



Coachella Valley  
Mosquito and Vector  
Control District

43420 Trader Place  
Indio, CA 92201  
Phone (760) 342-8287  
[www.cvmvcd.org](http://www.cvmvcd.org)

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## **Board of Trustees Meeting**

**Tuesday, January 8, 2019**

**6:00 p.m.**

### **AGENDA**

Assistance for those with disabilities: If you have a disability and need accommodation to participate in the meeting, please call the Clerk of the Board at (760) 342-8287 for assistance so the necessary arrangement can be made.

1. **Call to Order** – Doug Hassett, Vice President
2. **Pledge of Allegiance**
3. **Oath of Office**
4. **Roll Call**
5. **Motion to Excuse Absences**
6. **Confirmation of Agenda**
7. **Public Comment**
  - Those wishing to address the Board should complete a Public Comment Card and provide it to the Clerk of the Board.
  - Non-Agenda Items: Anyone wishing to address the Board on items not on the agenda should do so at this time. Each presentation is limited to no more than 3 minutes.
  - Agenda Items: Comments should be made when the agenda item is called. Each presentation is limited to no more than 3 minutes.
8. **Announcements**
  - General Manager's Report – **Jeremy Wittie, M.S., General Manager**
9. **Board Reports**
  - A. President's Report – **Vice President Hassett**

- B. Finance Committee – **Administrative Finance Manager, David I’Anson**
- Finance Committee Minutes (**Pg. 2**)

10. **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 or the public may request an item be pulled from Items of General Consent for separate discussion.
- A. Minutes for November 13, 2018, Board Meeting (**Pg. 5**)
- B. Correspondence (**Pg. 10**)
- C. Approval of Expenditures for November 14-30, 2018, December 1-31, 2018, and January 1-8, 2019 (**Pg. 14**)
- D. Informational Items:
- District Travel (**Pg. 29**)
  - Staff reports from:
    - Semi-Annual Research Reports from the University of California, Riverside and University of California, Davis, and U.S. Department of Agriculture for 2018 – **Jennifer Henke, MS, Laboratory Manager (Pg. 31)**
    - Entomological Society of America Annual Conference, November 11-14, 2018 in Vancouver, British Columbia (**Pg. 56**)
    - MVCAC Planning Session, December 6-7, 2018 in Emeryville, CA (**Pg. 57**)
- E. Approval to purchase supplies for arbovirus testing from ThermoFisher Scientific in an amount not to exceed \$13,700 from fund 7575.01.400.045 – Internal Mosquito RT-PCR *Budgeted; Funds Available* – **Jennifer Henke, M.S., Laboratory Manager (Pg. 58)**
- F. Approval to contract with the lowest responsible bidder, CleanExcel, for cleaning services for the District headquarters in an amount not to exceed \$3,496 per month, from fund 7675.01.305.000 – Contract Services *Budgeted; Funds Available* – **David I’Anson, Administrative Finance Manager (Pg. 59)**

11. **Old Business**

- A. Discussion and approval to enter into a service provider agreement with Slovak Baron Empey Murphy & Pinkney (SBEMP) to provide the District’s general attorney services in an amount not to exceed \$4,000 per month, from fund 6100.01.200.000, Attorney Fees, General *Budgeted; Funds Available* – **Jeremy Wittie, M.S., General Manager (Pg. 61)**

12. **New Business**

- A. Nomination and election of Board Officers for the 2019 Calendar Year – **ad hoc Nomination Committee (Pg. 77)**

- B. Discussion and/or approval of General Manager Employment Agreement Amendment– **ad hoc Negotiating Committee (Pg. 80)**
- C. Discussion and/or approval of the new District logo – **Jill Oviatt, M.C.D.M. Public Information Manager (Pg. 81)**

13. **Closed Session**

- A. None.

14. **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 situation 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 3 minutes.

15. **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.

All public records relating to an agenda item on this agenda are available for public inspection at the time the record is distributed to all, or a majority of all, members of the Board. Such records shall be available at the District office located at 43420 Trader Place, Indio, California

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**Certification of Posting**

I certify that on January 4, 2019, 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 4, 2019.

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Grace Morales, Clerk of the Board

**SECTION**

**9**



# **BOARD REPORTS**

# COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

## Finance Committee Meeting Minutes

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**TIME:** 4:00 P.M. NOVEMBER 13, 2018

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

**TRUSTEES PRESENT:**

Clive Weightman

Bito Larson

President Kaplan

**TRUSTEES ABSENT:** Betty Sanchez

**OTHERS PRESENT:**

Jeremy Wittie, General Manager

David l'Anson, Administrative Finance Manager

Grace Morales, Clerk of the Board

**1. Call to Order:** Treasurer Weightman called the meeting to order at 4:05 p.m.

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

**3. Confirmation of Agenda:**

**4. Public Comments:** None.

**5. Items of General Consent:**

**5A – Approval of Minutes from October 9, 2018, Finance Committee Meeting:** On motion from Trustee Larson seconded by Treasurer Weightman, and passed by unanimous vote, the Committee approved item 5A.

Trustee Benjamin Guitron arrived at 4:19 p.m.

**6. Discussion and/or Review:**

**6A. Review of Check Report from Abila MIP for the period of September 12, 2018 to October 3, 2018:** Reviewed by Committee.

**6B. CalCard Charges September 2018:** Reviewed by Committee. Trustee Larson asked what the charges from Hyatt, Advanced Inverter, and the Society for Vector Ecology travel expenses were for. Also, utility charges from Imperial Irrigation District looked higher than usual. A discussion ensued. The Committee asked Administrative Finance Manager, David l'Anson, to review charges at a later time and report findings at the next meeting.

**6C. Review of August 2018 Financials:** Reviewed by Committee. Treasurer Weightman mentioned he is pleased to see the changes to the reports Mr. l'Anson has made. Payroll expenditures and prepaids were discussed further. P&L is slightly favorable. General operating expenses are within expected figures and there is a 67% of budget remaining. Mr. Weightman requested the addition of a column to financial reports titled "YTD Budget."

**7. Old Business:** None.

**8. New Business:** None.

**9. Confirmation of Next Meeting:** The next Finance Committee Meeting was not scheduled. It will be scheduled at a later time in December.

**10. Trustee and/or Staff Comments/Future Agenda Items:** None.

**11. Adjournment:** The meeting was adjourned by Treasurer Weightman at 4:38 p.m.

**SECTION**  
**10**



**ITEMS OF GENERAL CONSENT**

# COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

## Board of Trustees Meeting Minutes

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CALLED TO ORDER: 5:04 P.M. NOVEMBER 13, 2018

LOCATION: 43420 Trader Place, Indio, CA 92201

### TRUSTEES PRESENT:

PRESIDENT :	Shelley Kaplan	City of Cathedral City
VICE-PRESIDENT	Doug Hassett	City of La Quinta
SECRETARY:	Franz De Klotz	County at Large
TREASURER:	Clive Weightman	Indian Wells

Palm Desert	Doug Walker	Palm Springs	Dr. Doug Kunz
County at Large	Bito Larson		
Rancho Mirage	Vacant		
Indio	Benjamin Guitron		

### TRUSTEES ABSENT:

Coachella	Betty Sanchez
Desert Hot Springs	Adam Sanchez

### OTHERS PRESENT:

Jeremy Wittie, General Manager  
Grace Morales, Clerk of the Board  
David l'Anson, Administrative Finance Manager  
Anita Jones, Human Resources Manager  
Jill Oviatt, Public Information Manager  
Edward Prendez, IT Manager  
Brad Anderson, Rancho Mirage Resident

1. **Call to Order:** President Kaplan called the meeting to order at 5:04pm.
2. **Pledge of Allegiance:** Trustee Hassett led the Pledge of Allegiance.
3. **Oath of Office:** N/A
4. **Roll Call:** Roll call indicated eight (8) Trustees out of ten (10) were present.
5. **Motion to Excuse Absences:**

On motion from Trustee Hassett seconded by Trustee Larson, and passed by unanimous vote, the Board of Trustees excused the absences of Trustee Betty Sanchez and Trustee Adam Sanchez.



**Ayes:** Trustees De Klotz, Kaplan, Kunz, Larson, Walker, Guitron, Weightman, and Hassett.

**Noes:** None.

**Abstained:** None.

**Absent:** Betty Sanchez and Adam Sanchez

**6. Confirmation of Agenda:** Oath of Office removed

**7. Public Comment:** Rancho Mirage resident, Brad Anderson, made a public comment regarding his ongoing matter regarding previous employment with the District, a recent service request he submitted, a past public records request he submitted, and a settlement check for a former employee.

**8. Closed Session:**

- A. Public Employee Appointment, Title: District Legal Counsel pursuant to Government Code Section 54957

Returning from Closed Session, President Kaplan announced that there was no reportable action.

**9. Presentation:** Audit report presentation of Fiscal Year 2017/2018

**10. Board Reports:**

**10A – President’s Report:** President Kaplan commented he has had the pleasure of serving on the Board for several years, however, this is his last meeting and wishes everyone well. Vice President Hassett expressed his appreciation for his time and service.

**10B – Finance Committee: Finance Committee Met Prior to Board Meeting:** Treasurer Weightman reported that the Finance Committee met to review the finances. He informed that the Administrative Finance Manager, David l’Anson, has generated two very helpful graphs that summarize the Districts fiscal position and that the Finances are looking good.

**11. Items of General Consent:**

- A. Minutes for October 9, 2018, Board Meeting
- B. Correspondence
- C. Approval of Expenditures for October 10-31, 2018, and November 1-13, 2018
- D. Informational Items:
  - District TravelTreasurer to Approve Release of Payment to Vendors for December District Travel

Staff reports from:

- 48<sup>th</sup> Annual SOVE Conference, October 7-11, 2018, Tenaya Lodge, Yosemite National Park, California.
- CASQA, October 15-17, 2018 in Riverside, California.
- MVCAC Fall Meeting, November 1-2, 2018 in Palm Springs, California.

- E. Department Reports
- F. Discussion and/or approval of Fiscal Year 2018/19 research proposals in an amount not to exceed \$150,000.00 from Fund #8510.01.600.000, Research Projects– Jennifer A. Henke, M.S., Laboratory Manager
- G. Approval of Resolution 2018-17 providing a gift certificate to employees for work performed late November through early December, 2018, in a total collective amount for all certificates not to exceed \$2,760.00, from fund 5300.01.225.000 – Employee Incentive– Jeremy Wittie, M.S., General Manager
- H. Approval of District Travel for Miguel Vargas, Vector Control Technician I to attend the Mosquito and Vector Control Association of California annual meeting February 3-7, 2019 to be held in Burlingame, California, in an amount not to exceed \$1,000.00 from Fund 6110.01.500.023 – MVCAC Annual Conference Expense– Wakoli Wekesa, Ph.D., Operations Manager
- I. Approval to re-administer Employee Satisfaction Survey by CPS HR Consulting in alignment with Strategic Plan, in an amount not to exceed \$5,760.00 from Fund 6095.01.202.000 – Professional Fees– Anita Jones, Human Resources Manager

**Public Comment:** Mr. Brad Anderson commented on the correspondence placed in this month's Board packet and he also expressed his disagreement with funding of item 11F.

On motion from Trustee Walker, seconded by Trustee Kunz, and passed by unanimous vote, the Board of Trustees approved the items of General Consent.

**Ayes:** Trustees De Klotz, Kaplan, Kunz, Larson, Walker, Guitron, Weightman, and Hassett.

**Noes:** None.

**Abstained:** None.

**Absent:** Trustees Betty Sanchez and Adam Sanchez.

## 12. Old Business:

- A. Discussion and approval to enter into Public Works contract with ABC Liovin Drilling, the lowest responsible bidder, for well destruction in an amount not to exceed \$30,000.00 from Capital Facility Replacement Fund – David l'Anson, Administrative Finance Manager

On motion from Trustee Hassett, seconded by Trustee Kunz, the Board of Trustees approved item 12A.

**Ayes:** Trustees De Klotz, Kaplan, Kunz, Walker, Guitron, Weightman, and Hassett.

**Noes:** Trustee Larson.

**Abstained:** None.

**Absent:** Betty Sanchez and Adam Sanchez.

**13. New Business:**

- A. Discussion and/or approval for the District to negotiate and execute a License Agreement or, some other form of agreement (i.e., easement), with the Coachella Valley Association of Governments to use a portion of the District's property for the construction of CV Link and an access point. Tom Kirk, Executive Director, CVAG
- B. Discussion and/or approval to purchase a scissor-lift in an amount not to exceed \$13,000.00 from Capital Equipment Replacement Fund – David I'Anson, Administrative Finance Manager

**Public Comment:** Mr. Brad Anderson expressed his disagreement with the CV Link easement. Martin Magana, CVAG Director of Transportation presented for Tom Kirk CVAG Executive Director.

The Board gave direction to General Manager, Jeremy Wittie, to complete specific tasks related to item 13A and bring back to the Executive Committee and then the full Board of Trustees in January for further review/discussion.

On motion from Trustee Guitron seconded by Trustee Hassett, and passed by unanimous vote, the Board of Trustees approved item 13B.

**Ayes:** Trustees De Klotz, Kaplan, Kunz, Larson, Walker, Guitron, Weightman, and Hassett.

**Noes:** None.

**Abstained:** None.

**Absent:** Betty Sanchez and Adam Sanchez.

**14. Closed Session**

- A. Closed Session: Public Employee Performance Evaluation of General Manager Pursuant to Government Code Section 54957 (b)(1)

Returning from Closed Session, there was no reportable action taken.

**15. Trustee Comments, Requests for Future Agenda Items, Travel and/or Staff Actions:**

None.

**15. Adjournment:** On motion from President Kaplan, seconded by Vice President Hassett, and passed by unanimous vote, the meeting was adjourned by President Kaplan at 9:50 p.m.

**Ayes:** Trustees Hassett, De Klotz, Guitron, Kunz, Larson, Walker, Kaplan, and Weightman.

**Noes:** None.

**Abstained:** None.

**Absent:** Betty Sanchez and Adam Sanchez.

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Doug Hassett  
Vice President

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Franz De Klotz  
Secretary



## CITY OF COACHELLA

1515 SIXTH STREET, COACHELLA, CALIFORNIA 92236

PHONE (760) 398-3502 • FAX (760) 398-8117 • [WWW.COACHELLA.ORG](http://WWW.COACHELLA.ORG)

December 18, 2018

Graciela Morales  
Clerk of the Board  
Coachella Valley Mosquito & Vector Control District  
43420 Trader Place  
Indio, CA 92201

**Via e-mail:** [gmorales@cvmvcd.org](mailto:gmorales@cvmvcd.org)

**Subject:** City of Coachella's Representatives on the  
Coachella Valley Mosquito and Vector Control Board

Dear Ms. Morales:

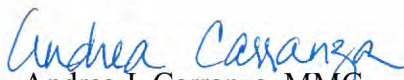
This letter is a formal notice of action by the City Council of the City of Coachella on December 12, 2018.

The City Council approved Councilmember Philip Bautista to serve as representative to the Coachella Valley Mosquito and Vector Control Board. His contact information is [pbautista@coachella.org](mailto:pbautista@coachella.org).

This term is a two year term expiring on January 2021.

If you have any questions, please feel free to contact me at (760) 398-3502, extension 102.

Sincerely,

  
Andrea J. Carranza, MMC  
Deputy City Clerk

# CITY OF RANCHO MIRAGE



November 27, 2018

Ms. Grace Morales  
Executive Assistant / Clerk of the Board  
Coachella Valley Mosquito and Vector Control District  
43-420 Trader Place  
Indio, CA 92201

RE: APPOINTMENT TO THE BOARD OF TRUSTEES

Dear Grace,

On November 15, 2018, the Rancho Mirage City Council appointed Mr. Isaiah Hagerman, City Manager of the City of Rancho Mirage, to serve as the City's representative on the Coachella Valley Mosquito and Vector Control District Board of Trustees. This appointment is for the remainder of the current term, as well as the subsequent two-year term ending January 4, 2021. Mr. Hagerman may be contacted at (760) 324-4511, or via email to [IsaiahH@RanchoMirageCA.gov](mailto:IsaiahH@RanchoMirageCA.gov).

If I may be of further assistance, please contact me at (760) 324-4511 Ext. 488.

Best Regards,

Kristie Ramos  
City Clerk

ADMINISTRATION  
Tel. 1.760.324.4511  
Fax. 1.760.324.8830

COMMUNITY DEVELOPMENT  
Tel. 1.760.328.2266  
Fax. 1.760.324.9851

FINANCE  
Tel. 1.760.770.3207  
Fax. 1.760.324.0528

HOUSING AUTHORITY  
Tel. 1.760.770.3210  
Fax. 1.760.341.6793

PUBLIC LIBRARY  
Tel. 1.760.341.7323  
Fax. 1.760.341.5213

PUBLIC WORKS  
Tel. 1.760.770.3224  
Fax. 1.760.770.3261



December 19, 2018

Grace Morales  
Executive Assistant/Clerk of the Board  
Coachella Valley Mosquito and Vector Control District  
43420 Trader Place  
Indio, CA 92201

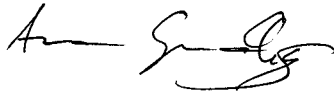
Ms. Morales:

At the December 13, 2018 Council meeting, the City Council re-appointed Clive Weightman to the Coachella Valley Mosquito & Vector Control District Board of Trustees **as the City of Indian Wells' representative. The term of appointment** is through January 2, 2021.

**Mr. Weightman's contact information is:**

Clive Weightman  
76-102 Via Montelena  
Indian Wells, CA 92210  
484-888-8880  
[cliveweightman@msn.com](mailto:cliveweightman@msn.com)

Sincerely,

A handwritten signature in black ink, appearing to read 'Anna Grandys', written over a horizontal line.

Anna Grandys, CMC  
City Clerk

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**From:** Sarah Crenshaw  
**Sent:** Thursday 11/1/2018 10:25 AM  
**To:** DistrictWideGroup  
**Subject:** Compliment Call - Oscar

Good morning,

I received a call from a Palm Springs resident who said Oscar was so polite and nice. She said that she just can't say enough about him and she would happily hire him for her business.

Great Job, Oscar!

