



13001 GARDEN GROVE BOULEVARD
GARDEN GROVE, CA 92843-2102
PHONE: (714) 971-2421 • (949) 654-2421

FAX: (714) 971-3940
E-MAIL: ocvcd@ocvcd.org
WEB SITE: www.ocvcd.org

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Mr. Jeremy Haas
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123

RE: Tentative Order No. R9-2007-0002,
The Orange County Municipal Storm Water
Permit for the San Diego Region

Dear Mr. Haas:

On April 4, 2007 the Orange County Vector Control District (the District) submitted a comment letter regarding Tentative Order No. R9-2007-0002, the Orange County Municipal Storm Water Permit for the San Diego Region. In said letter, the District outlined its broad-based concerns for the Board's consideration with respect to the relationship of water quality issues and public health concerns as they relate to the potential for storm water treatment control BMPs to become a nuisance and a public health threat. In response to the District's comments, Board staff met with District staff at the San Diego Regional Water Quality Control Board offices on May 4, 2007, at which time the District further detailed its concerns and issues on this subject as it pertains to the proposed Order. Also, discussed was what the District deems reasonable and appropriate measures to be considered by the Board for inclusion in the aforementioned Order.

It is clear that the Board recognizes the significance of vector control considerations as they relate to aspects of water quality with inclusion of Finding No. 35 in the current NPDES Permit No. CAS0108740. Finding No. 35 states the following:

35. Vector Control: Certain BMPs implemented or required by municipalities for urban runoff management may create a habitat for vectors (e.g. mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative effort between

"An Independent Special District Serving Orange County Since 1947"

The mission of the Orange County Vector Control District is to provide the citizens of Orange County with the highest level of protection from vectors and vector-borne diseases.

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municipalities and local vector control agencies and the State Department of Health Services during the development and implementation of the Urban Runoff Management Programs is necessary to minimize nuisances and public health impacts resulting from vector breeding.

Although the intent of this finding was to direct the inclusion of vector minimization principles in the planning, design, and operation and management of storm water BMPs this has not been accomplished in any significant measure in Orange County since its adoption in the 2002 re-issuance of the permit. This is in part due to lack of broad-based outreach emphasizing the potential for vector problems specifically associated with storm water BMPs by the District (and others in the public health arena), inattention or inadvertent oversight by municipalities, and the deficiency of the 2002 permit to provide for specific measures and mechanisms for tracking and reporting on BMPs which could have avoided many of the problems that have resulted thus far.

In recent years, NPDES requirements for wide-scale implementation of structural storm water BMPs coupled with the onset of West Nile Virus in California since 2003 has further exacerbated the need for preventative solutions and long-term management strategies to address these emerging challenges. The District is already faced with many such challenges and obstacles when treating hundreds of storm water BMPs that routinely breed mosquitoes throughout Orange County. Often District staff is unaware of storm water BMP features until they are reported by the public and have already become a nuisance or hazard. Those that are problematic are either poorly designed, improperly installed, or inadequately maintained (especially lacking in regular sediment removal and vegetation management). Structural storm water BMPs require proper and timely maintenance to ensure they meet water quality objectives and minimize potential for mosquito and vector production.

Due to the potential of storm water BMPs to produce mosquitoes, it is important that the District be aware of the locations and types of all existing (to the extent possible) and planned installations. Vector control agencies under the authority of the California Health and Safety Code (Sec. 2040) have the obligation and authority to require "the person or agency claiming ownership" to remove conditions that contribute to mosquito production (See Attachment 1, California Health and Safety Code Sec. 2060). Moreover, the District is ardently dedicated to protecting public health and serving the citizens of Orange County and does so by assessing and addressing developing threats.

Additionally, most of these features have no signage which could serve to identify the type of BMP and responsible party contact information. The District's task is often complicated when our staff has to spend time and resources to search out the responsible party to inform them of the measures that need to be taken to eliminate mosquito breeding conditions or other associated vector problems. The District also finds that when our staff is able to make contact with the responsible party, they are at times unaware of their responsibility and/or unable to fund the necessary retrofit, repair, or maintenance of the BMP.

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Some storm water BMPs are less likely to produce mosquitoes than others, depending on the structural design and on surrounding conditions. Incorporating vector minimization principles and, when necessary, involving the District early in the planning process would help ensure that the most effective options are implemented and that vector production is avoided to the maximum extent practicable. This proactive approach would save project proponents, developers, and property owners the cost of having to make required changes after the BMP is in place. This would also allow for planning of appropriate and safe access for inspection and treatment, if necessary, for vector control staff.

Furthermore, the District is forced to spend disproportionate amounts of the tax-payers resources on treating the most problematic storm water BMPs (like water quality treatment wetlands/basins). Some of these features require frequent treatment (on average three to four times per week during mosquito breeding season), large amounts of biorational pesticides, and hundreds of man hours. This sort of intensive treatment, year after year, can be avoided if these features are planned with vector prevention elements incorporated. Compounding the problem, under certain circumstances, neglected BMPs are eventually viewed as providing "habitat" for certain species of animals. When this occurs, any subsequent maintenance procedures can be in violation of some other state or federal statute. It is not uncommon for the party responsible for the BMP to be in violation of the Health and Safety Code because of mosquito production, and potentially facing a violation of the Endangered Species Act (ESA) or other laws and regulations if they take the steps necessary to curtail mosquito production.

Also, the District would like to emphasize the need for the Board to more adequately address dry weather nuisance flows in the context of the proposed Order as such flows tend to concentrate pollutants and are more persistent source of waters in the MS4 and watershed as a whole which promote mosquito production.

In light of our current challenges and in anticipation of the numerous storm water BMP features that will be implemented and/or retrofitted in the future, we ask that the Board consider the following recommendations which would help to avoid, mitigate, and manage potential vector related issues associated with structural storm water BMPs.

