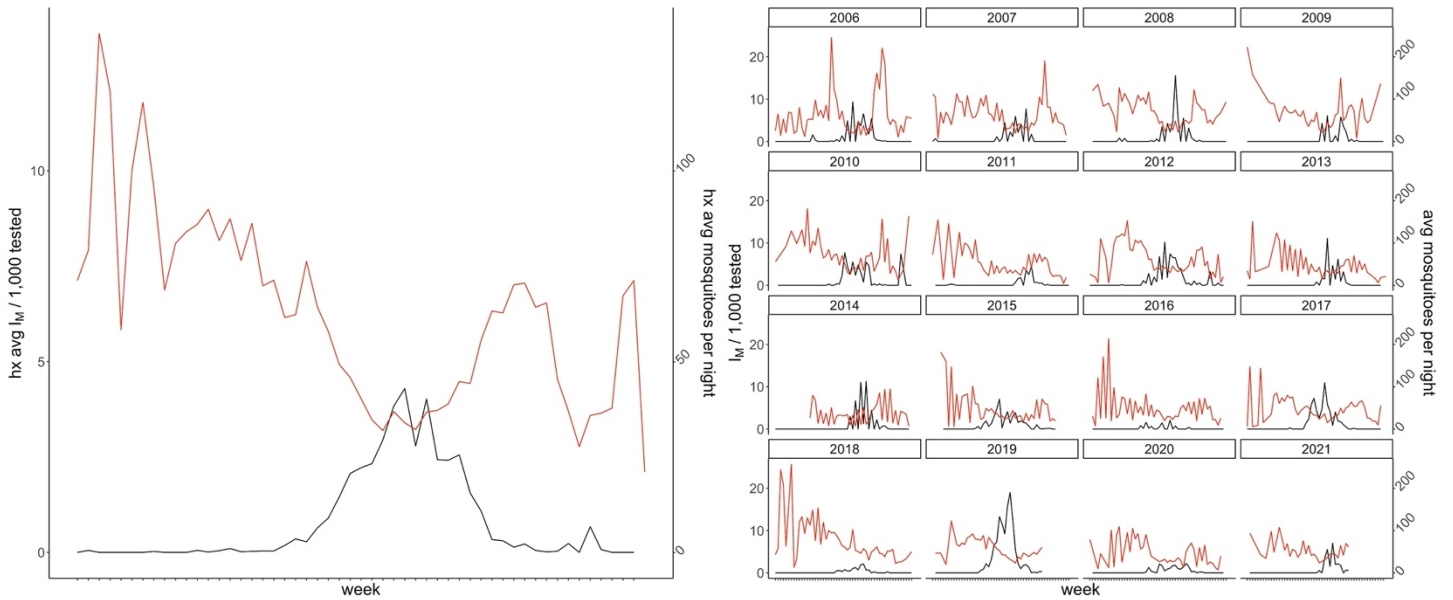
**Figure 4.** CVMVAD trapping locations (dots) overlaid with NLDAS grids (red) and gridMET grids (blue) used in this analysis ( $\geq 500$  mosquitoes per season for  $\geq 10$  years) in the Coachella Valley, CA; 2006 - 2021.

**Trap information from Coachella Valley:** Mosquito abatement districts carried out weekly mosquito surveillance subject to budgetary constraints, the severity of WNV, mosquito nuisance problems, and weather. Coachella Valley Mosquito abatement district has an extensive mosquito monitoring network that records mosquito populations in each trapping region, and other details such as species, number of adults and females, and the viruses these populations carry, which, when combined, provides a detailed picture of the spatial distribution of WNV and the regional vectors. Mosquito viral testing data for WNV is available from 2006 to present. The number of pooled mosquito samples varied by year between 2018-2021, years when ECOSTRESS was active (Table 3 and Figure 5). Before developing a model at the ECOSTRESS spatial scale we evaluated the impact of hydrological and meteorological conditions at the NLDAS (13km<sup>2</sup>) and gridMET (4 km<sup>2</sup>) spatial scale (Figure 4). For our analysis we included grid locations with at least 500 mosquitoes tested in a year and a minimum of 10 years of data of testing. Figure 4 shows which traps were used in which grids, then Figure 6 and 7 show the annual mosquito infection rate. These restrictions were implemented to make sure each estimated observation of the annual mosquito infections was valid.

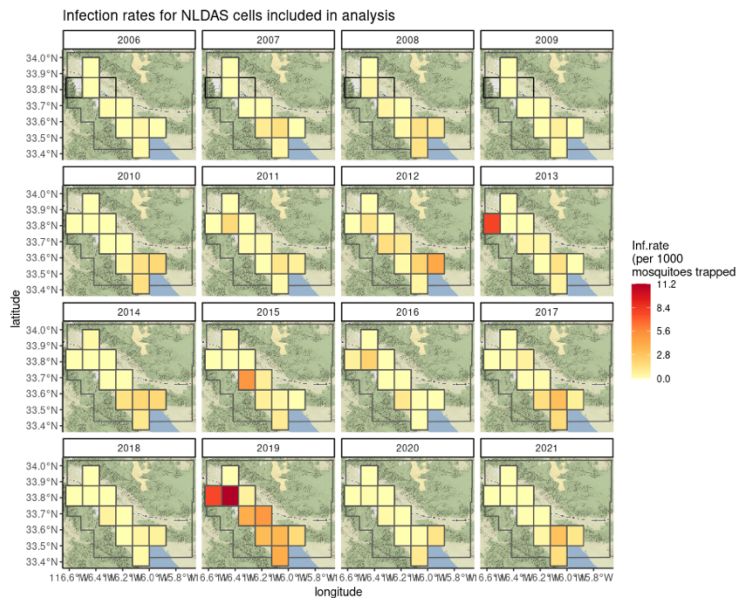
**Table 3.** Mosquito monitoring network for 2018 - 2020 in Coachella Valley, CA.

Year	# Traps	Avg. pools per week
2018	245	150
2019	529	152
2020	356	118
2021	243	137

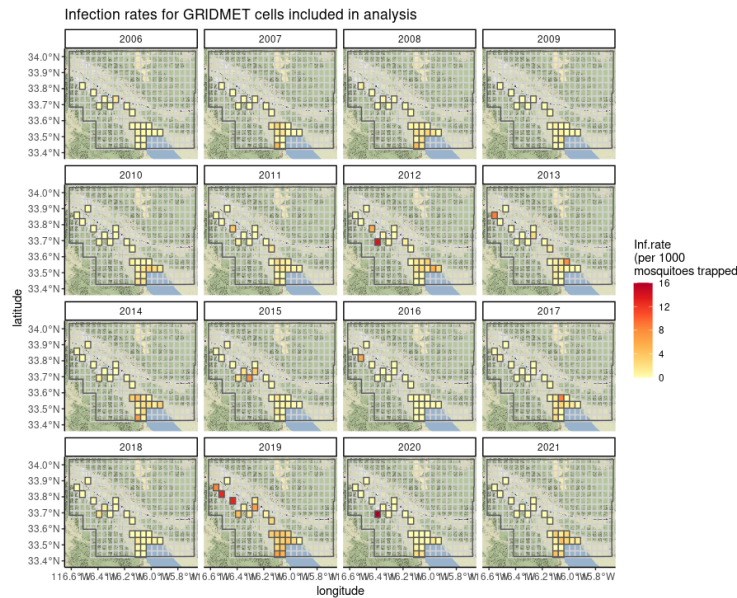
CV Mosquito and Vector Control District, Progress report – Board Meeting, December 2021



**Figure 5.** Weekly infections per 1,000 *Culex* mosquitoes tested (black) and the average number of female *Culex* mosquitoes per trap night per week (red) in the Coachella Valley, CA. Left; weekly mean for years 2006 – 2021. Right; weekly mean by year. *Cx. quinquefasciatus* and *Cx. tarsalis* are combined.



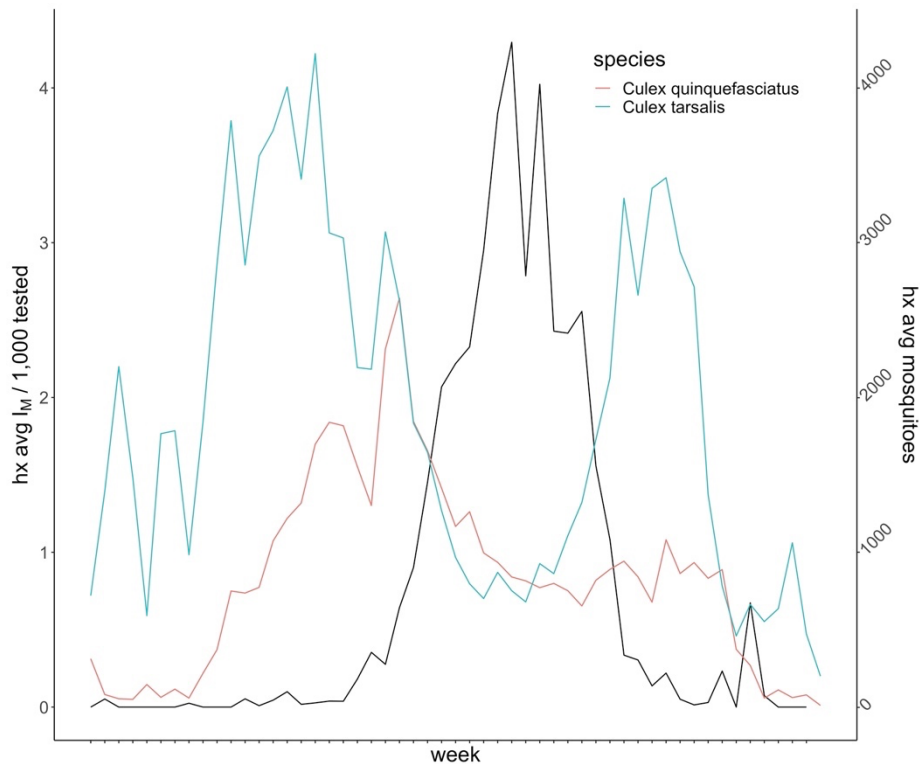
**Figure 6.** Annual WNV infection rate (per 1,000 *Culex* mosquitoes tested) at the NLDAS scale (13 km<sup>2</sup> grid) in the Coachella Valley, CA.



