

**AGENDA**  
1063<sup>rd</sup> MEETING OF THE BOARD OF TRUSTEES  
OF THE ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

DECEMBER 12TH, 2018

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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 the minutes of the 1062<sup>nd</sup> meeting held November 14<sup>th</sup>, 2018 (**Board action required**)
5. Proposal from the Municipal Resource Group, LLC to conduct a Capital Asset Replacement Program Analysis (**Board action required**)
6. Nominating Committee (Beatty, Hernandez, Cooley) nominates a slate of 2018 District Officers for Board approval (**Board action required**)
7. Appointment of members to the Personnel/ Salary Committee (**Board action required**)
8. Report on the 2018 Annual Meeting of the Entomological Society of America and the Entomological Society of Canada by Trustee Dr. Jan O. Washburn (Information only)
9. Discussion on Board Packet paper-reduction possible strategies (Information only)
  - a. Keep as-is with paper copies
  - b. Print as requested, use personal devices to access electronically
  - c. Provide electronic devices to view Board Packets
10. Schedule a Finance Committee meeting to discuss: (Information only)
  - i. OPEB investment policy
  - ii. Pension rate stabilization fund investment policy

- iii. Possible credit card change
- iv. Internal Control review

11. Financial Reports as of November 30<sup>th</sup>, 2018: (Information only).

- a. Check Register
- b. Income Statement
- c. Investments, reserves, and cash report

12. Presentation of the Monthly Staff Report for December 2018 (Information only).

13. Presentation of the Manager's Report for December 2018 (Information only).

- a. Trustee & Staff Anniversaries
- b. Solar and remodel projects out to bid
- c. Update of work on USFWS land
- d. Confirmed City Council Presentations: 1/7-San Leandro, 1/10-Newark, 1/14-Livermore, 1/15-Pleasanton, 1/22-Union City, 2/5-Emeryville (tentative: Berkeley-1/29, Fremont-1/8, Piedmont-1/21).

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

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

16. Board President asks trustees for items to be added to the agenda for the next Board meeting.

17. 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](http://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](mailto:acmad@mosquitoes.org) to request an alternative format.**

## MINUTES

### 1062<sup>th</sup> MEETING OF THE BOARD OF TRUSTEES OF THE ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

November 14, 2018

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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 5:01 P.M.
2. Trustees Marquez, Hentschke, Beatty, Cooley, Young, Dickinson and Bhat were present. Trustees Poulson, Brown, Doggett, Washburn and Narum were absent. Trustee Hernandez arrived at 5:02 P.M.
3. Board President Marquez invited members of the public to speak on any issue relevant to the District. Mosquito Control Technician Jeremy Sette was present to record the minutes.
4. Approval of minutes of the 1061<sup>st</sup> meeting held October 10<sup>th</sup>, 2018.  
**Motion:** Trustee Hentschke moved to approve the minutes  
**Second:** Trustee Cooley  
**Vote:** motion carries: unanimous.
5. Appointment of committee to nominate candidates for Board Offices.  
**Discussion:**  
The General Manager opened up a discussion regarding the appointment of a committee to nominate candidates for Board Offices and fielded the following questions. Trustee Beatty asked if President Marquez could serve two years in a row, since it was announced that Vice-President Poulson would be deferring interest in the President position, and if there was a policy regarding Presidents serving consecutive years (no policy but traditionally the position is filled by seniority currently: Secretary Hentschke as President, Vice-President Poulson remaining, and Trustee Beatty as Secretary). President Marquez asked if Vice-President Poulson would be interested in keeping Vice-President position (likely). Trustee Beatty asked if

Trustee Hentschke and himself should opt out of the committee responsibility since they were in-line for positions already (not necessary). Trustee Beatty also asked if the Board should contact Vice-President Poulson (it is up to the committee) Trustee Beatty, Hernandez and Cooley each agreed to join the Committee.

**Motion:** Trustee Hernandez moved to approve Trustees Beatty, Hernandez and Cooley to the Committee to nominate candidates for Board Offices.

**Second:** Trustee Hentschke

**Vote:** motion carries: unanimous.

6. ACMAD Public Open House 2019 Discussion

**Discussion:**

The General Manager expressed tentative plans for an ACMAD Public Open House in 2019 and fielded the following questions. Trustee Dickinson asked when the last time an open house was done at ACMAD (after the last remodel in 2006) and the reasoning for an upcoming open house (to educate and invite the public as well as to promote the completion of remodel). Trustee Beatty asked who the primary audience would be (elected officials and their staff, partner agencies, the general public).

7. Financial Reports as of September 30<sup>th</sup>, 2018.

**Discussion:**

The General Manager presented the Financial Reports as of October 31<sup>st</sup>, 2018. Trustee Dickinson asked about the status of the funds in the County Account (will be transferred to LAIF). President Marquez complimented Accounting Associate Michelle Matthes for her work in updating the Financial Reports for the Board. Trustees Beatty and Cooley each agreed and noted that the reports are shorter and easier to follow. Trustee Hernandez requested that the totals of the cash and investment balances also show totaled (yes) asked about the OPEB interest/(loss) of \$203,237.87 (this is likely just due to market activity, but the GM will look into if this amount includes the annual withdrawal).

8. Presentation of the Monthly Staff Report for October 2018.

**Discussion:**

The General Manager presented the Monthly Staff Report for October 2018 and fielded the following questions. Trustee Young commented that the annual ditching being conducted by staff sounds labor intensive. The General Manager asked Mosquito Control Technician Jeremy Sette if he had any additional input on the labor-intensive nature of ditching (Sette answered that the staff gets sufficient breaks, is provided with water, and works at a safe pace). Trustee Hentschke asked who the ACMAD contact would be for West Nile virus bird information (Laboratory Director Eric Haas-Stapleton).

9. Presentation of the Manager's Report for October 2018.

**Discussion:**

The General Manager presented the Manager's Report for October 2018 and fielded the following questions. President Marquez asked what the next steps would be for the remodel (the goal is for it to go out to bid by December and ready to present for the next Board Meeting). Trustee Beatty asked if the spike in service request calls in Los Angeles County have been *Aedes Aegypti* related (yes) and if LA is doing a lot of spraying (yes). Trustee Beatty also commented on the lack of Board Member related issues at annual MVCAC Conference.

10. President Marquez asked for reports on conferences and seminars attended by Trustees.  
None.

11. Board President Marquez asked for announcements from the Board. Trustee Hernandez commented that he may have to leave the Board for an obligation with another position but is unsure of status at the moment.
12. Board President Marquez asked trustees for items to be added to the agenda for the next Board meeting. None.
13. The meeting adjourned at 5:44 P.M.

**Respectfully submitted,**

Approved as written and/or corrected  
at the 1063<sup>nd</sup> meeting of the Board of  
Trustees held December 12<sup>th</sup>, 2018

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Elisa Marquez, President  
BOARD OF TRUSTEES

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Eric Hentschke, Secretary  
BOARD OF TRUSTEES

**Alameda County Mosquito Abatement District  
Proposal to Conduct a Capital Asset Replacement Program  
Analysis**



MUNICIPAL RESOURCE GROUP, LLC  
675 HARTZ AVENUE, SUITE 300  
DANVILLE, CA 94526  
(925) 314-3889



November 27, 2018

Ryan Clausnitzer, General Manager  
Alameda County Mosquito Abatement District  
23187 Connecticut Street  
Hayward, CA 94545

Dear Mr. Clausnitzer,

Municipal Resource Group is pleased to provide this Proposal to conduct a Capital Asset Replacement Program Analysis for the District. Please note that we have included an optional element to the proposal—provision of additional financial advice and or support should the District decide to use Jack Dilles for support on financial matters other than involved in the Capital Facilities Analysis.

As you know Municipal Resource Group was founded by broadly experienced municipal professionals. Our consultants have many years of combined hands-on experience working as municipal managers and consultants, providing essential services, insights and support to local governments.

We are pleased to be able to submit our proposal using three of Municipal Resource Group's consultants to manage and conduct the analysis. Each has many years of experience in municipal government management, finance and public works/special district activities.

We look forward to the opportunity to meet with your staff on this exciting project.

Sincerely,

Mike Oliver, President  
Municipal Resource Group, LLC

**Alameda County Mosquito Abatement District**  
**Proposal to Conduct a Capital Asset Replacement Program Analysis**

This proposal is based on conversations with the District's General Manager and a meeting held at the District offices.

The proposed project includes the following elements:

- a. Developing capital item definitions and descriptions (cost, age, life expectancy and unique/other characteristics);
- b. Reviewing existing District replacement policies, depreciation schedules, existing asset/capital definitions, set-aside practices and replacement schedules. Development of depreciation and replacement schedule recommendations, providing justification for each and categories to include all the defined Capital Items;
- c. Developing a reporting format for the District's future use; recommended changes to existing depreciation, replacement, and reserve policies and schedules and providing reasons why changes may need to be made in the schedule in the future.
- d. Providing alternative funding strategies and related cash flow analysis to assure a positive cash balance for capital asset replacement over the next 20 years.
- e. Developing draft and final reports, a presentation to staff, and providing a presentation to the District Board.
- f. As an optional element, MRG will provide financial and related information to the staff to assist in the District's financial operations.

Municipal Resource Group is proposing three experienced professionals to conduct this project for the Alameda County Mosquito Abatement District:

- *Mike Oliver*, public and private sector consultant for the past nine years, former City Manager in three cities and President of Municipal Resource Group who will manage the project.
- *Mike Bakaldin*, an experienced consultant with 20+ years public sector experience including as Public Works Director in the City of San Leandro and most recently the Deputy General Manager of the Delta Diablo Sanitation District where he provided day to day leadership and oversight to the District's three departments.
- *Jack Dilles*, an experienced consultant with 25+ years of public sector experience



including as Finance Director for the cities of Morgan Hill and Santa Cruz, who has been providing public sector consulting for MRG for the past five years.

We have developed the following work plan to meet the District's needs.

1. *Initial Meeting with the District General Manager and key staff:*
  - The meeting will include a review project outcomes and the project process; obtaining contact information, setting an initial timeline, requesting additional information and background reports and a tour of the facilities.
2. *Data Collection and Compilation*
  - Conducting initial meetings with key staff; on-site review of equipment;
  - Preparation of an equipment/facilities replacement schedule, estimated life and development of current replacement costs.
3. *Creation of a net present value schedule, cash flow schedule and replacement rationale*
  - Summarize replacement costs by year;
  - Deflate future replacement costs, develop cash need per year;
  - Develop a replacement rationale for the replacement schedule;
  - Prepare schedule of future cash flows for positive 20 year funding;
  - Review materials with staff and revise as needed;
  - Coordinate with staff as needed.
4. *Preparation of draft report and review with District Staff, prepare final draft*
  - Prepare initial draft;
  - Review initial draft with District staff;
  - Revise as needed.
5. *Preparation of final report & Board presentation*
  - Complete final report, prepare key findings summaries (PowerPoint if requested), and recommendations;
  - Present at a Board Meeting.

