

AGENDA
1062nd MEETING OF THE BOARD OF TRUSTEES
OF THE ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

NOVEMBER 14TH, 2018

TIME: 5:00 P.M.
PLACE: Office of the District, 23187 Connecticut Street, Hayward
TRUSTEES: Elisa Marquez, President, City of Hayward
Wendi Poulson, Vice-President, City of Alameda
Eric Hentschke, Secretary, City of Newark
P. Robert Beatty, City of Berkeley
Alan Brown, City of Dublin
Betsy Cooley, City of Emeryville
George Young, City of Fremont
James N. Doggett, City of Livermore
Jan O. Washburn, City of Oakland
Robert Dickinson, City of Piedmont
Kathy Narum, City of Pleasanton
Ed Hernandez, City of San Leandro
Subru Bhat, City of Union City
County-at-Large, vacant

1. Call to order.
2. Roll call.
3. President Marquez invites any member of the public to speak at this time on any issue relevant to the District. (Each individual is limited to three minutes).
4. Approval of minutes of the 1061st meeting held October 10th, 2018 (**Board action required**)
5. Appointment of a committee to nominate candidates for Board Offices (**Board Action required**)
6. ACMAD Public Open House 2019 discussion (Information only):
7. Financial Reports as of October 31st, 2018 (Information only):
 - a. Check register
 - b. Income statement
 - c. Investments, reserves, and cash report.
8. Presentation of the Monthly Staff Report for November 2018 (Information only).
9. Presentation of the Manager's Report for November 2018 (Information only).
 - a. Utility Cost Management, LLC hired to consult on solar installation project
 - b. Capital Asset Replacement Study scope of work in development
 - c. OPEB actuarial report awaiting audit, which is ongoing
 - d. Training certificates to expire soon: AB 1234: Cooley; AB 1825: Beatty, Cooley, Young, Washburn
 - e. Remodel update: currently addressing comments on building plans
 - f. MVCAC Quarterly Meeting summary; MVCAC Annual: February 3-5, Burlingame
 - g. ACMAD Trustee Open House & Board Group Picture: December 12th 3-5 pm

10. Board President asks for reports on conferences and seminars attended by Trustees.
11. Board President asks for announcements from members of the Board.
12. Board President asks trustees for items to be added to the agenda for the next Board meeting.
13. Adjournment.

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

Please Note: A copy of this agenda is also available at the District website, www.mosquitoes.org or via email by request. Alternative formats of this agenda can be made available for persons with disabilities. Please contact the district office at (510) 783-7744, via FAX (510) 783-3903 or email at acmad@mosquitoes.org to request an alternative format.

MINUTES

1061st MEETING OF THE BOARD OF TRUSTEES OF THE ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

October 10, 2018

TIME: 5:00 P.M.
PLACE: Office of the District, 23187 Connecticut Street, Hayward
TRUSTEES: Elisa Marquez, President, City of Hayward
Wendi Poulson, Vice-President, City of Alameda
Eric Hentschke, Secretary, City of Newark
P. Robert Beatty, City of Berkeley
Alan Brown, City of Dublin
Betsy Cooley, City of Emeryville
George Young, City of Fremont
James N. Doggett, City of Livermore
Jan O. Washburn, City of Oakland
Robert Dickinson, City of Piedmont
Kathy Narum, City of Pleasanton
Ed Hernandez, City of San Leandro
Subru Bhat, City of Union City
County-at-Large, Vacant

1. Board President Marquez called the regularly scheduled board meeting to order at 5:00 P.M.
2. Trustees Marquez, Poulson, Hentschke, Beatty, Brown, Cooley, Young and Washburn were present. Trustees Doggett, Narum, Hernandez and Bhat were absent. Trustee Dickinson arrived at 5:02 P.M.
3. Board President Marquez invited members of the public to speak on any issue relevant to the District. Mechanical Specialist Mark Weiland was present to report on the District's pesticide safety program and remodel projects. Mosquito Control Technician Jeremy Sette was present to record the minutes.
4. Approval of minutes of the 1060th meeting held September 12th, 2018.
Motion: Trustee Hentschke moved to approve the minutes
Second: Trustee Cooley
Vote: motion carries: unanimous.
5. Review of bids and awarding of contract for the repair of the main office and laboratory roof.
Discussion:
The General Manager and Mechanical Specialist Mark Weiland presented the review of bids for the repair of the main office and laboratory roof. Trustee Beatty asked if the same company worked on the shop roof (yes). President Marquez asked if there have been any concerns regarding the shop roof (none). Trustee Hentschke asked if the white paint on the shop roof was purposeful (Trustees Washburn and Cooley replied, yes, the paint is of semi-reflective material). The General Manager mentioned that another bid came in after the board packet

was posted by State Roofing Systems, Inc. for \$98,182. The General Manager also mentioned that the quote from CentiMark was shortened to remove several pages of pictures of damages that were not deemed crucial to include in the packet. Mr. Weiland recommended CentiMark Roofing and commented that they had the most detailed proposal and the District had a positive history working with the company on the previous roof project.

Motion: Trustee Beatty moved to approve the bids and awarding of contract for the repair of the main office and laboratory roof.

Second: Trustee Washburn

Vote: motion carries: unanimous.

6. The General Manager presented the final version and approval of ACMAD Strategic Plan 2018-2021.

Discussion:

President Marquez asked if the Board had the opportunity to review the Strategic Plan (yes). The General Manager commented that there were no comments from the Board sent to him. The General Manager suggested adding headshots of the Trustees to the final version. Vice-President Poulson and President Marquez suggested a photo of the Board occur during the annual Board open house in December and that photo replace the headshots. Vice-President Poulson noted a typo on top of page 5 of Strategic Plan (environment should be environmental). President Marquez thanked the Strategic Planning Committee and Vector Biologist Miguel Cardenas for the efforts on the Strategic Plan.

Motion: Trustee Brown moved to approve the ACMAD Strategic Plan 2018-2021.

Second: Trustee Washburn

Vote: motion carries: unanimous.

7. The General Manager provided background to the District's IIPP policy and Mechanical Specialist Mark Weiland provided more details on the safety program. Mr. Weiland explained his role in implementing the IIPP program. The General Manager commented on Weiland's commitment to safety, attention-to-detail and accuracy, as well as his coordinating IIPP efforts with Field Supervisor Joseph Huston and Laboratory Director Eric Haas-Stapleton. President Marquez asked if the District has AED machines (yes). The General Manager explained the multiple safety trainings undergone by District staff. Trustee Beatty asked which larvicidal/adulticidal products the District uses the most (larval control products, mostly consisting of Vectobac G (BTI)). Trustee Beatty asked about the uses of mineral oil (mostly used for mosquito control in catch basins/storm drains) and asked if employees sign off on pesticide training (yes, annually).

8. Presentation of 5-year award, a pewter belt buckle to Trustee Kathy Narum. Trustee Narum was absent so the Board will acknowledge her next meeting. President Marquez suggested looking into new types of longevity awards.

9. Financial Reports as of September 30th, 2018.

Discussion:

The General Manager presented the Financial Reports as of September 30th, 2018. The General Manager commented on the \$150 contract awarded to Mosquito Control Technician Jeremy Sette for writing, recording, and mixing an original musical composition for the District's phone line's hold music and acknowledged his efforts in doing so. Mr. Sette commented on his musical background as a music teacher and composer and thanked the General Manager, IT Director Robert Ferdan, Field Supervisor Joseph Huston and the rest of the District for the opportunity to create music for the District. The General Manager noted that Field Supervisor Joseph Huston is also a band manager and acknowledged Huston's assistance with helping

Sette write up an official licensing contract for the District. Trustee Brown highlighted the District's payment to Dublin GMC for the recent lab truck purchase.

10. Presentation of the Monthly Staff Report for September 2018.

Discussion:

The General Manager presented the Monthly Staff Report for September 2018.

11. Presentation of the Manager's Report for September 2018.

Discussion:

The General Manager presented the Manager's Report for August 2018. The General Manager congratulated Vice-President Poulson for her 3 years of service as a Trustee. Trustee Beatty asked when the next CSDA Annual Conference will be held next year (around the same time as this year in Anaheim). President Marquez asked if the General Manager had photos from the conference accepting awards on behalf of the District to post on social media (yes). President Marquez also asked when the District MOU process would begin (January 2019) and asked on the length of the contracts (three years expiring in 7/19). Trustee Brown asked if Board members will be notified prior to their city council's visit by the General Manager for his presentations (yes). President Marquez recommended adding city council presentation videos to the website. President Marquez also asked about the ACMAD County-at-Large trustee vacancy and when it might be filled (the General Manager has contacted the Ag Department and Acting-Director, but the District may have to wait for permanent employee position to be filled, he will follow-up). Trustee Washburn asked what the likelihood of the Acting-Director joining the Board (unsure at this time). President Marquez asked if the Ag Director is appointed by the Board of Supervisors (yes).