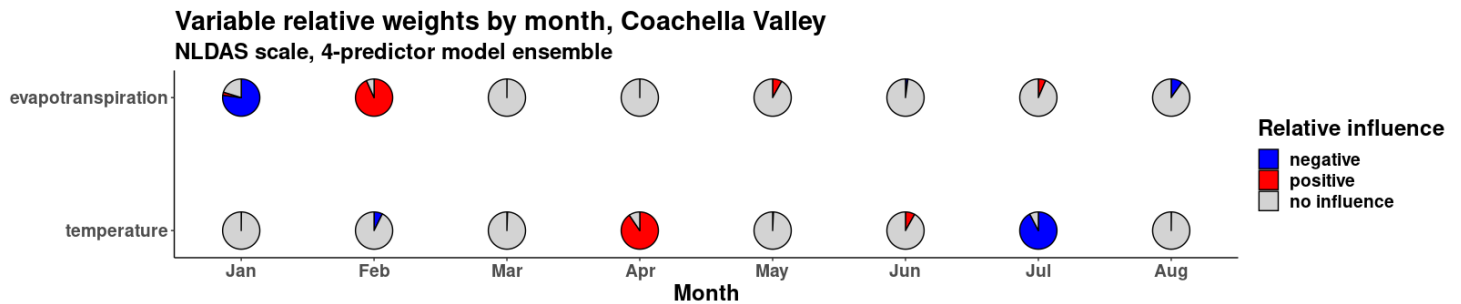
**Figure 7.** Annual WNV infection rate (per 1,000 *Culex* mosquitoes tested) at the GRIDMET scale (4 km<sup>2</sup> grid) in the Coachella Valley, CA.

**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.

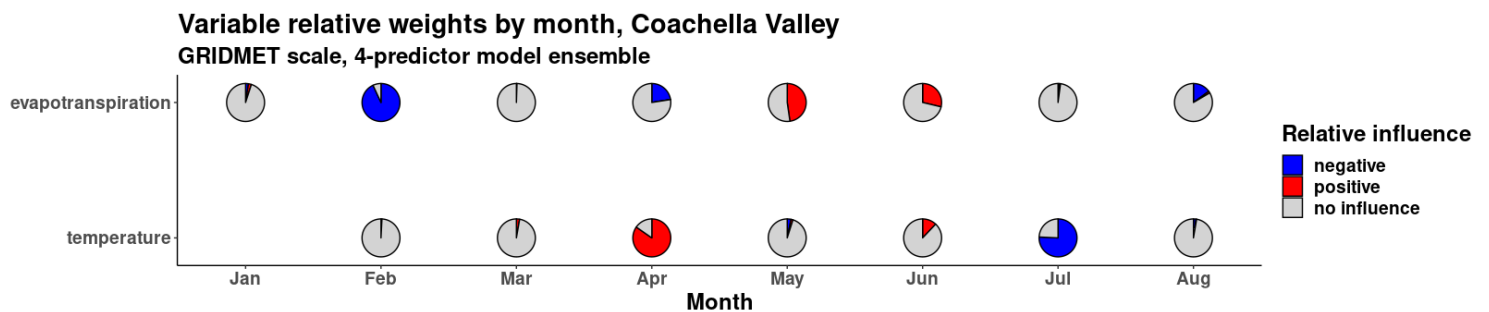
Building on Aim 1, we have generated environmental groupings from a combination of hydrology and meteorological conditions to identify the most relevant combination of environmental conditions for viral amplification. Furthermore, we have developed a robust inference system able to improve our current 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<sup>2</sup> and GRIDMET 4km<sup>2</sup> figures 6 and 7, respectively). Model testing is currently underway using remote sensing variables including surface temperature and evapotranspiration which are from ECOSTRESS platforms (70m resolution) to develop an high resolution risk prediction. We are also comparing these results to more traditional outcomes such as temperature, precipitation, specific humidity, and at larger spatial scales NLDAS (13km<sup>2</sup>) and gridMET (4 km<sup>2</sup>) (Figure 3). *Culex* species are currently aggregated, but we plan to disaggregate between *Cx. quinquefasciatus* and *Cx. tarsalis* for further model testing. Historically, we see *Cx. tarsalis* is of greater abundance than *Cx. quinquefasciatus* Figure 8. We have employed a multi-model averaged predictions 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 9 and 10 show the environmental conditions that are associated with the increased risk of WNV infection rates using different spatially refined environmental indicators. 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 8.** Weekly infections per 1,000 of *Culex* mosquitoes tested (black) and the number of female *Culex quinquefasciatus* (red) and *Culex tarsalis* (green) mosquitoes trapped in the Coachella Valley, CA; 2006 - 2021. *Cx. quinquefasciatus* and *Cx. tarsalis* are combined for the infection rate (black).



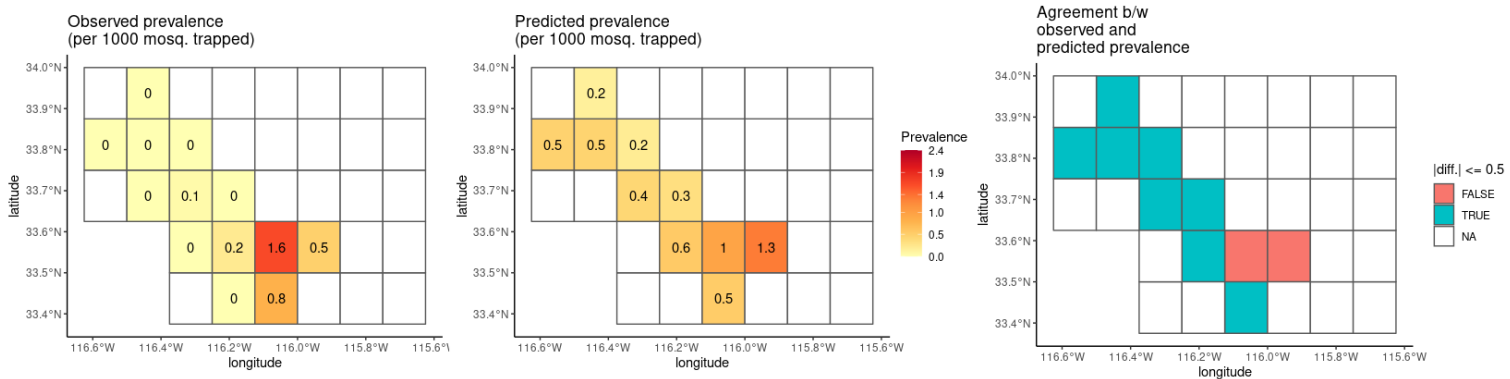
**Figure 9.** Scatter-pie of four predictor model ensemble indicating proportion and effect (positive or negative) of evapotranspiration (ET) and atmospheric temperature (ATMP) per month at the NLDAS scale in the Coachella Valley, CA; 2006 - 2021.



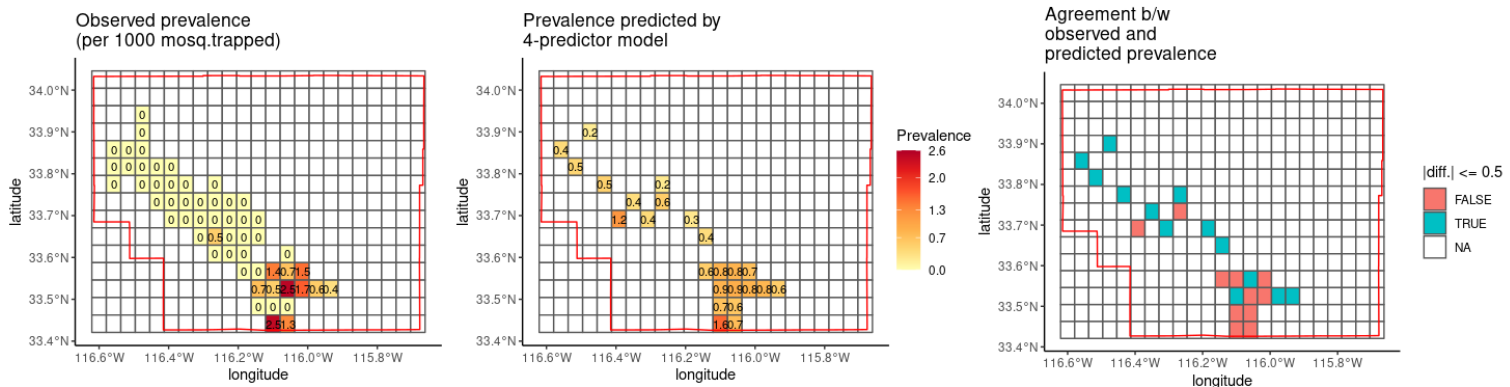
**Figure 10.** Scatter-pie of four predictor model ensemble indicating proportion and effect (positive or negative) of evapotranspiration (ET) and atmospheric temperature (ATMP) at the gridMET scale in the Coachella Valley, CA; 2006 - 2021.

**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 to estimate the both seasonal and geographical (NLDAS, gridMET) scales to map the infection risk of WNV in which contribution of our climate and hydrological variables to WNV risk in the CV (Figures 11 and 12 were seasonal spatial forecasts and figures 14 for temporal 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 (Figure 11) and GRIDMET (Figure 12). Then evaluated the forecast accuracy by grid cell and year for 2018 to 2021 (Figure 13) and a forecast was deemed accurate if a prediction was within  $\pm 0.5$  infected misquotes.

