COUNTY OF SAN DIEGO
WEST NILE VIRUS STRATEGIC RESPONSE PLAN

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Department of
Environmental Health

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THE COUNTY OF SAN DIEGO
WEST NILE VIRUS STRATEGIC RESPONSE PLAN

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EXECUTIVE SUMMARY

The County of San Diego's West Nile Virus Strategic Response Plan is designed to protect public health and the environment from the effects of West Nile virus (WNV). This can be accomplished through enhancement of the existing vector surveillance and control program, which has been in existence for over thirty years. WNV is a mosquito-borne disease that impacts people as well as animals.

West Nile Virus was first detected in the United States in the State of New York in 1999. The illness has spread from East to West across the United States by birds and mosquitoes. Currently there is no WNV vaccine for humans. San Diego County has no known cases of human or animal illness associated with WNV as of February 2003.

PURPOSE STATEMENT

The purpose of the West Nile Virus Strategic Response Plan is to implement an integrated, risk-based response designed to promote safe and livable communities, educate and involve County of San Diego agencies, residents and visitors in the year-round effort to control mosquito breeding and minimize environmental and economic impacts associated with West Nile virus.

STRATEGY

While mosquito populations can be controlled and reduced, it is not possible to completely eradicate the mosquito population. Resources will be allocated to control mosquito populations in areas that pose the most risk to public health. Elimination or treatment of mosquito breeding sources is paramount to control. The County employs an integrated pest management (IPM) approach that includes physical, biological, and as a last resort, chemical control measures. Animals living in close proximity to areas of human habitation will also benefit from these control efforts.

The County of San Diego Vector Surveillance and Control (VSC) program has effectively monitored mosquito-borne diseases for over three decades. These efforts are linked to local, state and national disease-tracking protocols. The introduction of a new mosquito-borne disease, like WNV, calls for increased surveillance activities. The existing VSC mosquito-borne disease program has three main elements:

- Mosquito identification and testing program.
- Mosquito breeding site monitoring and control.
- Sentinel chicken flock testing.

WNV related enhancements include, but are not limited to:

- Dead bird collection and testing.
- Monitoring the WNV progress across North America.
- Increased year-round, as opposed to seasonal, surveillance.

BACKGROUND

Although the County has had a comprehensive mosquito-borne disease surveillance program in place since 1972, this report was created particularly in response to the pending arrival of WNV in San Diego County. Human cases of WNV, first reported in the Western Hemisphere in 1999, have now been reported as far west as Los Angeles, California.

Since the 1930's, human cases of WNV have been commonly reported in Africa, West Asia, and the Middle East. In 1999 and 2000, outbreaks of WNV were first reported in persons living in the New York City metropolitan area. During these two years, 83 cases were reported with nine deaths. As of March 2003, there have been 3,893 human cases, with 254 deaths, reported from 43 states to include most of the plains states. One human case was reported in Los Angeles in September of 2002, although the source of the infection was not identified. WNV has been found in more than 110 bird species, with crows being especially susceptible. Additionally, WNV has been found in a number of other animal species, particularly horses. To date, no mosquitoes, horses, or other animals have been reported infected with WNV in California. Due

to the progressive westward movement of WNV in the United States, it is a matter of when, not if, this virus will be detected in mosquitoes, birds, horses or humans in California.

Most humans infected with WNV have no symptoms. A small number develop mild symptoms that include fever, headache, body aches, skin rash and swollen lymph glands. Less than 1 % of infected people develop more severe illness that includes meningitis or encephalitis. A small portion of those, mostly people over the age of 50, will die. There is no known specific treatment or vaccine for those infected with WNV.

The West Nile Virus Strategic Response Plan is comprised of five elements:

- Public Education
- Surveillance
- Mosquito Control
- Response
- Remediation

Public Education

Goal: To educate and inform San Diego County residents about WNV specifically and mosquito control generally.

This goal will be achieved by:

- Targeted outreach materials and a well-crafted media campaign.
- Continuous implementation of the education campaign regardless of the Response Levels. This will ensure a steady public campaign aimed at prevention and education rather than reaction and alarm.
- Education and outreach materials will be made available in English and Spanish, in print, on the web and in all pertinent media.
- Proactive press releases and media events.
- Establishment of the County of San Diego as The Local Resource for WNV information.

Surveillance

Goal: To efficiently and accurately identify and monitor the onset, spread and risk of mosquito- borne diseases (including WNV) in the County of San Diego.
This goal will be accomplished because of the following:

- San Diego County has been effectively monitoring mosquito borne illnesses for over 35 years through the existing Vector Surveillance and Control Program. These efforts are seamlessly linked to local, statewide and national disease tracking efforts. Human illness is reported through the County's Health and Human Service Agency to the California Department of Health Services (CDHS) and concurrently to the Centers for Disease Control and Prevention (CDC). Animal illness is reported through the County Veterinarian's office in the County's Department of Agriculture Weights and Measures. An Interdepartmental Policy detailing this communication process is provided as Attachment O.

- VSC staff regularly trap and test mosquitoes in over 30 locations each week. VSC staff regularly monitor over 600 known mosquito-breeding locations throughout the County. This monitoring may involve site visits or be in response to citizen inquiries or complaints. Breeding activity is verified by visual observation, trapping and/or larval collection from water sources using dipping equipment.

- The VSC Program maintains three flocks of sentinel chickens located in key areas of entry into the County. The chickens are bled bi-weekly and tested for mosquito-borne diseases including WNV. Testing for WNV has been ongoing since 2000.

Necessary enhancements to the existing program include:

- Educating the general population about WNV.
- Controlling, and to the extent feasible, reducing mosquito breeding.
- Increasing surveillance activities for the WNV and other mosquito-borne diseases.
- Integrating response and treatment efforts countywide.
- Collecting and testing of dead birds suspected of carrying the WNV.
- Training of County and City field staff to increase monitoring activities for mosquito breeding locations.
- Increasing visibility and reporting options for the general population (e.g. dedicated website, information telephone line, etc.)

Mosquito Control

Goal: To reduce the number of mosquito breeding sites in San Diego County.

Mosquito breeding is a naturally occurring event throughout the County. It is not possible or warranted to attempt to completely eradicate the mosquito population. Resources must be carefully allocated to control mosquito populations in areas that pose the most risk to public health while preserving the environment and sensitive habitats. Although the focus will be on the human population, animals, such as horses, are often in close proximity to areas of human habitation and will benefit from control efforts.

To effectively break the chain of events that lead to the spread of WNV, the most effective measures have been directed at the reduction of mosquitoes. The lifecycle of the mosquito is inherently associated with standing water. Elimination of mosquito breeding locations will reduce the mosquito population and the spread and impact of the WNV. The County employs an Integrated Pest Management (IPM) approach that uses physical, biological and chemical control measures. Such activities will range from:

- Removal of standing water from residential properties (physical).
- Introducing mosquito larva-eating fish to backyard ponds, fountains, etc. (biological).
- Removal of overgrown vegetation along creek beds to allow open water flow (mechanical).
- Applying mosquito growth regulators or other pesticides (chemical).

The County's mosquito control is further delineated in the following attachments:

- Attachment H provides a detailed description of approved insecticidal compounds, personnel, and costs for controlling larval and/or adult mosquitoes;
- Attachment I describes revenue sources for this endeavor;
- Attachments J and K contain templates for residential notifications of pesticide applications in English or Spanish respectively;
- Attachment L gives the laws, regulations, and authority for conducting mosquito control in the County of San Diego;
- Attachment M summarizes personnel safety elements VSC for pesticide applications;
- Attachment N provides State guidelines and risk assessments for Arbovirus surveillance.

Response

Goal: To efficiently and effectively allocate limited resources to reduce the public health impacts associated with vector borne illness, specifically WNV.

The WNV Strategic Response Plan is based on conditions established by the California Department of Health Services (CDHS) *California Mosquito-borne Virus Response Plan* (this may be found at http://westnile.ca.gov), and the Centers for Disease Control (CDC) that exist at three response levels identified as normal season, emergency planning, and epidemics of WNV. Following are the conditions or risk factors and responses for each of these three levels:

- Environmental conditions such as snowpack, rainfall, temperature and season;
- Adult female mosquito 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 1-5, 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), and epidemic (4.1 to 5.0). Table N-1 (see attachment N), provides a worksheet 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 are determined for the preceding five-year period. The ratings given are benchmarks only, and may need to be adjusted relative to the conditions in a specific region of the state.

Level 1 Normal Season Risk rating: 1.0 to 2.5

CONDITIONS
• Average or below average snowpack 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

Level 2 Emergency Planning Risk rating: 2.6 to 4.0

CONDITIONS
• Snowpack and rainfall above average • Adult mosquito abundance greater than 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; evidence of recent infection in wild birds • One human case statewide • Viral activity in small towns or suburban area
RESPONSE
• Enhance pubic education (include messages on the signs and symptoms of encephalitis and meningitis; 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 • Review epidemic response plan • Ensure notification of key agencies of presence of viral activity, including the local office of emergency services

Level 3 Epidemic Conditions Risk rating: 4.1 to 5.0

CONDITIONS
• Snowpack, 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 ten birds in multiple flocks • More than two equine cases in specific region; increased sero-prevalence rates in wild bird populations or die-off of susceptible species • One or more human cases in region • Virus detection in urban or suburban areas
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 if appropriate • 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 • 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 reduce and no additional human cases are detected

At Level 1, under the legal authority granted Vector Surveillance and Control, regular surveillance, control and access issues are provided for in the California Government Code, California Health and Safety Code, California Civil Code, California Penal Code, the San Diego County Code of Regulatory County Ordinances, and municipal codes for all 18 incorporated cities, and unincorporated areas of San Diego County. These codes provide for all services and control activities.

In addition, requirements under the County’s National Pollution Discharge Elimination System (NPDES) Permit (CAG99003) have been accepted and the annual Federal Fish and Wildlife Service permit is currently in draft form and is being reviewed.

This includes:

- Following the specific guidelines of our NPDES permit.
- Coordinating with all county departments in the Multiple Species Conservation Plan, Multiple Species Habitat Plan, San Diego River Plan, Otay Regional Park Plan, and all other environmental organizations within San Diego County.

At Level 2, increased surveillance and control activities require, in addition to the above, notifications to Federal, State and County agencies especially where increased access to wetlands or lands within the Multiple Species Conservation Program require additional review and/or permits. Should adulticiding be required at this level, additional notifications to the general public are mandated.

At Level 3, and if a public emergency is issued, most restrictions become statutory exemptions and as such, emergency actions are allowable as specified in the Public Resources Code or a declared State health emergency. This would include aerial applications of pesticides, vegetation removal, or other control activities. The cooperation of the various County, State and Federal agencies (County Parks and Recreation, Department of Public Works, Federal Fish and Wildlife Service, California State Fish and Game, etc.) would be requested to coordinate mosquito control activities while protecting native flora and fauna.

Remediation

> Goal: <u>To reduce or eliminate mosquito breeding locations countywide by attaining compliance with existing regulatory requirements</u>

Regulatory authority is detailed in attachment L.

In all instances, the County VSC Program will seek voluntary compliance. In the event that voluntary compliance cannot be attained, the VSC will work with property owners, public agencies and municipalities to ensure appropriate remediation to protect public health.

Attachment A Public Information and Outreach

Goal: To educate and inform San Diego County residents about WNV specifically and mosquito control generally.