12. President Marquez asked for reports on conferences and seminars attended by Trustees. None for the previous month, but Trustee Washburn will be attending the Entomological Society of America's annual conference in November.

13. Board President Marquez asked for announcements from the Board. None

14. Board President Marquez asked trustees for items to be added to the agenda for the next Board meeting. None

15. The meeting adjourned at 5:53 P.M.

Respectfully submitted,

Approved as written and/or corrected
at the 1062nd meeting of the Board of
Trustees held November 14th, 2018

Elisa Marquez, President
BOARD OF TRUSTEES

Eric Hentschke, Secretary
BOARD OF TRUSTEES

Alameda County Mosquito Abatement Dist.
 Check Register
 For the Period From Oct 1, 2018 to Oct 15, 2018

Filter Criteria includes: Report order is by Date.

Check #	Date	Payee	Amount
1199	10/11/18	Payroll	71,160.50
1200	10/15/18	CalPERS 457	3,220.00
1201	10/15/18	Voya Institutional Trust Company	150.00
1202	10/15/18	P. Robert Beatty	100.00
1203	10/15/18	Subrahmanya Y Bhat	100.00
1204	10/15/18	Alan Brown	100.00
1205	10/15/18	Elizabeth Cooley	100.00
1206	10/15/18	James N Doggett	100.00
1207	10/15/18	Robert Dickinso	100.00
1208	10/15/18	Eric Armin Hentschke	100.00
1209	10/15/18	Edward Hernandez	100.00
1210	10/15/18	Anibal Humberto Izquierdo	100.00
1211	10/15/18	Elisa Marquez	100.00
1212	10/15/18	Katherine Narum	100.00
1213	10/15/18	Wendi Lynn Poulson	100.00
1214	10/15/18	George Young	100.00
1215	10/15/18	AJR Door Service, Inc	1,185.00
1216	10/15/18	ACSDA	100.00
1217	10/15/18	All-Ways Green Services	410.00
1218	10/15/18	Airgas	735.17
1219	10/15/18	Adapco	8,483.30
1220	10/15/18	CSDA	1,521.56
1221	10/15/18	City of Hayward	1,326.86
1222	10/15/18	CarQuest	57.51
1223	10/15/18	Cintas	544.14
1224	10/15/18	Delta Dental	4,411.85
1225	10/15/18	Grainger	298.80
1226	10/15/18	Industrial Park Landscape Maintenance	215.00
1227	10/15/18	Makal Solutions	205.00
1228	10/15/18	NBC Supply Corp	329.25
1229	10/15/18	PFM Asset Management	1,876.35
1230	10/15/18	PG&E	66.59
1231	10/15/18	Spark Creative Design	375.00
1232	10/15/18	Sonitrol	757.00
1233	10/15/18	The Light House	338.68
1234	10/15/18	Treds	110.00
1235	10/15/18	The Hartford	74.08
1236	10/15/18	VCJPA	217.92
1237	10/15/18	VSP	674.60
1238	10/15/18	U.S Bank Corporate Payment System	17,015.35
ACH	10/15/18	CalPERS Retirement	11,907.15

Voided Checks

1236V
 1239V

Total Expenditures 10/15/18 129,066.66

Alameda County Mosquito Abatement Dist.
Check Register
 For the Period From Oct 16, 2018 to Oct 31, 2018

Filter Criteria includes: Report order is by Date.

Check #	Date	Payee	Amount
1241	10/25/18	Payroll	71,958.51
1242	10/31/18	Voya Institutional Trust Company	150.00
1243	10/31/18	CalPERS 457	3,220.00
1244	10/31/18	P. Robert Beatty	100.00
1245	10/31/18	Alan Brown	100.00
1246	10/31/18	Elizabeth Cooley	100.00
1247	10/31/18	Robert Dickinson	100.00
1248	10/31/18	Eric Armin Hentschke	100.00
1249	10/31/18	Elisa Marquez	100.00
1250	10/31/18	Wendi Lynn Poulson	100.00
1251	10/31/18	Jan Washburn	100.00
1252	10/31/18	George Young	100.00
1253	10/31/18	AJR Door Service, Inc	435.71
1254	10/31/18	Airgas	688.83
1255	10/31/18	Alex Ahlefeldt	40.88
1256	10/31/18	CSDA	6,740.00
1257	10/31/18	Cintas	675.96
1258	10/31/18	Grainger	456.13
1259	10/31/18	Ricky Ho	40.88
1260	10/31/18	KAMPS Propane, Inc.	53.83
1261	10/31/18	Cindy Kizanis	40.88
1262	10/31/18	Rick Long	40.88
1263	10/31/18	Leading Edge Associate, Inc.	29,685.00
1264	10/31/18	Mello, Melvin	1,500.00
1265	10/31/18	NBC Supply Corp	637.43
1266	10/31/18	PG&E	1,576.82
1267	10/31/18	PC Professional	119.64
1268	10/31/18	The Light House	338.68
1269	10/31/18	VSP	674.60
1270	10/31/18	Verizon	1,425.17
1271	10/31/18	Lance Yung	40.88
1272	10/31/18	WEX Bank	3,750.45
1273	10/31/18	Bay Area MVCAC Regional Training Fund	1,395.00
ACH	10/31/18	CalPERS Retirement	11,887.66
ACH	10/31/18	CalPERS Health	31,440.43

Total Expenditures 10/31/18 169,914.25

Alameda County Mosquito Abatement District
Income Statement
Consolidated
October 31, 2018. (4 of 12 mth, 33%)

REVENUES	Actual 2015/16 ¹	Actual 2016/17 ¹	Current Month	Year to Date 2018/2019	Budget 2018/2019	Actual vs Budget
Total Revenue	\$ 4,180,831.00	\$ 4,366,903.00	\$ -	\$ -	\$ 4,476,728.00	0%

EXPENDITURES	Actual 2015/16	Actual 2016/17	Current Month ²	Year to Date 2018/2019	Budget 2018/19	Actual vs Budget
Salaries	\$1,661,234	\$1,677,469	\$ 157,953.00	\$ 636,742.11	\$1,933,182	33%
CalPERS Retirement	\$205,340	\$219,892	\$ 13,585.26	\$ 201,169.89	\$301,812	67%
Medicare	\$21,160	\$21,368	\$ 2,115.56	\$ 8,569.91	\$28,031	31%
Fringe Benefits	\$554,630	\$453,877	\$ 38,775.56	\$ 152,225.95	\$508,680	30%
Total Salaries, Retirement, & Benefits	\$2,442,364	\$2,372,606	\$212,429	\$998,708	\$2,771,705	36%
Clothing and personal supplies (purchased)	\$7,169	\$8,955	\$ 904.07	\$ 2,706.78	\$6,000	45%
Laundry service and supplies (rented)	\$7,162	\$8,840	\$ 1,243.95	\$ 3,987.79	\$9,500	42%
Utilities	\$22,214	\$27,084	\$ 1,643.41	\$ 7,621.28	\$36,500	21%
Communications-IT	\$32,756	\$54,128	\$ 3,477.24	\$ 29,365.93	\$122,200	24%
Maintenance: structures & improvements	\$6,739	\$19,503	\$ 1,835.71	\$ 2,927.53	\$25,000	12%
Maintenance of equipment	\$24,175	\$27,051	\$ 2,593.45	\$ 5,422.93	\$35,000	15%
Transportation, travel, training, & board	\$75,326	\$124,827	\$ 10,850.17	\$ 28,140.23	\$134,210	21%
Professional services	\$159,499	\$82,082	\$ 3,397.91	\$ 37,756.84	\$190,620	20%
Memberships, dues, & subscriptions	\$14,540	\$20,191	\$ 6,840.00	\$ 20,550.60	\$21,402	96%
Insurance - (VCJPA, UAS)	\$106,268	\$113,867	\$ 217.92	\$ 124,703.92	\$127,851	98%
Community education	\$12,450	\$40,222	\$ 2,281.64	\$ 11,883.30	\$33,000	36%
Operations	\$187,490	\$176,758	\$ 11,143.29	\$ 56,198.59	\$234,000	24%
Household expenses	\$13,790	\$17,373	\$ 1,370.87	\$ 5,190.02	\$19,350	27%
Office expenses	\$14,195	\$18,590	\$ -	\$ 491.53	\$15,100	3%
Laboratory supplies	\$76,130	\$80,008	\$ 8,307.45	\$ 23,091.43	\$118,148	20%
Small tools and instruments	\$1,155	\$2,513	\$ 759.45	\$ 1,672.52	\$2,500	67%
Total Staff Budget	\$ 780,944.00	\$833,192	\$ 56,866.53	\$ 361,711.22	\$1,130,381	32%
Total Operating Expenditures	\$ 3,032,263.00	\$3,479,710	\$ 269,295.91	\$ 1,360,419.08	\$3,902,086	35%

