

IV C 3, 6, 7 & 8-Development Planning Review
City of Malibu
FY 2011-2012

3. List the types and numbers of BMPs that your agency required for priority projects to meet the requirements described above.

Twelve (12) projects are listed as having completed the development planning review stage and have been approved to proceed with issuance of permits for development. The types of BMPs installed include catch basins with filters, trench drains, landscaping/vegetated bio-filters, permeable pavers, a cistern, and general good housekeeping BMPs. See more details about these BMPs in the attached table.

The City requires that BMPs be installed and/or implemented but cannot be prescriptive as to what is specifically installed on a project. The Standard Urban Stormwater Mitigation Plan (SUSMP) requirements including the Water Quality Mitigation Plan (WQMP) and associated BMPs are imposed in the conditions of approval on projects. These conditions are largely derived from the Local Coastal Plan (LCP). However, the Local Coastal Plan (LCP) Local Implementation Plan (LIP) provides examples of what are acceptable BMPs in Chapter 17 Water Quality Protection Ordinance Appendix A and Appendix B Table 3. Chapter 17 of the LIP, relevant appendices, and some BMP definitions are attached at the end of this document. The LCP in its entirety is available for review at www.malibucity.org.

When a project is required to meet SUSMP criteria, the City tracks the BMPs proposed as part of the plan. This SUSMP log recording the projects that completed the review process and were likely issued permits this year is included at the end of this document. The log illustrates the address of each project and the types of BMPs that will be constructed or implemented as part of the project's Water Quality Mitigation Plan (WQMP) for post construction BMPs (SUSMP requirement).

6. Describe the process your agency uses to include SUSMP design standards in new development and redevelopment project approvals.

Development Planning Review

All development and re-development in the City is subject to review through the Development Planning process. During this process, projects are reviewed for compliance with standards found in the City's LCP (including the Local Implementation Plan and Land Use Plan), the State Water Resources Control Board Orders, the California Environmental Quality Act (CEQA), the City's Municipal Code, local requirements as a result of the City's coverage under a municipal NPDES permit, and local wastewater treatment requirements. Projects requiring issuance of a Coastal Development Permit (CDP) are subject to review and approval of Planning Commission. Projects that do not pose a threat to or have the potential to impact coastal resources may be subject to either Administrative Planning Review (APR) or issuance of other permits. Upon submittal of a development application, a development project is reviewed by applicable City Departments and agencies for compliance with all of the standards and regulations mentioned above, which may include review by the Planning Department and the City Biologist, Public Works Department, the City Geologist, the Coastal

Engineer and Environmental Health Administrator and the Los Angeles County Fire Department. During the Public Works review, the Department determines whether the project will need to meet SUSMP requirements. During this Development Planning review, the Departments generate proposed conditions of approval which are then included in the development permit and imposed by the Planning Commission or administratively by the Planning Director, depending on the specifics of the project.

These conditions of approval recommended by the Public Works Department include conditions required for compliance with the NPDES Permit and the Planning Development requirement to complete a SUSMP, or the plan locally referred to as a Water Quality Mitigation Plan (WQMP). After approval of the Planning permit, detailed construction plans are submitted to the Environmental Sustainability Department for building plan check, in preparation for issuance of grading and building permits. Any development project submitted for plan check that includes any grading or new construction is referred to the plan check engineer in Public Works. The applicant is directed to the online BMP handbook for assistance and is also required to have an approved drainage and erosion control plan.

7. How many of each of the following projects did your agency review and condition to meet SUSMP requirements last year?

i. Total number of permits issued to priority projects

The City reviewed and imposed conditions and mechanisms for stormwater management and mitigation on fifty-eight (58) new projects this year (this number represent the projects that were reviewed in the Development Planning stage, and conditioned to meet the provisions of the SUSMP *during this reporting year*). After this initial review, a proposed project proceeds to development permit review and these conditions will be included on any City issued development permits. Due to the extensive planning and environmental review procedures in Malibu, few projects are able to obtain development permits, let alone final building permit approval within the same year that the review began. It is not uncommon for it to take several years before development planning review is completed and building permits are issued to begin construction. Also, while the City imposed these development conditions on 58 projects, this number includes projects that have not yet been approved for development permits, and projects that may be or have been ultimately denied by the Planning Commission. The City tracks development planning conditions during the review stage only. However, the City has contracted with a consultant for new permitting software that will provide for more accurate tracking of projects from application through the permit process.

