



A-7.0 NEW DEVELOPMENT/SIGNIFICANT REDEVELOPMENT

A-7.1 Introduction

One of the most important responsibilities of the City of Irvine is to provide a decision making and approval processing framework for new development and significant redevelopment that occurs within the City's boundaries. This ensures that both development and significant redevelopment occur in an organized and orderly fashion that reflects the vision and needs of the community, assesses the environmental issues associated with the proposed changes, and provides a regulatory framework to ensure that standards set by the City are implemented.

In May 1997, the City certified to the Santa Ana Regional Board that it was implementing the new development and significant redevelopment water quality requirements developed with the Principal Permittee and other Permittees as Appendix G of the 1993 DAMP. Since that time all development and significant redevelopment in the City has occurred in conformance with Appendix G, resulting in water quality BMPs being implemented for water quality improvement in many projects.

The Third Term Permits require the City and other Permittees to initiate a comprehensive assessment of their planning and development processes with the intent of providing a greater focus on the protection of water bodies and a more rigorous application of BMPs in development and significant redevelopment projects. The City has supported the Principal Permittee in developing a model program to guide compliance with these requirements (see **2003 DAMP, Section 7**).

The model program links new development BMP design, construction and operation to the earlier phases of new development project planning encompassed by the General Plan, environmental review process and development permit approval processes. The General Plan specifies policies that guide new development. The environmental review process examines impacts from proposed new development/significant redevelopment with respect to the General Plan policies and many environmental issues, including water quality, and includes consideration of mitigation measures to reduce any identified significant impacts.

The development permit approval process carries forward mitigation requirements in the form of conditions of approval, design specifications, tracking, inspection and enforcement



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actions. These three “front-end” planning processes must be coordinated and linked to the later phases of BMP design, construction and operation for new development / significant redevelopment to help ensure stormwater quality protection features are planned, designed and evaluated in accordance with goals for the protection of water quality and other environmental resources.

The City has used this model program in developing the new development/significant redevelopment plan contained in this section of the LIP. Subsequent sections describe:

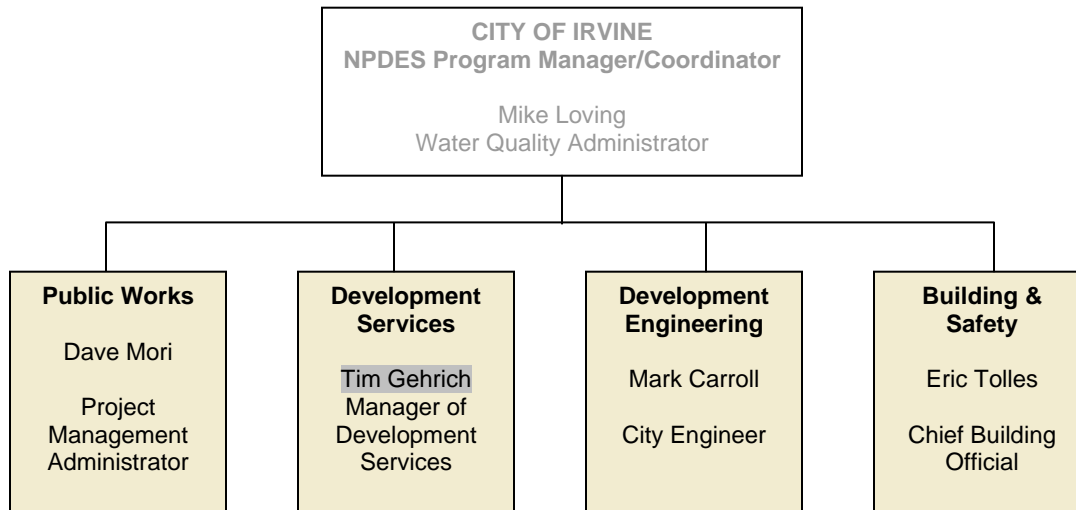
- The organization structure for new development/redevelopment in the City;
- The assessment of the City’s General Plan and the need for amendment;
- The assessment of the City’s CEQA environmental review process;
- The assessment of the City’s development project review, approval and permitting process;
- The City’s requirement for project Water Quality Management Plan (WQMP) preparation;
- The City’s program for post construction BMP inspection and verification;
- Education and training programs; and
- Program assessment.

A-7.2 Organization Structure

The key staff responsible for overseeing, implementing, and enforcing the new development/ significant redevelopment program are identified in **Figure A-7.1**.

**Figure A-7.1**

New Development/Significant Redevelopment Program Management Organization Chart



The contact information below describes the City's key contacts in each of the various departments with responsibility for new development and redevelopment. The contact provided has the primary responsibility and oversight for ensuring that the program has been implemented.

Community Development Department

Development Services Division

Contact Name: **Tim Gehrich**

Title: Manager of Development Services

Telephone: (949) 724-6363

Address: P.O. Box 19575, Irvine, CA 92623

Responsible for implementing the policies and objectives of the City set forth in the General Plan and Zoning Ordinance. This division also reviews proposed developments for consistency with the City's standards and policies relating to land use, and preservation of the environment.



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Building and Safety Division

Contact Name: Eric Tolles

Title: Chief Building Official

Telephone: (949) 724-6453

Address: P.O. Box 19575, Irvine, CA 92623

Responsible for overseeing that all building construction in the City complies with adopted codes, including the Water Quality Ordinance, and that permitting and licensing systems are efficient and serve the needs of the public, as well as the City.

Public Works Department

Project Management Division

Contact Name: Dave Mori

Title: Project Management Administrator

Telephone: (949) 724-7553

Address: P.O. Box 19575, Irvine, CA 92623

Responsible for the administration of City public improvement projects and ensuring construction in the public right-of-way complies with adopted codes and engineering standards.

Development Engineering Division

Contact Name: Mark Carroll

Title: City Engineer

Telephone: (949) 724-6410

Address: P.O. Box 19575, Irvine, CA 92623

Responsible for checking maps and improvement plans to ensure that development proceeds in accordance with City standards.

A-7.3 General Plan Assessment and Amendment

The City is required by the Santa Ana Region Permit to minimize short and long-term impacts on receiving water quality from new development and significant redevelopment



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to the maximum extent practicable. The permit requires at a minimum that the City's General Plan be reviewed and updated, as necessary, to ensure watershed and stormwater quality and quantity management are considered as specified in Section XII of Santa Ana Region Permit.

The Santa Ana Region Permit requires:

“Permittees shall review their watershed protection principles and policies in their General Plan or related documents (such as Development Standards, Zoning Codes, Conditions of Approval, Development Project Guidance) to ensure that these principals and policies are properly considered and are incorporated into these documents.”

To meet the Permit requirement, the City has undertaken the following actions consistent with the guidance provided in the **2003 DAMP, Section 7.4:**

1. Review of City's General Plan and Local Coastal Program

The City of Irvine has reviewed its General Plan Elements that cover land development issues, for which it may be appropriate to reflect watershed protection and stormwater quality management policies. This included a review of the goals and policies in the following General Plan Elements:

- Land Use
- Safety
- Circulation and Infrastructure (i.e., transportation)
- Public Facilities
- Integrated Waste Management
- Open Space
- Conservation

The City of Irvine reviewed development goals and policies, landscaping policies and requirements, open space goals and policies, including preservation or integration with natural features, water conservation policies, and public facilities operation and maintenance policies of these Elements. During the review, special attention was given to how the Elements address water quality protection from



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urban and stormwater runoff. The City kept in mind the following questions during this review, which could trigger the need for specific stormwater/urban runoff protection policies in the General Plan either as new policies and objectives or amended text to existing policies and objectives:

- a) Are there sensitive water resources in or downstream of the jurisdiction?
- b) Are there existing Total Maximum Daily Loads (TMDLs) or other such regulations pertaining to receiving waters within the jurisdiction?
- c) Is major new development or significant redevelopment expected?
- d) Are major new infrastructure projects anticipated (e.g. roads, sewer, flood control, storm drains)?
- e) Do stormwater/urban runoff affect recreational use of water bodies within the jurisdiction?

The City has also reviewed and considered the following additional objectives to the General Plan and Elements, as specified by the Santa Ana Region Permit, Section XII.3:

- a) Limit disturbance of natural water bodies and drainage systems; conserve natural areas; protect slopes and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;
- b) 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 stormwater directed to impermeable surfaces and the MS4s; and maximize the percentage of permeable surfaces to allow more percolation of stormwater into the ground;
- c) Preserve wetlands, riparian corridors, and buffer zones and establish reasonable limits on the clearing of vegetation from the project site;
- d) Encourage the use of water quality wetlands, biofiltration swales, watershed-scale retrofits, etc., where such measures are likely to be effective and technically and economically feasible;



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- e) Provide for appropriate permanent measures to reduce stormwater pollutant loads in stormwater from the development site; and,
- f) Establish development guidelines for areas particularly susceptible to erosion and sediment loss.

2. Assessment of Need to Amend City's General Plan (LCP)

Upon completing the review of its General Plan Elements (or related documents), the City has determined that certain sections should be modified to include specific policies, goals or objectives that address water quality protection as specified in the Third Term Permits and as described above. The need for and the extent of revisions to the General Plan (or related documents) was conducted by the Planning Services Division of the Community Development Department.

