

AGENDA

1048th MEETING OF THE BOARD OF TRUSTEES OF THE ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

SEPTEMBER 13TH, 2017

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

1. Call to order.
2. Roll call.
3. President Narum invites any member of the public to speak on any issue relevant to the District. (Everyone is limited to five minutes).
4. Approval of the minutes of the 1047th meeting held August 9, 2017 (**Board action required**).
5. Presentation by Biological Specialist, Dereje Alemayehu, on current ACMAD laboratory research partnerships with the Madera County Mosquito and Vector Control District (Information only).
6. Financial Reports:
 - a. Review of warrants dated August 15, 2017 numbering 006818 through 009218 amounting to \$179,951.38 and warrants dated August 31, 2017 numbering 009318 through 013018 amounting to \$1,513,688.03 (Information only).
 - b. Review of Budget as of August 31, 2017, (Information only).
 - c. Investments, Reserves, and Cash Balance as of August 31, 2017.
7. Report from the Finance Committee (Information Only)
8. Presentation of the Monthly Staff Report for August 2017 (Information only).

9. Presentation of the Manager's Report for August 2017 (Information only).
 - a. Formation of a strategic planning committee (attached)
 - b. Policy Committee: ACMAD policy update proposals are forthcoming
 - c. Little Hoover Commission Report on Special Districts (attached)
 - d. Brown Act Workshop: EBMUD, Oakland, 9-1, November 1st, 2017
 - e. Lab Collaborations: UC Berkeley Hacking 4 Impact, new control product experiments, genome sequencing with UCSF
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.

Agenda item: 1048.4

MINUTES

1047th MEETING OF THE BOARD OF TRUSTEES
OF THE ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

AUGUST 9TH, 2017

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

Board President Narum called the regularly scheduled Board meeting to order at 5:00 P.M.

Trustees Narum, Marquez, Poulson, Beatty, Cooley, Young, Doggett, Hentschke, Washburn, Dickinson, and Hernandez were present; Trustee Guarienti was absent. Trustee Quinn arrived at 5:03 P.M., Trustee Izquierdo arrived at 5:05 P.M.

Board President Narum invited members of the public to speak on any issue relevant to the District. ACMAD Lab Director, Dr. Eric Haas-Stapleton and Bill Reynolds, from Leading Edge Associates, Inc., were present.

The Board approved the minutes of the 1046th meeting held July 12th, 2017. (Marquez, Hentschke)– unanimous.

After answering a clarification question from Trustee Dickinson regarding the salary structure: (employees are hired at a certain step, up to five, according to their experience and education), the Board approved increasing the base salary of the Lab Director position by 5% (Quinn, Cooley) – unanimous, Trustee Washburn –abstained.

Trustee Dickinson asked what the budgeted amount for the new database was (\$218,000) and to monitor the implementation costs for continued increases. Trustee Hernandez asked if there is a contingency budget (yes, but for the general budget not for this purchase), and if there is a maintenance budget (yes). After further explanation detailing the out-of-scope work by Trustee Washburn and Bill Reynolds, the board approved the one-time payment of \$15,600 to Leading Edge Associates, Inc. (Dickinson, Beatty) – unanimous

The Board approved resolution 1047-1 honoring Trustee Washburn for his service as Temporary District Manager (Dickinson, Beatty)– unanimous.

The Lab Director gave a presentation on the laboratory components of the MapVision software and fielded questions from Trustees. Trustee Hernandez asked if there are plans to promote this product to the public (yes, at public events and association conferences), and if the mosquito abundance data will be viewable on the District's website (no current plans, but this possibility will be explored). Trustee Narum commented on the benefit of the additional data collection and asked if and why any traps are collected without mosquitoes (trap locations are evaluated by their effectiveness and importance; less productive traps may be relocated annually). Trustee Washburn asked what happens with positive pools of mosquitoes (it directs the operational staff where and when to treat mosquitoes preventing disease transmission to humans). Trustee Marquez asked if there are connectivity issues in the field (a mobile app was built specifically to alleviate this issue; data is cached until a signal can be found), and requested to place links to the official city websites on the District website. Trustee Dickinson requested more information on mosquito pooling and how the District determines trap location (location is determined by historical data of high mosquito populations and areas of high population density and travel), will this product lead to further scientific innovations such as heat mapping bots or machine learning (the data will be shared with academic and governmental partners). Trustee Beatty asked how many mosquitoes are in each testing pool (no more than 50 is recommended for efficacy), what is the rationale for pooling quadrants (operational strategies for treating catch basins), and what three arboviruses are being tested (West Nile virus, Western Equine encephalitis, and St. Louis encephalitis).

The finance committee reported on their meeting regarding reserve funds and unfunded pension liabilities. Trustee Marquez inquired on the date of the next finance committee meeting (between September 5th and the 13th). Trustee Dickinson offered that the discussed reserve funds are not being spent, rather transferred from one District account to another. Trustee Hernandez asked who CAMP is (a joint powers authority that provides investment services for governments)

The Board reviewed warrants dated July 15, 2017 numbering 000118 through 003118 amounting to \$492,263.97 and warrants dated July 31, 2017 numbering 003218 through 006718 amounting to \$189,918.14. Trustee Doggett asked what the \$1 warrant is (Trustee Washburn answered that this is an access fee charged by the Port of Oakland).

The Board reviewed the budget summary and IRC report received as of July, 31th, 2016. Trustee Hernandez asked if the reserve withdraw will come from the County fund (yes, Alameda County holds our general funds). Trustee Dickinson requested more information on the over \$60,000 accrual noted in the report (to be provided by the District Manager).

The District Manager and Lab Director presented the Staff report for July 2017. Trustee Beatty asked who tests the dead birds (the District's laboratory), were the species listed in the bloodmeal analysis the only species found (yes), why is Berkeley not listed in the mosquito abundance map (low numbers of mosquitoes), and commented that accurate bloodmeal analysis requires a large quantity of blood in mosquitoes. Trustee Dickinson asked if it is typical to find only West Nile positive birds but no mosquitoes (yes) and what software is used in these maps (ArcGIS and Tableau). Trustee Cooley suggested that mosquito abundance per capita/ per square mile may be a useful map. Trustee Washburn asked what is shaping the mosquito testing polygon sizes (number of mosquitoes and species diversity, not political boundaries).

The District Manager presented the Manager's report for July 2016. Trustee Young commented on the movie theater ad he witnessed in Fremont. Trustee Hernandez offered a useful mobile app for drone-use he encountered as a councilmember to the City of San Leandro. Trustee Dickinson urged a cautious approach to mosquito surveillance and treatment by an unmanned aircraft. Trustee Beatty offered that some emerging mosquito control techniques, such as sterile male releases & *Wohlbachia*, have been around for years but the CRISPR technology is new. Trustee Washburn suggested adding a summary of these novel mosquito control methods on the District's website.

Board President Narum asked for reports on conferences and seminars attended by Trustees, there were none.

Board President Narum asked for announcement from the Board, there were none.

Board President Narum asked trustees for items to be added to the agenda for the next Board meeting, there were none.

The meeting adjourned at 6:18 P.M.

Respectfully submitted,

Approved as written and/or corrected
at the 1048th meeting of the Board of
Trustees held September 13th, 2017

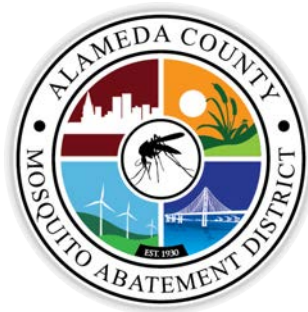
Kathy Narum, President
BOARD OF TRUSTEES

Wendi Poulson, Secretary
BOARD OF TRUSTEES

Mosquito Magnet Trap Lures

A Field Study of Mosquito Magnet Traps
supplemented with commercially available lures to
trap invasive *Aedes* mosquitoes

Dereje Alemayehu & John Busam



Limitations of traps recommended by CDC for killing *Aedes aegypti*

- BG sentinel is powered by electricity using a 120 volt wall plug limiting its usage
- CDC EVS Trap (CO₂ attractant) and New Jersey Light Traps (light attractant) do not efficiently attract invasive *Aedes* mosquitoes.
- Autocidal gravid trap (AGO) attracts gravid mosquitoes that have already bitten a human and the sticky board makes mosquito ID difficult.



Advantages of Mosquito Magnet Trap

- On board propane power supply and can be placed anywhere.
- Deployed for up to three weeks.
- Captures 100s – 1000s of mosquitoes over two weeks.
- Useful for reducing adult mosquito abundance without chemical pesticides.
- Commercially available and durable.





Study Site
City of
Madera:

Established
populations of
Invasive species
Aedes aegypti

Mosquito Magnet Trap with Lure



Collection Chamber

Propane for power
CO₂, and heat

Lure near mosquito
intake

Lurex3



BG-Sentinel



R-Octenol



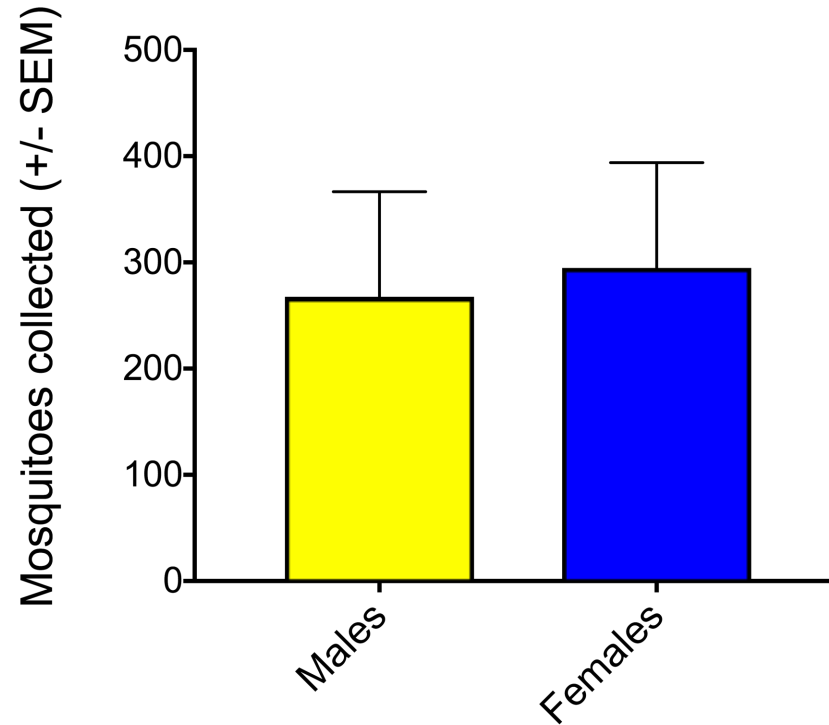


Three sites for
placing
Mosquito
Magnet Traps

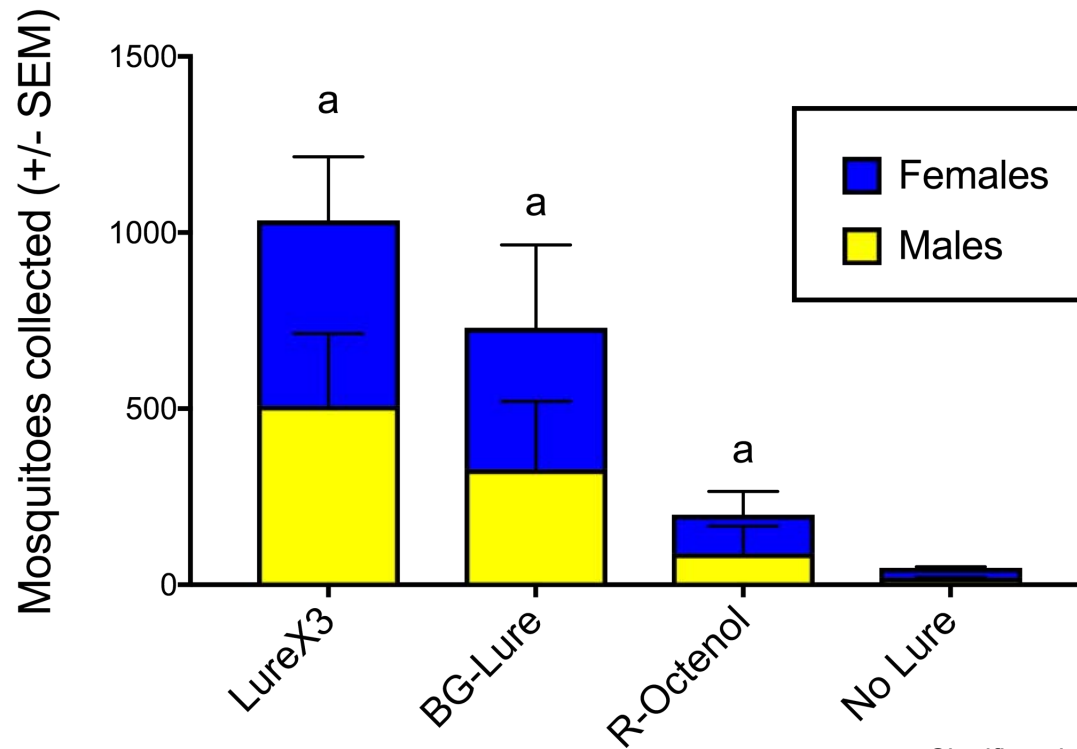
Adult *Aedes aegypti*
mosquitoes trapped and
killed from a single trap
session



Mosquito Magnet Traps collected similar numbers of male and female *Aedes aegypti* mosquitoes in Madera, CA



Aedes aegypti mosquitoes collected in Madera, CA using Mosquito Magnet Traps supplemented with chemical lures



^aSignificantly different from No Lure ($p < 0.05$)

Pros and Cons of Mosquito Magnet Traps

Disadvantages

- Expensive, upwards of \$750 per trap.
- Bulky and difficult to transport.
- Deploy site should be secured.