- All storm water treatment BMPs should be planned and designed using vector minimization principles.
- Copermittees should submit all Priority Projects (and any others which may have an elevated potential create a vector-borne disease risk to public health) to the Orange County Vector Control District (OCVCD) for evaluation.
- Copermittees should provide a list of properties (public and private) and responsible operators for, at a minimum, all treatment measures implemented from the date of adoption of the proposed Order. Information on the location and ownership of all existing and proposed storm water treatment measures should be sent to OCVCD.
- All storm water treatment BMPs should be outfitted with signage that identifies the type of BMP and responsible parties contact information in clear view.

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- OCVCD would like to receive copies of all storm water BMP annual reports.
- OCVCD would like to provide all municipalities with a vector education workshop suitable for planning, public works, and management staff.
- Vector control considerations should be added to the municipal plan check approval process.
- The OCVCD website link should be added to all municipal website's storm water page.
- A section should be included in all Water Quality Management Plans (WQMPs) and /or Standard Urban Stormwater Mitigation Plans (SUSMPs) which details the vector minimization principles incorporated into project storm water BMPs. This section should detail access provisions for vector control staff for inspection and treatment. The WQMP should also include educational materials which discuss the potential for storm water BMPs to breed mosquitoes and harbor other vectors. These materials can be acquired from the OCVCD website.
- In an effort to minimize the threat to public health and liability resulting from mosquito production, the District proposes to work cooperatively with Board staff, municipalities, and storm water program managers to identify and report malfunctioning or neglected BMPs. During the mosquito breeding season the District staff of inspectors and seasonal personnel in the field numbers approximately 60. Our staff's daily presence throughout Orange County could help to serve as an extra layer of reporting on bad BMPs to the appropriate agency.

Since the Board regulates and enforces water quality laws which require the implementation of storm water BMPs, this guidance should come from the Board's directive to be most effective. Please note that other Regional Boards in the state have begun to more comprehensively address vector control issues by incorporating language and requirements in to local NPDES permits in recent years (See Attachment 2). The Region 2 Board required that the copermitttees join storm water program develop a vector control plan in conjunction with local vector control agencies to provide guidance for storm water programs and dischargers. Additionally, in an effort to have public health issues addressed for all projects, the District is currently advocating that Vector Control be adopted as the eighteenth item on the California Environmental Quality Act (CEQA) checklist (See Attachment 3).

It is the District's firm belief that these recommendations will help minimize many of the mosquito and vector production problems associated with storm water BMPs required for compliance with water quality regulations. We recognize that the proposed tentative Order establishes a framework for areas that will aide in addressing our concerns and provide better opportunities to work cooperatively and share data. Below are specific changes that we would like the Board to consider incorporating into Tentative Order No. R9-2007-0002 which would more adequately address and ensure minimization of vectors associated with storm water BMPs. We believe that these suggestions will accomplish the intent of finding No. 35.

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1. Page 3, C.4. add (underlined):

4. Pollutants in urban runoff can threaten and adversely affect human health. Human illnesses have been clearly linked to recreating near storm drains flowing to coastal waters. Also, urban runoff pollutants in receiving waters can bio-accumulate in the tissues of invertebrates and fish, which may be eventually consumed by humans. Polluted waters that are allowed to stagnate more than 72 hours can also adversely affect human health by contributing to vector-borne disease through the proliferation of mosquitoes.

2. Page 8, D.2.f., add (underlined):

f. If not properly designed or maintained, certain BMPs implemented or required by municipalities for urban runoff management may create a habitat for vectors (e.g. mosquitoes and rodents). However, proper BMP design to avoid standing water can prevent the creation of vector habitat. Nuisances and public health impacts resulting from vector breeding can be prevented with close collaboration and cooperative effort between municipalities and local vector control agencies and the State Department of Health Services during the development and implementation of urban runoff management programs. In Orange County failure to collaborate with the Orange County Vector Control District and the State Department of Health Services can lead to violations of the California Health and Safety Code. (Ref. CCR, Health and Safety Code, Sections 2000, 2060-2067)

3. Page 11, D.3.f., add (underlined):

f. Enforcement of local urban runoff related ordinances, permits, and plans is an essential component of every urban runoff management program and is specifically required in the federal storm water regulations and this Order. Each Copermittee is individually responsible for adoption and enforcement of ordinances and/or policies, implementation of identified control measures/BMPs needed to prevent or reduce pollutants in storm water runoff, and for the allocation of funds for the capital, operation and maintenance, administrative, and enforcement expenditures necessary to implement and enforce such control measures/BMPs under its jurisdiction. Copermittees are responsible for enforcement of ordinances to insure that control measures/BMPs continue to properly function and do not become a public nuisance or threaten public health.

4. Page 11, D.3.g., add (underlined):

g. Education is an important aspect of every effective urban runoff management program and the basis for changes in behavior at a societal level. Education of municipal planning, inspection, and maintenance department staffs is especially

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critical to ensure that in-house staffs understand how their activities impact water quality and public health to accomplish their jobs while protecting water quality, and their specific roles and responsibilities for compliance with this Order. Public education, designed to target various urban land users and other audiences, is also essential to inform the public of how individual actions affect receiving water quality and how adverse effects can be minimized.

5. Page 12, D.4.c., add (underlined):

c. It is important for the Copermittees to coordinate their water quality protection and land use planning activities to achieve the greatest protection of receiving water bodies. Copermittee coordination with other watershed stakeholders, especially Caltrans, the Department of Defense, Orange County Vector Control District, and water and sewer districts, is also important.

