

City of Long Beach
Department of Health & Human Services
Vector Control Program
Pesticide Application Plan
(Revised December 2011)

The Discharger shall develop a Pesticides Application Plan (PAP) that contains the following elements:

1. **Description of all target areas, if different from the water body of the target area, into which larvicides and adulticides are being planned to be applied or may be applied to control vectors. The description shall include adjacent areas, if different from the water body of the target areas; see attached map**

2. **Additional target areas, other than water bodies, would include:**

1. Flood control channels, basins, freeway drains, pump stations, storm drains, and any other conveyance for water runoff in an urban/ suburban area.
2. Roadside low-spots, backyard pond and pools.

3. **Discussion of the factors influencing the decision to select pesticide applications for mosquito control:**

For more than 38 years, the LBDHHSVCP has actively engaged in mosquito control and surveillance in Long Beach, California. Personnel from this agency are certified by CDPH and trained to control mosquitoes safely and effectively by utilizing Integrated Pest Management (IPM) and Best Management Practices (BMPs).

Pesticides specific for controlling larvae or adults are only used by LBDHHSVCP when other alternative or preventive methods are not possible or are not successful. Our strategies for making these decisions are detailed below:

Surveillance of Mosquito Larvae and Adults:

LBDHHSVCP uses adult surveillance to identify mosquito populations in a known mosquito breeding source/habitat.

Several types of traps are used for adult surveillance since most mosquitoes are attracted to different traps depending on their species, sex and physiological condition. The most common traps use light, carbon dioxide, water for egg laying, and a resting area.

LBDHHSVCP uses light, carbon dioxide and gravid traps. Trapped adults provide information about local distribution, density and identity. The size of an adult mosquito population can be assessed by the number and distribution of service request from the public. LBDHHSVCP use the data to help locate new sources of mosquitoes or known sources with a recurrent problem. LBDHHSVCP has 22 known sources where traps are placed weekly.

Please see attached Surveillance Map:

Control Strategies:

Long Beach Department of Health Human Service Vector Control Program has been most successful with the use of biological control agents, including native or introduced predators, and combining water management practices to control mosquitoes. See item #9 for specific details.

Providing Education Programs:

LBDHHSVCP has developed and provided educational materials to the public relating to disease transmission by mosquitoes, mosquito breeding prevention, and how to report mosquito breeding to our program. In addition, program staff attend numerous outreach activities throughout the City to provide these materials to the public. We also work with our various City Departments to distribute these materials at outdoor summer events like Concerts in the Park and Outdoor Movie nights.

Establishing Action Thresholds:

When the traps counts exceed our threshold levels, and fish and water management practices do not bring the trap count down to acceptable counts, then decisions on whether or not to use pesticides will be considered by LBDHHSVCP field, supervisor, and management staff. Only approved pesticides will be used in areas that will not adversely affect the environment and aquatic life.

Please see the Best Management Practices for Mosquito Control in California, pages 9-13 & 15-16.

4. Pesticide products or types expected to be used and if known, their degradation by-products, the method in which they are applied, and if applicable, the adjuvants and surfactants used;

Please see Attachments E and F within NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. for Vector Control Applications. Also, please see attachment A (List of Pesticides Used) provided with NOI. Products may be applied by hand, truck, backpack, or hand-can, according to label directions.

5. Description of all the application areas* and the target areas in the system that are being planned to be applied or may be applied. Provide a map showing these areas;

Any site that holds water for more than 96 hours (4 days) can produce mosquitoes. Source reduction is the LBDHHSVCP's preferred solution, and whenever possible the program works with property owners to affect long-term solutions to reduce or eliminate the need for continued applications as described in Best Management Practices for Mosquito Control in California. The typical sources treated by this program include:

All water within the contiguous boundaries of the City of Long Beach subject to periodic breeding of mosquitoes, biting midges or non-biting midges and require either routine or occasional treatment with pesticides labeled for use to control their immature stages.

1. Any and all-navigable waters in the City Of Long Beach City that breed mosquitoes and midges.
2. Flood control channels, basins, freeway drains; pump stations, storm drains and any other conveyance for water runoff in an urban/suburban area.
3. Roadside low-spots, backyard pond and pools.

