

ANNUAL REPORT 2020



Coachella Valley Mosquito
& Vector Control District

Coachella Valley Mosquito & Vector Control District

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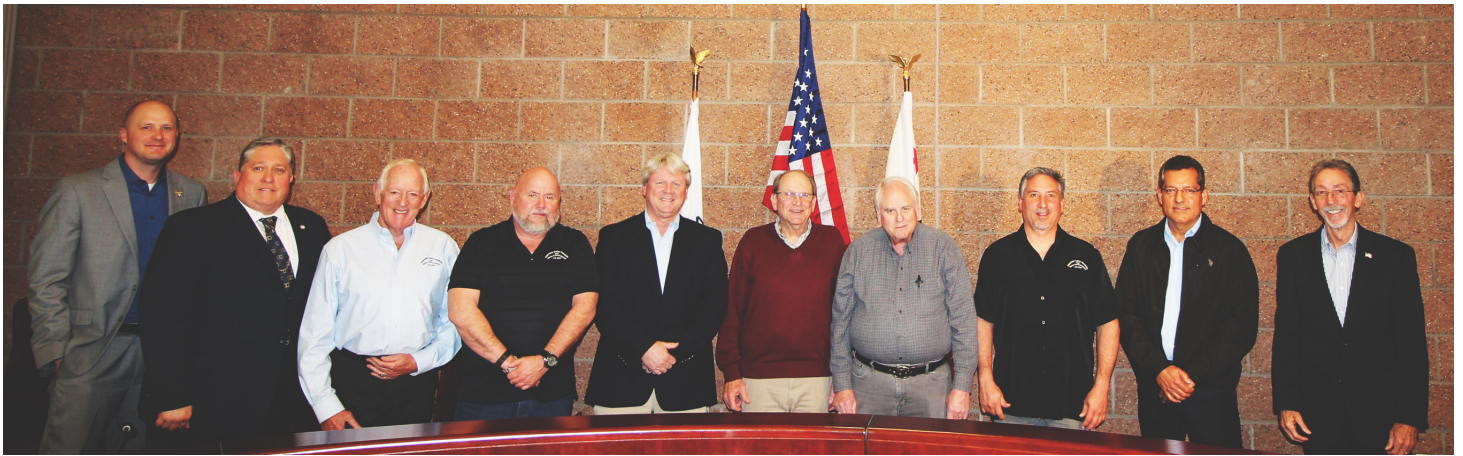
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Left to Right: Isaiah Hagerman, Benjamin Guitron IV, Clive Weightman, Gary Gardner, Franz De Klotz, Doug Walker, Dr. Doug Kunz, Bito Larson, Sergio Espericueta, Doug Hassett (Philip Bautista not pictured).



OUR MISSION

We are dedicated to enhancing the quality of life for our community by providing effective and environmentally sound vector control and vector-borne disease prevention programs.

OUR VISION

To progress towards a future free of vector-borne disease using proven scientific, technical, and educational strategies, which are financially and environmentally sound.



COACHELLA VALLEY MOSQUITO & VECTOR CONTROL DISTRICT

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Dear Stakeholders,

2020 will always be remembered as the year of the great COVID-19 pandemic. As I wrote this same letter in 2019 I would have never imagined the challenges that both our Country and District would face. In 2020, we lost our dedicated Vector Control Technician and friend Fernando Fregoso whose life sadly came to an end on June 11, 2020, due to complications from COVID-19. He will always be remembered by staff and those that loved him.

Despite the ravages of COVID-19 on our lives and the tragic loss of Fernando, the District team demonstrated their dedication and commitment to maintaining the District's essential integrated vector management program. Through collaboration with District leadership and employee unions, we innovated new policies and workflows to ensure the continuity and delivery of services while protecting the health and safety of our staff. We instituted staggered shifts, remote working, and rigorous daily health screening and sanitization procedures. We moved personal interactions to socially distanced interfaces by email, phone, or video conferencing and routinely worked with staff on ways to protect themselves and their families from COVID-19.

With the help of these modifications, the vector management programs continued and Riverside County reported just one human infection of West Nile Virus (WNV). We continued reducing both native and invasive mosquito species populations throughout the Valley, educating our constituency through innovative use of social media, and kept the District in excellent financial health through the adoption of a balanced budget. For the 12th straight year, the District was recognized and awarded excellence and transparency in financial reporting.

The District's Board of Trustees maintained their governance duties in maintaining oversight and providing strategic direction. Migrating from in-person Board Meetings to virtual meetings took great flexibility and dedication but was a success. This enabled the Board to continue their important service to the District and constituency in remaining transparent while conducting the business of the agency, maintaining oversight, and ensuring the resources and policies were in place to allow staff to remain safe while carrying out their essential duties.

It is with great pride that I present to you this 2020 Annual Report. It stands as a testament to the professionalism, determination, and resiliency of our District team who achieved great success in achieving the District's mission while navigating the worst pandemic of our lifetime.

Respectfully,

Jeremy Wittie, MS

General Manager

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IVM PROGRAM 2020

The District’s Integrated Vector Management (IVM) program and response plans provided guidance to District’s staff in effectively targeting areas with evidence of virus-infected mosquitoes for immediate control. Pandemic effects were widely felt by all departments through many challenges and policy changes. Despite those challenges, the work performed by the District’s essential team successfully achieved the District’s mission reducing the risk to public health from mosquito transmitted viruses, such as, West Nile virus (WNV) and Saint Louis encephalitis virus (SLEV).

MOSQUITOES

There are 13 mosquito species detected in the Coachella Valley; two of these *Culex tarsalis* (the western encephalitis mosquito) and *Culex quinquefasciatus* (the southern house mosquito), are considered important vectors of arboviruses (viruses transmitted by mosquitoes and other insects). In 2020, the District detected record levels of SLEV positive virus mosquito samples. The District detected higher numbers of adult mosquitoes for both vector species compared to the 5-year average (**Figures 1 and 2**). As **Table 1** summarizes, there was an increase in trapping and testing over the past four years.

Table 1. Summary of Arbovirus Surveillance in <i>Culex</i> mosquitoes in the Coachella Valley in 2015-2020							
		2015	2016	2017	2018	2019	2020
Female Mosquito Samples (<i>Culex quinquefasciatus</i> and <i>Culex tarsalis</i>)	Samples tested	3,903	2,814	5,148	4,337	6,168	4,940
	# of mosquitoes	112,248	66,893	154,510	140,529	218,342	166,159
	WNV positive	99	19	120	24	513	55
	SLEV positive	37	92	23	56	105	159

Challenges

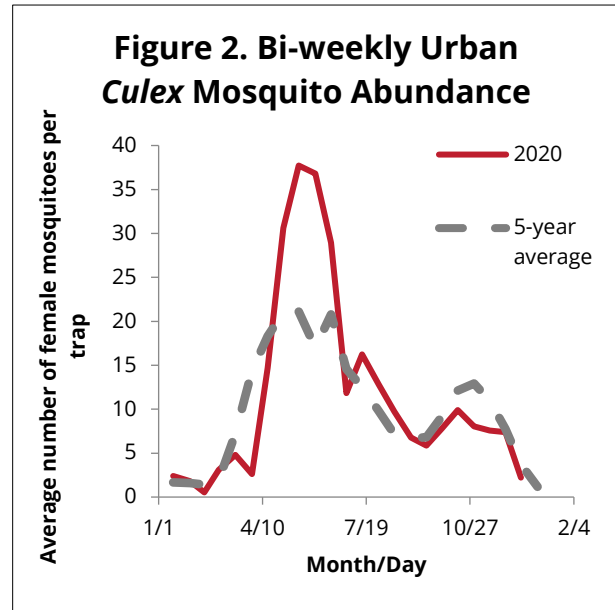
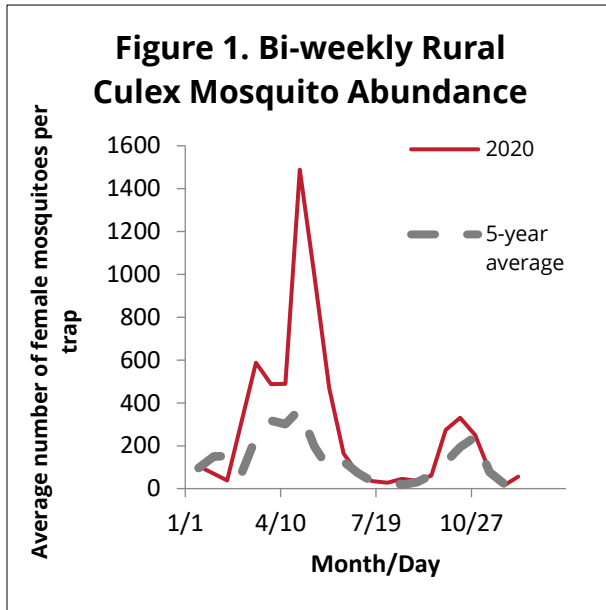
In 2020, the District faced three main challenges. 1) Sustained presence of WNV in Palm Desert, 2) sustained SLEV presence in the Eastern Valley, and 3) the District continued to detect the invasive mosquito, *Aedes aegypti* throughout the Valley - now in all cities. There were no reported cases of people contracting viruses that can be vectored by *Aedes* (such as Zika, dengue, and chikungunya) in the Valley or any local transmission of those viruses in California.

MOSQUITO SURVEILLANCE

The District uses different types of traps to capture adult mosquitoes. Carbon dioxide (CO₂) traps (attracting female mosquitoes looking to bite) and gravid traps (attracting egg-bearing mosquitoes) are used to detect *Culex* mosquitoes. To target *Aedes aegypti* mosquitoes, BG traps attract biting mosquitoes. The mosquitoes collected in the traps are used to provide

population abundance data and for arbovirus surveillance. Mosquito counts from the traps are compared with the average abundance of the five preceding years to help determine the risk levels of arbovirus transmission.

The District’s operational effort to control mosquitoes is in large part directed by the distribution of the mosquito population as determined by our surveillance program. In 2020, our District collected more than 600,000 adult mosquitoes as part of our surveillance efforts.



Rural Zones

The rural habitat of the Coachella Valley includes areas south and east of the incorporated cities comprised of a variety of land types such as farmlands, wetlands, small residential areas, desert, and the Salton Sea shoreline. In 2020, the District set carbon dioxide (CO₂) traps at 61 locations and gravid traps at 5 locations in rural habitats of the District. These traps collected a total of 465,039 mosquitoes. CO₂ traps are effective at capturing most of the mosquitoes in the Coachella Valley including *Cx. tarsalis*, the most abundant and important vector of WNV in rural areas. **Figure 1** displays how the population of the *Cx. tarsalis* and *Cx. quinquefasciatus* varied over 2020 in rural areas compared to the previous 5-year average.