The City has added policies under Objective H-3 ("Waste Water") of the Integrated Waste Management element to make more specific references to the 2003 DAMP. The references included environmentally sensitive receiving waters (ESAs), existing Total Maximum Daily Loads (TMDLs), and recreational water resources. There has been discussion added to the Existing Conditions and Trends sections of the element describing the most recent efforts of the County and City of Irvine to reduce stormwater and urban runoff pollution. Additional cross-references have been added to the Conservation and Open Space Element. The City will monitor and update the General Plan as required through the LIP.

The City of Irvine General Plan has included a number of policies that directly or indirectly affect water quality. The policies are contained in several elements as follows:

Land Use A-3 b. Ensure development in the hillside areas retains the character and aesthetic value of the natural landform through use of the Hillside Development Ordinance.

Land Use A-3 c. Design roadways to preserve the natural topography and minimize their impact on any environmentally sensitive areas through the following efforts:

- o Designing alignments to pass around rather than through sensitive areas.
- o Designing grade separation of roadways when applicable.
- o Permitting flexibility in grading standards in roadway design, when applicable.



Land Use A-3 d. Ensure developments occurring in close proximity to NCCP/HCP implementation areas are consistent with the NCCP plan and/or implementing agreement.

Integrated Waste Management H-3 b. Require developers of new projects located adjacent to, or upstream of, natural water courses to develop surface drainage systems which will direct low flows (those which carry the most pollutants) away from natural water source into an area designed to remove pollutants. Require evidence be provided that any proposed development will have adequate sewer service, including assurance that collection and treatment capacity can be accommodated.

Integrated Waste Management H-3 c. Require a National Pollutant Discharge Elimination System (NPDES) permit to be obtained from the State Water Resources Control Board whenever surface water is collected anywhere for discharge as a point source, or if a point source discharge is contemplated, a National Pollutant Discharge Elimination System (NPDES) permit to be obtained from the State Water Resources Control Board. Encourage the use of alternative Best Management Practices (BMPs) to control and minimize urban pollutant runoff.

Conservation and Open Space L-2 e. Maintain sufficient riparian areas in preservation areas as natural corridors and sources of shelter, water, and food for wildlife, except where required for infrastructure.

Conservation and Open Space L-2 d. Ensure that NCCP construction-related minimization measures set forth in the NCCP are enforced.

Conservation and Open Space L-2 a. (Selected points)

- Promote the development of a flood control channel to handle projected flood waters of the San Diego and Peters Canyon Washes. Where practicable, require that the channel be a natural swale channel with grass or other natural planting as an integral part of its design as opposed to a concrete design.
- Ensure environmental impact reports for future development to consider impacts to waterways.
- Pursue waterway preservation policies while considering drainage, water conservation, storage, and flood control purposes.
- Minimize alterations of major creek courses and bottoms.



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- Allow no net loss quantity or quality of surface and subsurface water flow into San Joaquin Marsh to occur as a result of development in Planning Area 23.
- Ensure that any access roads or highways that must pass through hillside areas are the least environmentally damaging, feasible alternate which minimizes the impacts to the hillside ecological and/or aesthetic characteristics.
- Ensure that any proposed development in hillside areas is the least environmentally damaging feasible alternative and minimizes flood hazard and runoff impacts to the lowlands and hillsides.

Conservation and Open Space L-8 e. Ensure that riparian vegetation is not significantly modified, except as necessary to provide fire protection, access roads, and flood control, drainage, water, sewer and utility facilities, and except where habitat is to be enhanced as part of a mitigation program approved by the California Department of Fish and Game.

Conservation and Open Space L-12 a. Integrate water feature opportunities and constraints through the development review process.

3. Schedule for Amending the City's General Plan

The City has initiated authorization from its City Council to amend the General Plan (or related documents) and LCP to incorporate watershed and stormwater management policies, goals and objectives. As part of the General Plan amendment process, maps have been revised, as necessary, to reflect location-specific watershed protection/stormwater quality management policies, and to eliminate conflicts among land use districts, permitted land uses, and stormwater-specific goals and policies.

The City process to proceed with the General Plan Amendment is as follows:

- a) Prepared draft text for General Plan Element(s), policy amendment(s), and related CEQA documentation;
- b) Published a notice for the Planning Commission hearing to consider General Plan Amendment;
- c) Requested Planning Commission approval through the public hearing process on the proposed General Plan Amendment;



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- d) Incorporated any changes or additional studies, if required, as a result of the Planning Commission hearing;
- e) Published a notice on the City Council hearings on the General Plan Amendment;
- f) Requested City Council approval through the public hearing process on the proposed General Plan Amendment; and
- g) Obtained California Coastal Commission approval through the public hearing process on the proposed amendment to the Local Coastal Plan.

The City will proceed with the General Plan Amendment and LCP Amendment whenever elements of the City's General Plan are significantly rewritten or within two years after receiving approval of the Local Implementation Plan.

The City's schedule for amendments to the General Plan is as follows:

- December 1, 2003 through January 2004 - Developed draft of proposed amendments to the General Plan;
- December 15, 2003 - Submitted application for General Plan amendment and proposed General Plan amendments to the Development Services Division of the Community Development Department;
- December 1, 2003 through February 1, 2004 - Conducted environmental review, refine proposed General Plan amendments, and conduct necessary reviews and workshops;
- February 2004 - Presented proposed General Plan amendments to Planning Commission for approval to present to City Council; and
- March 2004 - Presented proposed General Plan amendments to City Council for adoption.

A-7.4 CEQA Environmental Review Process

The City of Irvine is required by the Santa Ana Region Permit to minimize short and long-term impacts on receiving water quality from new development and significant redevelopment to the maximum extent practicable (MEP).



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The Santa Ana Region Permit (Section XII.A.3) requires the City to review its CEQA document preparation process to ensure stormwater and urban runoff-related issues are properly considered and addressed. If necessary, the City's processes may be revised to consider and mitigate impacts to stormwater quality. The Santa Ana Region Permit lists the following potential impacts to be considered by the City during the CEQA review:

- a) Potential impact of project construction on stormwater runoff;
- b) Potential impact of project's post-construction activity on stormwater runoff;
- c) Potential for discharge of stormwater pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas;
- d) Potential for discharge of stormwater to affect the beneficial uses of the receiving waters;
- e) Potential for significant changes in the flow velocity or volume of stormwater runoff to cause environmental harm; and
- f) Potential for significant increases in erosion of the project site or surrounding areas.

These environmental review issues from the Permit have been considered in an evaluation of the City's:

- CEQA Initial Study process; and
- EIR preparation and review process.

The results of this evaluation are presented in the sub-sections below.

A-7.4.1 Project Application Form

The City of Irvine currently does not incorporate environmental questions on the Development Case application. It has been staff's experience that many applicants are not prepared by training and/or education to respond fully to environmental questions. Therefore it is the City's practice for each case planner to request the specific information to enable a thorough environmental evaluation of a project. The City of Irvine Zoning Ordinance authorizes the Director of Community Development to request any information needed from an applicant in order to determine that an application is complete. Therefore, the City has determined that it is not necessary to add questions to its application form.



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A-7.4.2. Initial Study Checklist

The current Initial Study Checklist (**Exhibit A-7.1**) contained in Appendix G of the CEQA Guidelines (State of California Office of Planning and Research, February 2001) was updated and is used by the City in its environmental review process. This Checklist contains the following considerations under the environmental impact category “Hydrology and Water Quality (Section VIII) with respect to whether the project would:

- a) Violate any water quality standards or waste discharge requirements?
- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on-site or off-site?
- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?
- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
- f) Otherwise substantially degrade water quality?
- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?
- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
- j) Inundation by seiche, tsunami, or mudflow?



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The City has concluded that stormwater/urban runoff/water quality considerations are generally covered in questions a) through f) of the CEQA Guidelines Appendix G checklist, but in some cases with less specificity than the questions provided in the Santa Ana Region Permit.

To ensure that the Initial Study thoroughly considers all issues listed in the Permit, the City has revised the CEQA Initial Study checklist to include all of the additional considerations provided in the Permit. The following items have been added as sub-items to be discussed under Section VIII.e. (regarding runoff pollution):

1. Potential substantial impact of project construction on stormwater runoff;
2. Potential substantial adverse impact of project's post-construction activity on stormwater runoff;
3. Potential for significant discharge of stormwater pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas;
4. Potential for discharge of stormwater to adversely affect the beneficial uses of the receiving waters;
5. Potential for significant changes in the flow velocity or volume of stormwater runoff to cause environmental harm; and
6. Potential for significant increases in erosion of the project site or surrounding areas.

The City has also changed Item XVI.c (Utilities and Service Systems Section) of the checklist to read as follows:

Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities (e.g. Best Management Practices such as water quality treatment basins or constructed wetlands), the construction or operation of which could cause significant environmental effects (e.g. increased vectors and odors?)



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To support awareness of the Third Term Permit considerations described earlier, the City will take the following additional actions:

- Provide the list of Permit considerations to all environmental planning staff for use in preparing and reviewing CEQA documents for internal City projects and when reviewing CEQA documents prepared by the private sector;
- Distribute the list to consultants and other members of the private sector for use in preparing CEQA documents for private and public sector projects;
- Provide the list of environmental consultants on the City-approved list of contractors, and to project applicants during the CEQA preliminary review process; and,
- Support the preparation of training programs by the Principal Permittee for the City, other Permittees and the private sector to cover this topic. Training materials containing these permit considerations and associated guidance on their use will be included by the City during various phases of the environmental review process.