As explained in question #3 above, 12 of these 58 projects have recorded covenants indicating a high likelihood that this project will proceed to development and obtaining building permits.

8. What is the percentage of total development projects that were conditioned to meet SUSMP requirements?

37 projects were conditioned to meet SUSMP requirements out of 199 total reviewed or 18%. As explained above in Section IV.C.3, due to the unusually stringent review procedures in Malibu, most projects do not receive permits (neither development planning nor building permits) in the same year that the review process begins and it is not uncommon for a

development application to take longer than two years from submittal to when building permits are finally pulled. So, even though the City has many pending projects, many have not yet been conditioned because they have not completed the initial review process through to the final development planning permitting and conditioning stage (i.e. Planning Commission) and actually pulled building permits. This number also includes projects that may have been ultimately denied or in which a final decision on the application has yet to be made.

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ID	ADDRESS	BMP 1	BMP 2	BMP 3	BMP 4	BMP 5	BMP 6	BMP 7
1	28891 Cliffside Dr	Kristar FloGard Plus catch basin filter insert	24" Catch basin					
2	7211 Birdview Ave	Kristar Flogard Filter Insert	Vegetated swales	Bioretention Landscape	cistern			
3	30822 Broad Beach Rd	trench drain	2- 12"x12" Catch basins	3- 6" area drains				
4	28891 Cliffside Dr	FloGard Plus catch basin & filter	Non-stormwater infiltration device					
5	31260 Broad Beach Rd	2- Kristar Flogard catch basin filter inserts						
6	30980 Broad Beach Rd	Flogard Lopro filter insert	trench drain	2- 6" drains to french drain system				
7	30822 Broad Beach Rd	12"X12" catch basins	trench drain					
8	27712/ 27716 PCH	Triton catch basin inserts						
9	23354 Malibu Colony Dr	Flogard Plus catch basin filter insert						
10	30215 Morning View Dr	19- Flogard catch basin & filter inserts	3- Contech Stormfilters	Contech CMP detention system	2- trench drains	4- vegetated swales	6- bio retention planters	cistern
11	25236 Malibu Road	Flogard LoPro filter insert	trench drain					
12	28884 Cliffside Dr	3- Catch basins	bio filtration planter	porous pavers				

CHAPTER 17—WATER QUALITY PROTECTION ORDINANCE

17.1. PURPOSE AND INTENT

The purpose of this Chapter is to protect and enhance coastal waters within the City of Malibu in accordance with the policies of the City’s Local Coastal Plan, Sections 30230, 30231, 30232 and 30240 of the California Coastal Act, and the City’s municipal NPDES permit requirements under the Regional Water Quality Control Board. To implement the certified Land Use Plan, application submittal requirements, development standards, and other measures are provided to ensure that permitted development shall be sited and designed to conserve natural drainage features and vegetation, prevent the introduction of pollutants into coastal waters, and protect the overall quality of coastal waters and resources.

The intent of this Chapter is to address the following principles:

- A. All development should be evaluated for potential adverse impacts to water quality and applicants should consider Site Design, Source Control and Treatment Control BMPs in order to prevent polluted runoff and water quality impacts resulting from the development. Site Design BMPs reduce the need for Source and/or Treatment Control BMPs, and Source Control BMPs may reduce the amount of Treatment Control BMPs needed for a development. Therefore, BMPs should be incorporated into the project design in the following progression:
- Site Design BMPs
 - Source Control BMPs
 - Treatment Control BMPs
- B. All development should be designed to prevent the introduction of pollutants that may result in water quality impacts. Projects should be designed to control post-development peak runoff rates and average volumes to maintain or reduce pre-development downstream erosion rates. These objectives can be accomplished through the creation of a hydrologically functional project design that strives to mimic the natural hydrologic regime and by achieving the following goals:
- Maintain and use natural drainage courses and vegetation
 - Conserve natural resources and areas by clustering development on the least environmentally sensitive portions of a site while leaving the remaining land in a natural, undisturbed condition
 - Reduce the amount of directly connected impervious surface and total area of impervious surface
 - Incorporate on-site retention and infiltration measures
 - Direct rooftop runoff to permeable areas rather than driveways or impervious surfaces to reduce the amount of storm water leaving the site
 - Minimize clearing and grading

Incorporating these goals and principles into the project design will help to prevent the introduction of pollutants to the site and decrease the amount of polluted runoff leaving the site, resulting in the overall objective of water quality protection. Sections 17.4, 17.5 and 17.6 of the Malibu LIP describe the requirements

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and process for implementing BMPs into development and provide examples of types of BMPs to incorporate.