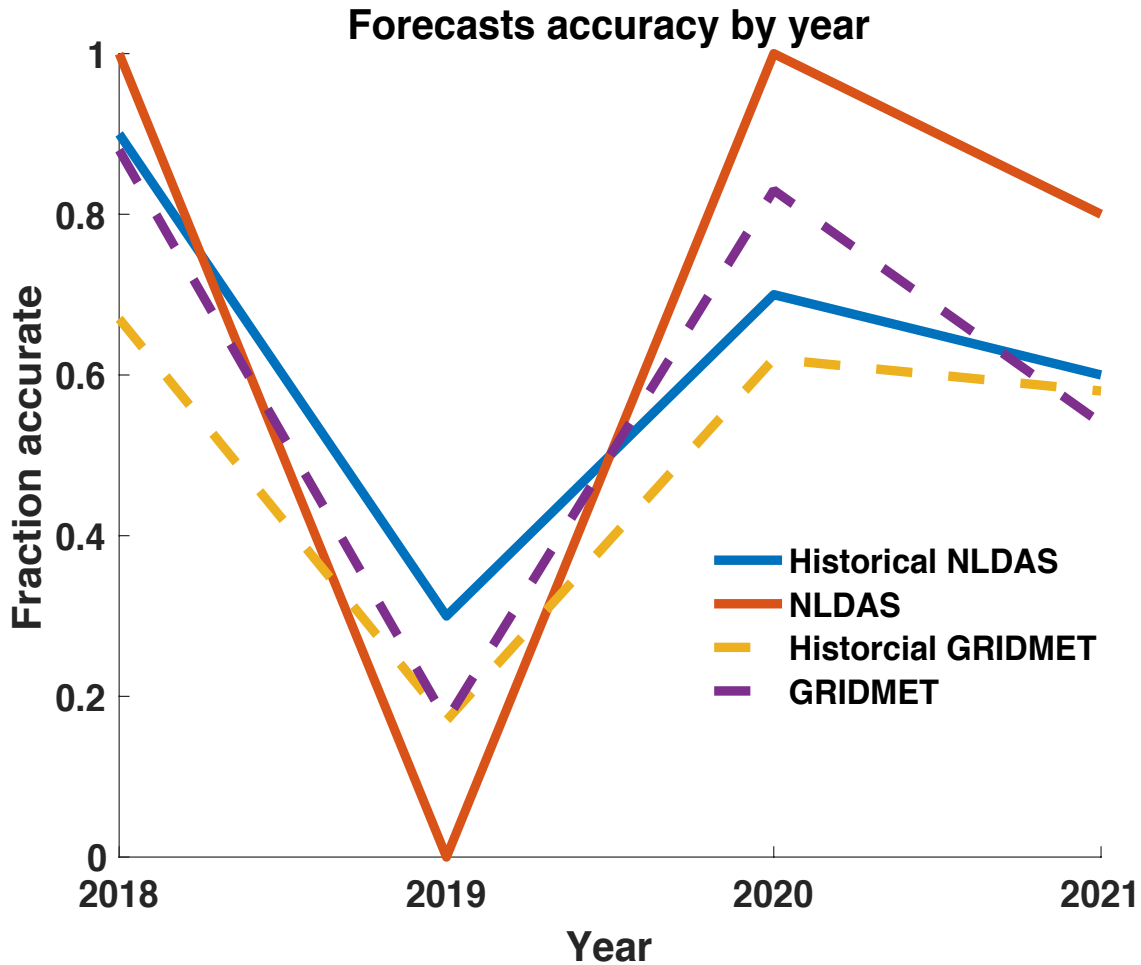


**Figure 11.** Left; observed infection rate (infected mosquitoes/1,000 mosquitoes) in 2021. Center; predicted infection rate of mosquitoes in 2021 using four predictor model. Right; proportion of cells agreeing with model using a  $\leq 0.5$  mosquito/1000 tested cutoff at the NLDAS spatial scale for the Coachella Valley, CA. Green represents an accurate forecast (within  $\pm 0.5$  infected misquotes), red a prediction outside the tolerance of an accurate forecast.



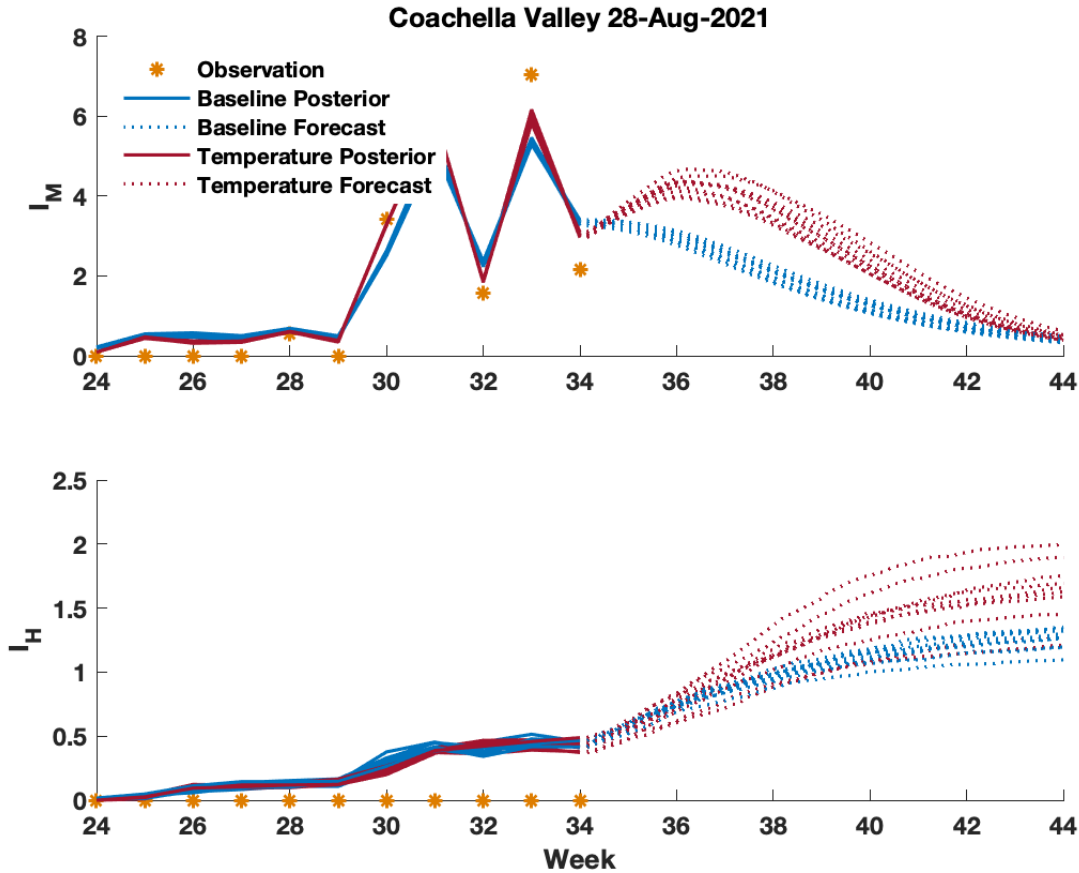
**Figure 12.** Left; observed infection rate (infected mosquitoes/1,000 mosquitoes) in 2021. Center; predicted infection rate of mosquitoes in 2021 using four predictor model. Right; proportion of cells agreeing with model using a  $\leq 0.5$  mosquito/1000 tested cutoff at the gridMET spatial scale for the Coachella Valley, CA. Green

represents an accurate forecast (within  $\pm 0.5$  infected misquotes), red a prediction outside the tolerance of an accurate forecast.



**Figure 13.** The fraction of forecasts accurately predicated (within  $\pm 0.5$  infected misquotes) as a function of year for the metrics of infectious mosquitoes by grid cell.

Also, During the 2021 summer starting in July when viral activity was identified in Coachella Valley, CA, we begin generating weekly forecasts for the mosquito abatement districts. These forecasts consisted of providing a probability of when we expected the infected mosquitoes to peak, how many mosquitoes would be infected and how many people we would expect to become infected. This was done at the spatial scale of the mosquito abatement districts. An example of the forecast is seen in figure 13. In Coachella valley we were able to capture the peak timing and magnitude of the outbreak and accurately estimate the number of human cases in August.



**Figure 14.** Temperature-forced (red) and a baseline (blue) real-time forecasts generated for August 28<sup>th</sup>, 2021. Solid red lines are the ensemble mean posterior distributions and the dotted red lines are the ensemble mean forecasts for the temperature-forced model. Solid blue lines are ensemble mean posterior distribution and dotted blue lines are the ensemble mean forecasts for the non-temperature forced model. 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 precedings paper, and a manuscript that we intend to submit in the next month.

**Deliverables and accomplishments**

**Year 1:**

- Downloaded and processed 317 overpasses for Coachella Valley, CA
- Downloaded and processed 207 best or nominal observations for Coachella Valley, CA during the West Nile virus outbreak season
- Processed mosquito trapping and pesticide data
- Presented research at AGU
- Presented research at the international Society for Environmental Epidemiology
- 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 2021
- Final phase of running models to develop downscaled observations on WNV and understanding how meteorological and hydrological conditions influence WNV transmission



**Publications, Submitted Manuscripts, Manuscripts in Preparation, Presentations**

- 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.* 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 series. 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 4) we finalize our probabilistic models using environmental indicators; then, we will generate an environmentally informed spatial risk map forecast early in the WNV season using our understanding of the temporal importance of climatic and hydrological parameters. We are in the initial stages of developing a tool allowing for real time visualization of risk.

**Table 4.** Proposed timeline, years 1 – 2 (Jan 1, 2021 – December 31, 2022).

	Year 1				Year 2			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Task #1</b>								
Download and process environmental data								
<b>Task #2</b>								
Develop downscaled observations of WNV								
Feasibility study								
Feasibility study Complete								
<b>Task #3</b>								
Forecast at fine spatial scale								
Verify decision support system								
Verify decision support system Complete								
implement in real time								

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

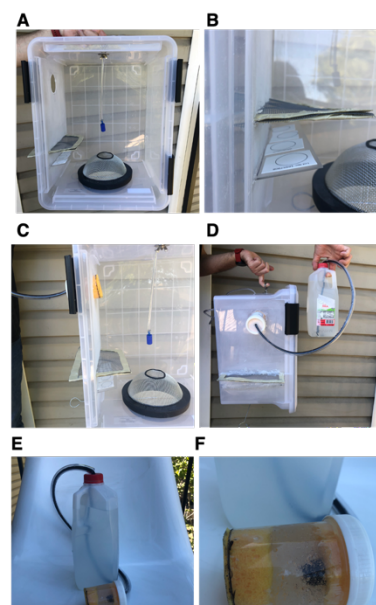
CVMVCD semi-annual research report / Dec 2021

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. For this, we exposed 5- to 7-day old female *Culex tarsalis* mosquitoes to sheep's bloodmeal containing 10<sup>5</sup> PFU/mL St. Louis Encephalitis virus (SLEV; IMP 570). On day 7 post-exposure, mosquitoes were to be transferred to individual containers for excreta collection, however, we encountered high-mortality probably associated with cold knock-down. We planned to repeat the experiment twice, but we were unsuccessful due to colony mortality and/or mortality in the incubators. To overcome this, we designed an experiment mimicking excreta deposited on FTA® cards under field conditions. For this, cards were inoculated with 10 µL serially diluted SLEV (1-1000 PFU) in triplicate and assigned to 3 treatment groups: no incubation (baseline), 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. All samples have been collected and are awaiting to be tested for SLEV RNA by RT-rtPCR. Additionally, to overcome adult *Cx. tarsalis* mortality issues encountered in our BSL-3 insectaries, we thoroughly decontaminated all incubators and conducted a survival study. By day 16 post blood feeding, we observed higher survival for mosquitoes held on the bench (81%), followed by Darwin Chambers incubator (66%) and Binder incubator (17%). Based on these results, we have modified our protocols to hold *Cx. tarsalis* on the bench or in the Darwin Chambers incubator when temperature and humidity control is required.