6. Page 15, A.1., add (underlined):

1. Discharges into and from municipal separate storm sewer systems (MS4s) in a manner causing, or threatening to cause, a condition of pollution, contamination, or nuisance (as defined in the CWC section 13050 and the Health and Safety Code section 2060), in waters of the state are prohibited.

7. Page 18, C.1.b., add (#10):

(10) Discharges from any regulated source condition which stagnates for more than 72 hours and results in the production of mosquitoes or other vectors.

8. Page 20, D.1, add (underlined):

1. Each Copermittee must implement a program which meets the requirements of this section and (1) reduces Development Project discharges of pollutants from the MS4 to the MEP, (2) prevents Development Project discharges from the MS4 from causing or contributing to a violation of water quality standards and public health and safety codes, (3) prevents illicit discharges into the MS4; and (4) manages increases in runoff discharge rates and durations from Development Projects that are likely to cause increased erosion of stream beds and banks, silt pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

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9. Page 20, D.1.b., add (underlined):

b. Each Copermitttee must revise as needed its current environmental review processes to accurately evaluate water quality impacts and cumulative impacts (including the impacts to public health), and identify appropriate measures to avoid, minimize, and mitigate those impacts for all Development Projects.

10. Page 21, D.1.c., add (underlined):

c. For all proposed Development Projects, each Copermitttee during the planning process, and prior to project approval and issuance of local permits, must prescribe the necessary requirements so that Development Project discharges of pollutants from the MS4 will be reduced to the MEP, will not cause or contribute to a violation of water quality standards and public health and safety codes, and will comply with Copermitttee's ordinances, permits, plans, and requirements, and with this Order.

11. Page 21, D.1.c., add (#6 underlined):

(6) Structural post-construction BMPs need to be outfitted with signage that indicates the type of BMP, the permit number, and the responsible party's contact information. This signage needs to be updated if responsible party changes.

12. Page 23, D.1.d., add (underlined):

d. Each Copermitttee must implement an updated local SUSMP, within twelve months of adoption of this Order, which meets the requirements of section D.1.d of this Order and (1) reduces Priority Development Project discharges of pollutants from the MS4 to the MEP, (2) prevents Priority Development Project runoff discharges from the MS4 from causing or contributing to a violation of water quality standards and public health and safety codes, and (3) manages increases in runoff discharge rates and durations from Priority Development Projects that are likely to cause increased erosion of stream beds and banks, silt pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

13. Page 29, D.1.d.6., add ((h) underlined):

(h) Treatment control BMPs for all Priority Development Projects must include elements which avoid or, to the maximum extent possible, minimize vectors such as mosquitoes, rodents, and flies.

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14. Page 31, D.1.d.9., add (underlined):

(9) Site Design and Treatment Control BMP Design Standards as part of its local SUSMP, each Copermitttee must develop and require Priority Development Projects to implement siting, design, and maintenance criteria for each site design and treatment control BMP listed in its local SUSMP so that implemented site design and treatment control BMPs are constructed correctly and are effective at pollutant removal, runoff control, and vector minimization. LID techniques, such as soil amendments, must be incorporated into the criteria for appropriate treatment control BMPs. Development of BMP worksheets which can be used by project proponents is encouraged.

15. Page 32, D.1.f.1., add (underlined):

(1) Each Copermitttee must maintain a watershed-based database to track and inventory approved treatment control BMPs and treatment control BMP maintenance within its jurisdiction. At a minimum, the database must include information on treatment control BMP type, location, watershed, date of construction, party responsible for maintenance, maintenance certifications or verifications, inspections, inspection findings, and corrective actions. This data should be made available to other affected local agencies.

16. Page 37, D.1.i.1.c.(vii), add ((viii)underlined):

(viii). Public health concerns and disease suppression related to storm water structures.

17. Page 37, D.1.i.2.b.(v), add (underlined):

(v) Other topics of local importance, including local water quality conditions, impaired water bodies, environmentally sensitive areas, and public health concerns.

18. Page 37, D.1.j.2.d. add (underlined):

(d) Updated site design and treatment control BMP design standards with guidance from the revised California Stormwater Best Management Practice Handbooks (CASQA, 2005) and National Management Measures to Control Nonpoint Source Pollution from Urban Areas (November 2005, EPA-841-B-05-004) or newer.

19. Page 37, D.1.j.2. add ((e) underlined):

(e) All project SUSMPs or equivalent WQMPs are required to include section that addresses vector minimization as it applies to storm water BMPs.

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20. Page 39, D.2. add (underlined):

Each Copermittee must implement a construction program which meets the requirements of this section, prevents illicit discharges into the MS4, implements and maintains structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites to the MS4, reduces construction site discharges of pollutants from the MS4 to the MEP, and prevents construction site discharges from the MS4 from causing or contributing to a violation of water quality standards and public health and safety codes.

21. Page 39, D.2.c.1. add (underlined):

(1) Each construction and grading permit must require proposed construction sites to implement designated BMPs and other measures so that illicit discharges into the MS4 are prevented and storm water pollutants discharged from the site will be reduced to the maximum extent practicable and will not cause or contribute to a violation of water quality standards public health and safety codes.

22. Page 40, D.2.d.1.a. add ((xvi)underlined):

(xvi) Minimization of vector related threats.

23. Page 43, D.2.e.6.e. add (underlined):

(e) Education and outreach on storm water pollution prevention and possible issues of public health importance, as needed; and

24. Page 44, D.2.h.2.e. add (underlined):

(e) Other topics of local importance, including local water quality conditions, impaired waterbodies, environmentally sensitive areas, and disease vector issues.

25. Page 46, D.3.a. add (underlined):

a. Municipal

Each Copermittee must implement a municipal program which meets the requirements of this section, prevents illicit discharges into the MS4, reduces municipal discharges of pollutants from the MS4 to the MEP, and prevents municipal discharges from the MS4 from causing or contributing to a violation of water quality standards and public health and safety codes.