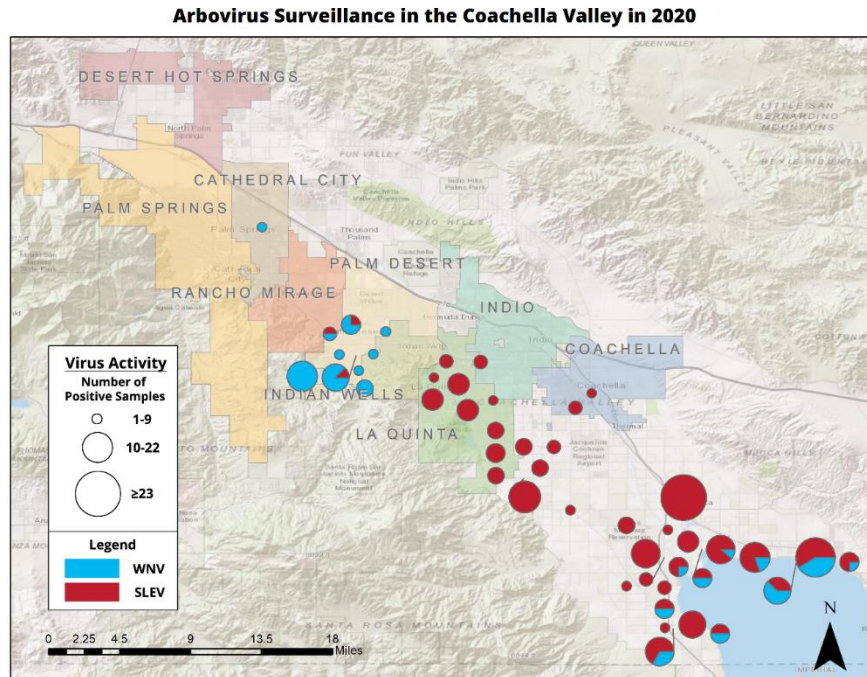
Urban Zones

The urban zones of the District include all the cities in the Valley ranging from Palm Springs and Desert Hot Springs in the north and west to La Quinta, Indio, and Coachella in the south and east. In 2015, the District greatly increased the number of traps and trap sites in the urban areas going from 29 traps at 22 locations to 96 traps at 48 locations. By 2020, the 48 locations remained the same, but the number of traps reduced to 48 for the majority of the year. These urban traps collected a total of 105,263 mosquitoes. Gravid traps are used more heavily in the urban areas than rural areas as they are effective and specific to collecting *Cx.*

quinquefasciatus mosquitoes, the most abundant vector of WNV in urban areas of the District. **Figure 2** displays how the population of the *Cx. tarsalis* and *Cx. quinquefasciatus* varied over 2020 in the urban areas compared to the previous 5-year average.

Arbovirus Distribution

In 2020, WNV was detected most abundantly in the central and eastern ends of the District. In May, mosquito samples were found to be positive in Palm Desert. In June, detections peaked; the majority of detections were in Palm Desert with additional detections in Indian Wells and Cathedral City. Detections continued in July in Palm Desert, with a second active detection period through the summer in Northshore, Thermal, Oasis, and Mecca. The final WNV positive sample of the year was detected in October from Mecca.



SLEV was more abundant in 2020 than it was in 2019. The first positive sample was detected in May in Thermal, one month earlier than the previous year. Samples were then detected routinely in Thermal, Oasis, Northshore, and Mecca, with the peak of activity in August. Positive SLEV samples were also detected in Indio (July); Coachella (August); and La Quinta (May – August). The final SLEV positive sample was detected in October from Northshore.

Riverside County Department of Public Health reported only one human case of WNV infection of residents within the Coachella Valley, which is much lower than was detected in 2019 (8). Overall, there were fewer human cases in Riverside County (11) than in 2019 (14), which is much lower than the numbers in 2015 (138 cases and 6 deaths). During the period of increased virus activity, the risk level for the area was at epidemic conditions. The District responded with elevated surveillance and control efforts with the objective to prevent further amplification of the virus and potential spreading to neighboring areas. ***There were no human cases of SLEV infections detected in Riverside County.***

Historical surveillance data. The District has been entering surveillance data into a statewide database since 2006. Surveillance data, including mosquito abundance, location, species, and virus activity is collected, and trends can be spotted across collaborative districts. District surveillance data collected prior to 2006 is being archived into the Gateway

system so that it can be accessed more easily than in its current handwritten form. A preliminary review of the CO₂ collection data showed that mosquito abundance has increased over the past 20 years around the Salton Sea shoreline. Additional analysis will be conducted to examine mosquito populations and virus trends in an effort to improve our surveillance and control programs.



Comparing Trap Types. There is a new style of trap on the market called the BG-Pro developed by Biogents. It is a modular trap that can be set similarly to a traditional CO₂, CDC, or BG-sentinel trap. The traps used normally at the District are CO₂ and BG-sentinel traps; therefore, this project aimed to compare the BG-Pro trap to the CO₂ trap and BG-sentinel trap in the respective habitats where they are normally used. For 12 weeks, two BG-Pro traps were set up as the CO₂-style and compared with two traditional CO₂ traps in the rural area. Later, two BG-Pro (BG-sentinel-style) and two BG-sentinel traps were set in the urban area for another 12 weeks. Species, sex, and abundance information was collected for both types of trap comparisons. The BG-Pro traps as both a CO₂ and BG-sentinel style were able to collect just as many mosquitoes and number of species as the traditional traps. BG-Pro traps only require one battery to operate as opposed to BG-sentinel traps needing 2 batteries. However, BG-Pro traps took longer to set up and pulling the mosquitoes from the traps was more difficult, especially if there were a lot of mosquitoes.

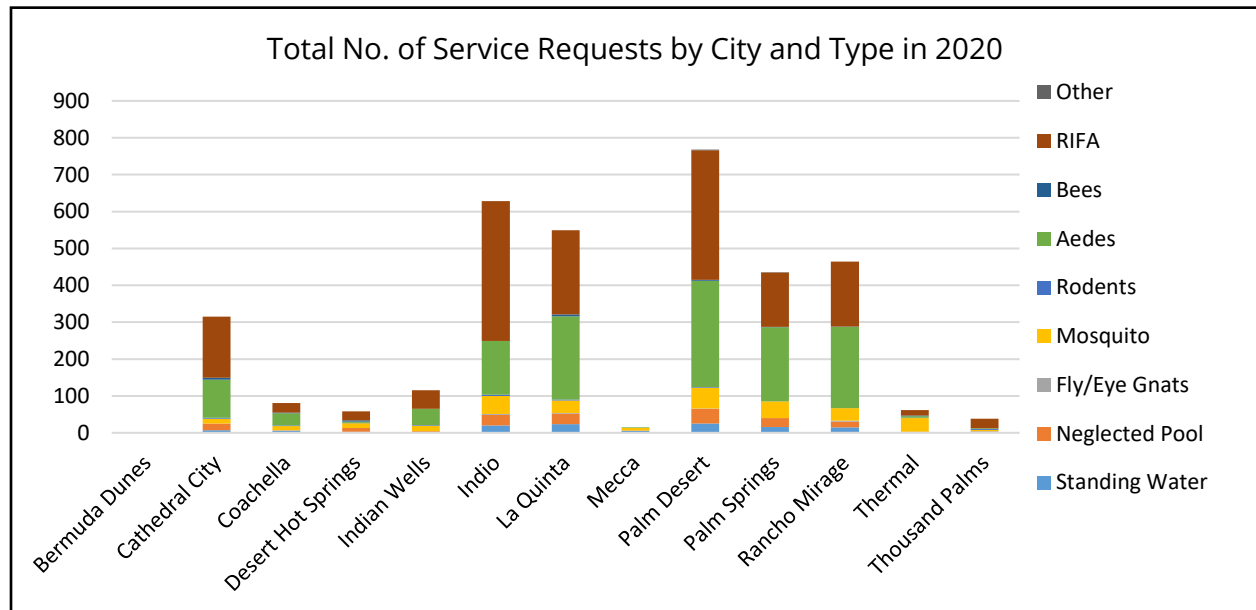
Rearing *Aedes* mosquitoes. Procedures for maintaining an *Aedes aegypti* colony in the District's rearing chambers are being developed to improve our ability to conduct bioassays, application evaluations, and to monitor for resistance. Since *Aedes* mosquitoes typically bite mammals, we have been examining different ways to deliver blood meals and monitoring both egg production and hatch rate. Other factors being explored include water quality and wait time before flooding the eggs.



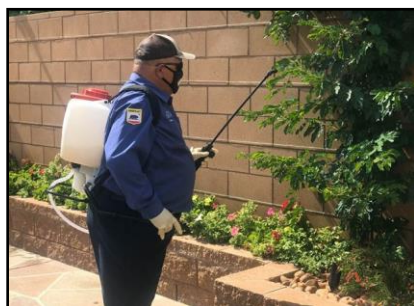
Aedes egg collection from Ovicup.

RESPONSE TO PUBLIC CALLS FOR SERVICE

The District responds to thousands of phone calls and emails from Coachella Valley residents and visitors requesting service or information on Red Imported Fire Ants (RIFA), local and invasive mosquitoes, and other pestiferous species. These service requests were 24% lower than in 2019 due to the impact of the COVID-19 pandemic. The cities with most of the service requests include: Palm Desert (768), Indio (628), La Quinta (549), and Rancho Mirage (464), together equaling 67% of total requests for service in the Coachella Valley.



There are twenty-two full-time vector control technicians in the Operations Department. Each attend to different tasks of the IVM program. Out of those, eighteen technicians are assigned to specific zones throughout the District. They respond to service requests from the public while providing additional vector control services to Coachella Valley cities and unincorporated communities of Riverside County.



Vector Control Technician Fernando Fregoso applies barrier treatment to vegetation.

Two vector control technicians, assisted by five seasonal employees, responded to all service requests arising from the invasive *Aedes aegypti* mosquito species. This team also pro-actively inspected probable detections of *Aedes aegypti*

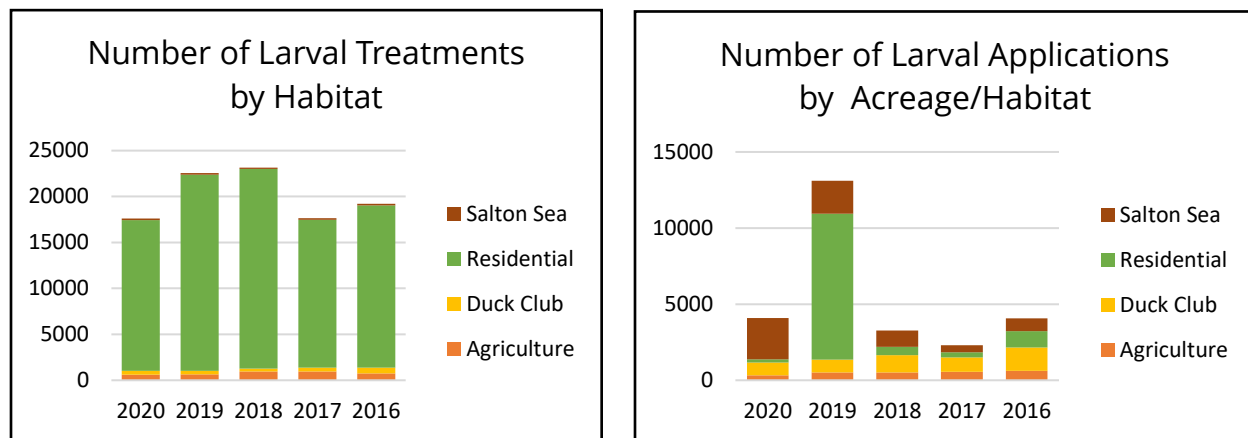
throughout the District.