Although in the initial project design we proposed to evaluate viral RNA stability in mosquito excreta deposited on FTA® cards before conducting any trap modifications, because of the setbacks described above, we decided to start conducting both activities in parallel. Based on the design previously described by Meyer in Australia, we have built prototype A of the modified Passive Box Trap (PBT) to collect mosquito excreta (Figure 1). The modified trap contains two honey-soaked filter paper cards held by magnets on top of the trap to act as a feeding substrate (not shown). Two slits on the side (A-B) secure an FTA® card holder for excreta collection and insect screen to prevent dead mosquitoes from falling on the cards. The FTA® card holder is made of an acrylic sheet whist the screen consists of a fiberglass standard screen (Phifer) over a frame made of stainless-steel woven wire mesh. The FTA® card holder and mesh are placed beneath the humidity chamber opening (C) of the external water reservoir (D). The water reservoir is essential since it provides humidity to improve mosquito survival, which increases the chances of mosquitoes feeding and excreting on the substrate



**Fig 1.** PBT for excreta collection- prototype A

thus increasing the chances of viral detection. The external water reservoir consists of a 0.5-gallon plastic bottle with water, connected by capillary action to the humidity chamber by ¼” nylon rope covered in ½” clear vinyl tubing to prevent evaporation (E). The humidity chamber is made of a 100 mL specimen collection jar with its bottom removed. Although the original design uses multipurpose or chamois sponges to maintain humidity in tropical conditions, we have included water storing crystals (Miracle-Gro) between two pieces of multipurpose sponge (F) expecting to increase humidity and reduce dissection further.

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

Because of the setbacks encountered with Aim 1, we have requested to put this component of the project on hold (no-cost extension). We proposed to wait until next season to deploy the modified traps around the Salton Sea, starting from March. Therefore, most of our efforts for the field component of this project will occur in the spring of 2022.

## Annual Report (2021): Attractive Toxic Sugar Bait (ATSB) to Control House Flies near Crop Fields

Alec Gerry, Ph.D.

Department of Entomology, University of California, Riverside CA 92521

**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. Bait stations will be designed with screen guards to prevent honeybee access so that these important pollinators are protected.

### Research Activity:

Research activity related to this project was initiated in February 2020 and then unfortunately paused just a month later in March 2020 due to the COVID pandemic. At that time, the University of California mandated that all non-essential research projects be paused, and access was restricted to research laboratories, research vehicles, and research facilities. Prior to the temporary curtailment of this project, my student had just begun the laboratory portion of this project assessing fly response to food baits. Research supplies were ordered, and a wild strain of house fly was colonized. Although we were forced to pause the project shortly after it was initiated, we have maintained the wild house fly colony over the last two years in anticipation of restarting this project.

During the last few months, the campus has begun to relax the restrictions that were put into place to limit COVID transmission. Students are again authorized to work in laboratories and multiple researchers can travel again in university vehicles (with masks). In response to this, I have recently reinitiated this project along with others that were also curtailed in 2020. During the last couple of months, we are again testing methods to assess house fly response to food baits and attractants. Typically, these trials have been choice tests offering a group of flies with two bait options to evaluate the attraction and feeding response to the offered baits (Fig 1).



Figure 1. Choice test of house fly feeding on sugar baits with various odors and/or insecticides.

I expect to have laboratory methods fully worked out and be running laboratory trials for this project starting in January. Field trials require high numbers of wild flies at field sites. Therefore, field trials will begin as originally proposed in early spring when fly numbers can be very high in the Coachella Valley. I will continue coordinate with Dr. Kim Hung (CVMVCD) to identify locations that are appropriate for field trials.

Although year 1 of this project was funded in 2020, due to the delay caused by the COVID pandemic we are essentially just now starting the research objectives for year 1 of the originally proposed 2-year project. Thus, COVID has put this project almost exactly two years behind the originally proposed research timeline. The District can therefore expect first year project goals to be reported and discussed in the 2022 annual report.

Much of the year 1 project funds remain unspent and I recently requested extension of these funds into 2022 to carry out the proposed year 1 laboratory and field projects. These remaining funds are sufficient for the proposed laboratory and field experiments. I have not requested the second year of funding yet given the delay in starting this project. However, pending successful completion of the year 1 project goals during 2022, I anticipate requesting the second year of funding for 2023.

# *Annual Report, December 2021: Attractive Toxic Bait Station for Mosquito Control in Underground Storm Drain Systems of the Coachella Valley*

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## *Objectives:*

The goals of this project are to investigate the efficacy of attractive toxic sugar bait (ATSB) stations to transmit and promote mosquito-propagated (autodissemination) transmission of chemical and biological control agents against 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 in release and recapture trials under laboratory and field conditions.

## **USDS Field Trial: Spring 2021**

The spring 2021 trial demonstrated that attractive toxic sugar bait (ATSB) stations were associated with reduced mosquito production compared to controls, with 10-fold lower adult trap counts in USDS-ATSB compared to USDS-Control. Some captured adult mosquitoes contained the red dye used with ATSB stations suggesting bait ingestion was prevalent by mosquitoes in USDS populations.

A full report on the spring 2021 field trial can be reviewed with the June 2021 Progress Report.

## **USDS Field Trial: Autumn 2021**

### ***Methods***

#### *ATSB Deployment and Design*

A total of twelve ATSB were deployed in six USDS chambers at Coachella, La Quinta, and Palm Desert in autumn 2021 (Figure 1). Each treatment chamber contained two ATSB stations, one with and one without an entomopathogenic fungus (*Beauveria bassiana*), and a total of four ATSB in two chambers were present per city-site. Replicate ATSB chambers were located within 20 meters of each other to concentrate treatment effects. Conversely, control USDS were separated from ATSB chambers by an average of 200 meters to minimize interactions between ATSB and control sites due to adult mosquito movement. One aboveground sample site without ATSB was monitored at each city-site in the vicinity of USDS.

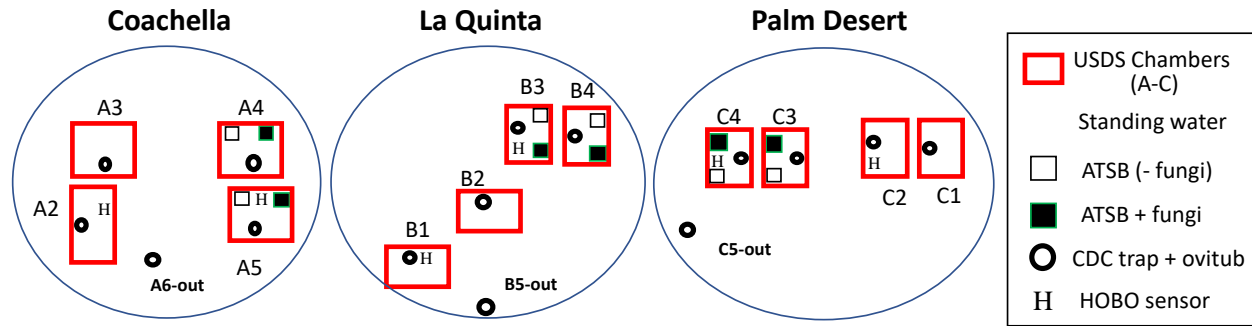


Figure 1. Experimental design for the field ATSB trial, October-November 2021. ATSB = 25% sugar bait with 1% boric acid. (- fungi) = red bait without fungal treatment. (+ fungi) = green bait with fungus (*Beauveria bassiana*). Letters (ABC) indicate different test locations, while numbers (1-6) indicate different USDS chambers. Traps were also placed at above ground sites adjacent to underground sites (marked as -out). Note: figures and distances not drawn to scale.

Experimental field designs were similar to the spring 2021 trial (Progress Report June 2021); except that (1) control USDS lacked stations instead of housing a non-toxic attractive bait station, (2) treatment USDS contained two toxic bait stations per chamber, one with fungus (green bait) and one without fungus (red bait), and (3) fungus formulation was added to bait stations using a combined dry/wet method that resulted in stations with both wetted and non-wetted fungal powder. Unwetted formula tends to be associated with higher infection rates, but reduced bait efficacy, while wetted formula tends to be associated with higher bait efficacy, but reduced infection rates, in laboratory assays (Figure 2). USDS-ATSB with non-wetted powder provided the highest wild adult infection rates in our previous studies (Annual Report December 2020); however, USDS-ATSB with wetted powder (spray) has been the only field treatment to coincide with reduced adult mosquito abundance (Progress Report June 2021). Therefore, during the Autumn 2021 field trials, fungus was added to only one of the two ATSB in each USDS, with the intent to optimize both bait and fungal performance.

A total of 6 grams of dry fungal powder was added to each ATSB, which was less than in previous USDS trials (e.g., 25 grams per station: Annual Report 2020), but comparable to the highest fungal amount tested in the laboratory and which resulted in good infection of adult mosquitoes (Figure 2). Four of the six grams of material was sprinkled with a sieve on external covers (dispenser and washtub) and the remaining two grams distributed into a ring inside bait dispensers. To encourage adult mosquito feeding on the toxic bait within the ATSB, fungal powder was not directly applied to the bait-saturated sponge within the ATSB. External surfaces of each station were then sprayed with ~ 60 mL of water over 14 seconds to wet the fungal powder. Fungal powder inside bait dispensers remained dry.