A-7.4.3 Guidance for Preparing and Reviewing CEQA Initial Studies and Environmental Impact Reports (EIRs)

The guidance provided in the **2003 DAMP, Section 7, Exhibit 7.I** has been used by the City in evaluating the CEQA Initial Study checklist questions in Section VIII. Hydrology and Water Quality (Appendix G of the CEQA Guidelines, State of California Office of Planning and Research, February 2001) including the additional questions to be considered by the Santa Ana Region Permit. This guidance is also applicable to the review and preparation of CEQA documents including Negative Declarations, Mitigated Negative Declarations and EIRs.

The guidance will be reviewed annually in conjunction with the Principal Permittee and other Permittees, updated as needed, and its status/use will be discussed in the Annual Progress Report.



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A-7.5 Development Project Review, Approval and Permitting

A-7.5.1 Project Review, Approval, and Permitting Process Overview

During project review, approval, and permitting, the City shall require new development and significant redevelopment projects to address the quality and quantity of stormwater and urban runoff through the incorporation of permanent (post-construction) BMPs in project design. The City shall require project Water Quality Management Plans (WQMPs) for all private and public projects in accordance with **Section 7.6** of this appendix that:

- Qualify as one of the Priority Project Categories listed in **Figure A-7.2**, regardless of project size.
- Do not qualify as one of the Priority Project Categories but meet one of the following criteria:
 - Require discretionary action that will include a precise plan of development.
 - Require issuance of a non-residential plumbing permit, for work that has the potential to impact stormwater quality, where a non-residential plumbing permit is defined as a plumbing permit authorizing the construction and installation of facilities for the conveyance of liquids other than stormwater, potable water, reclaimed water or domestic sewage (see Water Quality Ordinance Section A-4).

New development and significant redevelopment projects requiring a project WQMP will be categorized by the City as either a Priority Project or a Non-Priority Project. The primary difference between a Priority Project and a Non-Priority Project is that Priority Projects will be required to include treatment control BMPs in project design. The detailed requirements for preparation of a WQMP are included in **Section A-7.6** and templates for preparing WQMPs are provided as **Exhibits A-7.2 and A-7.5**. The City's Environmental Programs section will review all applications and provide applicants with information on project WQMP requirements, including requirements for treatment control BMPs.

“Significant Redevelopment” means development that would add 5,000 or more square feet of impervious surfaces on an already developed site. Significant redevelopment includes, but is not limited to:

- Expansion of a building footprint



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- Addition of a building and/or structure
- Replacement of an impervious surface that is not part of a routine maintenance activity
- Land disturbing activities related with structural or impervious surfaces

Replacement of impervious surfaces includes any activity that is not a part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Significant redevelopment does not include trenching and resurfacing associated with utility work; resurfacing and reconfiguring parking lots; new sidewalk construction, pedestrian ramps, or bike lanes on public and private existing roads; and replacement of damaged pavement.

Significant Redevelopment projects may fall into one of several categories:

- Following redevelopment, the entire development (including the redeveloped area) would meet one of the Project Priority categories listed in **Figure A-7.2**. The project would be considered a Priority Project and require a project WQMP including treatment controls. Where the significant redevelopment results in an increase of less than fifty percent of the impervious surface of a previously existing development, and the existing development was not subject to project WQMP requirements, the treatment requirements apply only to the addition, and not to the entire development.
- Following redevelopment, the entire development (including the redeveloped area) would not meet one of the Project Priority categories listed in **Figure A-7.2**, but would require discretionary action that will include a precise plan of development, or require issuance of a non-residential plumbing permit. The project would be considered a Non-Priority Project and require a project WQMP but would not require treatment controls.
- The redevelopment activity would not result in a Priority Project and would not require discretionary action that will include a precise plan of development or issuance of a non-residential plumbing permit. The project would not require a project WQMP.

The City shall require project applicants to submit a project WQMP at one or both points in the project planning and permitting stage:



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- During the discretionary approval process (land use permit) of a proposed project, when the City must exercise judgment or deliberation in order to approve or disapprove a new development or significant redevelopment project, or
- During the ministerial approval process of issuing a grading, building, demolition, or similar “construction” permits in which only fixed standards or objective measures are applied.

Project WQMPs submitted during the discretionary approval process may be conceptual or preliminary with final project WQMPs submitted during the ministerial permit process. Projects subject to the Regional Program (see **Section 7-6.2**) may rely upon the Regional Plan at the discretionary process.

A-7.5.2 Public Agency Projects

The City has incorporated the requirement for a project WQMP into the process of planning, design, approval, and construction oversight of its public agency projects. Depending upon the type of public agency project being planned or designed, the City’s Public Works Department or the design architect/engineering contractor will prepare the project WQMP for a public facility project.

The City will not require a project WQMP for public agency projects consisting of routine maintenance or emergency construction activities required to protect public health and safety; interior remodeling with no outside exposure of construction materials or construction waste to stormwater; mechanical permit work; electrical permit work; and sign permit work.

The types of public agency projects for which the City will require a project WQMP include, but are not limited to:

- Parks and recreation facilities
- Public buildings
- Streets and roadways¹
- Drainage facilities (see footnote)

¹ At the time of this LIP revision, there is significant debate and discussion among the Permittees on the necessity for providing project WQMPs for streets, roadway, drainage and other non-fixed facility projects. The City of Irvine currently requires treatment control BMPs for these types of projects the fall under the priority project definition but does not require a project WQMP.



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- Utility and other infrastructure projects (see footnote on previous page)

The categories of Priority Projects are listed in **Figure A-7.2**. Although the City does not plan and design some of these categories of projects per se, some public agency projects may have similar functions or characteristics or may conduct similar activities after construction is completed. Therefore, some of the City's public agency projects will be considered Priority Projects requiring Treatment Control BMPs.

For example, a new corporation yard may include a vehicle and equipment maintenance facility, which is very similar to an automotive repair shop. A new civic center or library may be considered a Priority Project since it is very similar in its characteristics to a commercial office building. A new senior citizens center or a jail may have a cafeteria, which is very similar to a restaurant, and, therefore may be categorized as a Priority Project.

A-7.5.3 Conditions of Approval

The City has reviewed its standard conditions of approval to ensure that the existing standard conditions are not in conflict with any provisions of the Santa Ana Region Permit, the 2003 DAMP, California's General Permit for Stormwater Discharges Associated with Construction Activity, California's General Permit for Stormwater Discharges Associated with Industrial Activity, and where conflicts were identified, the City has revised the existing standard conditions of approval.

The City shall utilize the following standard conditions of approval to protect receiving water quality from the short-term and long-term impacts of new development and redevelopment:

General Conditions

The following conditions shall be applied by the City to the project identified in A-7.5.1:

- Prior to the issuance of any grading permits for projects that will result in soil disturbance of one or more acres of land, the applicant shall demonstrate that coverage has been obtained under California's General Permit for Stormwater Discharges Associated with Construction Activity by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) Number. Projects subject to this requirement shall prepare



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and implement a Stormwater Pollution Prevention Plan (SWPPP). A copy of the current SWPPP shall be kept at the project site and be available for City review on request.

- Prior to the issuance of precise grading or building permits, the applicant shall submit a Water Quality Management Plan (WQMP) for review and approval by the Chief Building Official.
- Prior to the issuance of a grading permit final and/or a Certificate of Use and Occupancy, the applicant shall:
 - Certify that all structural best management practices (BMPs) described in the WQMP have been constructed and installed in conformance with approved plans and specifications;
 - Demonstrate that three (3) copies of the approved WQMP are available onsite for the future occupiers. Projects adjacent to Receiving Waters.

The following condition may be applied by the City on a project-specific basis:

- During the construction phase, the applicant shall comply with the following requirements:
 - All construction materials, wastes, grading or demolition debris, and stockpiles of soil, aggregates, soil amendments, etc. shall be properly covered, stored, and secured to prevent transport into coastal and receiving waters by wind, rain, tracking, tidal erosion or dispersion.

Projects in Hillside Areas

The following condition may be applied by the City on a project specific basis:

- In accordance with the City of Irvine Hillside Development Manual, drainage facilities discharging onto adjacent property shall be designed to imitate the manner in which runoff is presently crossing the adjacent property currently produced from the project site. Alternatively, the project applicant may obtain a drainage acceptance and maintenance agreement, suitable for recordation, from the owner of said adjacent property.



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Industrial Facilities

The following condition may be applied by the City on a project specific basis:

- For industrial facilities subject to California's General Permit for Stormwater Discharges Associated with Industrial Activity as defined by Standard Industrial Classification (SIC) code, prior to the issuance of grading or building permits and/or the City's approval of a Master Plan or Conditional Use Permit for redevelopment, the applicant shall demonstrate that coverage under the permit has been obtained by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the notification of the issuance of a Waste Discharge Identification (WDID) Number or other proof of filing.

Special Conditions

The following condition may be applied by the City on a project specific basis:

- Prior to the issuance of any building permits, the applicant shall include in the plans all BMPs identified in the approved final WQMP and any other urban runoff and stormwater pollution control measures deemed necessary by the Chief Building Official.
- Prior to issuance of Certificates of Use and Occupancy, building permits for individual tenant improvements, or construction permits for a tank or pipeline, uses shall be identified and, for specified uses, the applicant shall propose plans and measures for chemical management (including, but not limited to, storage, emergency response, employee training, spill contingencies and disposal). The chemical management measures shall be incorporated as an element of a Water Quality Management Plan (WQMP) and shall be subject to the approval of the City's Chief Building Official and other specified agencies such as the Fire Authority/Fire Department, the Orange County Health Care Agency and sewerage agencies to ensure implementation of each agency's respective requirements. Certificates or permits may be ministerially withheld if features needed to properly manage chemicals cannot be incorporated into a previously completed building, center or complex.