Two vector control technicians, assisted by five seasonal employees, were assigned to the Red Imported Fire Ant (RIFA) large property surveillance and control program.

MOSQUITO CONTROL

Larval Mosquito Control. Microbial and chemical control are tools used in vector control to reduce or manage mosquito populations to levels that reduce the risk of transmission of mosquito borne pathogens. Larval microbial and chemical control is the most effective method of chemical control by targeting mosquito breeding sources and controlling mosquito larvae before they become biting adults. The total number of larval mosquito source treatments was above 19,000 in 2020. This is less than the number of treatments completed in 2019 due in part to the fact that we had more detections of WNV and SLEV mosquito samples in 2019 than any other year. The majority of these treatments were applied in residential neighborhoods.

Increased Salton Sea shoreline and duck clubs mosquito control efforts in 2020 accounted for the higher number of acreage and habitat under larval applications.



Adult Mosquito Control. The District conducts chemical control targeting adult mosquitoes primarily when the District’s mosquito Risk Assessment Plan indicates elevated public health threat from arboviruses. Adult mosquito control is routinely performed by applications of control products as ultra-low volume (ULV) or barrier sprays using vector control adulticides registered with US Environmental Protection Agency (US EPA). ULV applications deliver a fine mist of the chemical product at specific times onto flying adult mosquitoes using special equipment mounted on trucks or helicopter. Barrier applications involve misting non-flowering vegetation in areas with high counts of mosquitoes or elevated virus activity to control resting mosquitoes with equipment attached to All Terrain Vehicles or by backpacks carried by vector control technicians.

Targeted Mosquito Control for Local Culex species

In 2020, adulticide applications were made in both urban and rural areas of the District in response to WNV and SLEV positive mosquitoes collected throughout the Coachella Valley. These applications included 18 aerial ULV applications, covering 19,410 acres; 64 truck-mounted ULV applications, covering 1,400 acres; and 8 barrier spray applications covering 374 acres. The number of positive mosquitoes were reduced or eliminated following the District’s enhanced larval and adult mosquito control efforts.

Biological Control

The District uses mosquitofish (*Gambusia affinis*) in permanent bodies of water to control mosquitoes. More than 2,500 fish were stocked in 73 unique sites.

PRODUCT EFFICACY AND QUALITY CONTROL

Culex mosquitoes

Resistance assays and semi-field applications – Pyrethroid-based insecticides are commonly used to control mosquitoes. Mosquito resistance to these products is an increasing concern. Bottle bioassays are conducted annually to monitor adult mosquito populations for potential resistance to pyrethroid products the District uses.

Culex quinquefasciatus and *Cx. tarsalis* were used in the monitoring of adult mosquito control products Aqua-Reslin, DeltaGard, Duet, Merus 3.0, Scourge 18+54, and Zenivex E4. Both species showed some signs of resistance to these products, with variability based on where the mosquitoes were collected. To ensure that these pyrethroid products are still effective under field conditions, the products are evaluated at regular label rate applications using truck-mounted ULV sprays, a step not completed in 2020.



Vector Ecologist Dr. Kim Hung conducting lab tests.

We evaluated *Cx. tarsalis* mosquitoes against Merus 3.0 and Scourge 18+54 in a semi-field set up. We treated wild and colony mosquitoes using a new handheld Colt fogger at 50 ft away. For Merus 3.0, mosquitoes appeared to be undertreated since not all the colony mosquitoes died as expected. However, the lower mortality of the wild mosquitoes compared to the colony mosquitoes supports the signs of resistance



Semi- field efficacy test.



Laboratory staff prepare for semi -field tests.

demonstrated in the bottle bioassays. Both the wild and colony mosquitoes treated with Scourge 18+54 had 100% mortality at 6 hours after treatment. This suggests that Scourge 18+54 can still be effective in the field despite evidence of resistance.

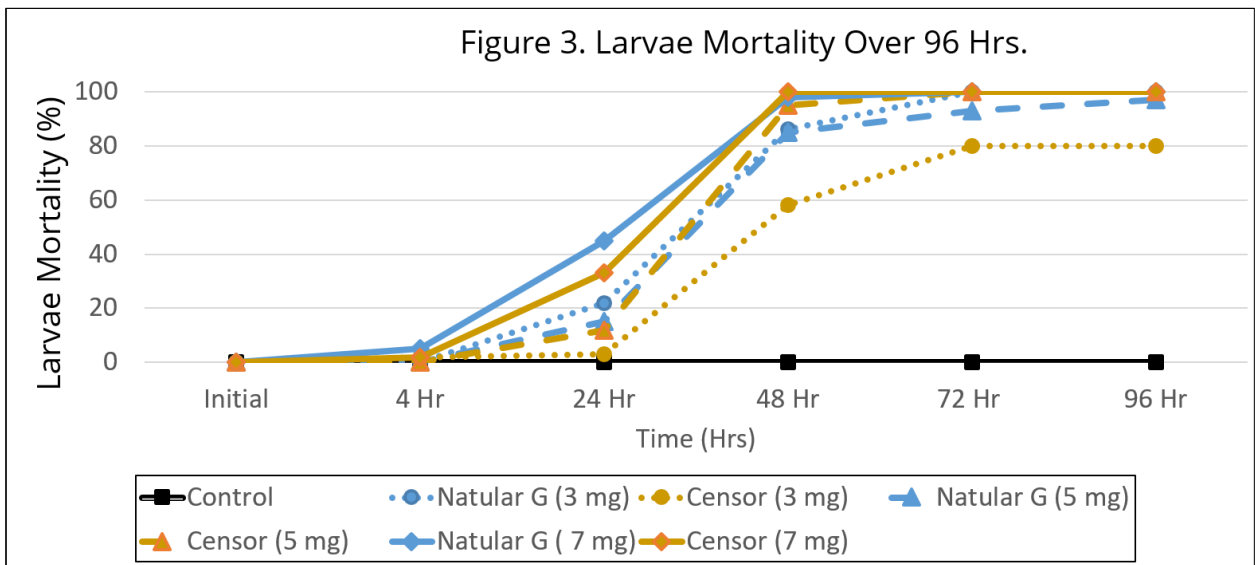


Biologist Gerald Chuzel examines cup assay samples.

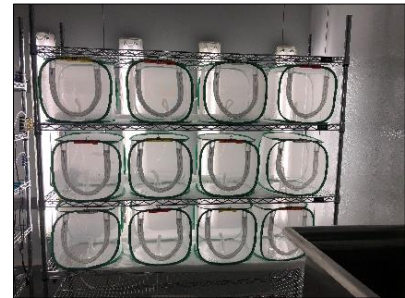
We have been conducting preliminary cup assays to examine resistance to active ingredients in control products for larval mosquitoes. This year, we are working on our standardized procedures, with plans to examine the pesticide resistance of *Culex quinquefasciatus*, *Cx. tarsalis*, and *Aedes aegypti* to bacterial larvicides (Bti, *L. sphaericus*, and spinosad) and insect growth regulators (methoprene). Work in May showed no significant increase in tolerance or resistance to Bti. We will be comparing the treatments of our susceptible colony with wild larvae from the field in future assays.

SumiLarv (a.i.: pyriproxifen) is a new product that works in a similar manner as other insect growth regulators, by preventing larvae from becoming adults. Six catch basin sites in Indio and 3 catch basin sites in La Quinta were treated. Water and wild larvae from each site were returned to the District Lab once per week for cup assay observations. The wild field larvae were compared with the District's susceptible colony for mortality or adult emergence (fly-off). Both locations had greater than 100 days of control with this product, which is greater than the expected activity. We plan to do some additional work examining the efficacy of this product.

Censor. Censor is a newer control product that has the same active ingredient as Natular G, which is spinosad. We conducted a bench-top assay that compared the larval mortality rate between Censor and Natular G, testing 3 different application rates (**Figure 3**). Censor yielded similar results to Natular G; both products had successful control (mortality of at least 80%). A high success rate from both products provides the District with the flexibility to use either product in the field efficiently.



Salt Feeding in Mosquito Adults. The District participated with researchers from the University of Southern Mississippi, University of Sydney, Salt Lake City Mosquito Abatement District, and Louisiana State University to conduct a study to examine whether feeding on salt could control adult mosquitoes. Commercial products being sold on the market claim that ingesting salt kills mosquitoes, which has led to several people making devices with salt solutions and selling them as mosquito control strategies. Nine medically important species of mosquitoes were tested simultaneously among five labs: *Aedes aegypti*, *Ae. albopictus*, *Ae. notoscriptionstus*, *Ae. dorsalis*, *Ae. vigilax*, *Anopheles quadrimaculatus*, *Culex pipens*, and the District's *Cx. quinquefasciatus* and *Cx. tarsalis* laboratory-reared adult mosquitoes were used for the study. Food treatments were given with an absorbent wick placed in a vial inside the cage. The treatments used were water only (negative control), salt only (1.03%), sugar only (8% and the positive control), and salt and sugar (1.03% and 8% respectively). Concentrations were made to be similar to the commercial products being sold. The treatments showed that the mosquitoes that were fed the salt only solution did not die from the salt but from starvation, similar to being fed water only. Similar results were observed among all the laboratories. No evidence was found that supported the claim that salt-based products at these concentrations kill adult mosquitoes. In October, this collaborative study, *No Evidence That Salt Water Ingestion Kills Adult Mosquitoes* was published in the *Journal of Medical Entomology*. (<https://academic.oup.com/jme/advance-article/doi/10.1093/jme/tjaa214/5921702>).



INVASIVE AEDES AEGYPTI

Equally alarming to SLEV outbreaks, detection of the invasive mosquito species *Aedes aegypti* has been steadily rising throughout the Coachella Valley since first detected in May 2016. This mosquito species does not belong naturally in Southern California but research tells us once introduced, they thrive in neighborhoods. This is particularly daunting because as this mosquito becomes more established, the risk of mosquito-borne diseases currently not transmitted in California such as chikungunya, dengue, and Zika will continue to grow as this mosquito spreads its distribution across California.