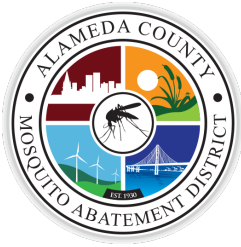
1 - Subcategories in Fiscal years 2015/16 and 2016/17 do not add up due to accruals not being posted

2 - Total Operating Expenditures in current month do not match the check register due to Capital purchase

**Alameda County Mosquito Abatement District
Investment, Reserves, and Cash Balance Report
October 31, 2018. (4 of 12 mth, 33%)**

Account #	Investment Accounts	Beginning Balance	Deposits	Withdrawals	Interest/ (loss)	New Balance
800005	LAIF	\$ 1,012,081.74	\$ -	\$ (282,000.00)	\$ 5,931.45	\$ 736,013.19
800006	OPEB Fund	\$ 4,231,196.58	\$ -	\$ -	\$ (203,237.87)	\$ 4,027,958.71
101106	VCJPA Member Contingency	\$ 338,010.00	\$ -	\$ -	\$ -	\$ 338,010.00
101106.1	VCJPA Property Contingency	\$ 50,263.00	\$ -	\$ -	\$ -	\$ 50,263.00
800007.1	CAMP: Repair and Replace ¹	\$ 649,416.74	\$ -	\$ (29,685.00)	\$ 1,248.19	\$ 620,979.93
800007.2	CAMP: Public Health Emergency	\$ 507,206.58	\$ -	\$ -	\$ 979.23	\$ 508,185.81
800007.3	CAMP: Operating Reserve	\$ 1,874,075.11	\$ -	\$ -	\$ 3,618.14	\$ 1,877,693.25
800007.4	CAMP: Capital Reserve Fund	\$ 251,093.66	\$ -	\$ -	\$ 484.77	\$ 251,578.43
800008	PARS: Pension Stabilization	\$ 1,017,365.14	\$ -	\$ -	\$ (2,950.00)	\$ 1,014,415.14
Cash Accounts		Beginning Balance			Activity	New Balance
101110	Bank of America (Payroll Account)	\$ 124,571.29				\$ 124,171.27
101111	Bank of The West (Transfer Account)	\$ 108,418.56				\$ 294,910.45
100001	County Account	\$ 444,369.79				\$ 444,369.79

1 - \$29,685.00 transferred to Bank of the West for MapVision expenses.



23187 Connecticut Street
Hayward, CA 94545

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

acmad@mosquitoes.org

MONTHLY STAFF REPORT –October 2018

Board of Trustees

President

Elisa Marquez

Hayward

Vice-President

Wendi Poulson

Alameda

Secretary

Eric Hentschke

Newark

Vacant

County at Large

P. Robert Beatty

Berkeley

Betsy Cooley

Emeryville

Alan Brown

Dublin

George Young

Fremont

James N. Doggett

Livermore

Jan O. Washburn

Oakland

Robert Dickinson

Piedmont

Kathy Narum

Pleasanton

Ed Hernandez

San Leandro

Subru Bhat

Union City

Ryan Clausnitzer

General Manager

1. OPERATIONS REPORT

During the month of October, operations staff continued to work on maintaining ditches in marsh sources. Two days a week are being dedicated to ditch maintenance. From the commencement of work at the beginning of September until the close of October, 8,844 linear feet of ditches have been cleared of silt, debris, and vegetation. These activities are already producing increased flow of tidal water into and out of several marsh sources. Ultimately, we expect that this increased flow will reduce the amount of time and material that is expended in these areas to provide mosquito control. It has been many years since any of these ditches have received any maintenance and overgrowth of vegetation has often made them difficult to locate. Along with increasing water flow, this ditching work project will make future inspections and treatments in and around these areas safer for operations staff.

As there are more sources and linear feet of ditches than can be attended to in any given ditching season, operations staff are selecting priority ditches to work on first. This priority is based on several factors including: how much time, effort and material is spent on a given source? What species of mosquitoes breed in the source? How long it has been since a given set of ditches last received maintenance work? Which sources will become inaccessible due to weather conditions? (some of the sources are miles out on levees that cannot be driven on after fall/winter rains occur).

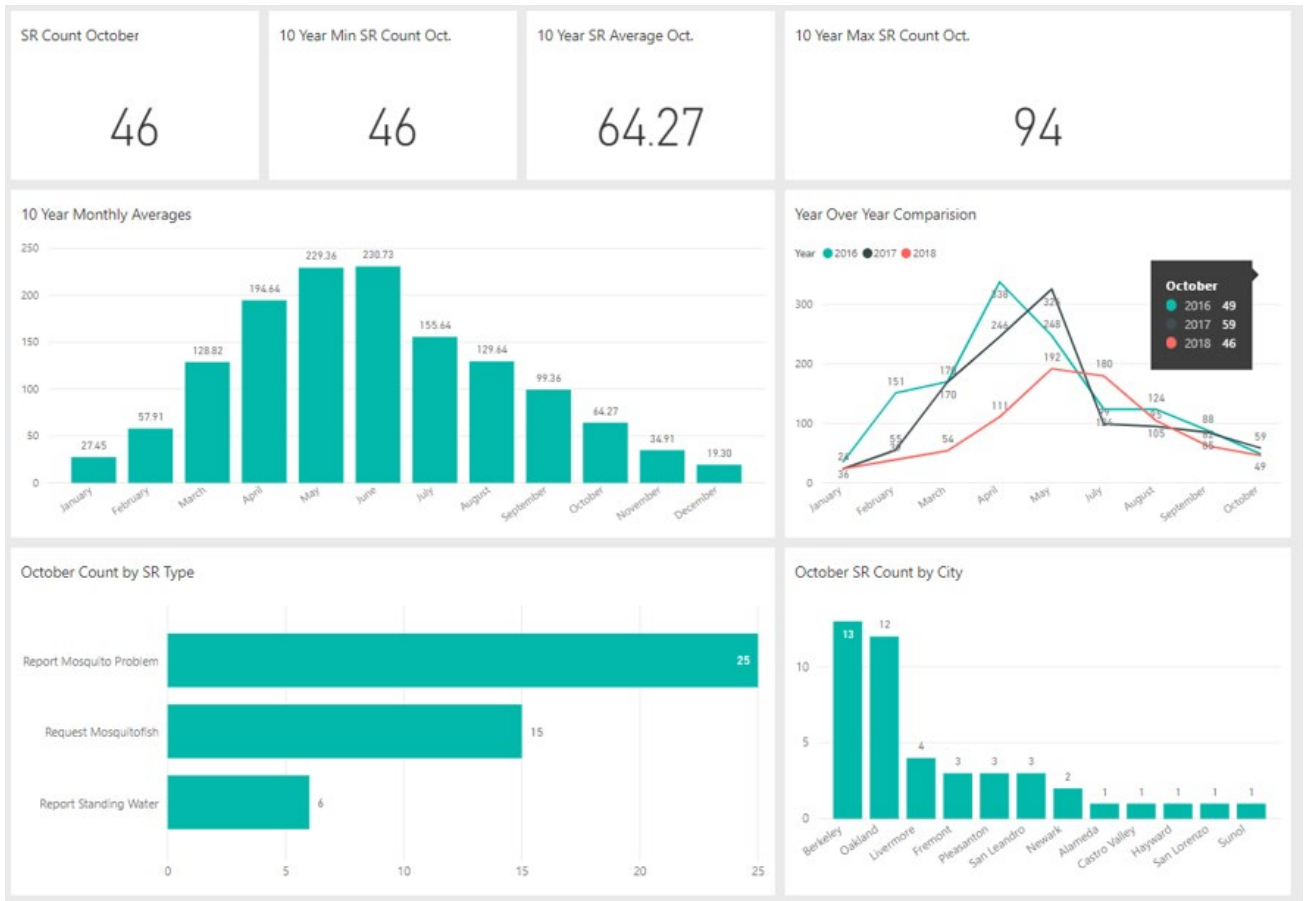
Numbers of larval mosquitoes collected during the month of October continue to be low. Operations focus on our three main *Culex* species to suppress West Nile virus activity. Treatments were conducted for *Culex pipiens*, *Culex tarsalis*, and *Culex erythrorhax* in a variety of sources including: catch basins, cemetery urns, canals, and fresh-water marshes. West Nile virus continued to be active in October, but numbers are declining with only three birds testing positive during the month. Operations activities relating to these species will continue at least until the county receives its first significant rainfall.

