# GUIDELINES FOR PRELIMINARY WATER QUALITY MANAGEMENT PLANS (WQMPs)

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

## BACKGROUND

The City is responsible to provide an approval process framework for new development and significant redevelopment that occurs within the City's boundaries to ensure that development occurs 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 is required by the Santa Ana Regional Water Quality Control Board's NPDES Permit for urban storm water runoff to minimize short and long-term adverse impacts that new development and significant redevelopment may have on water quality to the maximum extent practicable.

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 bullets provide a sample of the policies and goals contained in the General Plan:

- Protect water quality and conserve water supply.
- Local drainage courses, channels, and creeks should be improved to protect vegetation and wildlife habitat wherever possible.
- Reduce and eliminate contamination of water supply from industrial operations.
- Conserve and protect significant topographical features, important watershed areas, resources, and soils.
- Control erosion during and following construction through proper grading techniques, vegetation replanting, and the installation of proper drainage control improvements.
- Encourage the practice of proper soil management techniques to reduce erosion, sedimentation, and other soil-related problems.

On May 19, 2011 the Santa Ana Regional Water Quality Control Board approved the Model WQMP, which is Exhibit 7-II to Section 7 of the Orange County Drainage Area Management Plan. Understanding the Model WQMP is fundamental to preparation of a Preliminary WQMP, and ultimately the Final WQMP. The Model WQMP can be viewed or downloaded from the City's website at:

http://www.tustinca.org/civicax/filebank/blobdload.aspx?BlobID=23317

## PROJECTS REQUIRING A PRELIMINARY WQMP

To address water quality concerns in the planning process, the City's Environmental Information Form contains questions to help environmental planners and engineers assess the potential for significant environmental impacts. To support this process, if the proposed project qualifies as any one of the following categories, the project is classified as a "*Priority Project*" and a Preliminary WQMP is required.

| Priority Projects |
|---|
| 1. New development projects that create 10,000 square feet or more of impervious surface. This category includes commercial, industrial, residential housing subdivisions, mixed-use, and public projects on private or public property that falls under the planning and building authority or the Permittees. |
| 2. Automotive repair shops. This applies to facilities that are categorized in any one of the following Standard Industrial Classification (SIC) codes 5013, 5014, 5541, 7532-7534, and 7536-7539. |
| 3. Restaurants where the land area of development is 5,000 square feet or more including parking area. This category is defined as facilities that sell prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812). |
| 4. Hillside development greater than 5,000 square feet. Hillside development is defined as any development which is located in an area with known erosive soil conditions or where the natural slope is twenty-five percent or greater. |
| 5. Impervious surface of 2,500 square feet or more located within, directly adjacent to (within 200 feet), or discharging directly into receiving waters within Environmentally Sensitive Areas (ESAs). |
| 6. Parking lots 5,000 square feet or more including associated drive aisle, and potentially exposed to urban stormwater runoff. A parking lot is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. |
| 7. Streets, roads, highways, and freeways. This category includes any paved surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles. |
| 8. All significant redevelopment projects, where significant redevelopment is defined as the addition or replacement of 5,000 or more square feet of impervious surface on an already developed site. Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of the facility, or emergency redevelopment activity required to protect public health and safety.<br>If the redevelopment results in the addition or replacement of less than 50 percent of the impervious area on-site and the existing development was not subject to WQMP requirement, the numeric sizing criteria discussed in **Section 7.II-2.0 of the DAMP** only applies to the addition or replacement area. If the addition or replacement accounts for 50 percent or more of the impervious area, the Project WQMP requirements apply to the entire development. |
| 9. Retail Gasoline Outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more, or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day. |

## INCORPORATION OF BMPS INTO PROJECT

The goal in requiring a Preliminary 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 incorporate Low Impact Development (LID) and hydromodification control Best Management Practices. 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. Therefore if the project is proposing to use on

site infiltration they must conduct an infiltration test where the proposed BMP will be installed during the preliminary WQMP stage.

***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

On-site LID practices that should be considered include, but are not limited to, the following:

- Maximize Natural Infiltration Capacity and Groundwater Recharge (where appropriate)
- Preserve Existing Drainage Patterns and Time of Concentration
- Protect Existing Vegetation and Sensitive Areas
- Minimize Impervious Area
- Disconnect Impervious Areas
- Minimize Construction Footprint
- Re-vegetate Disturbed Areas

***Routine Source Control BMPs***

Routine structural 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
- Activity Restrictions
- Common Area Landscape Management
- Common Area Litter Control
- Street Sweeping Private Streets and Parking Lots

[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/.