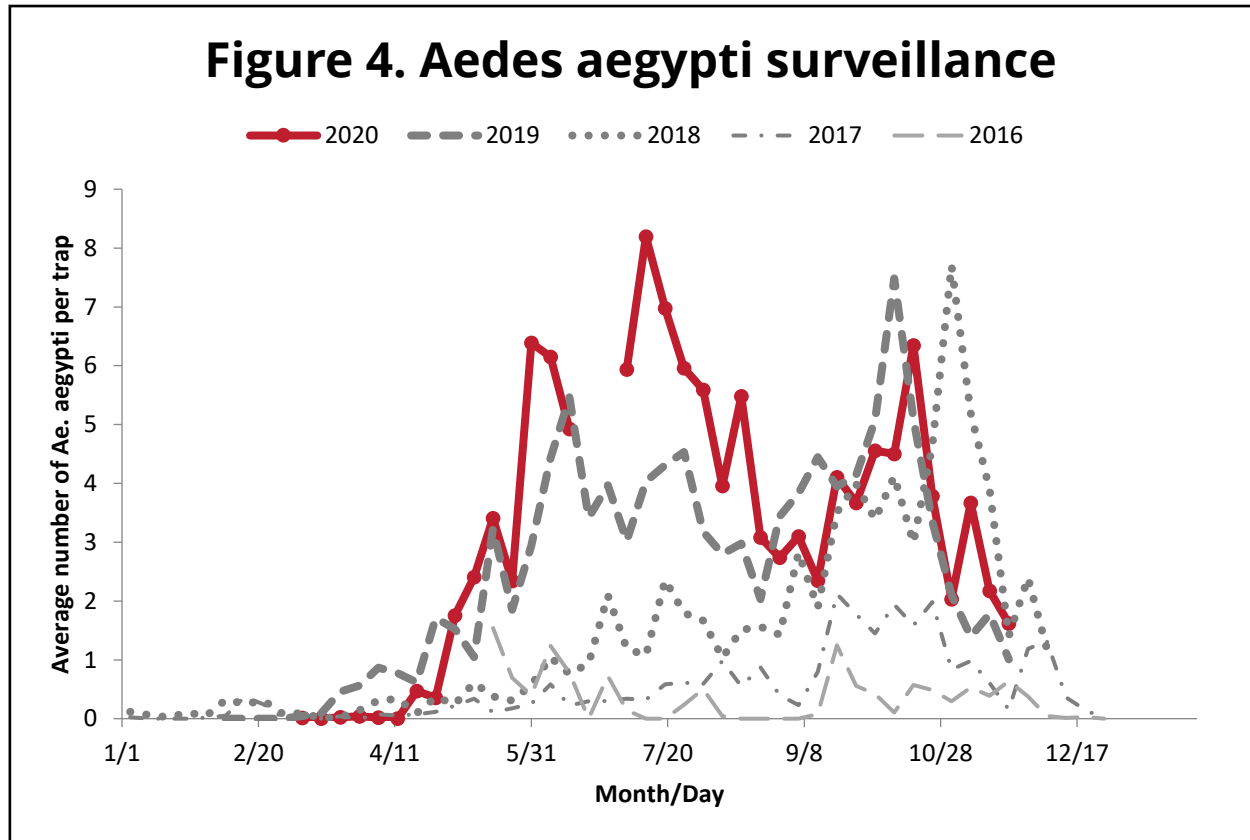
Aedes surveillance

The District has been gathering data and adjusting response efforts combatting the spread of this mosquito since 2016. Revisions and adjustments to surveillance efforts for invasive mosquitoes continued in 2020.

BG-Sentinel traps were deployed within cities of known *Aedes* activity on a routine basis for host-seeking mosquitoes. With this data, the Surveillance team relocated many BG-Sentinel traps to better represent mosquito detection areas in the Coachella Valley. The goal is to determine placement of eight to ten BG trap sites per city, with each trap sampling one square mile. This effort provides a better sample of *Ae. aegypti* activity within each city, and better guide our responses. BG trap realignment has been completed in Coachella, Indio, La

Quinta, and Palm Desert. We plan to continue this effort for the remainder of our detection area in 2021.

More *Ae. aegypti* were caught per trap in 2020 compared to prior years (**Figure 4**). The peak activity period appears shifted, but this is likely a result of the larvicide applications made to two areas over the summer, as discussed below.



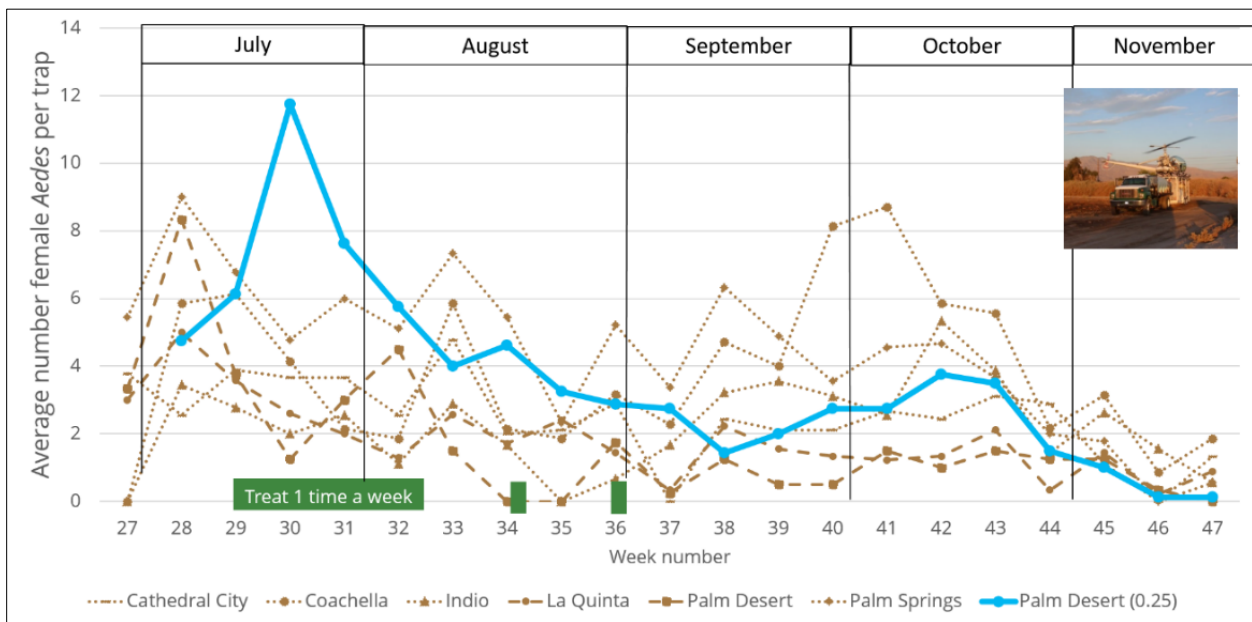
Targeting Aedes Mosquito Control

The District's IVM program identified two neighborhoods in the cities of La Quinta and Palm Desert deemed "hot spots" for *Aedes aegypti* activity. These neighborhoods were called out with the help of varying data points including vector control technician reports and service requests from the public. Staff created a strategic plan to lessen the abundance of *Aedes aegypti* by treating the neighborhoods with area wide larvicide applications over the summer.

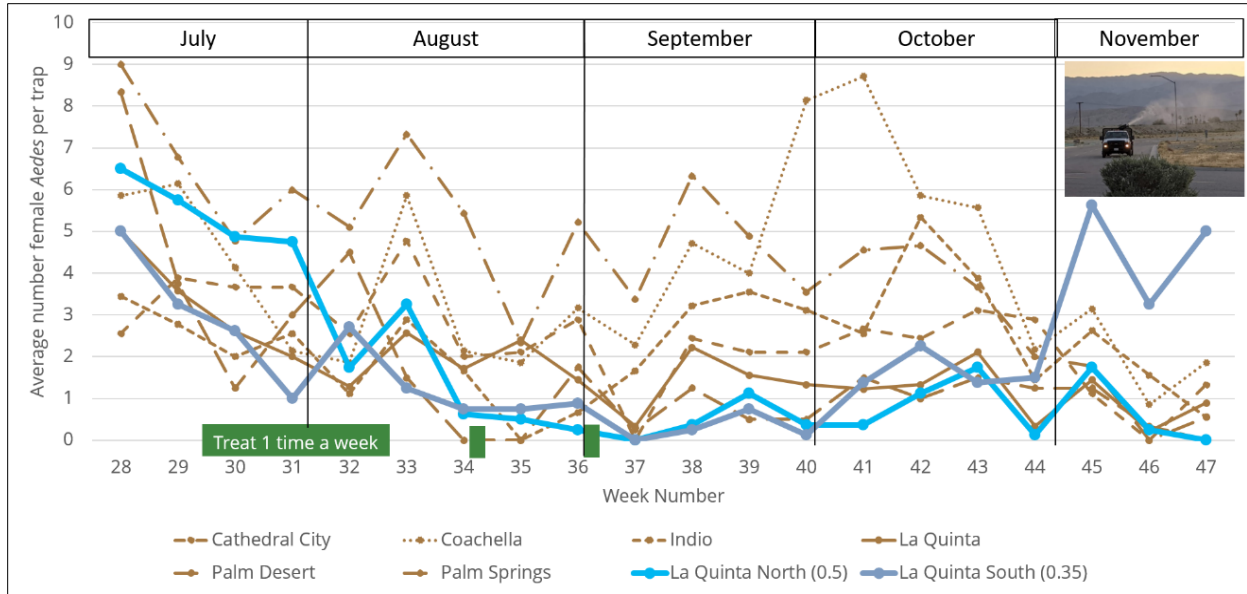
The District efforts in controlling *Aedes* included; public education, collecting larval and adult mosquitoes to find the spatial extent of infestation, and door-to-door inspections to determine presence and control of *Aedes* in all its life stages (eggs, larvae, pupae, and adult). Two vector control technicians, assisted by five seasonal employees, were the foundation of the invasive *Aedes* program in the field. The Invasive *Aedes* Control Team conducted more than 8,100 door-to-door inspections educating residents on identifying and eliminating water holding containers suitable for larval production of this mosquito. Vector control

technicians applied barrier and Ultra low volume treatments using backpack and hand-held spray equipment on properties to control invasive *Aedes mosquitoes*.

Aerial larvicide application evaluation. A series of aerial applications to control *Aedes aegypti* in Palm Desert was completed by helicopter. The District made six aerial larvicide applications over eight weeks between July and early September (weeks 29-36), using VectoBac WDG (a.i.: *Bacillus thuringiensis israelensis*). Evaluations included comparing the treated area with comparably sized areas where aerial applications were not conducted. The area where the aerial application was completed did have fewer *Aedes* mosquitoes compared to areas which did not receive an area-wide application, particularly in September. The collections slowly increased in October, which would be expected since it takes about two to three weeks after the application for those larvae to become adults.



Truck larvicide application evaluation. A series of applications conducted by truck mounted equipment was applied in the city of La Quinta to control *Aedes aegypti*. The treatment area was split and a comparison of two rates was made to examine if the District could achieve excellent control with less product. Adult mosquito collections in the application areas were compared to areas that did not receive area-wide treatments, although other mosquito control efforts continued in those areas. In La Quinta, the two neighborhoods that received treatment had similar drops in the number of *Aedes* females per trap. The adult collections were consistently lower to the other areas that did not receive area-wide treatments, especially in September. The collections in November trended up, with the area that was treated at the lower rate being a little quicker to rebound.