Requests for service from our public during the month of October were below average for the month. This is another potential indicator of lower numbers of mosquitoes in the environment. Operations staff have been working together to ensure that service requests are being addressed in a timely manner. Our normal 24-hour response time for attending to service requests has required some modification to accommodate the days working on ditch maintenance.

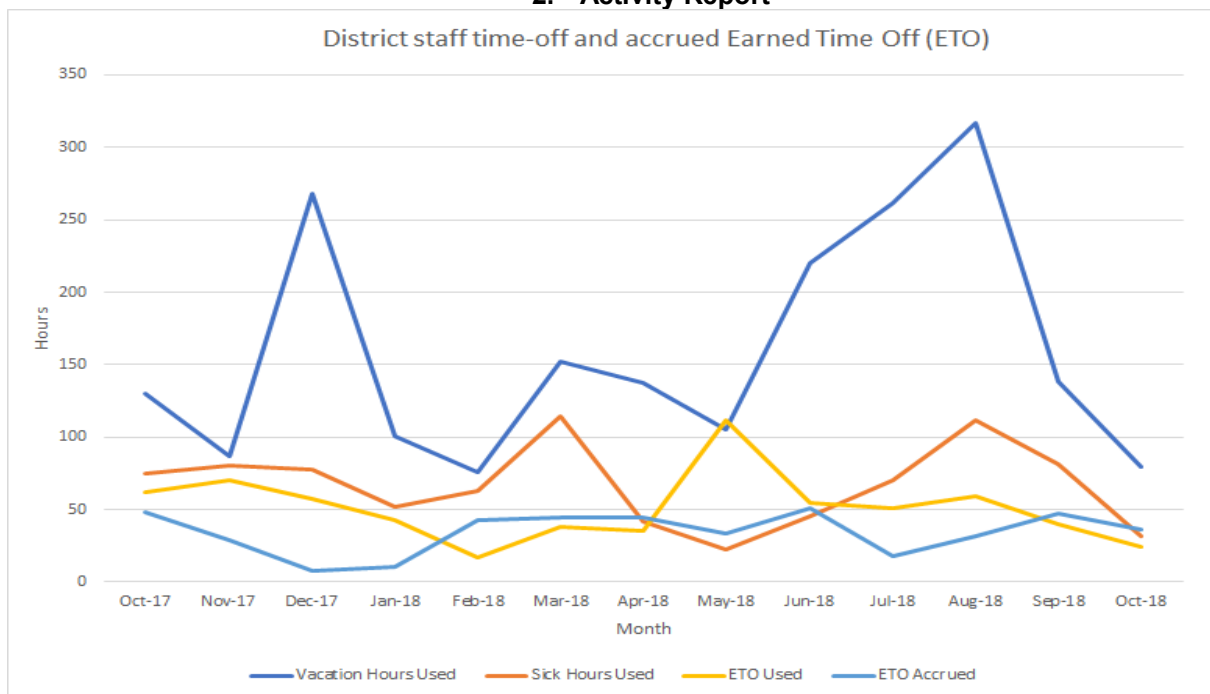
Joseph Huston
Field Operations Supervisor

A. District Data

1. Service Requests

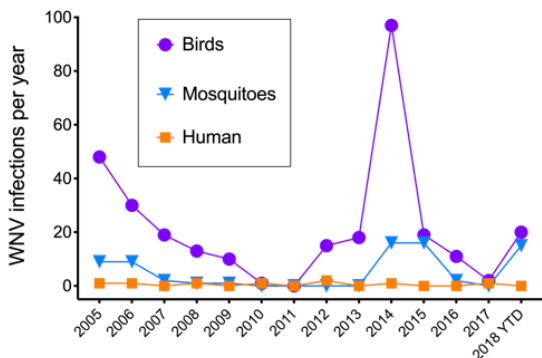


2. Activity Report

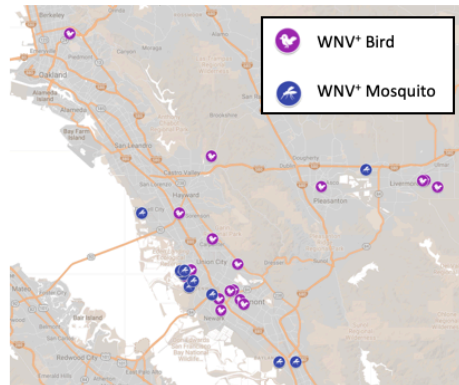


3. WNV Activity

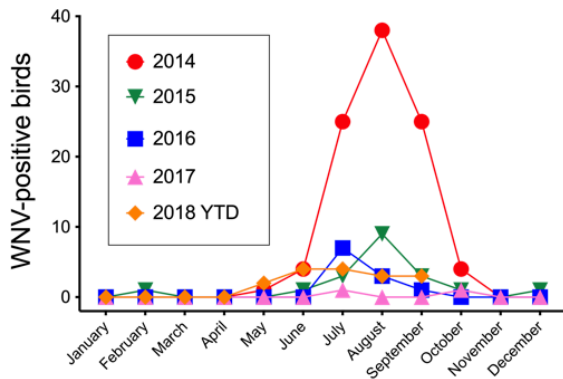
WNV infections detected in Alameda County
2005 – 2018 YTD



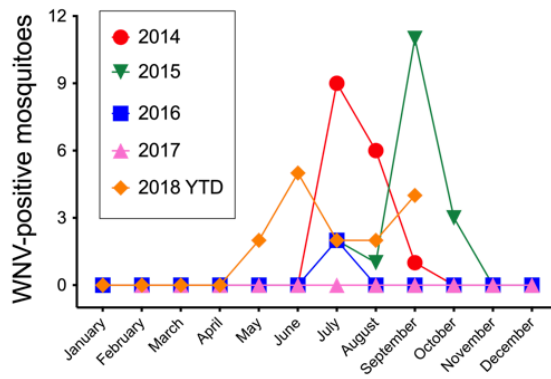
Locations of WNV-infected mosquitoes and birds collected in Alameda County during 2018



WNV-infected birds collected in Alameda County



WNV-infected mosquitoes collected in Alameda County



2. LAB

Summary

- West Nile virus (WNV) was detected in 2 American Crows and 1 House Sparrow during October 2018. WNV was not detected in any mosquitoes during October 2018
- Mosquito abundance in October was similar to the prior month.
- Machine learning is being used to detect *Aedes aegypti* eggs on oviposition trap substrates.

Arbovirus Monitoring

- During the month of October 2018, West Nile virus (WNV) was detected in 2 American Crows and 1 House Sparrow (see District Data). To date, a total of 20 birds and 15 collections of mosquitoes have been found to contain WNV during 2018.
- None of the mosquitoes or birds that were collected during 2018 were found to contain Saint Louis encephalitis virus (SLEV) or Western equine encephalitis virus (WEEV).

Native Mosquito Abundance

- For the month of October, there was no recorded rainfall and the average maximum temperature was 73 °F, (Hayward, CA). The prior two months had average maximum temperatures of 72 °F and 72 °F.
- Over the course of the month, 143 EVS CO₂ traps were placed; 1084 mosquitoes were collected and identified to species (Figure 1). There was an average of 7.6 mosquitoes per trap night, which was similar to the prior month (7.4 mosquitoes per trap night). *Culex erythrorhax* was the most highly abundant species collected in EVS CO₂ traps, followed by *Culex pipiens* and *Culiseta incidens* (Figure 2). The geospatial distribution of mosquito species collected in EVS CO₂ traps at each trap site is displayed in Figure 3.
- Mosquito abundance, as measured using NJLT, was similar to the prior month (Figure 4; 0.56 vs 0.55 mosquitoes / trap night, respectively; total of 581 mosquitoes over 1029 trap nights). *Culex tarsalis* was the most prevalent species collected in NJLT during October 2018, followed by *Culiseta incidens*, and *Culiseta inornata* (Figure 5).

Invasive Aedes Monitoring

- Invasive *Aedes* mosquitoes have not been detected in any mosquito trap placed in Alameda County during 2018.

