Coachella Valley Mosquito and Vector Control District

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July 8, 2011

NOTICE OF INTENT TO ADOPT A

MITIGATED NEGATIVE DECLARATION

COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

43-420 Trader Place

Indio, California 92201

(760) 342-8787

NOTICE IS HEREBY GIVEN that the District staff of the Coachella Valley Mosquito and Vector Control District intends to recommend the adoption of a Mitigated Negative Declaration for the project described below on the date and time, and at the location listed below. A copy of the proposed Mitigated Negative Declaration and the Initial Study on which this recommendation is based is available for inspection during regular business hours at the above address.

Any person desiring to comment on the recommendation of the District staff may do so verbally or in writing at the above address and telephone number. The public review period during which comments may be received is from the date of this notice until the end of the business day on **July 29, 2011**.

PROJECT TITLE: The Integrated Vector Management Program of the Coachella Valley Mosquito and Vector Control District.

PROJECT LOCATION: The District's activities are now conducted within a 2,400 square mile jurisdiction contained within Riverside County, California. The areas that will be actually or potentially impacted by District activities include the incorporated cities of Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, Rancho Mirage and certain unincorporated areas of Riverside County extending approximately 45 miles southeast from the eastern edge of the San Bernardino mountains to the Riverside/Imperial County line near the Salton Sea State Park.

General Description: The Project consists of surveillance, education, physical, biological, and chemical control of mosquitoes and vectors in an effort to reduce the risk of vector-borne disease or discomfort to the residents of its Service Area.

Finding: A public hearing regarding the recommendation to the District's Board of Trustees on adoption of a Mitigated Negative Declaration on the above project will be held on September 13, 2011 at 6:00 p.m. at 43-420 Trader Place, Indio, California 92201.

INITIAL STUDY

SECTION 1. CEQA DETERMINATION

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

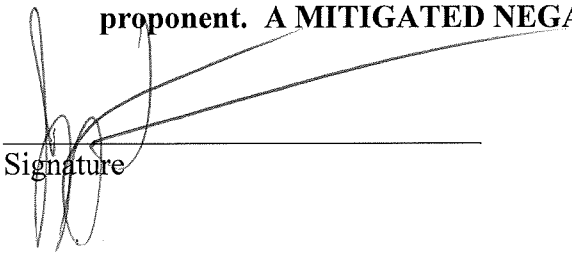
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics		Agricultural Resources		Air Quality
	Biological Resources		Cultural Resources		Geology / Soils
	Hazards & Hazardous Materials		Hydrology / Water Quality		Land Use / Planning
	Mineral Resources		Noise		Population / Housing
	Public Services		Recreation		Transportation / Traffic
	Utilities / Service Systems		Mandatory Findings of Significance		

DETERMINATION. (To be completed by the Lead Agency.)

On the basis of this initial evaluation:

X **I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.**



Signature

7/8/2011
Date

Jeremy Wittie, M.S.
Scientific Operations Manager
Printed Name

Coachella Valley Mosquito and Vector Control District
For

SECTION 2. ENVIRONMENTAL CHECKLIST FORM

This document is an Initial Study of the potential environmental impacts of the Integrated Vector Management Program of the Coachella Valley Mosquito and Vector Control District (District) to all parts of the District's jurisdiction (Project). This Initial Study was prepared pursuant to the California Environmental Quality Act (CEQA) of 1970, as amended, and in accordance with the CEQA Guidelines. The primary purpose of the Initial Study is to determine and document whether the Project will have a significant or potentially significant effect on the environment.

2.2.1 PROJECT TITLE:

THE INTEGRATED VECTOR MANAGEMENT PROGRAM OF THE COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT.

2.2.2 LEAD AGENCY NAME AND ADDRESS:

Coachella Valley Mosquito and Vector Control District
43-420 Trader Place
Indio, CA 92201

2.2.3 CONTACT PERSON AND PHONE NUMBER:

Jeremy Wittie, M.S., Scientific Operations Manager
(760) 342-8287

2.2.4 PROJECT LOCATION:

The Project is now conducted within a 2,400 square mile jurisdiction contained within Riverside County, California. The areas that will be actually or potentially impacted by the Project include:

1. The incorporated cities of Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, Rancho Mirage;

2. Certain unincorporated areas of Riverside County as described in Appendix A.

In addition, the District periodically cooperates with adjoining Mosquito & Vector Control Districts and/or County and State Public Health Departments on activities that cross normal District boundaries. In these situations, the District or Department with jurisdiction over the locations where specific activities are performed has primary responsibility for these activities.

2.2.5 PROJECT SPONSOR'S NAME AND ADDRESS:

Coachella Valley Mosquito and Vector Control District
43-420 Trader Place
Indio, CA 92201

2.2.6 GENERAL PLAN DESIGNATION:

All general plan designations found within the District's jurisdiction.

2.2.7 ZONING:

All zoning designations found within the District's jurisdiction.

2.2.8 SURROUNDING LAND USES AND SETTING:

The Project Area, which is coterminous with the District's jurisdiction, has a diverse set of land uses and settings. These include urbanized residential, commercial and industrial development; agricultural fields, both active and fallow; duck club properties; and a small area of marsh land on the northern end of the Salton Sea. The majority of the lands within the Project Area are developed or otherwise disturbed by human activity.

Because of the diversity of vector habitat, vector control activities are conducted in a wide variety of ecosystems and habitat types throughout the Project area. Mosquito control activities are associated with wet areas of all types and sizes. This includes marshes, ponds, creeks, manmade wetlands, ditches, ornamental fishponds; impound areas, etc., as well as individual homes or commercial buildings. Other vectors, such as eye gnats, inhabit an even wider range of natural and artificial habitats.

2.2.9 OTHER PUBLIC AGENCIES WHOSE REVIEW/APPROVAL IS REQUIRED:

The Project as a whole, including the registration and continuing education of state-certified field personnel, is reviewed and approved by the **California Department of Public Health Services**, through a formal Cooperative Agreement that is renewed annually.

For work on state lands and riparian zones, wetlands or other sensitive habitats, the District coordinates and reviews activities with the **California Department of Fish & Game,** the **U.S. Fish & Wildlife Service** and the **California State Lands Commission** as Trustee Agencies.

For chemical control activities, the District reports to and is periodically reviewed by the **Riverside County Agricultural Commissioner**.

2.2.10 DESCRIPTION OF PROJECT ACTIVITIES:

Project activities are now conducted within a 2,400 square mile jurisdiction contained within Riverside County (see map, Appendix A). The District exists to reduce the risk of vector-borne disease or discomfort to the residents of its Project Area. Besides being nuisances by disrupting human activities and the use and enjoyment of public and private areas, certain animals may transmit a number of diseases. The diseases of most concern in the Project Area are West Nile virus (WNV), western equine encephalomyelitis (WEE), St. Louis encephalitis (SLE), which are transmitted by mosquitoes; at higher elevations hantavirus pulmonary syndrome associated with wild rodents.

The Project consists of the following types of activities within the Project Area:

- **Surveillance** for vector populations, vector habitats, disease pathogens, and public distress associated with vectors; this includes trapping and laboratory analysis of vectors to evaluate populations and disease threats, direct visual inspection of known or suspected vector habitats, the use of all-terrain vehicles to access areas where vectors occur, maintenance of paths, and public surveys;

- Public **Education** to encourage and assist in the reduction or prevention of vector habitats on private and public property;

- Application and introduction of the "mosquito fish" *Gambusia affinis,* the bacterium *Bacillus sphaericus* and possibly use of other predators or pathogens of mosquitoes ("**Biological Control**"); and

- Elimination or alteration of manmade vector producing habitats (when permissible) in suburban areas to prevent vector production and/or harborage ("Physical Control")

- Application of non-persistent selective insecticides to reduce populations of larval or adult vectors ("**Chemical Control**").

Descriptions of these activities, including their typical annual frequency and intensity, and general District policies and procedures to ensure that they result in no significant environmental impact, are provided below.

A. VECTOR TYPES

The California Health and Safety Code defines a vector as "any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including, but not limited to, mosquitoes, flies, other insects, ticks, mites, and rats, but not including any domesticated animal" (Section 2002 (k) The District undertakes activities through its Integrated Vector Management Program to

control the following vectors of disease and/ or discomfort in the Project Area:

1. Mosquitoes.

Fourteen species of mosquitoes frequently occur within the Coachella Valley. Appendix B lists those species of human health importance known to occur within the Project Area. The reader is referred to the publications by Bohart and Washino (1978), and Meyer and Durso (1993) for detailed information concerning the biology, ecology, and diseases vectored by these mosquitoes.

Certain species of mosquitoes found in the Project Area can transmit West Nile virus, St. Louis encephalitis, western equine encephalomyelitis, and potentially other viruses or pathogens. Although some species of mosquitoes have not been shown to transmit disease, most species can cause human discomfort when the female mosquito bites to obtain blood. Reactions range from irritation in the area of the bite to severe allergic reactions or secondary infections resulting from scratching the irritated area. Additionally, an abundance of mosquitoes can cause economic losses, and loss of use or enjoyment of recreational, agricultural, or industrial areas.

2. Red Imported Fire Ants.

The Red Imported Fire Ant *(Solenopsis invicta)* or RIFA is one of over 280 widespread ant species. A native to South America, RIFA has become a pest in the southern United States and is present in the Coachella Valley. RIFA are known to have a strong, painful and persistent sting that often leaves a pustule on the skin.

A person typically encounters them by inadvertently stepping into one of their mounds, which causes the ants to swarm up and attack in large numbers. RIFA respond to the pheromones (chemical secreted by ants that influence the behavior of other members of the same species) that are released by the first ant to attack. The ant stings can even inflict death on smaller animals by overloading their immune system as well as anyone allergic to their sting.

Red Imported Fire Ants are not considered to be a vector of any disease; however their stings are of an important public health concern. Home invasions can threaten small children, the elderly and pets. Stings may produce a range of reactions from localized pain and swelling to anaphylactic shock.

RIFA respond rapidly and aggressively to any disturbance of the colony or to a food source. A single fire ant can sting repeatedly and will continue to do so even after their venom sac have been depleted. Initially the stings result in a localized intense burning sensation followed by the formation of a white pustule at the sting site within 24 - 48 hours.

3. Eye Gnats.

Adult eye gnats are non-biting insects, but their persistent buzzing around the head and eyes classifies them as a nuisance. Female eye gnats need proteins to develop

eggs, and so are attracted to exposed mucus in the eyes, nose, mouth and even open wounds. Their labium (lower lip) contains a spine that can introduce pathogenic organisms which spread diseases known as "pink eye" (conjunctivitis).

Adults are about 1/16 inch in length, shiny black to a dull gray color with yellow or orange markings on the legs.

Two population peaks are in late spring and in late summer or early fall. Daily activity peaks occur at sunrise and sunset during hot, dry weather, although eye gnats may occur in deep shade or on cloudy days. At night they rest at ground level or low shrubbery. Ideal temperature for activity is 90F to 100F degrees, preferring higher temperatures as humidity rises. Their activities slow up and reproductions ceases below 70 degrees.

4. Africanized Honey Bees.

Africanized honeybees (AHB) were first detected in 1994 in the Coachella Valley AHB are not known to be disease vectors and are no more venomous than European honeybees (EHB). However, AHB respond to threats more rapidly than EHB and will defend their hive with greater numbers of bees, resulting in a massive number of stings to an individual. Although individuals have died as a result of 100 - 300 stings, it is estimated that the average lethal dose of venom for an adult human is 1,100 bee stings; for a child or pet it can be substantially less. Bee stings, like yellow jacket stings, can result in anaphylactic shock and death within 15 to 30 minutes for the approximately 0.5% of the public with severe allergies. From the time of introduction, Africanized honeybees established in the Valley and the District is currently responding on public and non-structural calls for bee removal.

5. Other Vectors of Importance.

Although certain animal species such as rodents, fleas and ticks will not be regularly controlled, these animals play important roles in the transmission of human diseases, such as Hantavirus, and are surveyed for the presence within the Project Area. The District routinely provides education and consulting services to the public about disease risk associated with these vectors and appropriate measures to protect human health.

Most of the vectors mentioned above are extremely mobile and cause the greatest hazard or discomfort away from their breeding site. Each of these potential vectors has a unique life cycle and most of them occupy different habitats. In order to effectively control these vectors, an integrated vector management program must be employed. District policy is to identify those species that are currently vectors, to recommend techniques for their prevention and control, and to anticipate and minimize any new interactions between vectors and humans.

B. GENERAL VECTOR MANAGEMENT STRATEGY

The Project addresses vector management through a general strategy including identification of vector problems; responsive actions to control existing populations of vectors and prevent new sources from developing, education of land-owners and others on measures to minimize vector production or interaction with vectors; and provision and administration of funding and institutional support necessary to accomplish these goals.

In order to accomplish effective and environmentally sound vector management, the manipulation and control of vectors must be based on careful surveillance of their abundance, habitat (potential abundance), pathogen load, and/or potential contact with people; the establishment of treatment criteria (thresholds) (Appendices C & D); and appropriate selection from a wide range of control methods. This dynamic combination of surveillance, treatment criteria, and selection between multiple control activities in coordinated program is generally known as Integrated Pest Management (IPM) (Glass 1975, Davis et al 1979, Borror et al 1981, Durso 1996, Robinson 1996).

The District's Integrated Vector Management Program (IVMP), like any other IPM program, by definition involves procedures for minimizing potential environmental impacts. The Project employs IPM principles by first determining the species and abundance of vectors through evaluation of public service requests and field surveys of immature and adult vector populations; and then, if the populations exceed predetermined criteria, using the most efficient, effective, and environmentally sensitive means of control. For all vector species, public education is an important control strategy, and for some vectors (rodents, ticks) it is the District's only control method. In some situations, the District also uses biological control such as the planting of mosquitofish in ornamental ponds. When these approaches are not effective or are otherwise inappropriate, then pesticides are used to treat specific vector-producing or harboring areas or vector populations.

Vector control activities are conducted at a wide variety of sites throughout the Project Area. These sites can be roughly divided into: (1) those where activities may have an effect on the natural environment either directly or indirectly, and (2) sites where the potential environmental impacts are negligible ("Non-Environmental Sites"). Examples of "Environmental Sites" in the Project Area include marshes, diked marshes, ponds within duck clubs, storm water detention basins, flood control channels, street drains and gutters, wash drains, or roadside ditches. Examples of "Non-Environmental Sites" include animal troughs, artificial containers, tire piles, fountains, ornamental fish ponds, swimming pools, animal waste detention ponds, and non-natural harborage (such as wood piles, residential and commercial landscape, trash receptacles, etc.).

The Project principles for mosquito control apply similarly to other vectors or pest species, including assessing threat to surrounding organisms, proximity to populated regions, pesticide use in strict accordance with label requirements, eradication of breeding sources to prevent future re-infestation, educating the general public on preventative measures to prevent future colonization, and administration of funding and institutional support necessary to accomplish these goals.

The intensity of biological or chemical control activities in the Project Area in general, or in any particular vector source, varies annually and seasonally because of weather conditions, size and distribution of vector populations, disease patterns, known or potential pesticide resistance, and in response to other variables. Therefore, the level of activity discussed in the sections below are illustrative of typical District activities levels, but they will vary based on seasonal conditions in the future.

C. CEQA-EXEMPT DISTRICT ACTIVITIES

All Project activities have been evaluated in the District's CEQA Preliminary Review. In the Preliminary Review, the District concluded that most activities conducted by the District are statutorily or categorically exempt from further CEQA review. It was also determined that some specific activities within the District's Integrated Vector Management Program might exceed the scope of the exemptions to CEQA, or might trigger one or more of the exceptions to the exemptions, primarily because of their

potential impacts on endangered species or in critical habitats. Therefore the District has undertaken this Initial Study. To ensure that no potentially significant cumulative effects are missed, the entire IVM Program is evaluated here, with the exception of the Education activities that are clearly exempt from further CEQA review, as described in the Preliminary Review. In addition, all administrative support activities are exempt and are not discussed further in this document.

In the event of emergency conditions (actual or imminent disease outbreak), District actions are also exempt from CEQA and are therefore not covered by this document. It should be noted, however, that reasonably foreseeable actions in the event of emergencies vary from the routine operational actions of the District only in scope or intensity, and as such are not expected to result in any significant environmental impact.

D. SURVEILLANCE

The District's responsibility to protect public health involves monitoring the distribution, and abundance of vectors, vector habitat, presence and level of transmission of important human or vector-borne pathogens, and interactions between vectors and people over time and space. Collectively, these monitoring activities are termed Vector Surveillance.