I. Existing Department of Environmental Health (DEH) / Community Health Division / Vector Surveillance and Control Outreach and Education Efforts

A) The Community Health Division Operations Outreach Program reaches tens of thousands of County residents annually with information about vector surveillance and control.
   i) via our outreach events throughout the County
   ii) via our website
B) Vector technicians provide education in the field to County residents while responding to service requests and complaint calls. This education will include, but not be limited to mosquito biology, source reduction, mosquito exclusion, and the use of repellents.
C) Vector Surveillance and Control provides *Gambusia affinis* ("Mosquitofish") to all County residents with standing water on their property, at no charge.

II. WNV County "In-Reach" Plan

1. In an effort to educate, inform and protect our own County employees about WNV, we propose immediate dissemination of WNV prevention information as well as pertinent information about the progress of the working group.
2. The DEH Public Information Officer (PIO) will act as a clearinghouse for dissemination of all information and press releases to be sent to County employees.
3. WNV Strategic Plan development article in November 2002 County News, monthly updates to follow.
4. Personal Protection/ Source Reduction E-Mail sent to all County employees from LUEG on 10/30/02

III. Integration with County Media and Public Relations Office, County WNV Working Group Representatives and Working Group's Departmental Public Information Officers

1. The DEH PIO will work closely with media and public relations staff of county agencies to hone a professional, comprehensive and targeted media campaign throughout the process of addressing WNV in San Diego County.

2. The DEH PIO will work closely with public information officers from working group departments to present accurate and coordinated information to the press, public and employees.

3. The DEH PIO will work closely with the Working Group representatives from Health and Human Services and the County Veterinarian on outreach and education to practitioners re: reporting of WNV.

4. The DEH PIO will work closely with Farm and Home Advisor / Agriculture Weights and Measures representatives regarding safety of agricultural workers and reporting of dead birds / mosquito breeding in agricultural areas.

IV. Comprehensive Education/Outreach Strategy

A) Education and outreach materials will be made available in English and Spanish, in print, on the web and in all pertinent media.

B) DEH will provide information about WNV to residents of San Diego County 24 hours per day, 7 days per week through:

- Our County and DEH websites, regularly updated and with relevant links (currently in place)
- A dedicated WNV website (www.SDFightTheBite.com)
- A 24 hour toll-free phone line with recorded information about WNV, updated regularly in development with County Technology Office (CTO) and with links to county agencies
- "On-hold" WNV information while county callers wait for service on the phone
- Bi-national health networks to address border area issues (with materials available in Spanish and English).

C) The DEH PIO will work with Aging and Independence Services (AIS) to coordinate an education and outreach program for seniors throughout the County of San Diego via:

- AIS website (with link to DEH website)
- AIS newsletter / mailings

D) Speakers Bureau

- DEH PIO will recruit, train and coordinate a speakers bureau (in coordination with San Diego State University's Graduate School of Public Health) that can do both in-reach and outreach education related to WNV, personal protection, source reduction, etc.

E) Specific outreach materials and displays Table 1[1]

Material	Source	Format	Audience	Cost
WNV logo 	Developed in conjunction with County Health and Human Services (HHSA) Office of Media and Public Affairs	• General use on WNV materials • Temporary tattoos • stickers	• General • Youth	Reproduction
Brochures	Developed with (HHSA)	• Tri-Fold • English • Spanish	• General • Seniors	Reproduction
Bookmarks	Developed with (HHSA)	• Standard 2-Sided	• General	Reproduction
Promotional materials	Various vendors	• Flyswatters • Magnets • Mosquitofish-related items	• General • Homeowners • Youth • Seniors	varies
Posters	Developed with (HHSA)	• Full size • Letter size	• General • Homeowners	Reproduction
Coloring / Activity Book	Developed with (HHSA)	• Standard letter size bound book • English • Spanish	• Youth	Reproduction
Video	Developed in conjunction with County Television Network and Supervisor Cox's Office	TBD	• General • Employee Training • Seniors	TBD
3 Slides with logo and info	Developed with (HHSA)	• For use in movie theater advertising	• General • Seniors • Youth	• Reproduction • Distribution
PowerPoint Presentation	Developed with (HHSA)	• Employee training • Outreach	• County Employees • General	N/A

[1] Public Information and outreach materials will be developed and implemented to ensure that all field staff and the general public are educated and informed about the West Nile virus and prevention strategies prior to the onset of the mosquito breeding season (Spring of 2003).

V. Comprehensive Media Strategy

Goal: To assist with the flow of information to the press and public via a well-crafted pro-active press campaign. We will present the County of San Diego as The Local Resource for WNV information.

A. The DEH PIO will work with Media and Public Relations to hone regular WNV press releases:

- WNV general information press release
- Personal protection press release
- Source reduction press release
- *Gambusia affinis* ("Mosquitofish") information press release
- Dead bird reporting press release
- First San Diego avian or equine WNV case press release (for release at Level 2: Emergency Planning stage)
- First confirmed San Diego human WNV case (for release at Level 2: Emergency Planning stage)
- Several confirmed San Diego human cases (for release at Level 3: Epidemic Conditions stage)
- Signs and symptoms of encephalitis press release (for release at Level 3: Epidemic Conditions stage)

B. Board of Supervisors will be invited to participate in media events to encourage total Board ownership of the Strategic Plan.
   - Media and public relations representatives from HHSA and DEH hosted a media event, with relevant WNV Working Group representatives, and Supervisor Cox, at the Tijuana Sentinel Chicken Flock and Fenton Pond (both located adjacent to the Tijuana River) on 11/7/02. Eight media outlets were in attendance. Video of coverage is available. Stories followed in Union Tribune 11/8/02 and radio as well as on television.
   - DMPR and DEH PIO will plan a media event, with relevant WNV Working Group representatives in case of move to LEVEL 2 ENHANCED: Emergency Planning stage. The DEH PIO will work with DMPR and local venues to host relevant Working Group representatives at WNV media events.

C. Public Radio and AM radio WNV programs.

D. Public TV and Cable WNV programs.

E. Media ride-alongs with Vector surveillance and control.

F. The DEH PIO will work with DMPR to develop public service announcements (PSAs) for release to local radio stations.

G. The DEH PIO will work with DMPR to do cost analysis and project development for various media.

Attachment B Reporting Protocol- Animal Positive for WNV

Protocol for reporting: positive mosquito pool(s); sero-positive sentinel chickens; or positive wild birds.

Step I: VSC conducts routine mosquito-borne encephalitis surveillance by sending mosquitoes, sera from sentinel chicken flocks, and dead birds to the appropriate laboratories.

A. CDC carbon dioxide-baited light traps are put out once a week from April through October near known mosquito breeding areas, such as salt marshes and river runs, with known vector species of mosquitoes pooled (50 per pool) and sent to U.C. Davis for testing.

B. Three sentinel chicken flocks (10 birds per flock), located near mosquito breeding areas, are bled biweekly from April through October and bloods sent to the CDHS laboratory at Richmond for testing.

C. Wild birds that have died within 24 hours are picked up and sent to a CDHS laboratory for testing. See Attachment C for CHD's dead bird protocol.

Step II The Division Chief of the Community Health Division (CHD) is notified by CDHS of a Mosquito Pool(s) or Wild Bird(s) Positive for, and/or a Sentinel Chicken(s) Seroconverted for WNV, or the CHD Chief is notified by the Animal Diagnostic Disease Lab (ADDL) of a Wild Bird Positive for WNV (see Flowchart 1 below).

A. The CHD Chief immediately follows the Interdepartmental Policy (see Attachment O) and notifies: the Director, DEH, Division of Community Epidemiology (DCE), HHSA; each Office of the BOS; and other appropriate agencies (see Attachments D and E) of the findings of the positive and/or sero-conversion findings, to include site(s) of possible exposure, history of adult and larval mosquito occurrence and abundance, and history of human cases of mosquito-borne infections reported in the locality(ies) and informs them that the site(s) are being investigated by a Vector Ecologist.

B. The CHD Chief sends a Vector Ecologist to investigate the site(s).

A Vector Ecologist determines the probable presence of *Culex* species or other vector mosquitoes breeding in and/or near the probable site(s) of exposure, will collect larval samples, will note any dead or morbid birds in the area, and probable presence of potential human susceptibles, CDC carbon dioxide-baited light traps may be set to determine abundance and occurrence of mosquito species in the locality(ies). If warranted, a VSC Technician will larvicide the breeding sources at and near the site(s). (See Attachment H for list of compounds approved for controlling larval mosquitoes).

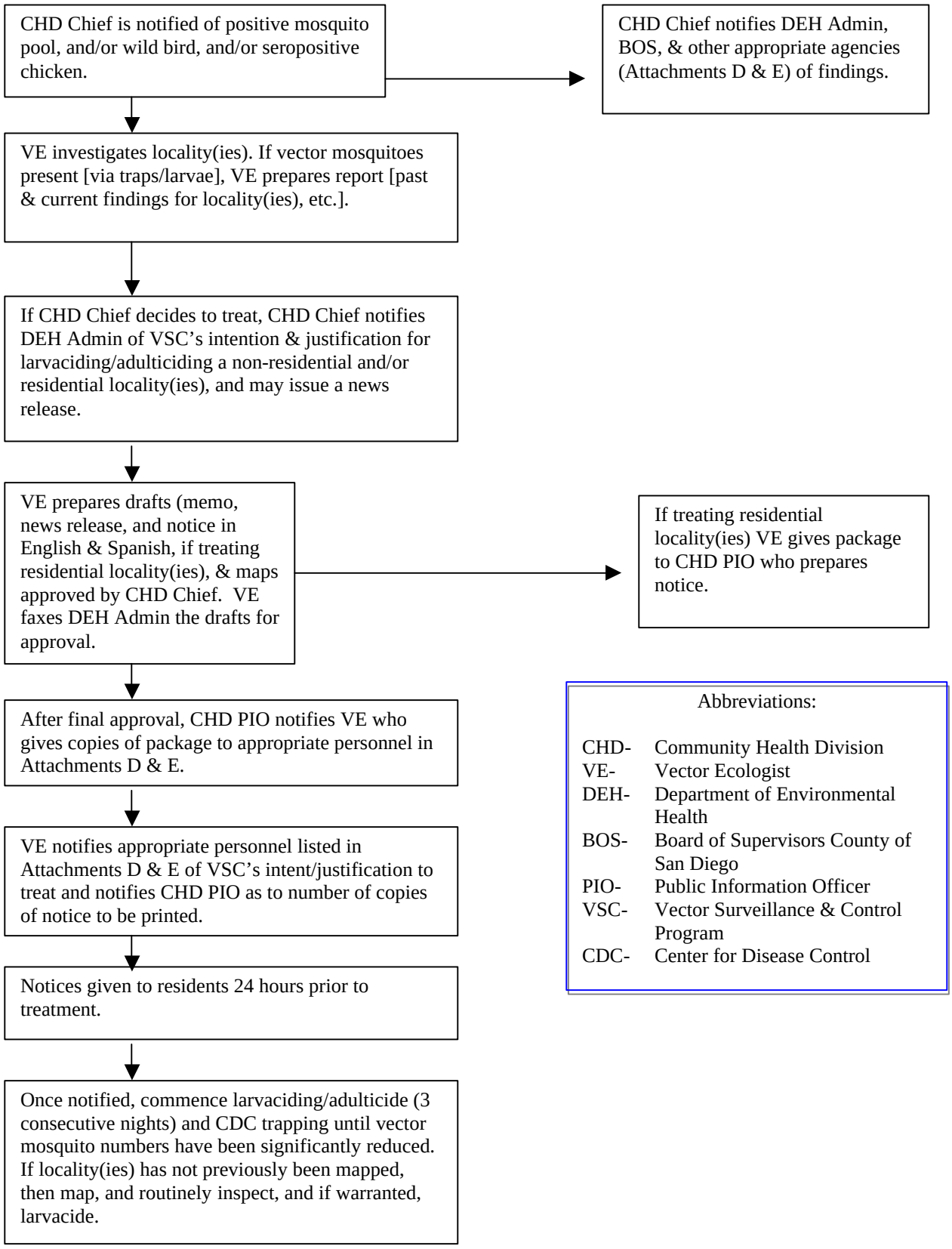
C. Reporting

A Vector Ecologist prepares a report for the CHD Chief to include: past history and current findings of adult species and abundance of mosquitoes trapped at and/or near the

site(s) of probable infection, species and abundance of larvae at breeding sources at and/or near the site(s), history of reported human cases of mosquito-borne encephalitids at or near the site(s), and accessible routes to the site(s) for larviciding and/or adulticiding The CHD Chief may decide to issue a news release informing public of action plan. The CHD Chief also notifies other agencies (Attachment D/E) of these findings.

