



July 8, 2018

Mr. Robert J. Fenton, Jr.  
Regional Administrator  
Federal Emergency Management Agency, Region IX  
U.S. Department of Homeland Security  
1111 Broadway, Suite 1200  
Oakland, California 94607-4052

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Subject: First Appeal – Project Worksheet 135  
FEMA-4308-DR-CA, February 2017 Storms  
Cal OES ID: 077-91001 FEMA ID: 077-URPF7-00  
Subrecipient: San Joaquin County Mosquito & Vector Control District  
Cal OES Log: 650647.1 FEMA Log: None

Dear Mr. Fenton:

On May 10, 2018, the California Governor's Office of Emergency Services (Cal OES) received the enclosed letter dated May 7, 2018, from San Joaquin County Mosquito & Vector Control District (District). This letter requests an appeal of the Federal Emergency Management Agency's (FEMA) denial of the District's eligibility for emergency protective measures for Project Worksheet (PW) 135. The District requests FEMA approve funding in the amount of \$381,429.35.

### Background

During the February 2017 Storms, the District was inundated with massive flooding. PW 135 was originally written to fund the mitigation of the mosquito population and combat the potential widespread mosquito migration. The inherent escalation of a mosquito outbreak was a threat to public health and posed a major risk for the transmission of diseases such as encephalitis and West Nile Virus (WNV).

The 2017 rainfall was unprecedented, especially for California. For comparison, from January through May of 2016, the District received between 6.4 to 15.8 inches of rainfall (average), whereas in 2017, the District received 10.6 to 28.1 inches during the same time period. Subsequently, rivers overflowed, small levees were damaged, and homes, agricultural properties, resorts, and low lands flooded. Further, Sierra reservoirs were filled to full capacity, from historic drought conditions. In fact, water had to be released daily in numerous locations along the San Joaquin River basin in preparation for additional storms.

The monumental 2017 floods created a potential for a fast growing mosquito population. The District's officials, engineers, and mosquito control technicians aggressively took control of the situation and



Mr. Robert J. Fenton  
July 8, 2018  
Page 2

executed a county-wide mosquito abatement campaign. The suppression plan included around-the-clock surveillance, various chemical ground abatements, aerial laticiding, and adulticiding along the Mokelumne, San Joaquin, and Stanislaus Rivers, as well as areas with Delta island flood leaks. The District spent \$321,493.00 to aerielly treat 42,571 acres compared to spending \$9,866.00 for 40.3 acres, the average of the last three years (January 1, 2014, to June 1, 2017).

The following chart displays the District's mosquito count for the Mokelumne, San Joaquin, and Stanislaus river basins from February 1, 2012, to June 30, 2016.

Mosquito Species	5 Year Average Count	Year 2017 Count	Percentage Increase
Culex Erythrothorax	45	516	1047
Culex Papiens	1,445	6,120	323
Culex Tasalis	987	25,886	2,523
Culiseta Inomata	10	268	2,580

Further, the highest number of female mosquitos captured in an Encephalitis Vector Survey (EVS) trap in a single night was 6,854 in June 2017, compared to 946 in June 2016. This is a significant capture because according to an article, "Mosquitoes Life cycle" published on [www.Megacatch.com/mosquito-faqs](http://www.Megacatch.com/mosquito-faqs), "Female mosquitoes can lay a set up to a hundred eggs about every third night after mating once. They typically lay as many as three sets before dying" (please see Enclosure 2). If these female mosquitoes had not been captured, there would have been more than 2,100,000 mosquitoes harvested from that one night. The District took drastic and aggressive measures to harness the growth of the mosquito population and subdue the migration before it got out of control.

Pursuant to FEMA's Public Assistance and Policy Guide, Page 74, Mosquito Abatement; anything above a three-year average for the same time frame (e.g: adulticiding, larvacidin, or habitat removal) is eligible for reimbursement. The insecticide formulations used by the District have been approved and registered by the U.S. Environmental Protection Agency for use in rural and urban areas for mosquito control.

### Analysis

The District submitted its request for reimbursement in the amount of \$381,429.35. The District provided FEMA with its documentation and measurable preparation of its increased mosquito threat to the community. The District's zealous management and diligence enabled the County to combat the mosquito population and restrain the migration as quickly as the mosquitos laid their first eggs in the still waters across San Joaquin County (County). After many months, the mosquito population finally subsided to its normal range in the affected areas. Title 44 of the Code of Federal Regulations (44 CFR) section 206.225 states that to be eligible for reimbursement, emergency protective measures must eliminate or lessen an immediate threat to lives, public health or safety, or significant additional

Mr. Robert J. Fenton  
July 8, 2018  
Page 3

damage to improved public property in a cost-effective manner. The District is responsible for showing that the emergency protective measures were required due to an immediate threat resulting from the declared incident.

FEMA states the District clearly demonstrated the increase of mosquito species and its habitats. However, FEMA indicates the District did not submit data to support its assertion that the increase of mosquitos was a threat to its emergency workers, which could have hampered the disaster response and recovery efforts.

FEMA further contended the District did not include verification from medical facilities within the County, or any supporting evidence to validate an increase in the general public's exposure to mosquitos that directly resulted in secondary infections. Therefore, FEMA determined the District did not sufficiently demonstrate the mosquito population alone posed an immediate threat to public safety or health of its residents and emergency workers.

Lastly, FEMA agreed the County experienced record-breaking precipitation over a period of six months (October to April) and the rivers experienced record inflow from snowmelt between April and July. However, FEMA contends the potential mosquito outbreak could not be solely attributed to this disaster event.