Vector Surveillance provides the District with valuable information on what vector species are present or likely to occur, when they occur, where they occur, how many there are, and if they are carrying disease or otherwise affecting humans. Vector surveillance is critical to an Integrated Vector Management Program because the information it provides is evaluated against treatment criteria to decide when and where to institute control measures. Equally important is the use of vector surveillance in evaluating the efficacy, cost effectiveness, and environmental impacts of specific control actions.

The District routinely uses a variety of traps for surveillance of adult mosquitoes, conducts regular field investigations of known mosquito sources to determine the presence and abundance of different mosquito larvae, tests mosquito samples and flocks of sentinel chickens for arbovirus[1] and responds to public service requests for control and abatement of mosquitoes and other insect vectors. The District uses low ground pressure all-terrain vehicles to access some these sites.

The District's vector and disease surveillance activities are conducted in compliance with accepted Federal and State guidelines, and the reader is referred to the volumes by Moore et al. (1993), Durso (ed.). (1996), and Reisen et al. (1995) for further information on specific surveillance techniques. These guidelines recognize that local conditions vary, and are thus flexible in the selection and specific application of methods. The District's specific activities and their potential environmental impacts are described

[1] Arbovirus is a conventional term used to refer to ARthropod-BOrne Viruses (Reisen et al 1995).

below.

E. BIOLOGICAL CONTROL

Biological control of mosquitoes is the intentional use of mosquito pathogens, parasites or predators to reduce the size of target mosquito populations to tolerable levels. Biological control represents one of the principal components of biorational control in mosquito control integrated pest management. The District uses the predatory mosquitofish *Gambusia affinis,* in man-made habitats, neglected pools, ornamental fishponds and other habitats as allowed by permit as a biological control of mosquitoes through direct predation of larvae. The District stocks about 100 pounds of mosquito fish annually in above mentioned habitats.

F. CHEMICAL CONTROL (PESTICIDE APPLICATION)

When field inspections indicate the presence of vector populations which meet District criteria for chemical control (including abundance, density, species composition, proximity to human settlements, water temperature, and other criteria), District staff apply chemical control, if other options have been exhausted, to the site in strict accordance with the control product label instructions.

1. Mosquito Larvicides

Depending on the time of year, water temperature, organic content, mosquito species present, larval density, and other variables, control product applications may be repeated at any site at intervals ranging from weekly to annually.

Biorational larvicides routinely used by the District include Bti - liquid and dry formulations (*Bacillus thuringiensis israelensis*), Bs - liquid and dry formulations (Bacillus *sphericus*), Methoprene – liquid and dry formulations, (Altosid), and Natular – Spinosad - compounds produced by naturally occurring soil dwelling bacterium. Biorational larvicides are highly specific for mosquito larvae. and essentially have replaced organophosphate insecticides for larval control. Agnique^{TM} MMF (monomolecular surface film) - ethoxylated fatty alcohol is also used less frequently and primarily as a pupicide.

Bti is a bacterium that is ingested by larval mosquitoes and disrupts their gut lining, leading to death before pupation. Bti is applied by the District as a liquid or bonded to an inert substrate (corncob granules) to assist penetration of vegetation. Persistence is low in the environment, and efficacy depends on careful timing of application relative to the larval instar. Therefore, use of Bti requires frequent inspections of larval sources during periods of larval production, and may require frequent applications of material. Application can be by hand, ATV or aircraft.

Bacillus sphaericus is a biological larvicide that enters the mosquito larvae thru ingestion. The mode of application is similar to that of *Bti*, but *B. sphaericus* may be used more than *Bti* in some sites because of its higher effectiveness in water with higher organic content.

Methoprene, or Altosid is a synthetic juvenile hormone designed to disrupt the transformation of a juvenile mosquito into an adult. It is applied either in response to observed high populations of mosquito larvae at a site, or as a sustained-release product that can persist for up to about four months. Application can be by hand, ATV or aircraft.

Natular –**Spinosad** (spinosyn A and spinosyn D) are a new chemical class of insecticides that are registered by the EPA to control a variety of insects. Natular is specifically formulated at a rate to only kill mosquito larvae. The active ingredient is derived from a naturally occurring soil dwelling bacterium called *Saccharopolyspora spinosa*, a rare actinomycete reportedly collected from soil in an abandoned rum distillery on a Caribbean Island in 1982. The bacteria produce compounds (metabolites) while in a fermentation broth. The first fermentation-derived compound was formulated in 1988. Spinosad has since been formulated into insecticides that combine the efficacy of a synthetic insecticide with the benefits of a biological control of pest organism. Spinosad kills susceptible species by causing rapid excitation of the insect nervous system. Due to this unique mode of action, Spinosad is valued in resistance management programs.

Agnique™ MMF is a control product that reduces the surface tension of water and makes it difficult for mosquito larvae and pupae to attach. The film also blocks their breathing tubes and the larvae and pupae drown. Resting adult males and adult egg-laying females that come in contact with the film will also drown.

2. Mosquito Adulticides

In addition to chemical control of mosquito larvae, the District also conducts ultra-low–volume (ULV) ground and aerial applications of control products for adult mosquitoes. Specific criteria for application include species composition, population density (as measured by night trapping or other quantitative method), proximity to human populations and/or human disease risk. (Appendix D) As with larvicides, adulticides are applied in strict conformance with label requirements. Adulticides used by the District include Pyrethrins (Pyrenone 25-5, Pyrocide 7396) and the synthetic pyrethroids Aqua-Reslin.

3. Other Insecticides

The District's use of control products for the control of stinging insects is currently limited to bees. The District occasionally applies the necessary control products for the non-structural removal of bees only on public property when the swarm or hive poses imminent danger to the public. The District does not control any bees that are located inside or on a structure. If a technician finds that a bee nest is located inside a structure, the resident or owner is recommended to contact a bee removal company certified for structural removal of bees. If a technician elects to treat bees, he or she will apply an insecticide directly to the bees or bees nest, in accordance with District policies and label requirements to avoid any drift and harm to non-target organisms.

Pesticides that contain the active ingredient potassium salts of fatty acids (essentially soap), such as M-Pede®, is used to control Africanized Honeybees. Potassium salts of fatty acids are extremely low in toxicity.

SECTION 3. EVALUATION OF ENVIRONMENTAL IMPACTS

This section presents the detailed environmental checklist and a discussion of potential environmental impacts of the Project and mitigation measures that have been incorporated into the Project to reduce the impacts, if any, to a less-than-significant level. The checklist includes questions relating to 17 areas of concern, and following each subject category an explanation is provided to support the basis of the impact finding. In preparing this Section, the District has conformed to the CEQA Guidelines:

3.3.1 AESTHETICS.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				X
c) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X	

Explanation:

Potential Environmental Impacts and Measures to Avoid Significance

Mosquito control activities will generally have no significant or long-term effect on aesthetics. Project activities generally occur in cities, agricultural areas, marshes, and riparian zones, and these activities do not result in the construction of structures which could impact views from surrounding areas. Inspection and control activities using wheeled vehicles on soft ground or in vegetated areas can temporarily knock down tall or stiff plants on the marshlands, but this is a short-term phenomenon that is temporary and periodic. Over a short time, vegetation recovers or grows over these areas, eliminating the impact. In addition, the District typically uses established ATV routes on existing trails, which minimize visual impacts.

Project activities may occur at night during periods of high arbovirus activity. This could result in an increase in light, due to headlights from District vehicles. The number of vehicles in any one area at one time, however, is less than or equal to two (2), which will not significantly impact the light environment. Further, as Project activities do not include permanent structures, lighting of any area will occur for short periods of time, and will stop when the vehicles move on to the next treatment area.

Overall impacts associated with aesthetics are expected to be less than significant.

3.3.2 AGRICULTURAL RESOURCES.

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?				X

Explanation:

Setting

The Project Area includes approximately 50,058 acres of harvested acreage.

Potential Environmental Impacts and Measures to Avoid Significance

Project activities will not convert any agricultural lands to other uses, nor conflict with any Williamson Act contracts. Project activities may occur on agricultural lands, including Prime, Unique or Statewide Importance lands. However, vector control activities do not negatively impact these activities, nor do they have the potential to change the environment or result in conversion of these farmlands.

3.3.3 AIR QUALITY.

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?			X	

Explanation:

Setting

There are currently two pollutants for which the Air Basin that contains the Project Area has not attained both Federal and State criteria for ambient air quality: ozone (O3), and particulate matter less than 10 micrometers in size (PM10) (SCAQMD, 6/25/99). Re-designation for PM10 is currently pending, and it is expected that the EPA will find the Coachella Valley in "attainment". Emissions of volatile organic compounds (VOC's), which are ozone precursors, are thus also considered an environmental issue in the Project Area.

Potential Environmental Impacts and Measures to Avoid Significance - Chemical Control

The Project will not conflict with air quality plans. The South Coast Air Quality Management District (SCAQMD) is responsible for air quality management in the Salton Sea Air Basin, in which the District activities occur. SCAQMD has established air quality measurement criteria and management policies for the Basin for criteria pollutants. The Project is subject to SCAQMD's 2007 Air Quality Management Plan (2007 AQMP) and the 2003 Coachella Valley PM_{10} State Implementation Plan (2003 $CVPM_{10}$ SIP). The

Project does not conflict with SCAQMD's plans for the improvement of air quality, insofar as these activities do not generate criteria pollutants.

The Project will not significantly impact criteria pollutant generation in the region. The District generates less than 60 vehicle trips per day from its activities, including trucks and ATVs. The pollutant generation from these vehicles does not exceed SCAQMD thresholds of significance.

Pesticide applications by the District do not significantly contribute to PM10; because most materials are applied directly to aquatic sources and aerosol applications use liquid droplets, not particulates, as carriers.

Project activities do not result in substantial pollutant concentrations, nor do they result in objectionable odors.

As described above, Project activities generate less than 60 vehicle trips per day. These trips will generate greenhouse gas emissions, in small quantities. However, these quantities are not expected to significantly impact the region. Project activities will not impact regional or local plans to reduce GHG emissions, insofar as their contribution will be minimal.

3.3.4 BIOLOGICAL RESOURCES.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			X	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) Through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?			X	

Explanation:

Setting

The Project Area is primarily agricultural and sub-urban and covers a wide range of primarily man-made habitats, including active and fallow agricultural fields, duck

clubs, and residential and commercial developed lands. A small area of sensitive habitat, such as the marshes around the Salton Sea, also occur within the Project Area. Lack of water in those areas, primarily during the last 10-15 years, fish farming activities, including the pumping of water into the marshes, have led to substantial changes and reduction in the marsh habitats around the Salton Sea and in the populations of local floral and faunal species. In addition, human activities have significantly impacted agricultural and suburban lands, so the majority of the Project Area exhibits human modification and impact.

Mosquito control activities are associated with areas with standing water of all types and sizes. These sites include approximately 154 acres of marshes around the Salton Sea, duck club ponds, street drains and gutters, or roadside ditches.

No sensitive species are likely to occur at animal troughs, artificial containers, fountains, ornamental ponds, swimming pools, liquid waste detention ponds, and non-natural harborage (such as wood piles, residential and commercial landscape, trash receptacles, etc.).

A. Impacts and Mitigation - Endangered and other Special Status Species

The Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) lists 48 special status species[2] in the Coachella Valley. In almost all cases, the primary explanation for their status is loss of habitat. Because the District's activities do not involve changes in land use, the District's activities do not contribute to this process. Should District activities occur in the vicinity of conservation lands for the MSHCP, District policies and practices specify step by step procedures for application methods, use of specific equipment and use of specific control products in different habitats to ensure that no significant impacts can occur. Habitat descriptions and current maps of distribution and potential habitat of all endangered species in the Project Area are maintained by the District and incorporated into the operational guidelines of field personnel.

ATV use, Biological Control; and/or Chemical Control have the potential to pose a threat to sensitive species outside the MSHCP conservation areas. However, the District implements the following standards and requirements which reduce the potential for impacts to less than significant levels:

- The District does not conduct routine control activities within 18 designated CVMSHCP conservation areas. The District conducts surveillance and control measures within the Coachella Valley Storm water Channel and Delta, and within small communities located within Thousand Palms and West Deception Conservation areas.

[2] Under the Federal and State Endangered Species Acts, the word "species" may also mean subspecies or other taxonomic groupings.

- The District **complies strictly with control product labels** that are written to ensure that no significant impact to biological resources can occur.

- The Project is highly **selective in space and time**, based on a detailed list of potential mosquito sources, pre-control surveillance for mosquito abundance, and threshold criteria for control applications.

- The District's field technicians are **certified by the California Department of Public Health Services** as **highly-trained** control product applicators, and are required to complete frequent **continuing education** sessions sponsored by the District and by the Mosquito & Vector Control Association of California pursuant to State Regulations.

- The Project is **routinely monitored** for safety, efficacy, and environmental impact by the District's Supervisors and General Manager, by the Riverside County Agricultural Commissioner, and other Trustee and Responsible agencies.

- The District and the Mosquito & Vector Control Association of California routinely fund and collaborate with researchers from the University of California and other academic institutions on **research projects** to evaluate activities and to ensure that practices are used with the least potential impact on biological resources consistent with operational requirements.

- The Project is **consistent** with the Riverside County General Plan's Conservation Element, and the Coachella Valley Multiple Species Habitat Conservation Plan, California and federal Endangered Species Act and City General Plans in the Service Area.

- District staff **coordinates and consults** with other responsible agencies, including the California Department of Health Services, the California Department of Fish and Game, and the Bureau of Land Management to ensure that Service Area activities do not result in significant impacts to biological resources.

In addition to these general operational standards, the District implements the following standard requirements:

1. ATV's

The District uses All-Terrain Vehicles (ATV's) on agricultural areas and some man-irrigated ponds/duck clubs and small portion of the marsh land along the existing fisheries on the west side of the Salton Sea to deliver and apply control products. In each case, the potential impacts of the ATV's are similar, and consist of noise, temporary flattening of low, green/dry ground cover vegetation and temporary disturbance of soils. The movement of ATV's is guided by the ground crew to avoid any damage to wildlife,

if present. The use of ATV's by the District does not and will not have a significant effect on the environment because activities are conducted in agricultural areas such as irrigated date gardens. In the spring months on the west side of the Salton Sea, use of the ATV's is limited to existing dirt roads around the flooded areas of fishery ponds. The District staff uses existing dirt roads around the fish farm ponds and occasionally enters open areas under the salt grass in the vicinity of the fish farm ponds. In the fall months the use of ATV's is limited to sites such as duck club ponds that are manmade. (These activities continue throughout the duck club season from September through April). Any ornamental plantings disturbed by these activities regrow quickly, and is not significantly impacted. All vegetation types re-grow completely following ATV use by the District, with no evidence of long-term impact.

2. Biological Control

The District uses mosquitofish (*Gambusia affinis)* only in private man-made bodies of water for mosquito control – neglected pools. The District has a California Department Fish and Game (CDFG) Permit for mosquitofish stocking and complies with the following requirements:

A. The District plant mosquitofish only in temporary man made wetlands that are covered by a CDFG permit and include Sections 19, 28, 29, 30, 31, Township 7, Range 9.

B. The District will not plant mosquitofish in the following Desert Pupfish refugia ponds:

   i. McCallum/Simone pond and Visitor center pond or any water course at the Thousand Palms Preserve, along Thousand Palms Canyon Drive.

   ii. The Seep pond, the Oasis pond or the Cienega (Sonoran) pond located at the Living Desert Zoological Gardens.

   iii. The small pond behind the Salton Sea State Park Headquarters.

   iv. Any pond or watercourse located at the Dos Palmas Preserve.

3. Chemical Control

When mosquito numbers exceed District control thresholds and other control methods would be ineffective, contrary to permits or other environmental protections, or otherwise inappropriate, the District utilizes specific insecticides that are registered for use in California and that possess a current EPA label.

4. Mitigation Measures

Although the District activities will not significantly impact special status species, the following mitigation measures will be adopted as a prudent action to ensure that impacts remain insignificant:

1. The District shall maintain current and updated maps and other information from the California Department of Fish and Game Natural Diversity Data Base, the Coachella Valley Multiple Species Habitat Conservation Plan, the Bighorn Sheep Recovery Plan and similar sources on the location of Special Status Species and designated Natural Communities in the Service Area.