Advantages

- Can be deployed for up to three weeks.
- May catch 10 – 15 times more mosquitoes than BG Sentinel Trap.
- Doesn't require electrical outlet.

Next Steps

Compare Mosquito Magnet and BG-Sentinel Traps supplemented with BG-Lure.

- Five Mosquito Magnet Traps paired to BG-Sentinel Traps, both with BG-Lure will be deployed in Madera during September 2017.

Goal: Learn more about the best attractant for these elusive invasive mosquitoes.



Thank you to:

Madera County MVCD

Trinidad Reyes
Lenard Irby, District Manager
Alex Scalzo, Supervisor



Alameda County MAD

Ryan Clausnitzer, District Manager
Eric Haas-Stapleton, PhD



1000 mile study



ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT
LIST OF WARRANTS DATED **AUGUST 15, 2017.**

WAR NO	PAYEE		ACCT NO	AMT OF CHARGE	AMT OF WARRANT
006818	Biological Specialist	Total salary less deductions for payroll period	600001	2,785.04	
006818	Mosq Control Tech	"	600001	2,324.07	
006818	Lab Seasonal	"	600001	1,099.33	
006818	Lab Seasonal	"	600001	1,207.29	
006818	Vector Biologist	"	600001	2,938.44	
006818	Vector Biologist	"	600001	2,965.54	
006818	Mosq Control Tech	"	600001	2,301.50	
006818	Regulatory & Public Affairs Director	"	600001	2,922.66	
006818	District Manager	"	600001	3,760.03	
006818	Asst Mosq Control Tech	"	600001	2,325.43	
006818	Lab Seasonal	"	600001	1,092.04	
006818	Field Seasonal	"	600001	1,146.75	
006818	IT Director	"	600001	3,120.98	
006818	Outreach seasonal	"	600001	161.62	
006818	Lab Director	"	600001	3,042.25	
006818	Field Operations Supervisor	"	600001	3,664.11	
006818	Lab Seasonal	"	600001	1,189.50	
006818	Office Assistant	"	600001	1,779.82	
006818	Vector Biologist	"	600001	3,694.61	
006818	Lab Seasonal	"	600001	354.78	
006818	Mosq Control Tech	"	600001	2,758.95	
006818	Mosq Control Tech	"	600001	2,291.11	
006818	Office Seasonal	"	600001	1,034.65	
006818	Mechanical Specialist	"	600001	3,326.68	
006818	IRS	Federal tax withheld (payroll)	600001	8,736.49	
006818		Medicare Tax Withheld (payroll)	600001	996.59	
006818		District Contribution to Medicare (payroll)	600401	996.59	
006818	State of California	State Tax withheld (payroll)	600001	2,636.47	
006818	EDD	Ca Disability	600001	542.45	67,195.77
006918	Public Employees' Retirement System	Employee Contributions	600001	16.00	
		Employee Paid Member Contributions, 7% & 6.5%	600001	4,546.65	
		Employer Contribution 9.558% & 6.930%	600201	5,728.29	10,290.94
007018	Aetna Life & Annuity	Employee Contributions	600001		150.00
007118	CALPERS 457 Plan	Employee Contributions - PERS 457	600001		2,530.00
007218	Delta Dental Plan	Monthly Premium	600601		4,411.85
007318	Vision Service Plan	Health premium	600601		651.36
007418	The Hartford	Life Insurance	600601		78.71
007518	Airgas	Dry ice cut block slab	620141.1		273.93
007618	All-Ways Green Services	Janitorial Service	620021.1		410.00
007718	Cintas	Laundry service	610011	454.60	
		Personal supplies	610001	0.00	454.60
007818	Corporate Park Landscaping	Landscape maintenance	610122.1		195.00
007918	City of Hayward	Fire Prevention Program	610461.52		1,179.52
008018	Grainger	Shop supplies	610461.6		
		Shop supplies	610122.2		471.26
008118	Hayward Water System	Hayward Water	610021		1,095.19
008218	Kimball Midwest	Shop supplies	610141		206.11
008318	Leading Edge Associates, Inc.	MapVision	800004		15,600.00
008418	Light House Inc	Shop supplies	610141		340.36
008518	NBC Supply Corp	Shop supplies	610461.6		441.63
008618	PFM Asset Management	Investment advisory services	610261.11		1,712.81
008718	PG & E	Utilities	610021.2		59.33
008818	Techniclean	Towels	620021.2		89.18
008918	VCJPA	Membership dues	610351	493.93	
		Contingency	800006	50,000.00	50,493.93
009018	Washburn, Jan	Pay for Temporary Manager	600001		2,687.50
009118	Waste Management	Garbage, July Service	610021.1		218.22

WAR NO	PAYEE		ACCT NO	AMT OF CHARGE	AMT OF WARRANT
009218	U.S Bank	WS Mosquito - Rechargeable batteries	620141.1	111.46	
		BioQuip - EVS Catch bag	620141.1	294.15	
		BioQuip - EVS Trap	620141.1	2,136.12	
		Target - (2) Clorax wipes	620141.1	13.63	
		Wal-Mart - Supplies for Madera project	620141.1	94.87	
		The Home Depot - Supplies for Madera project	620141.1	52.20	
		Uline - Plastic Pail	620141.1	1,056.00	
		Amazon - (2) Hard drive's	620141.8	164.60	
		Amazon - Keyboard case	650031.1	100.52	
		AmericanLadder - Box for truck lab	610141	545.65	
		Panera - Food for meeting	610191.7	96.06	
		Amazon - Paint sticks	620141.1	65.74	
		Amazon - Zip ties	620141.1	9.89	
		Apple Store - Thunderbolt, Adaptor	620141.1	53.53	
		Amazon - Set of scoopers	620141.1	29.99	
		BioQuip - Replacement Element	620141.1	144.90	
		Lampire	620141.1	231.25	
		Clearbags - Ziploc bags	620141.1	43.01	
		Amazon - Laminating pouches	620141.1	66.88	
		Amazon - prime membership	620141.1	108.65	
		Stericycle - Waste pick up	620141.3	197.47	
		Lifetech - Taqman	620141.3	1,421.67	
		Chem Tower - Piperonyl solution	620141.7	397.34	
		Fisher Scientific - ETH ALC	620141.7	243.94	
		Lampire - Chicken blood	620141.7	192.25	
		Amazon - (4) Erlenmeyer Flask	620141.7	59.96	
		Amazon - Storage bottles	620141.7	104.72	
		Amazon - (4) bug busters	620141.7	67.80	
		Amazon -	620141.7	45.13	
		Amazon - Hard drive	620141.8	82.30	
		Amazon - Disposable wiper	620141.8	34.36	
		Graphpad - Graph pad	620141.8	200.00	
		Fisher Scientific - Lab supplies	620141.8	20.62	
		Fisher Scientific - Wizard	620141.8	115.11	
		Apple - Mac track pad	620141.8	194.46	
		Amazon - Lab stool	620141.8	45.66	
		Lifetech - Amplitaq gold	620141.8	533.88	
		Amazon - (3) Keyboard cases	650031.1	121.59	
		Apple Store - Mini mac	650031.1	763.66	
		Amazon - Wall Mount	650031.1	24.99	
		Amazon - Ergonomic monitor	650031.1	244.57	
		Apple - Supplies for iPad	650031.1	547.65	
		Apple - Supplies for iPad	650031.1	54.82	
		Apple - Supplies for iPad	650031.1	108.65	
		Apple - Supplies for iPad	650031.1	141.58	
		Amazon - Cables for iPad	650031.1	49.35	
		Amazon - (2) Wall Mounts	650031.1	49.98	
		Sprint - Phone case	610022.4	43.69	
		Sub Depot - Lunch for conference E.C	610191.3	7.65	
		Sutter Galleria - Parking for meeting	610191.3	3.00	
		Vista Print - Business cards	610451	45.78	
		Lucky Vitamin - Insect repellent wipes	610451	63.05	
		Constant Contract - Contract	610451	20.00	
		Walgreens - Medicine for First Aid	610001	31.26	
		Amazon - Sun Hats	610001	149.85	
		Amazon - Boots	610001	205.57	
		Amazon - Work boots	610001	126.54	
		FoodMaxx - Laundry Soap	610011	17.29	
		Mosquito Control - Mosquito Magnet	610141	495.30	
		The Home Depot - Mixing Container	610141	38.92	
		KAMPS - Propane	610141	40.73	
		Amazon - Fish food	610461.4	77.06	
		Saco - Face Shields	610461.6	29.00	
		Saco - Face Shields	610461.6	53.00	
		Amazon - Insoles	610461.6	46.36	
		Amazon - Prime membership	620041	108.65	
		CalPERS - CalPERS conference	610191.3	350.00	
		Virgin American - Flight for conference	610191.3	257.40	
		CSDA - Conference for Trustee G.Y	610191.3	580.00	
		Panda Express - Lunch with Financial Consultant	610261.12	20.63	
		Adobe - Adobe installation for E.H	620041	599.88	
		Canon Copier - Copier rental	620041	340.23	
		Amazon - Keyboard wrist rest/ mouse pad	620041	11.97	
		Amazon - Double sided tape	620041	18.42	
		Quill - Office supplies	620041	133.32	
		The Cobblers - Boots for R.F & J.B	610001	380.00	
		Telepacific - Telephone service	610022.1	1,156.18	
		GoDaddy - Renewal	610022.3	10.99	
		Best Buy - TV	610122.2	695.26	

JAMF Software - Subscription	650031.1	22.00	
Amazon - (4) Keyboards	650031.1	178.08	
Amazon - TV Stand	650031.1	89.98	
Amazon - (4) Keyboard cases	650031.1	175.04	
Apple Store - Apple TV remote	650031.1	195.50	
Amazon - Chargers and cables	650031.1	329.85	
Amazon - Book	610191.7	13.98	
Amazon - Book	610191.7	5.45	
Amazon - Book	610191.7	31.55	
Amazon -Book	610191.7	19.41	
Amazon -Book	610191.7	5.45	
Amazon -Book	610191.7	8.30	
			18,714.18
Total Warrants August 15th			179,951.38

ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT
LIST OF WARRANTS DATED **AUGUST 31, 2017**