Machine learning to detect *Aedes aegypti* eggs

Prepared by Miguel Barretto, Assistant Vector Scientist.

- The potential introduction of invasive mosquito species such as *Aedes aegypti* to Alameda County is being monitored by a large network of oviposition traps, or ovibuckets. Over 700 ovibucket traps have been placed throughout the District. Each of oviposition substrates is manually evaluated to determine if *Aedes* mosquitoes have deposited eggs in the traps. Because *Aedes* eggs are miniscule, the oviposition substrate is currently scanned using a microscope, which substantially increases the time needed to check for eggs. The accuracy of this process is affected by human error. In order to reduce the work hours needed to maintain this network, as well as to increase accuracy, a method to detect *Aedes* eggs using machine learning (ML) was developed (Figure 6 and Figure 7). The source of the ML used for this task was Google's Auto ML Vision, a part of the Google Cloud AI. To further increase the throughput in analyzing oviposition substrates, we are investigating more automated approaches for imaging the substrates. We currently are evaluating two options: a high-resolution camera capable of imaging the substrate without a microscope, and a moving platform below the microscope lens that would automatically scan oviposition substrate.

FIGURES

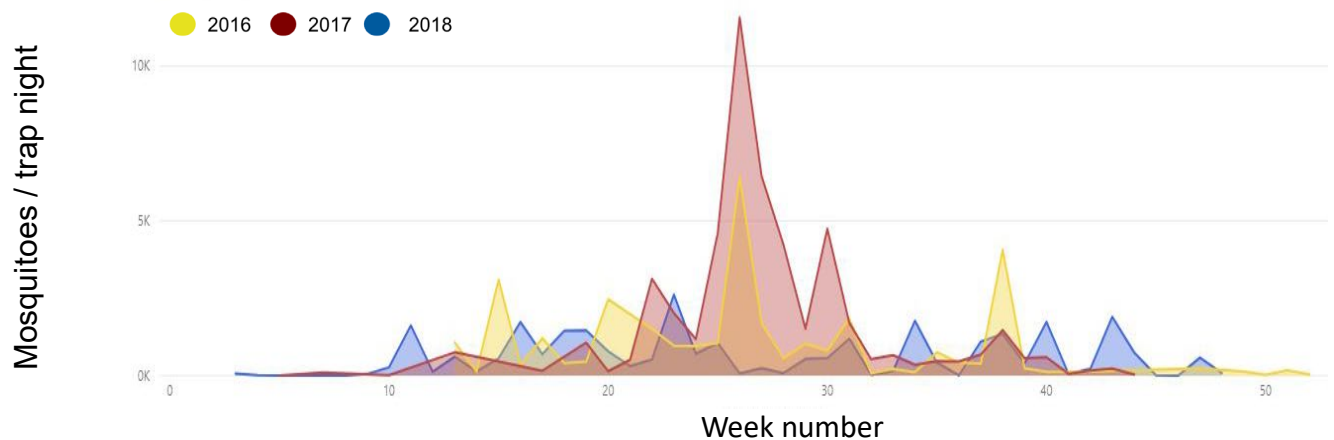


Figure 1. Mosquitoes captured in EVS CO₂ traps from 2016 – 2018. A total of 1,084 mosquitoes were captured in EVS CO₂ traps during October 2018 and identified to species.

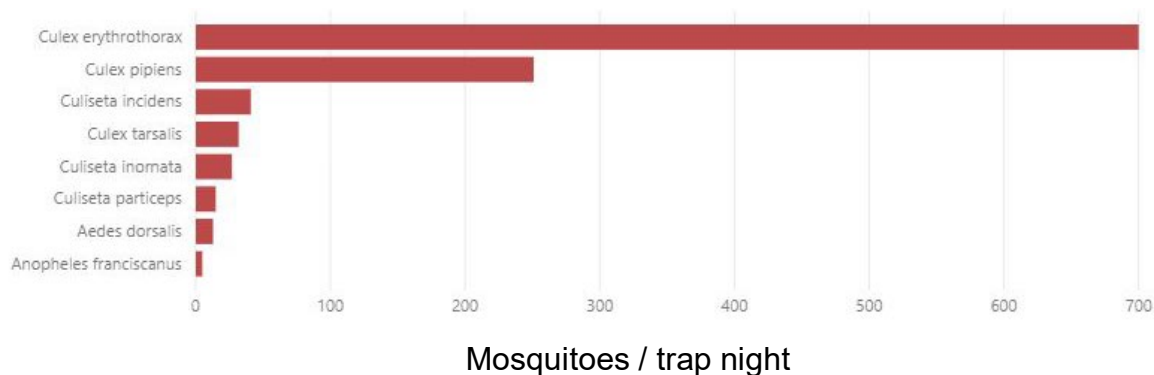


Figure 2. The eight-most abundant species of mosquito captured in EVS CO₂ traps during October 2018.

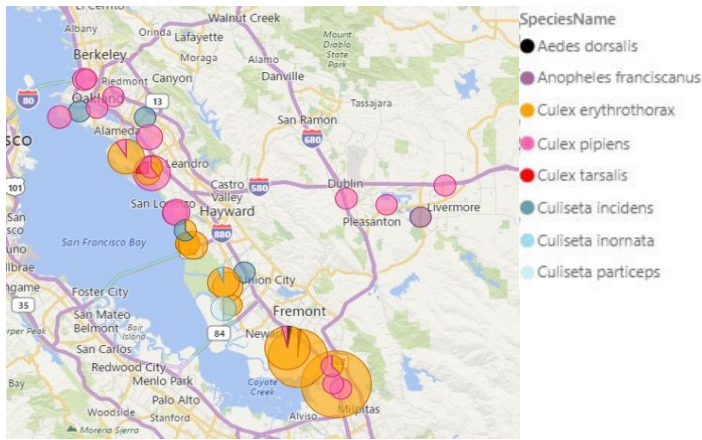


Figure 3. Mosquito abundance by trap site evaluated using EVS CO₂ traps. Pie charts over trap sites indicate the distribution of mosquito species collected at the trap site. The size of the pie charts indicates the relative number of mosquitoes at each site during October 2018. Sites with five or fewer mosquitoes collected in the traps are not shown on the map.

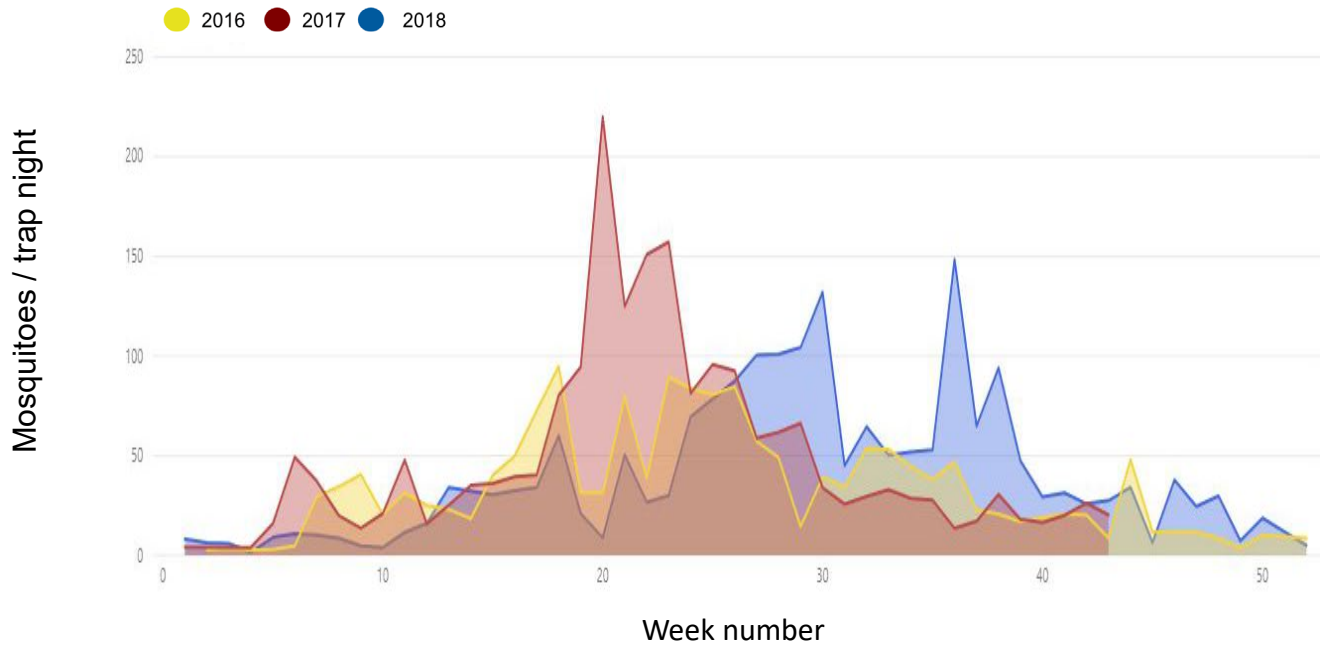


Figure 4. Mosquitoes captured in NJLT from 2016 – 2018. A total of 1029 mosquitoes were captured in NJLT during October 2018 and identified to species.