Cal OES asserts the District had proper documentation to support the increase of various species of mosquitos. In addition, the District implemented emergency protective measures successfully in the spirit of FEMA standards, as its preventative measures significantly diminished the occurrence of mosquitos throughout the San Joaquin communities. These measures ultimately alleviated an imminent threat to public health and safety.

The County was not the only area to experience hardship and challenges with fighting the potential outbreak of various mosquito populations. Throughout California, local authorities were disseminating warning, and preventative mosquito outbreak notices via news outlets, email, and social media. In fact, the California State Assembly filed the Concurrent Resolution No. 51, chapter 53, with the Secretary of State on a May 19, 2017. The State Assembly designated, "April 16, 2017 to April 22, 2017, inclusive as Mosquito Awareness Week (Enclosure 3)". The Assembly resolution added support to the local efforts to reach California communities.

An article by El Dorado County, "Mosquito Awareness Week Draws Attention to Risks, Prevention" published on YubaNet on April 21, 2017 (Enclosure 4), it indicated in 2016, there were 442 confirmed cases of WNV in 30 counties throughout California and statewide there were 19 human deaths.

According to Mr. Alvaro Garza, MD, MPH, Public Health Officer, San Joaquin County Public Health Services, "With this increase in standing water comes an increased threat of mosquito population growth and mosquito-borne diseases. Many of the areas of flooding during the recent storms were also

Mr. Robert J. Fenton  
July 8, 2018  
Page 4

areas of high West Nile Virus (WNV) transmission in many years, including 2016. Mosquito-borne diseases are an increasingly important cause of morbidity and mortality in San Joaquin County residents. Over the past three years, 26 people have been reported with WNV infection, including three deaths. WNV infections were elevated in 2016, with 14 people reported, compared to prior years (Enclosure 5)."

Although this was a stark reminder of 2016, San Joaquin County's Public Information Officer (PIO) issued news release on March 26, 2018, stating "Early mosquito population suppression is critical to reducing the risk of mosquito borne disease later in the year." The following month, the PIO issued another news release on April 16, 2018, stating, "Early detection is key. If the District is able to detect the invasive Aedes mosquitoes early, there is a higher chance to contain or possibly eradicate the population (Enclosure 6)."

The District was vigilant in confining the mosquitos, eliminating their breeding grounds, annihilating the potential threat. It strategically and intentionally increased its mosquito surveillance and implemented a suppression plan throughout the community via a media campaign. The District successfully educated the community on mosquito prevention techniques, and provided regular warnings about eliminating standing water in ponds, ditches, fountains, outdoor buckets, and even bottle caps.

Moreover, the District reiterated during the Applicants' Briefing held on April 17, 2017, that mosquito activity will continue to occur in the post-disaster remnants of rain water, river seepage, and the increased releases from reservoirs that require additional capacity from the record snow melt. If the breeding grounds in the highly affected areas are not contained and the mosquito migration confined, public safety and health are at risk. The District aggressively managed the potential threat and thwarted what could have been a major outbreak. According to the Supervising Public Health Biologist at the California Department of Public Health, "...WNV human case incidence in San Joaquin has averaged 1.8 times higher than the statewide incidence over the past decade. The District's proactive and aggressive control of the increased mosquito populations, produced as a result of the recent flooding events, quite likely prevented a significant number of human WNV cases in 2017 ( Enclosure 7)."

### **Recommendation**

The District demonstrated diligence, and intentional and aggressive management in preparation for the February 2017 Storms, as it devised plans for the mosquito abatement based on statistics of past years when there was no flooding. CalOES recommends FEMA approve funding under PW 135 in the amount of \$371,563.35. The District also demonstrated the increase in mosquito population and breeding in its affected areas. Inaction by the District would likely have led to a proliferation of vector-borne illnesses and/or deaths. At that point, the District would have easily fulfilled FEMA's conditions of obtaining verification of medical facilities and conditions, and proving the threat hampered emergency workers. CalOES believes the District's actions ensured the public's health and safety were

Mr. Robert J. Fenton  
July 8, 2018  
Page 5

protected. In accordance with 44 CFR section 206.225, Cal OES supports the District's first appeal and recommends FEMA approve funding for PW 135 in the amount of \$371,563.35.

If you require additional information regarding this correspondence, please contact Mr. David Gillings, State Public Assistance Officer, at (916) 845-8224 or Mr. Carney Briggs, Program Manager, at (916) 767-1771.

Sincerely,



CHARLES RABAMAD  
Governor's Authorized Representative

Enclosures:

1. San Joaquin County Mosquito and Vector Control District appeal and attachments dated May 7, 2018
2. Mosquito Life Cycle, Birth of a Bloodsucker: A Mosquito's Life, [www.Megacatch.com/mosquitofaqs](http://www.Megacatch.com/mosquitofaqs)
3. The California State Assembly, Concurrent Resolution No. 51, Chapter 53, Relative to Mosquito Awareness Week, Filed with Secretary of State on May 19, 2017
4. Mosquito Awareness Week Draws Attention to Risks, Prevention article by El Dorado County, dated April 21, 2017, published on YubaNet
5. San Joaquin County Public Health Services letter by Mr. Alvaro Garza dated April 3, 2017
6. News Release by Aaron Devencenzi, San Joaquin County Mosquito & Vector dated March 26, and April 16, 2018
7. California Department of Health letter by Mark G. Novak dated September 29, 2017

cc: Mr. Eddie Lucchesi, Manager, San Joaquin County Mosquito & Vector Control District  
Mr. Mark Wingate, Acting Recovery Division Director, FEMA, Region IX  
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