WAR NO	PAYEE	FOR	ACCT NO	AMT OF CHARGE	AMT OF WARRANT
009318	Biological Specialist	Total salary less deductions for payroll period	600001	2,871.72	
009318	Mosq Control Tech	"	600001	2,324.07	
009318	Lab Seasonal	"	600001	1,121.17	
009318	Lab Seasonal	"	600001	1,217.42	
009318	Vector Biologist	"	600001	3,013.35	
009318	Vector Biologist	"	600001	2,965.55	
009318	Mosq Control Tech	"	600001	2,301.49	
009318	Regulatory & Public Affairs Director	"	600001	2,994.07	
009318	District Manager	"	600001	4,249.82	
009318	Asst Mosq Control Tech	"	600001	2,325.43	
009318	Field Seasonal	"	600001	1,232.68	
009318	IT Director	"	600001	3,231.74	
009318	Outreach Seasonal	"	600001	1,198.96	
009318	Lab Director	"	600001	3,757.20	
009318	Field Operations Supervisor	"	600001	3,710.93	
009318	Lab Seasonal	"	600001	1,076.85	
009318	Office Assistant	"	600001	1,779.83	
009318	Vector Biologist	"	600001	3,694.60	
009318	Lab Seasonal	"	600001	1,085.55	
009318	Mosq Control Tech	"	600001	2,758.96	
009318	Mosq Control Tech	"	600001	2,291.10	
009318	Office Seasonal	"	600001	1,392.64	
009318	Mechanical Specialist	"	600001	3,523.77	
009318	IRS	Federal Tax Withheld	600001	9,435.75	
009318		Medicare Tax Withheld	600001	1,053.05	
009318		District Contribution to Medicare	600401	1,053.05	
009318	State of California	State Tax Withheld	600001	2,919.97	
009318	EDD	Ca Disability	600001	567.47	71,148.19
009418	Public Employees' Retirement System	Employees contributions	600001	16.00	
		Employee paid member contributions, 7%, 6.5%	600001	4,621.56	
		District contribution 9.559%, 6.908%	600201	5,827.91	10,465.47
009518	Aetna Life & Annuity	Employee contributions	600001		150.00
009618	CalPERS 457 Plan	Employees contributions - PERS 457	600001		2,530.00
009318A	Alameda County Mosquito Abatement District	Transfer money to Bank of the West to move into LAIF account			1,350,000.00
009718	CalPERS	Health insurance	600601		31,691.78
009818	P. Robert Beatty	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
009918	Elizabeth Cooley	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
010018	James Doggett	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
010118	Robert Dickinson	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
	Richard Guarienti	Trustee in lieu expenses - 1047th meeting	610191.5		
010218	Eric Hentschke	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
010318	Ed Hernandez	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
010418	Humberto Izquierdo	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
010518	Elisa Marquez	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
010618	Katherine Narum	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
010718	Wendi Poulson	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
010818	Ronald Quinn	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
10918	Jan Washburn	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
011018	George Young	Trustee in lieu expenses - 1047th meeting	610191.5		100.00
011118	Airgas	Dry ice pellets	620141.1		615.31
011218	Adapco	Vectolex, Altosid	610461.1		1,451.06
011318	Beck's Shoes	Boots for A.E	610001		157.31
011418	Bartkiewicz, Kronick & Shanahan	Phone call with J.H	610261.4		65.00
011518	Bay Area Distributing	Shop supplies	610141		722.02
011618	Cintas	Supplies	610461.6	318.28	
		Laundry service	610011	345.47	663.75
011718	CalPERS	Fees for GASB 68 Reports & Schedules	610261.2		700.00
011817	City of Hayward	Fire Prevention program	610461.52		1,326.86
011918	Donato Builders	Shed project	800002		17,670.40
012018	Employment Development Department	Letter L2047322912	600001		1,489.99
012118	Grainger	Shop supplies	610461.7	499.55	
		Shop supplies	610461.6	27.39	526.94
012218	Hass - Stapleton, Eric	Reimbursement for Garbage bags, gloves, and sanitizer	620141.1		21.27
012318	Korbmacher Engineering Inc	Shed Project	800002		468.00
012418	Kimball Midwest	Shop supplies	610141		168.37
012518	Mobile Modular Public Storage	Shed Project	800002		113.59
012618	PG & E	Utilities	610021.2		1,863.62
012718	Sonitrol	Monitoring charges and CCTV Fees	620021.3		750.00
012818	UC Regents	Invoice for R.C School	610191.7		12,944.75
012918	Verizon	Communication expenses	610022.4		704.83
013018	Wright Express	Fuel expenses, statement ended 08-15-17	610191.1		3,979.52
Total Warrants					1,513,688.03
Total Warrants August 31st					1,513,688.03
Total Warrants August 15th					179,951.38
Total August Warrants					1,693,639.41

Alameda County Mosquito Abatement District Budget Summary
As of August 31, 2017. (2 of 12 mth, 16%)

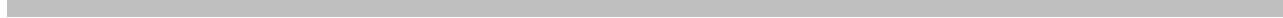
Account #		EXPENDED IN (August)	EXPENDED TO DATE	BUDGETED	BALANCE	% EXPEND ED
SALARY & BENEFITS						
600001	Salary and Wages	\$ 155,032.02	\$ 313,046.92	\$ 1,761,305.00	\$ 1,448,258.08	18%
600401	Contribution to Medicare	\$ 2,049.64	\$ 3,034.32	\$ 25,881.00	\$ 22,846.68	12%
600201	Contribution to Retirement	\$ 11,556.20	\$ 198,852.43	\$ 253,662.20	\$ 54,809.77	78%
600601	Contribution to Health Care	\$ 36,833.70	\$ 74,742.90	\$ 506,368.08	\$ 431,625.18	15%
SERVICE AND SUPPLIES						
610001	Clothing and personal supplies	\$ 1,050.53	\$ 1,430.53	\$ 8,500.00	\$ 7,069.47	17%
610011	Laundry services and supplies	\$ 817.36	\$ 1,145.07	\$ 9,000.00	\$ 7,854.93	13%
610021	Utilities					
610021.1	Garbage	\$ 218.22	\$ 218.22	\$ 3,000.00	\$ 2,781.78	7%
610021.2	PG & E	\$ 1,922.95	\$ 3,742.99	\$ 24,000.00	\$ 20,257.01	16%
610021.3	Hayward Water & Sewage	\$ 1,095.19	\$ 1,095.19	\$ 7,000.00	\$ 5,904.81	16%
610021.4	Biohazard and Chemical Waste Disposal	\$ -	\$ -	\$ 4,000.00	\$ 4,000.00	0%
Communications						
610022.1	Telephone Service & Internet	\$ 1,156.18	\$ 1,156.18	\$ 14,000.00	\$ 12,843.82	8%
610022.3	Website and email hosting	\$ 10.99	\$ 10.99	\$ 1,200.00	\$ 1,189.01	1%
610022.4	Cell phone service (Verizon)	\$ 748.52	\$ 2,410.78	\$ 17,000.00	\$ 14,589.22	14%
610022.5	Microsoft Office 365	\$ -	\$ -	\$ 4,000.00	\$ 4,000.00	14%
610141	Maintenance of equipment	\$ 2,557.46	\$ 3,334.58	\$ 45,000.00	\$ 41,665.42	7%
610122	Maintenance of structure and improvements					
610122.1	Landscaping service	\$ 195.00	\$ 195.00	\$ 3,600.00	\$ 3,405.00	5%
610122.2	Facility Maintenance	\$ 839.54	\$ 1,273.79	\$ 25,000.00	\$ 23,726.21	5%
Transportation, travel, & training						
610191.1	Fuel and GPS (WexMart)	\$ 3,979.52	\$ 7,580.99	\$ 45,000.00	\$ 37,419.01	17%
610191.3	Meetings, conferences, & travel	\$ 1,198.05	\$ 1,198.05	\$ 35,000.00	\$ 33,801.95	3%
610191.4	Board meeting expenses	\$ -	\$ 76.61	\$ 800.00	\$ 723.39	10%
610191.5	Board payments in lieu	\$ 1,300.00	\$ 2,200.00	\$ 16,800.00	\$ 14,600.00	13%
610461.53	Continuing Education fees	\$ -	\$ -	\$ 4,210.00	\$ 4,210.00	0%
610191.7	Staff Training (automotive, IT, staff development)	\$ 13,124.95	\$ 13,124.95	\$ 55,000.00	\$ 41,875.05	24%
Professional services						
610261.1	Audit	\$ -	\$ -	\$ 13,000.00	\$ 13,000.00	0%
610261.2	Actuarial reports	\$ 700.00	\$ 700.00	\$ 5,500.00	\$ 4,800.00	13%
610261.3	Helicopter service	\$ -	\$ -	\$ 35,000.00	\$ 35,000.00	0%
610261.4	Legal services	\$ 65.00	\$ 65.00	\$ 13,000.00	\$ 12,935.00	1%
610261.5	MVCAC Research Foundation	\$ -	\$ -	\$ 5,000.00	\$ 5,000.00	0%
610261.7	Tax collection service - SCI	\$ -	\$ -	\$ 35,000.00	\$ 35,000.00	0%
610261.8	Payroll service	\$ -	\$ -	\$ 10,000.00	\$ 10,000.00	0%
610261.9	Environmental consultant services for regulatory issues	\$ -	\$ -	\$ 15,000.00	\$ 15,000.00	0%
610261.1	HR Services (Municipal Resource Group)	\$ -	\$ -	\$ 15,000.00	\$ 15,000.00	0%
610261.11	OPEB service (PFM)	\$ 1,712.81	\$ 1,712.81	\$ 22,000.00	\$ 20,287.19	8%
610261.12	Financial advising	\$ 20.63	\$ 1,506.73	\$ 16,270.00	\$ 14,763.27	9%
610351	Annual memberships and dues total	\$ -	\$ 100.00	\$ 22,130.00	\$ 22,030.00	0%
610378	Insurance total	\$ 493.93	\$ 128,758.93	\$ 133,810.00	\$ 5,051.07	96%
610451	Community education total	\$ 128.83	\$ 13,628.83	\$ 53,000.00	\$ 39,371.17	26%
Special expenses						
610461.1	Pesticides	\$ 1,451.06	\$ 7,690.13	\$ 200,000.00	\$ 192,309.87	4%
610461.2	Field supplies (dippers etc)	\$ -	\$ -	\$ 2,200.00	\$ 2,200.00	0%
610461.4	Fish and Fish Maint.	\$ 77.06	\$ 632.06	\$ 6,000.00	\$ 5,367.94	11%
610461.51	Aerial Pool Survey	\$ -	\$ -	\$ 20,000.00	\$ 20,000.00	0%
610461.52	Permits	\$ 2,506.38	\$ 2,507.38	\$ 100.00	\$ (2,407.38)	2507%
610461.54	Board plaques and nameplates	\$ -	\$ -	\$ 500.00	\$ 500.00	0%
610461.6	Spray equipment	\$ 1,242.64	\$ 1,242.64	\$ 30,000.00	\$ 28,757.36	4%
610461.7	Safety	\$ 499.55	\$ 499.55	\$ 2,000.00	\$ 1,500.45	25%
620021.1	Janitorial service	\$ 410.00	\$ 820.00	\$ 6,500.00	\$ 5,680.00	0%
620021.2	Supplies	\$ 89.18	\$ 89.18	\$ 2,000.00	\$ 1,910.82	4%
620021.3	Alarm Service- Sonitrol	\$ 750.00	\$ 1,516.00	\$ 11,000.00	\$ 9,484.00	14%
620021.4	Drinking Water system & filter	\$ -	\$ -	\$ 510.00	\$ 510.00	0%
620041	Office supplies	\$ 1,212.47	\$ 1,212.47	\$ 13,050.00	\$ 11,837.53	9%
620042	Information technology	\$ -	\$ -	\$ 73,400.00	\$ 73,400.00	0%
620141	Laboratory total	\$ 9,544.05	\$ 9,927.05	\$ 105,000.00	\$ 95,072.95	9%
620261	Small tools and instruments	\$ -	\$ 131.11	\$ 8,500.00	\$ 8,368.89	2%
650031.1	Capital expenditures	\$ 3,197.81	\$ 81,093.56	\$ 240,000.00	\$ 158,906.44	34%
TOTAL EXPENDITURES		\$ 259,787.42	\$ 883,703.92	\$ 4,013,802.28	\$ 3,130,098.36	22%
TOTAL WARRANTS		\$ 1,693,639.41				
TOTAL RESERVE ACTIVITY		\$ 1,433,851.99				
Discrepancy from Expenditures and Warrant list			NA			