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26. Page 47, D.3.a.2.e.add ((e) underlined):

(e) Ensure that all storm water BMPs existing, planned for retrofit, and proposed incorporate vector minimization elements to reduce the risk to public health.

27. Page 48, D.3.a.6.b.i.add (underlined):

(i). Damage repair, inspection and removal of accumulated waste, trash, sediment, and vegetation at least once a year between May 1 and September 30 of each year for all MS4 facilities.

28. Page 51, D.3.a.10.a.i.[g]. add (underlined):

[g] Other topics of local importance, including local water quality conditions, impaired waterbodies, environmentally sensitive areas, and public health concerns.

29. Page 52, D.3.b. add (underlined):

b. Commercial/Industrial

Each Copermittee must implement a commercial / industrial program that meets the requirements of this section, prevents illicit discharges into the MS4, reduces commercial / industrial discharges of pollutants from the MS4 to the MEP, and prevents commercial / industrial discharges from the MS4 from causing or contributing to a violation of water quality standards and public health and safety codes.

30. Page 55, D.3.b.2.e add ((e) underlined):

(e) Ensure that all storm water BMPs existing, planned for retrofit, and proposed incorporate vector minimization elements to reduce the risk to public health.

31. Page 58, D.3.b.6.a.(iv). add (underlined):

(iv) Other topics, including public reporting mechanisms, water conservation, low-impact development techniques, and vector minimization;

32. Page 59, D.3.c. add (underlined):

c. Residential

Each Copermittee must implement a residential program which meets the requirements of this section, prevents illicit discharges into the MS4, reduces

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residential discharges of pollutants from the MS4 to the MEP, and prevents residential discharges from the MS4 from causing or contributing to a violation of water quality standards and public health and safety codes.

33. Page 60, D.3.c.2. f. add ((f) underlined):

(f) Ensure that all storm water BMPs existing, planned for retrofit, and proposed incorporate vector minimization elements to reduce the risk to public health.

34. Page 61, D.3.c.6.b. add ((vi) underlined):

(vi) Public health and disease vector issues associated with excessive urban runoff.

35. Page 71, E.1.f.2. add (underlined):

(2) Public Participation: Watershed Copermittees must implement a watershed specific public participation mechanism within each watershed. The mechanism must encourage participation from other organizations within the watershed (such as water/sewer districts, Orange County Vector Control District, Caltrans, non-governmental organizations, etc.).

The District appreciates this opportunity to comment on the tentative order and looks forward to working with the Board to ensure that vector concerns are addressed as they relate to storm water BMPs.

Sincerely,



Amber Semrow
Biologist, OCVCD

as

Encl: (3)

Attachment 1- *State of California Health and Safety Code Section 2060-2067, Condensed.*

Attachment 2- *Vector Language Successfully Incorporated into Stormwater NPDES Permits*

Attachment 3- *Position Paper Regarding Proposed Requirements for Mosquito Control in Structural Stormwater BMPs*

ATTACHMENT 1

**STATE OF CALIFORNIA HEALTH AND SAFETY CODE
SECTION 2060-2067**

Vector and Mosquito Abatement Districts

Condensed

2002. (j) "Public nuisance" means any of the following:

(1) Any property, excluding water, that has been artificially altered from its natural condition so that it now supports the development, attraction, or harborage of vectors. The presence of vectors in their developmental stages on a property is prima facie evidence that the property is a public nuisance.

(2) Any water that is a breeding place for vectors. The presence of vectors in their developmental stages in the water is prima facie evidence that the water is a public nuisance.

(3) Any activity that supports the development, attraction, or harborage of vectors, or that facilitates the introduction or spread of vectors.

(k) "Vector" means any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates.

2060. A district may abate a public nuisance pursuant to this article. The person or agency claiming ownership, title, or right to property or who controls the diversion, delivery, conveyance, or flow of water shall be responsible for the abatement of a public nuisance that is caused by, or as a result of, that property or the diversion, delivery, conveyance, or control of that water.

2061. Whenever a public nuisance exists on any property within a district or on any property that is located outside the district from which vectors may enter the district, the board of trustees may notify the owner of the property of the existence of the public nuisance. If the owner of the property does not abate the public nuisance and take the necessary actions to prevent the recurrence of the public nuisance within the time specified by the board of trustees, the district may abate the public nuisance and take the necessary actions to prevent the recurrence of the public nuisance. In addition, the board of trustees may impose civil penalties pursuant to Section 2063.

2063. In addition to abating the public nuisance and taking any necessary actions to prevent the recurrence of the public nuisance, a board of trustees may impose a civil penalty on the owner of the property for failure to comply with the requirements of Section 2061. The civil penalty may not exceed one thousand dollars (\$1,000) per day for each day that the owner of the property fails to comply with the district's requirements.

2065. The owner of the property abated pursuant to Section 2061 shall pay the district for the cost of abating the public nuisance and the cost of any necessary actions to prevent the recurrence of the public nuisance. The owner shall also pay any civil penalty imposed pursuant to Section 2063.

2066. The lien provisions of this article shall not apply to property owned by a public agency. Notwithstanding Section 6103 of the Government Code or any other provision of law, a public agency shall pay the district for the cost of abating the public nuisance, the cost of any necessary actions to prevent the recurrence of the public nuisance, and any civil penalties.

ATTACHMENT 2

Vector Language Successfully Incorporated into Stormwater NPDES Permits

2001

County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District, NPDES Permit # CAS0108758

http://www.swrcb.ca.gov/rwqcb9/orders/order_files/Order%20No.%202001-01%20Final%20Amended.pdf

Finding #36:

VECTOR CONTROL: Certain BMPs implemented or required by municipalities for urban runoff management may create habitat for vectors (e.g. mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative effort between municipalities and local vector control agencies and the State Department of Health Services during the development and implementation of Urban Runoff Management Programs is necessary to minimize nuisances public health impacts resulting from vector breeding.