17.2. APPLICABILITY

All properties within the City of Malibu are located within the coastal zone as defined in the California Coastal Act and are subject to the policies, standards and provisions of this Chapter, in addition to any other policies or standards contained elsewhere in the certified LCP that may apply. Where any policy or standard provided in this Chapter conflicts with any other policy or standard contained in the City's General Plan, Zoning Code or other City-adopted plan, resolution or ordinance not included in the certified Malibu LCP, and it is not possible for the development to comply with both the Malibu LCP and other plans, resolutions or ordinances, the policies, standards or provisions described herein shall take precedence.

17.3. APPLICATION SUBMITTAL REQUIREMENTS

The following plans shall be submitted with an application for a Coastal Development Permit according to the requirements listed below.

17.3.1. Construction Phase Requirements: Local Storm Water Pollution Prevention Plan

A. A Local Storm Water Pollution Prevention Plan (SWPPP) shall be required for all development that requires a Coastal Development Permit and a grading or building permit, and it shall apply to the construction phase of the project. The SWPPP shall include:

- Property limits, prior-to-grading contours, and details of terrain and area drainage
- Locations of any buildings or structures on the property where the work is to be performed and the location of any building or structures of adjacent owners that are within 15 ft of the property or that may be affected by the proposed grading operations
- Locations and cross sections of all proposed temporary and permanent cut-and-fill slopes, retaining structures, buttresses, etc., that will result in an alteration to existing site topography (identify benches, surface/subsurface drainage, etc.)
- Area (square feet) and volume (cubic yards) of all grading (identify cut, fill, import, export volumes separately), and the locations where sediment will be stockpiled or disposed
- Elevation of finished contours to be achieved by the grading, proposed drainage channels, and related construction
- Details pertaining to the protection of existing vegetation from damage from construction equipment, for example: (a) grading areas should be minimized to protect vegetation; (b) areas with sensitive or endangered species should be demarcated and fenced off; and (c) native trees that are located close to the construction site should be protected by wrapping trunks with protective materials, avoiding placing fill of any type against the base of trunks, and avoiding an increase in soil depth at the feeding zone or drip line of the retained trees
- Clearing and grading during the rainy season (extending from November 1 to March 31) shall be prohibited for development that:
 - Is located within or adjacent to ESHA, or

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- Includes grading on slopes greater than 4:1
- Approved grading for development that is located within or adjacent to ESHA or on slopes greater than 4:1 shall not be undertaken unless there is sufficient time to complete grading operations before the rainy season. If grading operations are not completed before the rainy season begins, grading shall be halted and temporary erosion control measures shall be put into place to minimize erosion until grading resumes after March 31, unless the City determines that completion of grading would be more protective of resources
- Information on potential flow paths where erosion may occur during construction
- Proposed erosion and sediment prevention and control BMPs, both structural and non-structural, for implementation during construction, such as:
 - Stabilize disturbed areas with vegetation, mulch, geotextiles, or similar method
 - Trap sediment on site using fiber rolls, silt fencing, sediment basin, or similar method
 - Ensure vehicles on site are parked on areas free from mud; monitor site entrance for mud tracked off-site
 - Prevent blowing dust from exposed soils
- Proposed BMPs to provide adequate sanitary and waste disposal facilities and prevent contamination of runoff by construction chemicals and materials, such as:
 - Control the storage, application and disposal of pesticides, petroleum and other construction and chemical materials
 - Site washout areas more than fifty feet from a storm drain, open ditch or surface water and ensure that runoff flows from such activities do not enter receiving water bodies
 - Provide sanitary facilities for construction workers
 - Provide adequate disposal facilities for solid waste produced during construction and recycle where possible

17.3.2. Post Construction Phase Requirements: Storm Water Management Plan

Post construction plans detailing how stormwater and polluted runoff will be managed or mitigated will be required for all projects that require a Coastal Development Permit. The basic requirement for all projects will be a Storm Water Management Plan that shows how the project will use appropriate Site Design and Source Control BMPs to minimize or prevent adverse effects of the project on water quality. For certain categories of development (see 17.3.3 of the Malibu LIP below) a Water Quality Mitigation Plan will be required showing how Treatment Control (or Structural) BMPs will be used (in addition to Site Design and Source Control BMPs) to minimize or prevent the discharge of polluted runoff from the project.