We estimate that the project will be complete in three months after receipt of a purchase order from the District.

The total project budget of \$19,946.50 is comprised of the following tasks:

Task 1	\$ 2,790.00
Task 2	\$ 6,255.00
Task 3	\$ 4,545.00
Task 4	\$ 4,027.00

Task 5	\$ 3,690.00
Mileage/Misc.	<u>\$ 619.00</u>
Total Project Cost:	\$21,926.00

An additional, an optional item includes provision of financial support and advice as determined by the District in addition to the work described in the proposal above. The assistance will be provided by Jack Dilles and billed at his hourly rate.

The current Municipal Resource Group hourly rates for these consultants are:

Mike Oliver	\$225.00
Mike Bakaldin	\$180.00
Jack Dilles	\$180.00

Billable monthly, plus authorized reimbursable expenses.

Our references include:

Valerie Barone, City Manager—City of Concord  
[Valerie.barone@cityofconcord.org](mailto:Valerie.barone@cityofconcord.org)  
925-671-3150

David Biggs, City Manager—City of Hercules  
[DBiggs@ci.hercules.ca.us](mailto:DBiggs@ci.hercules.ca.us)  
510-799-8200

Ron Bernal, City Manager—City of Antioch  
[rbernal@ci.antioch.ca.us](mailto:rbernal@ci.antioch.ca.us)  
925-779-7011

**Mike Oliver – Partner**  
**Organizational Intervention, Realignment & Development**  
**MUNICIPAL RESOURCE GROUP, LLC**

Telephone: (510) 915-4376

[moliver@municipalresourcegroup.com](mailto:moliver@municipalresourcegroup.com)

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Mike Oliver leads Municipal Resource Group's Organizational Intervention, Realignment and Development practice area and serves as President. Mike's MRG services to public sector clients include:

- Fiscal and operational analysis;
- Service realignment and enhancement;
- Law enforcement services studies for cities and counties;
- Preparation of grand jury investigation responses; and
- Alternative service delivery options for local governments.

Mike often serves clients by leading specialist teams in financial interventions, forensic accounting and budget analysis projects. He has assisted a number of cities and special districts in restoring their fiscal integrity and addressing the financial challenges facing California's local governments. His consulting activities include developing long-term development strategies for specialty public agencies including county fairs and transportation agencies. Mike often conducts public input and visioning processes and presents findings to elected officials and employees. With over 17 years of consulting experience, Mike has a recognized track record of assisting clients in addressing complex issues.

Mike has served as the City Manager of the Cities of Oakley, Citrus Heights and San Leandro. When Mike was the City Manager of San Leandro, the City created the first joint city-county redevelopment area in the state, induced over 500,000 square feet of commercial development and consolidated the City's Fire Operation with the Alameda County Fire Department. During his tenure as the first City Manager of Citrus Heights the City hired staff, negotiated a police services agreement, established the City's fiscal and expenditure management policies and practices, created the first redevelopment agency and negotiated settlement of the County's \$147 million lawsuit against the City. Today, Citrus Heights has over \$35 million in unencumbered reserves. During his tenure as the first City Manager of the City of Oakley, the City hired staff, built its City Hall, approved the general plan, approved 6,000 residential units and annexed over 2,500 acres of adjacent land.

Mike has presented at League of California Cities, Cal-LAFCO, California Special District and Bond Buyers conferences and professional organizations on a wide variety of subjects. His most recent presentations focus on the options for alternative service delivery and the fiscal issues faced by local government. Mike has his Bachelor's Degree in Political Science and Master's Degree in Public Administration from California State University at Hayward. He has also attended the Senior Government Officials course at the Kennedy School, Harvard College and has participated in training courses at the Menninger Clinic in Topeka, Kansas.

## **Mike Bakaldin – Public Works, Wastewater, Solid Waste**

**MUNICIPAL RESOURCE GROUP, LLC**

Telephone: (925) 628-6793

[mbakaldin@gmail.com](mailto:mbakaldin@gmail.com)

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Mike has over thirty years of experience in the private and public sectors in the environmental, public works and water utility sectors. He has spent the last fifteen years leading and managing public works and water utility organizations for both a municipality and a sanitation district. Mike has a proven track record of leading organization change while developing strong management teams.

For five years, Mike was employed as Deputy General Manager and Interim General Manager at the Delta Diablo Sanitation District. In this position, his accomplishments include:

- Effective day to day management and oversight of the District with an annual operating and capital budget of \$30 million and \$20 million, respectively;
- Strategic development of a \$100 million 5-year capital improvement program;
- Oversight of the development of an organizational study and subsequent reorganization;
- Development of the District's strategic plan and annual business plans;
- Development and implementation of the District's first succession plan and leadership development program; and
- Successful negotiation of a \$4 million land acquisition transaction with Dow Chemical.

Prior to that, Mike served as Director of Public Works for the City of San Leandro for eight years. He led the Public Works Department through the Great Recession, which required strategic and tactical organizational and operational adjustments over a multi-year period. Mike was successful in streamlining the organization and instituting innovative operational and service delivery methods to ensure continued high quality service in spite of budget reductions of nearly 35%. Other accomplishments include:

- Effectively led a 120 employee organization with an annual operating budget of \$22 million;
- Served as a key team member on a major shoreline redevelopment project, incorporating two operating golf courses, a 460 berth marina, two hotels and multiple restaurants;
- Initiated the planning, design and construction of a \$50 million wastewater treatment plant rehabilitation project;
- Negotiated and managed a 20-year solid waste and recycling franchise agreement; and
- Served as city liaison to the East Bay Dischargers Authority, a joint powers agency responsible for discharging effluent from six wastewater treatment plants to San Francisco Bay.

Mike holds a Bachelor of Science from the University of California, Berkeley and a Master of Science in Environmental Management from the University of San Francisco. He has also completed the Water and Wastewater Executive Leadership Program at the University of North Carolina, Chapel Hill.

## Jack Dilles, CPFO – Finance and Management Services

### MUNICIPAL RESOURCE GROUP, LLC

Telephone: (831) 566-3180

[jdilles@solutions-mrg.com](mailto:jdilles@solutions-mrg.com)

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Jack Dilles provides services to meet the needs of local governments, focusing on effective solutions to financial issues. His areas of expertise, gained through career public service in governmental finance, include strategic financial plans, analysis of new revenue options, creative methods of financing capital projects, fee studies, streamlining of financial operations, budgets, organizational studies and financial policies.



Jack has served as the Finance Director for the Cities of Santa Cruz, Morgan Hill, and Scotts Valley. He has worked as a Santa Cruz County Financial Manager in the Auditor-Controller and Public Works Departments. In addition, he has experience as a State and County Internal Auditor and as an Interim Finance Director for the City of Clearlake. Specific accomplishments have included:

- Financial planning and debt financing related to the successful construction of a new police station, library, indoor recreation center, and community center in the City of Morgan Hill;
- Implementation of a proper administrative cost allocation system and establishment of other financial systems in Scotts Valley, thereby enabling the City to balance its budget, convert a negative General Fund Balance into a positive one, and professionalize the Finance Department;
- Production of award winning budgets and comprehensive annual finance reports for the Cities of Scotts Valley, Morgan Hill, and Santa Cruz;
- Issuance of Pension Obligation Bonds to reduce pension costs for the City of Santa Cruz;
- Completion of Marks Roos, Mello Roos, Assessment District, Lease Revenue, and Wastewater Revenue bond sales in the Cities of Santa Cruz, Morgan Hill, and Scotts Valley to finance projects;
- Implementation of an internal borrowing program for the City of Santa Cruz; and
- Preparation of five year Strategic Financial Plans for the City of Morgan Hill.

Jack is a Certified Public Finance Officer (CPFO) as conferred by the Government Finance Officers Association (GFOA). He earned an undergraduate degree in Business Administration (with an Accounting Concentration) and an MBA, both from San Jose State University. He is an active member of both the GFOA and California Society of Municipal Finance Officers (CSMFO).

Jack has made presentations to the League of California Cities (“Budget Problems? Use a Lifeline – Ask the Community”) and CSMFO (“Risk Management in Finance. Who Cares?”).

Rounding out his experience, Jack currently serves on the Scotts Valley City Council. He previously served on the Santa Cruz County Board of Education.



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## MUNICIPAL RESOURCE GROUP, LLC

**Municipal Resource Group** is a full-service consulting firm dedicated to assisting its public sector clients in attaining their policy, management and service delivery goals.

**Municipal Resource Group** was founded by skilled and broadly experienced municipal professionals. Our principal consultants have over three-hundred years of combined hands-on experience working as municipal managers and consultants, providing essential services, insights and support to local governments and private sector clients. Our consultants' experience includes management positions serving as City Manager, County Executive Officer, Finance Director, Fire Chief, Police Chief, Human Resource Director, Parks and Recreation Director, Community Development Director, Economic Development Director and Public Works Director.

**Municipal Resource Group** develops and implements creative and time-tested solutions to a full-range of local government operations and services. We seek to achieve quick and cost-effective results, with the client's long-term interest as the primary focus of the engagement.

### OUR COMMITMENT TO CLIENTS

**Results**

**Quality**

**Integrity**

**Independence**

**Perseverance**

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## **CLIENT SERVICES**

**Municipal Resource Group, LLC** provides a broad array of services, which are always tailored to clients' specific needs and requirements.

### **Resource Development & Utilization**

Public Agency Organization Studies; New Cities Establishment; Facilities Development; Public-Private Partnerships.

### **Financial Analysis and Management Services**

Financial Planning and Practices; Fiscal Impact Reviews; Fee Studies; Development Project Feasibility; Development Project Negotiations; Financial Analysis;

### **Leadership and Organizational Effectiveness**

Management and Organizational Evaluations and Assessments; Council and Board/Manager Relations; Strategic Policy Development; Executive Coaching.

### **Fire Services and Homeland Security**

Fire Service Design, Implementation and Operations; Communication System Design, Funding and Implementation; Consolidation Studies; Homeland Security.

### **Law Enforcement**

Police Department Organizational Effectiveness Studies; Consolidation/Coordination of Service Studies.

### **Public Works**

Department Organizational Reviews and Effectiveness Studies.

### **Human Resource Management & Organizational Development**

Personnel System Design/Implementation; Organizational Development/Intervention; Investigations; Analysis of Labor Relations Practices; Negotiation Advisory Services.