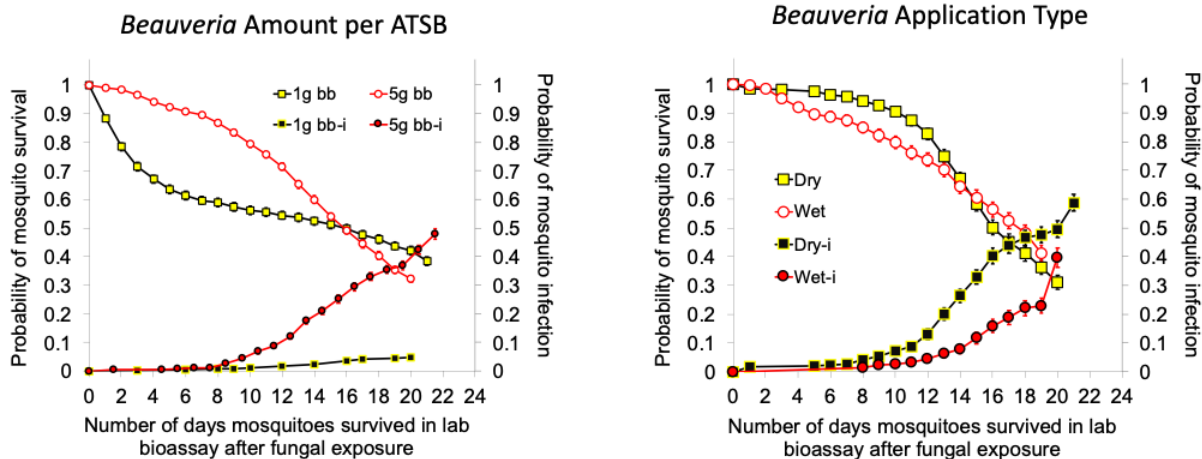


Figure 2. Kaplan-Meier survivorship curves of nulliparous *Culex quinquefasciatus* females (replicate cohort:  $n = 30$ ) in boric acid (1%-BA) ATSB exposure cage trials with *Beauveria bassiana* (bb). Stations with fungus applications consisted of powder on the external surface of each ATSB at different amounts (left: 1 gram vs. 5 grams) and moisture levels (right: dry vs. wetted). Controls without toxins were included for a total of four treatments per exposure (-BA/-bb, -BA/+bb, +BA/-bb, +BA/+bb). Each probability curve is an average of all treatments over time, where exposures with new mosquito cohorts were repeated every week as bait stations aged for a month under laboratory conditions.

### Mosquito Monitoring

A single CDC suction trap with UV light (no carbon dioxide) was deployed overnight once each week at each USDS site and at a nearby above ground location in each city. Live and dead adults in CDC traps were identified and enumerated by species, gender, female reproductive state, and presence/absence/color of ATSB-associated bait dye in the mosquito gut. These characteristics were observed for live adults in visual inspections after aspiration into a 50-dram vial (maximum  $n = 30$  individuals) and for dead adults under a dissecting microscope. Subsamples of live and/or dead adults (maximum  $n = 90$ ) were examined when trap catches exceeded 100 adults. Mortality and fungal infection rates of live cohorts were assessed up to one-month post-collection using laboratory procedures outlined previously (Annual Report 2018).

Larval dipper samples were collected weekly in triplicate per USDS if sufficient standing water was present. There were six standing reservoirs suitable for dipper samples which ranged in depth from 0.15 meters (A5/C3/C1) to 0.70 meters (A2/C2/C4). To provide an additional, standardized immature sampling method across all USDS chambers, including those lacking standing water, a covered washtub with oviposition-attractive infusion (oviposition tub or “ovitub”) was also placed into each USDS chamber. Oviposition infusion was based on the same concentrated solution used in attractive baits (5 g of 3 parts mouse chow and 1 part yeast per 0.8 L of water) fermented for one week. Fermented infusions were diluted with water by 50% and a total of 2000 mL and 3000 mL placed in below- and above-ground tubs, respectively. Differential totals accounted for greater evaporative loss at aboveground sites relative to underground USDS and ensured  $\geq 500$  mL remained for weekly assessment. At most two 500 mL subsamples were collected per ovitub, and each subsample was concentrated in filtering cups and preserved in vials with 95% ethanol on-site. Egg rafts, immature mosquitoes and their

associated invertebrates were later identified and enumerated by microscope. The remaining volume, if any, was discarded and tubs were washed with a small amount of fresh infusion to remove any remaining mosquito eggs or larvae before addition of fresh infusion volume for next week. Immature mosquitoes within ovitubs were never allowed to complete development to the adult stage.

CDC trap, dipper cup, and ovitub samples were collected every week during a 6-week period, beginning one week before ATSB deployment and ending one week after ATSB removal. The physical condition of each ATSB was assessed at 1, 2, and 4 weeks after deployment. Dead mosquitoes inside bait dispensers and washtub reservoirs were removed and identified by gender, female reproductive state, presence of bait color, and species. Dead specimens with dry, intact bodies were held in the lab and monitored for up to 2 weeks to assess fungal infection using laboratory procedures outlined previously (Annual Report 2018).

Bait dispensers were removed from covered tubs and weighed on-site two and four weeks after deployment. Freshly-prepared bait treatment (red or green) was added on week 2 so that each bait dispenser weighed approximately the same as when first deployed (~2500 g). Bait inside covered tubs was also recharged; however, tub weighing was impractical and therefore the amount of bait added was based on visual estimates. Bait station surveys included assessment of mold growth on dispenser membranes and/or within washtub reservoirs (1 = none, 5 = thick); thick mold growth was mechanically disrupted, if possible, to inhibit growth of biofilms that laboratory assays suggested can reduce mosquito ingestion of bait and overall efficacy (data not shown). After ATSB removal during week 4, covered washtubs with bait dispensers were sealed in black garbage bags and transported to the laboratory to measure final bait volumes. Adult mosquitoes found trapped in covered tub bait were identified and added to the total number of mosquitoes collected from each station.

HOBO sensor units (Onset Computer Corp., Bourne, MA) were deployed inside USDS six days after bait deployment until the study ended to record temperature and humidity every thirty minutes (Fig. 5). A total of 6 HOBO units, one per treatment site, were hung from hooks located approximately in the horizontal center of each underground chamber, one meter above the solid bottom, and on the same side as the manhole access cover. Whenever possible, sensors were placed at dry spots likely to be spared from direct contact with street run-off. In contrast to other sensors, the sensor at the Coachella USDS-A5 was positioned opposite to the manhole cover to avoid a ladder that travelled down the center of the access wall. 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](http://www.cimis.water.ca.gov), accessed November 30, 2021).

## **Results:**

### *Adult Mosquitoes in CDC Traps*

An average of 150 adult mosquitoes per trap night were collected in USDS chambers ( $N = 15,836$ ) while aboveground traps ( $N = 62$ , mean = 3 adults per trap night) produced significantly fewer numbers on all dates (Figure 3 and Table 1). *Culex quinquefasciatus* comprised 99.8% of identified adults; however, additional species collected were *Aedes aegypti* (6 females, 7 males),

*Culiseta inornata* (8 females), *Culex stigmatosoma* (5 females), and *Culex tarsalis* (3 female, 1 male). Overall trap sex ratio was 3:1 (female:male) and most females lacked eggs or bloodmeals (55% of total), although gravid (30%) and recently bloodfed (12%) specimens were common. The mean proportion of gravid females tended to be higher at Coachella and La Quinta (ca. 30% combined) relative to Palm Desert (12%). The mean proportion of recently bloodfed females tended to be highest at Coachella (13%), followed by lesser proportions at La Quinta (7%) and Palm Desert (4%). Across all city-sites, the proportion of females that were either gravid or bloodfed was similar in Control-USDS (33%), ATSB-USDS (30%), and at nearby aboveground sites (32%).

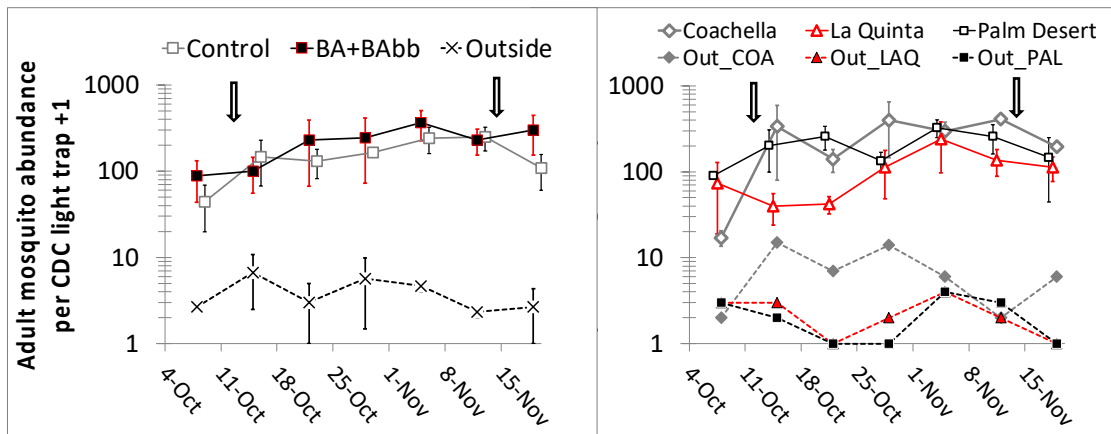


Figure 3. Mean ( $\pm$ SE) log<sub>10</sub> scale abundance of adult mosquitoes from CDC traps within USDS in the Coachella valley. Trends are stratified by bait station treatment (left) and city-site (right) and compared to aboveground traps nearby (outside, Out). Control = no bait station, BA+BAbb = two ATSB, one with boric acid only and one with BA + *Beauveria bassiana* fungi. COA = Coachella, LAQ = La Quinta, and PAL = Palm Desert. Down-arrows indicate ATSB deployment into and removal from treated USDS.