Thank you,

*Sarah L Crenshaw*



# Coachella Valley Mosquito and Vector Control District

Checks Issued for the Period of:  
November 14 to December 11, 2018

Check No	Payable To	Description	Check Amount	Total Amount
	Payroll Disbursement	November 16th	183,071.36	
	Payroll Disbursement	November 30th	192,440.10	
				<b>375,511.46</b>
<b>Cash - First Foundation Bank Checking</b>				
41959	David Aaker	Districtwide Professional Development	1,500.00	
41960	Advance Imaging Systems	Contract Services	231.70	
41961	Airgas Safety Inc.	Operating Supplies	1,327.98	
41962	CarQuest Auto Parts	Vehicle Parts & Supplies	124.45	
41963	CDW Government, Inc	Vehicle Parts & Supplies	223.51	
41964	Cintas Corporation #3	Uniform Expense	2,391.48	
41965	City of Indio Alarm Program	Permits, Licenses & Fees	93.00	
41966	CleanExcel	Contract Services	3,235.00	
41967	C&R Wellness Works	Employee Assistance Program	264.00	
41968	Department of Environmental Health	Lab Permits	53.00	
41969	Desert Alarm, Inc.	Contract Services	1,179.70	
41970	Desert Electric Supply	Repair & Maintenance	520.23	
41971	Desert Resort Security Services	Contract Services	1,050.00	
41972	Employee Relations Inc.	Employee Support	10.00	
41973	Fedak & Brown, LLP	Professiona Services	1,070.00	
41974	Fisher Scientific Company LLC	Capital Outlay	11,952.72	
41975	Gempler's	Safety Expense	236.79	
41976	High Tech Irrigation, Inc.	Repair & Maintenance	60.23	
41977	Jernigan's Sporting Goods, Inc.	Safety Expense	175.00	
41978	Life Technologies Corporation	Internal Mosquito PCR	4,067.09	
41979	Marlin Business Bank	Contract Services	920.73	
41980	NAPA Auto & Truck Parts	Vehicle Parts & Supplies	224.97	
41981	nfpAccounting Technologies, Inc.	Professional Development	425.00	
41982	Praxair Distribution, Inc.	Equipment Parts & Supplies	48.05	
41983	Puretec Industrial Water	Equipment Parts & Supplies	272.55	
41984	Refrigeration Supplies Distributor	Repair & Maintenance	278.81	
41985	Rutan & Tucker, LLP	Attorney Fees	4,236.55	
41986	SoCo Group Inc., The	Fuel & Oils Expense	5,843.26	
41987	UPS	Delivery Services	23.06	
41988	Waterlogic Americas LLC	Employee Support	213.15	
41989	Waxie Sanitary Supply	Maintenance & Supplies	140.04	
41990	U.S. Bank	CalCard - November Statement	151,451.89	
41991	Graciela Morales	Tuition Reimbursement	559.02	
<b>Cash - First Foundation Bank Check Run Total to be Approved</b>				<b>194,402.96</b>
<b>Total Expenditures: November 14 to December 11, 2018</b>				<b>569,914.42</b>

Shelley Kaplan, President

Clive Weightman, Treasurer

# Coachella Valley Mosquito and Vector Control District

Checks Issued for the Period of:  
December 12, 2018 to January 3, 2019

Check No	Payable To	Description	Check Amount	Total Amount
	Payroll Disbursement	December 14, 2018	201,237.08	
	Payroll Disbursement	December 28, 2018	178,347.08	
				<b>379,584.16</b>
<b>Pre-Approved Expenditures:</b>				
41992	CalPERS Healthcare	Healthcare Premiums: December 2018 & January 2019	156,701.56	
41994	CalPERS Retirement	Retirement Contributions: 10/14 - 12/8/2018	101,893.89	
<b>Cash - First Foundation Bank Checking</b>				<b>258,595.45</b>
<b>Cash - First Foundation Bank Checking</b>				
41995	Advance Imaging Systems	Contract Services	197.74	
41996	Airgas Safety Inc.	Operating Supplies	308.06	
41997	American Engraving Co.	Reproduction & Printing	666.63	
41998	AvQuest Insurance Service	Property & Liability Insurance	4,070.00	
41999	Burrtec Waste Industries	Utilities	6.58	
42000	Chevrolet/Cadillac of La Quinta	Vehicle Parts & Supplies	219.97	
42001	Cintas Corporation #3	Uniform Expense	1,739.74	
42002	City of Indio Alarm Program	Permits, Licenses & Fees	20.00	
42003	Damon's Carpet Cleaning Supplies	Repair & Maintenance	40.00	
42004	Daniel's Tire Service	Tire Services	681.25	
42005	Desert Air Conditioning	Repair & Maintenance	98.00	
42006	Desert Electric Supply	Repair & Maintenance	111.93	
42007	Desert Fire Extinguisher Co., Inc.	Repair & Maintenance	374.40	
42008	Gempler's	Safety Expense	67.26	
42009	High Tech Irrigation, Inc.	Repair & Maintenance	126.10	
42010	Liebert Cassidy Whitmore	Attorney Fees	23,412.03	
42011	Pentair Aquatic Eco-Systems, Inc.	Lab Operating Supplies	78.33	
42012	Pitney Bowes Global Financial Svcs	Contract Services	305.43	
42013	Pitney Bowes Purchase Power	Postage	500.00	
42014	Praxair Distribution, Inc.	Equipment Parts & Supplies	167.60	
42015	Salton Sea Air Service	Aerial Application Rural	4,400.00	
42016	SoCo Group Inc., The	Motor Fuel & Oils	5,106.69	
42017	TCI Thermal Combustion Innovators, Inc.	Operating Supplies	405.39	
42018	UPS	Postage	11.18	
42019	U.S. Foods	Chemical Control	838.30	
42020	Waxie Sanitary Supply	Maintenance & Supplies	106.73	
42021	U.S. Bank	CalCard Statement 12/24/2018	72,771.45	
<b>Cash - First Foundation Bank Check Run Total to be Approved</b>				<b>116,830.79</b>
<b>Total Expenditures: December 12, 2018 to January 3, 2019</b>				<b>755,010.40</b>

Shelley Kaplan, President

Clive Weightman, Treasurer

Coachella Valley Mosquito and Vector Control District  
FINANCES AT A GLANCE  
ALL FUNDS COMBINED  
For the Month Ended December 31, 2018

	Beginning of the Month	Change During the Month	End of the Month
INVESTMENTS	\$ 8,931,434	\$ 387,235	\$ 9,318,669
CASH	\$ 159,724	(95,919)	\$ 63,805
INVESTMENTS & CASH	\$ 9,091,158	\$ 291,317	\$ 9,382,475
CURRENT ASSETS	1,907,066	87,629	1,994,695
FIXED ASSETS	10,725,824	-	10,725,824
OTHER ASSETS	5,111,294	-	5,111,294
TOTAL ASSETS	<u>\$ 26,835,342</u>	<u>\$ 378,946</u>	<u>\$ 27,214,288</u>
TOTAL LIABILITIES	\$ 5,518,995	\$ (96,600)	\$ 5,422,395
TOTAL DISTRICT EQUITY	21,316,347	475,546	21,791,893
TOTAL LIABILITIES & EQUITY	<u>\$ 26,835,342</u>	<u>\$ 378,946</u>	<u>\$ 27,214,288</u>
RECEIPTS		\$ 1,125,029	
CASH DISBURSEMENTS			
Payroll	\$ 380,716		
General Admin	\$ 452,998		
Total Cash Disbursements		\$ (833,715)	
NON-CASH ENTRIES:		\$ 87,631	
Accrual Modifications -			
Changes in A/P, A/R & Pre-paid insurance			
Change during Month - Excess of Cash over Receipts & Non-Cash Adjustments		<u>\$ 378,946</u>	

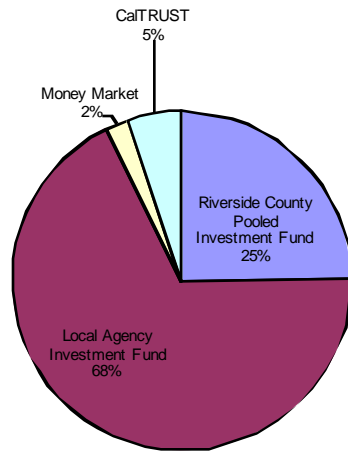
**CVMVCD**  
Cash Journal - deposits  
From 12/1/2018 Through 12/31/2018

<u>Effective ...</u>	<u>Payee/Recipient Name</u>	<u>Transaction Description</u>	<u>Deposits</u>
12/6/2018	Riverside County	December Receipts - Homowners Exemption	6,002.55
12/12/2018	Riverside County	December Receipts - Current Secured Advance	1,098,511.22
12/14/2018	Paymac Inc	December Receipts - Surplus Vehicles Sale	20,394.44
12/31/2018	First Foundation Bank	December Receipts	<u>121.22</u>
Report Total			<u><u>1,125,029.43</u></u>

**COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT**  
**INVESTMENT FUND BALANCES AS OF DECEMBER 31, 2018**

INSTITUTION	IDENTIFICATION	Issue Date	Maturity Date	YIELD	General Fund	Thermal Capital Fund	Capital Equipment Replacement Fund	Capital Facility Replacement Fund	BALANCE
	<b>Investment Fund Balance</b>				5,460,356	487,737	1,720,626	1,649,950	\$ 9,318,669
LAIF	Common Investments			2.29%	3,696,350	330,170	1,164,766	1,116,922	\$ 6,308,208
Riverside County	Funds 51105 & 51115			2.18%	1,360,443	121,519	428,693	411,084	\$ 2,321,739
CaITRUST	Medium Term Fund			1.49%	288,061	25,731	90,772	87,043	\$ 491,606
First Foundation	Market Rate			0.25%	115,502	10,317	36,396	34,901	\$ 197,117
	<b>Total Investments</b>				5,460,356	487,737	1,720,626	1,649,950	<b>\$ 9,318,669</b>

**PORTFOLIO COMPOSITION AS OF DECEMBER 31, 2018**  
**WEIGHTED YIELD 2.18%**



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  
From 12/1/2018 Through 12/31/2018

		Budget -			YTD Budget	Current	Current	Current	Total	Percent Total
		Original	YTD Budget	YTD Actual	Variance	Period	Period	Period	Original	Original
						Budget	Actual	Variance	Budget	Budget
									Remaining	Remaining
<b>Revenues</b>										
4000	Property Tax - Current Secured	3,733,045	1,054,227	<b>1,098,511</b>	44,284	1,054,227	<b>1,098,511</b>	44,284	(2,634,534)	(71)%
4010	Property Tax - Curr. Supplmntl	72,202	0	<b>0</b>	0	0	<b>0</b>	0	(72,202)	(100)%
4020	Property Tax - Curr. Unsecured	161,854	145,599	<b>147,283</b>	1,685	0	<b>0</b>	0	(14,571)	(9)%
4030	Homeowners Tax Relief	42,732	21,031	<b>6,003</b>	(15,028)	14,722	<b>6,003</b>	(8,719)	(36,729)	(86)%
4070	Property Tax - Prior Supp.	28,660	0	<b>0</b>	0	0	<b>0</b>	0	(28,660)	(100)%
4080	Property Tax - Prior Unsecured	9,902	0	<b>0</b>	0	0	<b>0</b>	0	(9,902)	(100)%
4090	Redevelopment Pass-Thru	4,275,025	0	<b>0</b>	0	0	<b>0</b>	0	(4,275,025)	(100)%
4520	Interest Income - LAIF/CDs	100,000	50,000	<b>50,288</b>	288	24,800	<b>121</b>	(24,679)	(49,712)	(50)%
4530	Other Miscellaneous Receipts	63,000	31,500	<b>15,334</b>	(16,166)	5,250	<b>0</b>	(5,250)	(47,666)	(76)%
4551	Benefit Assessment Income	1,996,366	0	<b>0</b>	0	0	<b>0</b>	0	(1,996,366)	(100)%
Total Revenues		10,482,786	1,302,357	<b>1,317,419</b>	15,062	1,098,999	<b>1,104,635</b>	5,636	(9,165,367)	(87)%
<b>Expenditures</b>										
Payroll Expenses										
5101	Payroll - FT	4,686,031	2,343,018	<b>2,204,634</b>	138,384	390,503	<b>363,382</b>	27,121	2,481,397	53 %
5102	Payroll Seasonal	208,460	92,648	<b>112,712</b>	(20,064)	0	<b>14,848</b>	(14,848)	95,748	46 %
5103	Temporary Services	6,900	6,900	<b>6,900</b>	0	0	<b>0</b>	0	0	0 %
5105	Payroll - Overtime Expense	41,700	20,850	<b>6,261</b>	14,589	3,475	<b>0</b>	3,475	35,439	85 %
5150	CalPERS State Retirement	566,460	349,516	<b>315,775</b>	33,741	36,158	<b>82,850</b>	(46,692)	250,685	44 %
5155	Social Security Expense	302,827	151,416	<b>141,724</b>	9,692	25,236	<b>20,587</b>	4,649	161,103	53 %
5165	Medicare Expense	70,821	35,412	<b>34,469</b>	943	5,902	<b>5,620</b>	282	36,352	51 %
5170	Cafeteria Plan	1,031,051	515,526	<b>610,953</b>	(95,427)	85,921	<b>175,996</b>	(90,075)	420,098	41 %
5172	Retiree Healthcare	342,420	171,210	<b>62,394</b>	108,816	28,535	<b>10,301</b>	18,234	280,026	82 %
5180	Deferred Compensation	101,030	50,514	<b>5,528</b>	44,986	8,419	<b>(10,199)</b>	18,618	95,502	95 %
5195	Unemployment Insurance	36,405	18,204	<b>4,673</b>	13,531	3,034	<b>574</b>	2,460	31,732	87 %
Total Payroll Expenses		7,394,105	3,755,214	<b>3,506,023</b>	249,191	587,183	<b>663,960</b>	(76,777)	3,888,082	53 %

CVMVCD  
Statement of Revenue and Expenditures  
From 12/1/2018 Through 12/31/2018

		Budget -			YTD Budget	Current	Current	Current	Total	Percent Total
		Original	YTD Budget	YTD Actual	Variance	Period	Period	Period	Original	Original
						Budget	Actual	Variance	Budget	Budget
									Remaining	Remaining
Administrative Expenses										
5250	Tuition Reimbursement	15,000	7,500	4,779	2,721	1,250	559	691	10,221	68 %
5300	Employee Incentive	6,000	3,000	127	2,873	500	0	500	5,873	98 %
5301	Employee Support	4,000	1,998	1,501	497	333	213	120	2,499	62 %
5302	Wellness	600	0	0	0	0	0	0	600	100 %
5305	Employee Assistance Program	3,200	1,602	1,596	6	267	0	267	1,604	50 %
6000	Property & Liability Insurance	79,895	9,948	47,982	(38,034)	(48,342)	(10,505)	(37,837)	31,913	40 %
6001	Workers' Compensation Insurance	85,730	(22,132)	15,164	(37,296)	(112,022)	(74,576)	(37,446)	70,566	82 %
6050	Dues & Memberships	25,480	23,035	24,405	(1,370)	407	0	407	1,076	4 %
6060	Reproduction & Printing	21,750	10,878	3,416	7,462	1,813	667	1,146	18,334	84 %
6065	Recruitment/Advertising	6,500	3,252	2,903	349	542	0	542	3,597	55 %
6070	Office Supplies	14,980	7,488	7,496	(8)	1,248	0	1,248	7,484	50 %
6075	Postage	8,500	4,248	1,534	2,714	708	523	185	6,966	82 %
6080	Computer & Network Systems	5,000	2,502	1,388	1,114	417	0	417	3,612	72 %
6085	Bank Service Charges	200	102	13	89	17	0	17	187	93 %
6090	Local Agency Formation Comm.	1,200	1,200	1,129	71	0	0	0	71	6 %
6095	Professional Fees	53,000	26,502	20,064	6,438	4,417	3,177	1,240	32,936	62 %
6100	Attorney Fees	90,000	45,000	32,974	12,026	7,500	9,718	(2,218)	57,026	63 %
6105	Legal Services / Filing Fees	1,000	0	0	0	0	0	0	1,000	100 %
6106	HR Risk Management	4,500	4,500	4,500	0	0	0	0	0	0 %
6110	Conference Expense	48,800	10,000	2,523	7,477	3,200	0	3,200	46,277	95 %
6115	In-Lieu	13,200	6,600	6,100	500	1,100	1,000	100	7,100	54 %
6120	Trustee Support	4,000	1,998	1,830	168	333	175	158	2,170	54 %
6200	Meetings Expense	2,000	1,002	406	596	167	0	167	1,594	80 %
6210	Promotion & Education	26,000	0	1,938	(1,938)	0	0	0	24,062	93 %
6220	Public Outreach Advertising	46,000	0	0	0	0	0	0	46,000	100 %
6500	Benefit Assessment Expenses	96,000	15,000	13,850	1,150	0	0	0	82,150	86 %
<b>Total Administrative Expenses</b>		662,535	165,223	197,618	(32,396)	(136,145)	(69,049)	(67,096)	464,917	70 %
Utilities										
6400	Utilities	105,000	52,500	30,565	21,935	8,750	7	8,743	74,435	71 %
6410	Telecommunications	11,000	5,502	2,075	3,427	917	0	917	8,925	81 %
<b>Total Utilities</b>		116,000	58,002	32,640	25,362	9,667	7	9,660	83,360	72 %

CVMVCD  
Statement of Revenue and Expenditures  
From 12/1/2018 Through 12/31/2018

		Budget -			YTD Budget	Current	Current	Current	Total	Percent Total
		Original	YTD Budget	YTD Actual	Variance	Period	Period	Period	Original	Original
						Budget	Actual	Variance	Budget	Budget
									Remaining	Remaining
Operating										
7000	Uniform Expense	26,650	13,326	14,806	(1,480)	2,221	2,337	(116)	11,844	44 %
7050	Safety Expense	23,350	11,676	6,512	5,164	1,946	0	1,946	16,838	72 %
7100	Physican Fees	4,000	1,998	2,755	(757)	333	0	333	1,245	31 %
7150	IT Communications	40,000	19,998	7,710	12,288	3,333	0	3,333	32,290	81 %
7200	Household Supplies	4,000	1,998	1,745	253	333	107	226	2,255	56 %
7300	Repair & Maintenance	42,000	21,000	9,479	11,521	3,500	526	2,974	32,521	77 %
7310	Maintenance & Calibration	6,000	3,000	0	3,000	500	0	500	6,000	100 %
7350	Permits, Licenses & Fees	10,850	5,424	3,750	1,674	904	20	884	7,100	65 %
7400	Vehicle Parts & Supplies	32,000	16,002	14,727	1,275	2,667	1,615	1,052	17,273	54 %
7420	Offsite Vehicle Maint & Repair	12,500	6,252	6,392	(140)	1,042	0	1,042	6,108	49 %
7450	Equipment Parts & Supplies	16,500	8,250	3,401	4,849	1,375	78	1,297	13,099	79 %
7500	Small Tools Furniture & Equip	1,700	852	262	590	142	0	142	1,438	85 %
7550	Lab Supplies & Expense	30,500	15,252	12,753	2,499	2,542	0	2,542	17,747	58 %
7570	Aerial Pool Surveillance	25,000	0	0	0	0	0	0	25,000	100 %
7575	Surveillance	45,500	22,752	10,657	12,095	3,792	0	3,792	34,843	77 %
7600	Staff Training	72,000	39,003	29,273	9,730	5,363	425	4,938	42,727	59 %
7650	Equipment Rental	1,000	498	540	(42)	83	0	83	460	46 %
7675	Contract Services	131,232	65,616	61,261	4,355	10,936	6,169	4,767	69,971	53 %
7700	Motor Fuel & Oils	73,200	36,600	42,349	(5,749)	6,100	5,107	993	30,851	42 %
7750	Field Supplies	9,400	4,698	3,841	857	783	0	783	5,559	59 %
7800	Control Products	785,000	392,496	200,380	192,116	65,416	27,150	38,266	584,620	74 %
7850	Aerial Applications	114,500	76,332	46,875	29,457	0	4,400	(4,400)	67,625	59 %
8415	Capital Outlay	20,650	10,326	3,943	6,383	1,721	0	1,721	16,707	81 %
8510	Research Projects	150,000	0	0	0	0	0	0	150,000	100 %
9000	Contingency Expense	150,000	75,000	0	75,000	12,500	0	12,500	150,000	100 %
<b>Total Operating</b>		1,827,532	848,349	483,411	364,938	127,532	47,935	79,598	1,344,121	74 %
Contribution to Capital Reserves										
8900	Transfer to other funds	482,614	241,308	241,307	1	40,218	40,218	0	241,307	50 %
<b>Total Contribution to Capital Reserves</b>		482,614	241,308	241,307	1	40,218	40,218	0	241,307	50 %
<b>Total Expenditures</b>		10,482,786	5,068,096	4,461,000	607,096	628,455	683,070	(54,615)	6,021,786	57 %
<b>Net revenue over/(under) expenditures</b>		0	(3,765,739)	(3,143,581)	622,158	470,544	421,565	(48,979)		



**CVMVCD**  
Balance Sheet  
As of 12/31/2018  
(In Whole Numbers)

		<u>Current Year</u>
Assets		
Cash and Investments		
1000	Cash - Investments	9,318,669
1016	Petty Cash	500
1017	Petty Cash Checking	1,500
1025	First Foundation - General	262
1026	First Foundation - Payroll	61,543
	Total Cash and Investments	<u>9,382,475</u>
Current Assets		
1050	Accounts Receivable	24,615
1085	Inventory	632,699
1168	Prepaid Insurance	179,471
1169	Deposits	1,157,910
	Total Current Assets	<u>1,994,695</u>
Fixed Assets		
1300	Equipment/Vehicles	1,870,816
1310	Computer Equipment	417,111
1311	GIS Computer Systems	301,598
1320	Office Furniture & Equipment	1,218,125
1330	Land	417,873
1335	Oleander Building	5,665,862
1336	Signage	23,651
1340	Structures & Improvements	3,026,126
1341	Bio Control Building	6,963,768
1342	Bio Control Equip/Furn	32,034
1399	Accumulated Depreciation	(9,211,140)
	Total Fixed Assets	<u>10,725,824</u>
Other Assets		
1520	Resources to Be Provided	3,514,102
1525	Deferred Outflows of Resources	1,284,772
1530	Deferred Outflows of Resources - OPEB	312,420
1900	Due to/from	0
	Total Other Assets	<u>5,111,294</u>
	Total Assets	<u><u>27,214,288</u></u>
Liabilities		
Short-term Liabilities		
Accounts Payable		
2015	Credit Card Payable	(164,566)
2020	Accounts Payable	58,782
2030	Accrued Payroll	(4,276)
2035	Fundware AP Clearing	1
2040	Payroll Taxes Payable	(1,293)