Watershed-Wide Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with New Developments in the San Jacinto Watershed, NPDES Permit # CAG618005

<http://www.swrcb.ca.gov/~rwqcb8/pdf/01-34.pdf>

Note* Our letter with suggested vector language was not received in time to be incorporated into this permit. However, the language was later included in the renewals of the Riverside, Orange, and San Bernardino County permits in 2002. The following language in the San Jacinto permit could be interpreted as including vectors.

Requirements:

II, Receiving Water Limitations, 1.

Storm water discharges and authorized non-storm water discharges to any surface or groundwater shall not adversely impact human health or the environment.

Section E: Standard Provisions, 4. Duty to Mitigate.

The discharger shall take all responsible steps to minimize or prevent any discharge in violation of this Order, which has a reasonable likelihood of adversely affecting human health or the environment.

Kern County and The City of Bakersfield, NPDES Permit # CA00883399

http://www.swrcb.ca.gov/stormwtr/docs/bakersfield_permit_5_01_130.pdf

Finding #25:

Certain storm water facilities may create habitat for vectors if not properly designed or maintained. Storm water facilities that generate vectors or nuisances can be eliminated or avoided by close coordination of design and surveillance and control with the local Mosquito or Vector Control Agency or the State Department of Health Services. Nothing in this permit is intended to preclude inspection, abatement, or treatment of nuisances by the vector control agency in accordance with the Health and Safety Code.

Requirements:

D, Provisions, #24.

The Discharger shall consider vector and nuisance abatement while implementing all parts of the revised SWMP. The Discharger shall consult with the local Mosquito or Vector Control Agency or the State Department of Health Services and implement reasonable and appropriate BMPs to minimize mosquito or vector breeding.

Fresno Metropolitan Flood Control District , City of Fresno, City of Clovis, County of Fresno, and California State University Fresno, NPDES Permit # CA0083500

http://www.swrcb.ca.gov/stormwtr/docs/fresno_permit_5_01_048.pdf

Finding #27:

Certain storm water facilities may create habitat for vectors if not properly designed or maintained. Storm water facilities that generate vectors or nuisances can be eliminated or avoided by close coordination of design and surveillance and control with the local Mosquito or Vector Control Agency or the State Department of Health Services. Nothing in this permit is intended to preclude inspection, abatement, or treatment of nuisances by the vector control agency in accordance with the Health and Safety Code.

Requirements:

D, Provisions, #14.

The Discharger shall consider vector and nuisance abatement while implementing all parts of the revised SWMP. The Discharger shall consult with the local Mosquito or Vector Control Agency or the State Department of Health Services and implement reasonable and appropriate BMPs to minimize mosquito or vector breeding.

Santa Clara Valley Water District, County of Santa Clara, City of Campbell, City of Cupertino, City of Los Altos, Town of Los Altos Hills, Town of Los Gatos, City of Milpitas, City of Monte Sereno, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara, City of Saratoga, and City of Sunnyvale, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program, NPDES Permit # CAS029718

<http://www.swrcb.ca.gov/rwqcb2/OrderNum/01-024.doc>
(2001 amendment with vector language) <http://www.swrcb.ca.gov/rwqcb2/OrderNum/01-119final.doc>

Note* The following language was included in the NPDES permit amendment adopted on Oct 17, 2001.

Finding #13:

Certain BMPs implemented or required by Dischargers for urban runoff management may create habitat for vectors (e.g. mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative effort between the Dischargers, local vector control agencies, the Regional Board staff, and the State Department of Health Services is necessary to identify appropriate vector control measures that minimize potential nuisances and public health impacts resulting from vector breeding, so that Dischargers and local vector control agencies can implement such control measures without undue adverse effects.

County of Los Angeles, and the Incorporated Cities, Except the City of Long Beach, NPDES Permit # CAS004001

http://www.swrcb.ca.gov/rwqcb4/html/programs/stormwater/la_ms4_final/FinalPermit.pdf

Findings: Section F, Implementation, #9.

This Order is not intended to prohibit the inspection for or abatement of vectors by the State Department of Health Services or local vector agencies in accordance with Cal. Health and Safety Code §2270 *et seq.* and §116110 *et seq.* Certain Treatment Control BMPs if not properly designed, operated or maintained may create habitats for vectors (e.g. mosquito and rodents). This Order contemplates that the Permittees will closely cooperate and collaborate with local vector control agencies and the State Department of Health Services for the implementation, operation, and maintenance of Treatment Control BMPs in order to minimize the risk to public health from vector borne diseases.

Requirements:

Part 3, Storm water quality management program (SQMP) implementation, Section G, Legal Authority, #2, f.
Require that Treatment Control BMPs be properly operated and maintained to prevent the breeding of vectors.

Part 4, Special Provisions, Section D, Development Planning Program (5th bullet).

Properly design and maintain Treatment Control BMPs in a manner that does not promote the breeding of vectors

2002

County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, within the Santa Ana Region, NPDES Permit # CAS618030.

<http://www.swrcb.ca.gov/~rwqch8/pdf/02-10.pdf>

Fact Sheet:

Table 1. Plastics and other debris: Entangles marine life or is ingested; degrades beaches, wetlands and nearshore habitats. Floatables (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors.