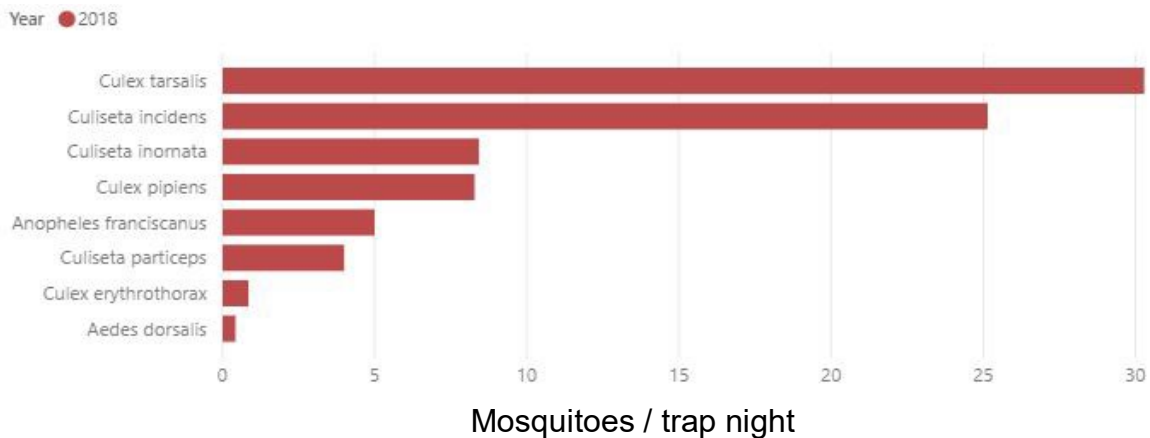


Figure 5. The eight-most abundant species of mosquito captured in NJLT during October 2018.

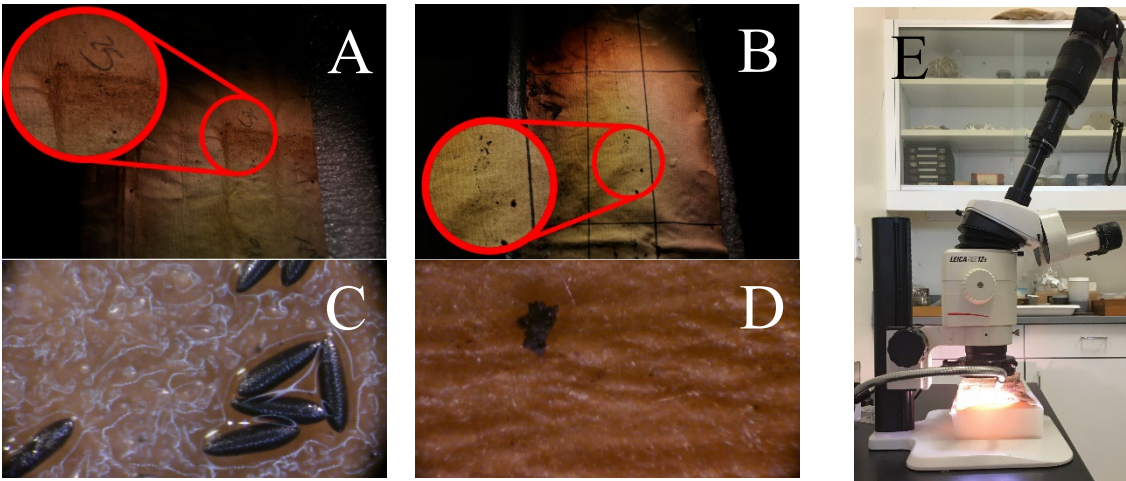


Figure 6. Oviposition substrate photographed for training the machine learning algorithm. (A) Substrate wallpaper with *Aedes aegypti* eggs caught in Madera, CA. (B) Substrate wallpaper without eggs, only Altosid residue/dirt (from Alameda County traps). (C) Microscopic view of *Aedes aegypti* eggs from paper in Figure A. (D) Microscopic view of Altosid residue from paper in Figure B. (E) Camera apparatus affixed to a discussion microscope that was used to image the oviposition substrates for *Aedes* eggs. *Prepared by Miguel Barretto, Assistant Vector Scientist*

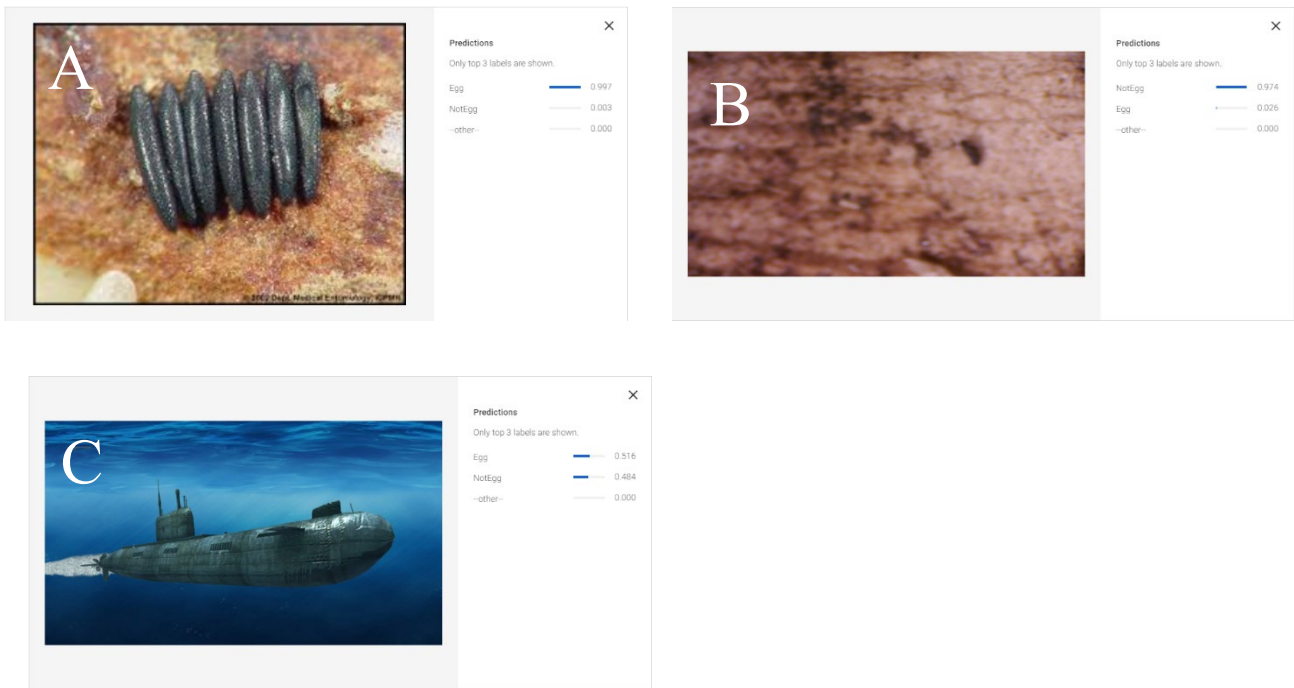


Figure 7. The machine learning algorithm successfully discriminated *Aedes* eggs on oviposition substrates. (A) *Aedes aegypti* egg photo taken from Google images, the training set did not include this image. Machine learning algorithm successfully identified *Ae. aegypti* eggs. (B) "No egg" photo taken in the lab, not in the training set. Correctly identified by algorithm as no eggs present. (C) A submarine. Unclear identification by algorithm. *Prepared by Miguel Barretto, Assistant Vector Scientist*