A flowchart of the response to a positive animal confirmation is provided below.

Figure 1
Level II: Vector Positive



Step III Procedure for Adulticiding/Aerial Larviciding only a Residential Locality(ies), and for Adulticiding/Aerial Larviciding both Residential and Non-Residential Locality(ies). This may require town hall meetings in addition to door-to-door postings.

A. Division Chief, CHD, Chief verbally notifies the DEH Director of VSC's intentions and justifications for adulticiding/aerial larviciding the specific non-residential locality(ies).

B. Vector Ecologist / Public Information Officer (PIO) prepares the following:

1. Draft memo from the Division Chief, CHD, to the DEH Director advising of the adulticiding/aerial larviciding operation.

2. Draft news release regarding adulticiding in residential localities.

3. Draft notice to be given to residents with English version on one side and Spanish version on the other side.

C. Map locality(ies) to be treated (with streets and areas to be adulticided highlighted).

1. Vector Ecologist/ PIO obtains approval of above draft documents from the CHD Chief.

2. Division Chief, CHD, verbally notifies the Office of the DEH Director and arranges to FAX them a copy of the draft memo to the DEH Director to include copies of the following drafts: news release; adulticiding/aerial larviciding notice for residents; and a map of locality(ies) to be treated. Once approval is received from the Director, proceed to `E'.

D. Vector Ecologist verbally notifies the PIO and gives him/her a copy of the above four draft documents. The PIO prepares a final version of the news release and notice in both English and Spanish, and awaits final approval from the Division Chief, CHD, before proceeding.

E. After approval has been finalized, Division Chief, CHD compiles the approved package for distribution that consists of the following:

1. Letter from CHD Chief to the DEH Director;
2. News release to be given to the media for their release 24 hours prior to the actual treatment;
3. Notice in English and Spanish to be given to residents at least 24 hours prior to the actual treatment;
4. Map of locality(ies) to be treated;

F. A Vector Ecologist hand delivers copies of the approved package to the appropriate personnel listed in Attachment D and/or E.

G. VSC Senior Clerk is informed by a Vector Ecologist of number of copies of the final version of the notice (to be given to residents) to be printed through DEH Copy Service.

H. VSC Senior Clerk verbally notifies appropriate Supervising VSC Technician, that the notices are ready to be handed out to the residents living in the locality(ies) to be treated. A Supervising VSC Technician arranges to have them handed out at least 24 hours prior to the actual treatment.

I. Division Chief of DEH Community Health Division verbally notifies the following appropriate personnel listed in Attachment D and/or E of VSC's intentions and justifications to treat.

J. After the appropriate individuals have been notified, larvacide the designated locality(ies) once and/or adulticide for three consecutive nights. This will be followed by one night of trapping using CO2-baited light traps. This application/trapping pattern will continue until *Culex* species numbers are significantly reduced as determined by a Vector Ecologist, and the CHD Chief with the latter making the final decision whether or not to continue this procedure.

K. The locality(ies) which were larvicide and/or adulticided will be mapped, if not previously done so, and routinely inspected by a Vector Control Technician for mosquito breeding sources which, if present, will be again be larvicided.

Attachment C Protocol for Handling Dead Birds

Community Health Division
Vector Surveillance and Control Program
West Nile Virus
Dead Bird Handling Protocol

Part of the ongoing Vector Surveillance activities relies on the eyes and ears of the general public and other County staff. We need to be sure that we are poised and ready to assist with the collection and proper processing of dead birds for testing for the West Nile Virus. To accomplish this task, it is essential that all calls or requests for service reach the appropriate staff member as expeditiously as possible. Therefore, we are defining the following protocols:

For telephone calls, faxes, or email distributions to the front clerical:

1. Take the name and contact information from customer
2. Take the specific location of the bird
3. Tell customer follow up will occur on the same date, but caution that bird may not be removed by County
4. Log the call into the West Nile Virus dead bird contact database.
5. Immediately contact one of the following senior staff directly in this **order of priority**:
   1) Supervising Vector Ecologist
   2) Senior Vector Ecologist
   3) Vector Supervisor North County
   4) Vector Supervisor South County
   5) Chief, Community Health Division
6. Convey information to senior staff listed above preferably in person. Follow up with email to that senior staff member to preserve the contact information.
7. If senior staff determines that the bird is not to be collected, senior staff will notify front clerical staff for logging purposes.
8. Senior staff will talk to the customer.
9. Clerical will make the necessary log-in entries as directed
10. If it is determined by senior staff that pick-up is warranted, Senior Staff will contact vector field staff in the immediate area.
11. The dead bird will be returned to Hazard Way by the Technicians and turned over to senior staff or stored in the REVCO freezer as directed by senior staff.
12. Senior staff will log-in date of collection and date of mailing to the California Animal Health & Food Safety Laboratory and subsequently to the University of California, Davis Arbovirus Research Unit. Senior staff will report any birds sent for testing to the CDHS.
13. UC Davis Laboratory reports positive results to CDHS and San Diego County VSC.

Note: After hours collection of dead birds is currently being reviewed for inclusion in the above process, but is not for inclusion at this point in time.

Attachment D Agency Notification List 1

Table 2 Agency Contact Information

Agency	Name	Telephone Number
Board of Supervisors	Chief of Staff	
District 1	Pam O'Neil	619-235-0644
District 2	Shannon Sorrell	619-696-7253
District 3	John Weil	619-531-5533
District 4	Cameron Durckel	619-531-5544
District 5	Joan Worsley	619-531-5555
Chief Administrative Office		
CAO	Walt Ekard	619-515-6555
DCAO LUEG	Robert Copper	619-531-5451
DCAO Staff Officer	Candis Compton	6194-595-697
Public Information Officer	Mike Workman	619-531-5450
County Departments		
DEH- Administration	Gary Erbeck	619-338-2222
DEH-CHD	Daniel Reid	858-694-3595
HHSA- Epidemiology	Moise Mizrahi	619-515-6937
HHSA- Epidemiology	Jackie Estey	619-515-6626
HHSA- Public Health Lab	Christopher Peter	619-692-8555
AWM- County Veterinarian	Alfonso Guajardo, DVM	858-694-4818
Animal Services	Mike Haas, Director	619-767-2605
Animal Services	Kathryn Jones	619-767-2613
Parks & Recreation	Cory Linder	858-694-3367
Parks & Recreation	Mark Webb	858-694-2968
DPW	Chandra Wallar	760-510-2447
DPLU	Maeve Hanley	858-495-5254
State of California		
Department of Health Services	Ken Lithicum	909-937-3448
Department of Fish & Game	Ken Maehler	848-467-4201
Department of Fish & Game	Terry Stewart	858-467-4209
Department of Fish & Game	Don Chadwick	858-467-4276
CA- Parks and Recreation	Ronnie Lee Clark	619-452-8732
CA- Parks and Recreation	John Quirk	858-642-4200
Federal Government		
US Fish and Wildlife Service	Martin Kinney	760-431-9440
US Fish and Wildlife Service	Susan E. Wynn	760-431-9440
US. Navy/Marine Corps.	Mike Medina	619- 532-3942
USMC, Camp Pendleton	Bill Berry	760-725-9729
U.S. Navy EPMU-5	La Rosa Watson	619-556-7070
U.S. Navy EPMU-5	Tracy Negus	619-556-7070
U.S. Forest Service- Ramona	Russ Lajole	619-445-6235
U.S. Forest Service	Cindy Williams	760-742-3491
U.S. Forest Service	Joe Raynola	760-782-3181
U.S. Forest Service -Descanso	Jeff Wells	760-788-0250

Attachment E Agency Notification List 2

Table 3 Incorporated Cities in San Diego County Contact Information

City	Name	Telephone Number
Carlsbad	Ray Patchett	760-434-2820
Chula Vista	David Rowlands	619-691-5031
Coronado	Mark Ochenduszko	619-522-7300
Del Mar	Lauraine Brekke-Esparza	858-755-9313
El Cajon	William Garrett	619-441-1776
Encinitas	Kerry Miller	760-633-2600
Escondido	Rolf Gunnarson	760-839-4880
Imperial Beach	Matt Rodriguez	619-423-8300
La Mesa	David Wear	619-463-6611
Lemon Grove	Robert Richardson	619-825-3800
National City	Tom McCabe	619-336-4200
Oceanside	Steve Jepsen	760-435-3065
Poway	James Bowersox	858-748-6600
San Diego	Michael Uberuaga	619-236-5555
San Marcos	Rick Gittings	760-744-1050
Santee	Keith Till	619-258-4100
Solana Beach	Barry Johnson	858-720-2400
Vista	Rita Geldert	760-726-1340

Table 4 Associated Agency Contact Information

Agency	Name	Telephone Number
S.D. County Farm Bureau	Eric Larson, Director	760-745-3023
Wild Animal Park	Don Janssen, DVM	760-291-5401
San Diego Zoo	Bruce Rideout	619-231-1515 xtn 4535
CARE (TJ River Valley)	Carolyn Powers	619-424-3684
Environmental Health Coalition	Joy Williams	619-235-0281
San Elijo Lagoon Conservancy	Doug Gibson	760-436-3944
Bejoca Co.	Charley Wolk	760-728-5176
Project Wildlife	Jane Meier	619-475-6237
Project Wildlife	Geri Smith	858-509-1123

Attachment F Role of the Animal Disease Diagnostic Laboratory

Step I The County of San Diego, Animal Disease Diagnostic Laboratory (ADDL) will provide handling of a presumed or confirmed Bird(s) or Mammal(s) Diagnostic for WNV (WNV) or other Mosquito-Borne Encephalitide.

A. On receipt of a report from veterinary health care providers or laboratories regarding a presumed or confirmed animal case, ADDL will initiate an investigation and collect the following information:

1. ADDL will contact the veterinary health provider or appropriate laboratory to obtain relevant veterinarians' notes and laboratory results.