**CVMVCD**  
Balance Sheet  
As of 12/31/2018  
(In Whole Numbers)

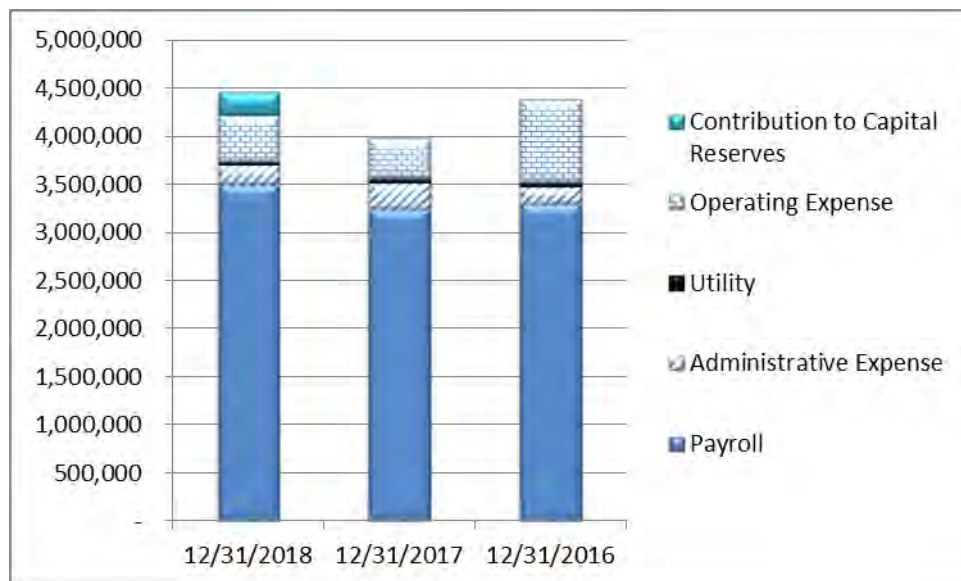
		<b>Current Year</b>
2175	Claims/Judgements Payable	(442)
2185	Employee Dues	(61)
	Total Accounts Payable	(111,855)
	Total Short-term Liabilities	(111,855)
	Long-term Liabilities	
2100	Pollution Remediation Obligation	2,100,000
2200	Net Pension Liability	1,763,285
2210	Deferred Inflows of Resources	131,145
2300	Net OPEB Liability	877,253
2500	Compensated Absences Payable	662,567
	Total Long-term Liabilities	5,534,250
	Total Liabilities	5,422,395
	Fund Balance	
	Non Spendable Fund Balance	
3920	Investment in Fixed Assets	10,698,793
3945	Reserve for Prepaids & Deposit	1,373,799
3960	Reserve for Inventory	532,129
	Total Non Spendable Fund Balance	12,604,721
	Committed Fund Balance	
3965	Public Health Emergency	4,103,640
	Total Committed Fund Balance	4,103,640
	Assigned Fund Balance	
3910	Reserve for Operations	4,500,000
3925	Reserve for Future Healthcare Liabilities	877,253
3955	Thermal Remediation Fund	463,724
3970	Reserve for IT Replacement	277,991
3971	Reserve for Vehicle Replacement	344,376
	Total Assigned Fund Balance	6,463,344
	Unassigned Fund Balance	
3900	Fund Equity	1,513,538
3999	P&L Summary	(499)
	Total Unassigned Fund Balance	1,513,039
	Current YTD Net Income	(2,892,852)
	Total Current YTD Net Income	(2,892,852)
	Total Fund Balance	21,791,893
	Total Liabilities and Net Assets	27,214,288

## FINANCE

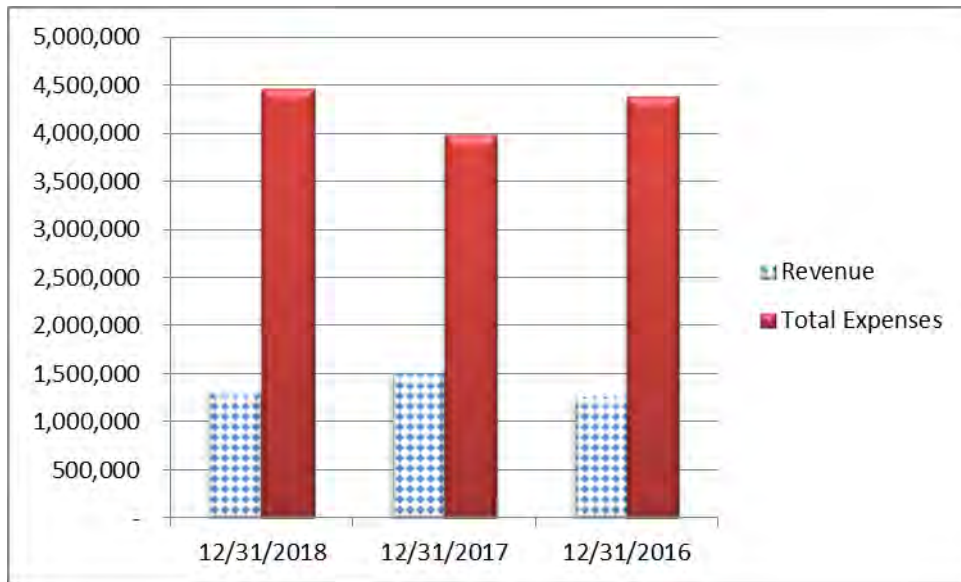
The financial reports show the balance sheet, receipts, and the revenue and expenditure reports for the month ending December 31, 2018. The revenue and expenditure report shows that the operating budget expenditure for July 1, 2018 to December 31, 2018 is \$4,461,000; total revenue is \$1,317,419 resulting in excess revenue over (under) expenditure for the year to December 31, 2018 of (\$3,143,580).

### THREE YEAR FINANCIALS

	12/31/2018	12/31/2017	12/31/2016
<b>Total Revenue</b>	<b>1,317,419</b>	<b>1,490,188</b>	<b>1,252,844</b>
Expenses			
Payroll	3,506,023	3,240,686	3,295,891
Administrative Expense	197,618	275,357	184,385
Utility			
	32,640	50,176	51,391
Operating Expense	483,411	415,759	848,048
Contribution to Capital Reserves	241,307		
<b>Total Expenses</b>	<b>4,461,000</b>	<b>3,981,979</b>	<b>4,379,715</b>
<b>Profit (Loss)</b>	<b>(3,143,580)</b>	<b>(2,491,791)</b>	<b>(3,126,871)</b>



**Figure 1 Three Year Expenditure**



**Figure 2 Three Year Revenue & Expenditure**

### THREE YEAR CASH BALANCE

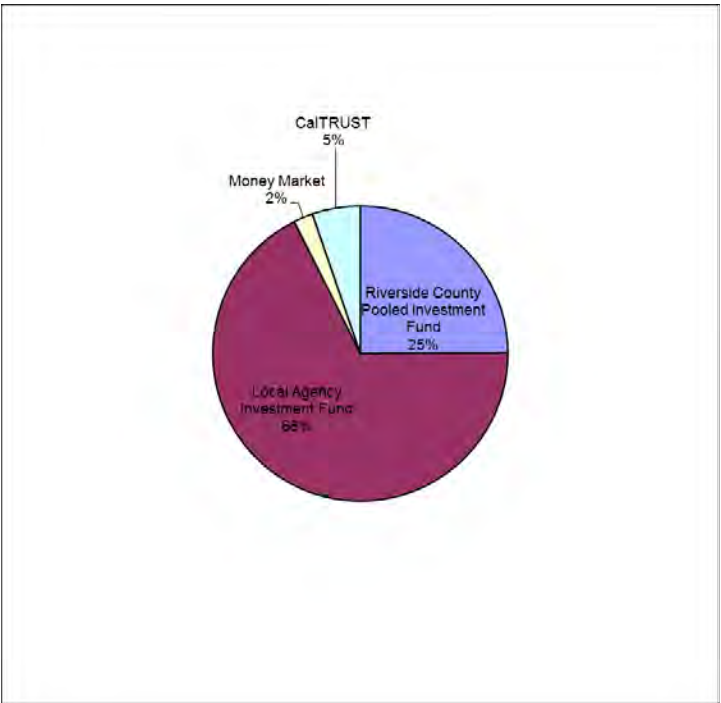
CASH BALANCES	12/31/2018	12/31/2017	12/31/2016
Investment Balance	9,318,669	9,237,976	9,669,926
Checking Accounting	262	11,967	6,217
Payroll Account	61,543	121,849	68,916
Petty Cash	2,000	2,000	2,000
<b>TOTAL CASH BALANCES</b>	<b>9,382,474</b>	<b>9,373,792</b>	<b>9,747,059</b>



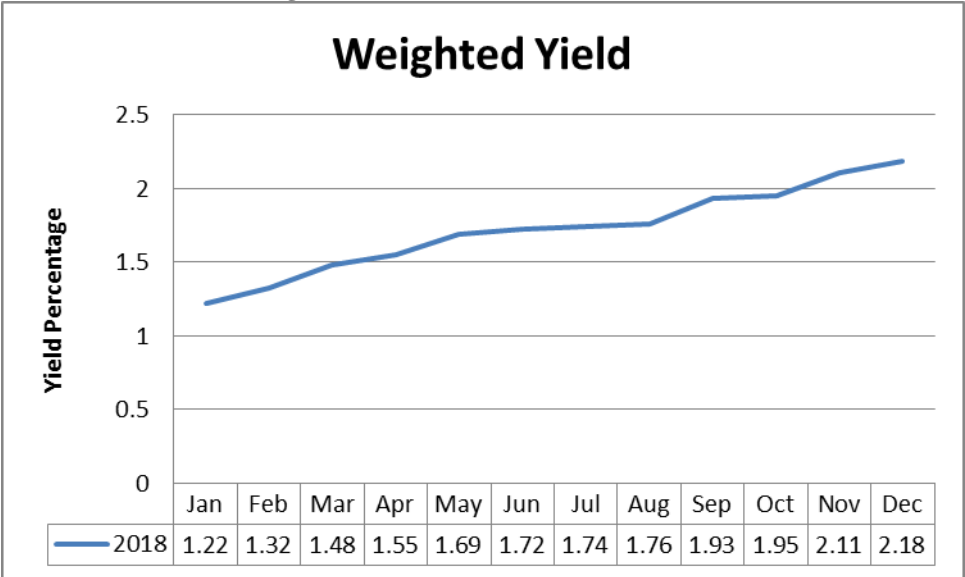
**Figure 3 Cash Balances**

**DISTRICT INVESTMENT PORTFOLIO 12/31/2018**

The District’s investment fund balance for the period ending December 31, 2018 is \$9,318,669. The portfolio composition is shown in the pie chart. Local Agency Investment Fund (LAIF) accounts for 68% of the District’s investments; the Riverside County Pooled Investment Fund is 25% of the total. The LAIF yield for the end of December was 2.29% and the Riverside County Pooled Investment Fund was 2.18%; this gives an overall weighted yield for District investments of 2.18%.



**Figure 4 Investment Portfolio 12-31-18**



**Figure 5 District Investments Weighted Yield**

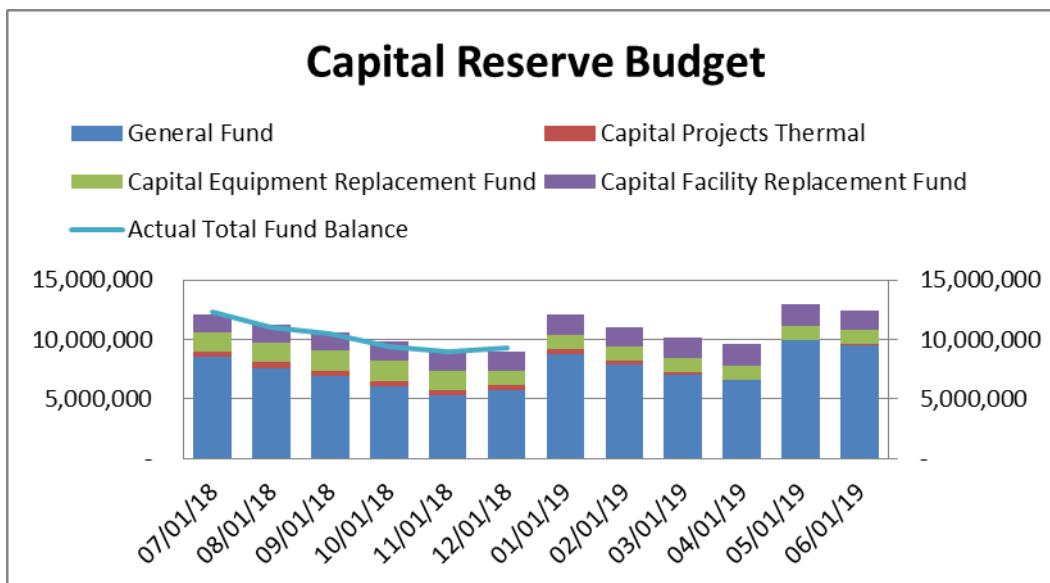


Figure 6 Capital Reserve Budget

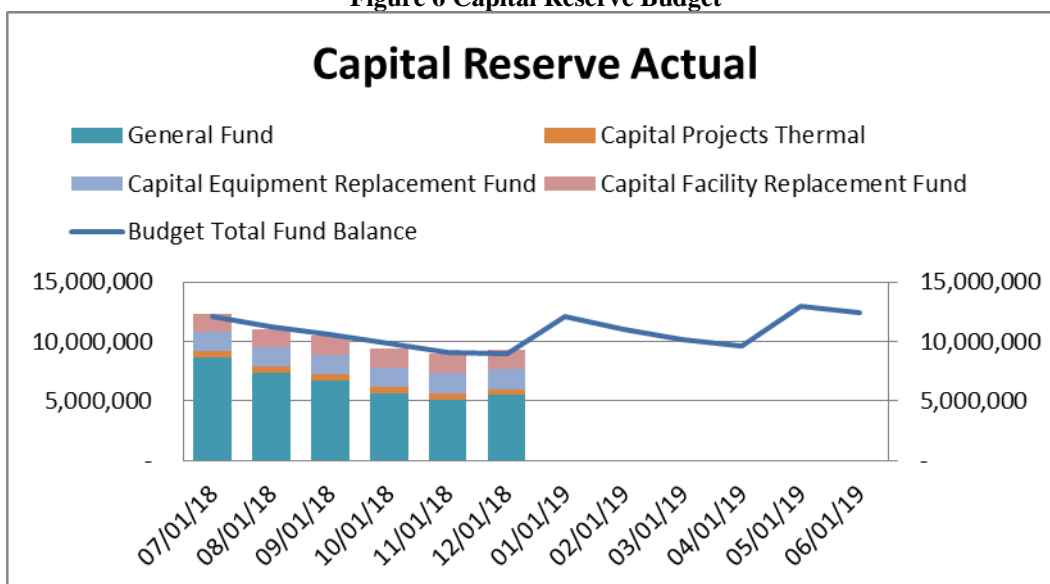


Figure 7 Capital Reserve Actual

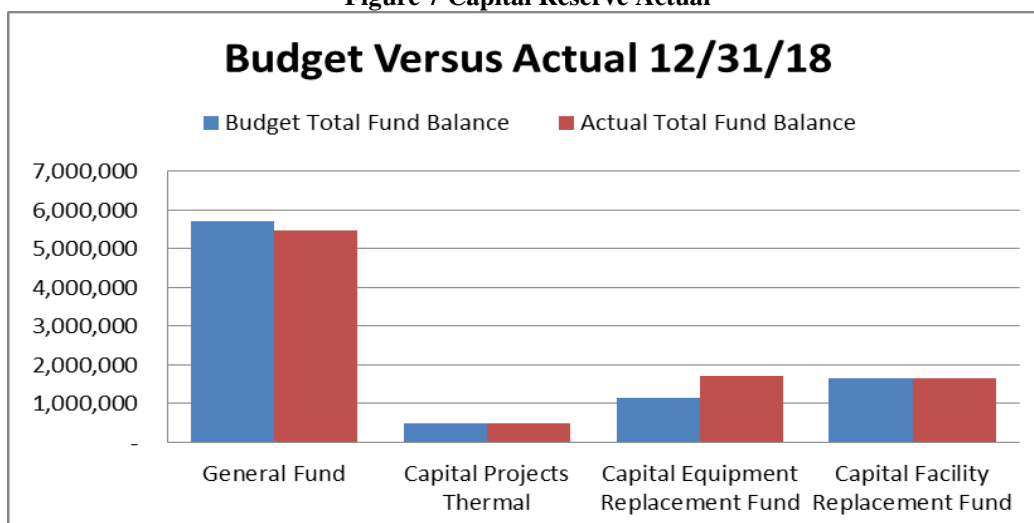
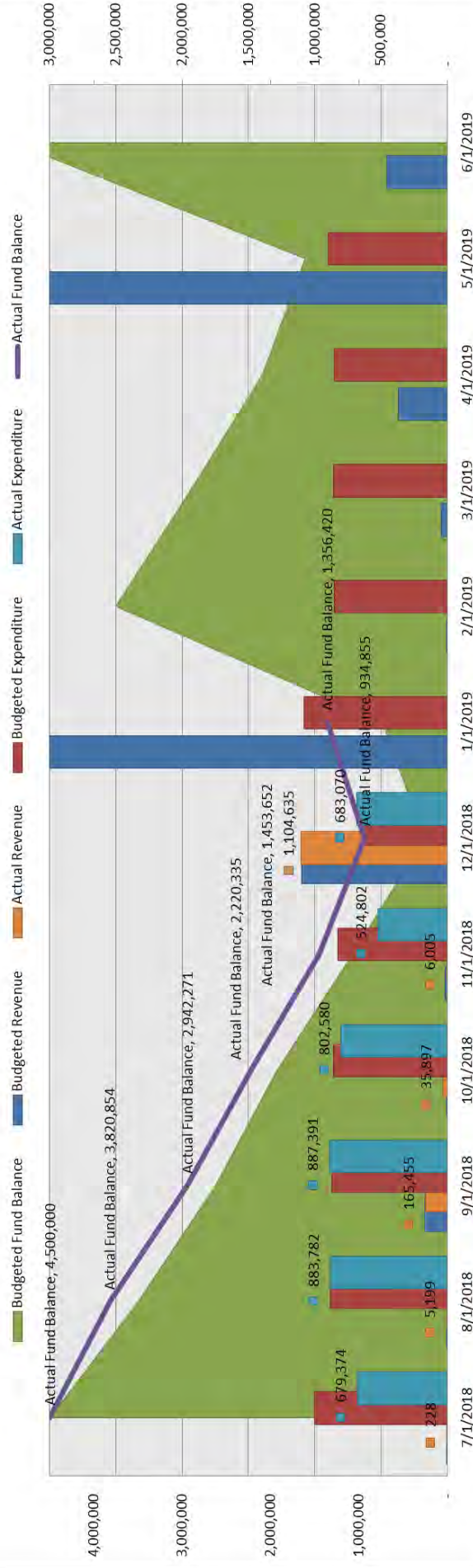


Figure 8 Capital Reserve 12/31/2018

## General Fund Operational Cash Flow




The **General Fund Operational Cash Flow** graph outlines the District's working capital for the fiscal year July 1 2018 to June 30 2019. The beginning fund and ending fund balance is \$4.5 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. The budget also accounts for prepayments. The revenue follows a different pattern, Riverside County distribute the property tax revenue in January and May with advancements in December and April.

The *green shaded area* represents the **Budgeted Fund Balance** which has a formula of (beginning) **Fund Balance** plus **Revenue** minus **Expenditure**. The *purple line* represents the **Actual Fund Balance** and is graphed against the *green shaded area* **Budgeted Fund Balance**.


The graph shows for December 31 the \$4.5 million **Fund Balance** plus total Revenue for July 1 to December 31, 2018 of \$1.3 million minus total Expenditure of \$4.46 million is \$1,354,420. For planning purposes the District is well within budget, showing revenue is slightly higher and expenditure is lower than budgeted. As long as the purple line stays out of the green shaded area the District is doing fine.