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A-7.5.4 Review and Approval of project WQMPs

The requirements for preparation of a project WQMP are described in **Section A-7.6**. The City shall require all new development and significant redevelopment projects that meet the minimum requirements described in **Sections A-7.5.1 and A-7.5.2** to select appropriate permanent (post-construction) non-structural and structural BMPs, prepare a project WQMP, and submit the project WQMP for review and approval. Prior to issuance of grading or building permits, the City shall require the project applicant to have an approved final project WQMP.

The City shall utilize a checklist to document the identification of a project as a Priority Project or as a Non-Priority Project. The checklist to be used by the City for categorizing new development and significant redevelopment projects as Priority or Non-Priority is shown in **Figure A-7.2**.

Figure A-7.2

Checklist for Categorizing New Development¹ and Significant Redevelopment² Projects as Priority or Non-Priority

Project File No.	
Project Name:	
Project Location:	
Project Description	



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Figure A-7.2 (continued)

Proposed Project Includes:	Yes	No
1. Residential development of 10 units or more		
2. Commercial and industrial development greater than 100,000 square feet including parking areas		
3. Automotive repair shop (SIC codes 5013, 5014, 5541, 7532-7534, and 7536-7539)		
4. Restaurant where the land area of development is 5,000 square feet or more including parking areas (SIC code 5812)		
5. Hillside development on 10,000 square feet or more, which is located on areas with known erosive soil conditions or where natural slope is 25 percent or more		
6. Impervious surface of 2,500 square feet or more located within, directly adjacent to (within 200 feet), or discharging directly to receiving water within Environmentally Sensitive Areas ³		
7. Parking lot area of 5,000 square feet or more, or with 15 or more parking spaces, and potentially exposed to urban runoff		
8. 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		

¹ New development is defined as projects for which tentative tract or parcel map approval was not received by July 1, 2003 and new redevelopment is defined as projects for which all necessary permits were no issued by July 1, 2003; new development does not include projects receiving map approvals after July 1, 2003 that are proceeding under a common scheme of development that was the subject of a tentative tract or parcel map approval that occurred prior to July 1, 2003.

² "Significant Redevelopment" means development that would create or add at least 5,000 square feet of impervious surfaces on an already developed site. Significant redevelopment includes, but is not limited to: the expansion of a building footprint; addition to or replacement of a structure; replacement of an impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Significant redevelopment does not include trenching and resurfacing associated with utility work; resurfacing and reconfiguring surface parking lots; new sidewalk construction, pedestrian ramps, or bike lane on public and private existing roads; and replacement of damaged pavement.

³ Environmentally Sensitive Areas are shown in **Exhibit A-7.VI**

Priority Project: Any question answered "YES."

Non-Priority Project: All questions are answered "NO."

DETERMINATION: This project is considered a PRIORITY / NON-PRIORITY project.

(Circle appropriate answer.)



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Although both Priority and Non-Priority projects require the preparation of a project WQMP, the scope of the project WQMP differs. Consistent with the Regional Program, if applicable, the project WQMP for a Priority Project must address:

- Regional or watershed programs (if applicable),
- Consideration of site design BMPs (as appropriate),
- Routine structural and non-structural BMPs,
- Treatment control BMPs,
- The mechanism(s) by which long-term operation and maintenance of all structural BMPs will be provided, and
- The Plan for Operations and Maintenance (O&M) for all structural BMPs.

The project WQMP for a Non-Priority Project must address:

- Routine structural and non-structural BMPs,
- Consideration of site design BMPs (as appropriate),
- The mechanism(s) by which long-term operation and maintenance of all structural BMPs will be provided, and
- The Plan for Operations and Maintenance (O&M) for all structural BMPs.

The O&M plan for structural BMPs that is prepared by the applicant for private sector projects shall include:

- Description of structural BMPs;
- Description of employee responsibilities and training for BMP operation and maintenance;
- Operating schedule;
- Inspection/maintenance frequency and schedule;
- Specific maintenance activities;
- Required permits from resource agencies, if any;
- Forms to be used in documenting maintenance activities;



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- Record keeping requirements (at least 5 years).

In addition, for industrial facilities subject to California's General Permit for Stormwater Discharges Associated with Industrial Activity as defined by Standard Industrial Classification (SIC) code, demonstrate that coverage has been obtained by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the notification of the issuance of a Waste Discharge Identification (WDID) Number as part of the project WQMP.

To assure thorough and consistent reviews of project WQMPs, the City will utilize the project WQMP Checklist provided in **Exhibit A-7.3** and approve in writing appropriately completed project WQMPs.

When reviewing project WQMPs for approval, the City will assess the potential project impacts on receiving waters and ensure that the project WQMP adequately identifies such impacts, including all pollutants and conditions of concern. The City will examine all identified BMPs, as a whole, to ensure that they address the pollutants and conditions of concern identified with the project WQMP. Additionally, the City will consider potential cumulative impacts of build-out within the watershed based on available watershed chapters of the DAMP (**DAMP Appendix D**), information learned from any CEQA documentation regarding the project, Permittee knowledge of watershed-wide and jurisdictional problems and programs and compliance with the requirements of the Third Term Permit.

The City recognizes the importance of understanding the physical, chemical and biological conditions of the receiving waters at a watershed scale and the impact of incremental projects on these conditions and will continue to enlarge its understanding of receiving waters on a watershed scale through implementation of the watershed chapters of the DAMP. This information will assist in providing a strong linkage between the planning process (**DAMP Sections 7.4 and 7.5 and Exhibit 7.1**) and the development review and permitting process (**DAMP Section 7.6**) as required by the Third Term Permit.

The Permittees have initiated watershed-scale assessments in some watersheds for watershed restoration and TMDL purposes, including modeling and other types of evaluations, and will continue efforts to provide forecasting tools that protect water resources from the impacts of new development and significant redevelopment. When evaluating the adequacy of a project WQMP, the City will utilize the information gathered and the forecasting tools developed under the watershed-scale portion of the program in



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determining whether the WQMP is adequate to protect the water quality of the receiving waters including cumulative effects.

A-7.5.5 Plan Check: Issuance of Grading or Building Permits

The construction plans submitted by the applicant for plan check must incorporate all of the structural BMPs identified in the approved project WQMP. The City will require applicants to obtain approval of the final project WQMP prior to approval of construction plans.

General or Special Notes for Plan Sheets

Prior to the issuance of a grading or building permit, the City shall require the permit applicant to include the following as general or special notes on the Stormwater Pollution Prevention Plan sheets for new development or significant redevelopment projects:

Stormwater pollution prevention devices and practices shall be installed and/or instituted as necessary to ensure compliance to the City of Irvine water quality standards contained in Chapter 3. Water, of Division 8 of Title 6 of the Irvine Municipal Code and any erosion control plan associated with this project. All such devices and practices shall be maintained, inspected and/or monitored to ensure adequacy and proper function throughout the duration of the construction project.

A stand-by crew for emergency work shall be available at all times during the rainy season (October 1 to April 30). Necessary materials shall be available on site and stockpiled at convenient locations to facilitate rapid construction/deployment of emergency devices when rain is imminent.

Compliance to the water quality standards and any erosion control plan associated with this project includes, but is not limited to the following requirements:

1. Sediments and other pollutants shall be retained on site until properly disposed of, and may not be transported from the site via sheet flow, swales, area drains, natural drainage courses or wind.



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2. Stockpiles of earth and other construction-related materials shall be protected from being transported from the site by the forces of wind and water flow.
3. Fuels, oils, solvents, and other toxic materials shall be stored in accordance with their listing and are not to contaminate the soil and surface waters. All approved storage containers are to be protected from the weather. Spills must be cleaned up immediately and disposed of in a proper manner. Spills may not be washed into the drainage system, nor be allowed to settle or infiltrate into soil.
4. Excess or waste concrete may not be washed into the public way or any other drainage system. Provisions shall be made to retain concrete wastes on site until they can be disposed of as solid wastes.
5. Trash and construction solid wastes shall be deposited into a covered receptacle to prevent contamination of rainwater and dispersal by wind.
6. Sediments and other materials may not be tracked from the site by vehicular traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the public way. Accidental deposits shall be swept up immediately and may not be washed down by rain or other means.
7. Any slopes with disturbed soils or removed vegetation shall be stabilized to inhibit erosion by wind and water.
8. Stormwater pollution prevention devices and/or practices shall be modified as needed as the project progresses to ensure effectiveness.

Plan Check for Projects with Land Use Permits

For projects with land use permits, the City shall review the environmental (CEQA) documentation (including the Mitigation Monitoring and Reporting Program), the conditions of approval, and the approved final project WQMP for an understanding of the water quality issues and structural BMPs required. The City shall review construction plans for conformity with the approved final project WQMP. If the selected BMPs were



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approved in concept during the land use entitlement process, the City shall require the applicant to submit detailed construction plans showing locations and design details of all BMPs that are in substantial conformance with the preliminary approvals. The City shall review a project's construction plans to assure that the plans are consistent with the BMP design criteria and guidance provided in **2003 DAMP Section 7, Exhibit 7.II**.