PUBLIC EDUCATION

A. Events

i. Upcoming

- **Career Day Presentation** – Friday, January 11th (Oakland)

ii. Past

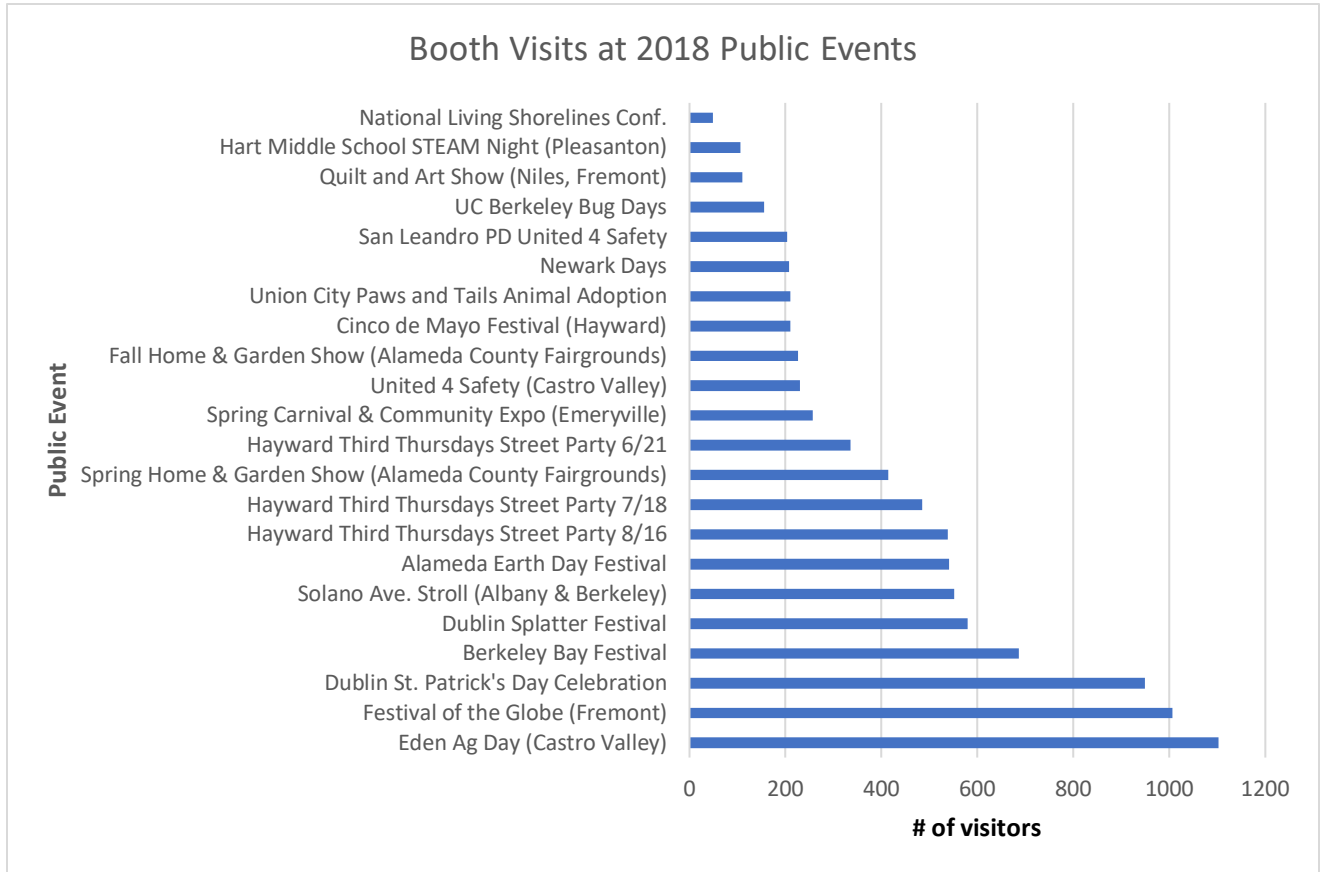


Figure 1. Number of visitors that attended events from January 1st to November 1, 2018

B. Advertisement Campaigns

i. Print ads (*East Bay Express*)

- Started May 30th and run through November 27th



ii. Internet Ads for ACMAD

- Started June 24th and ran through October 19th
- Displayed 26,460 times in June (one week only)
- Displayed 102,697 times in July
- Displayed 104,208 times in August
- Displayed 102,477 times in September
- Displayed 76,700 times in October



C. Google Analytics

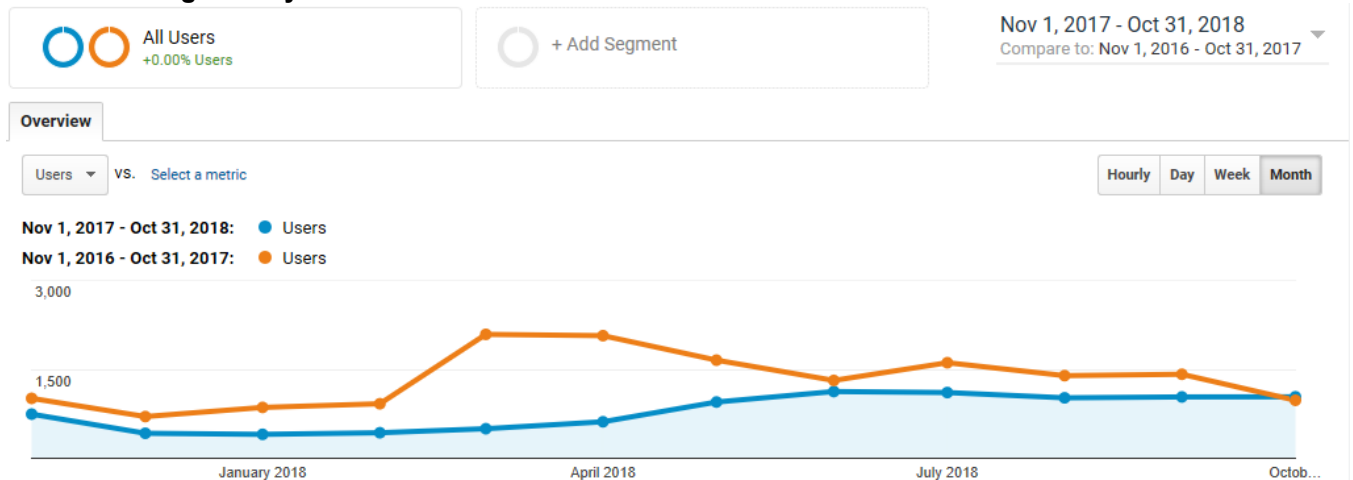


Figure 2. Comparison of website users over the past two years

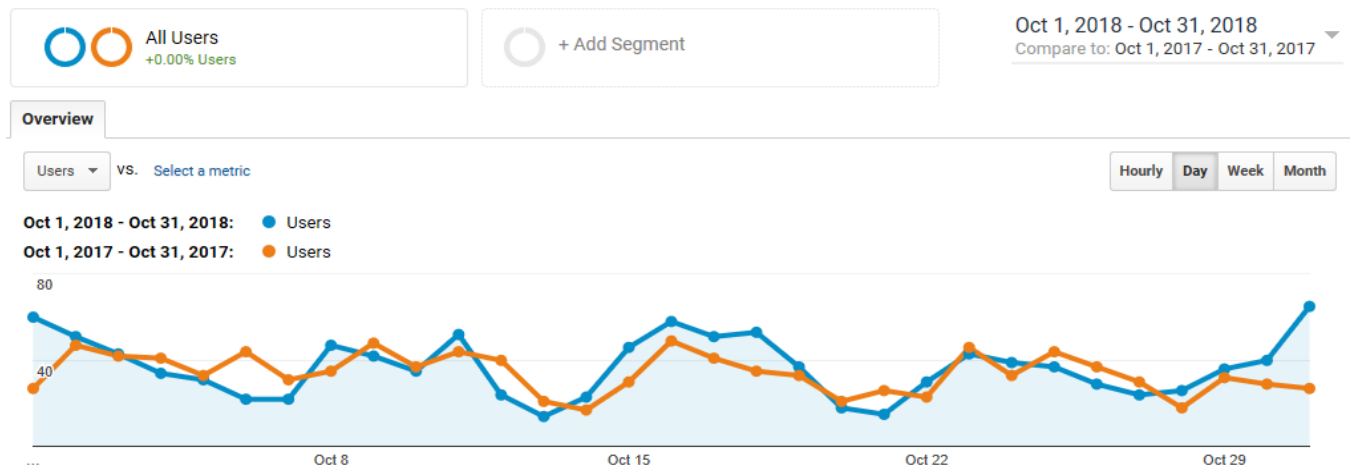
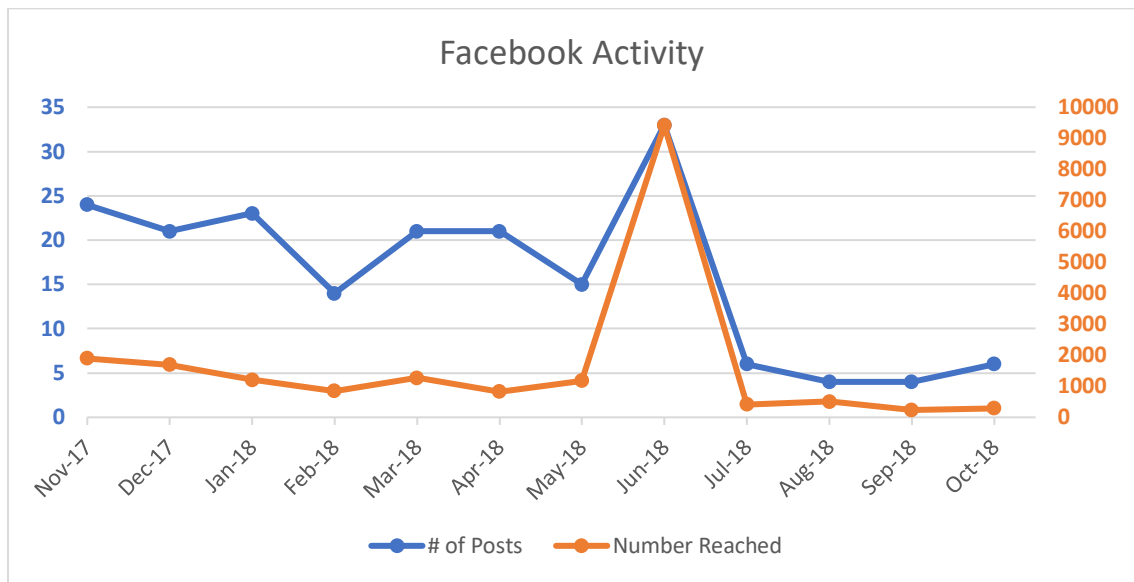