When ATSBs were absent in all USDS (= baseline), adult mosquito abundance was significantly different between USDS treatments (Table 1: present vs. absent, time), and on average 2.5 times greater in ATSB-assigned USDS than in Control-assigned USDS (Figure 3). In contrast, when ATSBs were present in half of USDS chambers, adult numbers were not statistically different between USDS treatments (Table 1: present vs. absent, chamber). This narrowed gap may have been the result of averages in Control-USDS, which increased by 2.5-fold during the deployment period ( $185 \pm 24$  vs. baseline:  $75 \pm 32$  adults). In contrast, mean numbers increased only slightly, if at all, in ATSB-USDS (deployment:  $233 \pm 42$  vs. baseline =  $193 \pm 105$  adults).

City-sites varied appreciably in adult abundance (Figure 3 and Table 1) with mean adult mosquito capture in Coachella (315 adults) > Palm Desert (234 adults) > La Quinta (113 adults). Interestingly, pre-deployment collections at Coachella contained few adults, but increased greatly the following week (when ATSB were deployed) to the highest adult levels among all cities.

Table 1. Spatial and temporal trends of adult mosquitoes in CDC traps. Subscript with parentheses indicates the number of sample dates with  $P < 0.05$  significance (bold).

Kruskal-Wallis ANOVA Grouping Variable (s)			Total Adults		<i>Culex quinquefasciatus</i> 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			8.80	0.185	11.52	0.074	6.81	0.338	<b>14.7</b>	<b>0.023</b>	<b>15.6</b>	<b>0.016</b>	2.78	0.836
USDS v. aboveground			<b>&gt; 33.0<sub>(7)</sub></b>	<b>&lt; 0.030</b>	<b>&gt; 33.0<sub>(7)</sub></b>	<b>&lt; 0.030</b>	<b>&gt; 32.0<sub>(7)</sub></b>	<b>&lt; 0.040</b>	<b>&gt; 31.5<sub>(6)</sub></b>	<b>&lt; 0.05</b>	<b>&gt; 31.0<sub>(5)</sub></b>	<b>&lt; 0.05</b>	<b>&gt; 31.5<sub>(5)</sub></b>	<b>&lt; 0.05</b>
USDS-ATSB	City		<b>&gt; 6.40<sub>(2)</sub></b>	<b>&lt; 0.04</b>	<b>&gt; 6.40<sub>(2)</sub></b>	<b>&lt; 0.04</b>	<b>&gt; 6.25<sub>(2)</sub></b>	<b>&lt; 0.05</b>	<b>&gt; 6.60<sub>(3)</sub></b>	<b>&lt; 0.04</b>	<b>&gt; 7.26<sub>(3)</sub></b>	<b>&lt; 0.03</b>	<b>&gt; 6.45<sub>(5)</sub></b>	<b>&lt; 0.04</b>
	Present vs. Absent	Time	522	0.050	510	0.038	568	0.132	537	0.070	523	0.050	620	0.324
		Chamber	< 28.5	> 0.100	< 26.5	> 0.190	< 26.5	> 0.190	< 24.5	> 0.335	< 22.5	> 0.310	< 30.0	> 0.060

Bait dye was evident in 24 females (6 red, 18 green) and 3 males (2 red, 1 green) collected 7 to 28 days after ATSB deployment, with most adults containing bait dye (78%) from the ATSB-USDS at Coachella (A4/A5). A few adults with visible bait dye were also captured in control-USDS traps at La Quinta (1 red and 1 green female) and Coachella (1 red female).

A total of three females presented with *Beauveria bassiana* infection ( $N = 1,442$ , infection prevalence = 0.2%) in the laboratory after live collection in USDS traps. A single fungus-positive *Culex quinquefasciatus* female was found at Palm Desert (C2) the week before ATSB deployment. Two additional *Culex quinquefasciatus* females presented with *Beauveria bassiana* sporulation one week after ATSB deployment ( $N = 258$ , infection rate = 0.8%). One infected female was collected at a Control-USDS (Coachella-A3) and one at an ATSB-USDS (La Quinta-B4). The fungus was not evident in live male mosquitoes ( $N = 382$ ) captured in USDS traps and held in the laboratory.

#### *Adult Mosquitoes within ATSB Stations*

A total of 81 females and 207 males were found dead inside ATSB stations (dispensers and/or washtubs) during inspections 1, 2 and 4 weeks after deployment. On each survey week, similar numbers of dead females (mean =  $28 \pm 9$ ) and males (mean =  $69 \pm 16$ ) were recorded. Nearly all (97%) dead adults were from Coachella stations, especially at A5-USDS, which accounted for 82% and 90% of total recovered females and males, respectively. Over all dates, La Quinta stations contained only 2 females and 6 males and Palm Desert stations contained only a single male. Numbers of dead were similar in ATSB with fungus (41 females and 95 males) and ATSB without fungus (43 females and 112 males). The color of dead adults usually was the same as the bait in the stations in which they were collected; two exceptions were: (i) one green female out of 5 total and two green males out of 19 total inside a red bait station without fungus at Coachella-A5 inspected week 1 and (ii) one green male out of 5 total in a green bait station with fungus at La Quinta-B3 inspected week 4. All adults were *Culex quinquefasciatus*, except for a single *Aedes aegypti* female observed inside an ATSB dispenser with fungus at Coachella (A4) one week after deployment.

#### *Immature Mosquito Collection*

Data analysis for this part of the study is ongoing. To date, approx. 1/3 of the dipper and ovitub samples have been processed. Preliminary trends are illustrated in Figure 4, but given the limited numbers of samples, immature abundance trends may change once the remaining samples are added to the analysis.

For dipper samples, immature mosquito abundance was much greater at Coachella (mean =  $635 \pm 383$ ) than at Palm Desert (mean =  $24 \pm 14$ ), although this gap narrowed at the end of ATSB deployment. Dipper abundance was to date greater in ATSB-assigned chambers (mean =  $506 \pm 405$ ) than in Control chambers (mean =  $153 \pm 87$ ).

For ovitub samples, immature mosquitoes were consistently more abundant inside USDS (mean =  $4692 \pm 2435$ ) compared to aboveground sites (mean =  $1185 \pm 900$ ), though abundance increased over time both inside and outside USDS. Control-USDS produced slightly more immatures on average ( $5890 \pm 4257$ ) compared to ATSB-USDS ( $3493 \pm 1805$ ). Mean immature production was least at least 4-fold higher at Coachella compared to the other city-sites. This gap was true for comparisons of ovitubs inside USDS (Coachella:  $10693 \pm 8550$  vs. Palm Desert:  $2408 \pm 1551$  and La Quinta:  $975 \pm 454$ ) and those outside USDS (Coachella:  $3364 \pm 2910$  vs. Palm Desert:  $620 \pm 531$  and La Quinta:  $550 \pm 283$ ). Note that aboveground ovitubs at Coachella averaged more immatures than ovitubs inside USDS at both Palm Desert and La Quinta.

During all previous USDS studies, *Culex quinquefasciatus* has been the only mosquito species found in immature samples; however, this changed with the discovery of *Aedes aegypti* larvae during week 2 of ATSB deployment. Specimens were discovered in samples from both dipper cups (1 larvae: stage II, C2-Palm Desert) and ovitubs (2 larvae: stage III and IV, A5-Coachella).

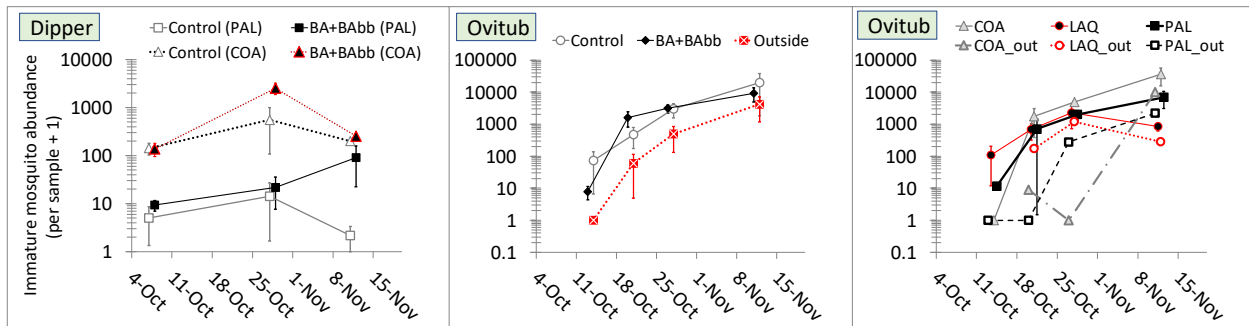


Figure 4. Immature *Culex* mosquito log<sub>10</sub> scale abundance (mean  $\pm$  SE) in dipper samples (left) and ovitubs (center, right).

### Environmental Conditions

For the duration of the study (Figure 5), mean temperature within USDS chambers was 3°C warmer and more stable (mean =  $23.4 \pm 1.7$  °C) than temperature aboveground at La Quinta (mean =  $20.5 \pm 3.3$  °C). Coachella USDS (A2/A5) were the only sites to average more than 25 °C, and temperatures frequently exceeded 33 °C in the 2-meter deep A2 chamber; however, temperatures never exceeded 30 °C in the 3-meter deep A5 chamber. Temperatures were similar in USDS at La Quinta ( $22.8 \pm 2.3$  °C) and Palm Desert ( $22.1 \pm 1.6$  °C). Relative humidity was predictably higher in USDS (mean =  $51 \pm 8\%$ ) compared to aboveground (mean =  $44 \pm 10\%$ ).

The highest mean relative humidity levels were found in three USDS with standing water reservoirs (A5: Coachella and C2/C4: Palm Desert), which averaged greater than 60% and exhibited frequent episodes above 80%. Interestingly, the USDS with the largest water reservoir (A2 – Coachella) had a mean relative humidity of 45% and never exceeded 72%; and also exhibited a period with relative humidity less than 18%, similar to USDS at La Quinta that lacked deep standing water.