Mosquito Control Treatment Notification to the Public

The District utilized a variety of outreach methods to notify residents in neighborhoods receiving area wide larval control efforts by land or air. Traditional notification methods including City Council presentations, posting physical notification signs throughout the neighborhoods, and weekly emails through the District’s notification ListServ were used. The application routes contained only about 5% of the total full-time residential population in the Valley. Understanding that meant a traditional ad campaign would be costly and irrelevant to a lot of people.



Application notification posted near a neighborhood entrance.

To provide additional notification and transparency to residents, the District purchased a series of advertisements to notify residents within the application routes. This strategy is known as geo-targeting. It provides the best value for advertising campaigns by showing the advertisements only to users that are within the designated geospatial area. Social media advertising is a cost effective way to notify residents. Online platforms used to geo-target the campaign area included: Nextdoor, Facebook, Instagram, Twitter, and online banner ads.

Facebook still holds value when it comes to high return on marketing investment. Advertising reports indicated that more than 18,000 people viewed the paid-for posts which tells us that 72% of the total estimated population viewed the notification ad on Facebook/Instagram. The report also gives us the click through rate for people who visited the custom webpage created for the application zones in La Quinta and Palm Desert. Another good data point is the average price per click. Between La Quinta and Palm Desert, the click through cost was only 58 and 23 cents respectively, which is an excellent return on investment.

A geo targeted campaign was also done using banner advertisements on local media websites. The campaign report indicated the banner ads received 44,649 impressions, meaning the advertisement was placed and seen 44,649 times.

The District engaged in a pilot program with the Nextdoor platform. The cost to use the tool is based off of residents signed up on the Nextdoor platform, or “members.” At the time of the contract, members on Nextdoor residing in the Coachella Valley for more than six-months of the year totaled around 78,000. As of December 2020, the number of members has risen to 114,000, nearly 33% of estimated households in the Coachella Valley. For more cost saving measures, the contract is seasonal and is only paid between April-November which is generally considered the District’s mosquito-borne virus season. In that timeframe, posts on Nextdoor yielded almost 15,000 impressions from residents that reside near a virus detection or within an application area.

Another measuring tool we use is web traffic. We pointed all online links to custom web pages for each application zone and tracked page visits. Total page views between July and September was 2,563. The majority of the page views were on the Palm Desert application page.

Outreach Survey

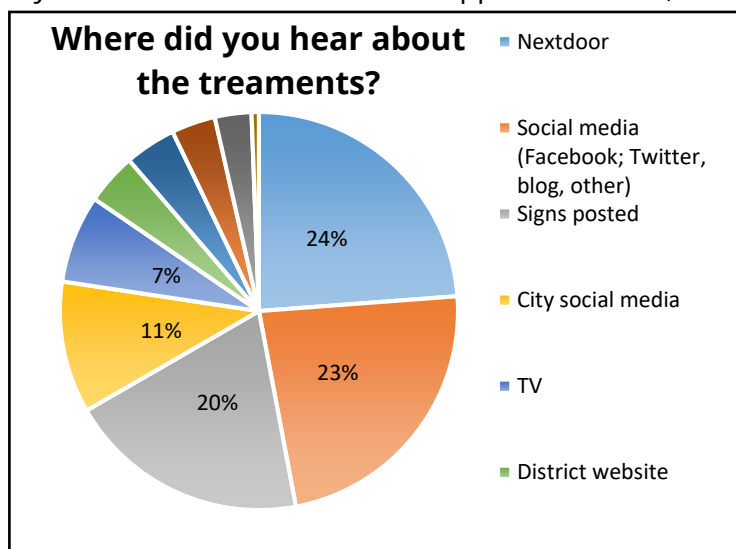
After the completion of the series of treatments, an online survey was promoted requesting residents’ opinion of mosquito control. The goals of the survey were to find 1) is there an understanding of the invasive *Aedes aegypti*, 2) do residents think mosquitoes are an issue in their community, 3) were residents notified of the treatments and where they heard about them, and 4) did the treatments work.

Residents within the application zones were geo-targeted and asked to complete the survey. 53% of survey participants indicated they lived within the Palm Desert application zone, 47% indicated residency in La Quinta.

Are mosquitoes a problem? 77.4% of respondents indicated they were aware that there had been an invasive mosquito detected in their neighborhood with 73.1% believing that mosquitoes were a cause for concern in their community.

Were you notified about the series of mosquito control treatments? Where? Although some respondents were not in the Coachella Valley during the series of treatments, 66%

of survey respondents disclosed that they did know that treatments were taking place over the summer. Of those who did hear about the control treatments, the top responses for



where they heard about them include: Nextdoor, social media ads, signs posted in neighborhood and their City's social media posts.

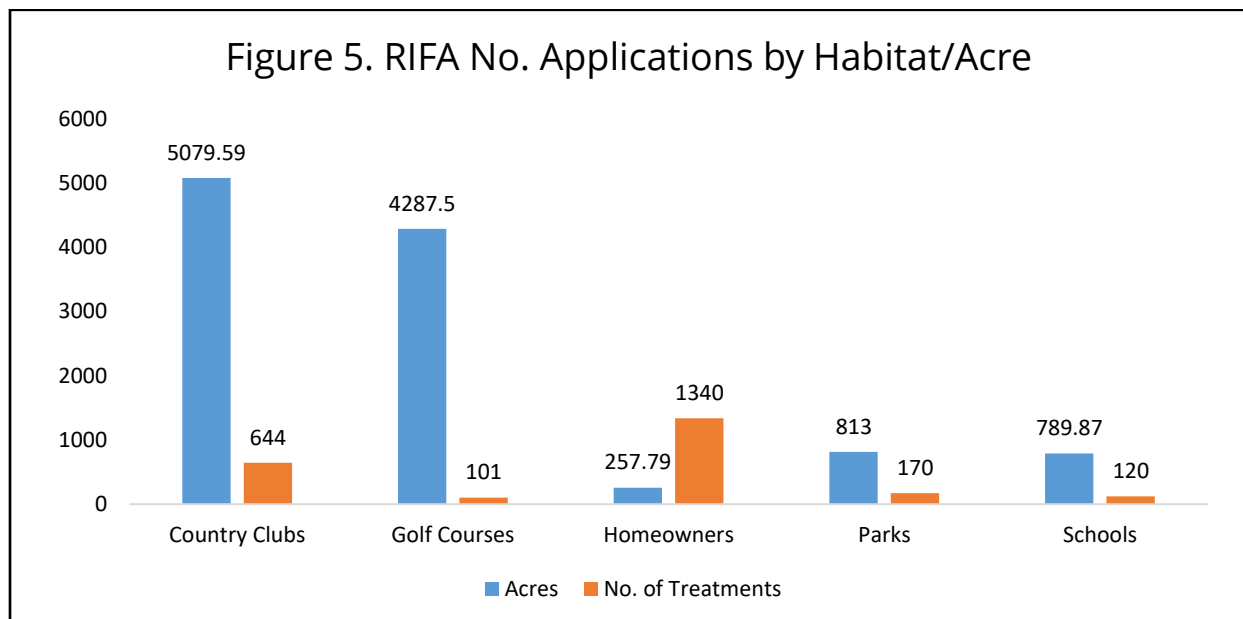
Do you notice less mosquitoes in your neighborhood after treatments? A vast amount of respondents - 82.6% - indicated a noticeable decrease in mosquitoes/mosquito bites as a result of the treatment series. This compared to only 3.6% that were unsure of a difference.

Moreover, many of the respondents commented at the end of the survey for closing remarks. By a three-to-one margin, positive comments overwhelmingly outdid negative comments.

We appreciate those who contributed in the survey. The information and insights gleaned from the responses are invaluable in measuring the efficacy of the outreach tools we use. Information from the survey will also be used to improve our education efforts and better our notification processes.

RED IMPORTED FIRE ANTS (RIFA)

In 2020, the RIFA team comprised of two vector control technicians and were assisted by five seasonal employees. Their primary work is to confirm the presence of RIFA on property and determine the level of infestation by a process called baiting. The determination of a positive find of RIFA always initiates treatment using bait granules, which contains a toxin, an insect growth regulator (IGR), or a combination of both active ingredients. The chemical bait granules once applied to the area with RIFA are taken back to the colony by foraging ants and fed to larval and adult ants killing them and ultimately killing the colony. The District's field staff carried out more than 2,300 RIFA treatments at private homes, schools, parks, golf courses, and country clubs covering more than 11,000 acres of properties in 2020. There was a similar number of treatments conducted in 2019. Although golf courses make up the most acreage of properties treated, residential properties (homeowners) represent the most treatments compared to the rest of the property types (**Figure 5**).



NUISANCE SPECIES

The District conducts a limited program on surveillance and control of nuisance pest species that may have the potential to transmit disease or directly cause injury or discomfort to people and their pets or animals. The primary focus of these programs includes surveillance, physical control, and public education. Many of the problems associated with nuisance species can be reduced or eradicated through proper sanitation and management.

Flies and Eye Gnat

In 2020, the District received 10 complaints of flies and eye gnats in the Coachella Valley. District staff had pamphlets distributed to residents with fly and eye gnat complaints as part of the best management practices training for agricultural operators, country clubs, golf courses, and HOAs in the District. The District also provides fly bottle traps, food lure concentrate, and instructions on how to maintain the trap as part of a “trap out” strategy to control eye gnats and flies in areas experiencing infestations.

Rodents

District staff conducts block surveys and rodent inspections of building exteriors and surrounding grounds to determine the level of rodent activity, access points for rodents to enter buildings, food and harborage areas for rodents, and landscape management strategies to limit rodent activity. In 2020, vector control technicians responded to 18 service requests for rodent infestations.

Bees

Technicians do not remove beehives from private property but may offer advice on how to seal and maintain properties to limit the likelihood of bees establishing colonies. The District conducts Africanized honey bee control and removal on right-of-way locations or near public schools. The control and removal work is limited to hives or swarms located in non-structural and accessible locations such as trees and bushes in public places where such bees pose an imminent threat to public safety. In 2020, the District received a total of 23 service requests concerning honey bees that were responded to by vector control technicians.

RESEARCH

The District has a strong commitment to ensure that its IVM program is effective, efficient, and environmentally sound. This is achieved through applied research projects focused on various aspects of the District’s IVM program. Projects are typically conducted through collaborative research projects by District staff, university and government scientists, and private organizations who specialize in vector ecology.



Mosquito Surveillance and Control Applied Research

UC Riverside – Researchers are examining the use of biopesticides with fungi as the active ingredients to control adult mosquitoes in underground storm water systems, such as catch basins. This research used commercially available products already approved to control insects in agriculture settings. The deployment of the bait stations did reduce the mosquito collections within the catch basins, and the mosquitoes are able to fly some distance from the stations (as they are found in untreated basins). Additional work is planned in 2021 to determine how many bait stations are needed to have an impact on the mosquito population.