A Storm Water Management Plan (SWMP) shall be required for all development that requires a Coastal Development Permit and shall require the implementation of appropriate Site Design and Source Control BMPs from Section 17.5 of the Malibu LIP and Appendix A to minimize or prevent post-construction polluted runoff. The SWMP should also specify any Treatment Control or Structural BMPs that the applicant elects to include in the development to minimize or prevent post-construction polluted runoff, and include the operation and maintenance plans for these BMPs.

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- A. The SWMP shall be certified by a California Registered Civil Engineer or Licensed Architect and approved by the City's Department of Public Works. The following information shall be included in a SWMP:
- Site design and source control BMPs that will be implemented to minimize or prevent post-construction polluted runoff (see 17.4.1 of the Malibu LIP)
 - Drainage improvements (e.g., locations of diversions/conveyances for upstream runoff)
 - Potential flow paths where erosion may occur after construction
 - Methods to accommodate onsite percolation, revegetation of disturbed portions of the site, address on-site and/or offsite impacts and construction of any necessary improvements
- B. In addition to the requirements in A. above, the SWMP shall implement the requirements for a SWMP found in the Malibu Storm Water Code, Section 5.4.09, described below:
1. Storm Water Pollution Prevention Plan (SWPPP), as required in Section 17.3.1. of the Malibu LIP above.
 2. Storm drainage improvement measures to mitigate any offsite/downstream negative impacts due to the proposed development, including, but not limited to:
 - a. Mitigating increased runoff rate due to new impervious surfaces through onsite detention such that peak runoff rate after development does not exceed the peak runoff of the site before development for the 100 year clear flow storm event (note; Q/100 is calculated using the Caltrans Nomograph for converting to any frequency, from the Caltrans "Hydraulic Design and Procedures Manual"). The detention basin/facility is to be designed to provide attenuation and released in stages through orifices for 2-year, 10-year and 100-year flow rates, and the required storage volume of the basin/facility is to be based upon 1-inch of rainfall over the proposed impervious surfaces plus 1/2-inch of rainfall over the permeable surfaces. All onsite drainage devices, including pipe, channel, and/or street & gutter, shall be sized to cumulatively convey a 100 year clear flow storm event to the detention facility, or;
 - b. Demonstrating by submission of hydrology/hydraulic report by a California Registered Civil Engineer that determines entire downstream storm drain conveyance devices (from project site to the ocean outlet) are adequate for 25-year storm event, or;
 - c. Constructing necessary off-site storm drain improvements to satisfy b. above, or;
 - d. Other measures accomplishing the goal of mitigating all offsite/downstream impacts.

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3. Storm drain pollution prevention measures including all construction elements and Best Management Practices (BMPs) to address the following goals in connection with both construction and long-term operation of the site:
 - a. Maximize, to the extent practicable, the percentage of permeable surfaces in order to allow more percolation of runoff into the ground,
 - b. Maximize, to the extent practicable, retention of dry-weather runoff onsite to allow percolation into the ground, or installation of other treatment measures thereby preventing pollutants from entering the storm drain system.
 4. The applicant is required to comply with the approved SWMP.
- C. The City of Malibu will review a SWMP according to the following requirements, found in the City of Malibu Storm Water Code, Section 5.4.09:
1. The City's evaluation of the SWMP will ascertain how well the proposed plan meets the combined objectives set forth above. In addition, the City will analyze the watershed characteristics and land uses, and estimate water quality requirements for each project. Each plan will be evaluated on its own merits according to the particular characteristics of the project and the site to be developed.
 2. The SWMP shall be approved or disapproved by the Director of Public Works (or designees) within twenty-one (21) calendar days following submittal. If the plan is disapproved, the reasons for disapproval shall be given in writing to the applicant and made available to the public.
 3. Full or partial waivers of compliance with this Section may be obtained for development sites where it can be adequately demonstrated that the accomplishment of these storm drain management measures is an economic and/or physical impossibility due to the particular configuration of the site. Requests for waivers must be approved, in writing, by the Planning Department, the Public Works Department, and the Environmental and Building Safety Department. A variance under Section 13.26 of the LIP from any requirements of this section shall not be granted.