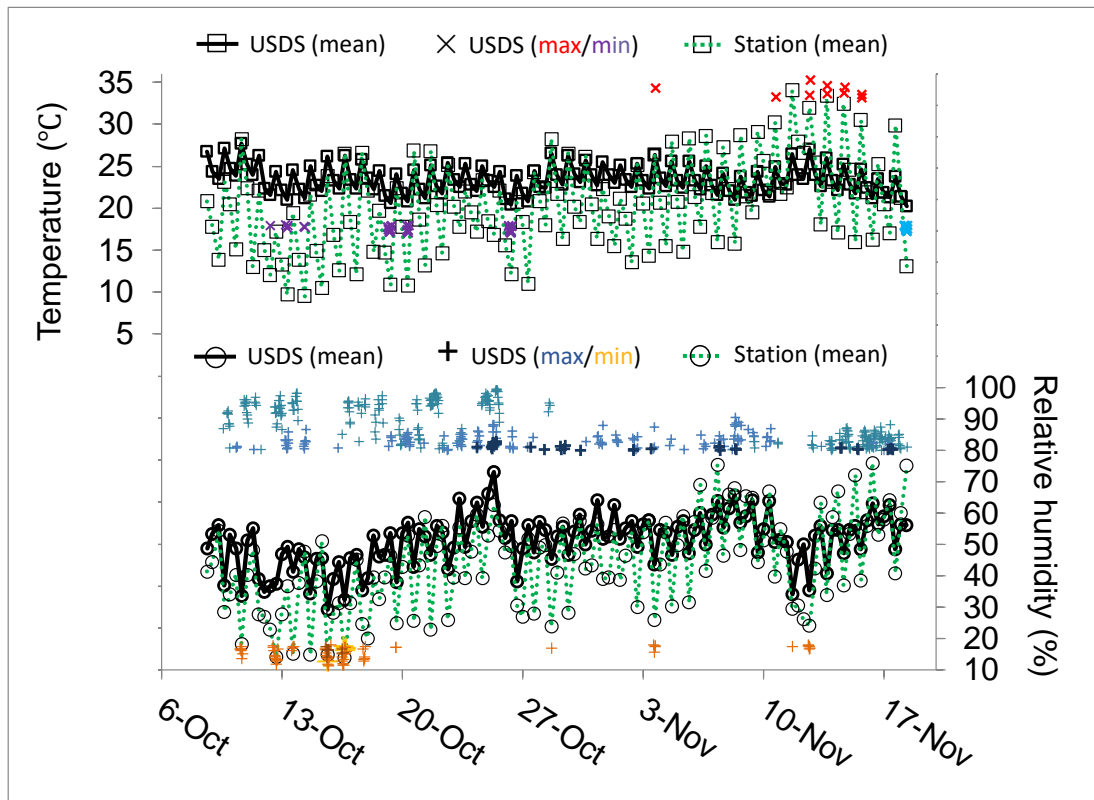


Figure 5. Temperature (top) and relative humidity (bottom) averages plotted every 8 hours from USDS (HOBO sensors) and at ground level (CIMIS, La Quinta II station). Extreme conditions in USDS chambers (max/min) were plotted if temperature was greater than 33 °C or less than 18°C and/or relative humidity was greater than 80% or less than 18%.

### *Bait Station Aging*

Week 2 inspections revealed bait dispensers weighed an average of 1,900 grams (SD: ± 200 g) before each was recharged to 2,500 grams with the appropriate amount and color of freshly prepared bait. Week 4 inspections revealed bait dispensers weighed an average of 2,250 grams (SD: ± 125 g) and tub bait volume averaged 1000 mL (SD: ± 250 mL). Two bait stations (Coachella: A5 + fungus and La Quinta: B3 no fungus) were flooded with USDS runoff and could not be surveyed during week 4 inspections.

### *Discussion*

Adult mosquito abundance within the study’s underground storm drain system (USDS)

remained high even in USDS containing two attractive toxic sugar bait (ATSB) stations as used in this study. However, ATSB treatments were assigned to USDS with higher initial mosquito abundance, and thus ATSB stations may still have provided some level of control. The impact of having two boric acid ATSB per USDS, one with fungi and one without, on overall efficacy is unclear; both red- and green-dye was observed in similar proportions in adult mosquitoes that were captured. However, the paucity of fungus infected adults suggested the wet/dry application of *Beauveria bassiana* did not effectively transmit the fungus to mosquitoes within the USDS. Larger quantities of dry fungus powder – e.g., 30 grams per ATSB – may be essential to spread infection under USDS conditions; however, negative impacts on bait efficacy would continue to be of concern. One possible alternative is to have two isolated deployment periods, one for ATSBs with fungus and one for ATSBs without fungus. The fungus deployment period could be first, lasting at most 2 weeks to minimize negative effects from aging, followed by a separate non-fungus deployment period of at least 4 weeks. Mosquito populations could be maximally inoculated with fungus without interfering with the majority of toxic bait ingestion and, in theory, provide greater synergism between adulticides compared to a simultaneous treatment. Simultaneous and step-wise exposures of *Culex quinquefasciatus* to laboratory ATSB stations would be conducted first to provide proof-of-concept before USDS deployment.

Mosquito movement among USDS chambers is probably common, given adults with bait dye were found at sites without bait stations, and controls may provide alternative sites that dilute ATSB treatment efficacy. ATSB stations distributed in most, if not all, of USDS chambers within a limited area may be necessary to uncover how position and density may and/or may not impact efficacy. The timing of ATSB use may be another avenue to explore, given past deployments have occurred primarily only during peak mosquito activity, and early season tests of ATSB stations to prevent mosquito amplification could be conducted.

ATSB design and management strategies have been successfully adapted, for the most part, to support mosquito abatement activity for a one-month period within USDS conditions. Weekly inspections and bait recharge after 2 weeks ensures stations remain intact and in a suitable position, and that stations have adequate bait volumes to keep the feeding membrane moist. Inspections also allow for a census of dead males and females, which were found in similar numbers every week on top of feeding membranes inside bait dispensers. It is unclear, however, why most of these dead specimens were found at Coachella (and not La Quinta or Palm Desert) and whether these dead are a reliable indicator of station efficacy. Enhanced mosquito surveillance by trapping greater numbers of dead mosquitoes might be achieved by the addition of a slippery (e.g. Teflon) or sticky (e.g. Tanglefoot) coating along perimeter surfaces.

Discovery of a few *Aedes aegypti* larvae for the first time among the many thousands of larval specimens collected is a concern and suggests that USDS may be future production sites for *Aedes aegypti* in the Coachella Valley area. Samples will continue to be closely monitored for the presence of *Aedes aegypti* larvae, pupae, and eggs to track its progression into and overall impact on USDS mosquito populations. As of now, *Culex quinquefasciatus* is by far the dominate species developing in these USDS.

Oviposition-attracting tubs enhanced the ability to assess immature development relative to adult production and will be routinely used in future USDS studies. Aboveground ovitubs revealed significant oviposition activity, which was surprising given the typical scarcity of adults

in aboveground CDC traps. Ovitub data may reflect and/or predict the mosquito production potential of USDS sites to help guide selection of management options such as biological control agents (e.g., fungus) or insect growth regulators in concert with ATSB-based adulticides.

The impact of treatments on immature production will continue to be assessed as remaining field samples are processed. At this point, it does not appear that ATSB in this study greatly impacted the production of immature mosquitoes within USDS, but too many samples remain to be processed to be confident in this outcome. Future studies that combine ATSBs with an insect growth regulator might prove to be integrated control strategies more effective in reducing mosquito production within USDS.



Semiannual Research Progress Report #4 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.

David H. Oi and Steven M. Valles  
USDA Agricultural Research Service,  
Center for Medical, Agricultural, and Veterinary Entomology  
1600 SW 23<sup>rd</sup> Drive, Gainesville, FL 32605

December 22, 2021

**Summary of Activity January 2020 through December 2021.**

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. Because of the COVID-19 pandemic, progress on the proposed research was mostly suspended. We are requesting a 1-year no-cost extension (ending March 31, 2023) to allow us to complete the objectives. A revised milestone table is provided on page 4.

- 1) To evaluate the effect of irrigation on fire ant bait efficacy in the field, two field sites, located at Lake Cahulla Veterans Regional Park and Lake La Quinta Recreation Area, were determined to be suitable for the study. These sites were surveyed for red imported fire ants on Feb. 25-26, 2020. Fire ant activity was high enough to allow for two replicates to be located at each site.

Further preparations for the field study were suspended due to the USDA-ARS prohibition of air travel and limited laboratory access since March 19, 2020, due to the COVID-19 pandemic. As of December 2021, air travel is still prohibited, and this study is on hold. Currently, the ARS timeline for phasing in normal operations will start no later than Jan. 3, 2022, with the full resumption of normal operations occurring in March. The easement of travel restrictions is yet to be determined but it is anticipated to start within the first quarter.

- 2) Research on monitoring fire ant mating flight activity has progressed despite the limited laboratory access due to COVID restrictions. A prototype fire ant alate trap has been developed and was field tested in Gainesville, Florida. Two traps were sent to the CVMVCD in March 2021 for testing under Coachella Valley conditions. Fire ant alates were caught in these traps both in Florida and California. Six traps are currently being constructed, so they will be ready for deployment in Coachella as soon as travel is allowed.
- 3) Surveying for the spread of fire ant biocontrol agents in Coachella was originally scheduled for the first quarter of 2021 and has been postponed until ARS travel restrictions are hopefully lifted in 2022.

#####

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 is slow as CMAVE is permitted 25% occupancy (1 person per lab) and air travel continues to be prohibited.

**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 hypothesize 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.

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. Infestations were high enough to allow for two replicates to be located at each site. However, when research and travel restrictions are lifted, these sites (or other sites) must be sampled to ensure fire ants densities are adequate for testing. Resumption of this test has been postponed until travel prohibition is ended, which we anticipate in late 1<sup>st</sup> quarter of 2022.

**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 to make them less cumbersome to transport and service. Previous traps utilized an inverted root ball basket with screening to collect alates in a covered bunt pan (Fig. 1). 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. 2):

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



Fig. 2. 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 1.) 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 1. 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	–	–	–	–

To correlate temperature and humidity with the occurrence of alate flights, radiation shields were constructed to protect temperature and humidity recorders (iButtons) that will be installed near alate traps (Fig. 3).

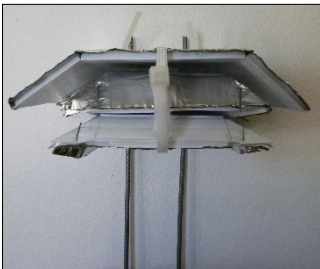


Fig. 3. Interior view of a radiation shield that houses temperature and humidity recorders.