### **Recreation, Parks and Community Services**

Parks Master Planning; Recreation Service Design, Development and Operation; Recreation Facility Management, Marketing and Revenue Planning.

### **Civil Engineering Services**

Planning, Civil Engineering and Surveying related to real estate development; Government Facilities Design; Engineering Staff Services provided through CBG Inc.

### **Traffic and Transportation Demand Services**

Alternate commute solutions, shuttle service design and operation, electric vehicle/bicycle Incentive programs, public and private commute analysis and solution design.



## **CORE VALUES**

**Our mission** is to assist our clients in achieving their goals in a challenging local government environment by providing sound advice, practical solutions and cost-effective services.

**Our passion** is to preserve our client's values, integrity, and standards and promote their success through our professional services.

**Our commitment** is to fully satisfy our clients through a continuous process of quality control throughout the client engagement.

**Our core values** are grounded in our desire to serve our clients.

**We seek the facts and provide insight** - our many years and breadth of experience provide a clear understanding of local government issues, and enables us to support our clients in a professional manner.

**We provide value to our clients** - our goal is to provide project deliverables that improve our clients' public services in a cost effective manner.

**We respect our clients and their commitment to service** - we have served in many public and private sector situations and understand it is essential for us to support our clients' commitment to provide high quality public services.

**We are open in our communication** - we share information, insight and advice frequently and constructively, to assist our clients in managing tough situations with confidence.

**We act with integrity** - we seek to uphold the highest professional standards by providing candid advice and sound recommendations.

**We continuously seek feedback from our clients** - only by constant communication with our clients can we accurately define their needs, monitor our progress in addressing those needs and ensure that our clients are satisfied.

**We lead by example** - each member of our team is committed to working with our clients in a forthright, professional and efficient manner.

**We are committed to our communities** - we are responsible corporate citizens and seek to give back to our communities through use of our skills, experience and financial resources.





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## MUNICIPAL RESOURCE GROUP

CLIENT LIST (Includes clients of MRG consultants in their former consultant capacities)

### PUBLIC AGENCIES

Alameda County Fair	City of Lathrop
Antioch Unified School District	City of Lincoln
Arroyo Seco Library Network	City of Los Altos Hills
Austin Public Library Foundation	City of Los Angeles Redevelopment Agency
Black Gold Library Authority	City of Loyalton
Brentwood Chamber of Commerce	City of Manhattan Beach
Brentwood Union School District	City of Manteca
California Park & Recreation Society	City of Marina
California State Library	City of Merced
California Construction Authority	City of Millbrae
Capital Area Development Authority	City of Modesto
Central Contra Costa Sanitary District	City of Morgan Hill
Chester Fire Protection District	City of Mountain View
City and County of San Francisco	City of Napa
City and County of San Francisco Public Utilities Commission	City of Oakland
City of Antioch	City of Oakley
City of Alameda	City of Orinda
City of Albany	City of Oroville
City of Alhambra	City of Pasadena
City of American Canyon	City of Petaluma
City of Atwater	City of Pittsburg
City of Big Bear	City of Placerville
City of Brentwood	City of Pleasant Hill
City of Citrus Heights	City of Pleasanton
City of Clayton	City of Rancho Cordova
City of Clearlake	City of Richmond
City of Cloverdale	City of Rio Vista
City of Concord	City of Rocklin
City of Davis	City of Rohnert Park
City of Dixon	City of Roseville
City of Dublin	City of Sacramento
City of East Palo Alto	City of Salinas
City of Elk Grove	City of San Bruno
City of Eureka	City of San Leandro
City of Fairfield	City of San Luis Obispo
City of Fillmore	City of San Mateo
City of Folsom	City of San Rafael
City of Fort Bragg	City of San Ramon
City of Galt	City of Santa Cruz
City of Goleta	City of Santa Monica
City of Half Moon Bay	City of Santa Rosa
City of Hercules	City of South Pasadena
City of Hollister	City of South Lake Tahoe
City of Lafayette	City of South San Francisco
	City of Stockton

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City of Thousand Oaks	Gwinnett County Public Library
City of Ukiah	Imperial County Library
City of Vacaville	International Association of Fire Chiefs
City of Vallejo	Knightsen School District
City of Walnut Creek	Lammersville School District
City of West Sacramento	Liberty Union High School District
City of Wheatland	Livermore Pleasanton Fire District
City of Yuba City	Madera District Fair
Contra Costa Community College District	Marin Municipal Water Agency
Cordova Recreation and Park District	Mountain House Community Services District
County of Alpine	Mountain Valley Library System
County of Amador	Oakley Union School District
County of Calaveras	Pacific Library Partnership
County of Contra Costa	Peninsula Library System
County of Colusa	Rio Linda Elverta Recreation & Park District
County of El Dorado	Risk Management Authority
County of Marin	Sacramento County Retirement Agency
County of Placer	Sacramento Housing and Redevelopment Agency
County of Sacramento	Sacramento Public Library Authority
County of San Joaquin	San Mateo County Library
County of Solano	San Ramon Valley Unified School District
County of Sutter	Service Employees International Union
County of Yolo	Solano County Transit Authority
County of Yuba	Stockton East Water District
Cooperative Personnel Services	Stanislaus County Council of Governments
Council of California County Law Librarians	State of California, Department of Food and Agriculture, Fairs and Expositions
Crockett Community Services District	Town of Colma
Diablo Water District	Town of Discovery Bay
Diablo San Ramon Sanitary District	Town of Loomis
Delta Counties Coalition	Travis Unified School District
Delta 2000, Regional Resource Agency	Truckee Donner Public Utility Department
East Bay Regional Park District	University of California - Santa Cruz
East Bay Regional Communications System Authority	Yorba Linda Public Library
East Contra Costa Irrigation District	Yuba County Water Agency
East Quincy Community Services District	Water Emergency Transit Authority
El Dorado Irrigation District	Zone 7 Water Agency
El Dorado Hills CSD	
Fresno Unified School District	

#### **PRIVATE AND NON-PROFIT CLIENTS**

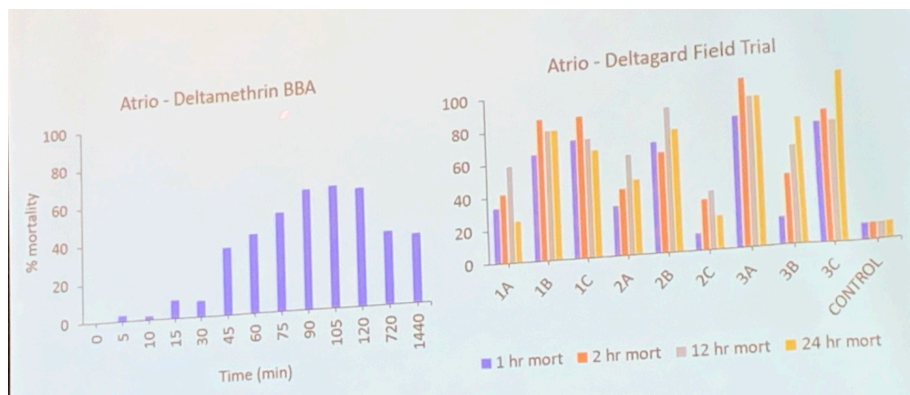
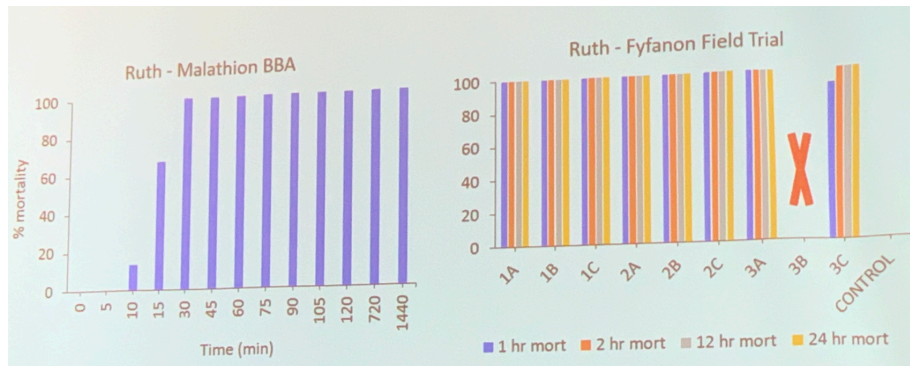
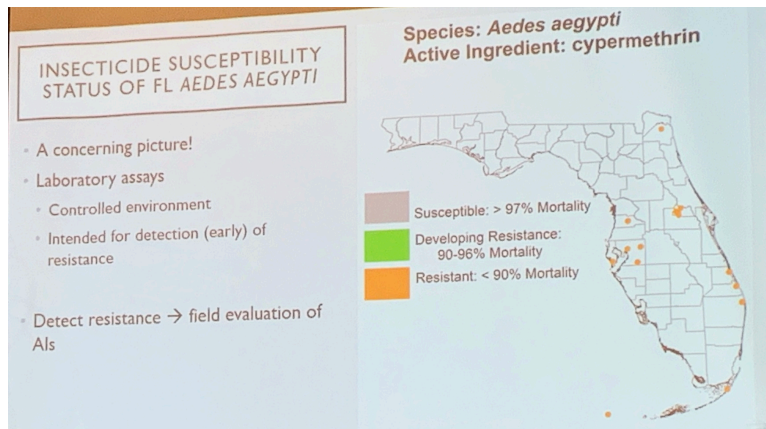
Arcadia Homes	Lewis, Bisbois, Bisgaard and Smith Law Firm
Best Best and Krieger Law Firm	Liebert Cassidy Whitmore Law Firm
Callahan Property Company	MAS/Nearon
Community Medical Centers	Meyers Nave Law Firm
Economic and Planning Systems	Pacific Development Group
Foundation for the Retarded of the Desert	Raney Planning & Management, Inc.
Fraser & Associates	RCH Group
Friends of the Truckee Library	TPC
Habitat for Humanity Diablo Valley Chapter	The Kivelstadt Group
Kikkoman	Volunteers of America

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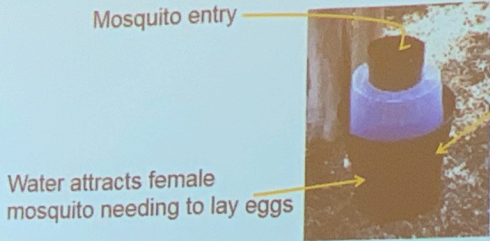
Report on the 2018 Annual Meeting of the Entomological Society of America and the  
 Entomological Society of Canada  
 Vancouver, BC  
 November 11 – 14, 2018  
 Jan O. Washburn