17.3.3. Post Construction Phase Requirements: Water Quality Mitigation Plan

Post construction plans detailing how stormwater and polluted runoff will be managed or mitigated will be required for all projects that require a Coastal Development Permit. The basic requirement for all projects will be a Storm Water Management Plan (see 17.3.2 above) that shows how the project will use appropriate Site Design and Source Control BMPs to minimize or prevent adverse effects of the project on water quality. For certain categories of development a Water Quality Mitigation Plan¹ will be required showing how Treatment Control (or Structural) BMPs will be used (in addition to Site Design and Source Control BMPs) to minimize or prevent the discharge of polluted runoff from the project.

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A Water Quality Mitigation Plan (WQMP) shall be required for all development that requires a Coastal Development Permit and is in a category of development identified in 17.3.3.A. below. In addition to the Site Design and Source Control BMPs required for a Storm Water Management Plan, the WQMP shall include Treatment Control (or Structural) BMPs identified in Appendix A to minimize or prevent post-construction polluted runoff. The WQMP shall also include the operation and maintenance plans for these BMPs.

A. A WQMP shall be required for projects that fall into one or more of the following categories of development:

- Single family hillside² residential developments (1 acre or more of disturbed area)
- Beachfront developments (2500 square feet or more of impervious surface area)
- Housing developments (includes single family homes, multifamily homes, condominiums, and apartments) of ten units or more
- Industrial/commercial development (1 acre or more of impervious surface area)
- Automotive service facilities (5,000 square feet or more of impervious surface area)
- Retail gasoline outlets (5,000 square feet or more of impervious surface area)
- Restaurants (5,000 square feet or more of impervious surface area)
- Parking lots (5,000 square feet or more of impervious surface area or with 25 or more parking spaces)
- Projects that are 2500 square feet or more of impervious surface area and discharge to an ESHA
- Redevelopment projects that result in the creation or addition or replacement of 5,000 square feet or more of impervious surface area on an already developed site

B. The WQMP shall be certified by a California Registered Civil Engineer or Licensed Architect and approved by the City's Department of Public Works. The following information shall be included in a WQMP:

- Site design, source control and treatment control BMPs that will be implemented to minimize or prevent post-construction polluted runoff (see 17.4.1 and 17.4.2)
- Pre-development peak runoff rate and average volume
- Drainage improvements (e.g., locations of diversions/conveyances for upstream runoff)

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- Potential flow paths where erosion may occur after construction
- Expected post-development peak runoff rate and average volume from the site with all proposed non-structural and structural BMPs
- Methods to accommodate onsite percolation, revegetation of disturbed portions of the site, address on-site and/or offsite impacts and construction of any necessary improvements
- Measures to treat, infiltrate, or filter runoff from impervious surfaces (e.g., roads, driveways, parking structures, building pads, roofs, patios, etc.) on the subject parcel(s) and to discharge the runoff in a manner that avoids erosion, gullyng on or downslope of the subject parcel, ponding on building pads, discharge of pollutants (e.g., oil, heavy metals, toxics) to coastal waters, or other potentially adverse impacts. Such measures may include, but are not limited to, the use of structures (alone or in combination) such as onsite desilting basins, detention ponds, dry wells, biofilters, etc.
- A long-term plan and schedule for the monitoring and maintenance of all drainage-control devices. All structural BMPs shall be inspected, cleaned, and repaired when necessary prior to September 30th of each year. Owners of these devices will be responsible for insuring that they continue to function properly and additional inspections should occur after storms as needed throughout the rainy season. Repairs, modifications, or installation of additional BMPs, as needed, should be carried out prior to the next rainy season.

The City Engineer, or his/her designee, who reviews coastal development permits shall determine if the development requires post-development BMP efficacy monitoring and shall approve the monitoring program.