If a property owner or a private entity, such as a homeowners association (HOA), retains or assumes responsibility for operation and maintenance of structural BMPs, the City shall require access for inspection through an agreement. If the City will be responsible for operating and maintaining structural BMPs on private property, an easement will be established to allow for entry and proper management of the BMPs. Such access easements shall be binding throughout the life of the project, or until the BMPs requiring access are acceptably replaced with a BMP not requiring access.

Plan Check for Projects with By-Right Zoning (Ministerial Projects)

For Projects with by-right zoning or projects that do not need discretionary review, the City shall first review the proposed project WQMP for conformity with the requirements described in **DAMP Section 7.7** and **DAMP Section 7, Exhibit 7.II**. The approved final project WQMP shall then be used in reviewing the construction plans for consistency with the BMP design criteria and guidance provided in **DAMP Section 7, Exhibit 7.II**.

Plan Check for Public Agency Projects

Prior to initiating grading or construction activities, the City shall ensure that the construction plans for its public works projects reflect the structural BMPs described in the approved final project WQMP. In conducting the design review process for its public agency projects, the City shall review the construction plans and specifications for conformity with the approved final project WQMP and for consistency with the BMP design criteria and guidance provided in **DAMP Section 7, Exhibit 7.II**.

A-7.5.6 Permit Final, Certificates of Use and Occupancy

The project WQMP continues with the property after the completion of the construction phase. In lieu of recordation, the City will require the project WQMP to include a Notice of Transfer of Responsibility Form, which serves to notify the City that a change in ownership has occurred and notify the new owner of its responsibility to continue implementing the project WQMP. The end of the construction phase therefore represents a



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transition from the New Development/Significant Redevelopment Program. Accompanying this is a final of permits and issuance of Certificates of Use and Occupancy. The City will use this juncture to assure satisfactory completion of all requirements in the WQMP by requiring the applicant to:

- Demonstrate that all structural BMPs described in the project WQMP have been constructed and installed in conformance with approved plans and specifications, or that appropriate temporary controls are in place as per the project WQMP;
- Certify that a mechanism has been executed for the long-term funding and performance of BMP operation, maintenance, repair, and/or replacement;
- Certify that the Operation and Maintenance Plan, in the approved project WQMP will be implemented;
- Demonstrate that three (3) copies of the approved project WQMP are available onsite; and,
- For industrial facilities subject to California's General Permit for Stormwater Discharges Associated with Industrial Activity as defined by Standard Industrial Classification (SIC) code, demonstrate that coverage has been obtained by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the issuance of a Waste Discharge Identification (WDID) Number.

At a minimum, the City shall require the annual inspection and maintenance of all structural BMPs including inspection and performance of any required maintenance in the late summer/early fall, prior to the start of the rainy season.

Following satisfactory inspection, those structural BMPs agreed during the planning process to be within the City rights-of-way, or on land to be dedicated to City ownership will be accepted. Upon acceptance, responsibility for operation and maintenance will transfer from the developer or contractor to the appropriate City department, including the funding mechanism identified in the approved project WQMP.

If a property owner or private entity, such as a homeowner association (HOA), retains or assumes responsibility for operation and maintenance of structural BMPs, the City shall require access for inspection through an agreement. If the City will be responsible for operating and maintaining structural BMPs on private property, an easement will be



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established to allow for entry and proper management of the BMPs. Such access easements shall be binding throughout the life of the project, or until the BMPs requiring access are acceptably replaced with a BMP not requiring access.

Public Agency Projects

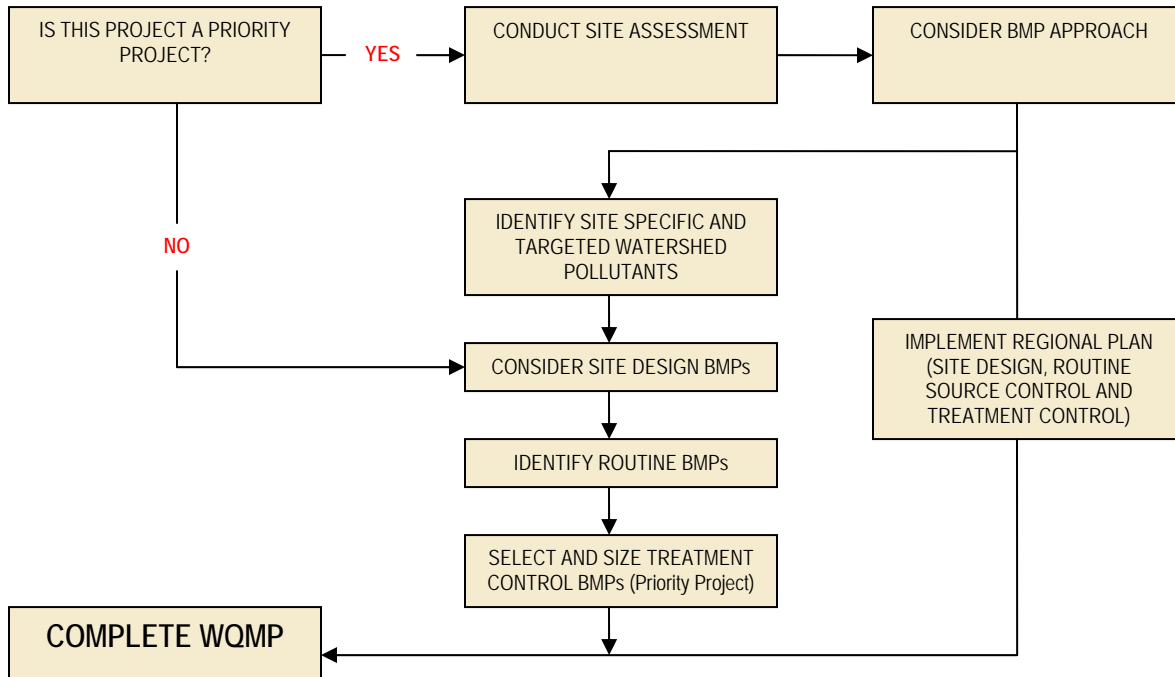
For the City's public facility projects, upon completion of construction when contract close-out occurs the responsibility for operation and maintenance of the structural BMPs will transfer from the contractor to the appropriate City department. The City has the authority to approve the transfer of structural BMPs to any other public entity within its jurisdiction and shall negotiate satisfactory operation and maintenance standards with the public agencies accepting the operation and maintenance responsibilities. Alternatively, the responsibility for the operation and maintenance of structural BMPs may be transferred to a private entity through contracts or lease agreements. In any such transfer agreement, the City shall be identified as a third-party beneficiary empowered to enforce maintenance agreements.

A-7.6 Project Water Quality Management Plan (WQMP) Preparation

In accordance with the requirements in the Development Project Review, Approval and Permitting process stated previously, the City will require project WQMPs to be prepared using the guidelines set forth in this section; the Model WQMP, provided in **2003 DAMP Section 7, Exhibit 7.II.**; and the submittal templates provided as **Exhibits A-7.2 and A-7.5.**



Elements of project WQMP development are illustrated in the following **Figure A-7.3**:



BMP Implementation

Consistent with the Model WQMP, the City will require Priority Projects to:

- Incorporate and implement all source control BMPs (routine non-structural and routine structural) unless not applicable to the project due to project characteristics, and document clearly why any applicable Source Control BMP was not included;
- Consider the implementation of site design BMPs and document those BMPs included and those not included (consistent with the Regional Program, if applicable);
- Incorporate and implement Site Design BMPs as appropriate and document those BMPs that are included;
- The combination of Source Control, Site Design, and Treatment Control BMPs or regional or watershed-based programs must adequately address all identified pollutants and hydrologic conditions of concern; and



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- Either:
 - Incorporate and implement Treatment Control BMPs, by including a selection of such BMPs into the project design (unless a waiver is granted for infeasibility of all Treatment Control BMPs, see Model WQMP, **2003 DAMP Section 7, Exhibit 7.II, Section 6.0** for details);
- or:
 - Participate in or contribute to an acceptable regional or watershed management program.

The City will require Non-Priority Projects to incorporate and implement applicable Source Control BMPs as above and consider implementing Site Design BMPs incorporate, implement and document Site Design BMPs as appropriate. Once a project reaches the plan check phase, the applicant will be required to submit the approved project WQMP together with construction plans that incorporate the selected BMPs. Projects that have not been subject to the land use entitlement process or other discretionary review will still need to prepare and obtain approval of a project WQMP, and include it with the plan check review submittal.

A-7.6.1 Project Approach

This section discusses BMP requirements for projects that will implement project-specific treatment control BMPs in the project design. Requirements for projects that will participate in or contribute to an acceptable regional program are discussed in **Section A-7.6.2**.

A combination of source control BMPs (routine non-structural and routine structural BMPs) and site design BMPs is generally the most effective means of stormwater pollution prevention and will reduce the need for treatment. The City will require treatment controls to be for all priority projects in addition to source controls to meet requirements of the Third Term Permits to minimize, to the maximum extent practicable, the discharge of pollutants to the storm drain system or receiving waters.

The categories of stormwater pollution control BMPs are summarized in **Table A-7.1**, together with applicable projects and primary pollution prevention objectives of the BMPs.