Additional Collaborative Research – Many agencies and institutions made adjustments to their research plans in 2020. The District funded additional research that was delayed in 2020 and will be conducted in 2021. In 2020, the District provided mosquitoes to Northern Arizona University for examining St. Louis encephalitis virus in the southwestern U.S.; mosquitoes to UC Davis to examine variations in mosquitoes across California; mosquitoes to UC Riverside to examine the immune response in mosquitoes to viruses; and mosquitoes to Penn State University to examine variations in mosquitoes across the United States.

ENVIRONMENTAL COMPLIANCE

Federal and State NPDES. The District complies with the Clean Water Act by ensuring that applications of control products made to or near waters of the U.S. sites are made under a National Pollutant Discharge Elimination System (NPDES) Permit. On February 29, 2020, the District filed its 2019 annual report for the California NPDES permit. Technicians made 818 larvicide treatments to waters of the U.S. and 46 applications of adulticides near waters of the U.S. No adverse conditions due to applications of vector control products were seen or reported.

Mosquito habitats on lands owned by Native American tribes are not subject to California state law. In 2015, the District obtained a federal NPDES permit to make applications at these sites and to comply with the federal regulation. On February 15, 2020, the District provided the EPA with reports of treatments made in 2019 to sites that could be considered waters of the U.S. on property owned by the Agua Caliente Band of Cahuilla Indians, the Cabazon Band of Mission Indians, and the Torres Martinez Desert Cahuilla Indians.



District Intern Juan Jose Mejia Palacios conducts a field study.

CEQA. The California Environmental Quality Act (CEQA) requires public agencies to conduct an environmental review to determine the cumulative impact of their activities on the environment. In 2011, the District concluded that its IVM Program could have negative impacts on the environment if its activities were not mitigated, and therefore adopted a Mitigated Negative Declaration. The District filed its Annual Compliance Report regarding the monitoring performed on February 1, 2020. The District complied with the 18 mitigation measures and concluded that the operation of its IVM Program did not have a significant impact on the environment.

PESP. The District is a Bronze-level member of the Environmental Protection Agency's Pesticide Environmental Stewardship Program (PESP). The program encourages members to reduce the risk of pesticide use by educating their staff and public about the proper use of pesticides and by examining alternative methods of controlling pests. The District re-submitted its five-year monitoring strategy, in 2018, and filed its eighth annual report on February 3, 2020. For the strategy plan, staff track source reduction, visits where no pesticide is used, visits where reduced-risk pesticides were used, surveillance activities performed, trainings held for staff, and outreach activities conducted on the topic of integrated vector management.

PUBLIC OUTREACH

Educating community members is an important factor in reducing mosquito abundance and



virus risk. As the public becomes better informed about vectors and vector control activities, vector populations will be reduced thereby reducing the need for chemical applications and a better-informed public. Although community education is one of the core objectives of the District, the pandemic hindered some aspects that are crucial to fighting vector-borne diseases.

Community Events

Amidst the pandemic year, District staff was still able to conduct 30 outreach activities that covered vector related topics and presented hands-on education in classrooms. Staff distributed information to residents and community organizations around the Valley and moved many presentations to the virtual setting. These activities are down from 98 outreach events in 2019, emphasizing the impact of the pandemic on community outreach.

One of the biggest outreach events in terms of staffing and resources is the Riverside County Fair & Date Festival. This ten-day event takes planning and organizing by many employees. Overall, the education booth at the Festival was staffed by nearly 40 District employees totaling 376 working hours. This included evenings, weekends, and a holiday. The dedication of staff to dutifully educate patrons of the Date Festival resulted in reaching almost 4,200 individuals learning about vectors in the Coachella Valley and how to protect themselves from vector-borne diseases.



Staff and patrons enjoy the Riverside County Fair & Date Festival. February 2020.

Education Materials

The number of brochures and flyers distributed for the calendar year was around 8,000. These materials include invasive *Aedes* warning notifications sent by mail or delivered door-to-door, and informational handouts distributed at presentations or events.

As in-person events were canceled and public schools went to all virtual classes, staff became more creative with material distribution. A mailer packet was developed for students 12 and

under dubbed the [Vector Inspector Activity Kit](#). Adults could request the kit online and a packet with instructions was mailed to the student. The packet includes storybooks, coloring pages, mosquito fact cards, and a magnifier with instructions on what to look for when inspecting your yard for mosquito breeding sources.

To incentivize students to complete the activities and home inspection a prize was offered to those that returned a completed report. 110 Vector Inspector Activity Kits were requested and mailed in 2020 and the program is still being offered to Coachella Valley residents on our website.



Virtual Classrooms

The District hired a bilingual Community Liaison to develop and implement online classrooms for Coachella Valley students. These classes apply California Core Standards in science to all grade levels. All materials and information are provided to teachers and classrooms at no charge.



To further educating virtually, a series of online events were developed to engage Coachella Valley students in learning and vector related activities. Staff participated in virtual events by partnering with Coachella Valley schools and non-profits to bring learning activities and crafts to participants.

Virus Detection and Treatment Notices to Residents

The District had not seen a more active year of SLEV activity in its 92-year history than it did in 2020. In fact, mosquito pools testing positive for SLEV in the 2020 season surpassed the next closest year (2019) by 51.4%.

To notify residents of SLEV detection, the District used traditional outreach methods like press releases. The District published 11 press releases in 2020, 15 less than in 2019. These releases generated 29 TV, radio, or newspaper news stories and interviews, many of which were then shared on the news source's social media platforms.

Additionally, the Outreach team sent over 28,000 emails to the District's notification ListServ which had an average open rate of 41%. This surpasses the industry average open rate of just 25%.

To increase notification probability to residents, a series of advertisements were also purchased to notify residents near areas that a virus had been detected, as well as, neighborhoods that would be receiving mosquito control treatments. 65 paid digital advertisements were purchased yielding almost 320,000 impressions from residents/visitors in the Coachella Valley.



Public Information Officer Tammy Gordon gives an interview to a local news station.

Online Communications

The District recognizes the importance of an online presence in today's fast-paced information environment. Practical methods were developed to grow the District's online educational and outreach resources. Almost 18,000 unique users visited the District's website in 2020 with nearly 61,000 page views. There were about 16,000 sessions logged on the District website in 2019.

Public Outreach Summary

With all of the challenges the pandemic brought to our community and trials to Public Outreach, District staff remains optimistic that we can continue to educate the public on vector related topics. Knowing when there is an increased risk of potential virus transmission from mosquito to humans is essential to the District's mission and empowers residents to take precautions against vectors.

The Outreach team will continue working steadfastly with partners and stakeholders to educate residents and further the District's vision progressing towards a future free of vector-borne disease. It's a community effort Coachella Valley, you are your best defense against vectors in the Valley. Help us by dumping out standing water, properly draining potted plants and landscaping, and scrubbing water-holding containers weekly.

LEGISLATIVE RELATIONS

State and federal legislation and regulations do affect Integrated Vector Management programs in California thus it is important to keep our legislators informed not only of our needs but also of our outstanding accomplishments vector agencies achieve in protecting public health in California and more specifically here in the Coachella Valley. The District has

made a priority of building and maintaining professional relationships with local, state, and federal legislators. Activities that help build and maintain those relationships range from making regular presentations at local city and community council meetings, attending mosquito and vector control legislative days in Sacramento, and, because of the pandemic, holding Zoom meetings with local and state legislators.

2020 Mosquito and Vector Control Association of California Legislative Day

On March 4, 2020, agency leaders representing California mosquito and vector control agencies made their way to the Capitol to meet with state legislators and staff to raise awareness and garner support for vector control issues in California.

The major focus and ask for 2020 was support in the coming State's budget, an allocation of \$500,000 for the ongoing funding and development of the VectorSurv Gateway. The Gateway is a statewide surveillance database used to track and predict the emergence of invasive species, mosquito-transmitted virus activity and resistance management. District General Manager, Jeremy Wittie, and Public Information Officer, Tammy Gordon, met with Coachella Valley state legislators or their staff in the offices of



General Manager Jeremy Wittie and PIO Tammy Gordon meet with Assemblyman Eduardo Garcia in his Sacramento office. March 4, 2020.

Assemblyman Eduardo Garcia and Assemblyman Chad Mayes. Acquiring the ongoing funding was not achieved in 2020 but will most likely be championed again in 2021.

Later in the year, we had the opportunity to follow up with those same legislators via Zoom and had the pleasure to introduce ourselves and discuss vector control with the newly elected Senator Melissa Melendez whose 28th State Senate District covers the Coachella Valley.

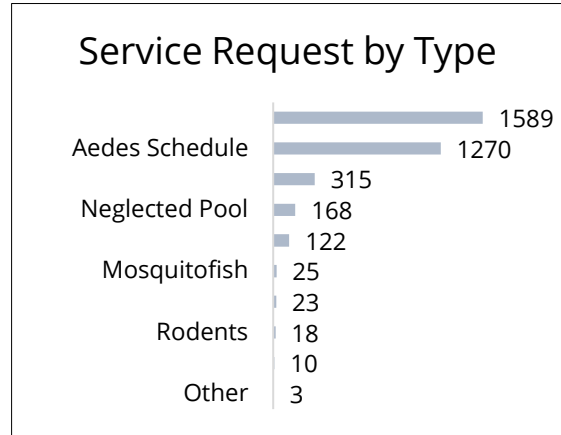
INFORMATION TECHNOLOGY

The Information Technology (IT) Department is responsible for network administration, installation and development of software, and maintaining hardware and software, including upgrades and replacements. The IT Department includes an Information Technology Manager, one IT/GIS Analyst, and one IT/GIS Assistant. On a daily-basis the IT Department supports and troubleshoots all technology-related problems ensuring that employees are

connected in-the-office, at home, and in the field using a variety of software and hardware technologies used by the District.

OPS Application

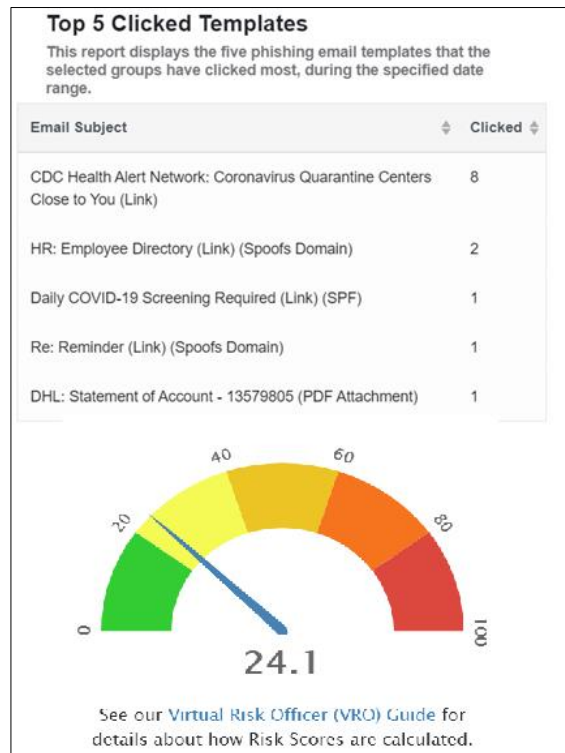
A major component of the OPS Application used by our Call Center, Vector Control Technicians, and the public, is the Service Request Component. Service Requests are generated by residents calling the District or by populating a Service Request Form on the District Website. The OPS Application in 2020 was used to process 3,543 Service Requests of which 3,531 were personally inspected by a vector control technician.