Investments, Reserves, and Cash Balance

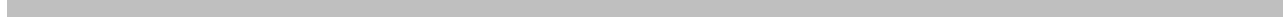
Account #		Activity in August	Activity to Date	Beginning Balance 7/1/17	Current Balance
Budget Reserves					
800001	Working Capital (Dry Period Cash)	\$ -	\$ -	\$ 2,391,220.00	\$ 2,391,220.00
800002	Capital Replacement	\$ 18,251.99	\$ 20,155.58	\$ 500,000.00	\$ 479,844.42
800003	Public Health	\$ -	\$ -	\$ 500,000.00	\$ 500,000.00
800004	Contingency	\$ 15,600.00	\$ 15,600.00	\$ 25,000.00	\$ 9,400.00



	July Balance	August Balance
Investment Accounts		
800005	LAIF (Public Health & Working Capital) \$ 151,234.96	\$ 1,501,234.96
	OPEB Fund \$ 4,242,992.77	\$ 4,252,402.41
800006	VCJPA Contingency \$ 50,000.00	\$ 334,557.00

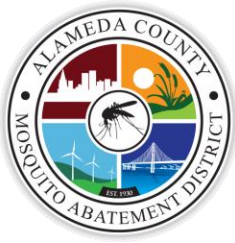


Checking accounts	July Balance	August Expenditures	Deposits ¹	August Balance
Bank of America (Payroll Account)				\$ 131,146.28
Bank of The West (Transfer account)				\$ 60,100.00
Alameda County (General Fund)	\$ 4,967,039.78	\$ 1,693,639.41	\$ (203,243.33)	\$ 3,497,400.11



Transfers			
County fund to LAIF	\$ 1,350,000.00		
ACH Transfers		\$ 20,756.41	

1- Deposits from the County



23187 Connecticut Street
Hayward, CA 94545

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

acmad@mosquitoes.org

Committee Assignments for 2017

Board of Trustees

President

Kathy Narum

Pleasanton

Vice-President

Elisa Marquez

Hayward

Secretary

Wendi Poulson

Alameda

Humberto Izquierdo

County at Large

P. Robert Beatty

Berkeley

Betsy Cooley

Emeryville

Richard Guarienti

Dublin

George Young

Fremont

James N. Doggett

Livermore

Eric Hentschke

Newark

Jan O. Washburn

Oakland

Robert Dickinson

Piedmont

Ed Hernandez

San Leandro

Ronald E. Quinn

Union City

Ryan Clausnitzer

District Manager

Financial Committee

Purpose: The Finance Committee is a standing committee tasked with reviewing the annual budget, assessing the District's long term capital needs, making recommendations for designating reserves and evaluating the allocation of the OPEB Trust.

Membership: Trustees Cooley, Dickinson, Narum, Quinn, and Young

Policy Committee

Purpose: The Policy Committee evaluates the District's Policies and updates and adds policies as needed. All District policies must be approved by a majority of the Board.

Membership: Trustees Doggett, Guarienti, and Marquez

Manager Evaluation Committee

Purpose: The primary task of this committee is to review the performance of the District Manager, annually by the June board meeting. Compensation changes and contract adjustments will be based on this evaluation.

Membership: Past, present, and future Board Presidents include Trustees Guarienti, Narum, and Marquez

West Nile Virus (Public Health Emergency) Committee

Purpose: To meet with the District Manager &/or Staff to review District surveillance and treatment information pertaining to current or emerging public health threats and make recommendations to the board if necessary.

Membership: Washburn, Doggett, Poulson

Status: This committee only meets on an as needed basis.

Personnel Committee

Purpose: To meet as needed if personnel issues rise to the level of an appeal to the board.

Membership: Board Officers –Narum, Marquez, and Poulson are members.

Status: This committee only meets on an as needed basis.

Sustainability Committee

Purpose: To evaluate areas the District can improve its sustainability such as solar energy, refuse reduction, and fuel efficiency.

Membership: Izquierdo, Marquez, Poulson, Washburn

Status: This committee only meets on an as needed basis.

Strategic Planning Committee

Purpose: *To assess the future opportunities and challenges facing the District, the committee will review the current Mission and Vision and develop a five-year strategic plan that aligns the Mission and Vision with forecasted challenges in finance, technology, infrastructure, regulation, climate change and personnel.*

Membership:

Status: This committee only meets on an as needed basis.



Special Districts: Improving Oversight & Transparency

Report #239, August 2017



Little Hoover Commission

Pedro Nava
Chairman

Sean Varner
Vice Chairman

David Beier

Iveta Brigis

Anthony Cannella
Senator

Joshua LaFarga

Chad Mayes
Assemblymember

Don Perata

Bill Quirk
Assemblymember

Richard Roth
Senator

Janna Sidley

Helen Iris Torres

Former Commissioners Who Served During The Study

Scott Barnett

Jack Flanigan

Sebastian Ridley-Thomas
Assemblymember

Jonathan Shapiro

Commission Staff

Carole D'Elia
Executive Director

Terri Hardy
Deputy Executive Director

Former Commission Staff

Jim Wasserman
Deputy Executive Director

In Memoriam

Matthew Gagnon
Research Analyst

Dedicated to Promoting Economy and Efficiency in California State Government

The Little Hoover Commission, formally known as the Milton Marks "Little Hoover" Commission on California State Government Organization and Economy, is an independent state oversight agency.

By statute, the Commission is a bipartisan board composed of five public members appointed by the governor, four public members appointed by the Legislature, two senators and two assemblymembers.

In creating the Commission in 1962, the Legislature declared its purpose:

...to secure assistance for the Governor and itself in promoting economy, efficiency and improved services in the transaction of the public business in the various departments, agencies and instrumentalities of the executive branch of the state government, and in making the operation of all state departments, agencies and instrumentalities, and all expenditures of public funds, more directly responsive to the wishes of the people as expressed by their elected representatives...

The Commission fulfills this charge by listening to the public, consulting with the experts and conferring with the wise. In the course of its investigations, the Commission typically empanels advisory committees, conducts public hearings and visits government operations in action.

Its conclusions are submitted to the Governor and the Legislature for their consideration. Recommendations often take the form of legislation, which the Commission supports through the legislative process.

Contacting the Commission

All correspondence should be addressed to the Commission Office:

Little Hoover Commission
925 L Street, Suite 805,
Sacramento, CA 95814
(916) 445-2125
littlehoover@lhc.ca.gov

This report is available from the Commission's website at www.lhc.ca.gov.

Letter From The Chair

August 30, 2017



The Honorable Kevin de León
President pro Tempore of the Senate
and members of the Senate

The Honorable Patricia Bates
Senate Minority Leader

The Honorable Anthony Rendon
Speaker of the Assembly
and members of the Assembly

The Honorable Chad Mayes
Assembly Minority Leader

Dear Governor and Members of the Legislature:

California's most prevalent form of government – special districts – is often its least visible. In a year-long review, the Commission looked at how California's more than 2,000 independent special districts provide vital services ranging from fire protection to healthcare, cemeteries to sewers. It wanted to better understand if California taxpayers were well-served through this additional layer of specialized bureaucracy and to analyze whether consolidation or dissolution of some special districts could lead to improved efficiency in governance and operations.

The Commission found no one-size-fits-all answer. The districts are as diverse as the geographic locations they serve and the millions of Californians who support them through taxes and fees. What might provide an appropriate pathway for five small water districts in rural Northern California who want to consolidate but need help sorting out water rights, likely would not make sense for their powerhouse counterparts, the Metropolitan Water District or Santa Clara Valley Water District, who serve millions of customers in Southern California and the Bay Area. And water districts are just one of 29 types of independent special districts ranging from airport districts to veterans memorial districts.

As part of this study, the Commission considered the role of the Legislature, which gave life to this form of local government in 1877 and retains the power to create or dissolve districts and amend the practice acts that guide district activities. As California began its rapid growth and urbanization after World War II, the Legislature realized that decision-making over local government growth was best done by local officials. In 1963, the Legislature and Governor Edmund G. "Pat" Brown created a local mechanism for overseeing local boundary decisions – and formed 58 Local Agency Formation Commissions (LAFCOs). LAFCOs have the authority to initiate special district consolidations or dissolutions.

In 2000, the Legislature expanded the authority of LAFCOs to conduct Municipal Service Reviews. These reviews provide information to guide districts in performance improvement and can serve as a catalyst for LAFCOs to initiate consolidations or dissolutions. Like many great ideas in government, particularly in a state as large and diverse as California, these 58 different commissions are not uniformly effective.

The Commission also used this review to assess the progress of its recommendations from a 2000 report, *Special Districts: Relics of the Past or Resources for the Future?* In that study, the Commission found an expansive government sector, largely invisible, serving constituents who know little about them or how the money they provide is used.

The Commission found some progress but also saw a missed opportunity for special districts – many have a great story to tell. Very rarely are taxpayer dollars so closely tied to services provided in the community. And still people do not seem to know much about these local governments and their locally-elected boards.

As much as the Commission wanted to find a magic bullet to ensure these 2,000 districts were performing efficiently and effectively, it didn't. The LAFCO process may not be working as it could and should in every corner of the state, but special districts remain best served by local decision-making. To that end, the Commission recommends the Legislature curtail its practice of bypassing the local process. Additionally, the Commission offers a number of common-sense recommendations to help LAFCOs exercise their authority. Two ideas have already resulted in legislation, AB 979 (Lackey) and SB 448 (Wieckowski). The Commission recommends the Legislature enact SB 448 and requests the Governor's signature on AB 979 and SB 448. This report also includes a rare recommendation to infuse a small one-time grant fund to pay to initiate the most urgent consolidations or dissolutions, which should lead to taxpayer savings in improved government efficiency.

The Commission heard extensive testimony on reserve funding – a thorny issue first raised in its 2000 report. The State Controller's Office has convened a task force to standardize reporting on reserves, a necessary first step before anyone can assess the adequacy of each district's rainy day fund. The Commission also urges special districts to adopt prudent reserve policies and make these policies public.

The Commission found significant improvements since its last review in the way that districts communicate their activities and finances with their constituents although not every district has a website. All districts should have a website with basic information including how to participate in decision-making and an easy guide to revenue sources and expenditures.

The Commission did not evaluate every type of special district, but it did take a deeper look at one type – healthcare districts. Originally formed in the 1940s to build hospitals where none existed, less than half of the current healthcare districts run hospitals today. But even within healthcare districts, the Commission found significant differences. In rural communities, districts largely continue to fulfill their original mission – providing a hospital that otherwise would not exist. Among healthcare districts no longer operating hospitals, the Commission found some districts assessing local needs and filling a void in preventative healthcare service. But this was not consistent and the Commission suspects that in some locations, LAFCOs should do more to assess whether every healthcare district should continue to operate. To guide this work, an essential step for the Legislature is an update to the 1945 practice act to reflect the modern healthcare landscape.

As part of the vigorous discussion on reserves, special districts were asked how they were planning and using their reserves to adapt to climate change, particularly those districts with large infrastructure investments. Building on its 2014 report, *Governing California Through Climate Change*, the Commission in this report recommends special districts and their associations take more active roles in existing state government process and in sharing best practices.

During its study process, the Commission discussed some rather extreme solutions that generated intense interest. Through a very robust public process, however, the Commission ultimately concluded that local institutions are best served by local decision-making. The important recommendations in this report will lead to improved efficiency. The Commission stands ready to assist.