	<p><b>Coachella Valley Mosquito and Vector Control District</b></p> <p><b>Staff Report</b></p>	<p><b>January 8, 2019</b></p>
<p><b>Agenda Item:</b> Informational Item</p> <p>District Travel – <b>Grace Morales, Executive Assistant/Clerk of the Board</b></p>		
<p><b>Background:</b></p> <p><b>February 3-6, 2019: MVCAC Annual Conference (Burlingame, CA)</b> ~ The annual MVCAC Conference provides quality public information, comprehensive mosquito and vector-borne disease surveillance, training to high professional standards, and effective legislative advocacy on behalf of California mosquito and vector control districts. MVCAC promotes cost effective methods of mosquito and vector control as a means to protect public health and safety. MVCAC actively promotes the safe and effective use of public health pesticides. MVCAC does this through legislative advocacy, public education and media relations.</p> <p><b>Requests to attend must have been made by the NOVEMBER 2018 BOARD MEETING.</b></p> <p><b>February 25-March 1, 2019: AMCA 85th Annual Meeting (Orlando, FL)</b> ~ The annual meeting of the American Mosquito Control Association (AMCA) is an opportunity for staff to meet with leading mosquito professionals from North America and other countries.</p> <p><b>Requests to attend must have been made by the NOVEMBER 2018 BOARD MEETING.</b></p> <p><b>March 31 - April 2, 2019: MVCAC Spring Meeting and Legislative Days (Sacramento, CA)</b> ~ This year MVCAC will be combining their Spring Board and Planning meeting with Lobby Day. Lobby Day provides an opportunity for District staff and trustees to meet with Legislators in Sacramento to foster relationships, share about the importance of mosquito and vector control in California, and discuss issues facing mosquito control in California and the Coachella Valley. Part of this year's focus will be on issues related to mosquito research funding in California.</p> <p><b>Requests to attend must be made by the FEBRUARY 2019 BOARD MEETING.</b></p>		



<b><u>Workshops and Webinars Offered Through CSDA</u></b>			
<b>Type</b>	<b>Description</b>	<b>Dates &amp; Times</b>	<b>Cost</b>
Workshop	<b>Board Member Best Practices</b> <i>This fast paced and informative session covers all of the essential best practices of serving as a trustee of a special district: the roles of board members and staff, policies and procedures your district should consider ensuring effective governance, and general ethics principles related to special districts including an overview of the laws affecting special districts.</i>	Thursday, February 14, 2019 9:00 a.m. – 1:00 p.m. Cucamonga Valley Water District	\$50
Webinar	<b>Maximize Your Membership Series: Resources for Board Members/Trustees</b> <i>In your role in the governing body of a special district, you need to know where to turn for information and resources. Learn how CSDA can help you best serve your community.</i>	Friday, February 22, 2019 10:00 – 10:30 a.m.	Free
<b>If you would like to attend either one, please let me know by February 1, 2019</b>			

	<p align="center"><b>Coachella Valley Mosquito and Vector Control District</b></p> <p align="center"><b>Staff Report</b></p>	<p align="center"><b>January 8, 2019</b></p>
<p><b>Agenda Item:</b> Informational Item</p> <p>Semi-annual research reports from the University of California, Riverside, the University of California, Davis, and the USDA for 2018 – <b>Jennifer A. Henke, MS, Laboratory Manager</b></p>		
<p><b>Background:</b></p> <p>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, and understanding vector biology. The proposals include finding a new methodology for detecting arboviruses and controlling adult mosquitoes, using biological control organisms to target adult mosquitoes in storm water systems, examining new control strategies for adult mosquitoes, and examining the impacts of water on fire ant control product efficacy. Each of the proposals were approved by the Research Committee and later approved by the full Board of Trustees at the November 2017 Meeting.</p> <p>As described in District’s Research Funding Policy and Procedure, researchers are to provide semiannual progress reports. The reports are from the following proposals:</p> <ol style="list-style-type: none"> <li><b>1. UC Davis (Dr. L. Coffey) – The proposal includes:</b> <ol style="list-style-type: none"> <li>a. Determine the number of mosquitoes feeding on sugar bait stations to allow for comparisons between current testing methods and testing sugar bait stations for arbovirus.</li> <li>b. Elucidate the most effective floral scent for attraction and use of sugar bait stations</li> </ol> </li> <li><b>2. UC Riverside (Dr. W. Walton) – The proposal includes:</b> <ol style="list-style-type: none"> <li>a. Examine the use of attractive toxic sugar bait stations with fungi and pyriproxifen as the toxic agents in storm drains</li> </ol> </li> <li><b>3. USDA (Dr. D. Oi) – The proposal includes:</b> <ol style="list-style-type: none"> <li>a. Examine the efficacy of water resistant baits as a control product for red imported fire ants.</li> <li>b. Evaluate the spread of 3 types of biological control organisms (decapitating phorid flies) released during the project funded in 2014-2015.</li> </ol> </li> </ol>		
<p><b>Exhibits:</b></p> <ul style="list-style-type: none"> <li>• UC Davis Annual Research Report – Dr. Coffey</li> <li>• UC Riverside Annual Research Report – Dr. Walton</li> <li>• USDA Annual Research Report – Dr. Oi</li> </ul>		

# Comparison of Floral Scent Attractants for *Culex* Mosquitoes in the Coachella Valley

Coachella Valley Mosquito and Vector Control District  
Final Report  
December 2018

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## Background

Sugar baits (Figure 1A), as describe in Steiner et al 2018<sup>1</sup>, have been shown to be a cost-effective means of detecting arbovirus activity in California. In an effort to enhance the effectiveness of sugar baits, this study was designed to investigate the abundance of mosquitoes attracted to scented-sugar baits. Sugar baits were modified to capture mosquitoes and treated with one of three scents. Scented traps were deployed in the Coachella Valley Mosquito and Vector Control District (CVMVCD) during the fall of 2018 to compare 3 scents.

## Study Design

### TRAP DESIGN

Sugar baits consisted of a 1.5 ml test tub filled with 1 ml of 40% sugar-water solution with a cotton dental wick plug (Figure 1A). The tubes were suspended in peat pots to provide shade. Three passive traps were tested to capture mosquitoes attracted to the sugar baits. In traps 1 (Figure 1B) and 2 (Figure 1C and D), sticky fly paper (yellow) was attached to the inside of the peat pot. The design of trap 3 (Figure E) was based on a commercially available passive trap with solid sides that would only allow diffusion of the scent through the trap entrance. Mosquitoes enter the trap through a 1-inch hole in the mesh funnel and are unable to escape because they are averse to flying downward.

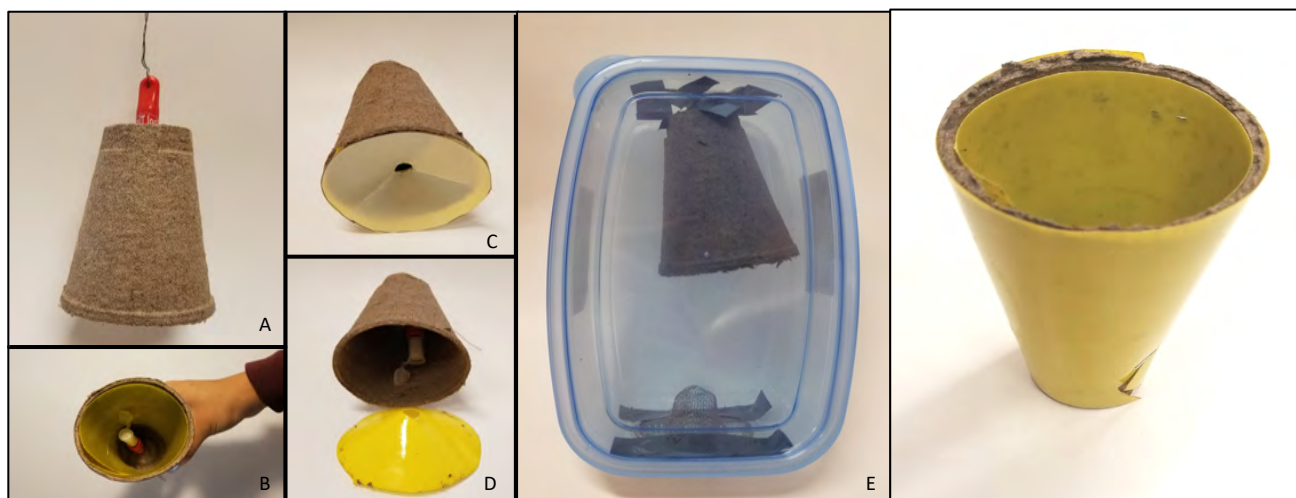


Figure 1. Trap Design. Sugar baits (A) were previously developed by Cody Steiner and reported in Steiner et al 2018. Three possible traps were tested: trap 1 (B), trap 2 (C and D) and trap 3 (E). All traps included the sugar-bait. Traps 1 and 2 rely on sticky paper to capture the mosquitoes that visit the sugar-bait. In trap 3, the sugar-baits are housed in an 82.2 oz plastic container with a mesh funnel. Mosquitoes enter the trap through a 1-inch hole in the mesh funnel and are unable to escape because they are averse to flying downward. (F) The trap design that was deployed in Coachella Valley was based on trap design 1 and had sticky paper on the inside and outside of the peat pot.

<sup>1</sup>Cody D Steiner, Kasen K Riemersma, Jackson B Stuart, Anil Singapuri, Hugh D Lothrop, Lark L Coffey; Scented Sugar Baits Enhance Detection of St. Louis Encephalitis and West Nile Viruses in Mosquitoes in Suburban California, *Journal of Medical Entomology*, Volume 55, Issue 5, 29 August 2018, Pages 1307–1318, <https://doi.org/10.1093/jme/tjy064>

Trap design 1 proved to be the most robust in early field trials conducted in the Sacramento and Yolo Mosquito and Vector Control District. However, few insects were captured by the sticky paper. The addition of sticky paper to the outside of the sugar bait (Figure 1F) greatly increase the number of insects captured in the field trials and was ultimately selected for use in this study. In the Coachella valley, so few insects were collected on the sticky paper lining the inside of the trap that it was dispensed with.

#### SITE SELECTION AND DEPLOYMENT

A total of 154 sticky traps were deployed between September 7, 2018 through December 11, 2018 (Figure 2). Traps were deployed at rural locations from September 7, 2018 through October 22, 2018. Sites were selected because they demonstrated a history of high mosquito abundance. Sites 1 to 4 were located at Adohrs duck club (Figure 2A-C). Traps were deployed to suburban sites between November 12, 2018 and December 11, 2018. Site 5 was located in Bermuda Dunes Country Club (Figure 2D), site 6 was located in La Quinta Golf Estates (Figure 2E), site 7 was located near Trilogy Estates (Figure 2F), and site 8 was located at the Coachella Valley Mosquito and Vector Control District office (Not Shown). No traps were deployed between October 22, 2018 and November 5, 2018.

During each trapping period, sticky traps were deployed at four locations. Four sticky traps were deployed at each site (16 total traps each trapping period). Traps were treated with one of the following scents: Plumeria, Phenylacetaldehyde (PAA), Human and Untreated. The Untreated traps did not receive any scent. Plumeria-scented traps received 10 sprays of is a commercially- available, synthetic, floral scent called Plumeria Fine Fragrance Mist purchased from Bath and Bodyworks stores. PAA-scented traps received a dose of 10 sprays. PAA is a



Figure 2. Sites of trap deployment. A-C) Traps in rural sites were deployed at Adohrs Duck Club, D) Bermuda Dunes, E) Golf Estates, and F) Trilogy Estates.



common floral volatile that has been demonstrated to attract mosquitoes (Lothrop et al 2012)<sup>2</sup>. Human-scented traps were deployed alongside a commercially available Human Skin Non-Toxic Chemical Lure available from Bioquip.

Traps were spaces at least 30 meters apart to prevent the scents from interfering. Sticky traps were rotated each trapping period to mitigate any confounding factors associated with intra-site variation. Sticky traps were collected between 4-10 days after deployment at which point mosquitoes were counted and speciated.

## TECHNICAL CHALLENGES

### *TECHNICAL CHALLENGES RELATING TO STICKY PAPER*

While the sticky paper was effective at capturing insects, it was difficult to work with, especially in field conditions. To facilitate transport, a transport rack was constructed with PVC pipe (Figure 3A). The rack allowed traps to be transported more easily and limited transfer of adhesive to the user. The rack had additional benefits as it protected the sticky paper from coming into contact with personal or environmental contaminants.

### *UNINTENDED CAPTURES*

During the trap deployment in suburban areas, there was a single instance in which two birds were captured by the sticky traps. From then forwards, sticky traps were enclosed in a mesh cage constructed from



Figure 3. Trap transport and assembly. The adhesive on the sticky paper created several challenges in the field. (A) A PVC rack was constructed to help move traps between the lab and field sites. (B) Dixie cups were used to prevent the contact between the user's skin and the sticky paper during trap assembly.



Figure 4. Trap cage. A mesh cage was constructed to prevent local wild life from coming into contact with the sticky traps.

<sup>2</sup>Hugh D. Lothrop, Sarah S. Wheeler, Ying Fang, William K. Reisen; Use of Scented Sugar Bait Stations to Track Mosquito-Borne Arbovirus Transmission in California, *Journal of Medical Entomology*, Volume 49, Issue 6, 1 December 2012, Pages 1466–1472, <https://doi.org/10.1603/ME12117>

chicken wire (Figure 4). The cages functioned to protect local wildlife and prevent further captures of off-target animal species.

## RESULTS

### MOSQUITO COLLECTIONS

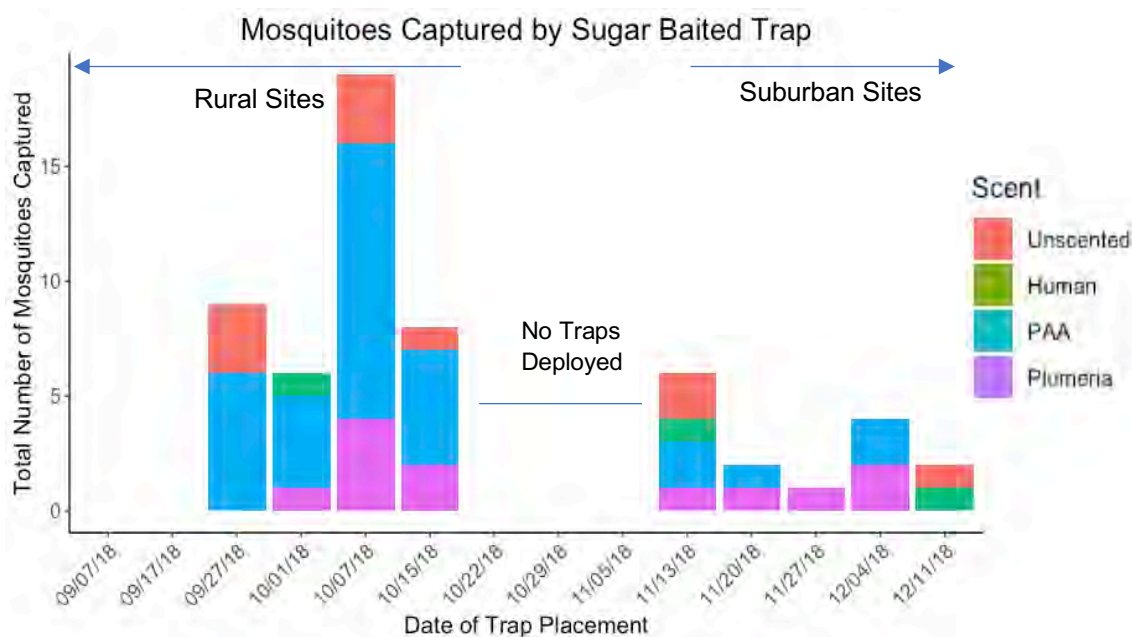


Figure 5. Summary of mosquito collection. Traps were deployed in rural locations from September 7, 2018 to October 15, 2018 and suburban sites from November 13, 2018 to November 27, 2018. The total number of mosquitoes captured each trapping period is indicated. Mosquitoes captured by untreated control traps (unscented) are shown in red, human-scented traps are shown in green, phenylacetaldehyde (PAA)-scented traps are shown in blue and plumeria-scented traps are shown in purple. Dates are provided in Month (MM)/Day (DD)/Year (YY) format.

A wide variety of insects were captured on the sticky traps (data not shown). Sixty of the insects collected during the course of this study were mosquitoes. Twenty-eight of the captured mosquitoes were *Culex tarsalis* (15 females, 6 males, 7 unknowns (legs only)), 25 were *Culex quinquefasciatus* (12 females, 9 males, 4 unknowns), 6 were *Aedes vexans* (4 females, 2 males) and 1 was *Culiseta inornata*. All of the *Culex tarsalis* and *Aedes vexans* mosquitoes were collected in the rural sites only. *Culex quinquefasciatus* were collected in both the urban and suburban sites. *Culiseta inornata* was captured in a suburban site. In all cases, the majority of the insects were located on the outside of the sticky paper.

The number of mosquitoes collected during each trapping period varied over time (Figure 5). For the sake of comparison, sticky traps were deployed at sites where traditional CO<sub>2</sub> traps were collected by the CVMVCD (Figure 6). The sticky traps collected far fewer mosquitoes than the CO<sub>2</sub> traps. However, both sticky and CO<sub>2</sub> traps exhibited a similar pattern. For instance, much greater number of mosquitoes were collected in rural sites than suburban sites. During the first 2 weeks of this study, CO<sub>2</sub> traps captured relatively few mosquitoes, which corresponds to the first 2 weeks of this study. Sticky traps



captured more mosquitoes between September 27, 2018 and October 15, 2018 because of the greater abundance in that region compared to suburban sites sampled from November 13 to December 20.

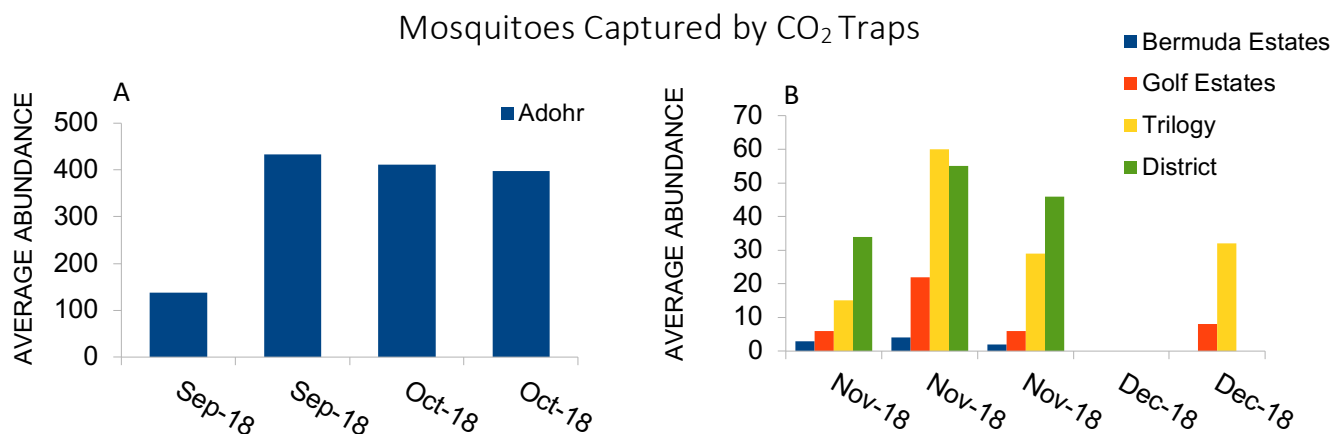


Figure 6. Results of mosquito collection using traditional CO<sub>2</sub> traps. The average number of mosquitoes captured by traditional CO<sub>2</sub> traps was determined for the A) rural and B) suburban sites.

## STATISTICAL ANALYSIS

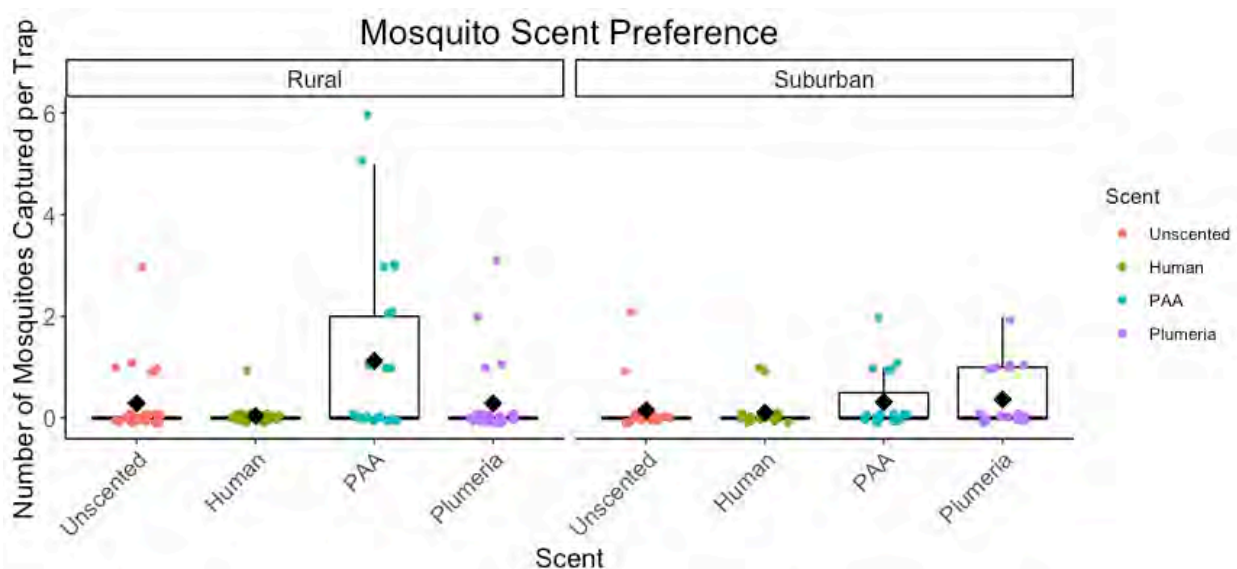


Figure 7. Boxplots comparing the number of mosquitoes captured by each scent group. Each dot represents the number of mosquitoes captured on a single trap. The number of mosquitoes captured on unscented traps are shown in red, human-scented traps in green, PAA-scented traps in blue and plumeria-scented traps in purple. The boxplots summarize the median, and inner quantiles (25<sup>th</sup>-75<sup>th</sup> percentile). The whiskers represent in lowest and higher values. Dots above the whiskers represent statistical outliers. Diamonds represent the mean number of mosquitoes collected in each group.