6. Other control methods used (alternatives) and their limitations;

With any source of mosquitoes or other vectors, the LBDHHSVCP's first goal is to look for ways to eliminate the source, or if that is not possible, for ways to reduce the potential for vectors. The most commonly used methods and their limitations are included in the Best Management Practices for Mosquito Control in California. Specific methods used by the agency include stocking mosquito fish (*Gambusia affinis*), educating residents that mosquitoes develop in standing water and encouraging them to remove sources of standing water on their property, and working with property owners to find long-term water management strategies that meet their needs while minimizing the need for public health pesticide applications. LBDHHSVCP never applies mosquito adulticides over permanent bodies of water, lakes, rivers permanent streams, natural ponds, commercial fishponds, swamps, marshes or estuaries. LBDHHSVCP always complies with application requirements as indicated on the label of the product.

7. How much product is needed and how this amounts was determined;

The need to apply product is determined by surveillance. Actual use varies annually depending on mosquito abundance. The pesticide amounts presented below were taken from the LBDHHSVCP's 2010 PUR as an estimate of pesticide use in 2011. Other public health pesticides in addition to those listed below may be used as part of the agency's best management practices. The amount of product anticipated for use in 2011:

- Golden Bear-1111, 25 gallons
- Vectolex CG, 300 lbs.
- Biomist 4+12 ULV, 1.5 gallons

8. Representative monitoring locations* and the justification for selecting these monitoring locations

Please see the MVCAC NPDES Coalition Monitoring Plan

9. Evaluation of available BMPs to determine if there are feasible alternatives to the selected pesticide application project that could reduce potential water quality impacts.

Long Beach Vector Control has applied the following alternatives to pesticide usage:

LBDHHVCP, in a coordinated effort with the Los Cerritos Wetlands Stewards, Inc. uses infrastructure maintenance in the Permanent Wetlands (Sims Pond and the Los Cerritos Wetlands)

Wetlands Infrastructure Maintenance Includes:

1. Periodically inspect, repair and clean water control structures of all debris, including silt and vegetation, which can impede drainage and water flow. Ensure water control structures are water tight to prevent unnecessary water flow or seepage. Regularly remove trash, slit and vegetation from water delivery ditches to allow efficient water delivery and drainage. Remove problem vegetation that inhibits water flow using periodic dredging.
2. LBDHHSVCP oversees the Vegetation Management Practices performed by Los Angeles County Department of Public Works in a five mile area along the Los Angeles River in Long Beach. Los Angeles Public Works manages the spread and density of floating and submerged vegetation to control mosquito populations along the river.
3. LBDHHSVCP practices Biological Control in Flood Managed Wetlands from permanent water sources (Simms Pond, and De Forrest Park). These areas contain mosquito predators (e.g. mosquito eating fish, invertebrate predators, and birds). The effectiveness of LBDHHSVCP Best Management Practices is evaluated by LBDHHSVCP's Mosquito Monitoring and Surveillance Section.

Monitoring and Surveillance Procedures Include:

LBDHHSVCP has conducted ongoing mosquito control and surveillance for over 38 years and has established 22 sites for monitoring populations. Our program conducts ongoing mosquito larvae surveillance and evaluation of larval populations on wetlands that produce mosquitoes capable of migrating into populated areas. We also collect and monitor data from mosquito traps, complaints, and reports from the public and correlate seasonal records with weather data to evaluate trends. We also monitor

adult mosquito distributions throughout the City and accurately identify, map, and monitor areas that may produce mosquitoes. And finally, the LBDHHSVCP tailors control measures for each site, contingent on the species of mosquitoes that are present.

Please see the Best Management Practices for Mosquito Control in California pages 11-13 &16.

10. Description of the BMPs to be implemented. The BMPs shall include at a minimum:

The LBDHHSVCP's BMPs are described in the Best Management Practices for Mosquito Control in California, Best Management Practices and Monitoring Plan For the City of Long Beach Department of Health and Human Services Vector Control Program and in the California Mosquito-borne Virus Surveillance and Response Plan. Specific elements have been highlighted below under items a-f.

a. Measures to prevent pesticide spill;

All pesticide applicators receive annual spill prevention and response training. Agency employees ensure daily that application equipment is in proper working order. Spill mitigation devices are placed in all vehicles and pesticide storage areas.

b. Measures to ensure that only a minimum and consistent amount is used

Application equipment is calibrated at least annually as required by the Department of Pesticide Regulations (DPR) and the terms of a cooperative agreement with the California Department of Public Health (CDPH).