Pedro Nava
Chair, Little Hoover Commission

Contents

5	Executive Summary	
13	Introduction	
	The Commission’s Study Process	13
16	Background	
	Numbers Rising Nationally, but Declining in California	18
	What Californians Can Find Online About Special Districts	19
	A Brief Recap: The Commission’s 2000 Study and Changes Since	20
23	Appropriate State Oversight	
	It Begins with Local Agency Formation Commissions (LAFCOs)	23
	Dealing with Property Tax Inequities	26
	The Prickly Question of Reserves	28
	Recommendations 1 – 8	29
31	Improving Transparency	
	Improving Transparency on Websites	31
	Low Visibility = Public Engagement Challenges	35
	Recommendations 9 – 11	38
40	What Role for Healthcare Districts?	
	Nearly Half of Districts Still Operate Hospitals	41
	California Healthcare Districts: A Brief Introduction and History	41
	Dissolution Has Proved Itself a Persistent Question	44
	Seeking a New Paradigm for Healthcare Districts	46
	Advisory Meeting: What Makes Healthcare Districts Special? Are They?	47
	How to Avoid Redundancies in Services Provided by Counties and Special Districts	47
	Making Healthcare Districts Better	47
	Start with One Thing (and Share it)	48
	What Should LAFCOs Decide about Healthcare Districts?	49
	Recommendations 12 – 14	49

Contents

51 Readyng California for Climate Change

As Imported Water Dwindles, a Climate-Driven Rush to New Sources	54
The Rancho California Water District (Riverside County)	55
The East Bay Municipal Utility District (Alameda County)	57
The Wastewater World Already is Complicated; Now Comes Climate Change	58
The East Bay Municipal Utilities District (Wastewater Division)	59
Sanitation Districts of Los Angeles County	60
When Faraway Imported Water Runs Short	60
Humans vs. Wildlife: The Regulatory Conflicts of Too Little Water	61
A Rising Ocean and 1,000-Year Storms: What Awaits Flood District Managers?	62
Fresno Metropolitan Flood Control District	62
Santa Clara Valley Water District	63
Recommendations 15 – 20	65

67 Appendices

Appendix A: Public Hearing Witnesses	67
Appendix B: Meeting Participants	68
Appendix C: Cover Photo Credits	70

71 Notes

Executive Summary

Special districts, the workhorses of public service delivery created by the California Legislature during the earliest days of statehood, represent the most common form of local government. They have prevailed through endless upheaval as California morphed from a state of rural open spaces into one of the world's most powerful economic engines and home to nearly 40 million people. Today special districts generate some \$21 billion in annual revenues and employ more than 90,000 local government workers.¹

In 2016 and 2017, the Little Hoover Commission reviewed and analyzed California's 2,071 independent special districts and the State of California's role and responsibility in overseeing them.² The Legislature not only created special districts and enacted the practice acts by which they are governed, but it retained the power to create new districts and also to dissolve them. In the early 1960s, the Legislature had the foresight to develop a local oversight mechanism, Local Agency Formation Commissions (LAFCOs) tasked with bringing more rational planning practices and reining in inappropriate growth by considering local government boundary decisions. LAFCOs have the authority to initiate dissolutions and consolidations of special districts, although ultimately local voters have the final say. The process is slow -- intentionally slow according to some --and occasionally frustrated parties attempt to bypass the local process by taking issues directly to the Legislature. This tension, in part, prompted the Commission to update its 2000 review of special districts to consider whether the local oversight process works as intended or whether a different process or a greater role for the Legislature would be more effective.

The Commission's review broke new ground, but also revisited issues first identified in its May 2000 report, *Special Districts: Relics of the Past or Resources for the Future?* The 2000 report declared that California's expansive special district sector often amounted to a poorly overseen and largely invisible governing sector serving residents who know little about who runs them or

what they pay in taxes to sustain them. The Commission nearly two decades ago questioned the soundness of special districts' financial management and asked if their numbers might be pared back through consolidations. Yet Commissioners also acknowledged in their 2000 analysis that special districts provide Californians valuable services and are "physically closest to their communities." The Commission concluded that despite its range of criticisms, special districts should remain, in the end, local institutions best served by local decision-making.

In its newest review the Commission heard from some who still contend that special districts are ripe for consolidation and represent convoluted, dispersed, under-the-radar government. Frustrated with the local oversight process, various local special district issues percolated up into bills in the 2015-16 legislative session as the Commission began its study, potentially signifying that the current system of oversight fails to work as well as intended.

In this review, the Commission found special districts themselves could do a better job of telling their own story to overcome the stigma that they function as hidden government. During an advisory committee meeting, Chair Pedro Nava encouraged special districts to "tell your story." There are very few government entities in a position to let people know that they work directly for the public and that the taxes and fees they collect fund local services, he said.

In testimony, the Commission also learned that despite the perception that special districts continue to proliferate in California, the number of special districts has declined 5 percent since 1997, while the number nationally increased by 10 percent.³ Thirty-three states have more special districts per capita than California. Despite frequent calls for dissolving or consolidating these local governments, special districts seem to have pluses that render them tolerable to those they govern and able to forestall movements to purge them or fold their work into city and county governments.

The Commission's 2016-2017 review delved into four primary arenas concerning special districts:

- Oversight of special districts, specifically, opportunities to bolster the effectiveness of Local Agency Formation Commissions (LAFCOs).
- The continued need for districts to improve transparency and public engagement.
- The frequently-controversial evolution of California's healthcare special districts, which in the 1940s and 1950s built a far-ranging system of hospitals that are mostly now gone due to a tremendous transformation in healthcare from hospitalization to preventive care.
- The urgency of climate change adaptation in California and the front-line roles that special districts, particularly water, wastewater treatment and flood control districts, play in preparing their communities and defending them from harm.

Toward Higher-Quality Local Control

As in 2000, the Commission held fast to the concept that special districts are essentially local institutions. Whether their individual endeavors are praised or panned, special districts seemingly reflect the wishes of local voters. They also reflect the politics of LAFCOs, unique oversight bodies in each county with authority to judge their performances and recommend whether they should continue to exist. The Commission again determined that LAFCOs should be the leading voice on the status of special districts in California – and that they need more tools to do the job well.

Commissioners perplexed by the seemingly slow progress in dissolutions and consolidations at one point during the study asked if a lack of money prevented LAFCOs and special districts from initiating consolidations or conducting the mandated Municipal Service Reviews that can identify opportunities for improved efficiency in service delivery. A chorus of stakeholders suggested a small, one-time infusion of grant funding, tied to specified outcomes to ultimately improve efficiency and save taxpayer dollars, was indeed warranted. They also called for various statutory changes that could bolster the effectiveness of LAFCOs.

Clearly, special districts can be improved. Given the routine front-line services they provide, the historic climate challenges these districts face in keeping California stable, as well as the need to provide the best possible healthcare to millions of residents, LAFCOs and the state have obligations to see that they succeed. To that end, the Commission offers 20 recommendations to guide the Legislature and Governor going forward. The first eight of those recommendations address the basic structure and governing issues revolving around special districts:

Recommendation 1: The Legislature and the Governor should curtail a growing practice of enacting bills to override LAFCO deliberative processes and decide local issues regarding special district boundaries and operations.

The Legislature and Governor have reason to be frustrated with slow and deliberative LAFCO processes. But these are local institutions of city, county and special district members often better attuned to local politics than those in the State Capitol. Exemptions where the Legislature gets involved should be few, and in special cases where the local governing elites are so intransigent or negligent – or so beholden to entrenched power structures – that some higher form of political authority is necessary.

Recommendation 2: The Legislature should provide one-time grant funding to pay for specified LAFCO activities, to incentivize LAFCOs or smaller special districts to develop and implement dissolution or consolidation plans with timelines for expected outcomes. Funding should be tied to process completion and results, including enforcement authority for corrective action and consolidation.

The Commission rarely recommends additional funding as a solution. However, a small one-time infusion of \$1 million to \$3 million in grant funding potentially could save California taxpayers additional money if it leads to streamlined local government and improved efficiency in service delivery. This funding could provide an incentive for LAFCOs or smaller districts to start a dissolution or consolidation process. Participants in the Commission's public process suggested the Strategic Growth Council or Department of Conservation could administer this one-time funding.

Recommendation 3: The Legislature should enact and the Governor should sign SB 448 (Wieckowski) which would provide LAFCOs the statutory authority to conduct reviews of inactive districts and to dissolve them without the action being subject to protest and a costly election process.

There has been no formal review to determine the number of inactive special districts – those that hold no meetings and conduct no public business. Rough estimates gauge the number to be in the dozens. Simplifying the LAFCOs' legal dissolution process would represent a significant step toward trimming district rolls in California. The Commission supports SB 448 and encourages the Legislature to enact the measure and for the Governor to sign the bill.

Recommendation 4: The Governor should sign AB 979 (Lackey), co-sponsored by the California Special Districts Association and the California Association of Local Agency Formation Commissions. The bill would strengthen LAFCOs by easing a process to add special district representatives to the 28 county LAFCOs where districts have no voice.

The Cortese-Knox-Hertzberg Reorganization Act of 2000 (AB 2838, Hertzberg) provided the option to add two special district members to county LAFCOs to broaden local governing perspectives. Nearly two decades later, 30 counties have special district representatives on their LAFCOs alongside city council members and county supervisors. This change provides LAFCOs a more diverse decision-making foundation and stronger finances. But 28 counties, mostly in rural California have not added special district representatives to their LAFCO governing boards, citing scarce resources. Presently, a majority of a county's special districts must pass individual resolutions within one year supporting a change. This has repeatedly proved itself a formidable obstacle to broadening the outlook of local LAFCOs. AB 979 (Lackey) would allow a simple one-time election process where districts could easily – and simultaneously – decide the question.

Recommendation 5: The Legislature should adopt legislation to give LAFCO members fixed terms, to ease political pressures in controversial votes and enhance the independence of LAFCOs.

The California Association of Local Agency Formation Commissions (CALAFCO) testified on August 25, 2016, that

individual LAFCO members are expected to exercise their independent judgment on LAFCO issues rather than simply represent the interests of their appointing authority. But this is easier said than done when representatives serve on an at-will basis. The CALAFCO hearing witness said unpopular votes have resulted in LAFCO board members being removed from their positions. Fixed terms would allow voting members to more freely exercise the appropriate independence in decision-making.

Recommendation 6: The Legislature should convene an advisory committee to review the protest process for consolidations and dissolutions of special districts and to develop legislation to simplify and create consistency in the process.

Complicated and inconsistent processes potentially impact a LAFCO's ability to initiate a dissolution or consolidation of a district. If 10 percent of district constituents protest a LAFCO's proposed special district consolidation, a public vote is required. If a special district initiates the consolidation, then a public vote is required if 25 percent of the affected constituents protest. Additionally, the LAFCO must pay for all costs for studies and elections if it initiates a consolidation proposal, whereas the district pays these costs if it proposes or requests the consolidation. Various participants in the Commission's public process cautioned against setting yet another arbitrary threshold and advised the issue warranted further study before proposing legislative changes. They called for more consistency in the process.

Recommendation 7: The Legislature should require every special district to have a published policy for reserve funds, including the size and purpose of reserves and how they are invested.

The Commission heard a great deal about the need for adequate reserves, particularly from special districts with large infrastructure investments. The Commission also heard concerns that reserves were too large. To better articulate the need for and the size of reserves, special districts should adopt policies for reserve funds and make these policies easily available to the public.

Recommendation 8: The State Controller's Office should standardize definitions of special district financial reserves for state reporting purposes.

Presently, it is difficult to assess actual reserve levels held by districts that define their numbers one way and the State Controller's Office which defines them another way. The State Controller's Office is working to standardize numbers following a year-long consultation with a task force of cities, counties and special districts. To improve transparency on reserves, a subject that still eludes effective public scrutiny, they should push this project to the finish line as a high priority.

Improving Transparency and Public Involvement

Because there are thousands of special districts in California, performing tasks as varied as managing water supply to managing rural cemeteries, the public has little practical ability to ascertain the functionality of special districts, including the scope of services these local districts provide, their funding sources, the use of such funds and their governance structure. Although publicly elected boards manage independent special districts, constituents lack adequate resources to identify their local districts much less the board members who collect and spend their money.

The Commission saw a number of opportunities for special districts to do a better job communicating with the public, primarily through improvements to district websites and more clearly articulating financing policies, including adopting and making publicly available fund reserve policies. Existing law requires special districts with a website to post meeting agendas and to post or provide links to compensation reports and financial transaction reports that are required to be submitted to the State Controller's Office. The State Controller's Office – despite having a software platform from the late 1990s – attempts to make all the information it receives as accessible as possible.