The capture rate of each scented trap varied (Figure 7) between groups. Scented traps captured between 0 and 6 mosquitoes each deployment. PAA-scented traps captured the greatest number of mosquitoes per deployment period and captured mosquitoes most often. Human-scented traps caught the fewest number of mosquitoes throughout the entire course of the study.

The mean number of mosquitoes captured was compared by repeated measures 2-way ANOVA with Geisser-Greenhouse correction in Graphpad Prism 7. Dunnett multiple comparison test was performed to determine statistically significant differences between scents. P value (p) less than 0.1 was considered statistically significant.

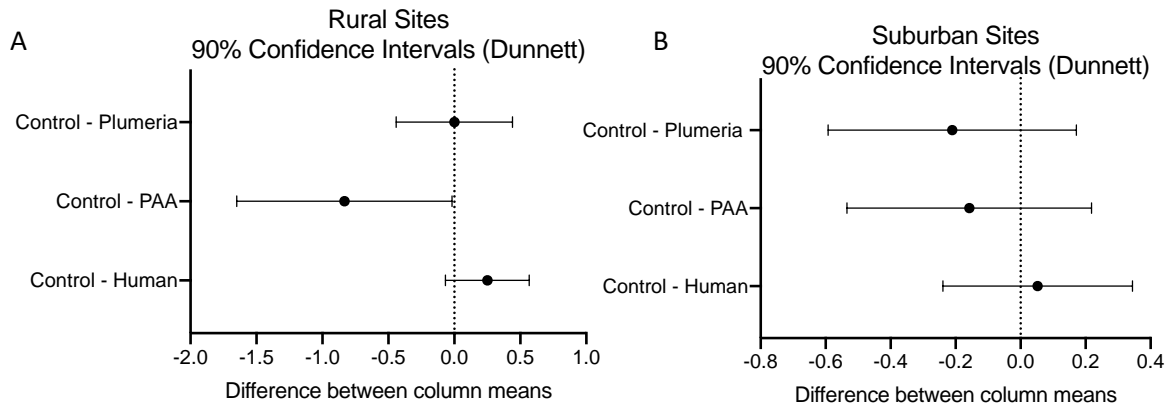


Figure 8. Dunnett multiple comparison test. The number of mosquitoes collected in rural sites (A) and suburban sites (B) were compared separately. The mean number of mosquitoes collected by the unscented control traps is represented as the dotted lines at 0 (control-control=0). The mean difference between each group and the control is represented as a black dot. Negative mean differences indicate that the treatment captured more mosquitoes than the control. The tails surrounding the mean represent the 90% confidence interval as determined by a Dunnett multiple comparison test.

### RURAL SITES

Among traps deployed in rural sites, there was little to no difference between the mean number of mosquitoes collected on the unscented control traps and the plumeria-scented traps (mean difference (mdiff) < -0.0009, 90% confidence interval (CI): -0.44 to 0.44,  $p > 0.99$ ) (Figure 8A). There was a marked decrease in the mean number of mosquitoes captured by the human-scented traps relative to the untreated control (mdiff = -0.25, 90% CI: -0.57 to 0.07); however, this difference was not statistically significant ( $p = 0.23$ ). Interestingly, there was a statistically significant ( $p = 0.09$ ) increase in the mean number of mosquitoes captured by the PAA-treated traps (mdiff = 0.83, 90% CI: 0.02 to 1.65) relative to the untreated control.

### SUBURBAN SITES

Among traps collected in suburban sites, both the plumeria-scented and PAA-scented traps captured more mosquitoes than the untreated control (plumeria vs control: diff = 0.21 90% CI: -0.17 to 0.59, PAA vs control: mdiff = 0.16, 90% CI -0.22 to 0.53) (Figure 8B). As in the rural sites, the human-scented traps captured fewer mosquitoes than the untreated control (mdiff = -0.05, 90% CI: -0.34 to 0.24). However, no statistically significant differences were observed between any groups in the suburban sites (all  $p > 0.1$ ).

## CONCLUSIONS

While the number of mosquitoes captured in this study was small, a statistically significant difference was observed between the untreated control and PAA-scented traps in the rural settings. This suggests that PAA can be used in rural settings to attract mosquitoes to sugar-baited traps. This result was not surprising given the scarcity of flowers in rural desert locations, which likely drives mosquitoes to seek sugar sources more readily.

No statistically significant relationships were identified between scents at suburban sites. This may be due to few mosquitoes that were captured, which would preclude our ability to detect statistically significant differences if they exist. It is possible that statistically significant differences would be apparent if the scented traps were deployed in suburban areas during a longer period of time, or during a time with higher mosquito abundance.

One unexpected result was that the commercially available human scent did not attract more mosquitoes than the untreated control. In fact, human-scented traps caught the fewest mosquitoes, suggesting that the lure may have acted as a repellent in this study. This was surprising because similar human-scented lures have been shown to significantly enhance mosquito collect of CO<sub>2</sub> traps. One likely explanation for this inconsistency is that mosquitoes not seeking a blood meal may avoid human scent while they seek out flowers for sugar meals. Addition studies to further investigate the relative attractiveness of floral-scented CO<sub>2</sub> traps and human-scented sugar baits may clarify this result and provide interesting new insights into mosquito behavior and improve trap design.

The results of this study indicate that PAA-scented traps are most attractive to mosquitoes in the Coachella Valley. Our future plan is to use PAA to deploy scented traps at more regions in California, coupled with arboviral RNA detection in sugar wicks, as a complement to conventional CO<sub>2</sub> and gravid trap-based surveillance that are the mainstay of mosquito and arbovirus detection in the state.

## APPENDIX

### CRITICAL SUPPLIES

Abbreviation	Source
High Effect 10"x8" Double-Sided Insect Yellow Sticky Traps	Sold by <a href="#">Plai Boutique</a> and fulfilled by Amazon
Human Skin Non-Toxic Chemical Lure	<a href="#">Bioquip</a> #2881
Jiffy 3" Round Deep Peat Pots	Sold by <a href="#">Garden Trends, Inc.</a> , fulfilled by Amazon
Phenylacetaldehyde 95% (PAA)	Sigma Aldrich
Plumeria Fine Fragrance mist	Bath and Body Works

### ABBREVIATIONS

Abbreviation	Full Text
ANOVA	Analysis of Variance
CI	Confidence Interval
CVMVCD	Coachella Valley Mosquito and Vector Control District
mDiff	Mean Difference
p	P Value
PAA	Phenylacetaldehyde

## *Annual Report, 2018: Attractive Toxic Bait Station Control of Mosquitoes 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 propose (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.

### *Experimental Design for USDS Autumn Field Trial*

Native mosquito populations in the same 12 USDS sites used in the spring 2018 field trial were monitored monthly (May-September: no ATSB present) until the autumn field trial Oct 20 – Nov 17. Methods of wild mosquito monitoring and larvae exposure in the spring trial (Progress Report June 2018) were largely duplicated during the autumn study. Each USDS contained a hanging ATSB below a spacer upon which rested a pair of glass bowls. Each bowl contained a food solution with laboratory-raised *Culex quinquefasciatus* larvae ( $n = 15$ ) exposed for a 2-day period and monitored for adult emergence in the laboratory post-exposure. Wild adults were collected with hanging CDC light traps ( $n = 1$  trap per USDS) and immatures were collected with dipper samples ( $n = 3$  samples per USDS if sufficient water present). *Culex quinquefasciatus* larval exposures were coupled with native mosquito collections at week 0, 1, 2 and 4 during the autumn ATSB experiment.

Unique to the autumn study was the pairwise deployment of open (cage-less) and closed cage constructs (Figure 1). Respectively, the two additional treatments controlled for the effects of the mesh cage opened at the zipper potentially deterring/limiting access to the ATSB by adult mosquitoes and airborne dispersal of PPF (contamination). The cage-less mounting design consisted of a PVC rectangle with two removable plastic bowls that each supported an inner glass bowl with mosquito larvae and rested on a cardboard spacer above each ATSB. The top of each plastic bowl was threaded to the PVC frame (non-removable) and hollowed out to the diameter of its glass bowl to provide adult mosquitoes access to water containing larvae. Both glass and plastic bowls were removed at the end of each larval exposure period and replaced with cleaned equivalents on the subsequent exposure period. The PVC design mounted larval bowls and ATSB in the same spatial configuration as on the metal frames used in the closed mesh

treatment (for mesh cage specifications see Field-testing Bait Stations for Mosquito Control in Underground Storm Drain Systems in the Coachella Valley: Year 2). Each closed mesh cage was zippered shut when not exchanging larval bowl setups (unlike the continuously unzipped ‘open’ mesh cage used in the spring assay).

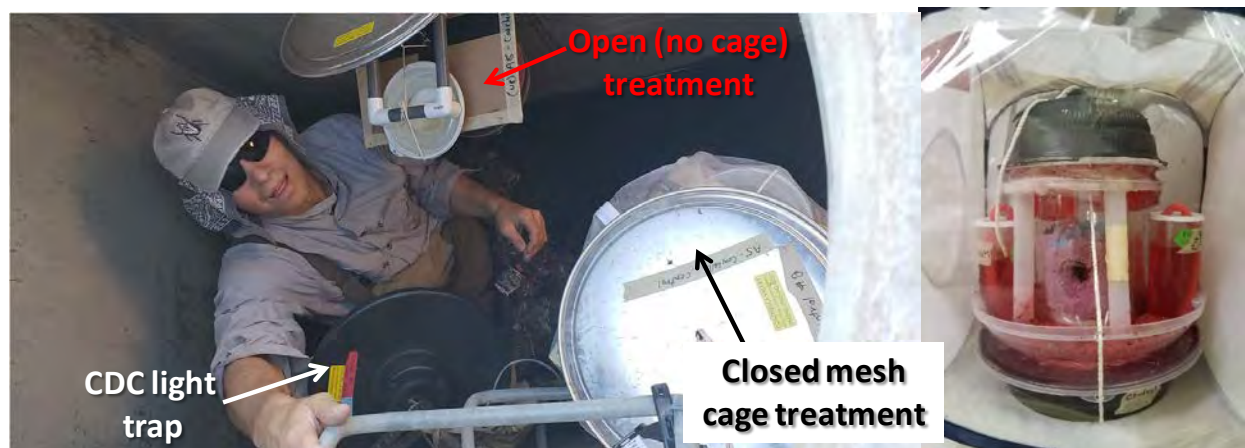


Figure 1. Field experimental setup in a USDS in the Coachella Valley (left) and an enlarged picture of an enhanced tubing ATSB model deployed (right).

An enhanced tubing ATSB design (Figure 1) tested in the autumn trial differed from the ATSB model used in the spring trial (see Annual Report 2017 and Progress Report June 2018) in three ways. First, the enhanced version contained a larger, more stable base with a bottom moat and a dual large vial setup that increased the storage volume – e.g. a PPB acid-treated ATSB contained 1000 mL of 1% boric acid attractive bait and 1800 mL of pyriproxyfen (PPF-max Pivot10 label concentration) in crystal/vial compartments (in addition to *Beauveria bassiana* powder at 1.5 g per 2000 cm<sup>2</sup> within the core). Second, PPF solutions blended with diluted attractive bait (10% final strength) and boric acid (1% final concentration) were added to crystal/vial compartments after laboratory trials demonstrated enhanced adulticide activity compared to PPF compartments lacking toxic attractive bait. Attractive bait was diluted because full strength bait was linked to excessive mold formation and reduced ATSB performance over time. Third, eugenol (0.1%) was added to all ATSB solutions because it also reduced mold formation and would help to preserve mosquito control efficacy during aging. Control ATSBs contained a full strength attractive sugar bait reservoir with diluted attractive bait (10%) crystal/wick compartments and a dry core contact zone.

Dead mosquitoes and associated fauna in CDC light traps and 95% ethanol preserved dipper samples were identified to species with a dissecting microscope in the laboratory. Live adult specimens in CDC light traps (up to 30 per sample) were monitored in the laboratory for fungal infection using standardized methods described in previous reports. In brief, live adults were aspirated in the laboratory from collection chambers into 50 dram plastic vials with dental wicks saturated with 10% sugar solution and observed for mortality for up to 21 days. Dead specimens of all ages were disinfected with 70% ethanol and transferred to 24 well plates inside a 100% humidity chamber for up to 10 days. Mosquito cadavers were examined weekly for growth of *Beauveria bassiana* from cuticular surfaces.

### Results: Adult Emergence of USDS-exposed Larvae

An average of nearly 15 (14.6) live *Cx. quinquefasciatus* larvae were collected from glass bowls after each 2-day USDS exposure period. Mortality of larval cohorts similar to that observed during the spring trial (Progress Report June 2018) was not observed during the autumn trial; however post-exposure adult emergence rates in the control treatment were reduced by nearly half in the autumn trial ( $49 \pm 4\%$  vs. spring controls =  $83 \pm 5\%$ ). Within autumn trial PPBacid USDS, overall adult emergence was slightly lower than controls ( $37 \pm 7\%$ ) and nearly twice as high in the closed cage treatment ( $47 \pm 9\%$ ) compared to the open cage-less treatment ( $27 \pm 10\%$ ). In contrast, emergence rates were similar between the two deployment designs (open =  $49 \pm 5\%$  vs. closed =  $48 \pm 8\%$ ) in the control USDS. In general, larval assays with fresh ATSB treatments (day 0 of deployment) coincided with lower average adult emergence than ATSB treatments aged 1, 2, and 4 wk. The lowest overall adult emergence rates were recorded in larval cohorts exposed to the fresh, open-mounted PPBacid treatment ( $1 \pm 1\%$  vs. fresh, open control =  $37 \pm 15\%$ ). Interestingly, adult mean emergence rates in open PPBacid treatments aged 1, 2, and 4 weeks were reduced by more than half at Coachella ( $25\% \pm 6\%$ ) and Palm Desert ( $31 \pm 27\%$ ) sites compared to the La Quinta ( $63 \pm 8\%$ ) site. Outside of this specific instance, the city location of an ATSB treatment was not predictive of adult emergence trends.

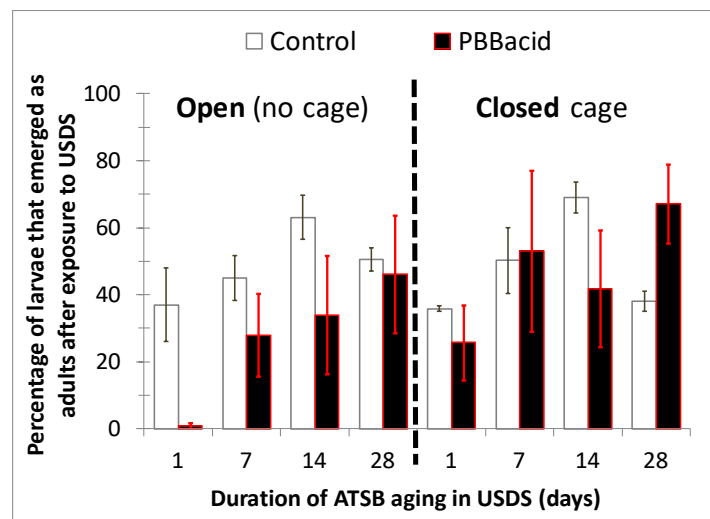


Figure 2. Adult emergence rates (mean  $\pm$  SE) of laboratory *Culex quinquefasciatus* larvae post-exposure to ATSB treatments aged in USDS during autumn 2018.

### Results: Native Adult Mosquito Samples in USDS

Native adult mosquitoes were frequently observed during sampling, especially upon entry into permanent water reservoirs of USDS at Coachella and Palm Desert sites. On average 109 adult mosquitoes ( $n = 5,232$ ) were collected per trap during the 1-month autumn trial and 84% of specimens were females. Virtually all adults ( $> 99\%$ ) were *Cx. quinquefasciatus*; although *Cx. tarsalis* (14 females), *Culiseta inornata* (4 females), and a single *Aedes aegypti* male were identified. Parity favored gravid (54%) and non-gravid (37%) reproductive states and females of

unknown parity (6%) or with an observable bloodmeal (3%) were less common.

Figure 3 provides adult mosquito trends among the ATSB treatments and USDS cities for 2018. Specific to the autumn trial, ATSB treatment rankings of averages per trap were PPBacid (131) > Control (95) > no ATSB (56). Trends varied over the course of ATSB deployment, most notably from a spike in PPBacid numbers (199 adults per trap) on week 2 and low initial counts in the no ATSB treatment (day 1 = 13 adults per trap). Interestingly, the 1<sup>st</sup> week of ATSB deployment exhibited similar mosquito trap averages between the PPBacid (100 adults) and control (98 adults) treatments (no ATSB = 47 adults). The autumn ATSB experiment also revealed total mean adult production per trap was stratified among USDS cities to an extent: Coachella (153) > Palm Desert (82) > La Quinta (48). This hierarchy in mosquito averages per trap did not appear consistent for the entire study – e.g. an early (wk 0, 1) trend of Palm Desert (114) > Coachella (100) > La Quinta (33) differed from a late (wk 2, 4) trend of Coachella (205) > La Quinta (62) > Palm Desert (50).

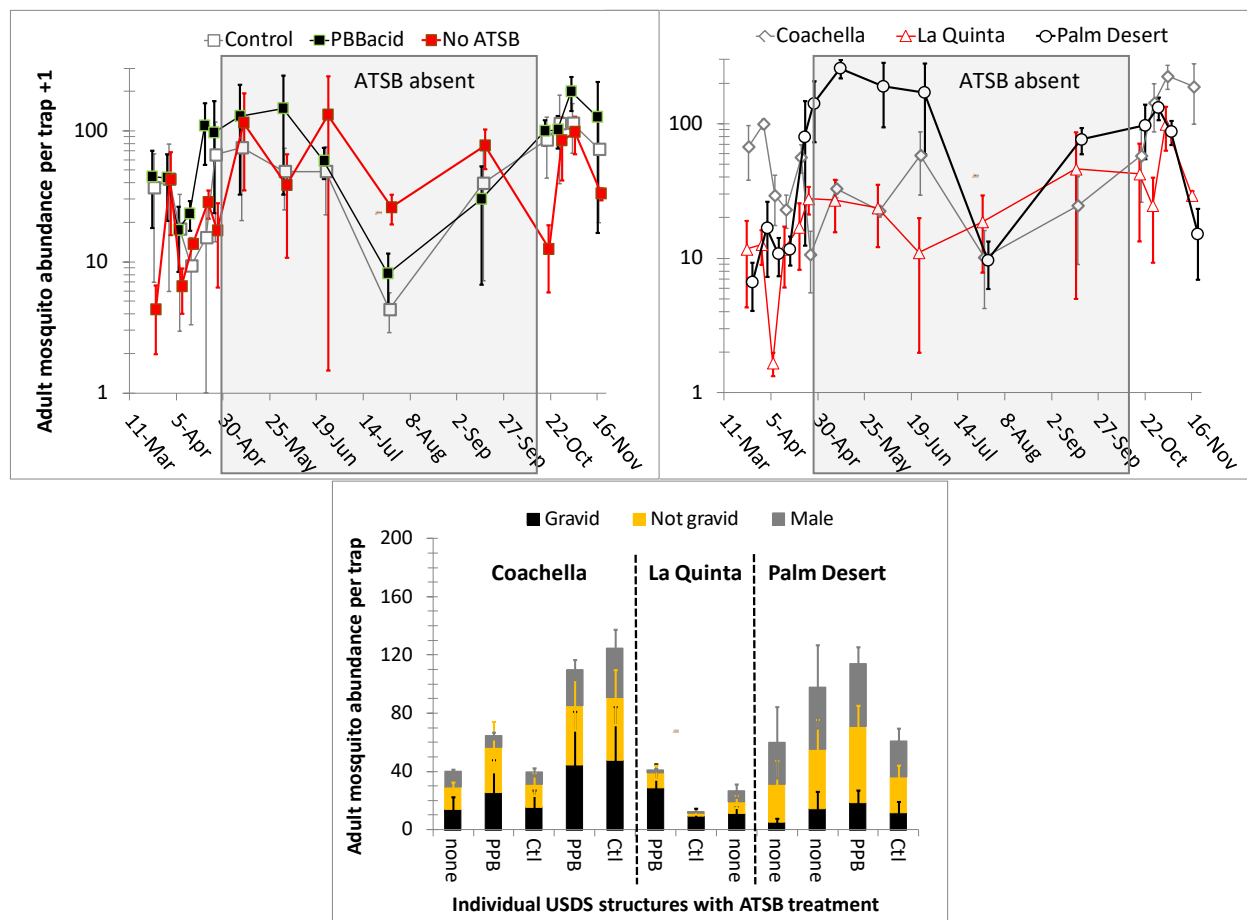


Figure 3. Adult mosquito abundance (mean  $\pm$  SE) in CDC-style light traps grouped by ATSB treatment (top left) and city (top right) during 2018 in USDS. Shaded areas illustrate when ATSB treatments were absent in USDS (note Log10 scale). During the autumn trial (bottom panel), the relative abundance of gravid females, non-gravid females, and males and the corresponding ATSB treatment is presented for each of the 12 individual USDS structures.