c. A plan to educate Coalition's or Discharger's staff and pesticide applicator on any potential adverse effects to waters of the U.S. from the pesticide application;

This will be included in our pesticide applicators annual pesticide application and safety training, continuing education programs, and/or regional NPDES Permit training programs.

d. Descriptions of specific BMPs for each application mode, e.g. aerial, truck, hand, etc.;

The LBDHHSVCP calibrates truck-mounted and handheld larviciding equipment each year to meet application specifications. Supervisors review application records daily to ensure appropriate amounts of material are being used. Ultra-low volume (ULV) application equipment is calibrated for output and droplet size to meet label requirements. This Program does not administer or contract for aerial adulticiding treatments.

e. Descriptions of specific BMPs for each pesticide product used; and

Please see the Best Management Practices for Mosquito Control in California for general pesticide application BMPs, and the current approved pesticide labels for application BMPs for specific products.

- f. **Descriptions of specific BMPs for each type of environmental setting (agricultural, urban, and wetland).**

Please see the [Best Management Practices for Mosquito Control in California](#).

11. Identification of the problem. Prior to first pesticide application covered under this General Permit that will result in a discharge of biological and residual pesticides to waters of the US, and at least once each calendar year thereafter prior to the first pesticide application for that calendar year, the Discharger must do the following for each vector management area:

- a. **If applicable, establish densities for larval and adult vector populations to serve as action threshold(s) for implementing pest management strategies;**

The LBDHHSVCP staff only applies pesticides to sources of mosquitoes that represent imminent threats to public health or quality of life. The presence of any mosquito may necessitate treatment, however higher thresholds may be applied depending on the Program's resources, disease activity, surveillance data, or local needs. Treatment thresholds are based on a combination of one or more of the following criteria:

- Mosquito species present
- Mosquito stage of development
- Pest, nuisance, or disease potential
- Disease activity
- Mosquito abundance
- Flight range
- Proximity to populated areas
- Size of source
- Presence/absence of natural enemies or predators
- Presence of sensitive/endangered species or habitats.

- b. **Identify target vector species to develop species-specific pest management strategies based on developmental and behavioral considerations for each species;**

Please see the [Best Management Practices for Mosquito Control in California](#) and the [California Mosquito-Borne Virus Surveillance and Response Plan](#).

- c. **Identify known breeding areas for source reduction, larval control program, and habitat management;**

Any site that holds water for more than 96 hours (4 days) can produce mosquitoes. Source reduction is the Program's preferred solution, and whenever possible the Program works with property owners to implement long-term solutions to reduce or

eliminate the need for continued pesticide applications as described in the Best Management Practices for Mosquito Control in California.

d. Analyze existing surveillance data to identify new or unidentified sources of vector problems as well as areas that have recurring vector problems.

This is included in the Best Management Practices for Mosquito Control in California and the California Mosquito-borne Virus Surveillance and Response Plan that the Program uses. The LBDHHSVCP continually collects adult and larval mosquito surveillance data, dead bird reports, and sentinel chicken test results, and monitors regional mosquito-borne disease activity detected in humans, horses, birds, and/or other animals, and uses these data to guide mosquito control activities.

12. Examination of Alternatives. Dischargers shall continue to examine alternatives to pesticide use in order to reduce the need for applying larvicides that contain temephos and for spraying adulticides. Such methods include:

a. Evaluating the following management options, in which the impact to water quality, impact to non-target organisms, vector resistance, feasibility, and cost effectiveness should be considered:

- No action
- Prevention
- Mechanical or physical methods
- Cultural methods
- Biological control agents
- Pesticides

If there are no alternatives to pesticides, dischargers shall use the least amount of pesticide necessary to effectively control the target pest.

The LBDHHSVCP uses the principles and practices of Integrated Vector Management (IVM) as described on pages 26 and 27 of the Best Management Practices for Mosquito Control in California. As stated in item #10 above, locations where vectors may exist are assessed, and the potential for using alternatives to pesticides is determined on a case-by-case basis. Commonly considered alternatives include:

- 1) Eliminate artificial sources of standing water;
- 2) Ensure temporary sources of surface water drain within four days (96 hours) to prevent adult mosquitoes from developing;
- 3) Control plant growth in ponds, ditches, and shallow wetlands;
- 4) Design facilities and water conveyance and/or holding structures to minimize the potential for producing mosquitoes; and

- 5) Use appropriate biological control methods that are available. Additional alternatives to using pesticides for managing mosquitoes are listed on pages 4-19 of the Best Management Practices for Mosquito Control in California.