1. Review of the highlights of medical entomology, 2018
  - a. Emerging tickborne diseases in North America
  - b. Range expansion of important mosquito vectors
  - c. Insecticide resistance in mosquito vectors and bottle bioassay validity



2. Community involvement in reducing populations of invasive *Aedes* mosquitoes (a case study from University Park, MD by Dina Fonesca & Brian Johnson)

### GRAVID *AEDES* TRAPS = GATs

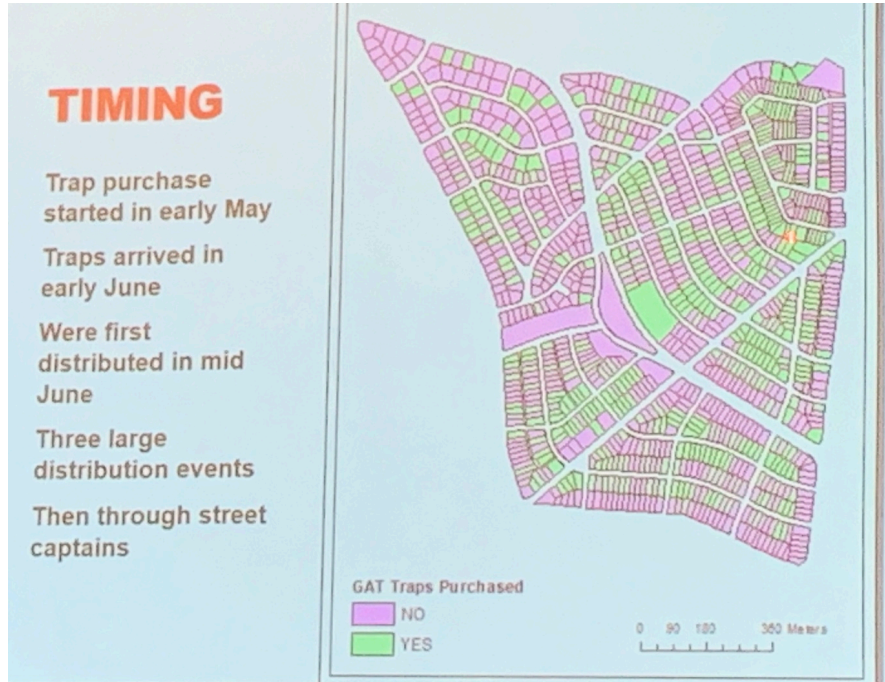


Mosquito entry

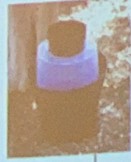
Water attracts female mosquito needing to lay eggs

There is netting across the bottom of the transparent dome sitting above the water. Dome is lined with **canola oil** (or a **sticky paper** hangs inside). Mosquito cannot escape and dies.

Traps are relatively cheap (~\$15-18 each + S&H)  
Easy to deploy, easy to maintain  
No dangerous insecticides



# GAT TRAPPING IN UNIVERSITY PARK



Out of a total of 1,156 potential households, 516 (45%) purchased and deployed 2 GATs (total of 1,032 GATs deployed in UP in 2017)

HIGH block = > 60%  
LOW block = < 60%



Legend  
Grey Lots without GATs  
Green Lots with GATs

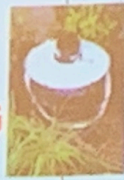
0 90 180 360 Meters

# HOW TO DETERMINE IF IT WORKED?

BG SENTINEL TRAPS

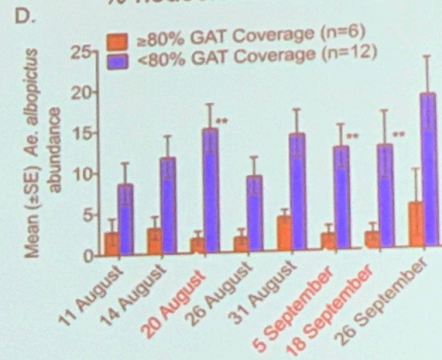
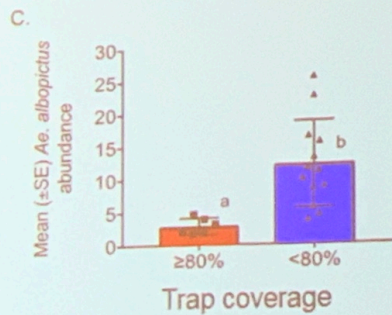
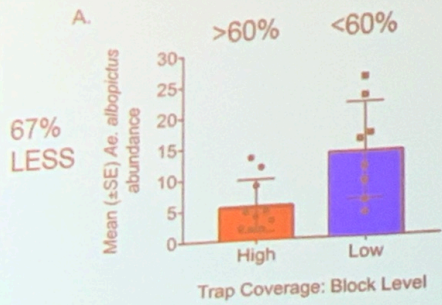


# BGS TRAPPING IN UNIVERSITY PARK

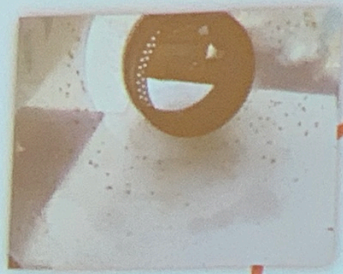


- Legend**
- Lots within 75
  - BGS Trap Locations
  - BGS Trap Locations
  - University Park Lots
  - No GATs
  - GATs

## RESULTS



# SPIRAL OF KNOWLEDGE

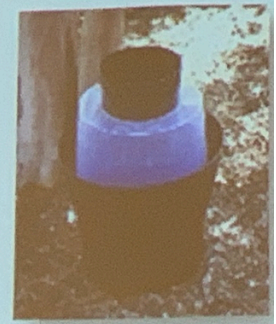


TRAPS

+

+

=

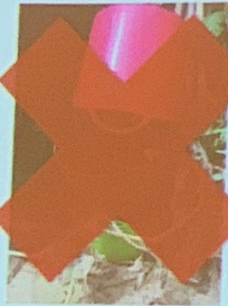


MOSQUITO  
CONTROL

Mosquito eggs  
& females  
killed

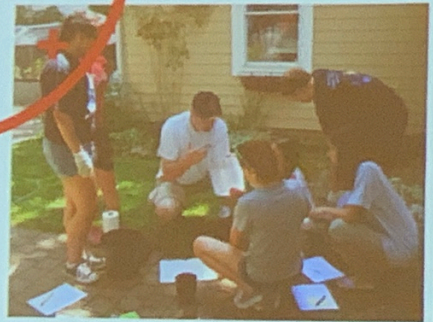
"Hands-on"  
Mosquito biology

=



=

More  
containers  
removed





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

Filter Criteria includes: Report order is by Date.

<b>Check #</b>	<b>Date</b>	<b>Payee</b>	<b>Amount</b>
1285	11/13/18	Payroll	70,697.72
1286	11/15/18	Voya Institutional Trust Company	150.00
1287	11/15/18	CalPERS 457	3,220.00
1288	11/15/18	Airgas	778.95
1290	11/15/18	Alco Sheet Metal and Heating, Inc.	405.00
1291	11/15/18	Nancy Fanning	40.88
1292	11/15/18	BARTKIEWICZ, KRONICK & SHANAHAN	72.50
1293	11/15/18	Cintas	538.98
1294	11/15/18	CentiMark Corporation	33,233.33
1295	11/15/18	Delta Dental	4,411.85
1296	11/15/18	Grainger	762.35
1297	11/15/18	Industrial Park Landscape Maintenance	215.00
1298	11/15/18	Kimball Midwest	219.81
1299	11/15/18	Makal Solutions	883.15
1300	11/15/18	PG&E	82.20
1301	11/15/18	PC Professional	115.82
1302	11/15/18	PFM Asset Management	1,740.39
1303	11/15/18	Sacramento Koi, Inc.	124.86
1304	11/15/18	Sonitrol	1,725.26
1305	11/15/18	The Hartford	77.78
1306	11/15/18	Techniclean	203.82
1307	11/15/18	Utility Cost Management LLC	1,920.00
1308	11/15/18	Waste Management of Alameda County	248.94
1309	11/15/18	U.S Bank Corporate Payment System	17,383.98
1310	11/15/18	KBA Docusys	1,821.02
1311	11/15/18	Wendi Lynn Poulson	100.00
ACH	11/15/18	CalPERS Retirement	11,924.52

Voided Check  
1213V

**Total Expenditures 11/15/18            153,098.11**

Alameda County Mosquito Abatement Dist.  
**Check Register**  
 For the Period From Nov 16, 2018 to Nov 30, 2018

Filter Criteria includes: Report order is by Date.

<b>Check #</b>	<b>Date</b>	<b>Payee</b>	<b>Amount</b>
1312	11/30/18	Payroll	70,433.80
1313	11/30/18	P. Robert Beatty	100.00
1314	11/30/18	Subrahmanya Y Bhat	100.00
1315	11/30/18	Elizabeth Cooley	100.00
1316	11/30/18	Robert Dickinson	100.00
1317	11/30/18	Eric Armin Hentschke	100.00
1318	11/30/18	Edward Hernandez	100.00
1319	11/30/18	Elisa Marquez	100.00
1320	11/30/18	George Young	100.00
1321	11/30/18	Airgas	369.02
1322	11/30/18	Cintas	450.64
1323	11/30/18	CalPERS 457	3,220.00
1324	11/30/18	Delta Dental	4,411.85
1325	11/30/18	Matthew Flanders	40.88
1326	11/30/18	Grainger	132.59
1327	11/30/18	Hayward Water System	564.21
1328	11/30/18	PG&E	1,540.95
1329	11/30/18	VSP	667.19
1330	11/30/18	Verizon	1,406.51
1331	11/30/18	WEX Bank	4,014.80
1332	11/30/18	Voya Institutional Trust Company	150.00
1333	11/30/18	Bay Alarm	6,287.58
ACH	11/30/18	CalPERS Retirement	11,953.72
ACH	11/30/18	CalPERS Health	33,637.88
<b>Total Expenditures 11/30/18</b>			<b>140,081.62</b>