Pending the lifting of USDA-ARS domestic air travel restrictions, we tentatively anticipate locating two or more monitoring sites. We plan to install a total of eight traps among the sites during the first quarter of 2022, in time for the purported regional flights initiated by seasonal fall and winter rains.

### 3) Status of fire ant biocontrol agents.

Sampling for the fire ant biocontrol agents, *Solenopsis invicta* virus 3 (SINV-3), and two species of phorid flies, *Pseudacteon obtusus* and *Pseudacteon curvatus*, will be conducted to determine their spread from the initial release sites. Sampling was originally scheduled for the first half of 2021. Pending the lifting of the ARS COVID travel prohibition, biocontrol sampling will hopefully be initiated by March of 2022.

Table 2. 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*	Treat & sample	Alate trapping	X (if needed)
2022 Jul-Sep		X	X (if needed)
2022 Oct-Dec		X	X (if needed)
2023 Jan-Mar		X	

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



**Coachella Valley Mosquito and  
Vector Control District**

**January 11, 2022**

**Staff Report**

**Agenda Item:** Informational Item

Staff report summary – MVCAC Planning Meeting, December 6-8, 2021, in Emeryville, CA

**Background:**

The focus of the MVCAC Planning Session was to review the work accomplished in 2021 and to set the priorities for 2022. The committee chairs were charged with setting their goals for the coming year and to update their rosters.

Additional items of interest include:

- Legislative activities – MVCAC Legislative Day will be virtual in 2022
  - To accommodate the construction at the Capitol Annex
- California Mosquito and Vector Control Awareness Week
- Organize request for funding for sterile mosquito programs
- Coordinate request for funding for California Department of Fish and Wildlife to reduce production of mosquitoes
- MVCAC review of contracts with service providers (AMG and KP) for the Association
- Changes to the 2022 Annual Conference to include COVID protocols

Staff also provided their input on other committees including Information Technology, Integrated Vector Management, Laboratory Technologies, Public Relations, Training and Certification, 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 11, 2022**

**Agenda Item:** Informational Item

Staff report Summary- CalPELRA Annual Conference, November 16-18, 2021, in Monterey, CA

**Background:**

The annual CalPELRA Annual Conference was three full days of education in areas of labor relations and human resources.

The first-time attendee track offered sessions tailored to individuals who are new in their role. The courses offered provided useful information with breakout sessions focused on:

- Diversity compliance and workplace transformance
- Conflict resolution techniques
- Best hiring, recruiting, and background check practices
- The post pandemic future of teleworking
- Legal strategies
- Onboarding best practices
- The first amendment amidst the social media boom

ATTENDEE:

*Graciela Morales, HR Specialist*

**RESOLUTION NO. 2022-01**

**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, 2022 – FEBRUARY 9, 2022, 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 June 9, 2021, the California Department of Public Health issued updated public health directives related to physical distancing and face coverings effective June 15, 2021, based on guidelines issued by the Centers for Disease Control and Prevention; and

**WHEREAS**, on or about December 13, 2021, the California Department of Public Health (CDPH) is requiring masks to be worn in all indoor public settings, irrespective of vaccine status, until February 15, 2022; 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) January 11, 2022, 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 11<sup>th</sup> day of January 2022, 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:**

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**Lena D. Wade, General Counsel**

**REVIEWED:**

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**Jeremy Wittie, M.S., General Manager**



# **OLD BUSINESS**



**Coachella Valley Mosquito and  
Vector Control District**

**January 11, 2022**

**Staff Report**

**Agenda Item:** Old Business

Confirmation of physical or virtual strategic planning workshop for February 3, 2022 –  
**Jeremy Wittie, M.S., General Manager**

**Physical or Virtual Meeting Options:**

**Physical Meeting Options** – proposed costs include room rental fees and food and beverage for the day-long workshop

1. Use of a multipurpose room at Desert Recreation Facility ~ \$750
2. Conference space at Palm Valley Country Club ~ \$2,500

**Virtual Meeting Options**

1. Virtual workshop with engagement similar to in-person with breakout rooms
  - a. Facilitator and notetaker cost \$3000
  - b. Cost of food for remote meeting≈\$450
2. Virtual workshop with engagement similar to in-person without breakout rooms
  - a. Notetaker cost \$500
  - b. Cost of food for remote meeting ≈\$450

**Staff Recommendation:**

That the Board chooses what they deem appropriate.



# **NEW BUSINESS**



**Coachella Valley Mosquito and  
Vector Control District**

**January 11, 2022**

**Staff Report**

**Agenda Item:** New Business

Approval to enter into an agreement for a Supplemental Mitigated Negative Declaration for CEQA compliance in an amount not to exceed \$35,000 from fund 6095.01.400.000 –  
**Jennifer A. Henke, M.S., Laboratory Manager**

**Background:**

The District adopted its Mitigated Negative Declaration in October 2011 for the District's Integrated Vector Management Program. The initial study in July 2011 reviewed the 17 areas of concern for environmental issues for the IVM program. The study reviewed all aspects of the IVM program, including surveillance, public education, and control practices of physical, biological, and chemical products for mosquitoes, red imported fire ants, eye gnats, and other vectors of importance. Both the study, and the comment letters received, indicated that while the District's IVM program could have a significant effect on the environment, revisions and monitoring of the work would reduce that impact.

The District's Mitigated Negative Declaration has been in place for 10 years and focuses heavily on the potential for mosquitofish to cause negative impacts to biological resources; the District's current use is much lower than what is detailed in the declaration. Additional changes to the District's programs include the re-establishment of St. Louis encephalitis virus; the detection and spread of *Aedes aegypti* mosquitoes; a reduction in vector work for eye gnats and Africanized honey bees; and new chemical control products. The District's control methods now include more applications by helicopter to more parts of the Coachella Valley, and the District plans to continue using novel technologies such as sterile insect releases and making applications by uncrewed aerial systems, known more commonly as drones. Additionally, with the continued changes to the Salton Sea as well as the conservation efforts for multiple animals and plants which are on endangered and threatened lists, there is a need to have additional professionals assist with reviewing the IVM program.

The District's legal counsel suggested three firms that would have the expertise that is needed. Of the three, one responded to the request for a meeting. A discussion with

Meridian Consultants included a review of our current work. While there are several options, the recommended option is to develop a supplement to the Mitigated Negative Declaration. The work will be completed by reviewing the District's current and planned program, providing opportunities for public comment, and updating the monitoring and reporting plan. The estimate from the firm was for \$25,000-35,000 and expected to be on the lower end of the scale.

**Staff Recommendation:**

To contract with Meridian Consultants to develop a Supplement to the Mitigated Negative Declaration in an amount not to exceed \$35,000.

**Fiscal Impact:**

FY2021-22 Budget  <b>GL # 6095.01.400.000</b>	Current Available Funds	Proposed Expense Fiscal Year 2021-22	Remaining Available Funds
<b>Amount budgeted</b>	<b>\$45,000.00</b>	<b>\$35,000.00</b>	<b>\$10,000.00</b>



**Coachella Valley Mosquito and  
Vector Control District**

**January 11, 2022**

**Staff Report**

**Agenda Item:** New Business

Nomination and Election of Board Officers for the 2022 Calendar Year – **ad hoc  
Nominations Committee**

**Background:**

The Nominations Committee (Trustees Isaiah Hagerman, John Pena, and Doug Walker) was appointed at November 9, 2021, Board Meeting by the Board President under the District's Bylaws to recommend a slate of Board officers for the 2022 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, expeditiously 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; and Secretary/Treasurer to be considered by the Board of Trustees, as follows:

President:	Trustee Benjamin Guitron
Vice-President:	Trustee Clive Weightman
Secretary:	Trustee Isaiah Hagerman
Treasurer:	Trustee Doug Walker

(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 2022 calendar year. Under the Brown Act, the votes must be taken in open session, since secret ballots are not permitted.

**Committee Recommendation:**

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-2022**

The Nominations Committee (Trustees: Hagerman, Pena, and Walker) reviewed the possible candidates for the officer positions for the Coachella Valley Mosquito and Vector Control Board for 2022. 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 2022:

**President: Benjamin Guitron**

Trustee Guitron was appointed by the City of Indio and has served on the Board of Trustees since 2018. He has voiced his interest in serving in an executive capacity. 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. This committee is nominating Trustee Guitron for President.

**Vice President: Clive Weightman**

Trustee Weightman, appointed by the City of Indian Wells, has served on the Board since 2017. He has served on the Finance Committee since 2017 and has served as Treasurer in 2018, 2019, 2020, and 2021. This committee is nominating Trustee Weightman for Vice President.

**Secretary: Isaiah Hagerman**

Trustee Hagerman has served on the Board 2019. He was appointed to the position of Rancho Mirage City Manager in 2018 and has been with the City of Rancho Mirage since 2012. This committee is nominating Trustee Hagerman for Secretary.

**Treasurer: Doug Walker**

Trustee Walker, representing the City of Palm Desert, has served on the Board of Trustees since 2007 and has previously held the office of President for four years, was Board Secretary in 2012, 2019, and 2020, and Vice President in 2021. Trustee Walker, with his scientific background, has also represented the District as a member of the Mosquito and Vector Control Association of California's Trustee Council. This committee is nominating Trustee Walker for Vice President.

Respectfully submitted by the Nominations Committee:

- Isaiah Hagerman
- John Pena
- Doug Walker



**Coachella Valley Mosquito and  
Vector Control District**

**January 11, 2022**

**Updated-Staff Report**

**Agenda Item:** New Business

Discussion and/or approval of a 3% COLA adjustment and a 5% Special Merit Pay for the **General Manager's** evaluation period ending December 2021 - **ad hoc Negotiations Committee**

**Background:**

At the November 9, 2021, Board Meeting, the Board completed the General Manager annual evaluation. On December 20, 2021, the General Manager met with the ad hoc Negotiations Committee comprised of Trustees Isaiah Hagerman and Benjamin Guitron, to negotiate a COLA and Special Merit Pay concerning the General Manager 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 salary and special merit pay based on his performance in 2021:

1. COLA of 3 %

Current Salary	COLA of 3 %	Proposed Annual Salary
\$160,965.79	\$4,828.98	\$165,794.77

2. One-time Special Merit pay of 5% = \$8,048.29

**Committee Recommendation:**

That the Board takes whatever action deemed appropriate.