2. The District shall coordinate its activities with approved Habitat Conservation Plans and Species Recovery Plans.

3. The District shall conduct all its activities consistent with the requirements of the California Department of Fish and Game, the Regional Water Quality Control Board, the US Fish and Wildlife Service and the US Army Corps of Engineers.

4. The District shall maintain policies and programs for the continuing education of field personnel to ensure minimization of specific mosquito control activities and/or the use of alternative mosquito control methods which might impact Special Status Species or designated Natural Communities.

B. IMPACTS AND MITIGATION - RIPARIAN AND OTHER SENSITIVE HABITATS

Project activities in riparian corridors are addressed in this subsection, and activities in wetland areas are discussed in subsection 3.4(C) below.

In riparian areas, the only Project activities with any potential for environmental impacts are the trimming of trees, shrubs, and bulrush to allow District staff access to areas in which the need to conduct surveillance and control measures. The only identified potential environmental impact of biological control in riparian zones is on sensitive species, which was discussed in A2 above.

1. Vegetation Management

Vegetation Management activities in riparian zones consist of pruning shrubs and trees to facilitate access for mosquito and mosquito habitat surveillance and control. The District does not conduct vegetation management in the Whitewater River. The District's practices are designed specifically to reduce potential impacts to riparian areas to less than significant levels. As a result, Vegetation Management in riparian areas has a less than significant impact on riparian areas.

2. Chemical Control

Please see Section A3.

C. IMPACTS AND MITIGATION - WETLAND HABITATS

Project activities in wetland habitats primarily include natural and man-made marshlands (salt, brackish, and fresh), and seasonal wetlands. In these areas, the only Project activities with any potential environmental impacts are ATV use, vegetation management for maintenance of access, and pesticide use. The only identified potential environmental impact of biological control in non-riparian zones is on sensitive species, which was discussed in A2. The other District activities which could impact wetlands are discussed individually below.

1. ATV's

The District uses All-terrain vehicles (ATV's) within the marshes along the Salton Sea to deliver and apply chemical pesticides. The potential environmental impacts of ATV use were discussed in A1 above. In the marsh areas within the Project Area, surveillance is conducted primarily on foot, while control operations are carried out primarily by foot and secondarily by ATV or helicopter.

2. Vegetation Management

As is true in riparian zones (discussed in B1 above), vegetation management in the marsh areas consists of the trimming of trees and bushes to facilitate access for mosquito surveillance and control.

3. Chemical Control

In addition to directly applying insecticides on marsh areas for the control of larval mosquitoes, the District also sprays other pesticides for the control of adult mosquitoes in areas adjacent to wetlands, which might cause pesticide drift onto some wetlands. The District's routinely low application intensity, strict compliance with label criteria, and substantial research on non-target effects of the materials used operationally by the District, insure that no significant impacts result from chemical control.

D. IMPACTS AND MITIGATION - CORRIDORS AND NURSERY SITES

Please see Section A.

E. IMPACTS AND MITIGATION - LOCAL POLICIES AND ORDINANCES

District activities have no apparent conflicts with any local environmental protection policies and ordinances. Specifically, District activities are consistent with the Conservation Elements of the Riverside General Plan and all other local General Plans.

F. IMPACTS AND MITIGATION - HABITAT CONSERVATION PLANS

There is currently one federally-approved area plan which includes specific policies for the protection of vegetative, water, fish and wildlife resources in the Coachella Valley: The Coachella Valley Multiple Species Habitat Conservation Plan. The Project activities are consistent with this plan.

3.3.5 CULTURAL RESOURCES.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?				X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?				X

Explanation:

Setting

The District activities are located within the traditional use area of the Cahuilla, who were Uto-Aztecan speaking hunters and gatherers who occupied predominantly desert territory in Riverside and parts of San Bernardino Counties. The archaeological record of the Colorado Desert indicates that cultural systems responded to changing environmental conditions (especially heat and available water resources) through time with a variety of hunter-gatherer subsistence and settlement strategies. Settlement systems are directly related to subsistence strategies, and the spatial distribution and seasonal abundance of resources directly influence the size and distribution of social groups.

The Cahuilla culture area encompassed four distinct life zones: Lower Sonoran, Upper Sonoran, Transition, and Canadian-Hudsonian. Because of the variability of environmental conditions, prehistoric populations exploited a variety of resources in different life zones. The Project area is within the Lower Sonoran life zone, which is generally below 600 meters, and includes a variety of floral and faunal resources.

The historical record in the Colorado Desert begins in 1774 when Don Juan Bautista de Anza led a large expedition through the area on the way to the missions of San Gabriel, which was the first to encounter the Cahuilla people. American trappers, miners, and settlers used the San Gorgonio pass for access to California destinations. The Americanization of the Indians began after the Mormons settled in San Bernardino

around 1852 and several American families settled in the San Gorgonio Pass region. The first road, known as the Bradshaw Trail, was constructed across Riverside County in 1862, and was used as an overland stage route beginning at San Bernardino and ending at La Paz, Arizona. The Bradshaw Trail was used extensively between 1862 and 1877 by miners and others on their way to the gold fields at La Paz. In 1875, the Southern Pacific Rail Line was built through the San Gorgonio Pass.

Following integration into the United States socio-political sphere, the region experienced rapid growth and change, which has continued, at varying rates, until the present. Numerous historic resources from this time are also present.

Potential Environmental Impacts and Measures to Ensure Insignificance

Mosquito control activities will not have any impact on historic, archaeological or paleontological resources, as the Project's activities generally occur on marked trails and existing roadways, in agricultural or developed areas. Further, Project activities do not disturb the ground surface, and therefore cannot disturbed buried cultural resources.

Finally, Project activities will have no impact on burial grounds or human remains, as no ground disturbance will occur.

3.3.6 GEOLOGY AND SOILS.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structure to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent San Andreas Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X

Explanation:

Setting

The Project Area is located in the Coachella Valley, which is one of the most seismically active regions in the United States. Some regions in the Service Area, including some unstable geological units, are likely to be subject to strong ground shaking, liquefaction, landslides, and possibly ground rupture in the event of a proximal moderate to severe earthquake on San Andreas or San Jacinto faults. However, it is unlikely that these events would affect the District's facilities, which consists of four (4) single story buildings including the administration building (4776 sqft), operations building (8882sqft), biocontrol building (2948 sqft) and tank room (3720 sqft). The two (2) buildings that are constructed of steel and masonry (constructed in 2001) include the mechanical shop (3340sqft) and a storage area (2528 sqft). The site also has three (3)

covered parking structures; two (2) of which with solar panels on top. The site is 10 acres total.

The soils underlying many mosquito-producing sites within the Project Area are moist and prone to compaction or erosion under substantial dewatering and /or operation of vehicles with high
ground pressure (over about three pounds per square inch = psi).

Potential Environmental Impacts and Measures to Ensure Insignificance

The Project will have no impact on geology. The Project is conducted throughout the Coachella Valley, using vehicles and ATVs. No construction is proposed as a result of the Project, so no damage to structures would occur. District offices were constructed to Building Code requirements, and are therefore designed for seismic zones. The Project will have no impact on expansive soils or unstable soils, as no construction or structure is proposed.

The Project will not result in substantial soil erosion because the ATVs used by the District use low pressure tires with soft treads and a ground loading pressure well under 2 psi. ATVs use existing trails, often in areas close to water which serves to stabilize soil and lessen erosion potential; or travel across natural areas in an infrequent and short-term manner, and do not cause repeated, frequent ground disturbance.

3.3.7 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
C) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			X	
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wild land fires, including where wild land are adjacent to urbanized areas or where residences are intermixed with wild lands?			X	

Explanation:

Setting

The Project Area is a primarily residential, suburban area with commercial and industrial nodes necessary to meet the employment and shopping demand of the residents. There are few large generators of hazardous materials in the Valley, as most commercial and industrial users are small generators. There are a number of known hazardous materials sites in the Valley, primarily associated with gasoline service stations, prior industrial uses, and similar activities.

There are public airports within the District. Although the airports themselves are not located on sites that will need extensive routine mosquito surveillance or control, the District could undertake pesticide applications within and around these sites, due to proximity to marsh and seasonal wetland habitats and to human settlements.

Potential Environmental Impacts and Measures to Ensure Insignificance

Minimizing the hazards of mosquito-borne disease depends on effective mosquito control, which can include the use of chemical insecticides. The District staff is trained in the application of pesticides within label guidelines, to assure that there is no significant hazard to the public (Cal. Dept. of Pesticide Registration). All pesticides are classified as "hazardous materials" by the State of California, regardless of their acute toxicity. Therefore, routine Project activities do pose a risk of release of hazardous materials through accidental releases, and this can occur within one-quarter mile of existing or proposed school sites. District policies and practices, however, ensure that these risks and impacts are not significant, as described below:

The pesticides used by the District are safe. The District does not use Category 1 or Category 2 pesticides, except for the OMRI listed M-pede which is infrequently used for bee control and is very similar to soap. The pesticides that are routinely used by the District have very low acute toxicities, and very low chronic toxicity at the concentrations and volumes transported and applied by the District.

The volumes of pesticides transported or used by the District are small. Bulk deliveries of pesticides to the District occur 4 times per year, and are always carried by haulers certified by the Department of Transportation (DOT) for the materials they are transporting. The District does not transport large volumes of pesticides in its own vehicles.

All District vehicles that transport or apply pesticides are equipped with all equipment and supplies needed to contain the largest possible spill from that vehicle. All District vehicles are maintained in good condition by a full-time mechanic working in a fully equipped shop.

All District personnel that handle pesticides are registered by the California Department of Public Health Services as Pesticide Applicator, and are required to complete annual pesticide safety training, including pesticide spill drills, offered by the District.

The District and its personnel are routinely inspected by the Riverside County Agricultural Commissioner's office to verify that all equipment is calibrated and functioning properly and to assure adequate staff training and knowledge concerning the proper use and handling of all pesticides used by the District.

As previously stated, Project activities have no impact on air operations, and although they may occur on or near airport lands, these occurrences are temporary and infrequent.

District staff operates on regional and local roadways, but District activities have no impact on these roadways, and therefore have no impact on emergency response or evacuation routes.

Project activities may occur in the foothills of the Valley, where wild land fires are most likely, but District activities cannot start wildfires, or create a risk of wildfires.

In addition, all District vehicles carry fire extinguishers and cellular telephones which can be used to summon assistance in the unlikely event that any District action initiates a fire.

3.3.8 HYDROLOGY AND WATER QUALITY.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge standards?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which a permit has been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?				X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?				X
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				X
f) Otherwise substantially degrade water quality?			X	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?				X

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam?				X
j) Inundation by seiche, tsunami, or mudflow?				X

Explanation:

Setting

Hydrology in the Valley is controlled by storm flows originating in the surrounding mountains, which flow through the Valley in a number of streams and creeks which occur throughout the area. The primary stream through the area is the Whitewater River, which originates in the western end of the Valley, and extends to the Salton Sea.

The majority of Project activities occur in urbanized areas, with minor activity occurring in riparian and other natural areas, as described in Section 3.3.4 (Biological Resources). The hydrology of these areas has been significantly impacted by urban development. All of the cities in the Valley, and the County of Riverside, manage storm flows in a similar fashion, and conform to the requirements of the National Pollution Discharge Elimination System (NPDES), which provides strict controls for the control of pollutants in surface waters. The District does not carry out any physical control work in natural areas. Physical Control work means physically controlled alterations to the environment that cause an area to hold water that is breeding mosquitoes. Examples of physical control for riparian or marsh land would be draining the marsh, making ditches to increase water movement, removing vegetation etc. All of these physical alterations to the aquatic habitat could decrease the likelihood of mosquito breeding. The District does not perform these activities in natural areas.

Potential Environmental Impacts and Measures to Avoid Significance - Water Quality

The majority of applications (for larvae control) are of aquatic larvicides labeled for application to water. Adulticides, if used are extremely low volumes with deposition negligible. This is the current focus of SWRCB/MVCAC 5 year NPDES permit. Barrier treatments are used in rural habitat 5-7 times per year away from the Whitewater River. Average annual rainfall is 2.18 inches (extremely little). The chance of a rain event coinciding with application is extremely unlikely.

Potential Environmental Impacts and Measures to Avoid Significance – Groundwater

Project activities do not require the use of groundwater. Further, the District does not apply pesticides or other chemicals in private or public wells.

Potential Environmental Impacts and Measures to Avoid Significance - Erosion and Siltation

The Project does not involve any dredging or vegetation removal activities, with the exception of minor brush cutting along existing thoroughfares. The small scales of these activities preclude significant impacts.

Potential Environmental Impacts and Measures to Avoid Significance - Flooding

Project activities do not result in the construction of structures or parking lots which could affect the rate or volume of storm flows. Project activities do not alter streams or channels, and do not affect the capacity of existing storm water management systems. Of the Project activities, only vegetation management has any potential to result in flooding, and the small scales of these activities preclude significant impacts. The District does not conduct any vegetation management in natural bodies of water, flood control channels, agricultural ditches, etc. The District relies on local property owners or other local agencies (such as water districts) to maintain all water conveyance systems (natural and manmade) in accordance with all State and Federal regulations.

Project activities will not result in any construction, and therefore will not place either structures or homes within a flood plain.

3.3.9 LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?			X	

Explanation:

Setting - Existing Environmental Practices, Plans, and Policies

Because of the size and diversity of the Project Area, there are a large number of existing environmental practices, plans, and policies, including those of Riverside County and the cities of the Coachella Valley. In addition, large institutional land-owners (e.g. the Bureau of Land Management) have adopted land use plans and other environmental policies and practices.

Potential Environmental Impacts and Measures to Avoid Significance

Project activity types are compatible with the cities' and County's general plans land use designations, policies and programs, and the zoning of the Project Area. All the jurisdictions in the service area support activities which protect local habitat, particularly protected habitats, including wetlands, riparian areas and marshes. The Project activities serve to reduce potentially dangerous insect populations in these areas, and have the potential to protect species of concern. This is particularly true as the vectors which the District is responsible for reducing are caused by human activities, rather than the natural processes of indigenous species.

The activities within the Project Area do not result in any changes to land use within the Project area. Implementation of Project activities is not expected to adversely

affect adjacent uses or directly cause any changes to regional land use. Therefore, Project activities are compatible with existing land uses. The Activity Elements, individually and collectively, appear to be consistent with all existing environmental policies and plans of relevance to the Project Area.

3.3.10 MINERAL RESOURCES.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

Explanation:

Setting

Mineral resources and mineral recovery operations have been determined by the State, and identified throughout the Coachella Valley, particularly in the foothills of the surrounding mountains.

Potential Environmental Impacts

Project activities do not involve any substantial mineral usage, nor do they interfere with any actual or proposed mineral extraction operations.

3.3.11 NOISE.

Would the proposal result in:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				X
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?				X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

Explanation:

Setting

The District uses 4 ATV's, 2 ARGOS, and backpack sprayers in marshlands surrounded by various land uses, including light industry, transportation, sewer treatment, agriculture, other open space, and residential areas. Primary noise sources in the Project Area include vehicular traffic, train traffic, and operational and construction activities at industrial facilities. The residential areas are generally located at some distance from the marshlands.

Potential Environmental Impacts and Measures to Avoid Significance - ATV's & Chemical Control

By Community Noise Equivalent Level criteria, there is no significant source of noise from the District's ATV's or other vehicles or ULV spray equipment to persons

more than a few dozen feet from the vehicle. All District ATVs meet California Vehicle Code requirements for OHV and do not exceed 96 dbA at 20 inches (California Vehicle Code Section 38370). District ATVs operating at idle can be heard up to 200 feet away in an unobstructed environment. This distance was determined in an open dirt lot in an urban environment. These vehicles are typically operated in agricultural areas of the Coachella Valley where many other types of agricultural equipment are being operated. Atmospheric conditions as well as vegetation type will affect the distance at which these vehicles are heard. These vehicles and ULV spray equipment are typically operated for relative short period of time (5-30 minutes) depending on habitat and application type. Most District surveillance and applications are conducted on foot by Vector Control Technicians after arriving on site with District trucks. Because of the normal locations and times for operating these vehicles and equipment, and the very short time spent at any specific location, noise levels are not sustained, and will not permanently impact the noise environment. The Project activities are temporary and periodic, and do not violate local noise ordinances. Finally, the activities are conducted during the less sensitive daylight hours, when the noise environment, and additions to the noise environment, are less noticeable.

Helicopter use occurs approximately 30 times per year, during daylight hours and almost always near open space at a distance from residential areas. The Project Area is impacted by air traffic currently, and the District's flights are not a significant part of the air traffic in the area, which is dominated by commercial aircraft and single engine private airplanes.

