

Guidelines for Preliminary Project Water Quality Management Plans (WQMPs)



City of Aliso Viejo

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This document provides background information and guidelines for Preliminary Water Quality Management Plans (WQMPs).

BACKGROUND

The City of Aliso Viejo is required by the San Diego Regional Water Quality Control Board's NPDES Permit (NPDES No. CAS0108740) for urban storm water runoff to minimize short and long-term impacts on receiving water quality from new development and significant redevelopment to the maximum extent practicable.

Therefore, the City of Aliso Viejo is responsible to provide an approval process framework for new development and significant redevelopment that occurs within the City's jurisdiction to ensure that development and redevelopment occur in an organized fashion that reflects the vision of the community, assesses the environmental issues associated with the project, and provides a regulatory framework to ensure that standards set by the City are implemented.

The City's General Plan includes development goals and policies, landscaping policies and requirements, open space goals and policies, including preservation or integration with natural features, and water conservation policies that reflect the vision of the community. The following is a summary of the policies and goals contained in the City's General Plan:

- Limit disturbance of natural water bodies and drainage systems; conserve natural areas; protect slopes and channels; and minimize impacts from storm water and urban runoff on the biological integrity of natural drainage systems and water bodies.
- Minimize changes in hydrology and pollutant loading; require incorporation of control, including structural and non-structural BMPs, to mitigate the projected increases in pollutant loads and flows; ensure that post-development runoff rates and velocities from a site have no significant adverse impact on downstream erosion and stream habitat; minimize the quantity of storm water directed to impermeable surfaces and into the storm drain system; and maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground;
- Encourage the use of water quality constructed wetlands, biofiltration swales, watershed-scale retrofits, etc., where such measures are likely to be effective and technically and economically feasible;
- Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site.

Understanding the Model WQMP is fundamental to preparation of a Preliminary Project WQMP, and ultimately the Final Project WQMP. The Model WQMP can be viewed or downloaded from:

http://www.ocwatersheds.com/StormWater/PDFs/2003_DAMP/2003_DAMP_Exhibit_7_II_Model_WQMP_Text.pdf

DEVELOPMENT PLANNING – PROJECT CATEGORIZATION

In order to address water quality concerns in the planning process, The City of Aliso Viejo Project Application contains the following Project Categorization Checklist. Information provided in this checklist will help environmental planners and engineers assess the potential for significant environmental impact and the type of storm water plans required for each development and redevelopment project.

Project Categorization Checklist

Part A: Priority Project Subject to General Commercial Permit requiring NOI, SWPPP and WQMP	Included?	
	Yes	No
1. Project with one acre or more		

If answer to part A is NO, continue to Part B.

Part B: Priority Projects Subject to WQMP	Included?	
	Yes	No
1. Residential development of 10 or more housing units		
2. Commercial and industrial development greater than 100,000 square feet including parking area		
3. Automotive repair shops, gas stations, auto body shops, or auto part stores (SIC codes 5013, 5014, 5541, 7532-7534, and 7536-7539)		
4. Restaurants where the land area of development is 5,000 square feet or more including parking area (SIC code 5812)		
5. Hillside developments on 5,000 square feet or more, which are located on areas with known erosive soil conditions or where natural slope is twenty-five percent or more		
6. Addition of impervious surface of 2,500 square feet or more located within, directly adjacent to (within 200 feet), or discharging directly to receiving waters within Environmentally Sensitive Areas (Note 1)		
7. Addition of parking Lots of at least 5,000 square feet or more, or with 15 parking spaces or more, and potentially exposed to urban stormwater runoff.		
8. Streets, roads, highways, and freeways which would create a new paved surface that is 5,000 square feet or greater		
9. All Significant Redevelopment projects, where Significant Redevelopment is defined as the addition of 5,000 or more square feet of impervious surface on an already developed site. Significant Redevelopment includes, but is not limited to (Note 2): <ul style="list-style-type: none"> • Expansion of a building footprint. 		