KnowBe4

Phishing remains the number one means of breaching an agency’s security. Phishing is the

fraudulent attempt to obtain sensitive information or data, such as usernames, passwords, and credit card details by disguising oneself as a trustworthy entity in an electric communication (Phishing, 2021). The majority of cyberattacks begin with a user clicking on a phishing email.



The District partnered with KnowBe4, a Security Awareness Platform, to simulate spear-phishing campaigns to train and educate staff on identifying suspicious emails. The top 5 clicked spear-phishing campaigns in 2020 were related to COVID-19 information; spoof domains and shipping account verification links. Using the outcomes of these spear-phishing campaigns, the KnowBe4 Platform provides a Virtual Risk Officer (VRO), who generates a risk rating based

on the simulating spear-phishing campaigns distributed to staff. The VRO generated a risk percentage of 24.1% for the District.

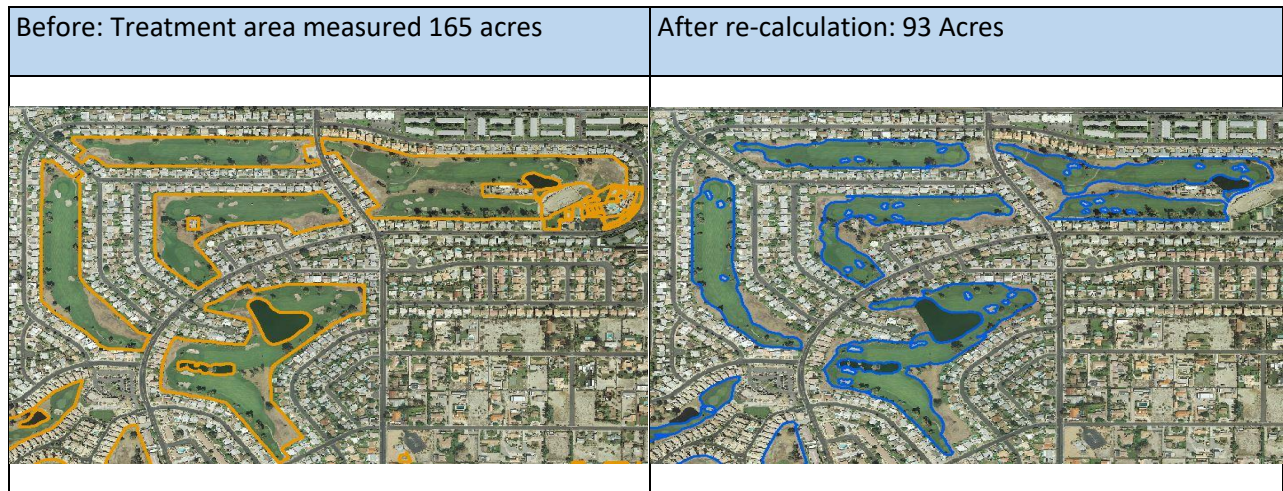
The IT Department aims to lower the District's Risk Percentage in 2021 by providing continuing education, targeted training, and interactive content to improve our co-workers' ability to recognize suspicious emails.

In 2020, the KnowBe4 Platform sent 1,370 ransom phishing emails and identified 37 educational opportunities to strengthen our ability to identify suspicious emails.

Impact of Desert Landscaping

The District services large acreage properties to control the spread of the Red Imported Fire Ant (RIFA). Green turf areas, where RIFA call home, are being removed and replaced with desert landscaping or artificial turf. In the past year, desert landscaping has increased in Homeowner Associations, Golf Courses, and Property Management Groups.

When this occurs, acreage measurements need to be re-calculated and treatment area polygons need to be re-digitized for RIFA Technicians. Vector Control Technicians use the information generated by the IT Department to assist in their RIFA applications and to properly calculate product usage. In 2020, the IT Department modified over 101 properties covering 736 acres.



HUMAN RESOURCES

The Human Resources (HR) Department recruits, develops, and protects the District's most valuable resource - its employees. We are dedicated to attracting, retaining, and supporting a qualified diverse workforce in order to meet the operational needs of our District and to serve the residents and visitors of the Coachella Valley. The District's staff consists of 60 regular full-time employees and, as many as, 17 seasonal employees.

Years of Service

The District's 60 regular full-time employees represent:

- 721 total years of service
- 12 years of service on average
- 32 employees with 10-19 years of service and 7 employees with 20+ years of service.



Retirements



Anita Jones, the District's Human Resource Manager, retired at the end of 2020 after 20 years of exemplary service to the District.

Anita began her 20 year career as the District's Administrative Clerk. With hard work and dedication expanding her knowledge of administrative and human resource best practices she earned the Human Resources Manager position in 2009.

Through all of her years at the District, Anita treated people with respect, kindness, and dignity. Because of her contributions Anita left the District in a better place than when she started. Thank you Anita for your service and thank you for leaving us with a model for how to be a success as a true professional in the workplace.

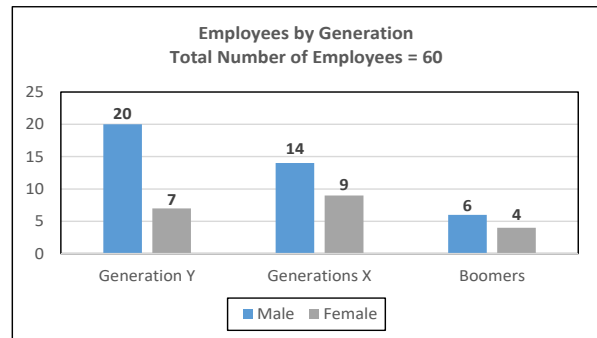


Demographics

Department	Filled Positions
Administration	2
Finance	4
Human Resources	3
Information Systems	3
Public Outreach	4
Fleet Maintenance	2
Building & Ground Maint.	2
Surveillance & Quality Control	10
Control Operations	30
Total	60

Age Group	Male	Female	Total
Under 30	2	2	4
30 – 39	19	4	23
40 – 49	7	8	15
50 – 59	10	2	12
60 & Over	4	2	6
Totals	42 (70%)	18 (30%)	60
Average Age	42.0	45.6	43.2

Looking to the future, training and succession planning are even more important as the baby boomers, which make up 17% of the District's workforce, continue to retire. Currently, 18 employees (30%) are eligible for service retirement through the California Public Employees' Retirement System (CalPERS).



FLEET

The Fleet Services Department is responsible for efficient maintenance, repair, purchase, and disposal of district vehicles and equipment. Fleet Services focuses on providing the District with the equipment and services necessary to support the District Mission in protecting public health. The Fleet Services Department includes one Shop Mechanic II and one Shop Mechanic I.

Since the 2018/19 Budget Year, Fleet Services has been working on a Vehicle Replacement Plan based on a weighted points system based on age, usage, type of service, reliability, maintenance and repair costs, and overall condition of the vehicle. The point system is used to determine the vehicles which should be replaced in the upcoming fiscal year.

The points system is used to determine the vehicle which should be replaced in the upcoming fiscal year. Vehicles with a score of 24 or greater qualify for replacement.

In 2020, the District purchased the last two vehicles based on this plan. Fleet Services will begin drafting the next Vehicle Replacement Schedule to avoid keeping vehicles and equipment beyond their reasonable life cycles.

Fleet Services also acquired new equipment to provide additional tools for the Operations Department to control mosquitoes which included:



The Guardian 190 G4 is a variable flow, fuel-injected sprayer controlled by a Monitor 5 Control System. The Monitor 5 Control System provides the Operations Department with Global Positioning Systems (GPS) data points indicating the speed, flow, and on/off location of the application. The devices were purchased to replace the aging foggers, decrease emissions, and improve data management of mosquito control applications.



The District acquired a second A1 SuperDuty larvicide sprayer, equipped with an atomizer attachment and a 100-gallon tank to provide a uniform larvicide spray over a large area.

In order to mix and suspend mosquito control products in water for the A1 SuperDuty, Fleet Services acquired a Turbo Turf Hydroseeder, which mixes large volumes of water with its powerful two jet agitation system. The jets create a strong rolling action to mix and keep the mosquito product suspended in the water for proper mosquito application.

FINANCE

The Finance function of the District involves budgeting, accounting, record keeping, and the control of fixed assets and investments. The primary goal of the Finance Department is to provide fiscally responsible financial administrative support to the District's Board of Trustees, operations, scientific, and facility staff in their efforts to reduce the risk of disease transmission by mosquitoes and other vectors for residents and visitors of the Coachella Valley.

Statement of Net Position: FY 2019-20 (June 30, 2020)

Assets:

Current Assets	\$	14,890,334
Capital assets		<u>10,177,670</u>
Total Assets		<u>25,068,004</u>

Deferred Outflows of Resources		<u>1,997,225</u>
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Liabilities

Current Liabilities		733,692
Non-current Liabilities		<u>4,964,677</u>
Total Liabilities		<u>5,698,369</u>

Deferred Inflows of Resources		<u>194,664</u>
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Net Position:

Net investment in capital assets		10,177,670
Unrestricted		<u>10,994,556</u>
Total Net Position	\$	<u>21,172,226</u>

Statement of Activities

The Statement of Activities is a summary of FY 2019-20 (June 30, 2020), showing revenue and expenditure/expenses (**Figure 6 and Figure 7**).