Figure 3. Comparison of website users over the past two years for the month of October.

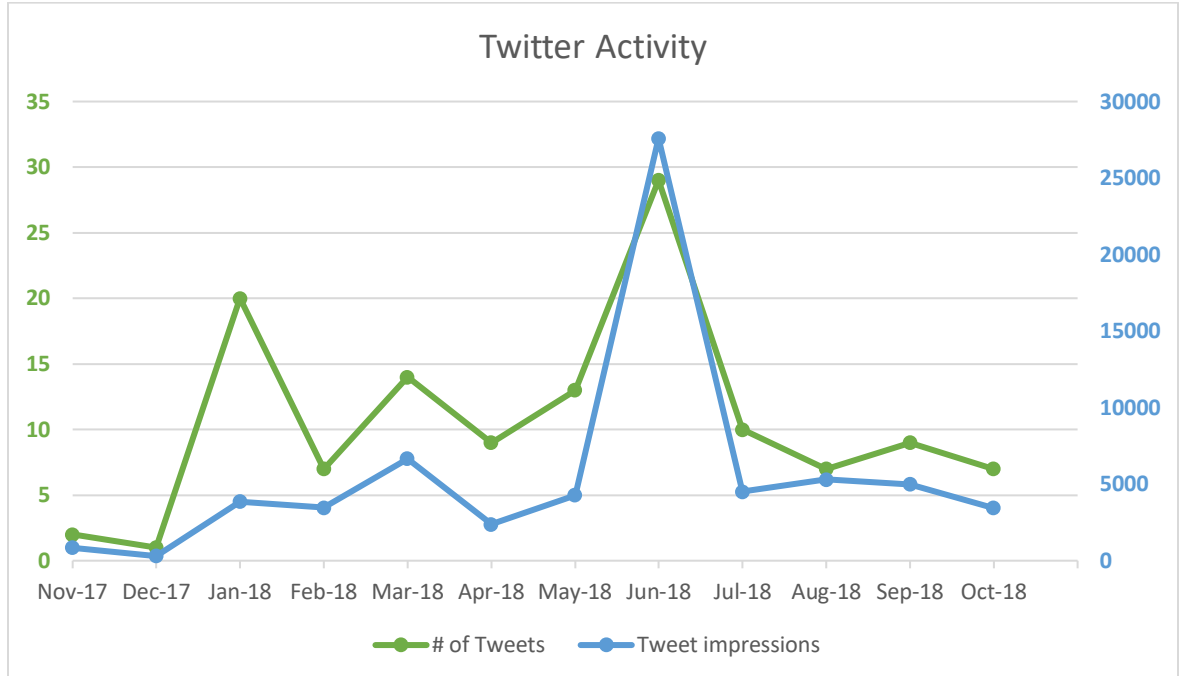
D. Facebook



Total Number of Followers: 169 (the same as 169 in September)

October's Most Popular Post: We will be at the Fall Home & Garden show this weekend at the Alameda County Fairgrounds! You can download and print free tickets at our website. (picture)

E. Twitter

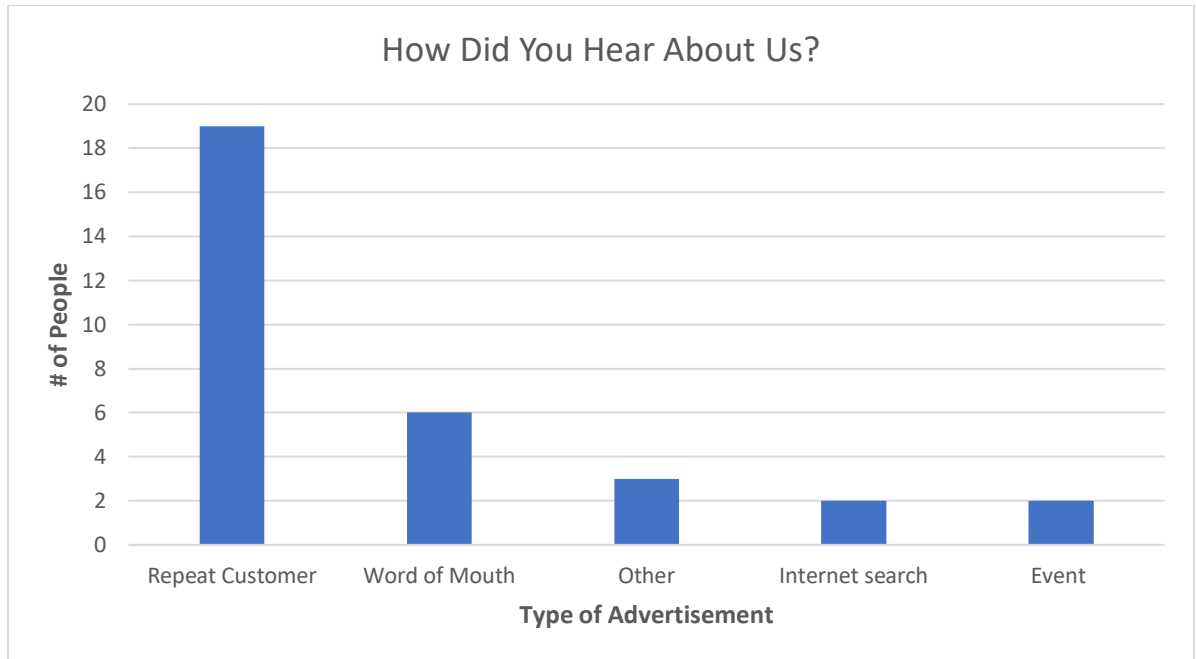


Number of Profile Visits in October: 72

Total Number of Followers (New This Month): 618 (1)

Top October Tweet: Some of our staff had a great time on Wednesday at the Alameda County Watershed Confluence Conference thanks to the host Alameda County Flood Control and Water Conservation District! (pictures)

F. Service Request Referral Summary



Note: District Vehicle or Employee, Internet Ad, Billboard Ad, Movie Theater Ads, Phone Book, News Story, Property Tax, and Social Media are also options for this question, but were not included on this chart, because they were not selected in the month of October. Out of the three people that chose "Other" only one person indicated where they heard about us which was from their doctor's office.

4. **LEGISLATIVE UPDATE:**

	Bill Name and description	Status	ACMAD Position	ACMAD Action
<i>California</i>				
CSDA	SB 929: This bill would require every independent special district to maintain a website that clearly lists contact information for the special district.	Chaptered	Support	Legislative Visits and support letters
<i>Federal</i>				