2. ADDL will contact the owner and/or caretaker of the animal and obtain:

   a) Animal and owner/caretaker identifying information, including names, telephone number(s), residence address and work address;

   b) Clinical history, including signs, date of onset, date of diagnosis, clinical impressions, treatments, and outcomes;

   c) Exposure risks, including history of exposure to arthropods, history of travel within and outside the county and the U.S., and other factors contributing to exposure risk.

B. If ADDL determines a confirmed or highly suspect case of WNV or other mosquito-borne encephalitid is likely to have been acquired locally, ADDL will:

1. Follow the Interdepartmental Policy (see Attachment O) and inform CDHS of its determination and forward reports of case history(ies) and other findings;

2. Inform VSC and HHSA Epidemiology of its findings and provide both agencies a copy of its report containing information necessary for vector-borne disease surveillance and control;

3. Provide VSC with a copy of reports and any other relevant information to assist VSC in vector-borne disease surveillance and control.

C. If ADDL determines local acquisition to be unlikely for a presumed or confirmed case of WNV or other mosquito-borne encephalitide (such as history of animal travel to an endemic area), SDADDL will:

1. Inform CDHS of its determination and forward reports of case history(ies) and other findings to CDHS;

2. Advise VSC and DCE of its findings

Attachment G Protocol for Reporting a WNV Case of Human Illness

RISK LEVEL 2/3: 2.6-5.0

Step I Notification of Report of Suspect or Confirmed Animal or Human Case(s) of WNV.

A. HHSA, Division of Community Epidemiology (DCE) receives information from health providers or laboratories regarding a suspect or confirmed human case(s) diagnostic for WNV or other mosquito-borne arboviral encephalitide occurring in the county.

1. DCE follows the Interdeparmental Policy (see Attachment O) and notifies VSC via a "Confidential Morbidity Report (CMR), and if applicable, a "WNV Case History Report (WNVR)" and sends copy(ies) of the completed report(s) to VSC.

B. VSC reviews the CMR and WNVR.

1. Finds the information to be complete. The CHD Chief makes the final decision whether or not to investigate the case(s). If the decision is made to investigate the case(s), then proceed to Step II, or

2. Finds the information to be incomplete.

a. DCE conducts further case investigation and obtains a more complete CMR and WNVR. When completed CMR and WNVR are obtained proceed to Step II; or

b. A Vector Ecologist and a DCE representative will conduct a joint investigation and interview, and complete the CMR and WNVR. Then proceed to Step II.

Step II Site Investigation

VSC sends a Vector Ecologist to investigate the probable site(s) of exposure, survey, and develop history of the area regarding vector surveillance and control.

A. A Vector Ecologist determines the probable presence of vector mosquitoes and probable presence of potential human susceptibles, and may set CO2-baited light traps. Proceed to Step III.

B. Vector Ecologist determines probable absence of vector mosquitoes and probable absence of potential human susceptibles. There is no further action warranted and report findings.

Step III Response to Trap Findings

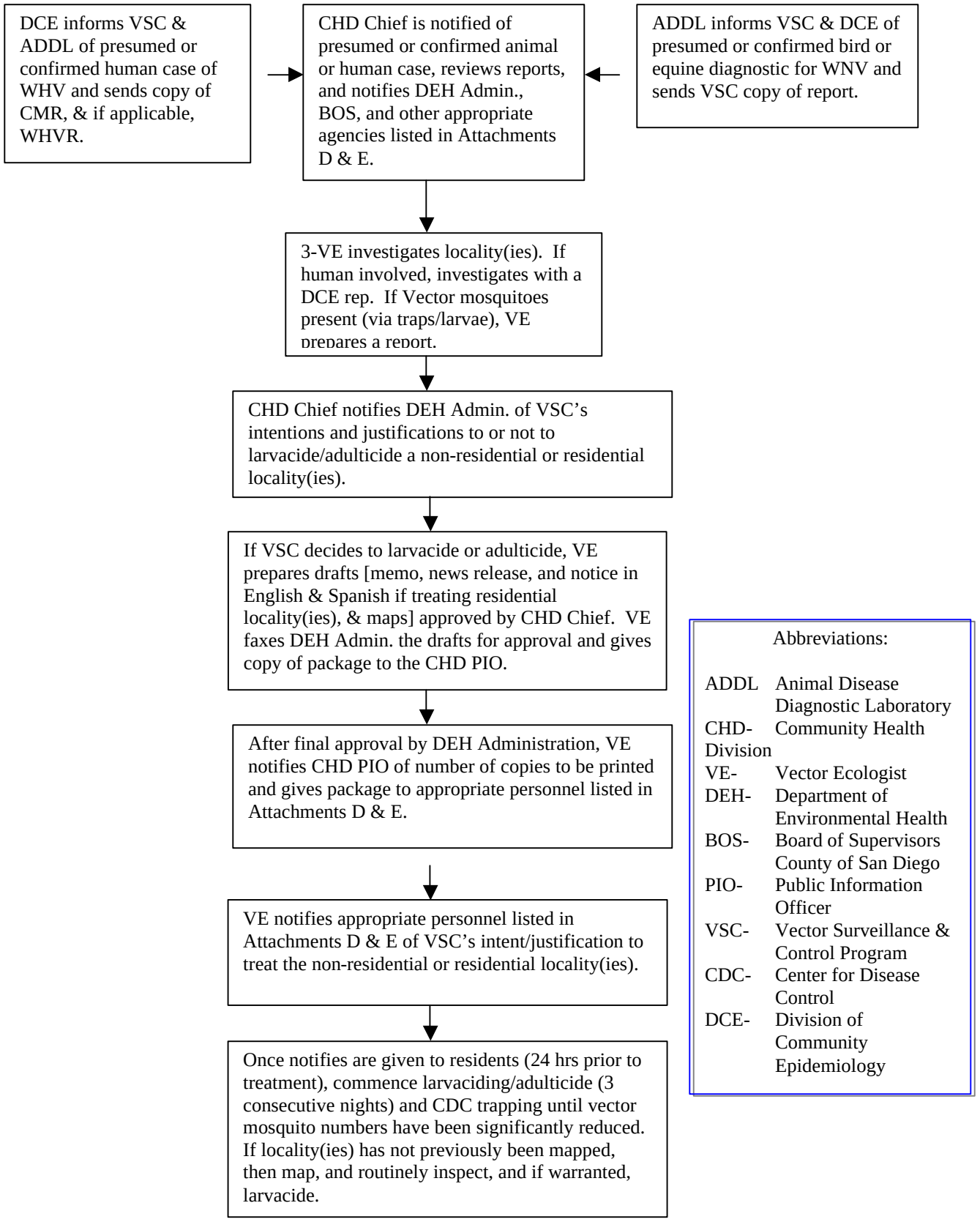
A. If adult *Culex* or other species of vector mosquitoes are trapped in significant numbers, as determined by the Vector Ecologist, to warrant a possible threat of WNV being transmitted by mosquitoes to equines and/or nearby residents and/or migrants, then proceed as follows:

1. If the CHD Chief decides to adulticide only a non-residential locality(ies), proceed to Step IV, Attachment B.

2. If the decision is made not to adulticide, the CHD Chief will report findings to the DEH Director.

Figure 2 below depicts the proposed response to a positive human case of WNV.

Figure 2 **Level III: Human Positive**



Attachment H County of San Diego, Mosquito Control

Larval Control:

Biological control entails the intentional use of natural predators, parasites, or pathogens to reduce immature mosquito numbers. Mosquito fish, *Gambusia affinis*, are the most widely used biological control agent in California. The county provides these fish free of charge to individuals with mosquito breeding on their property. VSC is also currently researching the use of another mosquito eating fish, the three-spined Stickleback to supplement the use of *Gambusia* in areas where non-native fish would pose a risk to the environment.

Control of mosquito larvae and pupae prevents them from becoming biting adult females capable of transmitting disease, causing discomfort, and ultimately producing another generation of mosquitoes. Larval control allows for the use of target-specific pesticides in definable areas. For these reasons, the County of San Diego and other mosquito control agencies target the immature stages rather than the adult stage. Larval mosquito control has three key components: environmental management, biological control, and chemical control.

Environmental management may include water management, such as increasing the water disposal rate through evaporation, percolation, recirculation, or drainage. Controlled irrigation or the careful timing of wetland flooding for waterfowl can reduce mosquito production. Environmental management also may entail vegetation management because emergent vegetation provides food and refuge for mosquito larvae. Vegetation management strategies include the periodic removal or thinning of vegetation, restricting growth of vegetation, or controlling algal growth. Environmental management decreases habitat availability for immature mosquitoes.

There are several mosquito control products that are highly specific and thus have minimal impact on non-target organisms. These include microbial control agents, such as *Bacillus thuringiensis israelensis* (Bti) and *Bacillus sphaericus* (Bts). Insect growth regulators, such as methoprene, prevent immature mosquitoes from developing into adults. Surface films are very effective against both larvae and pupae, but also may suffocate other surface breathing aquatic insects. Organophosphate pesticides are used infrequently because of their impact on non-target organisms and the environment.

Adult Control:

When larval control is not possible or has been used to the fullest extent possible, adult mosquito control (fogging) may be required to suppress mosquitoes and thus stem possible epidemics. Adult mosquito control products may be applied either using ground-based equipment, fixed wing aircraft, or helicopters. These products include organophosphates, such as malathion and naled, and pyrethroids, such as resmethrin, sumithrin, and permethrin.

There are many factors to consider when selecting a pesticide such as (1) efficacy against the target species or life cycle stage, (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.

Compounds approved for control of larval and adult mosquitoes in California are listed below. Label rates and usage for these compounds vary from year to year and geographically; consult your County Agricultural Commissioner and the Department of Fish and Game before application. Examples of products containing specific active ingredients are provided below, but this is not an inclusive list nor do they constitute product endorsement. For more information on pesticides and mosquito control, refer to the Environmental Protection Agency (EPA) Web site: http://www.epa.gov/pesticides/factsheets/skeeters.htm

The current costs of larvacides and adulticides and their inventory (as of December 2002) are given below and compared to projected items in the event that WNV is found in the county. An example of a notification to residents when larviciding and/or adulticiding is provided below.

Table 1: Compounds Approved for Mosquito Control in California and Vector Surveillance and Control (VSC) Inventory

Pesticides	Product Name	Use/ Action	VSC Inventory	VSC Cost
Larvicides				
	Bacillus thuringiensis israelensis Trade names: Vectobac Teknar	Use: Approved for most permanent and temporary bodies of water. imitations: Only works on actively feeding stages. Does not persist well in the water column.	Budget through 6/03 (normal season) stockpiled.	VectoBac $162.40/40 lbs.
	Bacillus sphaericus Trade name: Vectolex	Use: Approved for most permanent and temporary bodies of water. Limitations: Only works on actively feeding stages. Does not work well on all species. May persist and have residual activity in some sites.	Budget through 6/03 (normal season) stockpiled.	VectoLex $165.00/40 lbs.
	Methoprene Trade name: Altosid	Use: Approved for most permanent and temporary bodies of water. Limitations: Works best on older instars. Some populations of mosquitoes may show some resistance. The VCS used one application of methoprene pellets in May at Penasquitos Lagoon and achieved almost 100% control of mosquito larvae through mid-August.	Budget through 6/03 (normal season) stockpiled.	Altosid $24.00/lb.
	Diflurobenzamide Trade Name: Dimilin	Use: Impounded tail water, sewage effluent, urban drains and catch basins. Limitations: Cannot be applied to wetlands, crops, or near estuaries.	**Not currently used by VSC.**	
	Larviciding oils Trade names: Golden Bear 1111 BVA Chrysalin	Use: Ditches, dairy lagoons, floodwater. Effective against all stages, including pupae. Limitations: Consult California Department of Fish and Game for local restrictions.	5,300 gallons GB1111 BVA not currently used by VSCP.	Golden Bear 1111 $3.57/gal.
	Monomolecular Films Trade name: Agnique MMF	Use: Most standing water including certain crops. Limitations: Does not work well in areas with unidirectional winds in excess of ten mph.	Budget through 6/03 (normal season) stockpiled.	Agnique $38.00/gal.