Revenue FY 2019-20

Charges for Services - Benefit Assessments	2,162,379
Property Taxes	4,179,391
RDA Property Tax Increment	4,558,416
Interest & Miscellaneous	394,084

Total Revenue	\$11,294,270
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Expenditures/Expenses

Salaries & Wages	4,948,784
Employee Benefits	2,801,217
Field Operations	1,544,369
Materials, Services & Supplies	1,329,875
Insurance	255,321
Contract Agreements	130,454
Contingency	45,448
Depreciation	682,884

Total	\$11,738,352
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Figure 6. Revenue FY 2019-20

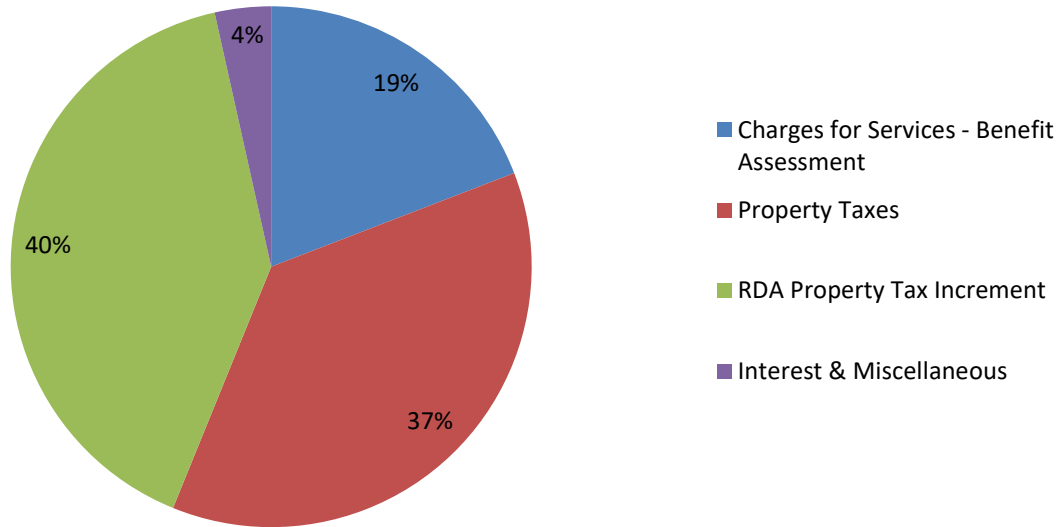
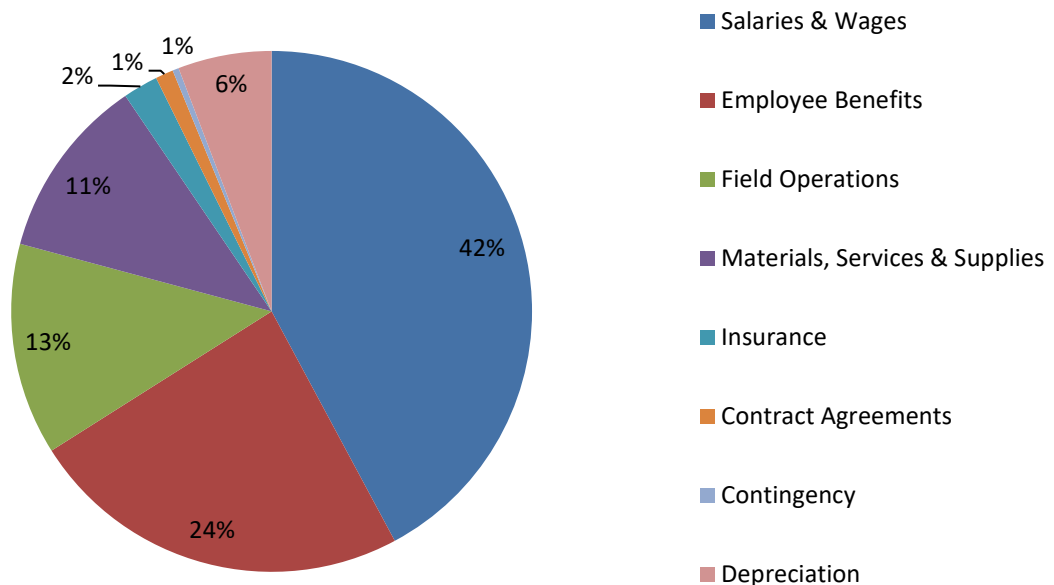


Figure 7. Expenditures/Expenses FY 2019-2020



For more information on the District's financial position, please see the Comprehensive Annual Financial Report FY 2019/2020, available online at:

https://www.cvmosquito.org/sites/g/files/vyhlf4551/f/pages/2020_fs_cvmvcd.pdf.

AWARDS

Certificate of Achievement for Excellence in Financial Reporting

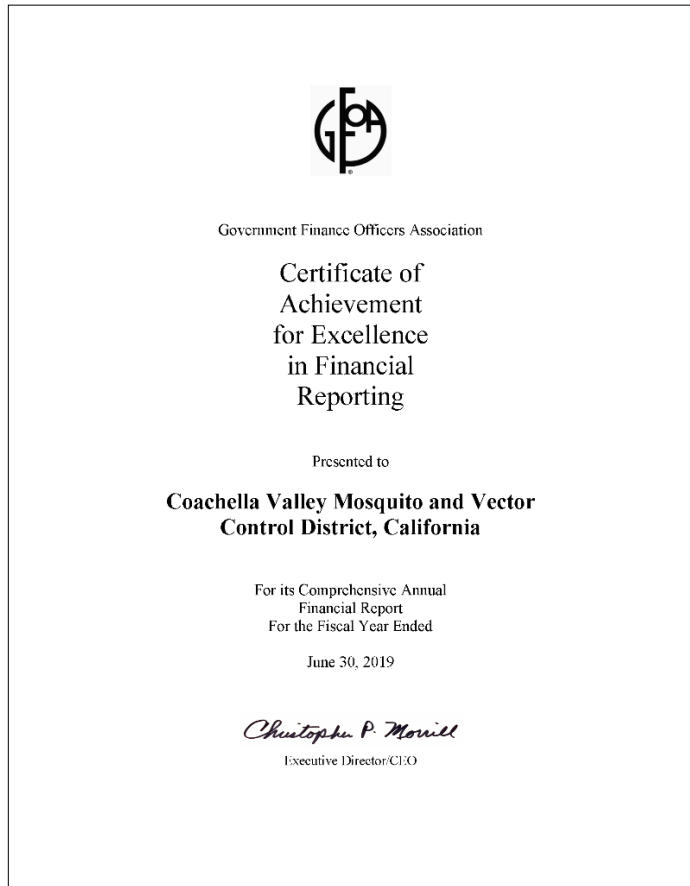
The Certificate of Achievement for Excellence in Financial Reporting was awarded to the District for the 11th year in a row. This certificate is in recognition of the District's commitment to full disclosure of finances and transparency.

The certificate is the highest form of recognition in the area of governmental accounting and financial reporting, and its attainment represents a significant accomplishment by a government and its management. The Government Finance Officers Association, presenter of the award, advances excellence in government finance by providing best practices, professional development, resources, and practical research for more than 21,000 members and the communities they serve.

"We are humbled by the recognition, and proud of our dedicated team," said District General Manager Jeremy Wittie. "Our finance team holds standards high for quality reporting and being good stewards of public funds."

The Financial Reporting Program (CAFR Program) was established in 1945 to encourage state and local governments to go beyond the minimum requirements of financial reports. To qualify the District must maintain and publish a comprehensive annual financial report, demonstrate legal compliance, and be audited by an independent auditor who performs the audit in accordance with generally accepted auditing standards or generally accepted government auditing standards as set forth in the Government Accountability Offices.

"Over a decade of acknowledging the Board of Trustees and the Finance Department's proficiency in overseeing the finances of the District emphasizes the exemplary work they continue to do." Wittie said.



2020 Employees of the Year

Employees of the Year are voted for by District employees, via an online survey, in four (4) categories – Field Operations, Field Support, Administrative Support, and Management. All regular full-time employees who have successfully completed their initial probationary period and have been employed for a minimum of one year are eligible to participate and receive an Employee of the Year Award. Congratulations to the 2020 Employees of the Year!



Field Operations

Vincent Valenzuela, Vector Control Technician II

Vincent has been with the District for five years. His coworkers describe him as hard-working and dedicated to the safety needs of the public. He has strong leadership skills and performs his work with professionalism, integrity, and takes pride and personal responsibility for his job performance.



Field Support

Oscar Guerrero, Facilities Maintenance Technician I

Oscar has been bringing joy and laughter to District staff for five years. His coworkers describe him as responsible and committed to getting the job done. As the District implemented additional protocols during the pandemic, Oscar trained to screen all employees going the extra mile for safety.



Administrative Support

Crystal Moreno, Human Resources Specialist

Crystal is a cog of positivity, care, and support at the District for its employees. She maintains a positive attitude and expresses empathy to her workers. In 2020, she took on the task of initiating District protocols during the pandemic. Crystal has 15 years of service at the district.



Management

Oldembour "Olde" Avalos, Field Supervisor

Olde has been passionate about his 25-year career at the District. As a Field Supervisor Olde has the opportunity to coach and mentor technicians and anyone else willing to learn. He can always be counted on for early morning preparation and is understanding, supportive, and patient.

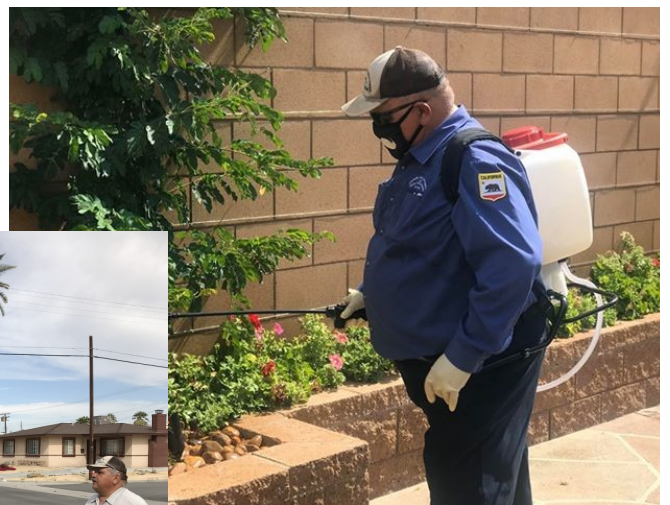
In Memoriam

Fernando Fregoso
1967 - 2020

CVMVCD Employee
1997 - 2020

Fernando was employed by the Coachella Valley Mosquito and Vector Control for 23 years. He worked as a Vector Control Technician I and truly enjoyed his job. While completing his job calls in his assigned areas of work, he passionately educated the public about the dangers of mosquito breeding and treated ant infestations. The greatest reward from his job was when a customer, whom he had given service to, would call the district to give him praise for his work.

His fellow colleagues miss his positive attitude, humor, and smile. He always made sure to stop and say hello and genuinely cared how someone was doing. He was a kind person who was a friend to everyone.





COACHELLA VALLEY MOSQUITO & VECTOR CONTROL DISTRICT

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🌐 www.cvmosquito.org ✉ CVmosquito@cvmvcd.org 🌐 @cvmosquito 🐦 @CV_mosquito

LOOKING FORWARD

Thank you for reading the highlights of the exceptional service that District staff exhibited protecting public health in 2020 in the Coachella Valley while navigating the COVID-19 pandemic. We are thankful to our community members and collaborators who worked with us in supporting our efforts to protect us all from vector-borne diseases. Looking ahead to 2021 I know we will continue to face challenges resulting from COVID-19 but given the effort and resilience that both the Board and Staff demonstrated in 2020, I know we will be a success.

2021 is the final year of our 3-year strategic plan and District staff and the Board will be gearing up in the fall of 2021 to plan for the coming three to five years of work. A snapshot of some of the projects taken from the District's strategic plan that staff will focus on in 2021 include:

- Surveying Coachella Valley residents on vector surveillance and control issues and use data to focus and drive public outreach and education campaigns in various communities.
- Determine District policy on retaining, using, or selling excess District-owned land.
- Develop and implement and/or revise integrated vector management plans for managed wetlands.
- Finalize the update all employee job descriptions and evaluations.
- Develop an internal system to capture staff ideas and feedback to improve District programs and services.

On behalf of the entire Coachella Valley Mosquito and Vector Control District team, Trustees, and Staff, we look forward with great pride and determination to serving and protecting residents and visitors from vectors and vector-borne illnesses.