Use of vehicles in the salt marsh has a potential impact on nesting birds and other wildlife. To mitigate this impact, surveillance and control activities on marshland around the Salton Sea during bird nesting season are conducted primarily on foot or by aircraft. The District communicates with the US Fish & Wildlife Service and California Fish & Game to ensure that its activities in sensitive areas do not conflict with wildlife management plans. The District at this time only has one permit with California Department of Fish and Game to stock *Gambusia affinis* in particular man-made habitats/duck clubs that do not empty directly into waters of the US.

3.3.12 POPULATION AND HOUSING.

Would the proposal:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads and other infrastructure)?				X
b) Displace substantial numbers of existing housing [units], necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

Explanation:

Setting

Single-family and other residential housing exists throughout Riverside County, interspersed with industrial, commercial, and recreational land uses. Prior to creation of the District, residential development in some areas of the County may have been slowed by high densities of mosquitoes. At this time, there are no areas in the District's Service Area where this is true.

Potential Environmental Impacts

No direct impacts on housing and population are anticipated within of the Project Area. The activities within the Project Area do not involve the development of projects or structures which could create significant numbers of new residents or jobs, or directly induce any growth in the area.

The District responds to the needs of the existing population, and does not act independently anywhere within the Project Area to reduce mosquito populations to allow further development.

Project activities do not displace housing or people, but instead occur in areas where human activities have attracted vectors and insects.

3.3.13 PUBLIC SERVICES.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives of any of the public services:				
Fire protection?				X
Police protection?				X
Schools?				X
Parks?				X
Other public facilities?				X

Explanation:

Setting

Public services including fire protection and emergency medical care are located in cities and unincorporated areas throughout the Project Area. Police agencies with jurisdiction over some or all of the Project Area include local Police Departments, the Riverside County Sheriff, and the California Highway Patrol.

Maintenance requirements of some roads are relatively high, due in part to the current flood regimes.

Costs to Caltrans and the County during road flooding include barriers, pumps, sandbags, vehicles, and personnel.

Costs to local cities, Caltrans and the County during road flooding include reconstruction, barriers, pumps, sandbags, vehicles, and personnel.

Potential Environmental Impacts and Measures to Ensure Insignificance

The Project places no significant demands on city or county public services. The only long-term demands foreseen for government services will be for the operation and maintenance of certain infrastructure such as flood control facilities built within the Project Area. Since local governmental entities have largely performed these functions in the past, little additional demand for services is likely.

3.3.14 RECREATION.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

Explanation:

Setting

The Project Area includes significant recreational resources, including local parks and recreation facilities, and regionally important recreational facilities, such as the Salton Sea Recreational Area and areas adjacent to the Salton Sea.

Potential Environmental Impacts

The Project will not infringe on existing recreational facilities, or on land upon which recreational uses could occur in the future. The District does conduct mosquito control in local parks in cities with minimal impact other than reducing the presence of vectors. Generally, water fixtures in the parks are well maintained and do not require mosquito control. There would be no detrimental impact to recreational areas. By reducing mosquito abundance, the Project substantially enhances outdoor recreational values and quality of life, and therefore represents a beneficial environmental impact.

3.3.15 TRANSPORTATION / TRAFFIC.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections?				X
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Result in inadequate parking capacity?				X

Explanation:

Setting

Levels of service in the Coachella Valley vary by time of day and location. Most desert cities have established Level of Service C or D as an acceptable Level of Service on their jurisdictions' roadways. Most of these roadways operate at acceptable levels, although peak hour activities, both morning and evening, can impact critical intersections throughout the Valley.

The Valley is served by several State or federal highways, including Interstate 10, State Highways 111, 62, 74 and 86. In general Interstate 10 operates within acceptable levels currently. The State highways may operate unacceptable levels of service where they occur in more urbanized areas, particularly in the west end of the Valley.

Regional traffic movements and improvements are coordinated through the Coachella Valley Association of Governments, which maintains the sub-regional traffic

model for the area.

Transit service is provided by the SunLine Transit Agency, created and operated through a joint powers agreement between all the Valley cities and the County of Riverside.

Potential Environmental Impacts and Measures to Avoid Significance

The small size of District staff vehicles that are daily on the road (less than 40) relative to the commuting, tourist, and business traffic in the Service Area (see attached maps from Riverside County General Plan) means that District impacts to transportation and traffic are insignificant.

As stated in the Air Quality section, above, the District generates less than 60 vehicle trips per day. These trips are distributed throughout the service area, but are focused to and from the District's offices, located west of Monroe Street, between Highway 111 and Interstate 10, in the City of Indio. The majority of trips to and from the District's offices occur during the work day, although District activities extend beyond the evening peak hour. The Indio General Plan Circulation Element classifies Monroe as an Augmented Major Arterial in the area of the District offices (6-lane divided). District activities currently occur on this roadway, and are not expected to change from current patterns. As Monroe Street operates at acceptable levels of service, Project activities do not significantly impact the roadway.

Project activities have no impact on air traffic, as the spraying of materials occurs well below flight paths. The District activities do not involve the construction of roadways or parking areas, so there will be no impact to these issue areas.

Project activities have no impact on alternative transportation, as all activities are conducted in District vehicles.

3.3.16 UTILITIES AND SERVICE SYSTEMS.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities the construction of which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

Explanation:

Project activities do not utilize wastewater treatment, domestic water of stormwater drainage facilities. Project activities do result in the disposal of containers and other materials used in the vector control process. The District disposes of pesticide containers and similar materials through approved methods dictated by county, state and federal standards. Thus, there would be no impacts associated with utilities or service systems.

3.3.17 MANDATORY FINDINGS OF SIGNIFICANCE.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Explanation:

The established policies and practices of the District's Integrated Vector Management Program together with the mitigation measures identified in the Biological Resources Section will ensure that potential impacts to plant and wildlife species remain at a less-than-significant level. Project activities would not adversely affect any long-term environmental goals.

Policies, practices, and mitigation measures have been included in Project activities that would eliminate the potential for significant impacts. The Project activities would not adversely affect human beings, either directly or indirectly.

3.3.18 EARLIER ANALYSIS.

The District refers in this Initial Study to Final Environmental Impact Report on Riverside County General Plan Revision. A Copy of which that can be reviewed at http://www.rctlma.org/genplan/default.aspx

1. Final Environmental Impact Report on Riverside County General Plan Revision (1991).

3.3.19 REFERENCES.

Many of the General References listed immediately below have an extensive bibliography justifying the general conclusions. To avoid unnecessary repetition, we refer the reader to them for additional literature on mosquito control and its potential environmental impacts.

Bohart, R.M. and R.K. Washino (1978). Mosquitoes of California. Berkeley, California, University of California Press. 153 pp.

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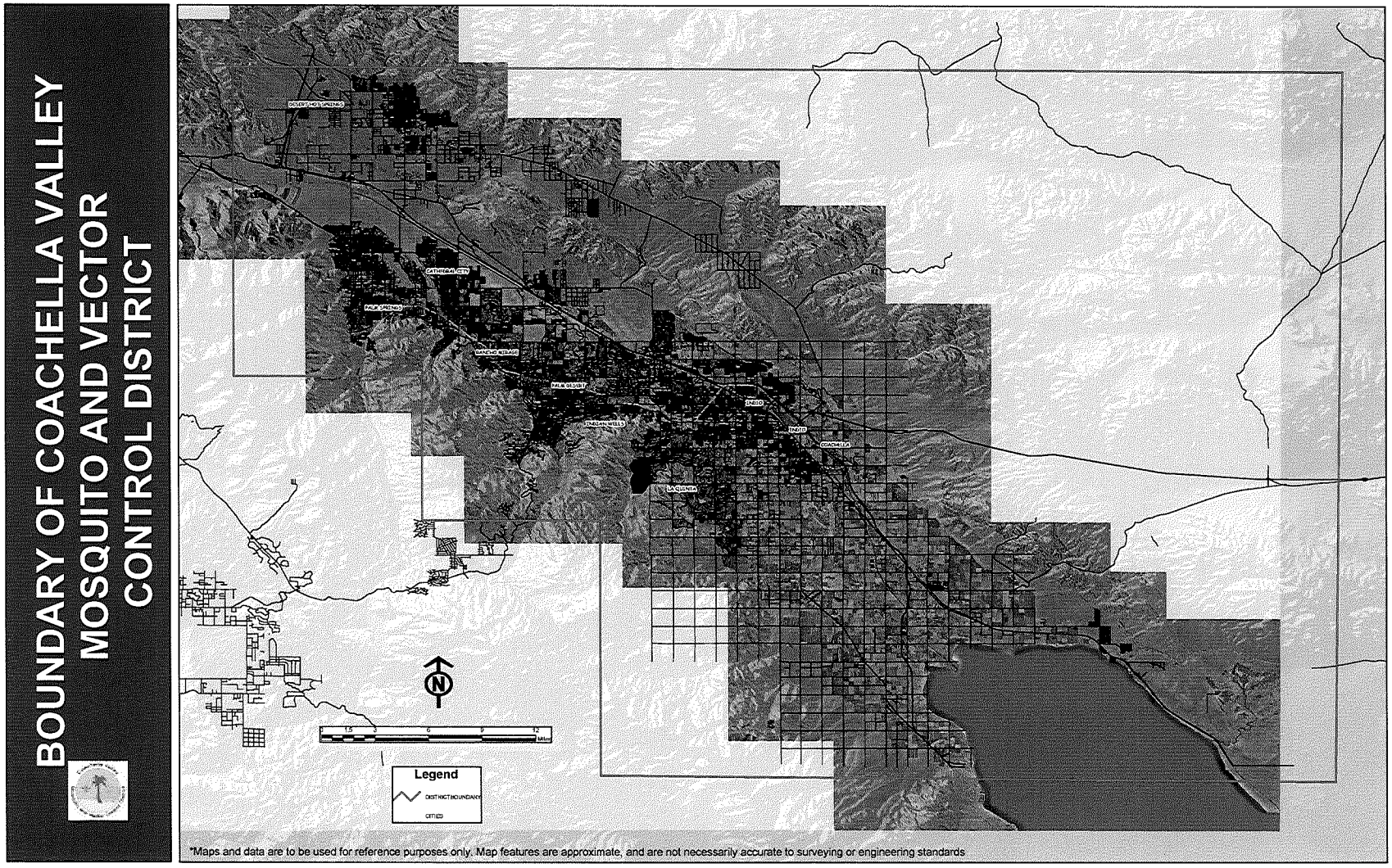
Tietze, N.S.,M.A. Olson, P.G. Hester and J.J. Moore. 1993. Tolerance of Sewage

Treatment Plant Microorganisms to Mosquitocides. J. Amer. Mosq. Cont. Assoc. 9(4):477-479.

Appendix A

District Boundary Map


BOUNDARY OF COACHELLA VALLEY
MOSQUITO AND VECTOR
CONTROL DISTRICT
DESERT HOT SPRINGS
CATHEDRAL CITY
PALM SPRINGS
RANCHO MIRAGE
PALM DESERT
INDIAN WELLS
INDIO
COACHELLA
LA QUINTA
N
Legend
DISTRICT BOUNDARY
CITIES
*Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards

Mosquito Species of Human Health Importance found in the Coachella Valley

Common Name	Scientific Name	Vector of Disease*
	Aedes dorsalis	Secondary vector of WEE and CE
Inland floodwater mosquito	*Aedes vexans*	Secondary vector of Dog heartworm
Southern house mosquito	*Culex quinquefasciatus*	Primary and Secondary Vector of SLE and WNv
Banded foul water mosquito	*Culex stigmatosoma*	Secondary SLE
Western encephalitis mosquito	*Culex tarsalis*	Principal Vector of SLE, WEE, and WNv
Large winter mosquito	*Culiseta inornata*	Pest
	Psorophora columbiae	Major Pest

* **CE** – California encephalitis; **WEE** – Western equine encephalomyelitis; **SLE** – St Louis encephalitis; **WNv** – West Nile virus

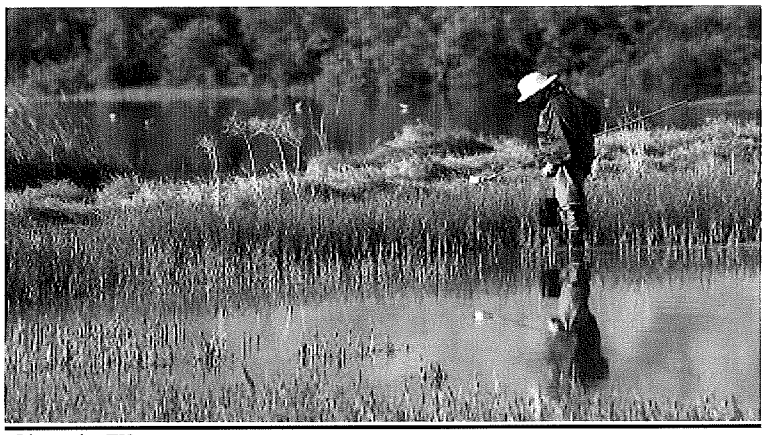
Appendix C

CVMVCD Larval Sampling Protocol and Thresholds

STANDARD OPERATING PROCEDURES

COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

LARVAL SAMPLING PROCEDURE



Picture by JW

Larval sampling is an important surveillance procedure used to assess mosquito larvae abundance, species composition, and stage(s) of development at a specific breeding site. It can also be used to help forecast the need for adult mosquito control and to help assess the effectiveness of both chemical and biological control measures.

- When searching for mosquito larvae proceed slowly and carefully.
- Vibrations from heavy footsteps, casting a shadow or moving vegetation may cause larvae to dive to the bottom and hide.
- Make sure that you wait 15 seconds before taking the next dip to allow larvae/pupae to return to the surface. This is especially important in small habitats.
- Dipping should be concentrated around floating debris and aquatic and emergent vegetation.
- If there is a strong wind larvae and pupae will be concentrated on the downwind side of the habitat
- Look for larvae/pupae before you begin to sample, if possible
- Each habitat contains a number of different microhabitats which could contain different mosquito species
    - under tree roots
    - within clumps of emergent vegetation
    - under floating or overhanging vegetation
    - open water
- Learn to recognize different microhabitats within an area and sample as many as possible to obtain accurate picture of the area's species composition

EQUIPMENT TO BE USED AT **ALL TIMES** WHEN SAMPLING

- Dipper – plastic/metal, 5" diameter, 3'/ telescoping handle
- Concentrator- to *concentrate* all dips from one habitat in one sample
- Plastic bags
- Rubber bands
- Labels

GIS/MOBIL APPLICATION

Larval sampling must be documented in the GIS/Mobil Application System by entering a "larval lab sample" - see mobile application guidelines: larvae lab sample procedure.

THRESHOLD

The threshold is the number of larvae per one dip. If the number is above the threshold, the condition indicates the need for application of a control product.

- When **all** the dips from a surveyed habitat are averaged, **ONE LARVA PER DIP,** is the value that indicates need for control action.

TRANSPORTATION OF LARVAL SAMPLES

While you are still in the field, sample bags should be **properly labeled** and stored in a cooler, preferably with ice, to prevent larvae die-off during transport to the lab for counting and identification.

LARGE HABITATS

Large habitats include any mosquito-breeding site in urban or rural areas (agricultural, Salton Sea marshes and duck clubs) larger than 0.25 acres.