**Alameda County Mosquito Abatement District  
Income Statement  
Consolidated  
November 30, 2018. (5 of 12 mth, 42%)**

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

<b>EXPENDITURES</b>	<b>Actual 2015/16</b>	<b>Actual 2016/17</b>	<b>Current Month <sup>2</sup></b>	<b>Year to Date 2018/2019</b>	<b>Budget 2018/19</b>	<b>Actual vs Budget</b>
Salaries	\$1,661,234	\$1,677,469	\$ 156,030.73	\$ 792,772.84	\$1,933,182	41%
CalPERS Retirement	\$205,340	\$219,892	\$ 13,629.77	\$ 214,799.66	\$301,812	71%
Medicare	\$21,160	\$21,368	\$ 2,089.26	\$ 10,659.17	\$28,031	38%
Fringe Benefits	\$554,630	\$453,877	\$ 43,206.55	\$ 195,432.50	\$508,680	38%
<b>Total Salaries, Retirement, &amp; Benefits</b>	<b>\$2,442,364</b>	<b>\$2,372,606</b>	<b>\$214,956</b>	<b>\$1,213,664</b>	<b>\$2,771,705</b>	<b>44%</b>
Clothing and personal supplies (purchased)	\$7,169	\$8,955	\$ 245.58	\$ 2,952.36	\$6,000	49%
Laundry service and supplies (rented)	\$7,162	\$8,840	\$ 989.62	\$ 4,977.41	\$9,500	52%
Utilities	\$22,214	\$27,084	\$ 2,436.30	\$ 10,057.58	\$36,500	28%
Communications-IT	\$32,756	\$54,128	\$ 9,685.53	\$ 39,051.46	\$122,200	32%
Maintenance: structures & improvements	\$6,739	\$19,503	\$ 1,358.78	\$ 4,286.31	\$25,000	17%
Maintenance of equipment	\$24,175	\$27,051	\$ 1,949.57	\$ 7,318.67	\$35,000	21%
Transportation, travel, training, & board	\$75,326	\$124,827	\$ 6,832.80	\$ 34,873.03	\$134,210	26%
Professional services	\$159,499	\$82,082	\$ 1,812.89	\$ 39,569.73	\$190,620	21%
Memberships, dues, & subscriptions	\$14,540	\$20,191	\$ 148.00	\$ 20,698.60	\$21,402	97%
Insurance - (VCJPA, UAS)	\$106,268	\$113,867	\$ -	\$ 124,703.92	\$127,851	98%
Community education	\$12,450	\$40,222	\$ 858.67	\$ 12,741.97	\$33,000	39%
Operations	\$187,490	\$176,758	\$ 512.38	\$ 56,711.00	\$234,000	24%
Household expenses	\$13,790	\$17,373	\$ 6,582.33	\$ 11,772.35	\$19,350	61%
Office expenses	\$14,195	\$18,590	\$ 4,564.86	\$ 5,056.39	\$15,100	33%
Laboratory supplies	\$76,130	\$80,008	\$ 3,792.66	\$ 26,884.09	\$118,148	23%
Small tools and instruments	\$1,155	\$2,513	\$ 348.92	\$ 2,021.44	\$2,500	81%
<b>Total Staff Budget</b>	<b>\$ 780,944.00</b>	<b>\$833,192</b>	<b>\$ 42,118.89</b>	<b>\$ 403,676.31</b>	<b>\$1,130,381</b>	<b>36%</b>
<b>Total Operating Expenditures</b>	<b>\$ 3,032,263.00</b>	<b>\$3,479,710</b>	<b>\$ 257,075.20</b>	<b>\$ 1,617,340.48</b>	<b>\$3,902,086</b>	<b>41%</b>

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 purchases & Petty cash

**Alameda County Mosquito Abatement District  
Investment, Reserves, and Cash Balance Report  
November 30, 2018. (5 of 12 mth, 42%)**

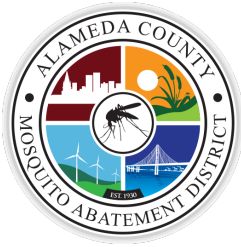
Account #	Investment Accounts	Beginning Balance	Deposits	Withdrawals	Interest Activity	New Balance
800005	LAIF	\$ 736,013.19	\$ -	\$ (292,000.00)	\$ -	\$ 444,013.19
800006	OPEB Fund	\$ 4,027,958.71			\$ 40,902.77	\$ 4,068,861.48
101106	VCJPA Member Contingency	\$ 338,010.00	\$ -	\$ -		\$ 338,010.00
101106.1	VCJPA Property Contingency	\$ 50,263.00	\$ -	\$ -	\$ -	\$ 50,263.00
800007.1	CAMP: Repair and Replace <sup>1</sup>	\$ 620,979.93	\$ -	\$ (1,037.45)	\$ 1,202.90	\$ 621,145.38
800007.2	CAMP: Public Health Emergency	\$ 508,185.81	\$ -	\$ -	\$ 985.07	\$ 509,170.88
800007.3	CAMP: Operating Reserve	\$ 1,877,693.25	\$ -	\$ -	\$ 3,639.72	\$ 1,881,332.97
800007.4	CAMP: Capital Reserve Fund <sup>2</sup>	\$ 251,578.43	\$ -	\$ -	\$ 487.66	\$ 252,066.09
800008	PARS: Pension Stabilization <sup>3</sup>	\$ 1,014,415.15	\$ -		\$ (26,830.02)	\$ 987,585.13
<b>Total</b>		<b>\$ 9,425,097.47</b>	<b>\$ -</b>	<b>\$ (293,037.45)</b>	<b>\$ 20,388.10</b>	<b>\$ 9,152,448.12</b>
Cash Accounts		Beginning Balance			Activity	New Balance
101110	Bank of America (Payroll Account)	\$ 124,171.27				\$ 119,117.51
101111	Bank of The West (Transfer Account)	\$ 294,910.45				\$ 302,769.65
100001	County Account	\$ 444,369.79			\$ 4,606.60	\$ 448,976.39
<b>Total</b>		<b>\$ 863,451.51</b>			<b>\$ 4,606.60</b>	<b>\$ 870,863.55</b>

1 - \$1,037.45 transferred to Bank of the West to cover permit fees for the remodel project

1 - \$33,233.33 will be transferred from CAMP - Repair and Replace to cover the down payment for the roof project

2 - \$1,920.00 will be transferred from CAMP - Capital Reserve Fund to cover 30% of the Solar project consultant services

3- PARS - Pension Stabilization balance is as of October 31, 2018.



23187 Connecticut Street  
Hayward, CA 94545

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

[acmad@mosquitoes.org](mailto:acmad@mosquitoes.org)

MONTHLY STAFF REPORT – November 2018

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**Hayward**

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**Pleasanton**

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**San Leandro**

Subru Bhat

**Union City**

**Ryan Clausnitzer**

General Manager

**1. OPERATIONS REPORT**

A significant storm event toward the end of November officially ushered in the winter season for ACMAD's field operations staff. Parts of the county received close to two inches of rain in a relatively short period of time. With a dry October and a mostly dry November, this rain event pushed rainfall totals up from nil to 89% of the normal averages for this period depending on location within the county. This rain pushed a lot of water through catch basins, storm drains, creeks, and canals in much of the county. These high flows helped eliminate breeding of *Culex tarsalis* and *Culex pipiens* in numerous sources. Temperature drops and a continued shift in photoperiod tends to drive adult females of these species to seek shelter where they remain until spring. Once the weather warms and flushing rain action ceases, these mosquitoes will enter back into the environment seeking suitable sites to deposit eggs.

Cooler temperatures have also triggered "over-summering" females of *Culiseta inornata* to come out and search for standing water suitable to deposit. This has been evidenced by collections of adults in traps placed by the lab. As rain water collects in marshes, diked salt marshes, depressions in willow habitat, vernal pools, and tree holes, eggs deposited last season or in previous years by *Aedes squamiger*, *Aedes washinoi*, and *Aedes sierrensis* will begin to hatch. Operations staff are shifting focus to these sources in anticipation of the first hatches of eggs of our main winter species. This process will likely continue well into March.

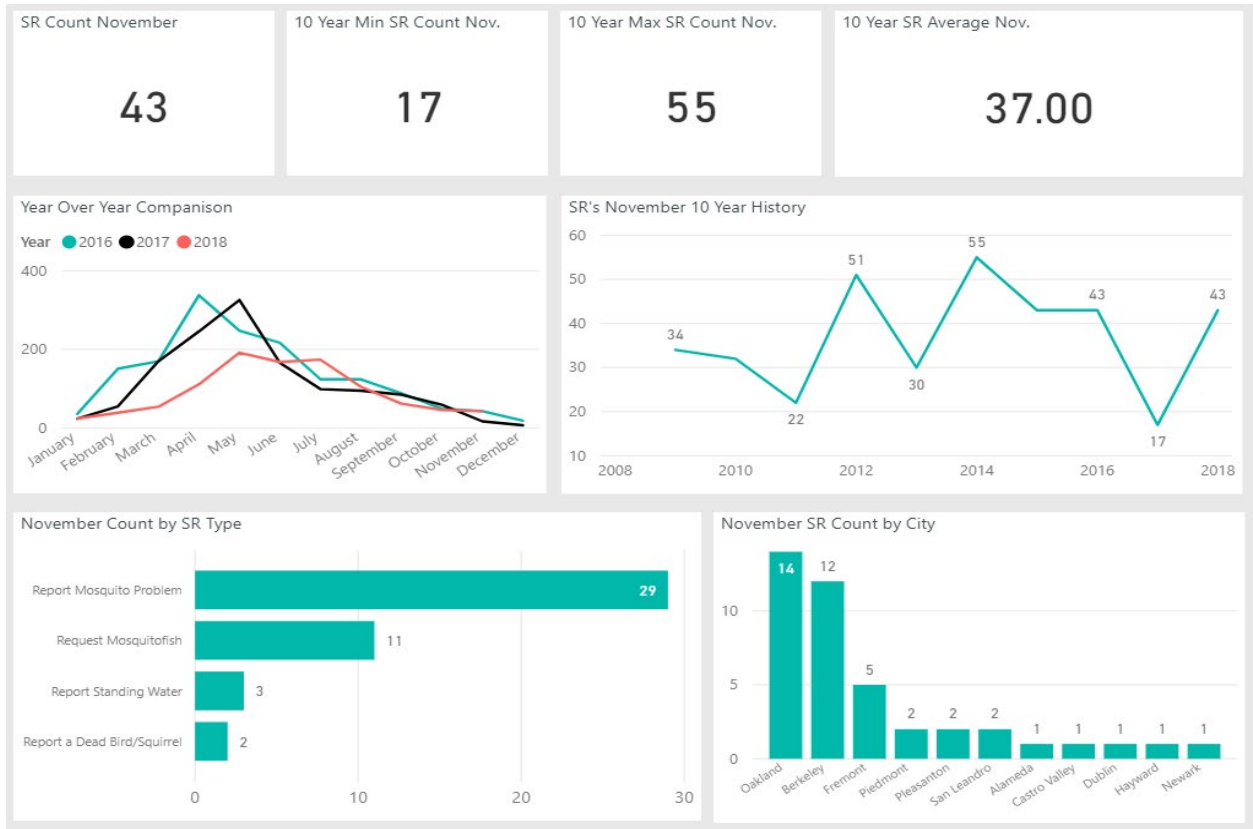
Service requests for the month of November were above average for the month. The ten-year average is 37, ACMAD received 43 for the month. This upswing in requests for service had been anticipated by operations. Without rain in October and little rain until the end of November, both *Cx. pipiens* and *Cx. tarsalis* remain active longer. Sources for both species were being inspected and treated right up to when the late month rains fell. Though normal rain was delayed cooler temperatures prevailed. This makes the warmer temperatures in most homes very attractive to these species seeking shelter to over-winter. The simple act of opening home and garage doors provides entry for mosquitoes harboring in sheltered areas around houses such as porches into the warmth and shelter inside. This will often trigger mosquito related service requests from our public.