Many special districts already utilize their websites to effectively communicate with their constituents and voluntarily follow the nonprofit Special District Leadership Foundation's transparency guidelines and receive the foundation's District Transparency Certificate of Excellence. But often, these districts are the exception and not the rule. The Commission makes three recommendations to improve special district transparency and to better engage the public served by the districts:

Recommendation 9: The Legislature should require that every special district have a website.

Key components should include:

- ***Name, location, contact information***
- ***Services provided***
- ***Governance structure of the district, including election information and the process for constituents to run for board positions***
- ***Compensation details – total staff compensation, including salary, pensions and benefits, or a link to this information on the State Controller's website***
- ***Budget (including annual revenues and the sources of such revenues, including without limitation, fees, property taxes and other assessments, bond debt, expenditures and reserve amounts)***
- ***Reserve fund policy***
- ***Geographic area served***
- ***Most recent Municipal Service Review***
- ***Most recent annual financial report provided to the State Controller's Office, or a link to this information on the State Controller's website***
- ***Link to the Local Agency Formation Commission and any state agency providing oversight***

Exemptions should be considered for districts that fall under a determined size based on revenue and/or number of employees. For districts in geographic locations without reliable Internet access, this same information should be available at the local library or other public building open and accessible to the public, until reliable Internet access becomes available statewide.

Building on this recommendation, every LAFCO should have a website that includes a list and links to all of the public agencies within each county service area and a copy of all of the most current Municipal Service Reviews. Many LAFCOs currently provide this information and some go further by providing data on revenues from property taxes

and user fees, debt service and fund balance changes for all the local governments within the service area. At a minimum, a link to each agency would enable the public to better understand the local oversight authority of LAFCOs and who to contact when a problem arises.

Recommendation 10: The State Controller’s Office should disaggregate information provided by independent special districts from dependent districts, nonprofits and joint powers authorities.

Over the course of this study, the Commission utilized data available on the State Controller’s website to attempt to draw general conclusions about independent special districts, such as overall revenues, number of employees and employee compensation. Presently, it is difficult to do this without assistance as information for independent districts is mixed with various other entities.

Recommendation 11: The California Special Districts Association, working with experts in public outreach and engagement, should develop best practices for independent special district outreach to the public on opportunities to serve on boards.

The Commission heard anecdotally that the public does not understand special district governance, does not often participate or attend special district board meetings and often does not know enough about candidates running to fill board positions. Often, the public fails to cast a vote for down-ballot races. Two county registrars provided the Commission information that showed in many instances those who voted for federal or statewide offices did not vote for local government officials at the same rate, whether they were city council positions, special district positions or local school or community college district positions.

What is the Role for Healthcare Districts?

The Commission found in its review that special districts were as diverse as the services provided and the millions of Californians served. To gain deeper insight on one type of local government service provider, the Commission took a closer look at an often-controversial group: healthcare districts that no longer operate hospitals. These entities struggle to explain their relevance within the rapidly evolving healthcare industry,

which emphasizes preventative care over hospitalization. Amid uncertainty about the future of the Affordable Care Act, many of these districts claim they are carving out new roles in preventative care. Yet the Legislature, local grand juries, LAFCOs and healthcare analysts continue to question their relevance and need to exist. Presently, just 37 of 79 California healthcare districts operate 39 hospitals, mostly in rural areas with few competitors or other alternatives – and few suggest the need to dissolve those districts.

Controversy tends to afflict districts in former rural areas that became suburbanized in recent decades and grew into competitive healthcare markets. The 2015-16 legislative session included a rash of legislation that considered whether to force district dissolutions or modify district boundaries – even though those decisions are the responsibility of LAFCOs. Nonetheless, most healthcare districts officials continue to maintain they are more flexible than counties in defining priorities and are pioneering a new era of preventative care under the umbrella of “wellness.” Officials say their districts are misunderstood by critics who lack understanding about how much the healthcare landscape is changing. They also say that local voters generally support their local missions and how they allocate their share of property taxes in the community.

As part of its special districts review, the Commission convened a two-hour advisory committee with experts to shed light on healthcare districts. During the course of the Commission’s study, the Association of Healthcare Districts convened a workgroup to develop recommendations, in part, in response to legislative scrutiny. These recommendations were considered and discussed during the November advisory committee meeting. Participants analyzed whether counties or healthcare districts are best positioned as local and regional healthcare providers and discussed the role of LAFCOs in consolidating, dissolving or steering healthcare districts toward more relevant roles. During the meeting Commissioners also pushed districts to share and adopt best practices and define better metrics to measure what they are accomplishing with their shares of local property taxes. Three Commission recommendations arose from the discussion as well as numerous interviews with experts during the study:

Recommendation 12: The Legislature should update the 1945 legislative “practice acts” that enabled voters to create local hospital districts, renamed healthcare districts in the early 1990s.

Experts widely agree that statutory language in the acts no longer reflects the evolution of healthcare during the past seventy years, particularly the shift from hospital-based healthcare to modern preventive care models.

Recommendation 13: The Legislature, which has been increasingly inclined to override local LAFCO processes and authority to press changes on healthcare districts, should defer these decisions to LAFCOs.

LAFCOs have shown successes in shaping the healthcare district landscape and should be the primary driver of change. Given the controversies over healthcare districts, the California Association of Local Agency Formation Commissions and LAFCOs should be at the forefront of studying the relevance of healthcare districts, potential consolidations and dissolutions of districts. To repeat a theme of Recommendation 1, the Legislature should retain its authority to dissolve healthcare districts or modify boundaries, but this authority should be limited to cases in which local political elites are so intransigent or negligent – or so beholden to local power structures – that some form of higher political authority is deemed necessary.

Recommendation 14: The Association of California Healthcare Districts and its member districts should step up efforts to define and share best practices among themselves.

A Commission advisory committee meeting discussion clearly showed that not enough thought or interest has been assigned to sharing what works best in rural, suburban and urban areas among members. The association should formally survey its members and collectively define their leading best practices and models for healthcare, as well as guidelines to improve the impacts of grantmaking in communities.

Front-line Roles for Climate Change Adaptation

At the Commission’s August 25, 2016, hearing, Chair Pedro Nava asked a simple question of special district attendees vigorously defending their need for robust reserve funds:

How are they assessing future climate change impacts when amassing reserves for long-range infrastructure spending? That question, rooted in the Commission’s 2014 climate adaptation report *Governing California Through Climate Change*, became the genesis of a deeper exploration of awareness of and preparations for climate change among special districts. In an October 27, 2016, hearing focused on special districts efforts to adapt to climate change, the Commission learned that:

- Special districts, even while vastly outnumbering cities and counties in California, have generally not participated at the levels of cities and counties in the state’s emerging climate adaptation information gathering and strategizing. Often that is because they lack land-use authority. Nonetheless, it is critical that their experienced voices be at the table.
- Many larger infrastructure-intensive water, wastewater and flood control districts stand at the forefront nationally in preparing for the varying, changing precipitation patterns – too much or too little water – at the heart of anticipated climate change impacts.

The Commission found it encouraging that many special districts are reducing the need for imported water by diversifying supplies and producing vastly more recycled water. Districts also are steering more stormwater runoff in wet years into groundwater recharge basins for use in dry years. The actions that all agencies must eventually take are already being done by some. The Commission agreed that these leading-edge actions and infrastructure spending strategies represent models for other districts to follow. Accordingly, the Commission makes six recommendations focused on climate change adaptation:

Recommendation 15: The Legislature should place a requirement that special districts with infrastructure subject to the effects of climate change should formally consider long-term needs for adaptation in capital infrastructure plans, master plans and other relevant documents.

Most special districts, especially the legions of small districts throughout California, have their hands full meeting their daily responsibilities. Many have few resources and little staff time to consider long-range issues, particularly those with the heavy uncertainty of

climate change adaptation. Making climate change a consideration in developing capital infrastructure plans and other relevant planning documents would formally and legally elevate issues of adaptation and mitigation, especially for districts where immediate concerns make it too easy to disregard the future.

Recommendation 16: The California Special Districts Association (CSDA), in conjunction with its member districts, should document and share climate adaptation experiences with the Integrated Climate Adaptation and Resilience Program’s adaptation information clearinghouse being established within the Governor’s Office of Planning and Research (OPR). Similarly, CSDA and member districts should step up engagement in the state’s current Fourth Assessment of climate threats, a state research project designed to support the implementation of local adaptation activities. The CSDA also should promote climate adaptation information sharing among its members to help districts with fewer resources plan for climate impacts and take actions.

The OPR clearinghouse promises to be the definitive source of climate adaptation planning information for local governments throughout California. At the Commission’s October 27, 2016, hearing, an OPR representative invited more district participation in state climate adaptation processes. It is critical that special districts and their associations assume a larger participatory role – both within state government and among their memberships – to expand the knowledge base for local governments statewide.

Recommendation 17: The state should conduct a study – by either a university or an appropriate state department – to assess the effect of requiring real estate transactions to trigger an inspection of sewer lines on the property and require repairs if broken.

The responsibility to safeguard California and adequately adapt to climate change impacts falls on every resident of California. This begins at home with maintenance and upgrading of aging sewer laterals. Requiring inspections and repairs during individual property transactions is an optimum way to slowly rebuild a region’s collective wastewater infrastructure in the face of climate change. At the community level, repairs will help prevent excess stormwater during major climate events from overwhelming wastewater systems and triggering sewage

spills into public waterways. The Oakland-based East Bay Municipal Utility District has instituted an ordinance that requires property owners to have their private sewer laterals inspected if they buy or sell a property, build or remodel or increase the size of their water meter. If the lateral is found to be leaking or damaged, it must be repaired or replaced. The state should consider implementing this policy statewide.

Recommendation 18: State regulatory agencies should explore the beginnings of a new regulatory framework that incorporates adaptable baselines when defining a status quo as climate impacts mount.

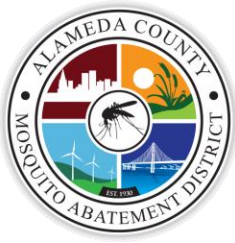
With climate change what has happened historically will often be of little help in guiding regulatory actions. State regulations designed to preserve geographical or natural conditions that are no longer possible or no longer exist already are creating problems for special districts. Wastewater agencies, for example, face conflicting regulations as they divert more wastewater flows to water recycling for human needs and less to streams historically home to wildlife that may or may not continue to live there as the climate changes. While it is not easy for regulators to work with moving targets or baselines, climate change is an entirely new kind of status quo that requires an entirely new approach to regulation.

Recommendation 19: The California Special Districts Association, and special districts, as some of the closest-to-the-ground local governments in California, should step up public engagement on climate adaptation, and inform and support people and businesses to take actions that increase their individual and community-wide defenses.

Special districts are uniquely suited to communicate with and help prepare millions of Californians for the impacts of climate change. Nearly all have public affairs representatives increasingly skilled at reaching residents through newsletters, social media and public forums. District staff grapple constantly with new ways to increase their visibility. Many will find they can build powerful new levels of public trust by helping to prepare their communities for the uncertainty ahead.

Recommendation 20: The California Special Districts Association and special districts should lead efforts to seek and form regional partnerships to maximize climate adaptation resources and benefits.

Water, wastewater and flood control districts are already bringing numerous agencies to the table to pool money, brainpower and resources for big regional projects. The East Bay Municipal Utility District has arrangements with many Bay Area and Central Valley water agencies to identify and steer water to where it is most needed for routine demands and emergencies alike. The Metropolitan Water District and Sanitation Districts of Los Angeles County also increasingly pool their joint resources to steer more recycled water to groundwater recharge basins for dry years. Likewise, the Santa Clara Valley Water district and other state and federal agencies are collectively planning and funding 18 miles of levees to protect the region from sea level rise. These partnerships among special districts and other government agencies clearly hint at what will be increasingly necessary as climate impacts begin to mount.