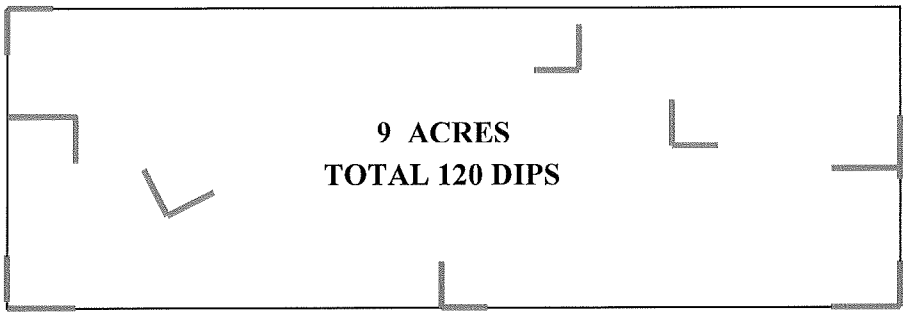
The sampling is done **randomly** and includes an "**L**" shaped pattern, which consists of **1** dip every **5** steps **TOTALING 10 DIPS/one "L "**

The number of "**L**" shaped patterns depends on the size of the habitat:

ACRES	No. of "**L**"s
0.25	1 = total 10 dips
0.50	2 = total 20 dips
0.75	3 = total 30 dips
1.00	4 = total 40 dips

EACH ADDITIONAL ACRE ADD ONE MORE "L"

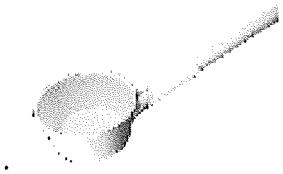
See one possible "**L** " sampling pattern below:



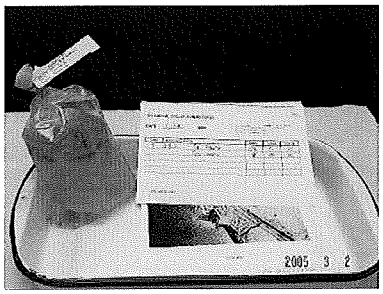
SMALL HABITATS

Small habitats include all urban or rural habitats under 0.25 acres. A small habitat may not be accessible for sampling. In situations like that make a note in the GIS Mobil system. In addition the number of dips when surveying a small habitat will be limited because of the habitat size.
Record the number of dips to estimate the average/dip and establish justification for application of control product.

- **NEGLECTED POOLS** – larval sample **must be taken** from every neglected pool
- **Do not take** more than one dip when the density of larvae is **excessive** – more than 30 larvae/dip
- **Do not take** a larval sample if you are surveying sewer water.



Dipper



Sample

Concentrator

Appendix D

CVMVCD Emergency Response Plan

COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

MOSQUITO-BORNE VIRUS SURVEILLANCE AND EMERGENCY RESPONSE PLAN

CVMVCD 43-420 Trader Place Indio, Ca 92201
E-mail: cvmosquito@cvmvcd.org
www.cvmvcd.org

GW 6.1.2011

TABLE OF CONTENTS

I. INTRODUCTION

For over 30 years, California has had a mosquito-borne disease surveillance program in place to monitor mosquito abundance and encephalitis virus activity. The state wide surveillance program was established in 1969. The District started with surveillance in the early 1980s and the present program is in place from 1990, and it was developed by a cooperative effort of the Arbovirus Research Group at the School of Public Health, UC Berkeley (now the Center for Vector-borne Disease, UC Davis), and the Coachella Valley Mosquito and Vector Control District (the District).

The District mission is to protect the health of the public in the Coachella Valley from excessive nuisance caused by mosquitoes and risk from mosquito-borne viral disease through an ongoing mosquito surveillance and control program. Intensive control measures may be applied to reduce the potential for virus transmission to humans by suppressing infected mosquito populations for no less than a 10 day period while infectious viremia persists in vertebrate hosts, thus breaking the cycle by preventing new vector infections.

This document describes an enhanced surveillance and response program for the Coachella Valley dependent on the level of risk of mosquito-borne virus transmission to humans. The Mosquito-borne Virus Surveillance & Response Plan generated by California Department of Public Health Services (DPHS) , Mosquito & Vector Control Association of California (MVCAC) and University of California, is the core of this document, however some necessary adjustments were made in benchmark ratings relative to the conditions in the Coachella Valley.

Guidelines for adult mosquito surveillance, processing mosquitoes for arbovirus detection, maintaining and bleeding sentinel chickens, testing dead birds and testing equines, as well as information regarding compounds approved for mosquito control in California are part of the California State Mosquito-Borne Virus Surveillance & Response plan.

II. BACKGROUND INFORMATION

Mosquito-borne viruses belong to a group of arthropod-borne viruses referred to us as arboviruses (for **ar**thropod-**bo**rne). From 12 mosquito-borne viruses known to occur in California, to date, only St. Louis encephalitis virus (SLE), Western equine encephalitis virus (WEE), and West Nile virus (WNV) have caused significant outbreaks of human disease. These viruses are maintained in nature in wild bird-mosquito cycles, and therefore they do not depend upon infections of humans or domestic animals for their persistence.
Surveillance includes the monitoring of immature and adult mosquito abundance and detecting virus activity by testing (a) adult female mosquitoes, (b) sentinel chickens and wild birds, (c) horses, and (4) humans for infection. Surveillance must include not only the monitoring of mosquito-borne viruses known to exist in California, but also the detection of newly introduced viruses.

III. MOSQUITO SURVEILLANCE OBJECTIVES

Mosquito control is the only practical method of protecting people and animals from WNV, SLE and WEE infections. Larvae and pupae (immature stages) of *Culex tarsalis* and *Culex quinquefasciatus* can be found throughout the Coachella Valley in a wide variety of aquatic sources, ranging from urban retention basins to irrigated agricultural lands, Salton Sea marshes and duck club habitats.

A. Mosquito Surveillance

Surveillance includes monitoring of immature and adult mosquito abundance in the Coachella Valley throughout the year. To monitor mosquito larvae, "dippers" or long-handled ladles are used to collect samples from known and new water sources. At that time, the number of larvae and pupae per "dip" is estimated. These data are used to determine larval control measures.

The records of the number and developmental stages of larvae, source size treated, product name and amount used, with the control effectiveness data can provide an early warning tool for forecasting the size of the adult population.

Mosquito adult surveillance in the Coachella Valley is conducted by setting 76 CO_2 baited traps on a biweekly basis, and 27 gravid traps on a weekly basis. Adult mosquito abundance is a key factor when evaluating the risk of disease transmission. **Guidelines for mosquito surveillance are summarized in Appendix A of California State Mosquito-Borne Virus Surveillance & Response plan – May 2011**

B. Mosquito Infections

Early detection of virus activity may be accomplished by testing *Culex tarsalis*, the primary vector of SLE, WEE, and WNV for virus infection. Sampling of other mosquito species may be necessary to detect the introduction of viruses that do not have a primary avian-*Culex* transmission. Mosquitoes are trapped by using carbon-dioxide-baited traps and the females are then pooled in groups up to 50 for submission to the laboratory at the UCD Center for Vector-borne Disease (CVEC). The current surveillance system is designed to detect WNV and other potentially new viruses, in addition to SLE and WEE.

Procedures for processing mosquitoes for virus infection are summarized in Appendix B California State Mosquito-Borne Virus Surveillance & Response plan – May 2011.

C. Avian Infections

Detection of arbovirus transmission in the bird population can be accomplished by using caged chickens as sentinels and bleeding them periodically to detect viral antibodies (serocoversions). In the Coachella Valley, 9 flocks of 10 chickens are placed in locations where mosquito abundance is known to be high or where there is a history of virus activity. Each chicken is bled biweekly, by pricking the comb and collecting blood on a filter paper strip. The blood is tested for antibodies to SLE, WEE, and WNV at the DPHS Viral and Rickettsial Diseases Laboratory. **Sentinel housing, bleeding instructions, and testing protocols are provided in Appendix C of the California State Mosquito-Borne Virus Surveillance & Response plan – May 2011.**

D. Dead Birds

In 2000, DPHS initiated a dead bird surveillance program in collaboration with other public agencies. DPHS annually notifies about 600 agencies, organizations and veterinarians involved with wildlife, including rehabilitation centers, about the program. Dead birds are reported to DHS, shipped to a California Animal Health & Food Safety Laboratory for screening and removal of kidney tissue, which is then sent to the UC Davis Arbovirus Research Unit for WN viral isolation. The dead bird testing algorithm is provided **in Appendix D of the California State Mosquito-Borne Virus Surveillance & Response plan – May 2011**

E. Equine Infections

Equine disease due to WEE is not a sensitive indicator of epizootic (infections only in animals) WEE activity in California. The reason for this is the widespread vaccination of equines. If confirmed cases do occur, it is a strong indication that WEE is active in the region. California Department of Agriculture (CDFA) and DPHS annually contact veterinarians to insure equine vaccinations. Besides WEE and WNV, other mosquito-borne viruses may also cause encephalitis in horses, and consequently, testing of equine specimens by DPHS has been expanded to include other viruses. **See Appendix E of the California State Mosquito-Borne Virus Surveillance & Response plan – May 2011.**

G. Human Infections

In general, human cases are not a sensitive surveillance indicator of virus activity because most human infections (>99%) have no, or only mild, symptoms. When severe encephalitis cases do occur, rarely are arboviruses suspected, and sera generally are not sent to DPHS for testing. Communication with key hospitals and local health officials has been enhanced in the last year. However, rapid detection and reporting of confirmed human cases is crucial to local mosquito control agencies in planning and expending emergency control activities to prevent additional infections. **(See Appendix F and G of the California State Mosquito-Borne Virus Surveillance & Response plan – May 2011.**

H. Data Analysis and Interpretation

1. All weather reports received from state and local agencies that can affect mosquito breeding will be reviewed and analyzed by the District staff.
   Weekly and biweekly mosquito occurrence reports received from the CVMVCD laboratory and from the DPHS - VBDS statewide will be used for forecasting purposes. For websites related to weather conditions refer to **Appendix I of the California State Mosquito-Borne Virus Surveillance & Response plan.**

2. Reports from DPHS – VBDS and UCD on virus isolations in mosquito pools and chicken bloods tested, confirmed human cases and horse cases of encephalitis will be used for operational program planning.

I. Public information and education

Residents, farmers and duck club owners can play an important role in reducing the number of adult mosquitoes by eliminating standing water that may support the development of immature mosquitoes. Farmers and ranchers can ensure that irrigation practices do not allow standing water for extended periods, and duck club owners can work with mosquito control agencies to determine appropriate flooding schedules. Education regarding personal protective measures will help reduce exposure to mosquitoes (insect repellents, protective clothing time of the exposure to mosquitoes). Equally important is the education of the medical community to recognize the symptoms of WEE, SLE, and WNv and request proper laboratory testing for their conformation. Public health officials need to be alerted if a mosquito-borne viral disease is detected, especially if the public health risk is high.

The level of public information and education depends on the conditions and required response.

Level 1: During a normal mosquito-breeding season, routine public education will be conducted.

Level 2: Emergency planning, enhanced public education will be conducted including, posted messages on the symptoms of encephalitis, public information about pesticide applications and recommendation about avoiding mosquito bites.

Level 3: Full-scale media campaign is required at this level. Coordinate with CDHS in a regional emergency response in conjunction with California Office of Emergency Service in informing, County Board of Supervisors, Local Health Departments, city, and county officials.

IV. MOSQUITO CONTROL OBJECTIVES

Mosquito control in California is conducted by over 70 local agencies, including mosquito and vector control districts, environmental health departments and county health departments.

The Coachella Valley Mosquito and Vector Control District is a Special District and public agency that operates under the California Health and Safety Code, section (2000). The District currently serves 2400 square miles and has an 11 member board of Trustees, nine from incorporated cities and two from the County at large, to govern it.
The District mission is to reduce the risk from disease carried by mosquitoes and other vectors for residents in the Coachella Valley. **See Appendix H of the California State Mosquito-Borne Virus Surveillance & Response plan for compounds approved for mosquito control in California – May 2011.**

A. Larval control

This strategy prevents producing another generation of mosquitoes capable of transmitting disease. Control of larvae is target-specific and covers a defined area. Larval mosquito control includes environmental manipulation, biological control, and chemical control.

Environmental manipulation decreases habitat availability for immature mosquitoes. It may include water management, such as conservative crop irrigation in the Coachella Valley in date and citrus orchards, drainage in the urban areas, re-circulation of water at the fish farms and water disposal through evaporation, such as at duck clubs.

Biological control uses natural predators, parasites, or pathogens to suppress immature stages of mosquitoes. In the Coachella Valley, the tadpole shrimp, *Triops longicaudatus*, is finding its use in the agricultural habitats for suppression of the nuisance species of mosquitoes. Mosquitofish, *Gambusia affinis*, are the most widely used. In the Coachella Valley, these fish are released annually in a variety of habitats, mostly abandoned pools, and small ponds in the duck club area.

Chemical control presently includes products that are highly specific and have minimal impact on non-target organisms. These products include microbial control agents, such as *Bacillus thuringiensis israelensis* (Bti) and *Bacillus sphaericus* (Bs). Microbial products control mosquito larvae within 24 hours, and Bti is used at short term habitats, such as irrigated dates and citrus orchards. Microbial products with a longer residual, such as *Bacillus sphaericus*, are mostly used at permanent habitats of *Culex tarsalis* where penetration of the product is not an issue, or is applied by air to force the granules through the dense vegetation. Insect growth regulators, such as methoprene are widely in use in permanent breeding sources of *Culex tarsalis*, for instance, salt marshes along the Salton Sea and duck club ponds. Recently, lightweight oils that create monomolecular surface films are used, but have the drawback of suffocating non-target surface breathing aquatic organisms as well.

B. Adult control

Adult mosquito control may be required as an additional measure to control populations of infected mosquitoes and stem an epidemic. Adult mosquito control products may be applied by ground-based equipment (presently used in the Coachella Valley) and fixed wing airplanes or helicopters. Many factors need to be considered when selecting a pesticide and the target area for adult mosquito control treatments. These factors may include (1) efficacy against the target species or life cycle stages, (2) pesticide resistance (3) pesticide label requirements, (4) availability of pesticide and application equipment, (5) environmental conditions (6) cost, and (7) toxicity to non-target species, including humans. The products most likely used for adult mosquito control include pyrethrin and pyrethroids such as resmethrin, and permethrin.

V. RESPONSE LEVELS

The California Mosquito-borne Virus Surveillance and Response Plan is based on conditions that exist at three response levels identified as normal season, emergency planning, and epidemic. Seven risk factors that are analyzed to determine the appropriate response level include:

- Environmental conditions (Salton Sea level, rainfall, and temperature)
- Adult mosquito vector abundance
- Virus isolation rates from mosquitoes
- Sentinel chicken seroconversion rates
- Infection rates in wild or domestic animals
- Human cases of mosquito-borne viruses
- Proximity of detected virus activity to urban or suburban regions

Each of these factors is rated on a scale of 1 to 5, with 5 representing conditions indicative of a high risk of human infection with a mosquito-borne virus. An average rating is determined for the seven factors and is correlated with the response level as follows:

- **Normal season (1.0 to 2.5),**
- **Emergency planning (2.6 to 4.0),**
- **Epidemic (4.1 to 5.0).**

Table 1 – 3 provide worksheets to assist in determining the appropriate rating for each of the risk factors. The term "average" refers to averages over non-epidemic years in a specific region, such as that within the boundaries of a local mosquito and vector control district. Averages typically are determined for the preceding five-year period. Roles and responsibilities of key agencies involved in carrying-out the surveillance and response plan are outlined in "Key Agency Responsibilities".

Mosquito-borne Virus Risk Assessment Tables

Table 1.

SLE **Surveillance Factor**	**Assessment Value**	**Benchmark**	**Value**
1. **Environmental conditions** Favorable environmental conditions include above normal temperatures Salton Sea level, and rainfall.	1	Salton Sea level, rainfall, and temperature well below average	
	2	Salton Sea level, rainfall, and temperature below average	
	3	Salton Sea level, rainfall, and temperature average	
	4	Salton Sea level, rainfall, and temperature above average	
	5	Salton Sea level, rainfall, and temperature well above average	
2. Adult *Culex tarsalis and Cx. quinquefasciatus* vector abundance average Area of North and West Shore in last 5 years = female mosquitoes /trap night/ month	1	Vector abundance well below average (<50%)	
	2	Vector abundance below average (50–90%)	
	3	Vector abundance average (90–150%)	
	4	Vector abundance above average (150–300%)	
	5	Vector abundance well above average (>300%)	
3. Virus isolation rate in *Culex tarsalis and Culex quinquefasciatus* mosquitoes Tested in pools of 50. Test results expressed as minimum infection rate (MIR) per 1,000 female mosquitoes tested (or per 20 pools)	1	MIR / 1000 = 0	
	2	MIR / 1000 = 0–1.0	
	3	MIR / 1000 = 1.1–2.0	
	4	MIR / 1000 = 2.1-5.0	
	5	MIR / 1000 > 5.0	
4. Sentinel chicken seroconversion rate per 10 birds Number of chickens in a flock that develop antibodies to a particular virus. If more than one flock is present in a region, number of flocks with seropositive chickens is an additional consideration	1	No seroconversions	
	2	One seroconversion in single flock over broad area	
	3	One seroconversion in multiple flocks in region	
	4	Two–three seroconversions per flock in multiple flocks in region	
	5	More than three seroconversions per flock in multiple flocks in region	
5. Infections in wild birds or domestic animals	1	No bird or equine cases over broad region	
	2	No bird or equine cases in specific region	
	3	One bird or equine case in broad region	
	4	One or two birds or equine cases in specific region	
	5	More than two birds or equine cases in specific region	
6. Human cases	1	No human cases	
	3	One human case statewide (but not within local jurisdiction or region)	
	5	One or more human cases in region	
7. Proximity to urban or suburban regions (score only if virus activity detected) Risk of outbreak is highest in urban areas because of high likelihood of contact between humans and vectors	1	Virus activity in remote area	
	2	Virus activity in rural areas	
	3	Virus activity in small towns	
	4	Virus activity in suburban areas	
	5	Virus activity in urban area	
<u>Response Level / Average Rating:</u> Normal Season (1.0 to 2.5) Emergency Planning (2.6 to 4.0) Epidemic (4.1 to 5.0)		**TOTAL**	
		AVERAGE	

Table 2.