The ratios of females to males and non-gravid females to gravid females for the most part were not affected by ATSB treatment and USDS city – i.e. the relative trends within each category generally reflected the relative trends of overall numbers when comparing treatments. One exception was a relative preponderance ( $72\% \pm 11\%$ ) of gravid females at La Quinta compared to Coachella ( $53 \pm 6\%$ ) and Palm Desert ( $44 \pm 15\%$ ).

#### Results: Immature Native Mosquitoes in USDS

A total of 4,551 immature mosquito stages (egg raft, larvae, and pupae) were collected at an average rate of 56 per dipper sample from Palm Desert and Coachella USDS during week 0-2 of the autumn study (the processing of week 4 samples is ongoing). Larvae comprised 96% of all mosquito stages and early instars (1<sup>st</sup> and 2<sup>nd</sup>: 59% of total larvae) were nearly twice as abundant as late instars (3<sup>rd</sup> and 4<sup>th</sup>: 37% of total larvae). Greater than 99% of late instar larvae were *Cx. quinquefasciatus*; only four *Cx. tarsalis* specimens were identified. *Culex* spp. pupae were detected in 38% of samples and averaged 2 individuals per dipper sample (3% of total immature counts). Unhatched *Culex* spp. egg rafts (observed as fragmented batches of unhatched eggs) were found in 11 dipper samples (14% of total samples). Fragments were assumed to originate from a single egg raft in each of these samples (given the total egg number per sample was less than 231 in all cases) and averaged 101 individual eggs per egg-positive sample.

Mosquito numbers in dipper samples during weeks 0, 1, and 2 of the autumn study (Figure 4) were in general similar among ATSB treatments, with average immature abundance per dipper sample following the overall pattern: Control (81) > PPBacid (52) > No ATSB (36). Palm Desert USDS (mean = 83) overall averaged more than double the number of immatures collected in Coachella USDS (mean = 34) on a per dipper sample basis across sample weeks in autumn.

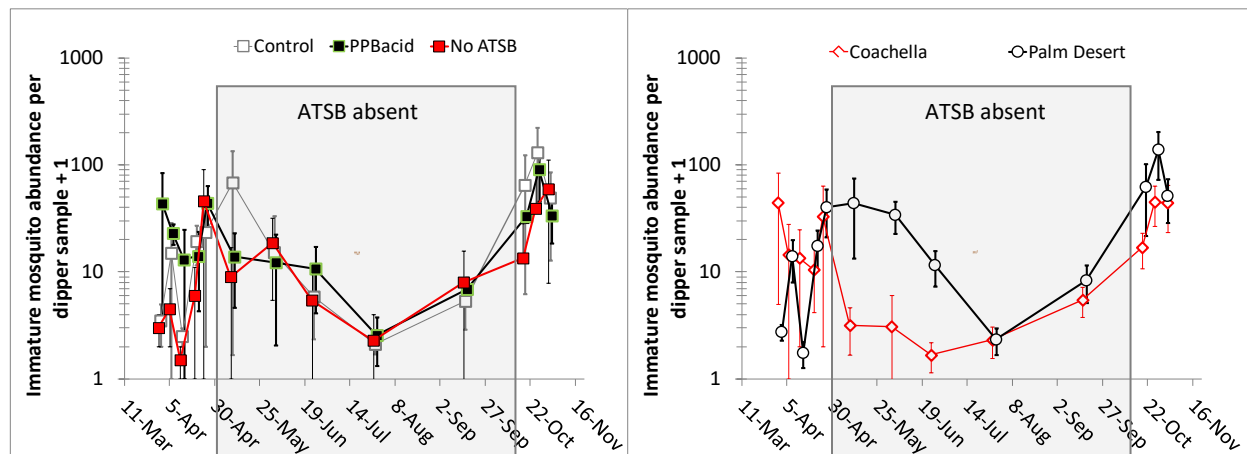


Figure 4. Immature mosquito abundance ( $N + 1$  transformed means  $\pm$  SE) from dipper samples grouped by ATSB treatment (left) and city (right) in spring 2018. Note log scale.

## *Discussion*

In contrast to prior laboratory evidence, ATSBs have yet to demonstrate consistent efficacy against native mosquito populations in USDS in the Coachella Valley. While immigration of adults produced elsewhere (outside a particular USDS cistern) is distinctly possible, it is also plausible that field conditions inhibit efficacy of the current ATSB design. USDS reservoirs with standing water were commonly full of debris of all kinds that likely emitted a variety of chemical signals and competed with the ATSB for adult mosquito attention. USDS water levels often changed rapidly (e.g. one foot overnight) and contained pockets of highly organic films (evident from dipper samples) that may have diluted PPF and limited exposure to mosquito larvae. The complex physical structures inherent to USDS, especially trunk lines that extend underground and movement of adult mosquitoes within USDS sites, may be sources that diminished the effective radius of each ATSB. Methods to place an ATSB at the water line and at connecting trunk lines are being developed to address spatial effects on ATSB efficacy in each USDS (Field Testing Bait Stations for Mosquito Control in Underground Storm Drain Systems in the Coachella Valley: Year 2).

In the laboratory, choice experiments with multiple feeding sites – e.g. an ATSB and sugar water cup – may be useful to improve ATSB attractiveness to adults. Recent observations in dual-cage ‘igloos’ suggest the PPBacid blend could be a deterrent to resting mosquitoes, since greater numbers are collected away from the ATSB cage (in the adjacent larval bowl cage), which is opposite trend to that observed in controls. Regardless, we plan to re-examine the efficacy of our attractive bait relative to different blend ratios and similar commercially available products.

Field results and recent laboratory data call into question the effectiveness of liquids for autodissemination of PPF. In early laboratory experiments, an ATSB with saturated PPF solution in vials and absorptive crystals reduced adult emergence to nearly zero and this trend was repeated in the field for up to 3 weeks in the spring trial. PPF is clearly effective against mosquitoes in concentrations at the parts per billion level. However, after protocols were enacted to reduce the risk of PPF contamination, this high level of PPF efficacy has not been observed in the autumn field trial or in laboratory experiments. It is therefore possible early experiment results were an artifact of PPF contamination during experimental preparation and not indicative of true mosquito autodissemination rates. PPF powder, typically from grinding PPF granules, has been reported to be effectively transmitted by adult mosquitoes for larval control and our ATSB platforms are currently being adapted for upcoming laboratory testing.

Semiannual Research Progress Report #1 for CVMVCD grant:  
December 21, 2018

Improving fire ant bait efficacy in irrigated landscapes in the Coachella Valley

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**Background Information from 2017.**

- Three water-resistant fire ant bait formulations containing the insect growth regulating active ingredient (IGR) pyriproxyfen were tested against laboratory fire ant colonies.
  - All three formulations caused a significant reductions in brood volume 6 weeks after being provided bait that was either: a) soaked in water (70-89%); b) soaked in water then allowed to air dry for 18-23 hours (66-100% reduction); or c) if left dry (90-100%). In contrast the brood in the control colonies **increased** 60-70% after 6 weeks. Reduced amounts of brood is indicative of effective delivery of the IGR bait.
- Interestingly the non-water resistant standard fire ant bait (Esteem/Distance) also caused significant reductions in brood despite being a) soaked in water (100%); b) soaked in water and allowed to dry (99%); or c) remained dry (100%).
- In potted plants infested with fire ant colonies, fire ants were observed feeding on all baits (water resistant and standard) placed under sprinkler irrigation. While bait efficacy was inconclusive due to ant escapes and inconsistent brood recovery, the study indicated that baits placed in piles could better withstand heavy irrigation and be accessible to ants.
- Application and wetting of standard fire ant bait (Esteem/Distance) and the water resistant fire ant bait (Erasant) in irrigated field plots in the Coachella Valley both resulted in significant reductions (44-51%) in fire ant activity when compared to the untreated control (1% increase) after 11 weeks.
  - Broadcast applications of both baits, plus the standard bait applied in piles did not differ significantly among each other after 11 weeks.
  - However, significant differences in fire ant foraging were not detected among all bait treatments and the untreated control, 21 weeks (Nov.) after bait applications. Evaluations of brood reductions and caste shifts were inconclusive due to the difficulty of sampling brood in the desert climate.

**Summary of Activity January through December 2018.**

- Three water-resistant fire ant bait formulations were further tested after changing the active ingredient to hydramethylnon. Hydramethylnon has a faster mode of action (2-4 weeks) where it kills adult workers in contrast to the IGR pyriproxyfen (6-8 weeks). The faster mode of action

on adult worker ants provided more definitive results since worker death is easier to observe and does not require extensive colony rearing to see IGR effects on brood.

- The water-resistant Erasant bait now includes a formulation with hydramethlynon (Erasant-Hydro). In laboratory testing, the new formulation and the standard bait (Amdro) both eliminated 2 of 3 fire ant colonies when wet and 3 of 3 colonies when dry. This suggested that water resistant formulation did not improve performance when wet bait is presented as piles in laboratory tests.
- Erasant-Hydro, the other water resistant carriers (Zein, Ars) formulated with hydramethlynon, and Amdro eliminated fire colonies in irrigated potted plants. The Amdro and Zein baits had no queen survivorship in all 3 reps.
- Methods to compare water resistant bait applied in piles versus broadcasting on sod resulted in colony mortality (i.e. all queens dead) for Amdro bait being applied in piles or broadcast regardless of whether the treated sod was irrigated or left dry. Interestingly, the water resistant zein bait had less efficacy.
- The first replicate of testing commercially available fire ant baits scattered on soil that was watered until saturation, thus far has shown worker ant death, but not colony death for Advion bait only. However study will be repeated with several more replicates to confirm results.

## Water Resistant Baits

Prolonging the physical stability and palatability of fire ant baits exposed to water would markedly advance the ability to control fire ants in wet conditions. Efforts have been made to decrease the negative effects of precipitation and/or irrigation on fire ant baits that utilize a corn-grit carrier. Moisture renders corn-grit carriers mushy and supposedly unpalatable to fire ants. One example of water-resistant baits (Erasant), replaces the corn-grit with dried distiller's grains solubles (DDGS) (Kafle et al 2010). Another approach protects the corn-grit carrier from moisture by spraying the corn protein zein on standard fire ant bait (J. Chen, personal communication). Three water-resistant fire ant bait formulations (Erasant-Hydro, Zein, Ars) plus a standard fire ant bait (Amdro) and a control bait (Table 1) were evaluated colonies of red imported fire ants, *Solenopsis invicta*. These carriers contained the active ingredient hydramethylnon, which has a faster mode of action than the insect growth regulating (IGR) active ingredient pyriproxyfen used in 2016 and 2017. Hydramethylnon kills adult workers in 2-4 weeks in contrast to pyriproxyfen which takes 6-8 weeks to show its effect of impeding worker brood development.

Table 1. Baits tested for water-resistance.

Bait	% AI	Carrier	Manufacturer
Erasant-Hydro	0.9% hydramethylnon	DDGS	Chung Hsi Chemical
Zein	1.0% hydramethylnon	corn grit	ARS Stoneville, MS
Ars	1.0% hydramethylnon	corn grit	ARS Stoneville, MS
Amdro	0.73% hydramethylnon	corn grit	Central Garden & Pet
Control	0.0% no active ingred.	corn grit	---

## Laboratory colony testing of water-soaked hydramethylnon baits.

The Erasant-Hydro, the standard fire ant bait Amdro, and the control bait were tested against laboratory colonies of red imported fire ants to confirm the efficacy of the Erasant bait with hydramethylnon because the combination of this active ingredient and the DDGS carrier was new. All baits were soaked in water for 30 minutes, allowed to drain for 10 minutes, and then presented to the colonies. Another set of colonies were presented dry bait for comparison. Colonies were starved for 24 hours, had access to bait for about 24 hours, and then laboratory diet of frozen crickets and 10% sugar solution were added. Data were collected on the third day after initial bait access and approximately weekly for 4 weeks. A randomized complete block design was used with blocks based on colony size. Each colony contained one queen with average ( $\pm$ std. err.) number of workers and brood volume (ml) per rep as follows: Rep 1: 1,317 ( $\pm$ 182), 7.3 ( $\pm$ 1.0) ml; Rep 2: 417 ( $\pm$ 31), 3.3 ( $\pm$ 0.3) ml; Rep3: 41,667 ( $\pm$ 1,667), 33.8 ( $\pm$ 4.6) ml. Percent reductions in worker numbers and brood volume from pretreatment values were analyzed by analysis of variance and Tukey's HSD test.

The water soaked Erasant-Hydro and the Amdro baits caused significant reductions in workers and brood volume and killed the queens in 2 of 3 colonies. Both of the dry baits eliminated all three colonies each, while all of the control colonies remained alive (Tables 2-4).

Table 2. Average ( $\pm$ SE) [n=3] percent reduction of *S. invicta* workers and milliliters of worker brood at specified weeks after exposure to wet or dry hydramethylnon bait. Negative values indicate colony growth. Means within a column followed by the same letter are not significantly different ( $P>0.05$ ) by analysis of variance and Tukey's HSD test.

	<b>% Reduction in Worker Ants</b>					
<b>Treatment</b>	<b>Day 3</b>	<b>Week 1.0</b>	<b>Week 1.4</b>	<b>Week 2.4</b>	<b>Week 3.4</b>	<b>Week 4.3</b>
Wet Control	0.0 c ( $\pm 0.0$ )	-8.3 bc ( $\pm 8.3$ )	0.0 b ( $\pm 0.0$ )	-8.3 b ( $\pm 4.2$ )	12.5 b ( $\pm 7.2$ )	38.8 <sup>a</sup> ab ( $\pm 48.8$ )
Wet Amdro	47.5 ab ( $\pm 13.8$ )	64.4 ab ( $\pm 12.4$ )	84.4 a ( $\pm 4.4$ )	89.7 a ( $\pm 4.2$ )	91.3 a ( $\pm 4.7$ )	93.9 a ( $\pm 3.5$ )
Wet Erasant-H	41.1 abc ( $\pm 15.6$ )	47.8 abc ( $\pm 19.5$ )	52.5 a ( $\pm 19.5$ )	54.7 a ( $\pm 21.5$ )	63.3 a ( $\pm 16.4$ )	66.4 a ( $\pm 16.5$ )
Dry Control	0.0 a ( $\pm 0$ )	-22.2 c ( $\pm 22.2$ )	-19.4 b ( $\pm 10.0$ )	-42.2 b ( $\pm 16.8$ )	-54.7 b ( $\pm 23.2$ )	-45.8 b ( $\pm 25.3$ )
Dry Amdro	86.9 a ( $\pm 1.9$ )	96.9 a ( $\pm 1.6$ )	98.3 a ( $\pm 1.7$ )	98.3 a ( $\pm 1.7$ )	99.2 a ( $\pm 0.8$ )	100 a ( $\pm 0.0$ )
Dry Erasant-H	40.6 bc ( $\pm 7.8$ )	48.9 abc ( $\pm 14.5$ )	77.9 a ( $\pm 8.1$ )	81.6 a ( $\pm 9.7$ )	83.7 a ( $\pm 10.9$ )	90.0 a ( $\pm 10.0$ )

<sup>a</sup>One colony had escaped between weeks 3.4 and 4.3

Table 3. Average ( $\pm$ SE) [n=3] percent reduction of worker brood at specified weeks after exposure to wet or dry hydramethylnon bait. Negative values indicate colony growth. Means within a column followed by the same letter are not significantly different ( $P>0.05$ ) by analysis of variance and Tukey's HSD test.

	<b>% Reduction in Brood</b>					
<b>Treatment</b>	<b>Day 3</b>	<b>Week 1.0</b>	<b>Week 1.4</b>	<b>Week 2.4</b>	<b>Week 3.4</b>	<b>Week 4.3</b>
Wet Control	0.0 a ( $\pm 0$ )	-8.3 ab ( $\pm 8.3$ )	-27.8 ab ( $\pm 2.8$ )	-77.8 b ( $\pm 64.1$ )	-55.6 ab ( $\pm 53.0$ )	-75.0 <sup>a</sup> b ( $\pm 75$ )
Wet Amdro	0.0 a ( $\pm 0$ )	15.1 a ( $\pm 8.3$ )	41.3 ab ( $\pm 12.5$ )	73.1 ab ( $\pm 16.1$ )	77.3 a ( $\pm 16.8$ )	88.7 a ( $\pm 8.4$ )
Wet Erasant-H	8.3 a ( $\pm 8.3$ )	12.0 a ( $\pm 7.2$ )	31.1 ab ( $\pm 13.6$ )	47.9 ab ( $\pm 14.2$ )	63.4 a ( $\pm 21.2$ )	76.9 a ( $\pm 12.9$ )
Dry Control	0.0 a ( $\pm 0$ )	-62.5 b ( $\pm 31.5$ )	-45.8 b ( $\pm 25.3$ )	-78.7 b ( $\pm 34.6$ )	-95.4 b ( $\pm 42.7$ )	-62.5 b ( $\pm 31.5$ )
Dry Amdro	1.7 ab ( $\pm 1.7$ )	32.2 ab ( $\pm 17.5$ )	53.1 ab ( $\pm 20.6$ )	71.7 a ( $\pm 23.5$ )	83.3 a ( $\pm 16.7$ )	100 a ( $\pm 0$ )
Dry Erasant-H	0.0 a ( $\pm 0$ )	1.7 ab ( $\pm 1.7$ )	32.2 ab ( $\pm 17.5$ )	53.1 ab ( $\pm 20.6$ )	71.7 a ( $\pm 23.5$ )	83.3 a ( $\pm 16.7$ )

<sup>a</sup>One colony had escaped between weeks 3.4 and 4.3

Table 4. Number of live *S. invicta* queens and the number of colonies at specified weeks after exposure to wet or dry hydramethylnon bait.

	<b>Number of live queens/No. of colonies</b>					
<b>Treatment</b>	<b>Day 3</b>	<b>Week 1.0</b>	<b>Week 1.4</b>	<b>Week 2.4</b>	<b>Week 3.4</b>	<b>Week 4.3</b>
Wet Control	3/3	3/3	3/3	3/3	3/3	2/2*
Wet Amdro	3/3	3/3	2/3	2/3	1/3	1/3
Wet Erasant-H	3/3	3/3	3/3	3/3	1/3	1/3
Dry Control	3/3	3/3	3/3	3/3	3/3	3/3
Dry Amdro	3/3	2/3	1/3	0/3	0/3	0/3
Dry Erasant-H	3/3	3/3	3/3	3/3	1/3	0/3

\*One colony escaped between weeks 3.4 and 4.3

### Irrigated nursery pots

The water resistant bait carriers Ars, Zein, and Erasant-Hydro, the standard fire ant bait Amdro, and a control of 20% once-refined soybean oil absorbed onto pregel defatted corn grit were tested on fire ant colonies nesting in irrigated, potted boxwood shrubs. The methods followed the protocol used in 2017: Bait (10 g /pot) was applied in a pile under a micro-sprinkler immediately before water sprayed on the bait for 2 minutes (Fig. 1). Thereafter the sprinkler was on for 2 minutes at 8 am, 12 noon, and 4 pm, for seven days, which was based on the irrigation schedule used by a local nursery. Pots were contained in fluon-lined trays to prevent ant escapes and held for 4 weeks outdoors under a covered lanai to allow for the effects of hydramethylnon to be expressed. Frozen crickets, 10% (w/v) sugar solution, and water were added to the pots 48 hr after baiting to provide sustenance to fire ant colonies. After 4 weeks, fire ants were extracted from the pots by cutting the trunk at the soil line, placing the root ball in a bucket, and slowly dripping water into the bucket until the accumulating water forced the ants out of the root ball. The size of the extracted colonies was determined by visually estimating the number of living ants based on photos of known numbers of fire ants in nest cells and comparing the brood volume to photos of measured brood volume. Colonies also were examined for the presence of their queen. Two replications were conducted for each bait.