Routine Source Control BMPs

Routine source control BMPs are low-technology practices designed to prevent pollutants from contacting stormwater runoff or to prevent discharge of contaminated runoff to the municipal storm drain system. Routine non-structural source control BMPs are listed in **Table A-7.2**. Routine structural source control BMPs are listed in **Table A-7.3**.

Table A-7.1
Summary of BMPs for Development/Significant Redevelopment Projects

BMP Category		Applicable Projects	Pollution Prevention Objective
Source Control BMPs	Routine Non-Structural BMPs	Required for all projects – as applicable	Prevent pollution by educating the public on proper disposal of hazardous or toxic wastes, regulatory approaches, street sweeping and facility maintenance, and detection and elimination of illicit connections and illegal dumping
	Routine Structural BMPs	Required for project features (see Table A-7.3)	Prevent potential pollutants from contacting rainwater or stormwater runoff or to prevent discharge of contaminated runoff to receiving waters. Reduce the creation or severity of potential pollutant sources or to reduce the alteration of the project site's natural flow regime
Site Design BMPs		Shall incorporate as appropriate	Minimize or prevent potential pollutants from contacting rainwater or stormwater runoff or to prevent discharge of contaminated runoff to receiving waters.
Treatment Control BMPs		All priority projects – at least one treatment control BMP required	Remove pollutants from stormwater runoff prior to discharge to receiving waters



Table A-7.2
List of Routine Non-Structural BMPs

IDENTIFIER	NAME
N1	Education for Property Owners, Tenants and Occupants
N2	Activity Restrictions
N3	Common Area Landscape Management
N4	BMP Maintenance
N5	Title 22 CCR Compliance (How the development will comply)
N6	Local Industrial Permit Compliance
N7	Spill Contingency Plan
N8	Underground Storage Tank Compliance
N9	Hazardous Materials Disclosure Compliance
N10	Uniform Fire Code Implementation
N11	Common Area Litter Control
N12	Employee Training
N13	Housekeeping of Loading Docks
N14	Common Area Catch Basin Inspection
N15	Street Sweeping Private Streets and Parking Lots
N16	BMP has been removed and is not to be used
N17	Retail Gasoline Outlets



Table A-7.3
List of Routine Structural BMPs

Provide storm drain system stenciling and signage
Design and construct outdoor material storage areas to reduce pollution introduction
Design and construct trash and waste storage areas to reduce pollution introduction
Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control
Protect slopes and channels and provide energy dissipation
Required for the following project features: <ul style="list-style-type: none"> ▪ Private Roads ▪ Residential driveways and guest parking ▪ Loading dock areas ▪ Maintenance bays ▪ Vehicle wash areas ▪ Outdoor processing areas ▪ Equipment wash areas ▪ Parking areas ▪ Roadways ▪ Fueling areas ▪ Hillside landscaping ▪ Wash water control for food preparation areas ▪ Community car wash racks

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 stormwater 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) provides design guidance and techniques for implementing site design BMPs. Benefits derived from this approach include:



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- 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. Site Design BMPs include the design techniques listed in **Table A-7.4**

Table A-7.4
Site Design BMP Techniques

Minimize Impervious Area/Maximize Permeability (C-Factor Reduction)
Minimize Directly Connected Impervious Areas (DCIAs) (C-Factor Reduction)
Create Reduced or “Zero Discharge” Areas (Runoff Volume Reduction)
Conserve Natural Areas (C-Factor Reduction)

Fact sheets for routine structural Source Control BMPs and Site Design BMPs are presented in **Exhibit A-7.3**. The fact sheets include design criteria established to ensure effective implementation of the required Site Design BMPs and will be made available by the City.

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 to the maximum extent practicable as required by the Third Term Permit. The type of treatment control BMP(s) 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, project site conditions, receiving water conditions, and General Industrial Permit requirements, when applicable. Land requirements, and costs to design, construct and maintain treatment control BMPs vary by treatment control BMP.

Unlike flood control measures that are designed to handle peak flows, stormwater treatment control BMPs are designed to treat the more frequent, lower-flow storm events, or the first flush portions of runoff from larger storm events (typically referred to as the



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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 (SQDF) or the Stormwater Quality Design Volume (SQDV) of the stormwater runoff. Table A-7-5 lists BMPs along with the basis of design, SQDF or SQDV, to be used for designing the BMP. The Model WQMP (DAMP Section 7, Exhibit 7-II) shows the approach that should be used to calculate the SQDF and/or SQDV.

Table A-7.5
Basis of Design for Treatment Control BMPs

Table with 2 columns: Treatment Control BMP and Design Basis. Rows include Vegetated (Grass) Strips, Vegetated (Grass) Swales, Proprietary Control Measures, Dry Detention Basin, Wet Detention Basin, Constructed Wetland, Detention Basin/Sand Filter, Porous Pavement Detention, Porous Landscape Detention, Infiltration Basin, Infiltration Trench, Media Filter, and Proprietary Control Measures.

The City prefers that extended detention basins, biofilters, and constructed wetlands be used as treatment control BMPs for priority projects. However, the City will approve manufactured treatment control BMPs that have been field tested by a governmental



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agency such as the USEPA or qualified third party for a wide range of pollutants of concern in the Newport Bay watershed and that meet other City criteria.

Fact sheets are presented in **Exhibit A-7.3**. The fact sheets include design criteria established to ensure effective implementation of the required treatment BMPs.

Regional or Watershed Programs

If the option to implement a regional or watershed-based program is selected, the regional or watershed BMPs selected must be designed to provide equivalent treatment objectives for the entire area. More detailed analysis (such as detailed planning and modeling) should be employed and cross-jurisdictional issues must be clearly defined and coordinated (see **DAMP Section 7** for a more detailed discussion of the applicability of regional or watershed programs).

A-7.6.2 Regional Program Approach

This section discusses BMP requirements for priority projects that will participate in or contribute to the approved Regional Natural Treatment System (NTS) Program in lieu of project-based treatment controls. Non-priority projects need not implement treatment controls, as discussed in **Section A-7.6.1**, above.

The Regional Program approach combines project-based source control BMPs (routine non-structural and routine structural BMPs) and site design BMPs with treatment controls provided through the San Diego Creek Watershed Natural Treatment System (NTS), the City of Irvine Open Space Element, the Orange County Central/Coastal Subregional Natural Communities Conservation Planning/Habitat Conservation Plan (NCCP/HCP), and Newport Bay and the San Diego Creek Watershed 208 Plan, as a comprehensive approach for the prevention and treatment of stormwater runoff and dry weather flows within the San Diego Creek Watershed. The NTS Plan complements the regional planning efforts represented by the NCCP/HCP, which is an ecosystem-based preserve focusing on conserving a variety of natural habitat types and a range of wildlife species through the preservation of large, contiguous pieces of land. Approximately 14,000 acres of NCCP/HCP Reserve and Special Linkage Areas are located within the San Diego Creek Watershed.



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The Irvine Ranch Water District (IRWD), together with City and County partners, has prepared the NTS Plan that includes the construction, operation, and maintenance of numerous constructed wetland facilities to treat low-flow nuisance flows and small storm runoff. The NTS Plan describes regional retrofit facilities that would be built by IRWD, and local facilities that would be built by local interests and transferred to IRWD for operation and maintenance. The plan addresses runoff from both existing development as well as planned new development within the watershed, which is more comprehensive than new development controls alone. One of the intended purposes of the NTS Plan is to meet the treatment requirements otherwise required of project-based treatment controls. The NTS Plan exceeds DAMP requirements in that the sizing of the NTS facilities is typically larger than those facilities that would otherwise be required, but more importantly, the NTS facilities provide a treatment mechanism that has been demonstrated to be the most effective amongst stormwater BMP types. In addition, it provides structural treatment BMPs for low flows, which are not required under the LIP, and treats substantial natural open space areas.

The City will require source control and site design BMPs to be implemented per this section for all projects that are participating in the Regional NTS Program; in addition, priority projects will be required to utilize the treatment control provided by the Regional NTS Program, to meet requirements of the Third-Term Permit to minimize, to the maximum extent practicable, the discharge of pollutants to the storm drain system or receiving waters.

The City may approve other regional or subregional programs in addition to the approved Regional NTS Program. Such other approved regional or subregional programs are anticipated to function in similar fashion to the approved Regional NTS Program (with designated site design, source control, and treatment control BMPs) and will utilize similar documentation as the approved Regional NTS Program (see **Exhibit A-7.5**). Projects served by such other approved regional or subregional programs will be considered as following the “Regional Approach” for purposes of this Local Implementation Plan.

The categories of stormwater pollution control BMPs for the approved Regional NTS Program are summarized in **Table A-7.6**, together with applicable projects and primary pollution prevention objectives of the BMPs.

Routine Source Control BMPs



Routine source control BMPs are low-technology practices designed to prevent pollutants from contacting stormwater runoff or to prevent discharge of contaminated runoff to receiving waters. Routine non-structural source control BMPs are listed in **Table A-7.7**. Routine structural source control BMPs are listed in **Table A-7.8**.