Finding #13:

Pollutants in urban runoff can impact the beneficial uses of the receiving waters and can cause or threaten to cause a condition of pollution or nuisance. Pathogens (from sanitary sewer overflows, septic system leaks, spills and leaks from portable toilets, pets, wildlife and human activities) can impact water contact recreation, non-contact water recreation and shellfish harvesting. Microbial contamination of the beaches from urban runoff and other sources has resulted in a number of health advisories issued by the Orange County Health Officer. Floatables (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors. Oil and grease can.....

Requirements:

XIX, Provisions, 6.

The Permittees should consult the Orange County Vector Control District to ensure that structural treatment systems are designed to minimize the potential for vector breeding.

The San Bernardino County Flood Control District, the County of San Bernardino, and the Incorporated Cities of San Bernardino County within the Santa Ana Region, NPDES Permit # CAS618036

<http://www.swrcb.ca.gov/~rwqch8/pdf/02-12.pdf>

Fact Sheet:

Table 1. Plastics and other debris: Entangles marine life or is ingested; degrades beaches, wetlands and nearshore habitats. Floatables (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors.

Finding #16:

These pollutants can then impact the beneficial uses of the receiving waters and can cause or threaten to cause a condition of pollution or nuisance. Pathogens (from sanitary sewer overflows, septic system leaks, spills and leaks from portable toilets, pets, wildlife and human activities) can impact water contact recreation, non-contact water recreation and shellfish harvesting. On a nationwide basis, microbial contamination of the beaches from urban runoff and other sources has resulted in beach closures and health advisories. Floatables (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors. Oil and grease can.....

Requirements:

XVIII, Provisions, General, 4.

Certain BMPs implemented or required by the permittees for urban runoff management may create habitat for vectors (e.g. mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative effort between the permittees and local vector control agencies and the State Department of Health Services during the development and implementation of urban runoff management programs are necessary to minimize potential vector habitat and public health impacts resulting from vector breeding. Nothing in this permit is intended to prohibit inspection or abatement of vectors by the State or local Vector Control agencies in accordance with the respective Health and Safety Code.

The Riverside County Flood Control and Water Conservation District, the County of Riverside, and the Incorporated Cities of Riverside County within the Santa Ana Region, NPDES Permit # CAS618033

<http://www.swrcb.ca.gov/~rwqcb8/pdf/02-11.pdf>

Fact Sheet:

Table 1. Plastics and other debris: Entangles marine life or is ingested; degrades beaches, wetlands and nearshore habitats. Floatables (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors.

Finding #16:

Pathogens (from sanitary sewer overflows, septic system leaks, spills and leaks from portable toilets, pets, wildlife and human activities) can impact water contact recreation and non-contact water recreation. Floatables (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors. Oil and grease can.....

Requirements:

XV, Provisions, A. General, 6.

Certain BMPs implemented or required by the Permittees for Urban Runoff management may create habitat for vectors (e.g. mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative effort between the Permittees and local vector control agencies and the State Department of Health Services during the development and implementation of Urban Runoff management programs are necessary to minimize potential vector habitat and public health impacts resulting from vector breeding. Nothing in this Order is intended to prohibit inspection or abatement of vectors by the State or local vector control agencies in accordance with the Health and Safety Code of the State of California.

2003

Alameda countywide NPDES municipal stormwater permit, NPDES Permit # CAS0029831

<http://www.swrcb.ca.gov/rwqcb2/Agenda/02-19-03/02-19-03-12finalrev.doc>

Finding #39:

Certain control measures implemented or required by Permittees for urban runoff management may create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative effort among Permittees, local vector control agencies, Regional Board staff, and the State Department of Health Services is necessary to minimize potential nuisances and public health impacts resulting from vector breeding.

Requirements:

C, Provisions, 3. New development and redevelopment performance standards, e. Operation and maintenance of treatment measures, i.

Compilation of a list of properties (public and private) and responsible operators for, at a minimum, all treatment measures implemented from the date of adoption of this Order. Information on the location of all stormwater treatment measures shall be sent to the Alameda County Mosquito Abatement District. In addition, the Permittees shall inspect a subset of prioritized treatment measures for appropriate O&M, on an annual basis, with appropriate follow-up and correction.

C, Provisions 3. New development and redevelopment performance standards, e. Operation and maintenance of treatment measures, ii.

Verification and access assurance at a minimum shall include: where a private entity is responsible for O&M, the entity's signed statement accepting responsibility for maintenance until the responsibility is legally transferred to another entity, and access permission to the extent allowable by law for representatives of the Permittee, local vector control district, and Regional Board staff strictly for the purpose of O&M verification for the specific stormwater treatment system to the extent allowable by law; and, for all entities, either:.....

C, Provisions 3. New development and redevelopment performance standards, e. Operation and maintenance of treatment measures, iv.

The Program shall submit by June 1, 2004, a vector control plan for Executive Officer approval, after consultation with the appropriate vector control agencies. The plan shall include design guidance for treatment measures to prevent the production of vectors, particularly mosquitoes, and provide guidance on including vector abatement concerns in O&M and verification inspection activities.

C, Provisions, 3. New development and redevelopment performance standards, n. Reporting, including pesticide reduction measures, ii. For projects that must implement treatment measures, report which treatment measures were used and numeric-sizing criteria employed, the O&M responsibility mechanism including responsible party, site design measures used, and source control measures required. This information shall also be reported to the appropriate local vector control district, with additional information on access provisions for vector control district staff. This reporting shall begin in the Annual Report following the implementation date specified in Provision C.3.c.

Contra Costa countywide NPDES municipal stormwater permit amendment, NPDES Permit # CAS0029912

<http://www.swr.ch.ca.gov/rwqch2/Agenda/02-19-03/02-19-03-13finalorder.doc>

Finding #16:

Certain control measures implemented or required by the Dischargers for urban runoff management may create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative effort between Dischargers, local vector control agencies, Regional Board staff, and the State Department of Health Services is necessary to minimize potential nuisances and public health impacts resulting from vector breeding.