Operations staff continued ditching efforts twice a week during the month of November. Sources in two of the three "marsh zones" have received ditch work to date. Ditching will continue until our permit runs out at the end of January. By the close of our ditching season, several sources in all three "marsh zones" will have had ditching performed. Operations expect to see results from these efforts over the next few months and into our spring and summer seasons.

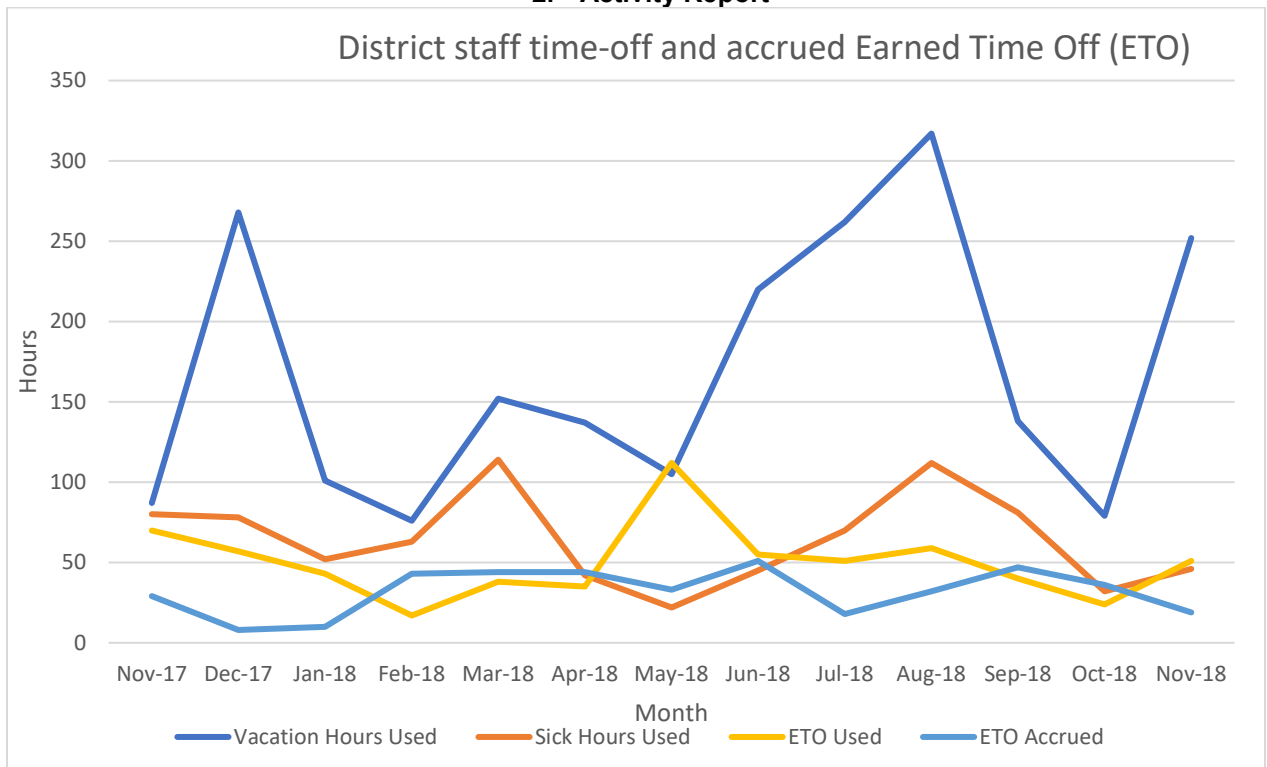
Joseph Huston  
Field Operations Supervisor

## A. District Data

### 1. Service Requests

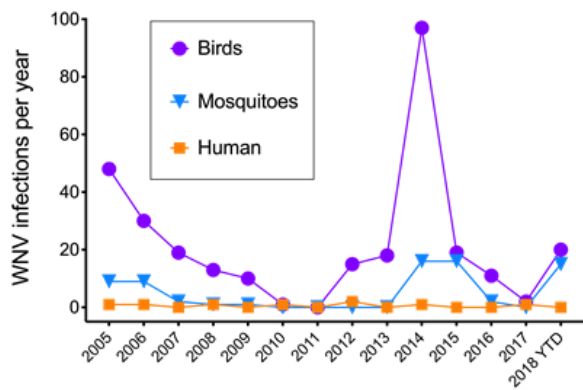


### 2. Activity Report

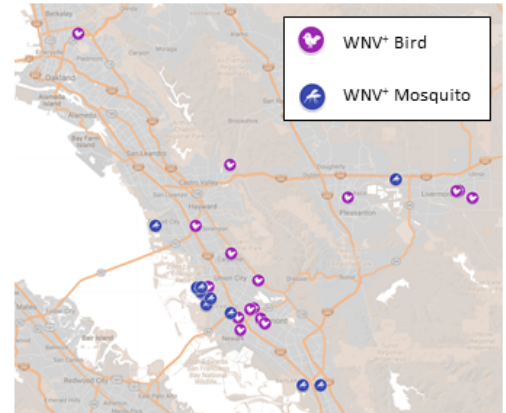


### 3. WNV Activity

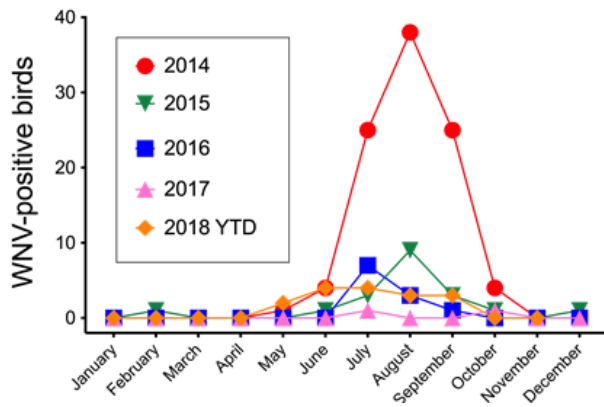
WNV infections detected in Alameda County  
2005 – 2018 YTD



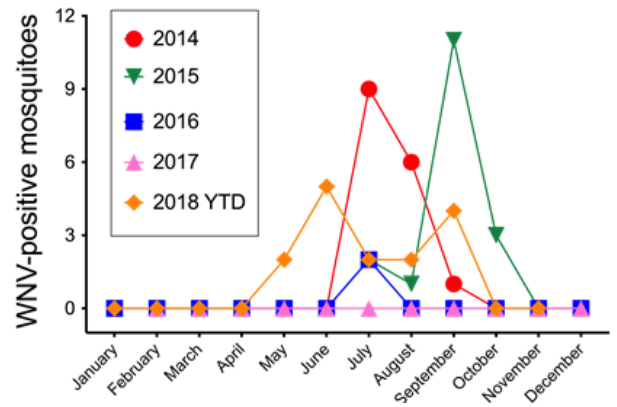
Locations of WNV-infected mosquitoes and birds  
collected in Alameda County during 2018



WNV-infected birds collected in  
Alameda County



WNV-infected mosquitoes collected in  
Alameda County



## 2. LAB

### Summary

- West Nile virus (WNV) was not detected in birds or mosquitoes during the month of November (2018).
- Mosquito abundance in November was lower relative to the prior month.
- A commercially available colony of *Culex quinquefasciatus* and the ACMAD colony of *Culex pipiens* were equally susceptible to permethrin.

### Arbovirus Monitoring

- West Nile virus (WNV) was not detected in birds or mosquitoes during the month of November (2018). 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 1.78 inches of rainfall and the average maximum temperature was 68 °F, (Hayward, CA). The prior two months had no rainfall and average maximum temperatures of 73 °F and 72 °F.
- Cooler temperatures and rainfall limited trapping using EVS CO<sub>2</sub> traps. Over the course of the month, 62 EVS CO<sub>2</sub> traps were placed; 198 mosquitoes were collected and identified to species (Figure 1). There was an average of 3.2 mosquitoes per trap night, which reflects a 58% reduction in mosquito abundance for November relative to the prior month. *Culex erythrorhax* remained the most highly abundant species collected in EVS CO<sub>2</sub> traps, followed by *Culex tarsalis*, and *Culex pipiens* (Figure 2). The geospatial distribution of mosquito species collected in EVS CO<sub>2</sub> traps at each trap site is displayed in Figure 3.
- Mosquito abundance, as measured using NJLT, was slightly reduced relative to the prior month (Figure 4; 0.47 vs 0.56 mosquitoes / trap night, respectively; total of 1217 mosquitoes over 574 trap nights). *Culex tarsalis* was the most prevalent species collected in NJLT during October 2018, followed by *Culiseta inornata*, and *Culiseta incidens* (Figure 5).