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<ul style="list-style-type: none"> • Addition of a building and/or structure. • Addition of an impervious surface, such as construction of a new parking lot, which is not part of a routine maintenance activity. • Replacement of impervious surfaces, buildings and/or structures when 5,000 or more square feet of soil is exposed during replacement construction. Replacement does not include routine maintenance activities, trenching and resurfacing associated with utility work, resurfacing and reconfiguring the surface of parking lots (unless 5,000 or more square feet of impervious surface is added to the existing parking lot area) or reconfiguration of pedestrian ramps and replacement of damaged pavement. 		
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If all answers to part B are NO, continue to Part C.

Part C: Non- Priority Projects – Subject to Site Specific Mitigation	Included?	
	Yes	No
10. Vehicle or equipment fueling areas		
11. Vehicle or equipment maintenance areas, including washing or repair		
12. Commercial or industrial waste handling or storage		
13. Outdoor handling or storage of hazardous materials		
14. Outdoor manufacturing areas		
15. Outdoor food handling or processing areas		
16. Outdoor animal care, confinement, or slaughter		
17. Outdoor horticulture activities		

1. Generally, these are areas “in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which would easily be disturbed or degraded by human activities and developments” (California Public Resources Code §30107.5). Examples are Areas of Special Biological Significance as designated by the State Water Resources Control Board, areas identified in Habitat Conservation Plans as supporting endangered or threatened species, and receiving waters that are designated as being impaired. These areas are shown on maps that are available upon request or can be found at www.ocwatersheds.com/StormWater/documents_damp_section7.asp.
2. Page 7-26, 2003 Drainage Area Management Plan, Section 7 – New Development/Significant Redevelopment dated September 24, 2003.

INCORPORATION OF BEST MANAGEMENT PRACTICES INTO PROJECT

The goal in requiring a Preliminary Project WQMP is to encourage the applicant early in the planning process to address the project's quality and quantity of stormwater runoff to allow for the implementation of innovative, technically sound, cost effective, and multi-beneficial Best Management Practices (BMPs). WQMP is not acceptable by the City of Aliso Viejo unless there are multiple structural BMPs planned on site. If the applicant/developer waits until the end of the planning process to address the project's quality and quantity of stormwater runoff, they may be faced with a very limited number of costly alternatives.

Note: Generally, WQMP for a new development redevelopment projects is not acceptable by the City of Aliso Viejo unless there are multiple structural BMPs planned on the project site.

Site Design BMPs

The principal objective of Site Design BMPs is to prevent pollution of stormwater by minimizing the introduction of pollutants and conditions of concern that may result in significant impacts generated from site runoff to the storm water conveyance system. One approach to achieve this objective is to reduce stormwater runoff flows and volumes and reduce pollutants through appropriate Site Design BMPs. *Start at the Source (Bay Area Stormwater Management Association (1999) and Using Site Design Techniques to Meet Development Standards for Stormwater Quality, A Companion Document to Start at the Source (May 2003)*¹ provide design guidance and techniques for implementing Site Design BMPs. Benefits derived from this approach include:

- Reduced size of downstream treatment controls and conveyance systems;
- Reduced pollutant loading to treatment controls; and
- Reduced hydraulic impact on receiving streams

Site Design BMPs should be incorporated and implemented, as appropriate. Some examples of Site Design BMPs are:

- Conserve natural areas
- Use open-jointed paving materials, pervious concrete, porous asphalt, granular materials
- Incorporate landscaped buffer areas between sidewalks and streets
- Direct runoff from rooftops, sidewalks, patios, etc. into adjacent landscaped areas

¹ Both of these documents were prepared for the Bay Area Stormwater Management Agencies Association and can be viewed or downloaded from <http://www.basmaa.org/documents/>.