Requirements:

Provision C.3 New development and redevelopment performance standards, a. New development and redevelopment performance standard implementation, i.

Each Discharger shall ensure access to treatment measures to Contra Costa Mosquito and Vector Control District staff

Provision C.3 New development and redevelopment performance standards, e. Operation and maintenance of treatment measures, i. Compiling a list of properties (public and private) and responsible operators for, at a minimum, all treatment measures implemented from the date of adoption of this Order. Information on the location of all stormwater treatment measures shall be sent to the local vector control district. In addition, the Dischargers shall inspect a subset of prioritized treatment measures for appropriate O&M, on an annual basis, with appropriate follow-up and correction.

Provision C.3 New development and redevelopment performance standards, e. Operation and maintenance of treatment measures, ii. Verification and access assurance shall at a minimum shall include: Where a private entity is responsible for O&M, the entity's signed statement accepting responsibility for maintenance until the responsibility is legally transferred to another entity; and access permission for representatives of the Discharger, local vector control district, and Regional Board staff strictly for the purpose of O&M verification for the specific stormwater treatment system to the extent allowable by law; and, for all entities, either:.....

Provision C.3 New development and redevelopment performance standards, e. Operation and maintenance of treatment measures, iv. The Program shall submit by June 1, 2004, a vector control plan, acceptable to the Executive Officer, after consultation with the Contra Costa Mosquito and Vector Control District. The plan shall include design guidance for treatment measures to prevent the production of vectors, particularly mosquitoes, and provide guidance on including vector abatement concerns in O&M and verification inspection activities.

Provision C.3 New development and redevelopment performance standards, n. Reporting, ii.

For projects that must implement treatment measures, report which treatment measures were used and numeric-sizing criteria employed, the O&M responsibility mechanism including responsible party, site design measures used, and source control measures required. This information shall begin in the Annual Report following the implementation date specified in Provision C.3.c. This information shall also be reported to the appropriate local vector control district, with additional information of access provisions for vector control district staff.

San Mateo countywide NPDES municipal stormwater permit amendment, NPDES Permit # CAS0029921
<http://www.swrcb.ca.gov/rwqcb2/Agenda/02-19-03/02-19-03-14finalto.doc>

Finding #16:

Certain control measures implemented or required by the Dischargers for urban runoff management may create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative effort between Dischargers, local vector control agencies, Regional Board staff, and the State Department of Health Services is necessary to minimize potential nuisances and public health impacts resulting from vector breeding.

Requirements:

Provision C.3 New development and redevelopment performance standards, a. New development and redevelopment performance standard implementation, i.

Each Discharger shall ensure access to treatment measures to San Mateo Mosquito and Vector Control District staff

Provision C.3 New development and redevelopment performance standards, e. Operation and maintenance of treatment measures, i.
 Compiling a list of properties (public and private) and responsible operators for, at a minimum, all treatment measures implemented from the date of adoption of this Order. Information on the location of all stormwater treatment measures shall be sent to the local vector control district. In addition, the Dischargers shall inspect a subset of prioritized treatment measures for appropriate O&M, on an annual basis, with appropriate follow-up and correction.

Provision C.3 New development and redevelopment performance standards, e. Operation and maintenance of treatment measures, ii.
 Verification and access assurance shall at a minimum shall include: Where a private entity is responsible for O&M, the entity's signed statement accepting responsibility for maintenance until the responsibility is legally transferred to another entity; and access permission for representatives of the Discharger, local vector control district, and Regional Board staff strictly for the purpose of O&M verification for the specific stormwater treatment system to the extent allowable by law; and, for all entities, either:.....

Provision C.3 New development and redevelopment performance standards, e. Operation and maintenance of treatment measures, iv.
 The Program shall submit by June 1, 2004, a vector control plan for Executive Officer approval, after consultation with the appropriate vector control agencies. The plan shall include design guidance for treatment measures to prevent the production of vectors, particularly mosquitoes, and provide guidance on including vector abatement concerns in O&M and verification inspection activities.

Provision C.3 New development and redevelopment performance standards, n. Reporting, ii.

For projects that must implement treatment measures, report which treatment measures were used and numeric-sizing criteria employed, the O&M responsibility mechanism including responsible party, site design measures used, and source control measures required. This information shall begin in the Annual Report following the implementation date specified in Provision C.3.c. This information shall also be reported to the appropriate local vector control district, with additional information of access provisions for vector control district staff.

Fairfield-Suisun areawide NPDES municipal stormwater permit, NPDES Permit # CAS612005
<http://www.swrcb.ca.gov/rwqcb2/Agenda/04-16-03/04-16-03-7finalto.doc>

Finding #39:

Certain control measures implemented or required by Permittees for urban runoff management may create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative effort among Permittees, the Solano County Mosquito Abatement District, Regional Board staff, and the State Department of Health Services are necessary to minimize potential nuisances and public health impacts resulting from vector breeding.

Requirements:

Provision C.3 New development and redevelopment performance goals, e. Operation and maintenance of treatment measures, i.
 Verification and access assurance shall at a minimum shall include: where a private entity is responsible for O&M, the entity's signed statement accepting responsibility for maintenance until the responsibility is legally transferred to another entity; and access

permission to the extent allowable by law for representatives of the Permittee, local vector control district, and Regional Board staff strictly for the purpose of O&M verification for the specific stormwater treatment system to the extent allowable by law; and, for all entities, either:.....

Provision C.3 New development and redevelopment performance goals, e. Operation and maintenance of treatment measures, iv.
The Program shall submit by August 1, 2004, a vector control plan for Executive Officer approval, after consultation with the Solano County Mosquito Abatement District. The plan shall include design guidance for treatment measures to prevent the production of vectors, particularly mosquitoes, and provide guidance on including vector abatement concerns in O&M and verification inspection activities.