Pesticides	Product Name	Use/ Action	VSC Inventory	VSC Cost
Adulticides				
	Organophosphate compound *Malathion* Trade name: Fyfanon	Use: May be applied by air or ground equipment over urban areas, some crops including rice, wetlands. Limitations: Paint damage to cars; toxic to fish, wildlife and bees; crop residue. Limitations restrict application before harvest.	Not used by VSCP.	
	Organophosphate compound *Naled* Trade name: Dibrom Trumpet EC	Use: Air or ground application on fodder crops, swamps, floodwater, residential areas. Limitations: Same as malathion.	Not used by VSCP.	
	Pesticides containing natural pyrethrin *Pyrethrins* Trade name: Pyrenone Pyrocide	Use: Wetlands, floodwater, residential areas, some crops. Limitations: Do not apply to drinking water, milking areas; may be toxic to bees, fish, and some wildlife. Some formulations with synergists have greater limitations.	Budget through 6/03 (normal season) stockpiled. 250 gallons.	Pyrenone $152.00/gal.
	Pyrethroids *Synthetic pyrethrin products containing resmethrin or permethrin*: Trade name: Scourge	Use: All non-crop areas including wetlands and floodwater. Limitations: May be toxic to bees, fish, and some wildlife; avoid treating food crops, drinking water or milk production.	Budget through 6/03 (normal season) stockpiled. 55 gallons.	Scourge $277.00/gal.

Refer to Attachment I for discussion on revenue sources.

THIS SECTION (COST AND STAFFING ESTIMATES) LEFT INTENTIONALLY BLANK: UNDER DEVELOPMENT

Attachment I Revenue Sources

As indicated previously, research of responses to outbreaks of WNV across the United States has indicated a rapid response and deployment of additional vector surveillance and control efforts directed at the mosquito vectors. This effort has ranged from a 20% increase to over a 200% increase in the initial year of the outbreak. Several states (e.g. New York, Connecticut, Pennsylvania, etc.) have been inundated with the virus for several years (1999-2002). Although only three years of data are available, the expenditures directed towards vector control decrease from the first year and plateau at a level above the pre-WNV level of effort. In some instances, vector surveillance and control efforts were minimal (e.g. New York) at the time of the outbreak. These areas showed the greatest increase in levels of effort and have re-established more robust programs than previously existed.

It is difficult to predict the level of effort necessary to minimize the impacts of WNV. However, preventative measures such as an educated, well-informed and motivated community are the most efficient and effective. Vector Surveillance and Control activities, alone, will not be effective, spread across the entire County. As discussed in other sections of this Plan, the County's effort must be integrated with other State, Regional and local level efforts. Individual resident efforts such as eliminating backyard mosquito breeding locations must become an automatic response such as recycling and water pollution prevention efforts have become within the Community.

In order to be prepared for the eventuality of a major vector-borne disease outbreak, the Vector Surveillance and Control District was established in 1989. Funding for the District comes from assessment charges on parcels in San Diego County located in three benefit assessment districts. Revenue from these assessments is placed in an interest-bearing trust fund in order to keep them segregated from other County revenues. The cost of the services provided by the District is offset by withdrawals from the trust fund. Each of the benefit assessment districts generates either $2.28/parcel (inland zones) or $3.00/parcel (central and coastal zones). Assessments are collected in the unincorporated and incorporated areas through the invoicing for property taxes performed by the County Treasurer/Tax Collector's Office. Many of the government owned, non-profit open space preserves and other County owned properties have been exempted from the benefit assessments.

Over the last five years, revenue has approximately equaled expenses. Total revenue, including trust fund interest, for the Vector Surveillance and Control District totaled $10,955,746 from FY97/98 to FY01/02. Expenditures for the same time period totaled $10,874,709. The trust fund balance at the beginning of FY97/98 was $1,920,460 and is currently $2,001,497; which reflects the $81,037 excess revenue over expenditures for this time period.

The Vector Surveillance and Control Program also generates a small amount of revenue from contracts for specialized control activities in municipalities and/or research activities associated with treatment control Best Management Practices (BMPs) for stormwater devices designed, constructed and maintained by Caltrans. These contracts are full cost reimbursement, and no vector control district funds are used in support of these programs.

THIS SECTION (PROJECTED REVENUE ESTIMATES) LEFT INTENTIONALLY BLANK: UNDER DEVELOPMENT

A. Short-term funding options

1. Grants. County staff are tracking and supporting the passage of Federal legislation to provide grant funding from the Federal Government through the Centers for Disease Control and the State Department of Health Services for up to $100,000 to supplement mosquito-borne vector surveillance and control operations. An additional $10,000 will likely be provided to assist with the development of Strategic Response Plans such as this. If passed, it is not clear if these grants will allow for retroactive reimbursement for Plan development efforts.

County staff will aggressively seek out and acquire grant funding whenever and wherever possible.

2. Contracts. As discussed above, the county has several existing revenue contracts. Additional revenue contracts will be sought with public entities for many of the larger, known mosquito-breeding locations.

3. Remediation. Although not covered in a formal contractual agreement, additional levels of effort by the owners or maintenance staff at known mosquito breeding locations (i.e. removal of vegetation that allows for mosquito breeding, restricts access and hampers mosquito control and surveillance activities) is the most effective leveraging of limited local resources.

The current California Health and Safety Code defines mosquito breeding as a "nuisance." As such, under the authority of the Health Officer, delegated to the Director of Environmental Health, the county may enforce this section to reduce or eliminate mosquito-breeding areas. In the event that the outbreak is declared a local or State emergency, the authority of the Health Officer increases and county costs incurred may be recoverable through the Federal Emergency Management Agency and/or through reimbursement from individual and public property owners.

County staff has been discussing these issues with many public and private property owners and will be seeking voluntary efforts to increase maintenance and control mosquito breeding prior to the onset of a WNV outbreak. However, the county must also be prepared to enforce the Health and Safety Code to protect the local population. The use of Administration Citation powers may be implemented.

B. Additional Funding Options

In 1997, California voters passed what is commonly known as Proposition 218. This proposition requires voter approval for any new or increased fee or assessment directly tied to property. As such, it has been the opinion of the State Attorney General, local County Counsel and City Attorneys that an increase in benefit assessments, or additional special fees or taxes, for vector surveillance and control activities, are subject to the requirements delineated in Proposition 218.

Table 1 below lists some of the potential funding options, while Table 2 depicts the Proposition 218 requirements and any additional requirements for each additional revenue source.

Table 1. Potential Revenue Sources for Funding the Vector Surveillance and Control Program.

Funding Source	Pros	Cons
Vector Surveillance and Control District – Increased Fee	• Good area match • Strong functional nexus • Ability to increase flexibility by incorporating land use considerations, equate service levels with service fees	• Requires voter approval under Prop 218 requirements • LAFCO action • Funding tied to service zones
New Community Service Area- Assessment	• Administratively clean • Best area match • Direct nexus • CSA established by BOS	• Requires Engineering Report • Local Area Formation Commission (LAFCO) Action • Voter Approval for funding
Special tax (e.g. sales tax increase)	• Significant source of funding • Provides flexibility for use of funding- does not have to be matched to benefit zones	• 2/3 majority of all voters needed • Funding appropriated to the County General Fund, weak nexus.
Utilities Tax		• Most difficult vote • No nexus
DMV add-on		• Weak nexus • May require State Action

Table 2. Right to Vote on Taxes and Requirements

	Local Sales or other Tax	Benefit Assessment	Fee for Service
Type of Vote	Voted on by all voters	Assessed property owners only; vote by mail	Property owners or electorate (option)
Weighted Vote?	No; each vote counts the same	Yes; weighted according to amount of assessment	If property owner vote, then yes
Required Percent for Passage	Majority if *general* tax; 2/3 if *special* tax	"Yes" ballots must outweigh "noes"	Majority of property owners or 2/3 of electorate
Engineer's report?	No	Yes	No; but fee must be apportioned per parcel on basis of cost of service
Majority Protest Procedure?	No	No	Yes; allow extra 45 days
Restrictions	Few- Special Taxes may only be used for the purpose specified	Only special benefits to property owners are assessable. Benefit to public in general must be paid for from other funds	Fee shall not exceed proportioned cost of delivering service. No fee may be charged for general governmental service
Local Examples		Existing Vector Surveillance and Control District Benefit Assessment	Sanitary district charges; Water usage charges

Attachment J Residential Notification of Larviciding/Adulticiding (English)

County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (858) 694-2888
1-800-253-9933
www.sandiegobugs.org

IMPORTANT NOTICE

Date: _____

County of San Diego, Department of Environmental Health staff will be fogging for mosquitoes in your neighborhood the evening of _____, if winds are calm. It is likely the fogging will be repeated every three days if weather permits. The fogging will be conducted between the hours of 8:00 p.m. and 4:00 a.m., along the riverbed east of _____. The entire operation should last about 2 hours.

This action is being taken as part of an intensified effort to reduce mosquitoes. All accessible areas of standing water have been treated with a larvacide to control the larval stages of the mosquitoes.

The insecticide pyrethrins will be used for the fogging. This product is registered for mosquito control by the Environmental Protection Agency and the California Department of Food and Agriculture. It is a botanical-type insecticide made from chrysanthemum-type flowers. It is specific to insects and relatively harmless to warm-blooded animals, but because a few people may have an allergic reaction to it, you are advised to stay indoors during the fogging. It is also recommended that pets, including birds and fish, be kept inside or covered.

A fogging machine mounted on the back of a pickup truck will apply the insecticide. This machine can be noisy, but the noise generated should not last more than a minute in any given area. Please do not follow the truck. If you have any questions or want additional information, please feel free to call the Vector Surveillance and Control Program at (858) 694-2888.

Attachment K Residential Notification of Larviciding/Adulticiding (Spanish)

County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (858) 694-2888
1-800-253-9933
www.sandiegobugs.org

Aviso Importante

Fecha:_____

Los empleados del Salubridad del Condado empezaran a rociar a consecuencia de los mosqitos (zancudos) en su vecindad el _____, por la tarde, si el viento esta tranquilo. Es probable que se repita el rocio en una semana, si el clima lo permite. Se empezara a rociar entre las 8:00 p.m. y 4:00 a.m., a lo largo del cauce al este de la Calle_____. La completa operacion durara cerca de 2 horas.

Esta accion ha sido tomada como parte de un esfuerzo intensivo para reducir los mosquitos. Todas las areas accesibles con agues estancadas han sido tratadas con un larvacide para controlar loas etapas de las larvas de los mosquitos.