Table A-7.6
Summary of BMPs for Development/Redevelopment Projects Participating in Regional Program

BMP Category		Applicable Projects	Pollution Prevention Objective
Source Control BMPs	Routine Non-Structural BMPs	Required for all projects – as applicable	Prevent pollution by educating the public on proper disposal of hazardous or toxic wastes, regulatory approaches, street sweeping and facility maintenance, and detection and elimination of illicit connections and illegal dumping.
	Routine Structural BMPs	Required for all projects – as applicable.	Prevent potential pollutants from contacting rainwater or stormwater runoff or to prevent discharge of contaminated runoff to receiving waters. Reduce the creation or severity of potential pollutant sources or to reduce the alteration of the project site's natural flow regime.
Site Design BMPs		Required for all projects - implementation of Site Design BMPs included in this section	Minimize or prevent potential pollutants from contacting rainwater or stormwater runoff or to prevent discharge of contaminated runoff to receiving waters.
Treatment Control BMPs		Required for all priority projects - participate in or contribute to regional program	Remove pollutants from stormwater runoff prior to discharge to receiving waters.

Table A-7.7
List of Routine Non-Structural BMPs

IDENTIFIER	NAME
N1	Education for Property Owners, Tenants and Occupants
N2	Activity Restrictions
N3	Common Area Landscape Management
N4	BMP Maintenance
N5	Title 22 CCR Compliance (How the development will comply)



Table A-7.7
List of Routine Non-Structural BMPs

IDENTIFIER	NAME
N6	Local Industrial Permit Compliance
N7	Spill Contingency Plan
N8	Underground Storage Tank Compliance
N9	Hazardous Materials Disclosure Compliance
N10	Uniform Fire Code Implementation
N11	Common Area Litter Control
N12	Employee Training
N13	Housekeeping of Loading Docks
N14	Common Area Catch Basin Inspection
N15	Street Sweeping Private Streets and Parking Lots
N16	BMP has been removed and is not to be used
N17	Retail Gasoline Outlets

Table A-7.8
List of Routine Structural BMPs

Provide storm drain system stenciling and signage
Design and construct outdoor material storage areas to reduce pollution introduction
Design and construct trash and waste storage areas to reduce pollution introduction
Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control
Protect slopes and channels and provide energy dissipation



Table A-7.8
List of Routine Structural BMPs

Required for the following project features:
<ul style="list-style-type: none">▪ Private Roads▪ Residential driveways and guest parking▪ Loading dock areas▪ Maintenance bays▪ Vehicle wash areas▪ Outdoor processing areas▪ Equipment wash areas▪ Parking areas▪ Roadways▪ Fueling areas▪ Hillside landscaping▪ Wash water control for food preparation areas▪ Community car wash racks

Fact sheets for routine structural BMPs are presented in **Exhibit A-7.3**. The fact sheets include design criteria established to ensure effective implementation of the required source control BMPs.

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 stormwater conveyance system. One approach to achieve this objective is to reduce stormwater runoff flows and volumes and reduce pollutants through appropriate site design BMPs.

DESIGN CONCEPT 1: MINIMIZE STORMWATER RUNOFF, MINIMIZE PROJECT'S IMPERVIOUS FOOTPRINT, & CONSERVE NATURAL AREAS. The following site design options shall be incorporated during the site planning and approval process, consistent with applicable General Plan policies and other development standards and regulations:

1. Landscape areas will be provided consistent with zoning agreements, village setback/parkway standards, and design objectives.
2. Natural areas shall be conserved through implementation of the Open Space Element of the General Plan and the Natural Community Conservation Plan for the



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Central/Coastal Orange County Subregion of the Coastal Sage Scrub Natural Community Conservation Program (NCCP/HCP). Development clustering per the General Plan and NCCP/HCP allows for the conservation of large amounts of contiguous natural areas and should provide more open space than conserving small natural areas on each project.

3. Construct streets, sidewalks, and parking lot aisles to the minimum widths specified in the City Land Use Code, except if there are other overriding design issues and in compliance with regulations for the Americans with Disabilities Act and safety requirements for fire and emergency vehicle access.
4. Canopy interception by planting trees will be provided consistent with City standards.
5. Use natural drainage systems in compliance with the City's drainage policy.
6. If Type A or B soils¹ are present on the project site per the NRCS Soils map, use perforated pipe or gravel filtration pits for low flow infiltration, except in hillside areas as defined in City Code.

DESIGN CONCEPT 2: MINIMIZE DIRECTLY CONNECTED IMPERVIOUS AREAS (DCIAs). Priority projects shall incorporate the following design characteristics:

1. Drain residential impervious sidewalks, walkways, trails, and patios into adjacent landscaping. Where landscaping is proposed for commercial and industrial projects,

¹ Hydrologic Soil Group Classifications are defined by the Natural Resources Conservation Service (NRCS, formerly the Soil Conservation Service) as follows:

A = (Low runoff potential). Soils having low runoff potential and high infiltration rates, even when thoroughly wetted. They consist chiefly of deep, well to excessively drained sands and gravels and have a high rate of water transmission (greater than 0.30 in/hr.).

B = (Moderately low runoff potential). Soils having moderate infiltration rates when thoroughly wetted and consist chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission (0.15-0.3 in/hr.).

C = (Moderately high runoff potential). Soils having low infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine to fine textures. These soils have a low rate of water transmission (0.05-0.15 in/hr.).

D = (High runoff potential). Soils having high runoff potential. They have very low infiltration rates when thoroughly wetted and consist of clay soils with a high swelling potential, soils with a permanent high water table, soils with a hardpan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very low rate of water transmission (0-0.05 in/hr.).

From "Urban Hydrology for Small Watershed", Technical Release 55 (TR-55), Second Edition, June 1986.



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drain sidewalks, walkways, trails, and patios into the landscaping if landscaping slopes are less than 2 percent and the project is not adjacent to steep slopes.

2. Use one or more of the following features for design of driveways and private residential parking areas in residential projects with lot sizes of $\frac{1}{3}$ acre or greater, with landscaping adjacent to the driveway or parking area, and no adjacent steep slopes:
 - a. Design driveways to drain into landscaping prior to discharging to the stormwater conveyance system.
 - b. Uncovered temporary or guest parking on private residential lots to the extent practical will be designed to drain into landscaping prior to discharging to the stormwater conveyance system.

Regional Treatment Program

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 to the maximum extent practicable.

The Irvine Ranch Water District (IRWD), in cooperation with Orange County and the Cities of Irvine, Lake Forest, Newport Beach, Orange, Santa Ana and Tustin, has developed a Natural Treatment System (NTS) Plan to address regional water quality treatment needs. The goal of the NTS Plan is to improve water quality in San Diego Creek and its tributaries, and to complement the County- and Cities-led watershed activities for compliance with TMDL targets. Secondary benefits include habitat creation and enhancement, aesthetics and recreation, and education.

The NTS Plan consists of an ecosystem-based network of constructed water quality treatment (WQT) wetlands for improving water quality in San Diego Creek. Constructed WQT wetlands are different from natural wetlands in that they are primarily designed to improve the water quality. The NTS approach is considered the best strategy for addressing regional water quality treatment needs because:

- WQT wetlands are a proven technology. The NTS Plan is an expansion of the experience and success of the existing IRWD constructed wetlands in the San Joaquin Marsh.
- A network of WQT wetlands address pollutant sources from existing and future development, as well as pollutants from diverse sources.



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- WQT wetlands can enhance habitat and natural resources in the watershed.

Constructed wetlands are an acceptable treatment control BMP under the Orange County Model Water Quality Management Plan. Therefore, the participation in the Regional NTS Program satisfies the requirement to provide treatment controls for priority projects.

The NTS Plan is comprised of WQT wetlands at 32 sites distributed throughout the watershed. The wetlands are categorized into three general configurations:

1. Wetlands that are adjacent to existing stream channels (Off-Line facilities)
2. Wetlands established within existing stream channels (In-Line facilities)
3. Wetlands that are incorporated within existing and planned flood control detention basins

The NTS Plan also includes one facility in Peters Canyon Wash (Site 67) that is specifically designed to remove selenium from dry weather base flows. This facility, all Type 2 facilities (in-line facilities), and some Type 1 facilities may not be used as treatment control for new development and significant redevelopment projects, as these facilities are not designed to treat stormwater runoff.

A list of proposed NTS facilities designed to treat stormwater runoff that will be located within the City as of March 2003 is provided in **Table A-7.9**. The facilities and their drainage areas are shown on the following Irvine Ranch Water District Figure A-6.2. Use of one of these Regional NTS facilities for treatment control, or any new facilities designed to treat stormwater runoff added to the NTS Plan in the future, is acceptable provided that construction of the facility is completed (or an equivalent temporary alternative is put in place) prior to the post-construction use of any new development or significant redevelopment project. The construction of Regional NTS facilities may be phased so that adequate treatment capacity is available for portions of development projects as they are completed. Further information on the NTS facilities is presented in the San Diego Creek NTS Master Plan.