Implementing preferred alternatives depends on a variety of factors including availability of agency resources, cooperation with stakeholders, coordination with other regulatory agencies, and the anticipated efficacy of the alternative. If a pesticide-free alternative does not sufficiently reduce the risk to public health, pesticides are considered, beginning with the least amount necessary to effectively control the target vector.

b. Applying pesticides only when vectors are present at a level that will constitute a nuisance.

The LBDHHSVCP follows an existing IVM program, which includes practices, described in the California Mosquito-borne Virus Surveillance and Response Plan and Best Management Practices for Mosquito Control in California.

A “nuisance” is specifically defined in California Health and Safety Code (HSC) §2002(j). This definition allows vector control agencies to address situations where even a low number of vectors may pose a substantial threat to public health and quality of life. In practice, the definition of a “nuisance” is generally only part of a decision to apply pesticides to areas covered under this permit. As summarized in the California Mosquito-borne Virus Surveillance and Response Plan, the overall risk to the public when vectors and/or vector-borne disease are present is used to select an available and appropriate material, rate, and application method to address that risk in the context of our IVM program.

13. Correct Usage of Pesticides:

Coalition’s or Discharger’s use of pesticides must ensure that all reasonable precautions are taken to minimize the impacts caused by pesticide applications. Reasonable precautions include using the right spraying techniques and equipment, taking account of weather conditions and the need to protect the environment.

This is an existing practice of the LBDHHSVCP and is required to comply with the Department of Pesticide Regulation’s (DPR) requirements and the terms of our California Department of Public Health (CDPH) Cooperative Agreement. All pesticide applicators receive annual safety and spill training in addition to their regular continuing education.

14. If applicable, specify a website where public notices, required in Section VIII.B, may be found.

http://www.longbeach.gov/health/wnv_info/default.asp

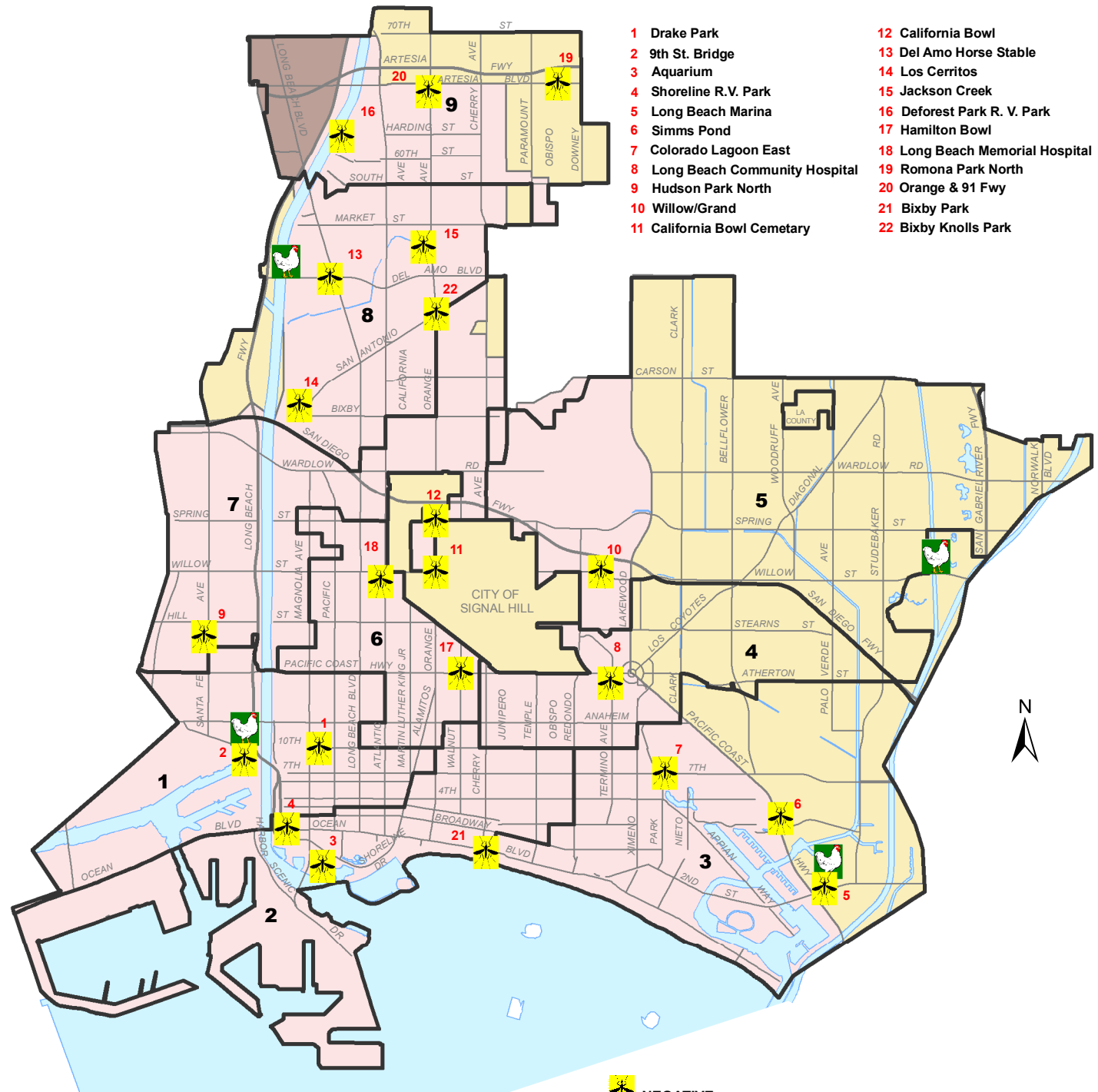
References:

- Best Management Practices for Mosquito Control in California. 2010. Available by download from the California Department of Public Health—Vector-Borne Disease Section at <http://www.westnile.ca.gov/resources.php> under the heading *Mosquito Control and Repellent Information*. Copies may be also requested by calling the California Department of Public Health—Vector-Borne Disease Section at (916) 552-9730 or the LBDHHSVCP at (562) 570-4090.
- California Mosquito-borne Virus Surveillance and Response Plan. 2011. [Note: this document is updated annually by CDPH]. . Available by download from the California Department of Public Health—Vector-Borne Disease Section at <http://www.westnile.ca.gov/resources.php> under the heading *Response Plans and Guidelines*. Copies may be also requested by calling the California Department of Public Health—Vector-Borne Disease Section at (916) 552-9730 or the LBDHHSVCP at (562) 570-4090.
- MVCAC NPDES Coalition Monitoring Plan. 2011. [In development at the time of this draft]
- Best Management Practices and Monitoring Plan For the City of Long Beach Department of Health and Human Services Vector Control Program. 2010. Copies may be requested by calling the LBDHHSVCP at (562) 570-4090.








CITY OF LONG BEACH

DEPARTMENT OF HEALTH AND HUMAN SERVICES

MOSQUITO-BORNE DISEASE SURVEILLANCE AND CONTROL 2011



- | | |
|---------------------------------|---------------------------------|
| 1 Drake Park | 12 California Bowl |
| 2 9th St. Bridge | 13 Del Amo Horse Stable |
| 3 Aquarium | 14 Los Cerritos |
| 4 Shoreline R.V. Park | 15 Jackson Creek |
| 5 Long Beach Marina | 16 Deforest Park R. V. Park |
| 6 Simms Pond | 17 Hamilton Bowl |
| 7 Colorado Lagoon East | 18 Long Beach Memorial Hospital |
| 8 Long Beach Community Hospital | 19 Romona Park North |
| 9 Hudson Park North | 20 Orange & 91 Fwy |
| 10 Willow/Grand | 21 Bixby Park |
| 11 California Bowl Cemetary | 22 Bixby Knolls Park |

-  **NEGATIVE**
-  **POSITIVE**
-  **CHICKEN SENTINEL LOCATIONS**
-  **COUNCIL DISTRICTS**
-  **COMPTON MOSQUITO ABATEMENT DISTRICT**
-  **GREATER LOS ANGELES COUNTY VECTOR CONTROL DISTRICT**
-  **LONG BEACH HEALTH DEPT-VECTOR CONTROL PROGRAM**



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