El insecticida pyrethrins se usara para rociar. Este producto esta registrado para el control de los mosquitos por las Agencia de Proteccion Ambiental y el Departamento de Alimentos y Agricultura de California. Es un insecticida de tipo botanico hecho de con tipo de flores de chrysanthemum. Es especificamente para matar insectos y es relativamente inofensivo para los animals de sangre tibia, pero por motivo de que algunas personas pueden tener una reaccion alergica, les estamos aconsejando en permanecer en el interior de su casa durante el rocio. Tambien estamos recomendando que los animalitos domesticos incluyendo los pajaros y pescados, permanezcan en el interior de la casa o que sean cubiertos.

El insecticida lo aplicara una maquina rociadora montada en la parte de atras de un troque pic-up. Esta manquina puede resultar muy ruidosa, pero el ruido generado, no durara mas de un minuto en cada area dada. Por favor no vaya a seguir al troque.

Si tiene alguna pregunta o desea mayor informacion, sientase con confianza en llamar a la Oficina del Control de Plagas al numero (858) 694- 2888.

"Environmental and public health through leadership, partnership and science"

Attachment L Regulatory Authority for Mosquito Control

The legal authority provided a vector control district- routine surveillance, control, and access issues- does not require obtaining a permit from regulatory agencies (e.g. California Department of Fish and Game). Permits would be required only if major access issues (i.e. drainage channel alterations) are required, based on location and ownership, for mosquito abatement.

Legal authority for the operation of the Vector Surveillance and Control program, Community Health Division, Department of Environmental Health are contained in the following regulations:

California Government Code

- Title 3, Division 2 – Officers, Part 2, Board of Supervisors,
    - Chapter 8 Health and Safety, Article 3 – Miscellaneous

California Health and Safety Code

- Division 3 – Pest Abatement, Chapter 2, Section 1800
- Division 3 – Pest Abatement, Chapter 5 – Mosquito Abatement Districts
    - Article 1 – General Provisions, Section 2200
- Division 3 – Pest Abatement, Chapter 5 – Mosquito Abatement District
    - Article 4 – District Powers
- Division 13 – Housing, Part 1.5 – Section 17920.3 Substandard Building
    - Conditions.

California Civil Code

- Sections 3479 and 3480

California Penal Code

- Sections 372 and 373 (a)

San Diego County Code of Regulatory County Ordinances

- Division 4 – Disease Control, Chapter 1
    - General Provisions Nuisances, Sections 64.101-64.106
- Division 4 – Disease Control, Chapter 2
    - Mosquitoes and Flies Sections 64.201-64-204
- Division 4 – Disease Control, Chapter 3, Sections 64.301-64.330

Municipal Codes for all 18 incorporated cities within San Diego County
(e.g. City of San Diego Municipal Code)

- Chapter 4 – Health and Sanitation, Article 6
  Disease Control, Sections 44.0341-44.0357)

California Environmental Quality Act (CEQA) – Public Resources Code sections. 21000-21004; California State CEQA Guidelines, California Administrative Code (Guidelines), sections 15002, 15086, 15087

CEQA's main objective is to disclose to decision makers and the public, the significant environmental effects of proposed activities and to require agencies to avoid or reduce the environmental effects by implementing feasible alternatives or mitigation measures. Other objectives of CEQA focus on public disclosure regarding the reasons for agency approval of projects with significant environmental effects, interagency coordination in the review of projects, and enhancement of public participation in the planning process.

National Environmental Policy Act (NEPA)[2] – 42 U.S.C. 4332; 40 C.F.R.1501

Statutory Exemptions

Emergency Actions in response to imminent threat to public health, as determined by the County Health Officer (delegated to the Director of Environmental Health), are exempt from CEQA and other regulatory permits under the Public Resources Code 21080(b)(4)

Under the requirements in the State Porter-Cologne Act and the Federal Clean Water Act, the Regional Water Quality Control Board is delegated authority for protection of surface and groundwater. Stormwater regulations dictate the need for a Notice of Intent to comply with statewide permit requirements related to applications of pesticides to waterways. The Vector Surveillance and Control Program has previously submitted, in coordination with the Department of Public Works, a Notice of Intent. Subsequently, both Agencies prepared and submitted a monitoring and reporting /quality assurance plan. This plan submitted under the National Pollution Discharge Elimination System requirements in the Clean Water Act, is currently being by the RWQCB.

Notification

Vector Surveillance and Control Program policies require the notification of the following (appropriate) agencies in relation to large scale, aerial or land based pesticide applications:

County of San Diego

- Department of Environmental Health
- Land & Water Quality, Stormwater Division- notification
- Department of Planning and Land Use, Multiple Species Conservation Program (MSCP)- notification and coordination
- Department of Public Works- notification for flood control channel activities
- Department of Agriculture Weights and Measures - notification
- Air Pollution Control District -notification only
- Health and Human Services Agency- Notification
- Farm and Home Advisor – University of California Extension- Notification
- Department of Parks and Recreation – site specific notification

[2] NEPA establishes an environmental review process that is separate from, but similar to that under CEQA. NEPA, however, applies only to federal agencies.

State Agencies

- California Department of Fish and Game
- Coastal Commission
- California Department of Pesticide Regulation
- Application with approved pesticides
- California Department of Health Services
- California Department of Parks and Recreation- Penasquitos Lagoon

Federal Agencies

- U.S. Fish and Wildlife Services
- U.S. Army Corps of Engineers
- No special permitting unless waterways are changed

Conservancies

- Buena Vista Conservancy
- Batiquitos Lagoon
- San Elijo Lagoon
- Talone Lake Conservancy

Attachment M Personnel Safety

Title 8 of the California Code of Regulations (8CCR), §3203, requires that the County have an effective and written injury and illness prevention program (IIPP). The purpose of the IPP is to provide better work place protection for employees and to reduce losses resulting from accidents and injuries. This IIPP is written specially for Vector Surveillance and Control (VSC) staff of the Community Health Division within the Department of Environmental Health, and has been revised as of September 18, 2002.

The nine elements required for an effective IIPP are as follows: management commitment and assignment of responsibilities; a 2-way safety communications system between employer and employee; a system for assuring employee compliance with safe and healthy work practices; scheduled inspection and evaluation of work place hazards; procedures for correcting unsafe or unhealthy conditions; accident investigation; health and safety training and instruction; and record keeping and documentation. Each of these elements is described in detail in the IIPP.

Some of the activities of the "health and safety training and instruction" element include: driver safety/defensive driving; respiratory protection; pesticide use and safety; field identification and protection; heavy equipment hazards; personal protection equipment; field physical hazards; and first aid. VSC field personnel presently perform some or all of these activities when putting out mosquito light traps, and when conducting ground or aerial larviciding and/or adulticiding for mosquitoes. These activities may be increased in the event that West Nile or other mosquito-borne viruses are found in mosquitoes, birds, equines, and/or humans. As given in the "management commitment and assignment of responsibilities" element, part of the supervisors' responsibilities include ensuring that these field activities are performed with the utmost regard for health and safety.

Besides physical hazards, County personnel also may be exposed to an increased risk of being exposed to mosquito-borne diseases, to include the possible arrival of WNV. Such individuals should follow the following safety procedures when outdoors: wear clothing that covers the skin such as long sleeve shirts and pants; apply effective insect repellent to clothing and exposed skin; and curb outside activity during dawn and dusk. If you are allergic to repellents, contact your doctor for alternative protective measures. If you are bitten by a mosquito and begin to experience fever, headache and body aches usually within 5-15 days following the bite, seek medical attention. Survey your work sites and look for and eliminate standing water, if possible, by tipping over flower pots, buckets, etc. that contain water. If the body of water is too large, call VSC at (858) 694-2888. If you notice dead birds where you are working, also call (858) 694-2888 and VSC will advise you concerning these birds possibly being picked up for WNV testing.

Attachment N State of California Arbovirus Surveillance Program

The California Arbovirus Surveillance Program, CDHS, emphasizes forecasting and monitoring WNV and other mosquito-borne viruses. These viruses are maintained in nature in wild bird-mosquito cycles, and therefore are not dependent upon infections of humans or domestic animals for their persistence. In California, surveillance and control activities focus on this cycle, which involves primarily species of mosquitoes belonging to the genus *Culex*, particularly *C. tarsalis* and *pipiens*, and various species of birds, particularly house finches and sparrows, and those in the crow family. Routine surveillance in the County of San Diego therefore includes the monitoring of immature and adult mosquitoes and detecting virus activity by testing (1) mosquitoes, (2) sentinel chickens and wild birds, (3) horses, and (4) humans. These specimens and/or samples are sent to CDHS where they are tested for WNV and other mosquito-borne viruses. Table 2 provides a worksheet to assist in determine the appropriate rating for each of the risk factors. For further information concerning the CDHS guidelines for adult mosquito surveillance, and procedures for processing mosquitoes for testing, for monitoring and bleeding sentinel chickens, and for testing dead birds, refer to the VSC program (858-694-2888). The VSC program also has established a protocol for reporting a mosquito pool(s), sentinel chicken(s), and/or wild bird(s) positive/seropositive for WNV or other mosquito-borne viruses (Attachment B), a protocol for handling dead birds (Attachment C), and lists of agencies to notify (Attachments D and E).

Adult Mosquito Surveillance: Two adult mosquito-sampling methods are currently used in the County of San Diego. One is the New Jersey light trap and the other is the carbon dioxide-baited or CDC light trap. Five New Jersey light traps are placed near known mosquito breeding habitats. These traps monitor the species and abundance of mosquitoes collected from April thorough October. Approximately 20-30 CDC traps are put out overnight once a week along prescribed river runs, by lagoons, and other localities that have been shown or have a potential for breeding mosquitoes. These are put out from April to October. Specimens of *C. tarsalis* and other species of *Culex* are pooled (50 per pool) and sent to CDHS for virus testing. Monitoring the abundance of adult mosquito populations also provides important information on the effectiveness of larval control efforts and the abundance of certain species of mosquitoes, which is a key factor when evaluating the risk of disease transmission to humans. During November 2002, through March 2003, CDC traps will continue to be used to monitor and test pools of mosquitoes for WNV and other mosquito-borne viruses. These will be put at eight key known breeding sites, with mosquito species pooled and sent for testing of WNV and other viruses.

TABLE N-1 – MOSQUITO-BORNE VIRUS RISK ASSESSMENT

Surveillance Factor	Assessment	Benchmark	Assigned
1.Environmental Conditions Considers snowpack, rainfall, and ambient temperature. (Note: disease outbreaks caused by SLE can also occur during hot, dry yeas). In those regions where the amount of water is not environmentally dependent, agencies may substitute water management factors	1	Snowpack, rainfall and temperature well below average	
	2	Snowpack, rainfall and temperature below average	
	3	Snowpack, rainfall and temperature average	
	4	Snowpack, rainfall, and temperature above average	
	5	Snowpack, rainfall and temperature well above average	
2. Adult mosquito vector abundance Determined by trapping adults, identifying them to species, and comparing numbers to those previously documented for an area.	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 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 to 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 or domestic animals Includes only equines.	1	No equine cases over broad region	
	2	No equine cases in specific region	
	3	One equine case in broad region	
	4	One or two equine cases in specific region	
	5	More than two 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 areas	
<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	

Immature Mosquito Surveillance: A "dipper," or long-handled ladle, is used to find immature stages (larvae and pupae) of mosquitoes in various water sources. VSC technicians inspect these known breeding habitats and search for new sources for mosquitoes on a seven to 14-day cycle. These data are used to direct control operations. Maintaining careful records of immature mosquito occurrence and abundance, developmental stages treated, source size, and control effectiveness can forecast the size of an adult population. Immature stages of *Culex tarsalis* can be found throughout California in a wide variety of aquatic sources, ranging from clean to highly polluted waters. Other mosquito species, such as the house mosquito, *Culex pipiens*, may play an important role in the transmission cycle of mosquito-borne diseases in urban and suburban areas in the County of San Diego.