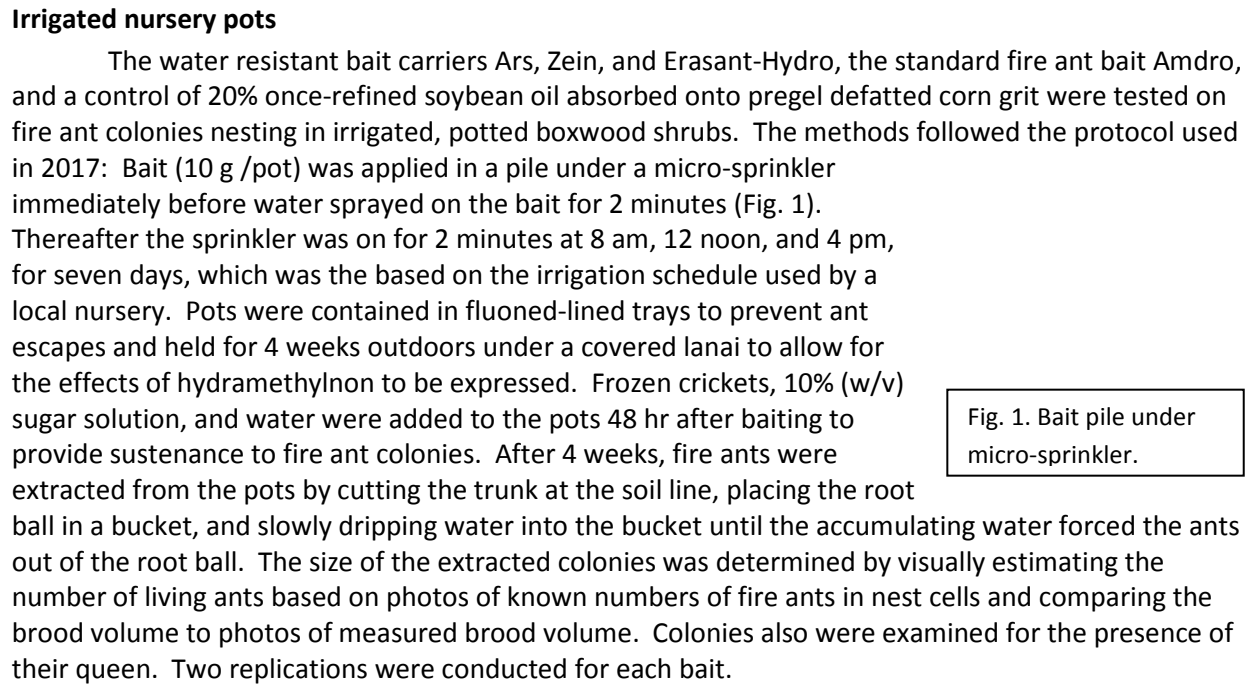


Fig. 1. Bait pile under micro-sprinkler.

In addition to the colony extraction, fire ant activity was rated weekly using the following scale when the soil was disturbed by prodding with a stick or fingers: 0 = no ant activity seen; 1= 1-10 ants seen (no fear of stings when searching soil for ants with bare hand); 2= 11-100 ants milling about in soil, ant activity slow but obvious, and not boiling out of soil; 3= >100 ants aggressively boil out of disturbed soil, hesitant to place bare hand in soil.

Results are presented in Tables 5 - 7. There was a large reduction in workers and brood volume in all treatments except the control. Percent reduction in workers and brood for all water resistant baits and the standard Amdro, ranged from 90-100% and 70-100%, respectively, after 4 weeks. In contrast the controls had a reduction of 29% and an increase of 20% in workers, and reductions of 23 and 80% in brood. Live queens were not found in any of the hydramethylnon baited pots, while the queen was found in each of the control colonies (Table 7). Ant activity was obviously greater in the control pots as fire ants would boil out of soil when the soil was prodded with a stick, while no more than 100 ants would be seen milling about in the hydramethylnon treated pots beginning at 2 weeks after treatment. Thus, based on queen survivorship, the water resistant baits and the standard bait performed similarly when baits were piled and placed directly under irrigation with the exception of the ARS and the Erasant-Hydro where queens survived in the third replicate (Table 7).

Table 5. Number of living worker ants per colony 0 and 4 weeks after initial bait access for reps 1 & 2.

Treatment	Number of worker ants			
	Rep 1		Rep 2	
	Week 0	Week 4	Week 0	Week 4
Ars	13,000	0	10,000	600
Erasant-Hydro	10,000	0	12,000	1,200
Zein	8,000	0	10,000	500
Amdro	12,000	0	8,000	500
Control	10,000	12,000	14,000	10,000

Table 6. Worker brood volume per colony at 0 and 4 weeks after initial bait access for reps 1 & 2.

Treatment	Brood Volume (ml)			
	Rep 1		Rep 2	
	Week 0	Week 4	Week 0	Week 4
Ars	30	0	18	0.25
Erasant-Hydro	12	0	18	0
Zein	12	0	10	2
Amdro	20	0	10	3
Control	15	10	25	5

Table 7. Number of live queens per colony at 0 and 4 weeks after initial bait access for reps 1 - 3.

Treatment	Queens Alive					
	Rep 1		Rep 2		Rep 3	
	Week 0	Week 4	Week 0	Week 4	Week 0	Week 4
Ars	1	0	1	0	1	1
Erasant-Hydro	1	0	1	0	1	1
Zein	1	0	1	0	1	0
Amdro	1	0	1	0	1	0
Control	1	1	1	1	1	1

### Comparing broadcast versus piled bait application to examine the effects of irrigation on fire ant bait performance.

Based on the results of the laboratory and pot tests, we hypothesized that the reported deleterious effects of irrigation on bait efficacy were due to the inaccessibility of bait because broadcast applications of bait exposes individual bait particles to greater moisture which facilitates deterioration and the washing away of bait particles. In contrast, piled baits are more protected from moisture and less prone to runoff. Thus, a study was conducted to compare the bait efficacy of broadcast and pile bait applications exposed to sprinkler irrigation.

Pieces of grass sod that contained either broadcast or piled fire ant bait (water resistant and standard hydramethylnon baits) were sprinkler irrigated then exposed to a fire ant colony (Fig. 2). For three replicates of this 10 treatment test, the Amdro broadcast had the most consistent efficacy killing



all queens regardless if the bait was broadcast or piled and whether it was irrigated or left dry. The water-resistant zein bait when broadcast and irrigated or dry resulted in no queens surviving, while when it was piled 1 of 3 colonies survived when irrigated and 2 or 3 colonies survived when left dry. All the control colonies survived (Table 8). Thus it seemed that the broadcast treatment either irrigated or dry allowed the fire ants find the baits more easily than when applied in piles.



Fig. 2. Fire ant colony provided access to grass sod. The lab colony typically moves into the sod on fabric strip from the rearing tray supported above the sod.

Table 8. Number of live queens per colony at 0 and 4 weeks after initial bait access for reps 1-3 of sod test with piled and broadcast bait exposed to irrigation (Wet) or not watered (Dry).

Irrig.	Treatment	Queens Alive					
		Rep 1		Rep 2		Rep 3	
		Week 0	Week 4	Week 0	Week 4	Week 0	Week 4
Wet	Zein –broadcast	1+	0	1+	0	1+	0
	Zein –piled	1+	0	1+	1	1+	0
	Amdro -broadcast	1+	0	4+	0	1+	0
	Amdro –piled	1+	0	3+	0	5+	0
	Control	25+	25+	1+	1+	1+	1+
Dry	Zein –broadcast	1+	0	5	0	1+	0
	Zein –piled	1+	0	1	3	1+	1
	Amdro -broadcast	5+	0	1+	0	1+	0
	Amdro –piled	1+	0	1+	0	1+	1
	Control	1+	5+	1+	1+	1+	1+

#### Laboratory testing of commercial baits under irrigation.

The first replicate of testing commercially available fire ant baits scattered on soil then watered by sprinkler until saturation, thus far has shown worker ant death, but not colony death for Advion bait only. Other commercially available baits tested included Seduce, Siesta, and the Erasant-Hydro, exhibited slight worker mortality. The study will be repeated with several more replicates to confirm results.

Table 1. Milestones for water-resistant bait development for the Coachella Valley.

Year / Quarter	Lab test broadcast vs pile bait application	Lab test water resistant baits	CA bait field trial: site selection	CA bait field trial: treat & sample
2018 Jan-Mar	In Progress			
2018 Apr-Jun	In Progress			
2018 Jul-Sep		In progress		
2018 Oct-Dec	Completed	In progress		
2019 Jan-Mar		X	X	
2019 Apr-Jun				X
2019 Jul-Sep				X
2019 Oct-Dec				

**References Cited.**

Kafle, L., W. J. Wu, and C. J. Shih. 2010. A new fire ant (Hymenoptera: Formicidae) bait base carrier for moist conditions. Pest Management Science 66: 1082-1088.



## Coachella Valley Mosquito and Vector Control District

### Staff Report

January 8, 2019

**Agenda Item:** Informational Item  
Staff report from:

- Entomological Society of America Annual Conference, November 11-14, 2018 in Vancouver, British Columbia

#### **Background:**


The Entomological Society of America held a Joint Annual Meeting with the Entomological Society of Canada and the Entomological Society of British Columbia. The theme, Crossing Borders: Entomology in a Changing World, allowed for organizers to gather a variety of presentations on the latest advances in the entomology for the four day meeting.

We attended a variety of presentations while there. The Medical, Urban, and Veterinary Entomology section of ESA had presentations on the latest research completed on mosquitoes and other arthropods of importance to public health. Some of the topics that were covered were the latest trapping and control techniques for mosquitoes; student presentations on their research about ants, biting midges, and flies; visual communication for entomological research; highlights of research published in 2018 about medical, urban, and veterinary entomology; an awards lecture on Walter Reed and his work on yellow fever; the peer review process; insecticide resistance; mosquito interactions with non-pathogenic microbes; presentations on a new tick to the U.S., the long-horned tick; and aquatic entomology.

*Jennifer Henke* was invited to present in the symposium titled Training the Next Generation of Vector Biologists. She discussed the District's participation with schools that have health career academies as well as the experience of hosting interns from the Health Career Connections.

#### **Attendees:**

*Jennifer A. Henke*, Laboratory Manager  
*Kim Hung*, Vector Ecologist

	<p><b>Coachella Valley Mosquito and Vector Control District</b></p> <p><b>Staff Report</b></p>	<p><b>January 8, 2019</b></p>
<p><b>Agenda Item:</b> Informational Item</p> <ul style="list-style-type: none"> <li>• MVCAC Planning Session, December 6-7, 2018 in Emeryville, CA</li> </ul>		
<p><b>Background:</b>  The focus of the MVCAC Planning Session was to review the work accomplished in 2018 and to set the priorities for 2019. The committee chairs were charged with setting their goals for the coming year and to update their rosters. The MVCAC Board will review the Mission, Vision, and Values of the association in 2019. Additional items of interest include:</p> <ul style="list-style-type: none"> <li>• Legislative activities – <i>MVCAC Legislative Day Tuesday, April 2, 2019</i> <ul style="list-style-type: none"> <li>• Funding CalSurv is likely to be a project again this year</li> </ul> </li> <li>• Regulatory activities – reviewing regulations on storm water and cannabis as they impact vector control</li> <li>• Public Relations – developing a white paper on Integrated Vector Management and working on the outreach to third party agencies</li> <li>• Vector Control Research – identify research needs and provide support</li> <li>• MVCAC review of contracts with service providers (AMG and KP) for the Association.</li> </ul> <p>Staff also provided their input on other committees including Information Technology, Integrated Vector Management, Laboratory Technologies, Training and Certification, and Vector and Vector-borne Disease.</p> <p><b>Attendees:</b>  <i>Jeremy Wittie</i>, General Manager, President  <i>Jennifer A. Henke</i>, Laboratory Manager, Regulatory Affairs Chair  <i>Jill Oviatt</i>, Public Information Manager, Public Relations Chair  <i>J. Wakoli Wekesa</i>, Operations Manager, Vector Control Research Chair</p>		
<p><b>Staff Recommendation:</b>  N/A</p>		
<p><b>Fiscal Impact:</b>  N/A</p>		
<p><b>Exhibits:</b>  N/A</p>		



## Coachella Valley Mosquito and Vector Control District

### Staff Report

January 8, 2019

#### Agenda Item: Items of General Consent

Approval to purchase supplies for arbovirus testing from Thermo Fisher Scientific in an amount not to exceed \$13,700.00 from fund 7575.01.400.045, Internal Mosquito RT-PCR – **Jennifer A. Henke, M.S., Laboratory Manager**

#### Background:

The Laboratory Department conducts arbovirus testing of mosquito samples during the virus transmission season (March – November). We use 5X MagMax-96 Viral Isolation Kits to recover the virus out of the cells of the mosquitoes so that we can determine if a mosquito sample has West Nile virus, St. Louis encephalitis virus, or western equine encephalomyelitis virus. Taqman Fast Virus is used to accurately detect the viruses in our samples. The proposed purchase includes additional supplies needed to complete the testing.

The member agencies of the Mosquito and Vector Control Association of California have a pricing agreement with Thermo Fisher Scientific. The District is able to purchase the testing supplies at a discount compared to the regular price of these items without the agreement. The pricing agreement was in place through December 31, 2018, and a new pricing agreement is expected soon. Each kit can be used to test approximately 500 samples, so the seven kits will allow us to test 3,500 samples (not including the controls needed for each plate).

We will also be buying additional supplies from Thermo Fisher Scientific on this order. Our planned purchase, using estimates from the 2018 pricing agreement are below. The final expenditure amount includes taxes and shipping charges.


Quantity	Item	2018 price per item	Total
7 kits	5X MagMax kits	\$1,300.00	\$9,100.00
1 vial	TaqMan Fast virus	\$2,700.00	\$2,700.00
1 pack	Plates	\$166.00	\$166.00
4 packs	Deep well plates (for mixing reagents)	\$286.00	\$1144.00
1 pack	Tip comb to remove beads from mixing	\$566.00	\$566.00

#### Staff Recommendation:

The Laboratory Department requests Board approve the purchase of reagents needed for testing mosquito samples for arboviruses in the amount not to exceed \$13,700.00.

#### Fiscal Impact:

FY2018-19 Budget <b>7575.01.400.045</b>	Current Available Funds	Proposed Expense	Remaining Available Funds
<b>34,500</b>	<b>25,991</b>	<b>13,700</b>	<b>12,291</b>

	<div>Coachella Valley Mosquito and Vector Control District</div> <div>Staff Report</div>	January 8, 2019								
<div>Agenda Item: Items of General Consent</div> <div>Approval to contract with the lowest responsible bidder, CleanExcel, for cleaning services for the District headquarters in an amount not to exceed \$3,496 per month, from fund 7675.01.305.000 Contract Services – David l’Anson, Administrative Finance Manager</div>										
<div>Background:</div> <div>The District uses an outside contractor for facility cleaning services. The current contractor has been working with the District over 5 years. Following direction from the Executive Committee, staff issued Request for Proposals (RFP) for Cleaning Services on November 30. The RFP included a mandatory walk through which was attended by four firms. The scope of work includes cleaning all bathroom and locker rooms daily and twice weekly all offices, hallways and lobby areas of the Administration (4,128sf), Operations (8,882sf) and Laboratory building (5,780sf). On January 2, 2019 the District received four bids:</div> <div><ul style="list-style-type: none"><li>CleanExcel \$3,496</li><li>All Ways Janitorial \$3,600</li><li>Molly Maids \$3,750</li><li>Right Way Janitorial \$7,800</li></ul></div> <div>The lowest bid was from CleanExcel, who is the current cleaning services provider. The District has contracted with CleanExcel since 2010, their service has been satisfactory and they have met all expectations. This an increase of \$261 per month on current contract due to the California minimum wage increase.</div>										
<div>Staff Recommendation:</div> <div><ul style="list-style-type: none"><li>Staff recommends to contract with the lowest responsible bidder, CleanExcel, for cleaning services for the District headquarters in an amount not to exceed \$3,496 per month.</li></ul></div>										
<div>Fiscal Impact:</div> <table><tr><td>FY2018-19 Budget 7675.01.305.000 &amp; 9000.01.500</td><td>Current Available Funds</td><td>Proposed Expense</td><td>Remaining Available Funds</td></tr><tr><td>45,732</td><td>157,840</td><td>\$20,976</td><td>136,864</td></tr></table>			FY2018-19 Budget 7675.01.305.000 & 9000.01.500	Current Available Funds	Proposed Expense	Remaining Available Funds	45,732	157,840	\$20,976	136,864
FY2018-19 Budget 7675.01.305.000 & 9000.01.500	Current Available Funds	Proposed Expense	Remaining Available Funds							
45,732	157,840	\$20,976	136,864							

**SECTION**  
**11**



# **OLD BUSINESS**



## Coachella Valley Mosquito and Vector Control District

### Staff Report

January 8, 2019

#### Agenda Item: Old Business

Discussion and approval to enter into a service provider agreement with Slovak Baron Empey Murphy & Pinkney (SBEMP) to provide the District's general attorney services in an amount not to exceed \$4,000 per month, from fund 6100.01.200.000, Attorney Fees – Jeremy Wittie, M.S., General Manager

#### Background:

At the October 9, 2018 Board meeting an ad hoc committee was appointed to review eight general attorney proposals that were submitted to the District. The ad hoc committee met on October 19, 2018 and selected four firms to be interviewed to potentially provide general attorney services for the District.

At the November 13, 2018 Board Meeting, the Board interviewed all four firms. After careful review, discussion, and contingent on a successful reference check, the Board directed the General Manager to pursue a draft agreement with Slovak Baron Empey Murphy & Pinkney (SBEMP) for general attorney services.

#### Attachment-Draft Agreement for Legal Services with SBEMP

#### Staff Recommendation:

- That the Board authorizes the President to execute an Agreement for general attorney services between the District and SBEMP

#### Fiscal Impact:

FY2018-19 Budget 6100.01.200.000	Current Available Funds	Proposed Expense	Remaining Available Funds
\$50,000	40,279	*20,000.00	20,279

\*Assuming contract starts February 1, 2019, for FY 2018-19 expense will be \$20,000



**AGREEMENT FOR LEGAL SERVICES  
BETWEEN  
COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT  
AND  
SLOVAK BARON EMPEY MURPHY & PINKNEY LLP**

This Agreement for Legal Services (AGREEMENT) is made and entered into as of January \_\_, 2019, by and between the COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT (hereinafter referred to as DISTRICT) and Slovak Baron Empey Murphy & Pinkney LLP (SBEMP) (hereinafter referred to as ATTORNEY), in view of the following facts:

- A. The DISTRICT is in need of general attorney services.
- B. ATTORNEY is duly licensed (where appropriate) and qualified to provide such services.
- C. The purpose of this AGREEMENT is to establish the terms and conditions under which the DISTRICT will retain ATTORNEY to provide the services described herein.

NOW, THEREFORE, IT IS AGREED AS FOLLOWS:

**1. SERVICES**

ATTORNEY shall provide the DISTRICT the services as described in the scope of work attached hereto as Exhibit A.

**2. PAYMENT**

The DISTRICT shall pay for such services in accordance with the fee schedule for general and special legal services attached hereto as Exhibit B. ATTORNEY shall submit itemized monthly statements for services rendered. The DISTRICT shall pay the statements within thirty (30) days of receipt. Payments shall be subject to review for compliance by the DISTRICT with the requirements of this AGREEMENT and shall be subject to a final audit upon completion of all services. No other compensation will be paid except for work done under a supplemental AGREEMENT approved under paragraph 10, "Changes in Work."

**3. TERM OF AGREEMENT**

This AGREEMENT shall continue from year to year unless either party gives notification to the other to modify or terminate it in its entirety as outlined in Article 14.

**4. STANDARD OF CARE**

ATTORNEY's services will be performed in accordance with generally accepted professional practices and principles and in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. Where approval by the DISTRICT, the General Manager or other representative of the DISTRICT is indicated, it is understood to be conceptual approval only and does not relieve ATTORNEY of responsibility for complying with all laws, codes, and industry standards, or from

liability for damages caused by negligent acts, errors, omissions, noncompliance with industry standards, or the willful misconduct of ATTORNEY or its subcontractors.

**5. PERFORMANCE FEEDBACK**

The DISTRICT may provide ATTORNEY with written or verbal feedback at the DISTRICT's discretion. The performance feedback procedure is outlined in Exhibit C and the performance feedback form is attached hereto as Exhibit D.

**6. ASSIGNMENT AND SUB-ATTORNEY**

ATTORNEY shall not assign, sublet or transfer this AGREEMENT or any rights under or interest in this AGREEMENT without the written consent of the DISTRICT, which may be withheld for any reason. Nothing contained herein shall prevent ATTORNEY from employing independent professional associates, subcontractors and investigators as ATTORNEY may deem appropriate to assist in the performance of services hereunder.

If ATTORNEY subcontracts any of the work to be performed under this AGREEMENT, ATTORNEY shall be as fully responsible to the DISTRICT for the acts and omissions of ATTORNEY's subcontractor and of the persons employed by the subcontractor, as ATTORNEY is for the acts and omissions of persons directly employed by ATTORNEY. Nothing contained in this AGREEMENT shall create any contractual relationship between any subcontractor of ATTORNEY and the DISTRICT. ATTORNEY shall bind every subcontractor, and every subcontractor by the terms of this AGREEMENT applicable to ATTORNEY's work unless otherwise approved in writing by the DISTRICT. It shall be the ATTORNEY's responsibility to confirm that each subcontracted attorney meets the minimum insurance requirements specified below.

**7. INDEPENDENT CONTRACTOR**

No employment relationship is created by this AGREEMENT. ATTORNEY shall perform the services provided for herein as an independent contractor, and not as an employee of the DISTRICT. The DISTRICT is ATTORNEY's client. ATTORNEY shall otherwise be free from the control and direction of the DISTRICT in connection with the performance of services under this AGREEMENT, but shall consult with the DISTRICT on matters involving ATTORNEY's representation of the DISTRICT and as otherwise provided in Exhibit A.