WEE Surveillance Factor	Assessment Value	Benchmark	Value
1. Environmental conditions Considers Salton Sea level, rainfall, and ambient temperature.	1	Salton Sea level, rainfall, and temperature well below average	
	2	Salton Sea level, rainfall, and temperature below average	
	3	Salton Sea level, rainfall, and temperature average	
	4	Salton Sea level, rainfall, and temperature above average	
	5	Salton Sea level, rainfall, and temperature well above average	
2. Adult *Culex tarsalis and Culex quinquefasciatus* abundance Area of North and West Shore in last 5 years = female mosquitoes /trap night/ month	1	Vector abundance well below average (<50%)	
	2	Vector abundance below average (50–90%)	
	3	Vector abundance average (90–150%)	
	4	Vector abundance above average (150–300%)	
	5	Vector abundance well above average (>300%)	
3. Virus isolation rate in *Culex tarsalis and Culex quiqvefasciatus* mosquitoes Tested in pools of 50. Test results expressed as minimum infection rate (MIR) per 1,000 female mosquitoes tested (or per 20 pools)	1	MIR / 1000 = 0	
	2	MIR / 1000 = 0–1.0	
	3	MIR / 1000 = 1.1–2.0	
	4	MIR / 1000 = 2.1-5.0	
	5	MIR / 1000 > 5.0	
4. Sentinel chicken seroconversion rate Number of chickens in a flock that develop antibodies to a particular virus. If more than one flock is present in a region, number of flocks with seropositive chickens is an additional consideration. Typically 10 chickens/flock	1	No seroconversions	
	2	One seroconversion in single flock over broad area	
	3	One seroconversion in multiple flocks in region	
	4	Two–three seroconversions per flock in multiple flocks in region	
	5	More than three seroconversions per flock in multiple flocks in region	
5. Infections in equines or ratites	1	No cases.	
	2	One case in broad region.	
	3	One or two case in region	
	4	One or two cases in specific region	
	5	More than two cases in specific region	
Response Level / Average Rating: Normal Season (1.0 to 2.5) Emergency Planning (2.6 to 4.0) Epidemic (4.1 to 5.0)		**TOTAL**	
		AVERAGE	

Table 3.

WNV Surveillance Factor	Assessment Value	Benchmark	Value
1. Environmental conditions Favorable environmental conditions in the Coachella Valley for virus multiplications/transmission. Considers Salton Sea level, rainfall, and ambient temperature.	1	Salton Sea level, rainfall, and temperature well below average	
	2	Salton Sea level, rainfall, and temperature below average	
	3	Salton Sea level, rainfall, and temperature average	
	4	Salton Sea level, rainfall, and temperature above average	
	5	Salton Sea level, rainfall, and temperature well above average	
2. Adult *Culex tarsalis and Culex quinquefasciatus* abundance Area of North and West Shore in last 5 years = female mosquitoes /trap night/ month.	1	Vector abundance well below average (<50%)	
	2	Vector abundance below average (50–90%)	
	3	Vector abundance average (90–150%)	
	4	Vector abundance above average (150–300%)	
	5	Vector abundance well above average (>300%)	
3. Virus isolation rate in *Culex tarsalis and Culex quiqvefasciatus* mosquitoes Tested in pools of 50. Test results expressed as minimum infection rate (MIR) per 1,000 female mosquitoes tested (or per 20 pools)	1	MIR / 1000 = 0	
	2	MIR / 1000 = 0–1.0	
	3	MIR / 1000 = 1.1–2.0	
	4	MIR / 1000 = 2.1-5.0	
	5	MIR / 1000 > 5.0	
4. Sentinel chicken seroconversion rate Number of chickens in a flock that develop antibodies to a particular virus. If more than one flock is present in a region, number of flocks with seropositive chickens is an additional consideration. Typically 10 chickens/flock	1	No seroconversion	
	2	One seroconversion in single flock over broad area	
	3	One seroconversion in multiple flocks in region	
	4	Two–three seroconversion per flock in multiple flocks in region	
	5	More than three seroconversion per flock in multiple flocks in region	
5. Dead bird infection Includes zoo collections.	1	No WN positive dead bird in California	
	2	WN positive dead bird in neighboring state, but not CA	
	3	One WN positive dead bird in none specific region	
	4	One WN positive dead bird in specific region	
	5	Multiple WN positive dead bird reported in specific region.	
6. Human cases	3	One human case statewide (but not within specific region)	
	4	One human case in specific region	
	5	Multiple human cases in specific region	
<u>Response Level / Average Rating:</u> **Normal Season (1.0 to 2.5)** **Emergency Planning (2.6 to 4.0)** **Epidemic (4.1 to 5.0)**			
	TOTAL		
	AVERAGE		

A. Level 1: Normal Season

Risk rating: 1.0 to 2.5

CONDITIONS
• Average or below average Salton Sea level and rainfall; average seasonal temperatures • Mosquito abundance at or below five year average (key indicator = adults of vector species) • No virus isolations from mosquitoes • No seroconversions in sentinel chickens • No equine cases • No human cases
RESPONSE
• Conduct routine public education (eliminate standing water around homes, use personal protection measures) • Conduct routine mosquito and virus surveillance activities • Conduct routine mosquito larval control • Inventory pesticides and equipment • Evaluate pesticide resistance in vector species • Ensure adequate emergency funding • Release routine press notices • Send routine notifications to physicians and veterinarians • Establish and maintain routine communication with local office of emergency services personnel; obtain Standardized Emergency Management System (SEMS) training

B. Level 2: Emergency Planning

Risk rating: 2.6 to 4.0

CONDITIONS
• Salton Sea level and rainfall above average • Adult mosquito abundance >5-year average (150% to 300%) • One or more virus isolations from mosquitoes (MIR / 1000 is <5) • One to three chicken seroconversions per flock of 10 birds • One or two equine cases • One human case statewide • Viral activity in small towns or suburban area • Evidence of recent infection in wild birds
RESPONSE
• Review epidemic response plan • Enhance pubic education (include messages on the signs and symptoms of • encephalitis; seek medical care if needed; inform public about pesticide applications if appropriate) • Enhance information to public health providers • Increase surveillance and control of mosquito larvae • Increase adult mosquito surveillance • Increase number of mosquito pools tested for virus • Conduct localized chemical control of adult mosquitoes • Contact commercial applicators in anticipation of large scale adulticiding • Review candidate pesticides for availability and susceptibility of vector mosquito species • Ensure notification of key agencies of presence of viral activity, including the local office of emergency services

C. Level 3: Epidemic Conditions

Risk rating: 4.1 to 5.0

CONDITIONS
• Salton Sea level, rainfall, and water release rates from flood control dams well above average • Adult vector population extremely high (>300%) • Virus isolates from multiple pools of mosquitoes (MIR / 1000 > 5.0) • More than three seroconversions per flock of 10 birds in multiple flocks • More than two equine cases in specific region • One or more human cases in region • Virus detection in urban or suburban areas • Increased seroprevalance rates in wild bird populations or die-off of susceptible species
RESPONSE
• Conduct full scale media campaign • Alert physicians and veterinarians • Conduct active human case detection • Continue enhanced larval surveillance and control of immature mosquitoes • Broaden geographic coverage of adult mosquito surveillance • Accelerate adult mosquito control • Coordinate the response with the local Office of Emergency Services or if activated, the Emergency Operation Center (EOC) • Initiate mosquito surveillance and control in geographic regions without an organized vector control program • Request public health exemptions from FIFRA (40 CFR 166) and emergency tolerance exemptions (40 CFR 176) • Determine whether declaration of a local emergency should be considered by the County Board of Supervisors (or Local Health Officer) • Determine whether declaration of a "State of Emergency" should be considered by the Governor at the request of designated county or city officials • Ensure state funds and resources are available to assist local agencies at their request • Continue mosquito education and control programs until mosquito abundance is substantially reduced and no additional human cases are detected

VII. A. Key Agency Responsibilities

A. Local Mosquito and Vector Control Agencies

- Gather, collate, and interpret regional weather data
- Monitor abundance of immature and adult mosquitoes
- Collect and submit mosquito pools for virus isolation
- Maintain sentinel chicken flocks, obtain blood samples, and send them to laboratory
- Conduct routine control of immature mosquitoes
- Conduct control of adult mosquitoes when needed
- Educate public on mosquito avoidance
- Coordinate with local Office of Emergency Services personnel
- Communicate regularly with neighboring agencies

B. Mosquito and Vector Control Association of California

- Coordinate purchase of sentinel chickens
- Receive, track, and disperse payment for surveillance expenses
- Coordinate surveillance and response activities among member agencies
- Maintain a standby contract with a large scale aerial pesticide applicator
- Serves as spokesperson for member agencies
- Establish liaisons with press and government officials

C. California Department of Public Health Services

- Collate adult mosquito abundance data submitted by local agencies; provide summary of data to local agencies
- Coordinate submission of specimens for virus testing
- Maintain database of all specimens tested
- Test sentinel chicken sera for viral antibodies
- Test human specimens for virus
- Distribute a weekly bulletin summarizing surveillance test results
- Send weekly surveillance results to the UC Davis interactive website
- Immediately notify local vector control agency and public health officials when evidence of viral activity is found
- Conduct epidemiological investigations of cases of equine and human disease
- Coordinate and participate in a regional emergency response in conjunction with California Office of Emergency Services
- Conduct active surveillance for human cases
- Coordinate equine and "dead bird" surveillance programs for WNv and other arboviruses
- Provide oversight to local jurisdictions without defined vector-borne disease control program
- Maintain inventory of antigens and antisera to detect exotic viruses

D. University of California at Davis (CVEC)

- Conduct research on arbovirus surveillance, transmission of mosquito-borne diseases, and mosquito ecology and control

- Test mosquito pools for virus
- Provide a panel of tests for a wide range of viruses for identification of viruses from human, equine, bird, or arthropod vectors
- Maintain an interactive website for dissemination of mosquito-borne virus information and data
- Maintain inventory of antigens and antisera to detect exotic viruses
- Provide confirmation of tests done by local or state agencies

E. **California Department of Food and Agriculture**
- Notify veterinarians and veterinary diagnostic laboratories about WEE and testing facilities available at UCD Center for Vector-borne Disease Research
- Conduct necropsies on dead crows and other birds
- Provide outreach to general public and livestock and poultry producers on the monitoring and reporting of equine and ratite encephalitides
- Facilitate equine and ratite sample submission from the field

F. Local Health Departments
- Refer human and equine specimens to DHS for further testing
- Notify local medical community, including hospitals and laboratories, if evidence of viral activity present
- Participate in emergency response
- Assist in public education

Governor's Office of Emergency Services
- Coordinate the local, regional, or statewide emergency response under epidemic conditions in conjunction with DHS via the Standardized Emergency Management System (SEMS)
- Serve as liaison with the Federal Emergency Management Agency (FEMA) in the event that a federal disaster has been declared

Centers for Disease Control and Prevention
- Provide consultation to state and local agencies in California if epidemic conditions exist
- Provide national surveillance data to state health departments

VII. B. DISTRICT OWNED INSECTICIDE APPLICATION EQUIPMENT

D. LARVAL CONTROL

Equipment	Number in use
1. Hand Cans (1 gal)	36
2. Hand Spreaders	11
3. Maruyama Back Sprayers	29
4. Hand Backpack Sprayers	35
5. Argo – all terrain vehicle	2
6. Powered Liquid Skid Mounted Sprayer	2
7. ATV - quadbike	2
8. ATV - ranger	2

E. ADULT CONTROL

Equipment	Number in use
1. Beecomist Pro-Mist ULV Sprayer	2
2. London Fog ULV Model 18-20	2
3. Hand Portable Fog Generator	3

F. AERIAL APPLICATORS AVAILABLE FOR CONTACT

1. Salton Sea Air Service, Inc.
   101-111 Desert Air Drive
   North Shore, CA 92254
   (760) 393-3994

VII. C. CHEMICAL PRODUCTS AND SUPPLIES

The following products are stored at the District's storage and minimum amounts available during the mosquito season for use:

LARVAL CONTROL

PESTICIDE	AMOUNT	TREATMENT/ACREAGE
1. Agnique MMF	90 gal	90 ac
2. Altosid XR	1600 each	3.67
3. Altosid Briquettes	1520 each	3.49
4. Altosid Pellets	3150 lbs	630
5. Altosid Liquid	7 gal	224
6. VectoBac G	2700 lbs	270
7. VectoBac WDG	90 lbs	205
8. VectoBac 12AS	30 gal	240
9. VectoLex CG	1700 lbs	170
10. VectoLex WDG	130 lbs	130
11. VectoLex WSP	300 each	0.34
12. VectoMax CG	850 lbs	85
13. Natular G	500 lbs	77
14. Natular G30	500 lbs	50
15. Natular T30	130 each	0.3
16. Natular EC	3 gal	128
17. Natular XRT	50 each	0.11

ADULT CONTROL

PESTICIDE	AMOUNT	TRETMENT/ACRAGE
Pyrocide for ULV 7396	6 gal	900 ac
Pyrenone 25-5	270 gal	40640 ac
Aqua Resilin	20 gal	47657 ac

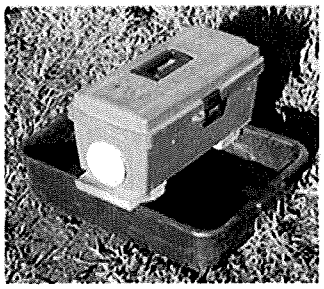
VIII. APPENDIX

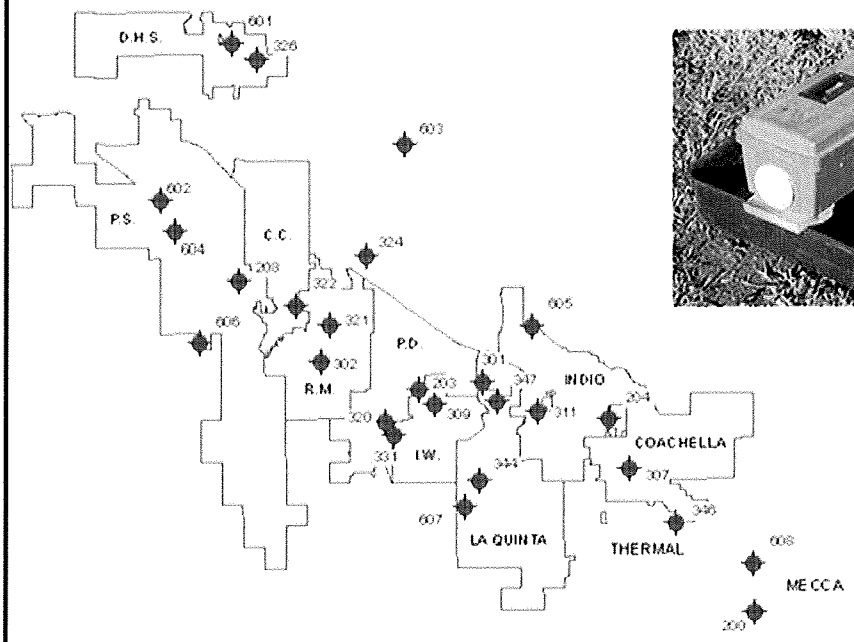
VII. Appendix A.