23187 Connecticut Street
Hayward, CA 94545

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

acmad@mosquitoes.org

MONTHLY STAFF REPORT – August 2017

Board of Trustees

President

Kathy Narum

Pleasanton

Vice-President

Elisa Marquez

Hayward

Secretary

Wendi Poulson

Alameda

Humberto Izquierdo

County at Large

P. Robert Beatty

Berkeley

Richard Guarienti

Dublin

Betsy Cooley

Emeryville

George Young

Fremont

James N. Doggett

Livermore

Eric Hentschke

Newark

vacant

Oakland

Robert Dickinson

Piedmont

Ed Hernandez

San Leandro

Ronald E. Quinn

Union City

Ryan Clausnitzer

District Manager

1. OPERATIONS

After months of planning, weekly meetings, and field tests, MapVision, ACMAD's new database was officially launched in August. Field operations staff began to use the data base via their tablets and desk-top computers to enter all daily activity. Fine-tuning of the database will continue for some time to come, but initial results and feedback are very positive. As with any new method of collecting and recording data, there are hurdles to overcome but the entire operations staff has done a great job in helping to build, test, and ultimately utilize this data base.

Inspections and treatments of unmaintained swimming pools, gathered from the two aerial surveys, continued through August. Close to 350 pools were inspected by operations staff this month alone. The goal is to have the last of the pools from the fly-over inspected by the end of September. Unmaintained swimming pools continue to be significant mosquito breeding sources for *Culex tarsalis*, *Culiseta incidens*, and *Culex pipiens*. Inspections and treatments of these pools can have a significant impact on the numbers of adult mosquitoes. This is especially true in areas with dense housing as these types of neighborhoods usually have a limited amount of mosquito breeding sources this time of year such as catch basins, storm drains, canals, and backyard sources including unmaintained pools. Monitoring and treating these sources greatly lowers the numbers of both *Culex pipiens* and *Cx. tarsalis*, two of our main species of concern for the transmission of West Nile virus.

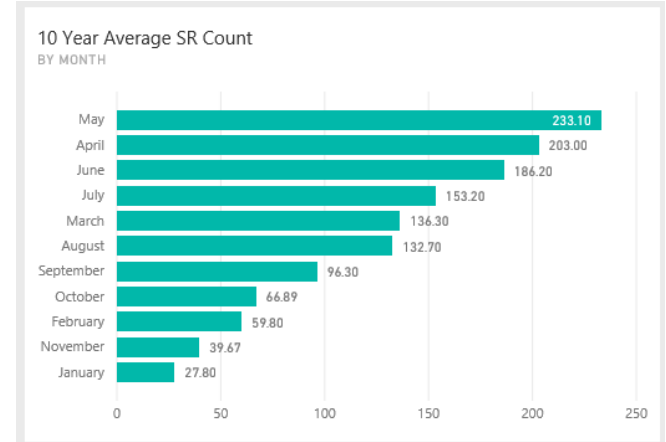
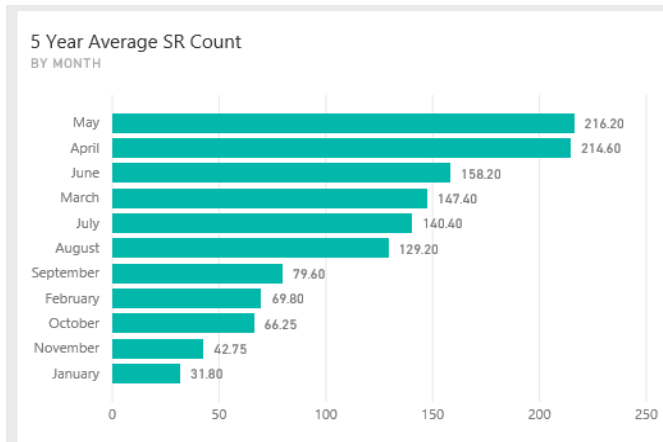
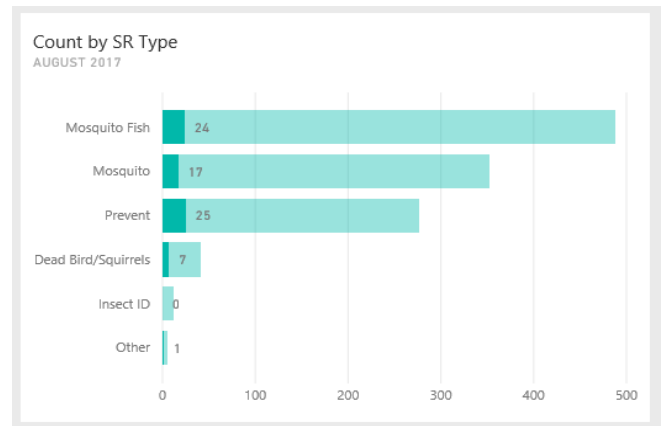
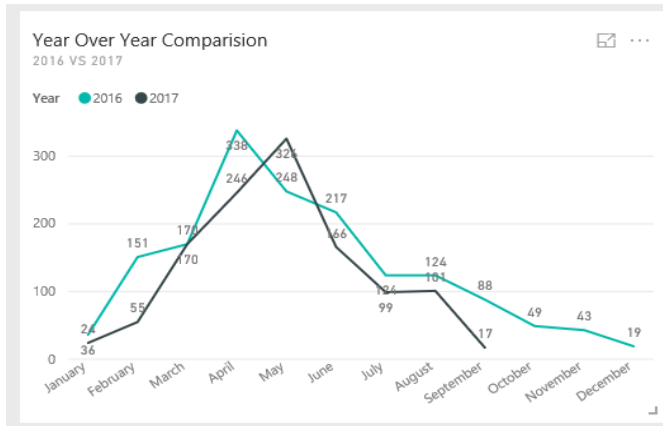
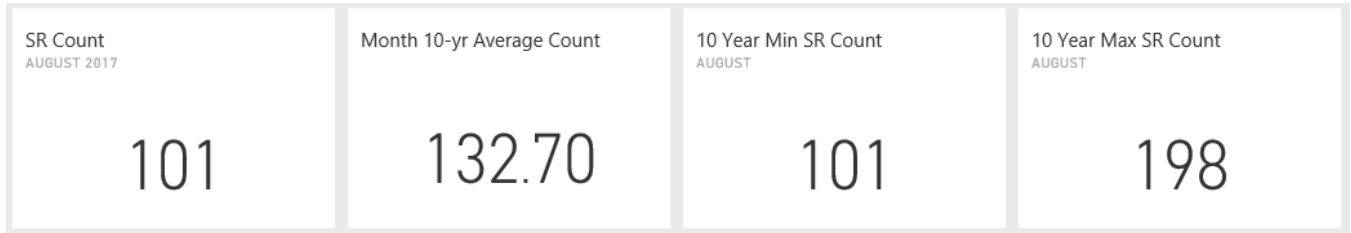
The flow of most creeks and canals has slowed down significantly and field staff are inspecting and treating these sources on a regular basis, primarily for *Cx. tarsalis*, but *Cs. Incidens*, as well as *Cx. pipiens*, can also be present in these mosquito source types. Many fresh water marsh sources that were fully filled during the significant rains from earlier in the year have dried down.

Several days of significant high tides during August led to impounding of tidal water in many mosquito breeding sources in Alameda County. Most of the operations staff spent several days treating tidal sources in the southern end of the county for *Aedes dorsalis* larvae. Based on trap and service request data, these treatments proved to be highly effective in preventing the emergence of *Ae. dorsalis* adults. The high larval counts in these sources, all of which need to be treated by hand, necessitated a team effort to accomplish the treatments in a timely fashion. *Ae. dorsalis* larvae can mature from egg to adult in a matter of days especially with high temperatures. These, and other tidal sources, will be monitored after high tide events for the next few months as well. Typically, *Ae. dorsalis* becomes inactive in the winter months, becoming active again in the spring

Joseph Huston
Field Operations Supervisor

A. Operational Data

1. Service Requests



2. Other

Number of all injuries during 2017 = 2

3. Activity Report

Vacation Hours Used	286
Sick Hours Used	23
Workers Comp.	0
ETO Used	13
Total Leave	322
ETO Hours Accrued	28

2. LAB

Summary

- No additional detection of arboviruses in birds during August 2017 (one crow in July 2017 was found to contain West Nile virus (WNV)). No mosquitoes have been found to contain WNV during 2017.
- No invasive *Aedes* mosquitoes detected in Alameda County during 2017.
- Highest mosquito abundance occurred in cities in the southern region of the county that border the San Francisco Bay. The West Nile virus vectors *Culex erythrothorax* predominated in CO₂ traps placed in Union City and Fremont, *Culex tarsalis* in Hayward, and *Culex pipiens* in San Leandro and Oakland (Figure 1). Atypically low numbers of mosquitoes were collected in Dublin, Pleasanton and Livermore during August 2017
- Mosquito abundance for August 2017 was 3-fold higher than the prior month as measured using CO₂ traps and New Jersey Light Traps (Figure 2), which can be attributed to increased numbers of *Cx. erythrothorax* in the marshes adjacent to Union City (Figure 1).
- Invasive *Aedes* trap network consisting of 660 oviposition bucket traps was monitored during the month of August. Although *Aedes* eggs were collected in the traps, mass spectrometry analysis of the eggs by the DART facility at UC Davis showed them to be *Aedes sierrensis*.
- A comparison of synthetic lures for attracting invasive *Aedes* mosquitoes to Mosquito Magnet Traps in collaboration with Madera County MVCD showed a significantly greater number of *Aedes aegypti* mosquitoes collected by traps supplemented with LureX3 and BG-Lure (Figure 3).

Mosquito Abundance Monitoring

- **Native mosquito abundance monitoring.**
 - *CO₂ Traps.* Geographically, the highest number of mosquitoes for the month of June was observed in cities in the southern region of the county that are adjacent to the San Francisco Bay (Figure 1). Cities with highest abundance of mosquitoes that can transmit West Nile virus (WNV) were: Hayward (*Culex tarsalis*), Union City (*Culex erythrothorax*), Fremont (*Cx. erythrothorax*) and Livermore (*Culex pipiens*). The high numbers of *Cx. erythrothorax* that were collected from Hayward and Union City were from traps located in marsh habitats that are relatively removed from people. Consequently, the risk of WNV transmission or nuisance biting was low.
 - Across the county, an average of 33.7 mosquitoes were collected per CO₂ trap night (range of 0 – 1200 mosquitoes / trap night; 111 traps). This represents a 3-fold increase in the number of mosquitoes per CO₂ trap night relative to the prior month (July 2017), and is principally due to increased *Cx. erythrothorax* abundance in the marshes adjacent to Union City (Figure 2A). Except for *Cx. erythrothorax*, overall mosquito abundance for August 2017 as measured using CO₂ traps was similar to or lower than the two prior years (2015 and 2016; Figure 2A).
 - New Jersey Light traps (NJLT) are monitored each week of the year. During August, an average of 3.4 mosquitoes were captured per NJLT trap night (n = 455 trap nights; range of 0 – 190 mosquitoes per trap). The number of mosquitoes collected in NJLT for August 2017 was similar to or lower than prior years, with the exception of *Cx. erythrothorax* for which abundance was slightly increased relative to prior years (Figure 2B).
- **Invasive *Aedes* mosquito monitoring.** The Lab has continued to monitor for invasive mosquitoes using the invasive *Aedes* trap network. A total of 660 oviposition bucket traps (OBT) were inspected during August, for a total of 16,500 trap nights. *Aedes* eggs collected in the OBT were analyzed using mass spectrometry by the DART facility at UC Davis, and found to be *Aedes*

sierrensis. To date, there have been no detection of invasive *Aedes* mosquitoes collected in any of the invasive *Aedes* traps that have been deployed.

Arbovirus Monitoring

- **WNV in birds and mosquitoes.** No WNV-positive birds or mosquitoes were detected in Alameda County for the month of August (one WNV-positive crow was detected in during July 2017). For the year 2017, no mosquitoes have been found to contain WNV, SLE or WEE.