- Employee Training
- Housekeeping of Loading Docks
- Common Area Catch Basin Inspection

Examples of structural Source Control BMPs are:

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

***Hydromodification***

Hydromodification is the alteration of natural flow characteristics and sediment supply in streams and channels due to urbanization, which can result from new development and significant redevelopment projects without appropriate preventative controls. Hydromodification control BMPs are implemented in order to prevent hydromodification from happening. Technical details regarding how to determine if there is a Hydrologic Conditions of Concern in downstream receiving waters from the project site and how to select and size BMPs to provide for hydromodification control BMPs if Hydrologic Conditions of Concerns exist is provided in the **Model WQMP Technical Guidance Document Section 2.2.3**. Additional assistance can be found the County's WIHMP website: https://cms.ocgov.com/gov/pw/watersheds/documents/wqmp/default.asp

***LID and Treatment Control BMP Design***

LID BMPs are required in addition to site design measures and source controls to reduce pollutants in stormwater discharges. LID BMPs are engineered facilities that are designed to retain or biotreat runoff on the project site. The following is the performance criteria for LID implementation:

- Priority Projects must infiltrate, harvest and use, evapotranspire, or biotreat/biofilter, the 85th percentile, 24-hour storm event (Design Capture Volume).

- Pre-treatment BMPs such as catch basin inserts and hydrodynamic separators are not considered treatment control BMPs cannot be used to satisfy this requirement.

- A properly designed biotreatment system may only be considered if infiltration, harvest and use, and evapotranspiration (ET) cannot be feasibly implemented for the full design capture volume. In this case, infiltration, harvest and use, and ET practices must be implemented to the greatest extent feasible and biotreatment may be provided for the remaining design capture volume.

Treatment control BMPs are required if it is not feasible to design LID BMPs for the full Design Capture Volume. Treatment-control BMPs are structural, engineered facilities that are designed to remove pollutants from stormwater runoff using treatment processes that do not incorporate significant biological methods. Both LID BMPs and treatment control BMPs can also partially or fully satisfy hydromodification performance criteria, depending on their design and functions.

The partial list of BMP designs described below constitute what are intended as LID and Treatment Control BMPs for the purpose of meeting stormwater management requirements:

| Infiltration | Evapotranspiration and Evaporation | Harvest and Use | Biotreatment |
|---|---|---|---|
| ➢ Infiltration Trenches<br>➢ Infiltration Basins<br>➢ Bioretention Without Underdrains<br>➢ Drywells<br>➢ Permeable Pavement<br>➢ Proprietary Infiltration | ➢ Green Roofs<br>➢ Brown Roofs<br>➢ Blue Roofs | ➢ Cisterns<br>➢ Underground Detention<br>➢ Irrigation Use<br>➢ Domestic Use | ➢ Bioretention with Underdrains<br>➢ Stormwater Planter Boxes With Underdrains<br>➢ Constructed Wetlands<br>➢ Vegetated Swales<br>➢ Vegetated Filter Strips<br>➢ Dry Extended Detention Basins<br>➢ Wet Extended Detention Basins<br>➢ Proprietary Detention |

Specific details and fact sheets for each BMP are provided in Technical Guidance Document which can be found on the City's webpage at:

**http://www.tustinca.org/civicax/filebank/blobdload.aspx?BlobID=23322**

## PRELIMINARY WQMP PREPARATION

In accordance with the requirements in the development project review, the City requires Preliminary WQMPs to be prepared using the guidelines provided in this document.

Preliminary WQMPs for Priority Projects must:

- Provide a project description.
- Identify the most proximate and 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 Primary Pollutants of Concern
- Identify hydrologic conditions of concern
- Identify and show on a site plan the Site Design BMPs that will be incorporated as project features.
- Identify the routine non-structural Source Control BMPs applicable to the project.
- Identify and show on a site plan the routine structural Source Control BMPs that will be incorporated as a project feature
- Identify and show on a site plan the LID and Treatment Control BMPs that will be incorporated as a project feature

The level of detail in a Preliminary 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 WQMP should be appropriate to the project and compatible with site characteristics as known at the time the Preliminary WQMP is prepared. The combination of Site Design, Source Control, and LID and Treatment Control BMPs must adequately address all identified potential 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. Detailed narrative descriptions of how BMPs will be implemented, operated, and maintained are not required for a Preliminary WQMP, but will be required for the Final WQMP.

The County has developed a Technical Guidance Document that provides the detailed guidance/instructions and a template for preparation of a Final WQMP. The project applicant should review the County's Model WQMP and should use the WQMP template and the Preparer's WQMP Checklist in preparing the Preliminary WQMP. However, the following information called for in the guidance and the template is not required for a Preliminary WQMP:

- Owner's Signature
- Discretionary Permit Numbers and Water Quality Conditions
- Detailed narrative description of BMP implementation
- Inspection Responsibility for BMPs
- BMP Details
- Educational Materials

Although the information may not be required for the preliminary WQMP each section must still be considered by the applicant and included in the document.

## ADDITIONAL INFORMATION

For additional information please contact:

City of Tustin
Public Works Department
714-573-3305

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