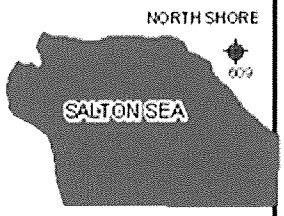
List of CVMVCD Gravid Trap Locations 2011

Site ID	NO.	City	Location Description	Latitude	Longitude
200	1	Mecca	Ave 65 and Lincoln	33.58059	-116.07774
204	2	Indio	VSD	33.712031	-116.194718
208	3	Palm Springs	Mesquite-Sewer Treament Plant	33.807501	-116.497363
301	4	Bermuda Dunes	78325 Hidden River Rd	33.73809	-116.298
302	5	Rancho Mirage	70-800 Hwy-Fire Station	33.75278	-116.43083
307	6	Coachella	1377 6th St-Fire Station #79	33.67849	-116.17849
309	7	Indian Wells	44900 El Dorado	33.72286	-116.33811
311	8	Indio	80-940 Shenendoah	33.71731	-116.2538
320	9	Palm Desert SM	Shadow Mountain CC Golf Club Ln	33.711574	-116.378692
321	10	Rancho Mirage	Tamarisk CC 70-240 Frank Sinatra	33.77678	-116.42374
322	11	Cathedral City	69-380 Converse Rd	33.790673	-116.451053
324	12	Thousand Palms	72695 La Canada	33.823889	-116.393056
326	13	Desert Hot Springs	Mission Springs Water District-Horton Treatment Plant	33.95801	-116.48208
331	14	Palm Desert LD	Portola-Living Desert	33.70248	-116.37198
344	15	La Quinta	Washington/Ave 52	33.67158	-116.3014
346	16	Thermal	56075 Hwy 111	33.64139	-116.14132
347	17	La Quinta	44555 Adams-La Quinta FS	33.72496	-116.28666
203	18	Palm Desert	Sewer Plant-43000 Cook St	33.733537	-116.351461
601	19	DHS	DHS Palm & 8th	33.968831	-116.501683
602	20	Palm Springs	Mountain Gates	33.862433	-116.560769
603	21	Sky Valley	Sky Valley Resort	33.899742	-116.362194
604	22	Palm Springs	270 Vereda Norte	33.841503	-116.549117
605	23	Indio	Ulls Water	33.775625	-116.257544
606	24	Palm Springs	Bogert Trail	33.765833	-116.529864
607	25	La Quinta	Alvarado	33.65377	-116.313906
608	26	Mecca	Ave 60 and Lincoln	33.613189	-116.078175
609	27	Northshore	Seabreeze and Ocotillo	33.507275	-115.890147

CVMVCD Gravid Trap Locations 2011







Legend

Gravid Traps

0 4 8 16 Miles

VII. Appendix B

List of CVMVCD CO_2 Trap Locations 2011

Site ID	NO.	City	Location Description	Latitude	Longitude
5	1	Oasis	Johnson and Avenue 82	33.455241	-116.061172
2	2	Oasis	Johnson and Avenue 84	33.440559	-116.0607
6	3	Oasis	Lincoln and Avenue 82	33.454897	-116.078977
131	4	Oasis	Ave. 81& Johnson - Jessup Ranch	33.459421	-116.087272
130	5	Oasis	Johnson and Avenue 81	33.462382	-116.061245
132	6	Oasis	Johnson and Avenue 81	33.463593	-116.074278
8	7	Oasis	Buchanan and Avenue 80	33.470187	-116.094818
9	8	Thermal	Pierce and King St	33.48065	-116.112692
13	9	Thermal	Buchanan and Avenue 76	33.498767	-116.095372
15	10	Thermal	Filmore and Avenue 76	33.498956	-116.130198
21	11	Thermal	Polk and Avenue 74	33.510786	-116.149466
25	12	Thermal	Filmore and Avenue 72	33.52516	-116.131143
23	13	Thermal	Polk and Avenue 70	33.542636	-116.148191
27	14	Thermal	Filmore and Avenue 68	33.555035	-116.130245
30	15	Mecca	Pierce and Avenue 70	33.540282	-116.112702
33	16	Mecca	Buchanan and Avenue 72	33.525217	-116.095513
17	17	Mecca	Lincoln and Avenue 73	33.516797	-116.082468
34	18	Mecca	Lincoln and Avenue 72	33.525969	-116.078921
35	19	Mecca	Lincoln and Avenue 70	33.539988	-116.078863
37	20	Mecca	Buchanan and Avenue 68	33.554755	-116.092281
68	21	Mecca	Lincoln and Avenue 66	33.569223	-116.079206
200	22	Mecca	Lincoln and Avenue 65	33.580572	-116.077744
140	23	Mecca	Johnson and Avenue 66	33.569114	-116.061466
532	24	Mecca	Grant and Avenue 66	33.569232	-116.044161
530	25	Mecca	Grant and Avenue 64	33.583961	-116.04366
531	26	Mecca	Hayes and Avenue 64	33.583798	-116.026346
533	27	Mecca	Hayes and Avenue 66	33.569668	-116.026249
40	28	Mecca	Hayes and Avenue 68	33.554938	-116.026518
48	29	Mecca	Johnson and Avenue 70	33.540052	-116.061755
45	30	Mecca	Grant and Avenue 71	33.532695	-116.043672
121	31	Mecca	Colfax and Avenue 72	33.52908	-116.035213
122	32	Mecca	Ave. 72 & Colfax -Gordon's Ranch	33.532247	-116.030868
123	33	Mecca	South of Gordon Ranch	33.526966	-116.030798
46	34	Mecca	Hayes and Avenue 72	33.525378	-116.026382
55	35	Mecca	Garfield and Avenue 72	33.523699	-116.008858
43	36	Mecca	Garfield and Avenue 70	33.540228	-116.008863
50	37	Mecca	Arthur and Avenue 70	33.539965	-115.991758
51	38	Mecca	Cleveland and Avenue 70	33.540407	-115.974133
56	39	Mecca	Arthur and Avenue 72	33.525371	-115.991129
57	40	Mecca	Cleveland and Avenue 72	33.524985	-115.97331
58	41	Mecca	Gun Club	33.525475	-115.956632

54	42	Northshore	Vanderveer and Avenue 73	33.521118	-115.939335
114	43	Northshore	Desert Mobile Home Park	33.515167	-115.93451
115	44	Northshore	Mecca Ave	33.512678	-115.930857
116	45	Northshore	South of Tripoli Rd	33.51122	-115.925506
60	46	Northshore	Salton Sea State Park	33.510767	-115.920793
10	47	Oasis	Buchanan and Avenue 79	33.481054	-116.095336
208	48	Palm Springs	Sewer Plant-4375 Mesquite Ave	33.805514	-116.498372
204	49	Indio	Wild Bird Center-45500 Van Buren	33.712031	-116.194712
203	50	Palm Desert	Sewer Plant-43000 Cook St	33.733537	-116.351461
201	51	Thermal	57023 Hwy 111	33.634805	-116.136049
210	52	Cathedral City	69380 Converse Rd	33.790675	-116.451052
536	53	Thermal	Avenue 62 and Orchid	33.598087	-116.224755
537	54	Thermal	Avenue 60 and Tyler	33.613073	-116.164041
538	55	Thermal	Avenue 58 and Van Buren	33.62715	-116.196887
539	56	Coachella	Avenue 54 and Jackson	33.656714	-116.218393
540	57	Mecca	Avenue 73 and Lincoln	33.51823	-116.078914
541	58	Mecca	Avenue 66 and Harrison	33.568954	-116.181827
542	59	Mecca	Avenue 64 and Fillmore	33.583874	-116.129596
600	60	DHS	Mission Lakes	33.982506	-116.531908
601	61	DHS	DHS Palm & 8th	33.968831	-116.501683
602	62	Palm Springs	Mountain Gates	33.862433	-116.560769
603	63	Sky Valley	Sky Valley Resort	33.899742	-116.362194
604	64	Palm Springs	270 Vereda Norte	33.841503	-116.549117
605	65	Indio	Ulls Water	33.775625	-116.257544
606	66	Palm Springs	Bogert Trail	33.765833	-116.529864
607	67	La Quinta	Alvarado	33.65377	-116.313906
608	68	Mecca	Ave 60 and Lincoln	33.613189	-116.078175
609	69	Northshore	Seabreeze and Ocotillo	33.507275	-115.890147
610	70	Mecca	Torres Martinez Wetlands	33.519944	-116.07636
302	70	Rancho Mirage	70-800 Hwy-Fire Station	33.75278	-116.43083
307	71	Coachella	1377 6th St-Fire Station #79	33.67849	-116.17849
322	72	Cathedral City	69-380 Converse Rd	33.790673	-116.451053
324	73	Thousand Palms	72695 La Canada	33.823889	-116.393056
326	74	Desert Hot Springs	Mission Springs H2O District-Horton Treatment Plant	33.95801	-116.48208
344	75	La Quinta	Washington/Ave 52	33.67158	-116.3014
347	76	La Quinta	44555 Adams-La Quinta FS	33.72496	-116.28666

BOLD #'s:
also gravid
trap site

CVMVCD CO_2 Trap Locations 2011

Legend

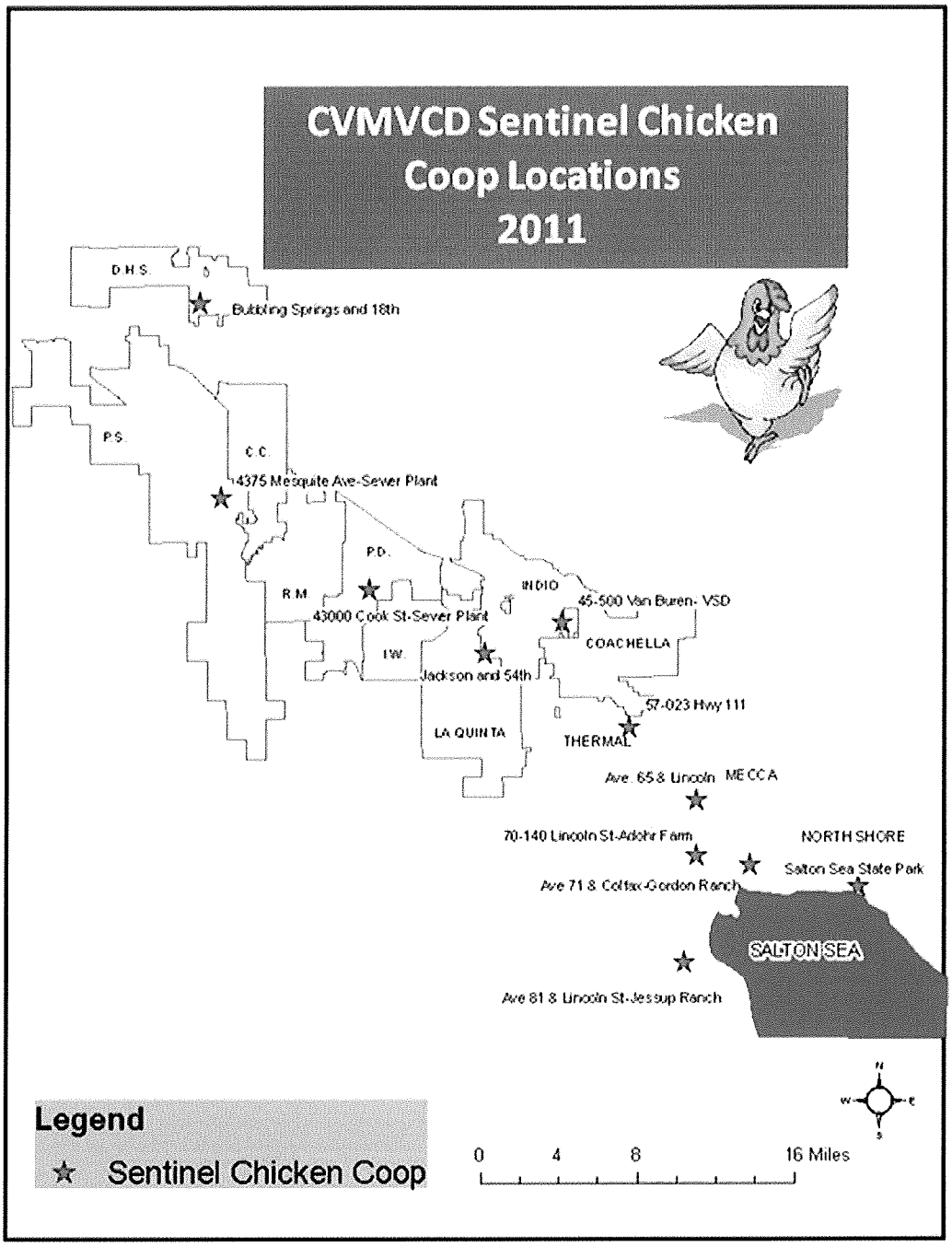
- co2 traps

0 4 8 16 Miles

VII. Appendix C.

List of CVMVCD Sentinel Chicken Coops - 2011

Site ID	NO.	City	Location Description	Latitude	Longitude
35	1	Mecca	70-140 Lincoln St-Adohr Farm	33.539204	-116.077955
114	2	Mecca	Desert Beach Dr. SE	33.515161	-115.934507
122	3	Mecca	Ave 71 & Colfax-Gordon Ranch	33.532244	-116.030875
131	4	Oasis	Ave 81 & Lincoln St-Jessup Ranch	33.461111	-116.089722
200	5	Mecca	Ave. 65 & Lincoln	33.58059	-116.07774
201	6	Thermal	57-023 Hwy 111	33.634752	-116.136081
203	7	Palm Desert	43000 Cook St-Sewer Plant	33.733544	-116.194718
204	8	Indio	45-500 Van Buren- VSD	33.712023	-116.194718
208	9	Palm Springs	4375 Mesquite Ave-Sewer Plant	33.805527	-116.498382
327	10	DHS	Bubbling Wells and 18th	33.917922	-116.484575
539	11	Coachella	Ave. 54 and Jackson	33.656714	-116.218393
60	12	North Shore	Salton Sea State Park	33.510767	-115.920793


CVMVCD Sentinel Chicken Coop Locations 2011
D.H.S.
Bubbling Springs and 18th
P.S.
C.C.
4375 Mesquite Ave-Sewer Plant
P.D.
R.M.
43000 Cook St-Sewer Plant
I.W.
Jackson and 54th
INDIO
45-500 Van Buren- VSD
COACHELLA
57-023 Hwy 111
LA QUINTA
THERMAL
Ave. 66 & Lincoln MECCA
70-140 Lincoln St-Adohr Farm
NORTH SHORE
Salton Sea State Park
Ave 71 & Coltax-Gordon Ranch
SALTON SEA
Ave 81 & Lincoln St-Jessup Ranch
Legend
Sentinel Chicken Coop
0 4 8 16 Miles

VII. Appendix D

Table 4. Annual and Monthly total and average rainfall (in.) for the Coachella Valley.

MONTH	2004	2005	2006	2007	2008	2009	2010	5 yr Avg.
JANUARY	0.01	1.52	0.0	0.09	1.62	0	2.55	0.852
FEBRUARY	0.00	2.12	0.02	0.00	0.04	0.48	0.41	0.19
MARCH	0.00	0.01	0.18	0.00	0.00	0	0.24	0.084
APRIL	0.36	0	0	0.04	0.0	0	0	0.008
MAY	0.00	0	0	0.00	0.04	0	0	0.008
JUNE	0.00	0	0	0.00	0.00	0	0	0.00
JULY	0.00	0	0	0.00	0.02	0	0	0.004
AUGUST	0	0	0	0	0.08	0	0	0.016
SEPTEMBER	1.38	0.01	0	0.1	0.0	0	0.01	0.022
OCTOBER	0.64	2.1	0.03	0	0.0	0	0.72	0.15
NOVEMBER	0.99	0	0	0	0.0	0	0	0.00
DECEMBER	0.97	0	0	0.36	1.5	0.58	0.37	0.562
YR TOTAL	4.35	5.8	0.23	0.59	3.27	1.06	4.3	1.89

* This data used for surveillance factor # 1 in the Mosquito Borne Virus Risk Assessment Table calculations for SLE, WEE, and WNV on pages 9 – 11 of the Coachella Valley Mosquito Borne Virus Surveillance and Emergency Response Plan.

VII. Appendix E

Table 5. Average Minimum and Maximum temperatures (°F) in the Coachella Valley.