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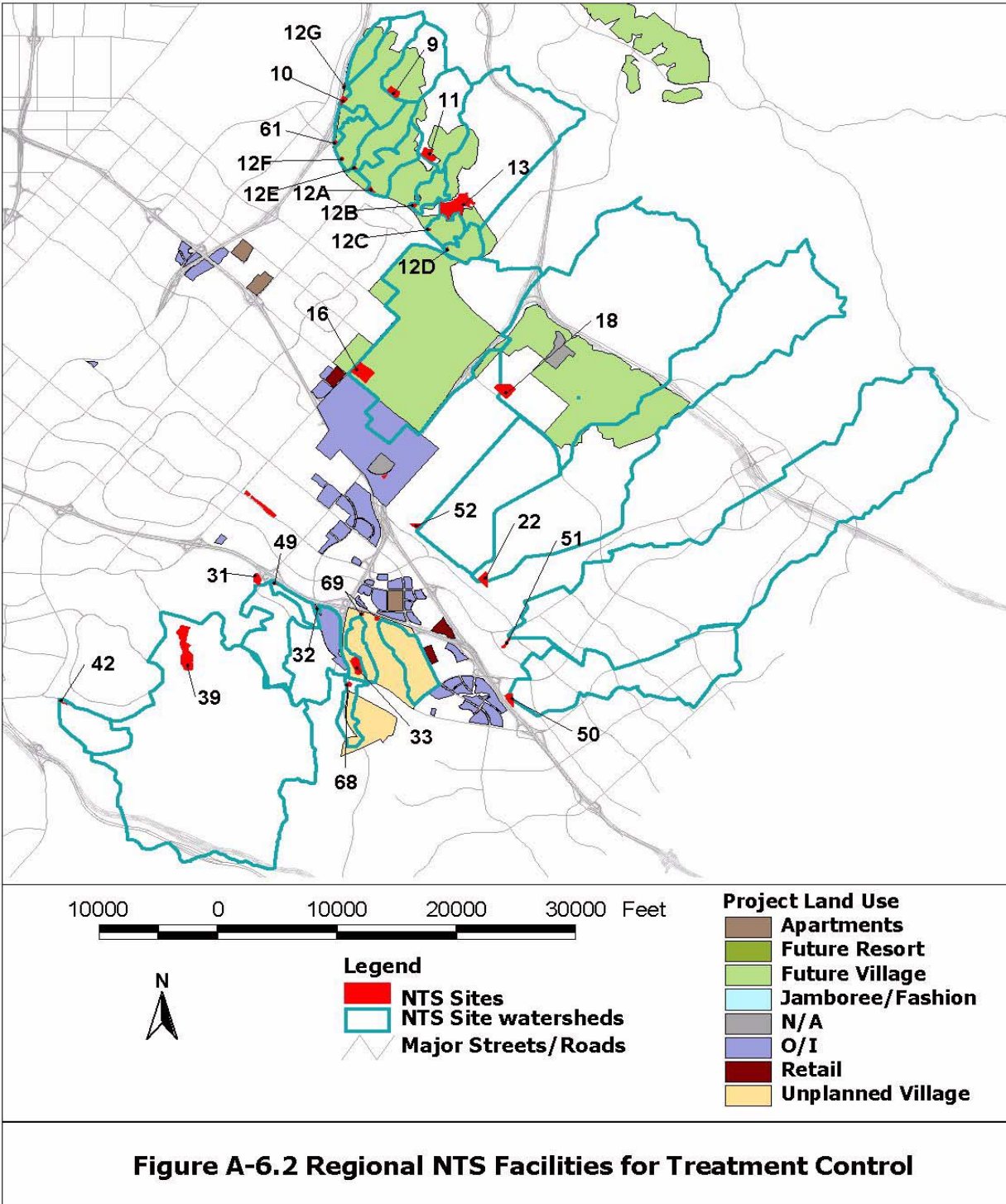




Table A-7.9
Regional NTS Facilities in Irvine for Treatment Control

Site Number	Site Name
9	PA 1 – Eastfoot Retarding Basin
10	PA 1 – Eastfoot Upper
11	PA 1 – Orchard Estates Retarding Basin
12a – 12g	PA 1 – Lower Orchard Estates
13	PA 1 - Rattlesnake Reservoir
16	PA 9 - Trabuco Retarding Basin
18	PA 6 - Marshburn Retarding Basin
22*	MCAS El Toro (Great Park) – Agua Chinon Lower
50*	MCAS El Toro (Great Park) – Irvine Auto Center
51*	MCAS El Toro (Great Park) – Serrano
52*	MCAS El Toro (Great Park) – Bee Canyon
61	PA 1 – Eastfoot Lower
68	PA 18
69a-c	PA 39
69d-e	PA 18
70a-c	PA 6
71	PA 6

* Not yet approved by the Regional Board

Unlike flood control measures that are designed to handle peak flows, stormwater treatment control BMPs are designed to treat the more frequent, lower-flow 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 (SQDF) or the Stormwater Quality Design Volume (SQDV) of the stormwater runoff. Water quality wetlands are designed on a volume basis. Therefore, the SQDV shall be provided for the project through the regional program. The Model WQMP (DAMP Section 7, Exhibit 7-II) shows the approach that should be used to calculate the SQDV.

On May 23, 2005, the Santa Ana Regional Water Quality Control Board made a consistency determination (consistent with the Clean Water Act, DAMP, and Order No. R8-2002-0010) for the use of specific Irvine Ranch Water District NTS sites as a regional treatment system. Sixteen of the proposed NTS sites met the requirements established in the Model WQMP/MS4 Permit and may be used as structural treatment BMPs for the Planning Areas they are designated to serve.



Although 16 sites were approved, the Regional Board indicated that additional information would need to be provided for the other NTS sites prior to their approval for use as a regional treatment system. As of **June 30, 2007**, all but **four** of the NTS sites were approved by the Regional Board as shown on **Table A-1.1** below.

Table A-1.1 below lists the NTS sites within the City of Irvine and those that have been approved by the Regional Board.

NTS Site No.	Planning Area	Does it Meet Sizing Requirement?	Approval Status (As of June 30, 2007)
9	PA 1	Yes	Approved
10	PA 1	Yes	Approved
11	PA 1	Yes	Approved
12a-f	PA 1	Yes	Approved
12g	PA 1	Yes	Approved
61	PA 1	Yes	Approved
13	PA 1	Yes	Approved
18	PA 6	Yes	Approved
70A-C	PA 6	Yes	Approved
71	PA 6	Yes	Approved
69A-C	PA 39	Yes	Approved
69D-E	PA 18	Yes	Approved
68	PA 18	Yes	Approved
22	MCAS (Great Park)	No	Needs additional information prior to approval
50	MCAS (Great Park)	No	Needs additional information prior to approval
51	MCAS (Great Park)	No	Needs additional information prior to approval
52	MCAS (Great Park)	No	Needs additional information prior to approval
16	PA 9	Yes	Approved

A-7.7 Post Construction BMP Inspection and Verification

The City will conduct verifications to assure that implementation and appropriate maintenance described in the project WQMP are taking place at structural and non-structural BMPs during the post construction phase. Assessment of BMP effectiveness will take place during verification. The goal is to perform verifications at 90% of developments with approved project WQMPs during the Third Term Permit period. The number of



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verifications necessary to achieve the above goal will be based on either the total area of approved project WQMP projects, or the total number of project WQMPs approved.

Verification of BMP implementation and ongoing maintenance will be conducted by inspection, self-certifications, surveys, or other equally effective approaches. A summary of the inspections conducted and any assessments of effectiveness will be provided in the annual progress report.

A-7.8 Education and Training

To assist responsible municipal staff and contract staff in understanding the 2003 DAMP's Model New Development/Significant Redevelopment Program, annual training sessions will be conducted. In addition to Permittee sponsored training, staff may also attend training seminars or workshops related to general water quality and stormwater management during construction, conducted by other organizations.

A-7.8.1 Training Modules

Two training modules have been prepared that cover different aspects of the Model New Development/Redevelopment Program. These modules are provided in **2003 DAMP Appendix B-7**.

New Development/Significant Redevelopment Program Management (2003 DAMP Appendix B, Exhibit B-7.I)

This training module is for Permittee Stormwater Program managers and the managers of a Permittee's planning and building departments. It provides an overview of the Stormwater Program as it pertains to a Permittee's General Plan, the preparation and review of environmental documents (Initial Studies, EIRs, Negative Declarations, Mitigated Negative Declarations, etc.), conditions of approval for projects, the review of project WQMPs, plan check, and permit closeout. The training module also briefly describes a Permittees' responsibility for verifying and inspecting permanent BMPs and for assessing the effectiveness of the New Development/Significant Redevelopment Program element.

Project Planning and Design: Environmental Review, Planning and Permitting, and project WQMP Development (DAMP Appendix B, Exhibit B.7.II)



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This training module is targeted to planners, plan checkers, developers and engineers, and will address: the laws and regulations applicable to new development/significant redevelopment; the connection between new development/significant redevelopment and water quality; how to review and prepare CEQA compliance documents with regard to stormwater/urban runoff effects; how to develop and review a project WQMP; and how to design and incorporate into a project, Source Control, Site Design and Treatment Control BMPs to minimize impact to receiving waters.

A-7.8.2 Record Keeping

Records of training provided to City staff will be maintained to allow a determination of:

- Which staff require which training
- When training sessions were conducted
- Compliance with the permit requirement

In addition to the Permittee-sponsored training, City staff may also attend various other workshop or training events as they take place throughout the year. These types of events may include local or national organization sponsored training.

A-7.9 Program Assessment

The City will submit an annual progress report (Program Effectiveness Assessment) each year to the Principal Permittee (see **2003 DAMP Appendix C-7**). This report will provide the basis for evaluating the City's efforts towards the reduction of pollutants from new development and significant redevelopment. The annual progress report will demonstrate a commitment to pollution prevention and source reduction processes in new development/redevelopment projects in the City. Future annual progress reports will include:

- Changes made to the City's General Plan, CEQA and development review processes;
- Information on project WQMPs approved and verified by the City; and
- Documentation of training received by the City staff.