Routine Source Control BMPs

Routine Source Control BMPs are low-technology practices designed to prevent rainfall or stormwater runoff from contacting pollutants. Some examples of non-structural Source Control BMPs are:

- Education for Property Owners, Tenants and Occupants
- Common Area Landscape Management
- Common Area Litter Control
- Street Sweeping Private Streets and Parking Lots

Examples of structural Source Control BMPs are:

- Storm drain system stenciling and signage
- Outdoor material storage areas designed to reduce pollution introduction
- Efficient irrigation systems & landscape design, water conservation, smart controllers, and source control
- Protection of fuel island area runoff into storm water drainage areas

Treatment Control BMPs

Treatment Control BMPs are engineered technologies designed to remove pollutants from stormwater runoff and are required to augment Source Control and Site Design BMPs to reduce pollution from stormwater discharges. The type of Treatment Control BMP (or BMPs) to be implemented at a site depends on a number of factors including type of pollutants in the stormwater runoff, volume or flow of stormwater runoff to be treated, site conditions (soils, slopes, depth to groundwater, etc.), and receiving water conditions.

Unlike flood control measures that are designed to handle peak flows, stormwater Treatment Control BMPs are designed to treat the more frequent, lower flow/volume storm events, or the first flush portions of runoff from larger storm events (typically referred to as the first-flush events). Small, frequent storm events represent most of the total average annual rainfall for the area. The flow and volume from such small events is targeted for treatment.

The primary control strategy for designing BMPs is to treat the Stormwater Quality Design Flow or the Stormwater Quality Design Volume of the stormwater runoff. The following is a sample list identifying various treatment control BMPs:

- Vegetated (grass) strips
- Vegetated (grass) swales
- Dry detention basins
- Detention basins

- Constructed wetlands, including subsurface wetlands
- Infiltration trenches and basins
- Sand filters/media filters
- Proprietary Controls – e.g., hydrodynamic separation systems, catch basin inserts, etc.

PRELIMINARY PROJECT WQMP PREPARATION

It is important to know that the first step in developing Preliminary Project WQMP is for the developer to meet with the City's Staff and discuss the project plans.

Preliminary Project WQMPs must:

- Provide a project description.
- Identify the most proximate and all downstream receiving waters for the project.
- Identify the known impairments of the receiving waters, including established Total Maximum Daily Loads (TMDLs) and impairments included in the Clean Water Act Section 303(d) List.
- Identify the project's potential/anticipated pollutants (see Section 7.II-3.2.3 of the Model WQMP).
- Identify the project's Primary Pollutants of Concern (see Section 7.II-3.2.3 of the Model WQMP).
- Identify hydrologic conditions of concern (see Section 7.II-3.2.4 of the Model WQMP).
- Identify and show on a site plan the Site Design BMPs that will be incorporated as a project feature (see Section 7.II-3.3.1 of the Model WQMP).
- Identify the routine non-structural Source Control BMPs applicable to the project (see Section 7.II-3.3.2 of the Model WQMP).
- Identify and show on a site plan the routine structural Source Control BMPs that will be incorporated as a project feature (see Section 7.II-3.3.2 of the Model WQMP)
- Identify and show on a site plan the Treatment Control BMPs that will be incorporated as a project feature (see Sections 7.II-3.3.3 and 7.II-3.3.4 of the Model WQMP)

The level of detail in a Preliminary Project WQMP will depend upon the level of detail known about the overall project design at the time project approval is sought. However, the BMPs identified in a Preliminary Project WQMP must be appropriate to the project and compatible with site characteristics as known at the time the Preliminary Project WQMP is prepared. The combination of Site Design, Source Control, and Treatment Control BMPs must adequately address all identified potential/anticipated pollutants and hydrologic conditions of concern. A combination of Site Design BMPs and Source Control BMPs is generally the most effective approach since it reduces the amount of stormwater runoff for which Treatment Control BMPs must be designed.

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Detailed narrative descriptions of how BMPs will be implemented, operated, and maintained are not required for a Preliminary Project WQMP, but will be required for the Final Project WQMP.

In addition, the following information will be required in the Final Project WQMP.

- Owner's Certification
- Discretionary Permit Numbers and Water Quality Conditions (Section I)
- Detailed narrative description of BMP implementation (Section IV)
- Implementation, Maintenance, and Inspection Responsibility for BMPs (Section V)
- BMP Details (Section VI)
- Educational Materials (Section VII)

ADDITIONAL INFORMATION

For additional information please contact:

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