Month	2005		2006		2007		2008		2009		2010		5 yr avg.	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
Jan	68	44	72	38	67	34	67	39	75	41	69	40	*70*	*38*
Feb	68	50	77	41	75	42	74	42	72	41	72	45	*73*	*42*
Mar	79	51	74	46	85	49	84	50	82	48	77	47	*80*	*48*
Apr	85	53	82	56	99	42	89	56	107	69	82	50	*74*	*55*
May	95	65	96	64	96	62	93	63	109	88	91	60	*97*	*67*
Jun	101	68	106	73	104	67	107	71	112	87	101	69	*75*	*73*
Jul	108	78	110	81	107	75	107	79	117	64	107	76	*110*	*75*
Aug	105	77	106	73	107	76	105	79	117	64	105	74	*76*	*73*
Sep	100	66	100	67	100	69	104	69	106	56	103	67	*103*	*66*
Oct	90	59	89	57	90	56	93	56	88	54	87	59	*77*	*56*
Nov	81	47	78	45	83	49	83	51	80	45	76	43	*80*	*47*
Dec	72	39	70	34	65	36	67	40	67	37	71	43	*68*	*38*

* This data used for surveillance factor # 1 in the Mosquito Borne Virus Risk Assessment Table calculations for SLE, WEE, and WNV on pages 9 – 11 of the Coachella Valley Mosquito Borne Virus Surveillance and Emergency Response Plan.

VIII. Appendix F

AVERAGE WATER LEVEL FOR THE SALTON SEA

Hydrologic Unit 18100200, Imperial County, western shore at Sandy Beach and 15.5 miles northwest of Westmorland.

Location: Lat. 33'33'33', lon. 115'49'59' in SE ¼ SW ¼ sec. 21 T. 11 S., R.11 E.

Salton Sea level from Jan. 2004 to 2010 at State Park, North Shore.

The Salton Sea is the largest inland body of shallow water in California surrounded by Colorado Desert ecosystem. It is in the southeastern corner of California and spans Riverside and Imperial counties. Surface elevation is 227 feet below mean sea level, surface area 365 square miles, contains 7.5 million acre-feet of water (maf), evaporates 1.36 maf each year and salinity is 44,000 milligrams per liter.

The Salton Sea's water level is maintained by agricultural runoff and to a lesser extent by municipal effluent and storm water that flows into the Sea through rivers and creeks in the Imperial, Coachella and Mexicali Valleys. Seasonal differences and fluctuations in the surface elevation are presented in table below for period from 2004 to 2010 with the average Sea water level for each month and year in analyzed period.

The current monthly Salton Sea water level needs to be compared with the average table value for particular month and use in the benchmark # 1 as a surveillance factor in Table 1 – 3 ; Mosquito-borne Virus Risk Assessments.

TABLE 6

MAX	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2004	-228.5	-228.3	-228	-227.6	-227.6	-228.1	-228.3	-228.5	-229.2	-229.2	-229.2	-229.1
2005	-228.4	-228.1	-227.9	-227.8	-227.7	-227.9	-228.2	-228	-228.5	-228.8	-228.8	-228.6
2006	-228.6	-228.4	-228.3	-228.2	-228.2	-228.2	-228.3	-228.5	-229.1	-229.5	-229.4	-229.4
2007	-229.5	-229	-228.8	-228.7	-228.7	-228.7	-229	-229	-229.5	-229.8	-229.8	-229.8
2008	-229.6	-229.5	-229.2	-229.1	-229.2	-229.2	-229.5	-229.7	-229.9	-230.5	-230.51	-230.3
2009	-230.2	-230	-229.9	-229.9	-229.8	-230.1	-230.3	-230.5	-230.9	-231.3	-231.4	-231.4
2010	-231.3	-230.7	-230.5	-230.4	-230.5	-230.6	-230.59	-231.1	-231.5	-231.6	-231.6	-231.75
5 yr Avg	-229.84	-229.52	-229.34	-229.26	-229.28	-229.36	-229.54	-229.76	-230.18	-230.54	-230.54	-230.53
MIN	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
2004	-228.6	-228.5	-228.3	-228.1	-228.1	-228.2	-228.5	-228.5	-229.1	-229.3	-229.1	-229.1
2005	-229.0	-228.5	-228.0	-227.9	-227.9	-228.1	-228.2	-228.3	-228.8	-229.1	-228.9	-228.9
2006	-228.9	-228.5	-228.4	-228.4	-228.1	-228.6	-228.6	-229	-230	-229.6	-229.4	-229.6
2007	-229.3	-229.2	-229.1	-228.8	-228.8	-228.9	-229.1	-229.3	-229.5	-230	-229.9	-229.8
2008	-229.8	-229.65	-229.5	-229.4	-229.4	-229.4	-229.7	-229.9	-230.2	-230.6	-230.51	-230.51
2009	-230.3	-230.2	-230	-230.1	-229.9	-230.3	-230.5	-230.8	-231.1	-231.5	-231.5	-231.5
2010	-231.4	-230.8	-230.7	-230.5	-230.6	-230.7	-231	-231.5	-231.7	-231.7	-231.75	-231.42
5 yr Avg	-229.94	-229.67	-229.54	-229.44	-229.36	-229.58	-229.78	-230.10	-230.50	-230.68	-230.61	-230.57

VIII APPENDIX G.

RISK ASSESSMENT OF MONTHLY AVERAGES AND THRESHOLD FOR ADULT MOSQUITOES FROM CO2 TRAPS AT THE NORTH AND WEST SHORE AREAS OF THE SALTON SEA

The seasonal seroconversion rate of sentinel chickens to WNV, WEE and SLE in the Coachella Valley, among other factors, is related to temperature, Salton Sea level, rainfall, and vector abundance and population size of vertebrate hosts.

Monthly mosquito population averages from North and West Shore areas for the last 5 years were analyzed to determine their association with SLE and WEE virus transmitting to sentinel chickens.

Table 7 and 8 present the average number of *Cx. tarsalis* female mosquitoes per trap night/month in the areas of the North and West shore of the Salton Sea.

TABLE 7.
North Shore Average Number of Mosquitoes in 6 traps/month/year

MONTH	2006	2007	2008	2009	2010	5-yr AVG
JAN	48	48	186	237	26	109
FEB	55	26	29	64	127	60
MAR	20	88	163	192	519	196
APR	56	166	151	72	399	169
MAY	40	107	235	101	89	114
JUN	28	93	89	3	89	60
JUL	7	14	6	2	24	11
AUG	1	2	16	8	13	8
SEP	11	39	53	16	41	32
OCT	32	39	49	99	312	106
NOV	50	92	44	68	12	53
DEC	50	28	58	74	89	60

TABLE 8.
West Shore Average Number of Mosquitoes in 6 traps/month/year

MONTH	2006	2007	2008	2009	2010	5-yr AVG.
JAN	110	104	162	485	41	180
FEB	106	62	177	73	182	120
MAR	203	294	277	321	527	324
APR	208	165	525	261	798	391
MAY	158	101	199	165	250	175
JUN	325	82	70	177	203	171
JUL	38	31	55	60	46	46
AUG	4	55	40	44	137	56
SEP	25	122	104	90	119	92
OCT	194	270	417	249	527	331
NOV	231	262	132	154	37	163
DEC	90	36	58	107	213	101

Coachella Valley Mosquito and Vector Control District

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• Toll Free 1-888-343-9399
E-mail: CVmosquito@cvmvcd.org • Website: www.cvmvcd.org

MITIGATED NEGATIVE DECLARATION

SUBJECT: THE INTEGRATED VECTOR MANAGEMENT PROGRAM OF THE COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

I. PROJECT DESCRIPTION:

The District's activities are now conducted within a 2,400 square mile jurisdiction contained within Riverside County. The District exists to reduce the risk of vector-borne disease or discomfort to the residents of its Service Area. Besides being nuisances by disrupting human activities and the use and enjoyment of public and private areas, certain animals may transmit a number of diseases. The diseases of most concern in the Service Area are West Nile virus (WNV), western equine encephalomyelitis (WEE), St. Louis encephalitis (SLE), which are transmitted by mosquitoes; at higher elevations hantavirus pulmonary syndrome associated with wild rodents.

The Project consists of the following types of activities within the District:

- Surveillance for vector populations, vector habitats, disease pathogens, and public distress associated with vectors; this includes trapping and laboratory analysis of vectors to evaluate populations and disease threats, direct visual inspection of known or suspected vector habitats, the use of all-terrain vehicles to access areas where vectors occur, maintenance of paths, and public surveys;

- Public Education to encourage and assist in the reduction or prevention of vector habitats on private and public property;

- Application and introduction of the "mosquito fish" *Gambusia affinis,* the bacterium *Bacillus sphaericus* and possibly use of other predators or pathogens of mosquitoes ("Biological Control");

- Elimination or alteration of manmade vector producing habitats (when permissible) in suburban areas to prevent vector production and/or harborage ("Physical Control"); and

- Application of non-persistent selective insecticides to reduce populations of larval or adult vectors ("Chemical Control").

II. ENVIRONMENTAL SETTING:

See attached Initial Study.

III. DETERMINATION:

The proposed project would result in potentially significant impacts associated with biological resources. Mitigation measures would be implemented to reduce these impacts to a less than significant level. See attached Initial Study for additional supporting information.

IV. DOCUMENTATION

The attached Initial Study documents the reasons to support the determination discussed above.

V. MITIGATION MEASURES:

See attached Initial Study and Mitigation Monitoring and Reporting Program.

VI. PUBLIC REVIEW DISTRIBUTION:

The following individuals, organizations, and agencies received a copy or notice of the Draft Initial Study and Mitigated Negative Declaration and were invited to comment on its adequacy and sufficiency:

- Federal Government

  Bureau of Land Management

  United States Fish & Wildlife Service

  United States Army Corps of Engineers

- State of California

  Air Resources Board

  Water Quality Control Board

  Department of Fish & Game

  Water Resources Control Board

- Local Agencies

  County of Riverside

  Riverside County Fire Department

  Riverside County Planning Department

  City of Desert Hot Springs

Riverside County Environmental Health Services

City of La Quinta

City of Cathedral City

City of Coachella

City of Indian Wells

City of Palm Desert

City of Indio

City of Palm Springs

City of Rancho Mirage

Augustine Band of Cahuilla Indians

Agua Caliente Cahuilla Indians

Cabazon Band of Mission Indians

Torres-Martinez Desert Cahuilla Indians

Coachella Valley Water District

Desert Water Agency

Mission Springs Water District

Imperial Irrigation District

Coachella Valley Association of Governments

Coachella Valley Mountain Conservancy

South Coast Air Quality Management District

Riverside County Flood Control and Water Conservation District/Regulatory

VII. RESULTS OF PUBLIC REVIEW:

( ) No comments were received during the public input period.

( ) Comments were received but did not address the Draft Mitigated Negative Declaration finding or the accuracy/completeness of the Initial Study. No response is necessary. The letters are attached.

( ) Comments addressing the findings of the Draft Mitigated Negative Declaration and/or accuracy or completeness of the Initial Study were received during the public input period. Responses were prepared to each letter. The letters and responses follow.

The Initial Study and Mitigated Negative Declaration are available for review at the Coachella Valley Mosquito and Vector Control District, 43-420 Trader Place, Indio, California 92201.

_____ _____

Jeremy Wittie, M.S., Scientific Operations Manager Dated

Mitigation Monitoring and Reporting Program

Pursuant to Section 21081.6 of the Public Resources Code and the *CEQA Guidelines* Section 15097, a public agency is required to adopt a monitoring and reporting program for assessing and ensuring compliance with the required mitigation measures applied to a proposed project for which a mitigated negative declaration has been prepared. As stated in the Public Resources Code:

> *"...the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects."*

Section 21081.6 provides general guidelines for implementing mitigation monitoring programs and indicates that specific reporting and/or monitoring requirements, to be enforced during project implementation, shall be defined.

The mitigation monitoring table below lists mitigation measures that are required to reduce the significant effects of the Integrated Vector Management Program of the Coachella Valley Mosquito and Vector Control District ("District"). These measures are discussed in Sections 3.3.4 of the Initial Study. To ensure that the mitigation measures are properly implemented, a monitoring program has been devised which identifies what activities, actions and practices shall be performed by the District on an annual basis to ensure compliance. The District will have the responsibility for implementing the measures, as well as for enforcing, monitoring, and reporting the implementation of the mitigation measures.

This Mitigation Monitoring and Reporting Program is set up as a Compliance Report, with space for confirming the correct mitigation measures have been implemented for the Integrated Vector Management Program. In order to sufficiently track and document the status of mitigation measures, the matrix below has been prepared with the following components:

- Mitigation measures
- Action Indicating Compliance
- Verification of Compliance (for use during the reporting/monitoring)

Monitoring for all mitigation measures is required on a continuous basis. The Compliance Report shall be completed by the District annually. Information pertaining to compliance with mitigation measures or any necessary modifications and refinements will be documented in the verification of compliance portion of the matrix. The mitigation measure matrix is provided in the following pages.

Mitigation Measure	Action Indicating Compliance	Verification of Compliance		
		Initials	Date	Remarks
The District does not conduct routine control activities within 18 designated CVMSHCP conservation areas. The District conducts surveillance and control measures within the Coachella Valley Storm water Channel and Delta, and small residential communities found within the Thousand Palms and West Deception Conservation areas.				
The District shall comply strictly with control product labels that are written to ensure that no significant impact to biological resources can occur.				
Project activities shall be highly selective in space and time, based on a detailed list of potential mosquito sources, pre-control surveillance for mosquito abundance, and threshold criteria for control applications.				
The District's field technicians shall be certified by the California Department of Public Health Services as highly-trained control product applicators and required to complete frequent continuing education sessions sponsored by the District and by the Mosquito & Vector Control Association of California pursuant to State Regulations.				
The Project is routinely monitored for safety, efficacy, and environmental impact by the District's Supervisors and General Manager, by the Riverside County Agricultural Commissioner, and other Trustee and Responsible agencies.				
The District and the Mosquito & Vector Control Association of California will routinely fund and collaborate with researchers from the University of California and other academic institutions on research projects to evaluate activities and to ensure that practices are used with the least potential impact on biological resources consistent with operational requirements.				
Project activities shall be consistent with the Riverside County General Plan's Conservation Element, and the Coachella Valley Multiple Species Habitat Conservation Plan, California and federal Endangered Species Act and City General Plans in				

the Service Area.				
District staff shall coordinate and consult with other responsible agencies, including the California Department of Health Services, the California Department of Fish and Game, and the Bureau of Land Management to ensure that Service Area activities do not result in significant impacts to biological resources.				
The movement of All Terrain Vehicles (ATVs) shall be guided by the ground crew to avoid any damage to wildlife, if present. The use of ATV's by the District shall not have a significant effect on the environment by limiting its activities to agricultural areas such as irrigated date gardens. In the spring months on the west side of the Salton Sea, use of the ATV's shall be limited to existing dirt roads around the flooded areas of fishery ponds. The District staff shall use existing dirt roads around the fish farm ponds and shall enter only those open areas under the salt grass in the vicinity of the fish farm ponds. In the fall months the use of ATV's shall be limited to sites such as duck club ponds that are man made.				
The District shall use mosquitofish (*Gambusia affinis)* only in private man-made bodies of water for mosquito control – neglected pools.				
The District shall maintain a California Department Fish and Game (CDFG) Permit for mosquitofish stocking.				
The District shall plant mosquitofish only in temporary man made wetlands that are covered by a CDFG permit which include Sections 19, 28, 29, 30, 31, Township 7, Range 9.				
A. The District shall not plant mosquitofish in the following Desert Pupfish refugia ponds: i. McCallum/Simone pond and Visitor center pond or any water course at the Thousand Palms Preserve, along Thousand Palms Canyon Drive. ii. The Seep pond, the Oasis pond or the				

Cienega (Sonoran) pond located at the Living Desert Zoological Gardens. iii. The small pond behind the Salton Sea State Park Headquarters. iv. Any pond or watercourse located at the Dos Palmas Preserve.				
When mosquito numbers exceed District control thresholds and other control methods would be ineffective, contrary to permits or other environmental protections, or otherwise inappropriate, the District shall utilize only those specific insecticides that are registered for use in California and that possess a current EPA label.				
The District shall maintain current and updated maps and other information from the California Department of Fish and Game Natural Diversity Data Base, the Coachella Valley Multiple Species Habitat Conservation Plan, the Bighorn Sheep Recovery Plan and similar sources on the location of Special Status Species and designated Natural Communities in the Service Area.				
The District shall coordinate it's activities with approved Habitat Conservation Plans and Species Recovery Plans.				
The District shall conduct all its activities consistent with the requirements of the California Department of Fish and Game, the Regional Water Quality Control Board, the US Fish and Wildlife Service and the US Army Corps of Engineers.				
The District shall maintain policies and programs for the continuing education of field personnel to ensure minimization of specific mosquito control activities and/or the use of alternative mosquito control methods which might impact Special Status Species or designated Natural Communities.				