Provision C.3 New development and redevelopment performance goals, n. Reporting, including pesticide reduction measures, ii.
For projects that must implement treatment measures, report which treatment measures were used and numeric-sizing criteria employed, the O&M responsibility mechanism including responsible party, site design measures used, and source control measures required. This information shall also be reported to the appropriate local vector control district, with additional information of access provisions for vector control district staff. This reporting shall begin in the Annual Report following the implementation date specified in C.3.c.

ATTACHMENT 3



Position Paper Regarding Proposed Requirements for Mosquito Control in Structural Stormwater BMPs

Prepared By Orange County Vector Control District

Introduction: Beginning with the Federal Water Pollution Control Act of 1948, there has been a progression of laws intended to regulate the discharge of pollutants into the waters of the United States. The growing public awareness and concern for improving water quality resulted in a series of amendments in 1972, 1977, and 1987. This law and subsequent amendments collectively became known as the Clean Water Act (CWA). The authority for enforcement of the CWA rests with the U.S. Environmental Protection Agency (EPA). In 1969 the Porter-Cologne Act gave ultimate jurisdiction of water rights and water quality in California to the State Water Resources Control Board. Nine Regional Water Quality Control Boards provide local control, including enforcing water quality standards, and taking whatever action may be needed to maintain those standards.

Background: In an effort to reduce non-point source pollution carried by stormwater and urban runoff, State water quality regulations and standards now require that all new development or significant redevelopment projects over 5,000 square feet, whether they are residential, industrial, commercial or municipal, implement Best Management Practices or BMPs. These practices are intended to be effective and practicable measures (including technological, educational, and institutional considerations) for reducing the amount of water pollution generated by non-point sources.

A stormwater BMP can be "any program, technology, process, siting criteria, operating method, measure, or device, which controls, prevents, removes, or reduces pollution" (California Stormwater Quality Association Handbook).

Structural stormwater BMPs are engineered systems designed to improve the quality of runoff and, depending on application, may also provide flood control and down-stream erosion control. These devices can be built to mitigate any number of target pollutants, including trash, suspended sediments, nutrients, oils, and grease. For example, certain BMPs employ natural methods of water purification through the use of constructed wetlands, vegetated swales, and infiltration basins. An unintended consequence of BMP implementation is the potential for vector production (e.g. mosquitoes, flies, and rodents), which is frequently associated with sheltered habitats and standing water. Unless designed and maintained properly, standing water may remain in BMPs long enough to provide conditions that will allow production of mosquitoes (Metzger, 2004).

Due to the potential of stormwater BMPs to produce mosquitoes, it is important that agencies responsible for vector control be aware of the locations and types of existing and planned installations. Currently, these breeding sources are often reported to vector control agencies by the public only after they have become a nuisance and public health hazard. Vector control agencies under the authority of the California Health and Safety Code (Sec. 2040) have the obligation and authority to require "the person or agency claiming ownership" to remove conditions that contribute to mosquito production (California Health and Safety Code Sec. 2060). Some stormwater BMPs are less likely to produce mosquitoes than others, depending on the structural design and on surrounding conditions. Larger urban developments can contain dozens of BMPs. Involving vector control agencies early in the planning process would assure that the most effective options were implemented. This proactive approach would save developers and property owners the cost of having to make required changes after the BMP was in place.

Structural stormwater BMPs require proper and timely maintenance to ensure they meet water quality objectives and minimize potential for mosquito and vector production. Frequently, there is no provision or long-term funding for the ongoing maintenance of BMPs following installation. To complicate matters, there is often confusion about ownership and responsibilities. Neglecting maintenance for too long a period can result in poor BMP performance and often results in areas of standing water due to

accumulations of captured materials and vegetation overgrowth. These conditions favor production of mosquitoes and other vectors such as rats. Under certain circumstances, neglected BMPs may eventually be viewed as providing "habitat" for certain species of animals. If this occurs, any subsequent maintenance procedures may be in violation of some other state or federal statute. It is not uncommon for the party responsible for the BMP to be in violation of the Health and Safety Code because of mosquito production, and facing a violation of the Endangered Species Act (ESA) if they take the steps necessary to curtail mosquito production.

Recommendations: The potential for vector production in stormwater BMPs needs to be formally addressed with each new development or redevelopment project, and retroactively with those where water quality considerations will pose a notable threat to public health. The California Environmental Quality Act or CEQA is one vehicle that could allow vector control issues to be addressed early in the planning stages. CEQA contains a list of State guidelines that must be addressed for virtually every construction project. We recommend that vector control considerations be added to the CEQA checklist. This would require that each project address the potential for vector production and measures taken to minimize this potential during the initial permitting phase. The current CEQA checklist includes the following seventeen items: Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use, Mineral Resources, Noise, Population and Housing, Public Service, Recreation, Transportation and Traffic, Utilities and Service System, and Mandatory Findings of Significance. Vector control should be the eighteenth item on the checklist. Within this item, there also should be a requirement for routine maintenance of each installation that ensures continued vector suppression, a provision for maintenance funding, and a clear pathway of title transfer from developer to final owner. It is critical that all parties realize who is, and who will be, responsible for the necessary maintenance of these stormwater BMPs.

It is the District's firm belief that these recommendations will minimize many of the mosquito and vector production problems associated with stormwater BMPs required for compliance with water quality regulations.

Metzger, M.E. 2004. *Managing mosquitoes in stormwater treatment devices*. University of California Division of Agriculture and Natural Resources. ANR Publication 8125. 11p. Available for download at <http://www.anrcatalog.ucdavis.edu>