Payment made to ATTORNEY pursuant to this AGREEMENT shall be the full and complete compensation to which ATTORNEY is entitled. The DISTRICT shall not make any Federal or State tax withholdings on behalf of ATTORNEY. The DISTRICT shall not be required to pay any workers' compensation insurance on behalf of ATTORNEY.

**8. INTEGRATION**

This AGREEMENT represents the entire understanding of the DISTRICT and ATTORNEY as to those matters contained herein. No prior oral or written understanding shall have any force or effect with respect to those matters covered hereunder. This AGREEMENT may not be modified or altered except in writing signed by the DISTRICT and ATTORNEY.

**9. OWNERSHIP OF FILES/DOCUMENTS**

All original reports, data, notes, files, estimates and other similar documents prepared by ATTORNEY in the performance of this AGREEMENT shall be the property of the DISTRICT.

**10. AMENDMENTS TO THE AGREEMENT**

Amendments to this AGREEMENT shall be handled as follows: A letter outlining a proposed amendment shall be forwarded to the DISTRICT by ATTORNEY and shall specify any proposed change to any term agreed to hereunder. Where the proposed change is to the fee schedule in Exhibit B, the letter must be submitted to the DISTRICT at least ninety (90) days prior to the effective date of any change to the fee schedule. An amended agreement shall be prepared by the DISTRICT and must be executed by both parties to take effect. The DISTRICT shall not be required to pay for work under the terms of such amended agreement, if such work is performed prior to the time such amended agreement is executed and takes effect.

**11. COVENANTS AGAINST CONTINGENT FEES**

ATTORNEY agrees that SBEMP has not employed or retained any company or person, other than a bona fide employee working for ATTORNEY, to solicit or secure this AGREEMENT, and that ATTORNEY has not paid or agreed to pay any company or person, other than a bona fide employee, any fee, commission, percentage, brokerage fee, gift, or any other consideration contingent upon, or resulting from, the award or making of this AGREEMENT. For breach or violation of this provision, the DISTRICT shall have the right to annul this AGREEMENT without liability, or, at its discretion, to deduct from the AGREEMENT price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fees, gift, or contingent fee, or deduct the same from ATTORNEY's fees.

**12. INSURANCE**

The ATTORNEY shall carry all insurance required by federal, state, county and local laws. The ATTORNEY shall procure and maintain, during the life of the AGREEMENT, adequate worker's compensation, public liability and property damage insurance. The specific requirements for insurance as set forth in this article shall be considered as minimum requirements.

The ATTORNEY shall procure and maintain, during the life of this AGREEMENT, such commercial general liability and automobile liability insurance necessary to protect him/her and the DISTRICT from all claims for bodily injury, including accidental death and property damage claims arising from operations under this AGREEMENT. Such insurance shall be primary and not contribute with any insurance or self-insurance maintained by the DISTRICT.

SBEMP carries its own errors and omissions insurance. After a standard deductible, this insurance provides coverage in the amount of \$3 million.

Minimum Scope of insurance

Coverage shall be at least as broad as:

1. Insurance Services Office Commercial General Liability coverage (occurrence form CG 0001).

2. Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.

#### Minimum Limits of insurance

ATTORNEY shall maintain limits no less than:

1. General Liability: \$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general and products-completed operations aggregate limit is used, either the general and products-completed operations aggregate limit shall apply separately to this project/location or the general and products-completed operations aggregate limit shall be twice the required occurrence limit.
2. Employer's Liability: \$1,000,000 per occurrence for bodily injury or disease.
3. Professional Liability: \$1,000,000 per occurrence for negligent acts, errors or omissions of a professional nature.

#### Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the DISTRICT. At the option of the DISTRICT, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the DISTRICT, its officers, officials, employees and authorized volunteers; or ATTORNEY shall provide a financial guarantee satisfactory to the DISTRICT guaranteeing payment of losses and related investigations claim administration and defense expenses.

#### Other Insurance Provisions

ATTORNEY shall maintain automobile liability insurance and shall indemnify and hold the DISTRICT harmless related to any automobile accidents in which ATTORNEY may be involved.

#### Acceptability of Insurers

NOTICE: To be acceptable, insurers must meet one of the following criteria:

- A. Be an "admitted insurer" in the State of California for the classes of insurance required and, in accordance with the current A.M. Best Company Rating, have a policy holder's rating of "B+" or better and a financial rating of VII or better.
- B. If not an "admitted insurer" in the State of California, for all of the classes of insurance required, have an agent for service of process in California and, in accordance the current A.M. Best Company Rating, have a policy holder's rating of "A-" or better and a financial rating of VII or better.

#### Verification of Coverage

ATTORNEY shall furnish the DISTRICT with original certificates and amendatory endorsements effecting coverage required by this clause. The endorsements should be on

standard ACORD insurance form or on another form approved by the DISTRICT, provided those endorsements or policies conform to the requirements. All certificates and endorsements are to be received and approved by the DISTRICT before work commences. The DISTRICT reserves the right to require complete, certified copies of all required insurance policies, including endorsements affecting the coverage required by these specifications at any time.

### **13. LAWS AND VENUE**

This AGREEMENT shall be interpreted in accordance with the laws of the State of California. If any legal action or proceeding is brought to interpret or enforce any term of this AGREEMENT, the action shall be brought in a state or federal court situated in the County of Riverside, State of California. In the event of any such litigation between the parties, the prevailing party shall be entitled to recover all reasonable costs incurred, including reasonable attorneys' fees, as determined by the court.

### **14. TERMINATION OR ABANDONMENT**

The DISTRICT has the right to terminate or **abandon** any portion or all of the work by giving ten (10) calendar days' written notice. The DISTRICT shall pay ATTORNEY for work performed by ATTORNEY prior to termination. If said termination occurs while ATTORNEY is still performing a task for the DISTRICT, the DISTRICT and ATTORNEY may agree that ATTORNEY shall complete performance of the task, and on the fee therefor. The DISTRICT shall not be liable for any costs other than the fees or portions thereof which are specified herein.

ATTORNEY may terminate this AGREEMENT upon thirty (30) calendar days' written notice.

Upon termination by either party, ATTORNEY shall retain and maintain all original reports, data, notes, files, estimates and other similar documents prepared by ATTORNEY in the performance of this AGREEMENT for three years unless ATTORNEY delivers said documents to the DISTRICT. ATTORNEY shall be required to comply with any request by DISTRICT to return to DISTRICT all reports, data, notes, files, and similar documents prepared by ATTORNEY relating to the DISTRICT.

### **15. CONFORMITY TO LEGAL REQUIREMENTS**

ATTORNEY shall cause all work performed on behalf of the District to conform to all applicable requirements of law: federal, state and local. All work performed on behalf of the District deliverables as herein required are the property of the DISTRICT. In the event this contract is terminated, all work performed on behalf of the District shall be delivered to the DISTRICT. ATTORNEY shall have the right to make a copy of the deliverables for his/her records.

### **16. PROHIBITED INTEREST**

No official of the DISTRICT who is authorized in such capacity on behalf of the DISTRICT to negotiate, make, accept, or approve, or take part in negotiating, making, accepting, or approving this AGREEMENT, shall become directly or indirectly interested personally in this AGREEMENT or in any part thereof. No officer or employee of the DISTRICT who is authorized in such capacity on behalf of the DISTRICT to exercise any executive, supervisory, or similar functions in connection with the performance of this AGREEMENT shall become directly or indirectly interested personally in this AGREEMENT or any part thereof.

**17. SUCCESSORS OR ASSIGNS**

All terms, conditions, and provisions hereof shall inure to and shall bind each of the parties hereto, and each of their respective heirs, executors, administrators, successors, and assigns.

**18. CONFLICT OF INTEREST**

ATTORNEY shall comply with the DISTRICT's Conflict of Interest Code, including any filing requirements, and with any financial disclosure requirements under the law.

ATTORNEY shall not make or participate in making or in any way attempt to use ATTORNEY's position to influence a governmental decision involving the DISTRICT in which ATTORNEY knows or has reason to know ATTORNEY has a financial interest, except that ATTORNEY may negotiate any amendments to this AGREEMENT or any subsequent agreement between ATTORNEY and the DISTRICT. ATTORNEY represents that ATTORNEY has diligently conducted a search and inventory of ATTORNEY's economic interests, as defined in the regulations promulgated by the California Fair Political Practices Commission, and has determined that ATTORNEY does not, to the best of ATTORNEY's knowledge, have an economic interest that would conflict with ATTORNEY's duties under this AGREEMENT. ATTORNEY will not have such interest during the term of this AGREEMENT. ATTORNEY will immediately advise the DISTRICT (including its Board and General Manager) if ATTORNEY learns it has an economic interest that may conflict with ATTORNEY's duties under and during the term of this AGREEMENT.

**19. ORGANIZATION**

ATTORNEY proposes to assign Lena D. Wade as Principal Attorney for this engagement, to provide supervision and have overall responsibility for this AGREEMENT for ATTORNEY, and designates John O. Pinkney as Backup Attorney. Neither the Principal Attorney nor the Backup Attorney shall be removed from the project or reassigned without prior approval of the DISTRICT. No subcontracting of these professional services shall be made without prior approval of the DISTRICT.

**20. NOTICE**

Any notice or instrument required to be given or delivered by this AGREEMENT may be given or delivered by depositing the same in any United States Post Office, registered or certified, postage prepaid, addressed to:

ATTORNEY: SBEMP  
1800 East Tahquitz Canyon Way  
Palm Springs, CA 92262  
Phone: 760/ 322-2275  
Fax: 760/ 322-2107  
[wade@sbemp.com](mailto:wade@sbemp.com); [pinkney@sbemp.com](mailto:pinkney@sbemp.com)  
DISTRICT: Coachella Valley Mosquito and Vector Control District  
Attn: General Manager  
43-420 Trader Place  
Indio, CA 92201  
[JWittie@cvmvcd.org](mailto:JWittie@cvmvcd.org)

and shall be effective upon the earlier of actual receipt or three (3) business days after having been deposited in the mail postage prepaid, registered, or certified.

**21. SIGNATURES**

The individuals executing this AGREEMENT represent and warrant that they have the legal capacity and authority to do so on behalf of their respective legal entities and to bind their respective entities hereto.

IN WITNESS WHEREOF, the parties have executed this AGREEMENT as of the date written above.

**COACHELLA VALLEY  
MOSQUITO AND VECTOR  
CONTROL DISTRICT**

**SLOVAK BARON EMPEY MURPHY &  
PINKNEY LLP**

\_\_\_\_\_, President  
Board of Trustees

\_\_\_\_\_  
John O. Pinkney, Managing Partner

**ATTEST:**

\_\_\_\_\_  
Graciela Morales, Clerk of the Board



## **EXHIBIT A**

### **SCOPE OF WORK**

Slovak Baron Empey Murphy & Pinkney LLP ("SBEMP") shall provide all day-to-day legal services required by the Coachella Valley Mosquito and Vector Control District ("District"). All day-to-day legal services shall be included in consideration for the monthly retainer, and shall include:

- Attendance at meetings of the Board of Trustees of the District, as requested by the Board, for the purpose of providing legal services and consultation.
- Attendance at such other meetings as requested by the President, Board of Trustees, General Manager, or other designee.
- Preparation of ordinances, resolutions, contracts, and the like concerning the District's business.
- Preparation of written legal opinions on matters concerning District business at the request of the Board, General Manager or designee.
- Analysis of proposed and enacted legislation, published legal opinions, and other matters that may have an impact on the operations of the District.
- Review of contracts, bid specifications, and purchasing documents for the purposes of legal and policy compliance, appropriate risk transfer, and risk analysis and avoidance.
- Consultation with District staff and/or the District's labor counsel regarding personnel matters, labor negotiations, relations matters, litigation, and other matters concerning District business, as requested (that may not otherwise be covered by District agreements with other legal resources).
- Advise the District concerning whether to file claims or commence litigation; and represent the District in connection with certain claims and litigation filed by or against it. Generally different counsel will be retained in the event of a conflict of interest which disqualifies SBEMP from representation. Other counsel may be retained to defend or prosecute actions which in the opinion of SBEMP require special expertise or where representation is being provided under a contract of insurance.
- Provide advice and assistance to District staff and Trustees on matters of law including the Brown Act, Government Code, Health and Safety Code, conflicts of interest and Political Reform Act and assisting them in seeking advice from regulatory agencies such as the Fair Political Practices Commission (at all times as counsel for the District and not for District staff or Trustees in their individual capacities).



- Provide legal assistance and consultation to District staff and Trustees on matters of environmental compliance, including, NPDES, CEQA, and NEPA, as they pertain to the District.
- Provide legal assistance and consultation to District staff and managers on matters of property rights and property management.
- Such other activities as directed by the President, the Board of Trustees, and the General Manager, or other designee.

Litigation related work (pre-litigation, pre-trial, trial, work and/or appeals) shall be billed off retainer.

## **EXHIBIT B**

### **FEE SCHEDULE**

**\$4,000** per month retainer. Any litigation related work (pre-litigation, pre-trial, trial, and/or appeals) will be billed at a blended rate of \$275 per hour for attorney time and \$160 per hour for paralegal time.

## **EXHIBIT C**

### **LEGAL COUNSEL PERFORMANCE FEEDBACK PROCEDURE**

#### **PURPOSE**

The purpose of the legal counsel performance feedback is to strengthen the relationship between the Coachella Valley Mosquito and Vector Control District ("District") and its legal counsel, provide a mechanism for regular feedback on performance objectives.

#### **PROCESS**

The District's Board of Trustees shall provide feedback to legal counsel on a regular basis. The schedule for performance feedback shall be determined by the District's Board. Board members shall complete the performance feedback form. Subsequently, the Board shall meet in closed session outside of the presence of legal counsel to discuss the ratings, comments and objectives contained in the individual feedback forms. The Board shall then meet in closed session with legal counsel and generally discuss performance, comments and objectives. The performance feedback forms shall then be placed in the District's legal services file.

**EXHIBIT D**

**LEGAL COUNSEL PERFORMANCE FEEDBACK  
COACHELLA VALLEY MOSQUITO & VECTOR CONTROL DISTRICT**

**Law Firm/Attorney** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Evaluation Period:** \_\_\_\_\_ **to** \_\_\_\_\_ **Submitted by** \_\_\_\_\_

**Rating Scale**

**Outstanding** - Performance consistently exceeds satisfactory.

**Meets Requirements** - Performance is consistently satisfactory.

**Needs Improvement** - Performance is frequently below satisfactory.

**Unsatisfactory** - Performance is consistently unacceptable and well below satisfactory, and requires immediate action and attention by the District's Board of Trustees.

**1. ADVICE TO THE DISTRICT** - Legal counsel provides objective/unbiased and professional advice to the District and Board of Trustees in a clear, timely and articulate manner. Legal counsel delivers reports, attends meetings and responds to inquiries contained in phone messages, email and/or other correspondence in a professional and timely manner. Legal counsel identifies and informs the District and Board of relevant legal trends/developments.

☐ **Outstanding**

☐ **Meets Requirements**

☐ **Needs Improvement**

☐ **Unsatisfactory**

**Comments:**

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**2. EFFECTIVENESS** - Legal counsel provides services in an efficient manner. Fees are competitive and appropriate for the services provided. Billing is clear and reflects appropriate allocations of time.

- ☐ Outstanding
- ☐ Meets Requirements
- ☐ Needs Improvement
- ☐ Unsatisfactory

**Comments:**

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**3. RELATIONSHIP WITH DISTRICT STAFF, BOARD OF TRUSTEES AND COMMUNITY** - Legal counsel effectively collaborates with District staff and the Board of Trustees to accomplish District goals. Legal counsel effectively communicates District policy with the District staff, Board, media and the community. Legal counsel is accessible and consistently maintains a professional demeanor.

- ☐ Outstanding
- ☐ Meets Requirements
- ☐ Needs Improvement
- ☐ Unsatisfactory

**Comments:**

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**4. SUMMARY RATING**

- ☐ Outstanding
- ☐ Meets Requirements
- ☐ Needs Improvement
- ☐ Unsatisfactory

**Comments:**

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**5. FUTURE GOALS AND OBJECTIVES**

Identify specific goals and objectives for the next evaluation period:

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Date: \_\_\_\_\_ Signature: \_\_\_\_\_

**SECTION**  
**12**



# **NEW BUSINESS**



## Coachella Valley Mosquito and Vector Control District

### Staff Report

January 8, 2019

#### Agenda Item: New Business

Nomination and election of Board Officers for the 2019 Calendar Year – **ad hoc  
Nomination Committee**

#### Background:

The Nominating Committee (Trustees *Walker, Larson, Hassett and Kaplan*) was appointed at the November 13, 2018, Board Meeting by the Board President in accordance with the District's Bylaws for the purpose of recommending a slate of Board officers for the 2019 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. In order to be eligible to hold office, the Trustee must have served as a Trustee for one calendar year.

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

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

**Vice-President:** In the absence of the President, the Vice President shall assume 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 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 Doug Hassett
Vice-President:	Trustee Franz De Klotz
Secretary:	Trustee Doug Walker
Treasurer:	Trustee Clive Weightman

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

Each Board Member will have the opportunity to nominate other candidates from the floor. This slate, if elected, would serve for the 2019 calendar year. Under the Brown Act, the votes must be taken in open session, since secret ballots are not permitted.

**To: Board of Trustees**

**Subject: Nominations for Officers CVMVCD Board of Trustees**

The Nominating Committee reviewed the possible candidates for the officer positions for the Vector Control Board for 2019. 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 2019; the following Trustees have expressed their willingness to serve in these capacities.

**President: Doug Hassett**

Trustee Hassett, appointed by the City of La Quinta, has served on the Board of Trustees since 2015. He served as Vice President in 2017 and has served as chair of the ad hoc Thermal Committee. Trustee Hassett 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 Hassett for President.

**Vice President: Franz De Klotz**

Trustee De Klotz, appointed by the County at Large, has served on the Board since 2017. He has voiced his interest on serving in an executive capacity. This committee is nominating Trustee De Klotz for Vice President.

**Secretary: 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 three years. 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 Secretary.

**Treasurer: 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 expressed interest in continuing in this role serving as Treasurer. The Nominating Committee believes the District's interests will best be served by Trustee Weightman continuing in the position of Treasurer.

Respectfully submitted by the Nominating Committee:

- Shelley Kaplan
- Doug Walker
- Bito Larson
- Doug Hassett



## Coachella Valley Mosquito and Vector Control District

### Staff Report

January 8, 2019

#### **Agenda Item:** New Business

Discussion and/or approval of General Manager Employment Agreement to include COLA and 2018 Merit Pay - **ad hoc Negotiating Committee**

#### **Background:**

At the November 13, 2018 Board Meeting, the Board completed the General Manager annual evaluation. On December 3, 2018 the General Manager met with an ad hoc Negotiations Committee comprised of Vice President Doug Hassett, Trustees Doug Walker and Doug Kunz to negotiate salary and benefits of the current 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 changes to Mr. Wittie's agreement:





1. COLA of 2 %

Current Salary	COLA of 2 %	Proposed Annual Salary
\$151,673.00	\$3,033.46	\$154,706.46

2. One time Special Merit pay of 3.5% = \$5,308.56

#### **Staff Recommendation:**

That the Board take whatever action they deem appropriate.

	<p align="center"><b>Coachella Valley Mosquito and Vector Control District</b></p> <p align="center"><b>Staff Report</b></p>	<p align="center"><b>January 8, 2019</b></p>
<p><b>Agenda Item:</b> New Business Approval of the new District logo – Jill Oviatt, M.C.D.M., Public Information Manager</p>		
<p><b>Background:</b> In 2016, the District started a rebranding project to review the District’s current logo, how it was being used, and how it reflected the current brand of the District 20 years after it had been created. Draft logos were developed based on feedback from District staff and management. Following feedback from staff, management, and Trustee focus groups, it was determined the logo still needed further development, and the project was shelved while the Public Outreach department focused intensively on invasive <i>Aedes</i> outreach and education with residents and city and county stakeholders. The project was brought back to life in the fall of 2018 and new logos were developed based on the initial focus group feedback. Six logos were then sent in a survey to five stakeholder groups, including District staff and managers, the Board of Trustees, a group of city and county officials, MVCAC colleagues, and residents who are part of the District notification email list. We received 73 responses, with overwhelmingly positive feedback on two logos, which have been updated by the designer to reflect commonly suggested revisions. The two logos are included here with their black and white versions.</p> <div data-bbox="185 814 271 846">Logo 1</div>  <div data-bbox="535 814 621 846">Logo 2</div>    <p>administrative, legal, financial, HR, training, and communications materials (internal and external), as well as signage, vehicles, uniforms, equipment, advertising, website, and online presence. Our updated brand will help communicate the District’s values and qualities, and by using standardized and consistent branding, people will be able to more quickly recognize both our presence and our value.</p>		
<p><b>Staff Recommendation:</b> Staff recommends the approval of Logo 1 or Logo 2. There is no cost related to the approval of the logo. Related costs updating District collateral will be presented at the February Board meeting.</p>		