Mosquito-borne Infections: Early detection of virus activity may be accomplished by testing adult mosquitoes for virus infection. Since *Culex tarsalis* is the primary vector for mosquito-borne viruses in California, surveillance efforts emphasize the testing of mosquitoes of this species. In other states, *Culex* species also have been shown to be the primary vector associated with human cases caused by WNV. Female mosquitoes are trapped, usually using carbon dioxide-baited traps, and pooled into groups of 50 females each for submission to the laboratory at Davis Arbovirus Research Unit (DARU), which is part of the UC Davis Center for Vector-borne Disease Research. Since 2000, the state surveillance system has been designed to detect WNV and other mosquito-borne viruses. Testing adult mosquitoes for infection is one of the best methods to detect newly introduced mosquito-borne viruses such as WNV.

Avian Infections: Detection of transmission of mosquito-borne viruses in bird populations in the county is being accomplished by using caged chickens as sentinels and bleeding them to detect viral antibodies (seroconversions), or by collecting and bleeding wild birds to detect viral antibodies in populations. In the County of San Diego, three flocks of ten chickens each are placed in pens in locations where mosquito abundance is known to be high or where there is a history of virus activity. Each chicken is bled bi-weekly by pricking the comb and collecting blood on a filter paper strip. The blood is tested at CDHS for antibodies to WNV and other mosquito-borne viruses. Biweekly bleeding of carefully placed flocks of sentinel chickens provides the most sensitive and cost-effective method to monitor the activity of these viruses. The VSCS program has protocols for sentinel housing, maintenance, bleeding instructions, and testing. Although sentinel chicken flocks are usually maintained from April through October, two flocks will be kept and tested for WNV and other mosquito-borne viruses from November to mid-December so as to monitor any virus activity in these birds.

Bleeding younger and older birds to determine if the prevalence of the virus in the region has changed over time also can monitor virus activity in wild bird populations. In contrast to the convenience of using sentinel chickens, the repeated collection and bleeding of wild birds generally is too labor intensive, technically difficult, and expensive for routine surveillance activity by local mosquito control agencies. In addition, the actual place where a wild bird became infected is rarely known, because birds usually are collected during daylight foraging flights and not at nocturnal roosting sites where they are most frequently bitten by mosquitoes.

In 2000, surveillance for WNV and other mosquito-borne viruses in dead crows was initiated by CDHS because these birds have been shown to provide an early warning that WNV is circulating

in a region. Although testing has revealed that there is currently no evidence of the presence of WNV in California, WNV could be imported to California through interstate or international transport of birds, mosquitoes, or mammals. Another possible source for introduction is by interchange of infected birds between the Atlantic, Missouri, and Pacific flyways.

For example, an infected bird when migrating may crossover into a different flyway and thus infects endemic birds in an entirely new region via a mosquito biting such a bird. The infected mosquito then bites an endemic bird, or an equine or human. In collaboration with many local, state, and federal agencies, crows and other birds that meet certain criteria are being tested by CDHS for a WNV and other mosquito-borne viruses. From early August 2002, to mid-January 2003, VSC has picked up and sent 28 dead birds to CDHS for WNV testing. This activity will continue thorough the winter months.

Equine Infections: Veterinarians are contacted annually by CDHS the California Department of Agriculture (CDFA) to ensure that equines (horses, donkeys, and mules) are vaccinated and to describe diagnostic services that are available in the event of a suspected case of western equine encephalitis (WEE) or WNV fever. Besides WEE and WNV, other mosquito-borne viruses may also cause encephalitis in horses, and consequently, testing of equine specimens has been expanded to include other viruses. Attachment F gives the protocol for the County Animal Disease Diagnostic Laboratory (ADDL) when they have a presumed or confirmed bird, or equine or other mammal diagnostic for WNV or other mosquito-born infection. This protocol includes that ADDL notifies VSC of such a case so that the latter can take necessary surveillance and control measures.

Human Infections: Human cases are an insensitive surveillance indicator of virus activity because most human infections (>99%) have no, or only mild, symptoms. When severe cases do occur (e.g. encephalitis or aseptic meningitis), physicians may not establish a definitive diagnosis of an arboviral disease. Rarely are arboviruses suspected, and sera are not generally sent to CDHS for testing. In an attempt to stimulate detection of human cases of SLE , WEE, or WNV in California, communication with key hospitals and local health officials has been enhanced and specimens from suspect cases are being tested rapidly through CDHS' California Encephalitis Project. In cases where patients have extensive mosquito exposure and SLE, WEE, and WNV are negative, additional testing for other arboviruses is done. Over 100 cases reported in California are referred to the CEP each year. The rapid detection and reporting of confirmed human cases is crucial to local mosquito control agencies in planning and expediting emergency control activities to prevent additional infections. The protocol for reporting a human case(s) of WNV or other mosquito-borne virus is given in Attachment G.

COUNTY OF SAN DIEGO
HEALTH AND HUMAN SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
DEPARTMENT OF AGRICULTURE WEIGHTS AND MEASURES
INTERDEPARTMENTAL POLICY / PROCEDURE / PROTOCOL

SUBJECT: WEST NILE VIRUS SURVEILLANCE AND CONTROL

Date: February 25, 2003

AUTHORITY: The California Health and Safety Code (HSC) authorizes the County Board of Supervisors to preserve and protect the public health (HSC §101025) and requires the County Health Officer to take measures to prevent the spread of the disease (HSC §120175). Additionally, the County Health Officer and Director of Environmental Health are authorized to enforce and observe orders and ordinances of the Board of Supervisors, and orders, quarantines and other regulations of the California Department of Health Services, and public health statutes (HSC §101030, 101280 and Title 17, CCR §1369). The Community Epidemiology Division (CED) and the Public Health Laboratory (PHL) of the Health and Human Services Agency's (HHSA) Public Health Services (PHS) are authorized by the Health Officer to act in events having public health significance. The Vector Surveillance and Control Program (VSC) of the Department of Environmental Health's (DEH) Community Health Division (CHD) is authorized by the DEH to act in vector borne disease and nuisance events [San Diego County Code of Administrative Ordinances (SDCCAO) §898 and 899). The County Veterinarian is authorized to enforce orders and ordinances of the Board of Supervisors pertaining to the health of animals and to establish, maintain and quarantine, sanitary, testing and immunizing measures, to promulgate necessary rules and regulations, and to supervise examination and testing of animals or premises for the presence of contagious, infectious or communicable diseases (San Diego County Code of Regulatory Ordinances §62.109). Under the supervision of the County Veterinarian, the Animal Diseases Diagnostic Laboratory (ADDL) of the Department of Agriculture, Weights and Measures (DAWM) provides services to diagnose diseases hazardous to animals or transmissible to man and conducts animal diseases surveillance and testing, including animal diseases, which may infect humans (SDCCAO §234).

PURPOSE: In protecting the public health, safety and welfare of County residents and visitors, rapid recognition, investigation, surveillance, prevention and control (hereinafter referred to as response) of vector borne illnesses is essential. This requires effective coordination and communication of activities of the PHS, DEH and DAWM. This document addresses the impending arrival and establishment of West Nile Virus (WNV) by delineating response activities that the PHS, DEH, and DAWM agreed to in this protocol. These include joint and separate duties and responsibilities. This document is also a template for addressing other mosquito borne viral encephalitides, which are endemic or may be introduced to San Diego County.

POLICY: Pursuant to previous HHSA and DEH agreements that delineate general roles and responsibilities of the two agencies regarding human health, and in keeping with operational

duties and responsibilities of the DAWM regarding animal health, this policy establishes procedures detailing joint and separate activities for the PHS, DEH and DAWM for response to WNV and other mosquito borne viral encephalitides. The PHS, DEH, and DAWM concur that rapid response to WNV and other mosquito borne viral encephalitides is of high priority. Accordingly, the PHS, DEH and DAWM shall insure that sufficient resources are allocated and shall take necessary administrative and operational measures to ensure immediate interdepartmental notification and communication, and immediate implementation of joint and separate response activities.

PROCEDURES: These procedures specify duties and responsibilities of the PHS, DEH and DAWM performed under joint and separate response activities for WNV and other mosquito borne viral encephalitides. The PHS, DEH and DAWM shall coordinate response activities and resource allocation. The CED is the lead for human case surveillance and investigation; the ADDL is the lead for animal case surveillance and investigation; and the VSC is the lead for vector and animal sentinel surveillance and for vector control. To the greatest extent possible, upon receipt of information of a confirmed or suspected occurrence of WNV or other mosquito borne encephalitis virus, interdepartmental communication and joint and separate response activities shall be immediately initiated.

I. Joint PHS, DEH and DAWM Activities. Joint activities involve notification, response coordination, confidentiality, media contacts, public information, and litigation response.

A. The CED will immediately notify the VSC and ADDL whenever the CED has knowledge that a human case of WNV or other mosquito borne viral encephalitis is suspected or confirmed to have been locally acquired; the VSC will immediately notify the CED and the ADDL whenever the VSC has knowledge that mosquitoes or sentinel or wild animals are found or suspected to be infected with WNV or other mosquito borne encephalitis virus; and the ADDL will immediately notify the CED and VSC whenever the ADDL has knowledge that an animal case of WNV or other mosquito borne viral encephalitis is suspected or confirmed to have been locally acquired. Upon receipt of information that a suspected or confirmed WNV or other mosquito borne encephalitis virus finding is made, the CED, VSC and ADDL will immediately notify their respective department administration. The CED, VSC and ADDL will also notify the County Department of Media and Public Relations whenever they have knowledge of information of note or information requiring public attention, such as but not limited to a locally acquired or identified human case of WNV, a locally acquired or identified animal case of WNV, or a finding of WNV infection in mosquitoes or sentinel or wild animals collected in San Diego County.

B. Coordination of investigations and findings (and reports of same) relating to WNV and other mosquito borne encephalitis virus will occur through immediate telephonic and/or electronic communications, exchange of documentation and attendance of weekly meetings of the CED, when appropriate. Reports of WNV and other mosquito borne encephalitis virus reported after regular working hours may require coordination with the DEH's WNV Information System (WNVIS) or the Hazardous Incident Response Team. If, in responding to a case of WNV or other mosquito borne viral encephalitis reported after working hours, it is necessary to access response personnel to implement these procedures, HHSA/DEH

Policy/Procedure/Protocol 001 (Single Point of Contact for Events of Public Health Significance) may be implemented in part or entirely, as appropriate.

C. Confidential information may be shared among the PHS, DEH and DAWM to conduct the necessary investigation. Any confidential information such as that contained in a citizens complaints, confidential morbidity reports, internal documents, interview notes and laboratory results is protected from unauthorized release. Only the originating department is authorized to release such documents.