### Invasive Aedes Monitoring

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

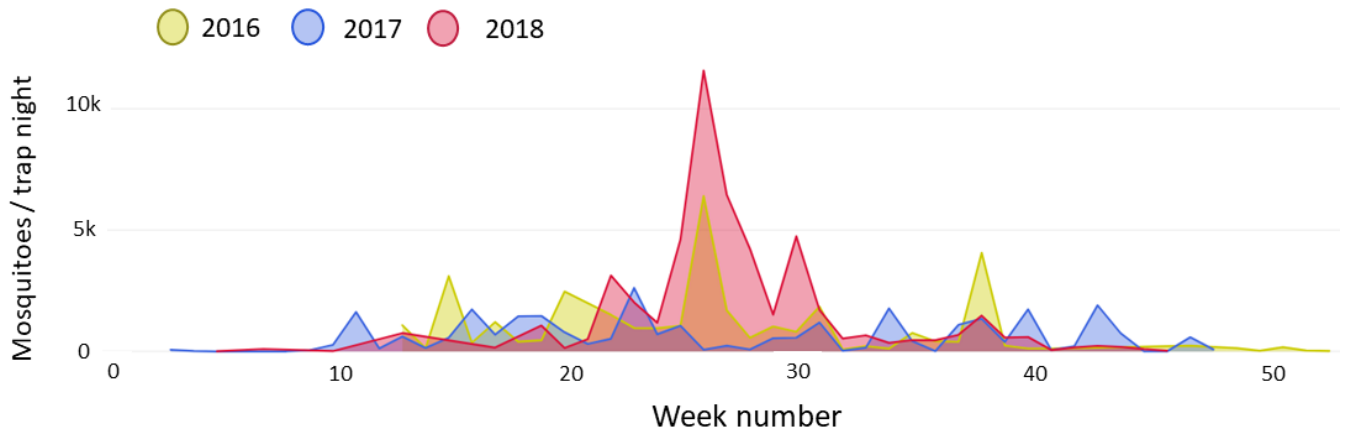
### Insecticide Resistance

- Rearing *Cx. pipiens* in the lab from egg to adult is laborious, requiring approximately 6 h of staff effort each week. Purchasing *Cx. pipiens* larvae and rearing them to adult has the potential to reduce the work effort substantially. Although *Cx. pipiens* are not commercially available, a related species, *Culex quinquefasciatus*, is available from Benzon Research Incorporated (Carlisle, PA). Because the two species are considered to

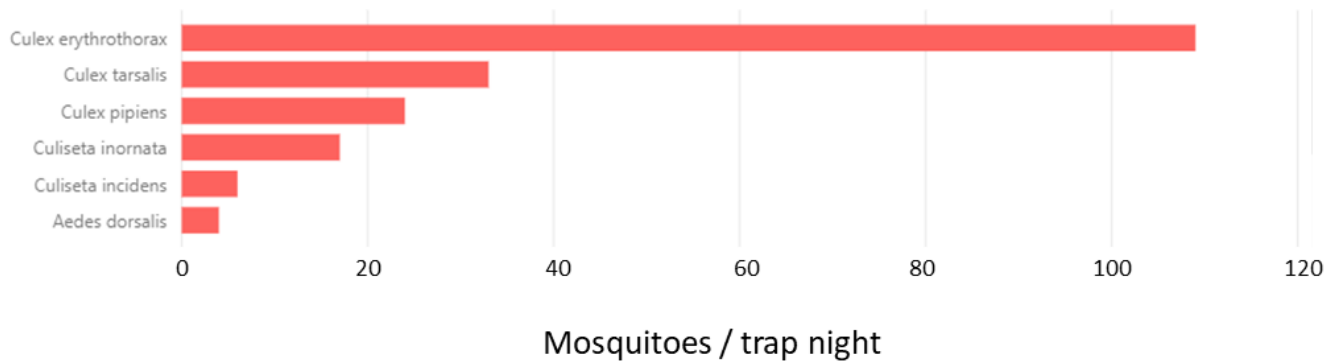


be within the same species complex (separated only geographically), we evaluated insecticide resistance for *Cx. quinquefasciatus* that we purchased from Benzon Research Incorporated. Assessment of the *kdr* allele using a SNP quantitative PCR assay showed that both the ACMAD colony of *Cx. pipiens* and the Benzon colony of *Cx. quinquefasciatus* possess the *kdr* allele that is associated with sensitivity to permethrin (not shown). To evaluate functional sensitivity to permethrin, bottle bioassays (BBA) were conducted using the Benzon colony of *Cx. quinquefasciatus*. The results show that the *Cx. quinquefasciatus* and *Cx. pipiens* were highly and equally susceptible to permethrin (Figure 6), demonstrating that the lab could transition to *Cx. quinquefasciatus* purchased from Benzon for our insecticide resistance testing program. However, with recent decisions to incorporate *Culex* mosquitoes into ACMAD educational outreach programs, we have elected to retain the ACMAD *Cx. pipiens* colony.

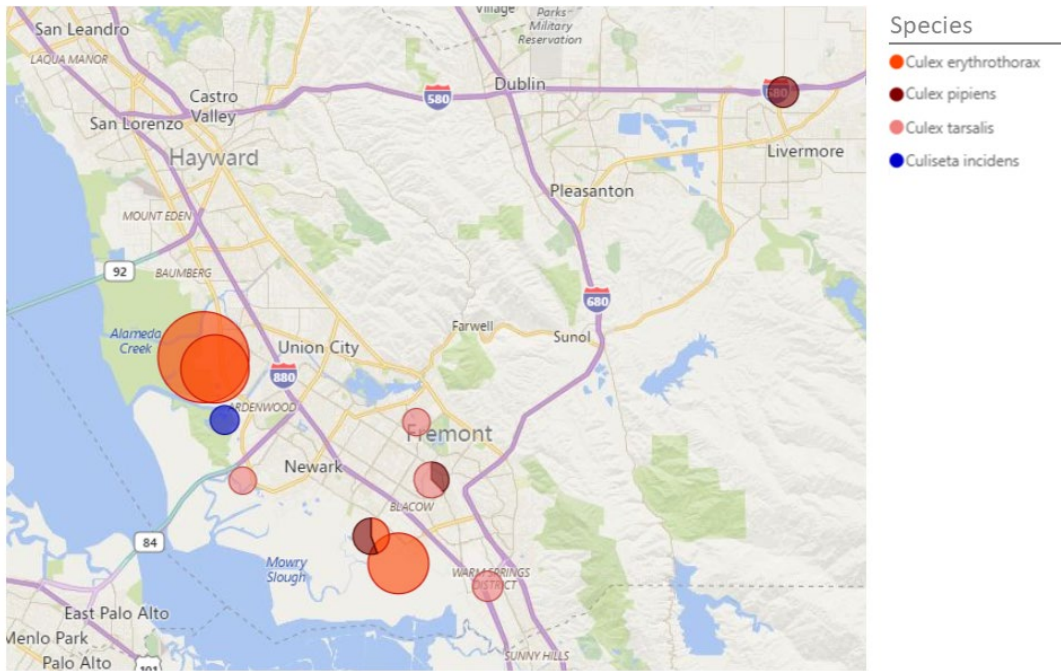
**FIGURES**



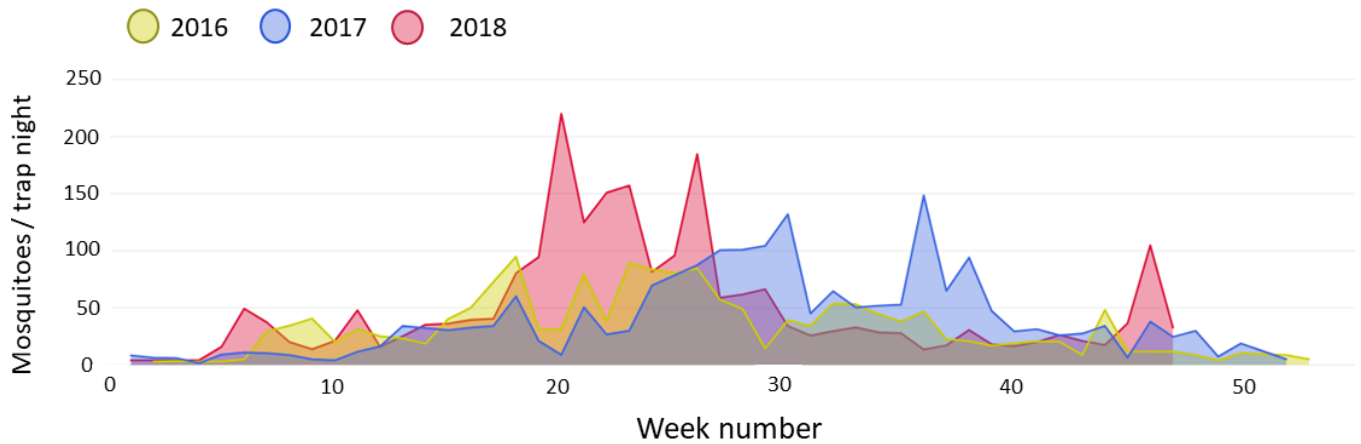
**Figure 1. Mosquitoes captured in EVS CO<sub>2</sub> traps from 2016 – 2018.** A total of 198 mosquitoes were captured in EVS CO<sub>2</sub> traps during November 2018 and identified to species.



**Figure 2. The six most abundant species of mosquito captured in EVS CO<sub>2</sub> traps during October 2018.**



**Figure 3. Mosquito abundance by trap site evaluated using EVS CO<sub>2</sub> 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 November 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 1217 mosquitoes were captured in NJLT during November 2018 and identified to species.

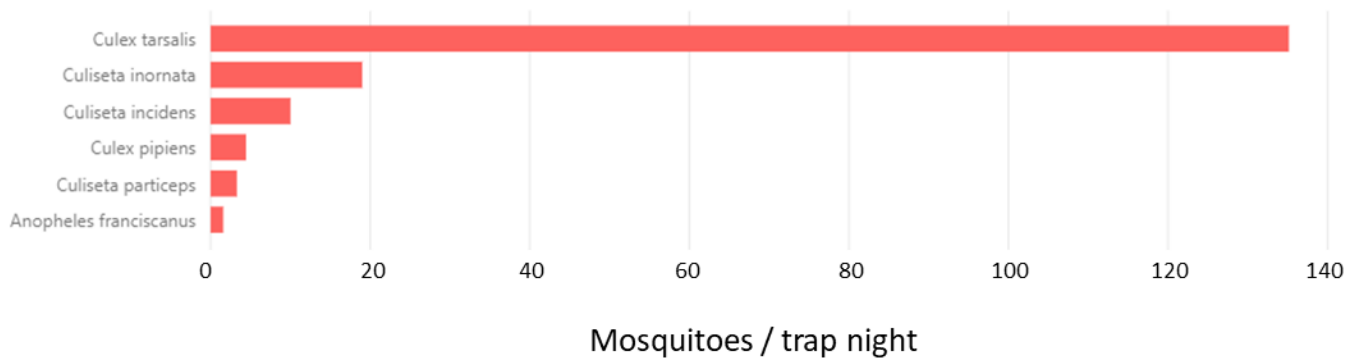


Figure 5. The six most abundant species of mosquito captured in NJLT during November 2018.