Research

- **Mosquito Magnet Traps supplemented with synthetic lures.** In collaboration with Madera County MVCD, during August 2017, we evaluated the efficacy of synthetic chemical lures for attracting adult invasive *Aedes* mosquitoes to Mosquito Magnet Traps (MMT). The MMT uses propane to supply power to the trap and generate heat, CO₂, and water vapor that attracts mosquitoes. ACMAD staff regularly use the MMT to suppress *Aedes sierrensis* populations. We hypothesize that the trap may be effective for controlling invasive *Aedes* mosquitoes as well. To test this hypothesis, MMT that were supplemented with the Lurex3™ (Woodstream Corporation, USA), BG-Lure (Biogents AG, Germany), R-Octenol Attractant (Woodstream Corporation, USA), or no additional synthetic lure were placed in Madera County, and the traps rotated over two week intervals. Greater than 95 % of the mosquitoes that were collected in the MMT were *Aedes aegypti* (not shown). The number of *Ae. aegypti* mosquitoes that were collected was significantly higher for MMT outfitted with Lurex3™ and BG-Lure attractants relative to those that lacked a lure supplement (Figure 3A). Although the R-Octenol Attractant also significantly increased the number of trapped mosquitoes in MMT relative to those that lacked an attractant supplement, the MMT fitted with Lurex3™ collected 5-fold more mosquitoes (Figure 3A). To determine whether there was a bias in the sex of mosquito collected in the MMT, we evaluated the numbers of male and female mosquitoes collected in each trap treatment. Unexpectedly, similar numbers of male and female *Ae. aegypti* mosquitoes were collected in the MMT, regardless of whether a supplemental synthetic lure attractant was employed (Figure 3A, 3B). The results suggest that Lurex3™ or BG-Lure synthetic attractants substantially improve the efficacy of MMT for suppressing *Ae. aegypti* populations. Because both male and female *Ae. aegypti* are equally attracted to the MMT, biting and mating may be suppressed when MMT with a synthetic chemical lure are deployed. Use of MMT with a synthetic chemical lure may reduce oviposition, and thereby limit the geographic expansion of invasive *Aedes* mosquitoes, should they be introduced into Alameda County. Details of this study will be presented by Dereje Alemayehu, Biological Specialist, during the September meeting of the ACMAD Board of Trustees. Our next study in collaboration with Madera County MVCD is to test the hypothesis that MMT supplemented with the BG-Lure collects greater numbers of invasive *Aedes* mosquitoes relative to BG-Sentinel traps supplemented with the same lure.

Figures

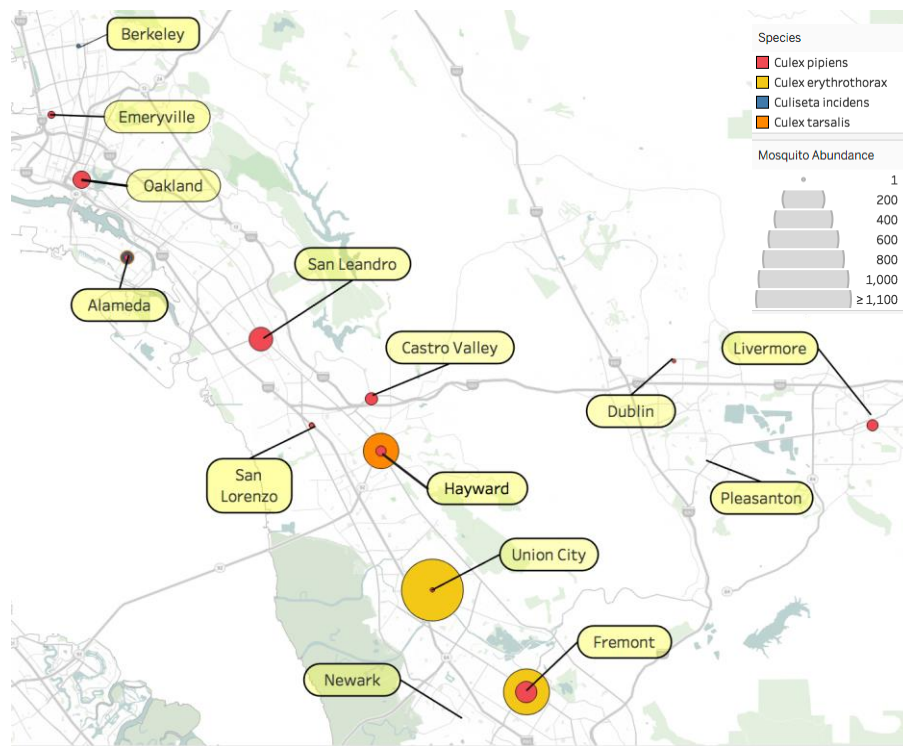
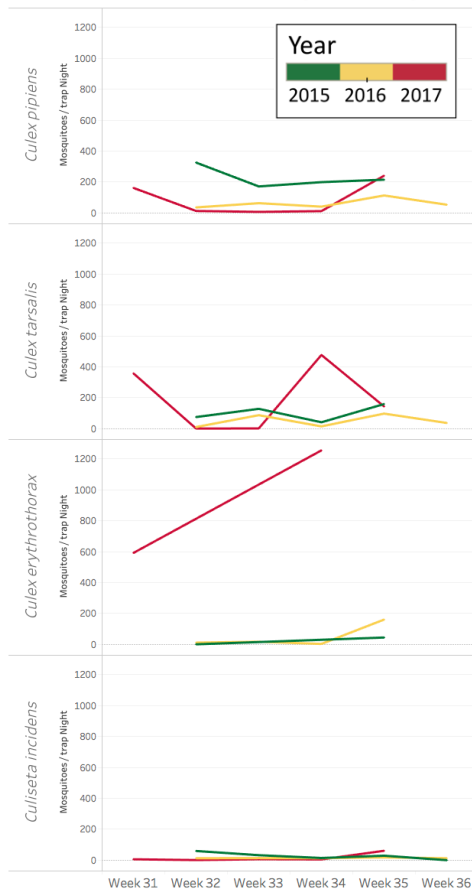


Figure 1. Geospatial distribution of the most prevalent mosquito species collected in each city during the month of August 2017. Larger diameter circles indicate higher number of mosquitoes while color of the nested circles indicate the species.

A

August Mosquito Abundance (CO2 Traps)



B

August Mosquito Abundance (NJLT Traps)

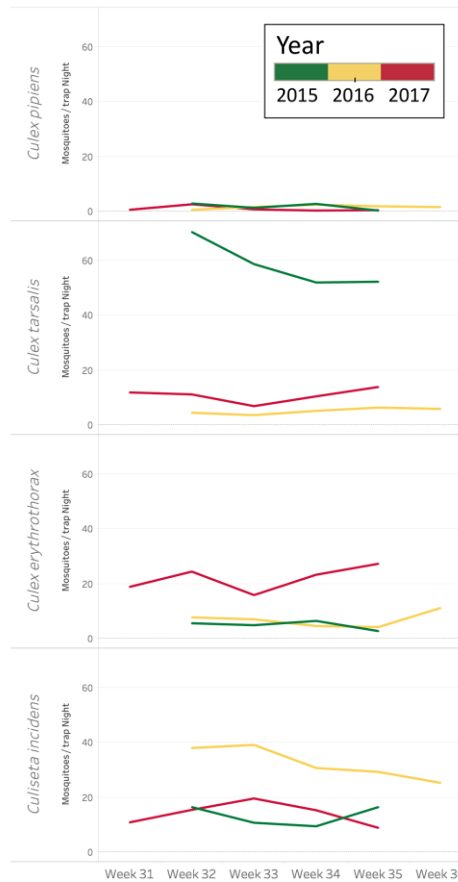


Figure 2. Abundance of the most prevalent mosquito species collected in Alameda County using CDC EVS CO2 traps (A) and NJLT (B) during the month of August for 2015 (green line), 2016 (yellow line), and 2017 (red line).

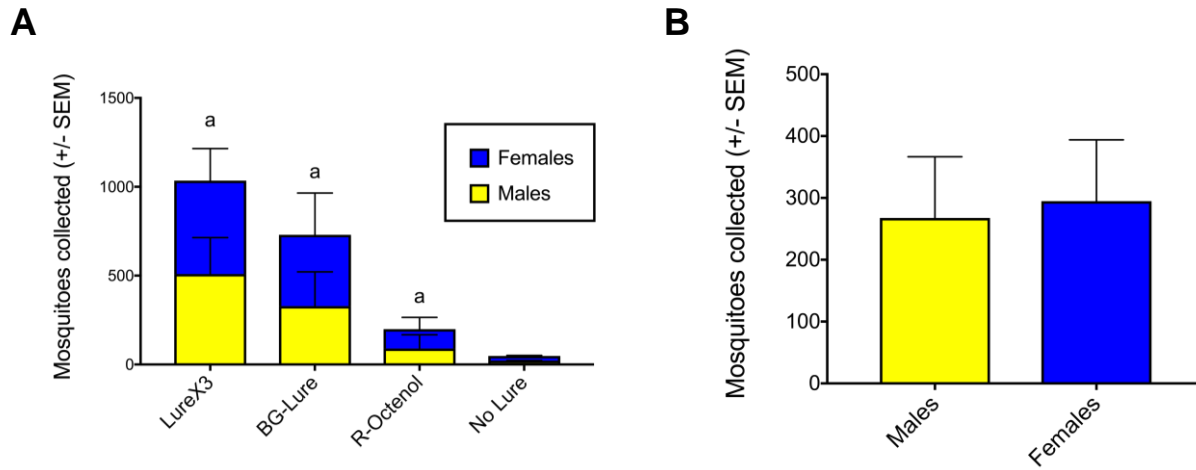


Figure 3. Comparison of Mosquito Magnet Traps (MMT) supplemented with synthetic lures to attract invasive *Aedes aegypti* mosquitoes. (A) Significantly more *Aedes aegypti* mosquitoes were collected in MMT that were supplemented with the synthetic attractants contained in Lurex3, BG-Lure and R-Octenol (^a $P < 0.05$, Unpaired t tests). (B) The MMT collected similar numbers of male and female *Ae. aegypti* mosquitoes, regardless of the supplemental attractant that was employed ($P = 0.797$, Paired t test).

Submitted respectfully by Eric Haas-Stapleton, PhD on September 7, 2017.

3. PUBLIC EDUCATION

A. Upcoming Events

- **Newark Days** (Newark Community Center) – Sunday, September 17th
- **Presentation to Sons in Retirement** (Castro Valley Moose Lodge) – Wednesday, September 27th
- **Alameda County Home & Garden Show** (Alameda County Fairgrounds, Pleasanton) – Friday, October 6th to Sunday, October 8th
- **CSUEB Science Festival** (CSUEB campus, Hayward) – Saturday, October 28th 11am-4pm

B. Google Analytics

	August 2017	July 2017	August 2016
Users	1,401	1,320	1,460
Number of Sessions	1,605	1,490	1,691
Sessions by New Visitors	1,354 (84.4%)	1,274 (85.5%)	1,414 (83.6%)
Pageviews	3,252	2,892	3,125
Average Session Duration	1 minutes 44 seconds	1 minutes 43 seconds	1 minutes 59 seconds
Top Cities	Hayward (6.8%), Los Angeles (5.2%), San Francisco (5.2%), Oakland (4.5%), Not Set (2.9%)	San Francisco (7.4%), Oakland (5.4%), Hayward (3.5%), Los Angeles (3.1%), San Jose (3%)	San Francisco (7.4%), Not Set (6.2%), Hayward (5.7%), Oakland (4.2%), Winamac (2.7%)
Top Pages	Homepage (21.9%), CA Species (18.5%), Mosquito Life Cycle (5.9%), Education (5.1%), Board of Trustees (4%)	CA Species (19.2%), Homepage (17.4%), Mosquitofish Request (8.1%), Education (8%), Report Mosquito Problem (5.4%)	Homepage (22.6%), CA Species (19.2%), Mosquitofish Request (7.5%), Mosquito Life Cycle (7.1%), Education (5.8%)

C. Facebook

	August 2017	July 2017
Total Posts	18	11
Number Reached	960	520
Most Popular	Did you know post on mosquito wing beat patterns	Dead bird press release
Total Number of "Likes"	135	129

D. Twitter

	August 2017	July 2017
Total Tweets	13	14
Tweet Impressions	2,635	4,359
Top Tweet (# Impressions)	Consumer reports insect repellent ratings article (210)	Correction to report that dead bird in Oakland was positive for Zika (469)
Profile Visits	179	162
New Followers (Total Followers)	14 (524)	20 (510)