D. Current policies, procedures and guidelines pertaining to press releases and news media contacts remain in force and are applicable to these procedures. All press releases relating to WNV and other mosquito borne encephalitis virus shall be initiated by or under the direction of the CED Chief, the CHD Chief, and/or the County Veterinarian. Unless otherwise specified, all press releases and contacts with the news media, relating to the occurrence of WNV or other mosquito borne encephalitis virus, shall first be approved respectively by the Health Officer, the Director of the DEH and/or the Director of the DAWM. Information developed for public distribution, including but not limited to news releases, brochures, handouts and county website postings, shall be routed by the originating agency to the other two involved agencies for review, input and approval prior to finalization and distribution.

E. All inquiries made in any form relating, or potentially leading, to litigation shall be referred to the respective Chief or designated representative for appropriate referral and/or response. Certain legal inquiries may require assistance from County Counsel's Office, as determined by the CED Chief, CHD Chief and/or County Veterinarian.

Separate PHS, DEH and DAWM Activities

A. PHS Activities.

The CED will conduct surveillance and investigation of suspected and confirmed human cases of mosquito borne viral illness, including WNV. Upon receipt of a Confidential Morbidity Report (CMR) from a health care provider or laboratory regarding a suspected or confirmed case, the CED will collect and record pertinent case information on the "West Nile Case History" (WNCH) form. The CED will contact the health care provider, appropriate laboratory and/or infection control specialist and obtain relevant physicians' notes, admission and discharge notes (if the case is hospitalized) and laboratory results. The CED will contact the case or an appropriate proxy and obtain patient information, including patient's age, gender, telephone number(s), residence address, work address, and other demographic information; clinical history, including signs and symptoms, date of onset, date of diagnosis, date of hospital admission and discharge, clinical impressions, treatment and outcomes; and exposure risks, including nature of employment, exposure to arthropods, birds or mammals, outdoor recreational activities, and travel history within and outside San Diego County, and other factors contributing to exposure risk.

If the CED determines that a confirmed or suspected case of mosquito borne illness is likely to have been locally acquired, the CED will inform the California Department of Health Services

(CDHS) of its determination and forward reports of case history and other findings to the CDHS; inform the VSC and the ADDL of its determination; and provide the VSC sufficient information to assist in vector surveillance and control. If the CED determines that a confirmed or suspected case of mosquito borne viral illness is likely to have been acquired outside of San Diego County, the CED will inform the CDHS of its determination and forward case history reports to the CDHS; advise, in general, the VSC and the ADDL of its findings; and inform the local (county) health jurisdiction where the exposure is suspected or determined to have occurred and forward case history reports to that jurisdiction.

The CED will conduct enhanced surveillance of viral encephalitis and aseptic meningitis of unknown etiology to determine whether or not mosquito borne encephalitis virus infection, including WNV, is involved. Upon receipt of a CMR of a case of aseptic meningitis or encephalitis meeting specified CDHS criteria (such as age, hospitalization, history of travel or mosquito bite), the CED will contact the health care provider, diagnostic laboratory, and/or patient (or proxy) to determine exposure history, including nature of employment, exposure to arthropods, birds or mammals, outdoor recreational activities, and travel history within and outside San Diego County, and other factors contributing to exposure risk; the CED will facilitate specimen and history submittals for review and evaluation of the case by the CDHS WNV/Encephalitis Projects. The PHL will also assist by providing consultations to health care providers and diagnostic laboratories and referral of specimens to the CDHS WNV/Encephalitis Projects. If the results from the CDHS WNV/Encephalitis Projects confirm WNV or other mosquito borne encephalitis virus infection likely to have been locally acquired, the CED will inform the VSC and ADDL of the results and its findings, and provide the VSC with sufficient relevant information to assist the VSC in vector surveillance and control. If the results confirm WNV or other mosquito borne encephalitis virus infection likely to have been acquired outside of San Diego County, the CED will advise, in general, the VSC and ADDL of its findings, and inform the local (county) health jurisdiction where the exposure is suspected or determined to have occurred and forward reports of case history and other findings to that local jurisdiction.

Upon receipt of information from DEH and/or DAWM regarding any significant administrative or operational activity relating to WNV or other mosquito borne viral encephalitides, the CED will notify the PHL.

B. DAWM Activities.

The ADDL will conduct surveillance and investigation of suspected and confirmed animal cases (birds and mammals) of mosquito borne viral illness, including WNV. Upon receipt of a report from a veterinary health care provider or laboratory regarding a suspected or confirmed animal case, the ADDL will initiate an investigation and collect pertinent information. The ADDL will contact the veterinary health care provider or appropriate laboratory to obtain relevant veterinarians' notes and laboratory results. The ADDL will contact the owner and/or caretaker of the animal and obtain animal and owner/caretaker identifying information, including names, telephone number(s), residence address and work address, clinical history of the animal, including signs and symptoms, date of onset, date of diagnosis, clinical impressions, treatments and outcomes; and exposure risks, including history of exposure to arthropods, history of travel within and outside San Diego County, and other factors contributing to exposure risk.

If the ADDL determines a confirmed or suspected animal case of mosquito borne encephalitis virus infection is likely to have been locally acquired, the ADDL will inform the California Department of Health Services (CDHS) of its determination and forward reports of case history and other findings to CDHS; inform the CED and VSC of its findings; provide to the CED sufficient relevant information necessary to assist in surveillance of potentially associated human cases, if any; and provide to the VSC sufficient relevant information necessary to assist in vector surveillance and control. If the ADDL determines that a confirmed or suspected animal case of mosquito borne encephalitis virus infection is likely to have been acquired outside of San Diego County, the ADDL will inform the CDHS of its determination and forward reports of case history and other findings to the CDHS; and advise, in general, the CED and VSC of its findings.

C. DEH Activities.

The VSC will conduct field investigation whenever the VSC receives a report and/or other information from the CED suggesting or confirming that a human case of WNV or other mosquito borne viral encephalitis, or a report and/or other information from the ADDL suggesting or confirming that an animal case of WNV or other mosquito borne encephalitis virus infection is likely to have been locally acquired. In its investigation the VSC will determine whether or not vector mosquito activity exits in the vicinity of the possible or suspected areas of exposure, including residence, work, or place of visit (through the use of CO2 baited mosquito light traps or other means); whether or not reservoir/host activity exists in the vicinity of the possible or suspected areas of exposure (through collection of blood sera from reservoirs/hosts, or by other means); and, jointly with the CED, whether or not human population density and activity may result in additional cases or promote further transmission of WNV or other mosquito borne encephalitis virus. The VSC will immediately notify the CED and ADDL of its findings and determinations, regardless of outcome.

The VSC will also conduct routine mosquito borne encephalitis virus surveillance by collecting and processing mosquitoes and sentinel chicken blood samples, as well as dead birds for shipping to appropriate laboratories for testing. If during routine encephalitis virus surveillance the VSC finds that a mosquito (es), bird(s) or other animal(s) is (are) infected with a mosquito borne encephalitis virus, the VSC will determine whether or not vector mosquito activity continues to exist in the vicinity of the positive finding; whether or not reservoir/host activity exists in the vicinity of the positive finding; and whether or not human population density and activity may result in human cases or otherwise promote further transmission of WNV or other mosquito borne encephalitis virus. The VSC will immediately notify the CED and ADDL of its findings and determinations, regardless of outcome. If the VSC finds adult vector mosquitoes and jointly with the CED determines that humans are at risk of exposure to WNV or other mosquito borne encephalitis virus, the VSC will investigate potential mosquito breeding sources in the vicinity of the positive finding, and if mosquito breeding is found the VSC will eliminate the source(s) or control the breeding. The VSC will also survey the area for dead birds or reports of dead birds. If adult vector mosquito vectors are collected in numbers determined by the VSC to be sufficient for the transmission of WNV, or other mosquito borne encephalitis virus, the VSC will determine the need and appropriateness of adulticiding in residential or non-residential areas or both. If the VSC finds that vector mosquitoes are not present or that humans are not at

risk, or otherwise determines that transmission of WNV or other mosquito borne encephalitis virus will not occur, no further action is warranted. In any event, the VSC will immediately report its findings and determinations to the CED and ADDL, regardless of outcome.

If the VSC determines that adulticiding will be conducted in non-residential localities only, the VSC will prepare necessary maps, documents of intent and justification for internal review and approval; the VSC will notify appropriate interested agencies and persons of its intent to adulticide specific non-residential localities. After notification to the appropriate interested agencies and persons has been made, the VSC will adulticide the target localities for three consecutive nights. After adulticiding has been completed the VSC will set CO2 baited mosquito light traps to determine the efficacy of the adulticiding operation. Adulticiding and trapping will continue in the same manner until the VSC determines that the vector mosquito population has been sufficiently reduced, thus preventing further transmission of WNV or other mosquito borne encephalitis virus. The VSC will routinely and frequently update and provide to the CED and ADDL relevant maps and reports of vector surveillance and control operations, including adult mosquito trapping, larval surveys, larviciding and adulticiding efforts, and keep other appropriate agencies and persons informed.

If the VSC determines that adulticiding will be conducted in residential areas (including or excluding non-residential localities), the VSC will prepare necessary maps, documents of intent and justification for internal review and approval; the VSC will notify appropriate interested agencies and persons of its intent to adulticide specific residential localities. The VSC will prepare and route draft news release(s) to the CED and DAWM as well as other appropriate/interested agencies for review and concurrence. In the news release the VSC will note its intent to adulticide, the localities, the dates and times of adulticiding operations, the materials to be used and a precautions advisory. The VSC will also prepare a "Notice to Residents", in both English and Spanish, advising residents of the target area that adulticiding operations will be conducted in their neighborhood. In the "Notice to Residents" the VSC will specify its intent to adulticide, detail areas to be adulticided, the dates and times of adulticiding operations, the materials to be used and necessary precautions to be taken by residents. The VSC will route the "Notice to Residents" to the CED and DAWM and other appropriate/interested agencies for review and concurrence. The VSC will post or otherwise provide the "Notice to Residents" to all residents in the target area. After interested agencies and persons have been notified, news release(s) published and "Notice to Residents" posted, the VSC will adulticide the target localities for three consecutive nights. After adulticiding has been completed the VSC will determine the efficacy of the adulticiding operation (through the use of CO2 baited mosquito light traps or other means). Adulticiding and trapping will continue in the same manner until the VSC determines that the vector mosquito population has been sufficiently reduced, thus preventing further transmission of WNV or other mosquito borne encephalitis virus. The VSC will routinely and frequently update and provide to the CED and ADDL relevant operations maps and reports of vector surveillance and control operations, including adult mosquito trapping, larval surveys, larviciding and adulticiding efforts, and keep other appropriate agencies and persons informed.

The DEH will provide and maintain a WNVIS to enhance response to residents' concerns. The WNVIS which includes telephonic, Facsimile, and website posting capabilities will be enhanced

to provide a twenty-four hour telephone information line, and when necessary will include expansion and staffing of phone banks through the County Emergency Operations Center.

SIGNED ORIGINAL ON FILE

NANCY BOWEN, MD, MPH Public Health Officer Health and Human Services Agency	GARY ERBECK, Director Department of Environmental Health	KATHLEEN THUNER, Director Department of Agriculture, Weights and Measures