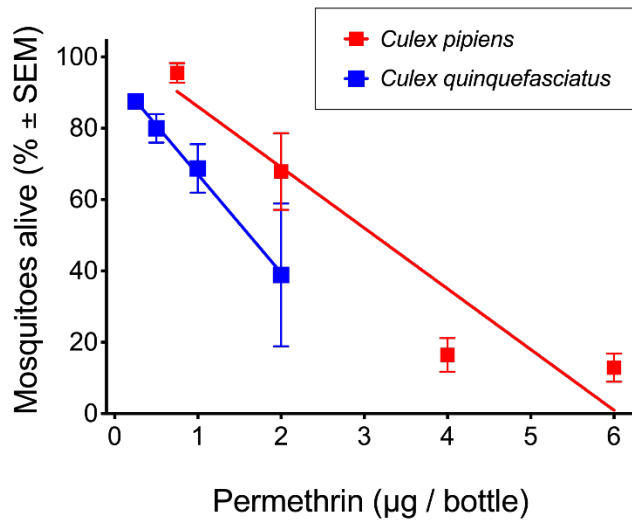


Figure 6. A commercially available colony of *Culex quinquefasciatus* was highly susceptible to permethrin. Bottle bioassays (BBA) were employed to assess the susceptibility of commercially available adult *Cx. quinquefasciatus* to permethrin. Relative to adult *Cx. pipiens* from the ACMAD lab colony, *Cx. quinquefasciatus* were 1.9-fold more susceptible to permethrin, however, the difference was not significant (*Cx. pipiens*:  $LC_{50} = 3.07 \mu\text{g} / \text{bottle}$ ,  $y = -16.56x + 101$ ; *Cx. quinquefasciatus*:  $LC_{50} = 1.62 \mu\text{g} / \text{bottle}$ ,  $y = -27.58x + 94.65$ ).



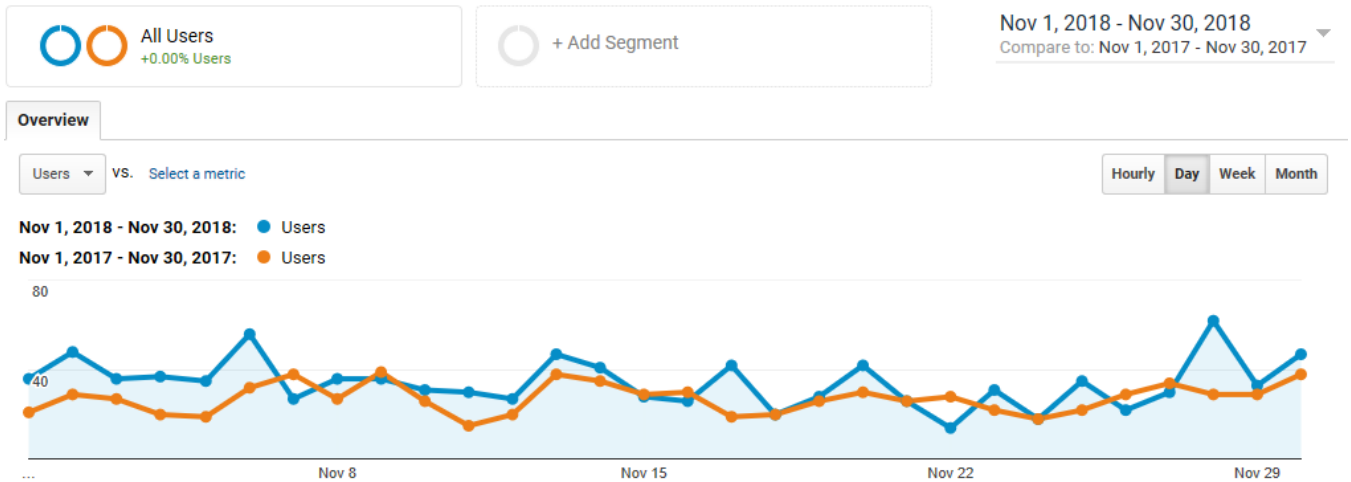
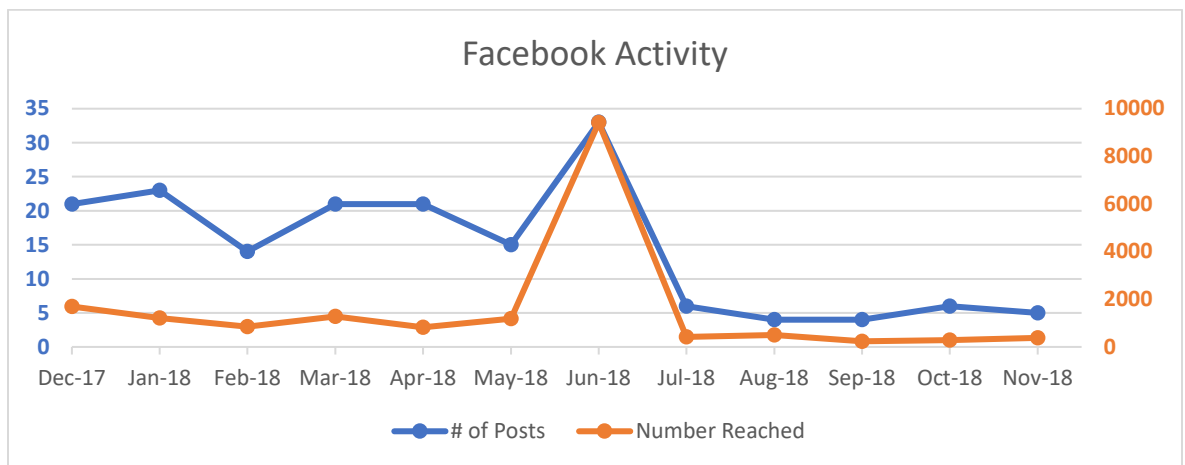


Figure 3. Comparison of website users over the past two years for the month of November.

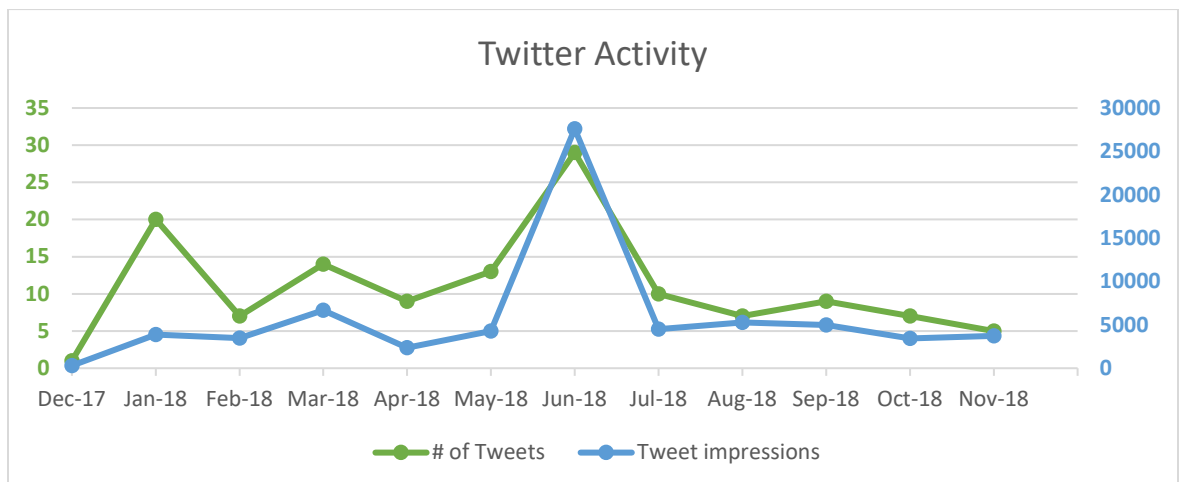
### C. Facebook



**Total Number of Followers:** 173 (up from 169 in October)

**November's Most Popular Post:** It's still warm in the Bay Area! Make sure you're still checking for standing water and wearing insect repellent when outdoors.

### D. Twitter

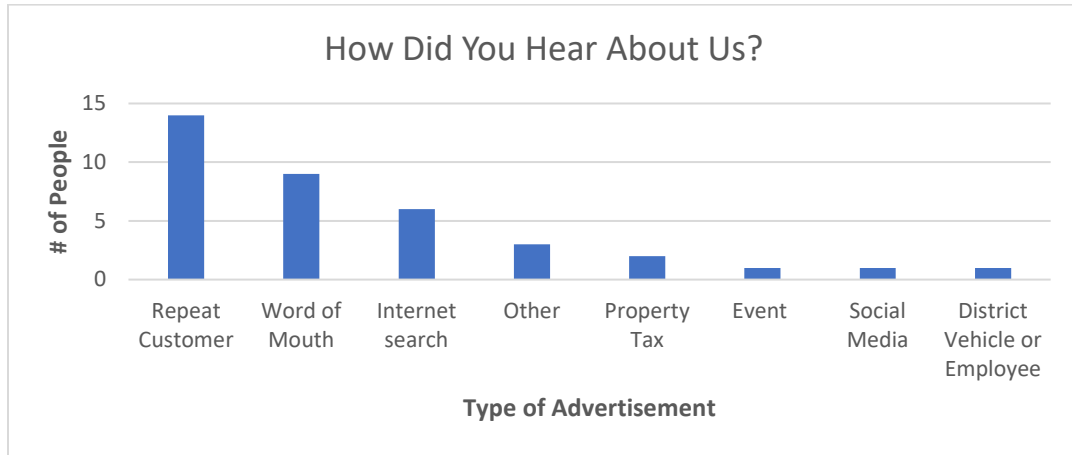


**Number of Profile Visits in October:** 75

**Total Number of Followers (New This Month):** 615 (down from 618 in October)

**Top November Tweet:** With rain finally back in the Bay Area that means more chances for mosquitoes to breed in standing water. Make sure you're checking your yards and dumping or draining any water you see.

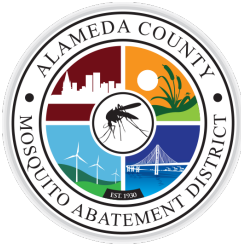
**E. Service Request Referral Summary**



**Note:** Internet Ad, Billboard Ad, Movie Theater Ads, Phone Book, and News Story are also options for this question, but were not included on this chart, because they were not selected in the month of November. Out of the three people that chose “Other” one person saw our East Bay Express ad and another person heard about us from Vector Control.

4. **LEGISLATIVE UPDATE:**

Nothing to report



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### Trustee Anniversary Recognitions:

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**Vice-President**  
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**San Leandro**

Subru Bhat

**Union City**

**Ryan Clausnitzer**

*General Manager*

**Background:**

ACMAD is pleased to recognize and thank the following Trustees and Employees on their anniversaries in the months of November & December.

Trustee	City	Years of Service	Anniversary Date
Betsy Cooley	Emeryville	2	December 6 <sup>th</sup>
Employee	Title	Years of Service	Anniversary Date
Neil Campbell	Vector Biologist	15	November 17th