- C. In addition to implementing the requirements in A. and B. above for a WQMP, the City will implement the following measures, consistent with SUSMP requirements, as described in the Malibu Storm Water Code, Section 5.4.09.5:
1. Issuance of Discretionary Permits. No Discretionary permit may be issued for any New Development or Redevelopment Project identified in Section 17.3.3. until the Authorized Enforcement Officer confirms that either (1) the project plans comply with the applicable WQMP requirements, or (2) compliance with the applicable WQMP requirements is impracticable for one or more of the reasons set forth below in paragraph 3 regarding issuance of waivers. Where a Redevelopment project results in an increase of less than fifty percent (50%) of the impervious surfaces of a previously existing development, and the existing development did not require a WQMP at the time the last Discretionary approval was granted by the City, the Design Standards set forth in the WQMP will apply only to the addition, and not to the entire development.
 2. Issuance of Certificates of Occupancy. As a condition for issuing a Certificate of Occupancy for a New Development or Redevelopment Project identified in Section 17.3.3., the Authorized Enforcement Officer shall require facility operators and/or owners to build all of the storm water pollution control Best Management Practices and Structural or Treatment Control BMPs that are

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shown on the approved project plans and to submit a signed Certification Statement stating that the site and all Structural or Treatment Control BMPs will be maintained in compliance with the WQMP and other applicable regulatory requirements.

3. Granting of Waiver. The Authorized Enforcement Officer shall have the authority to grant a waiver to a Development or Redevelopment Project from the requirements of the WQMP, if impracticability for a specific property can be established by the project applicant. A waiver of impracticability may be granted only when all Structural or Treatment Control BMPs have been considered and rejected as infeasible. Recognized situations of impracticability are limited to the following, unless approved by the Regional Board³:
 - a. Extreme limitations of space for treatment on a Redevelopment project;
 - b. Unfavorable or unstable soil conditions at a site to attempt infiltration; and
 - c. Risk of ground water contamination because a known unconfined aquifer lies beneath the land surface or an existing or potential underground source of drinking water is less than ten (10) feet from the soil surface.
4. A variance under Section 13.26 of the LIP from the requirements of the WQMP shall not be granted.
5. CEQA. Provisions of this section shall be complementary to, and shall not replace, any applicable requirements for storm water mitigation required under the California Environmental Quality Act.

¹ The Water Quality Mitigation Plan is essentially a local version of the model Standard Urban Stormwater Mitigation Plan (SUSMP) required by the RWQCB for these categories of development.

² "HILLSIDE" means property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is twenty-five percent (25%) or greater.

³ Note that the Standard Urban Storm Water Mitigation Plan (SUSMP) for Los Angeles County and Cities in Los Angeles County (March 8, 2000) specifies that except for those three situations above, "Any other justification for impracticality must be separately petitioned by the City and submitted to the Los Angeles Regional Water Quality Control Board for consideration. A waiver granted by the City to any development or redevelopment project may be revoked by the Regional Board Executive Officer for cause and with proper notification upon petition."

17.3.4. Verification of Ongoing BMP Maintenance and Conditions of Transfer

All applicants shall provide verification of maintenance provisions for Structural and Treatment Control BMPs, including but not limited to legal agreements, covenants, CEQA mitigation requirements, and conditional use permits. Verification at a minimum shall include:

- The developer's signed statement accepting responsibility for maintenance until the responsibility is legally transferred; and either
- A signed statement from the public entity assuming responsibility for Structural and Treatment Control BMP maintenance and that it meets all local agency design standards; or

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- Written conditions in the sales or lease agreement, which require the recipient to assume responsibility for maintenance and conduct a maintenance inspection at least once a year; or
- Written text in project conditions, covenants, and restrictions (CCRs) for residential properties assigning maintenance responsibilities to the Home Owners Association for maintenance of the Structural and Treatment Control BMPs; or
- Any other legally enforceable agreement that assigns responsibility for the maintenance of post-construction Structural and Treatment Control BMPs.

17.3.5. Water Quality Mitigation Plan for Agricultural and Confined Animal Facility Development

- A. New and/or expanded agricultural development, including vineyards and orchards, and the development of confined animal facilities, shall require a Coastal Development Permit if it involves placement or erection of any solid material or structure; grading, removing, dredging, mining, or extraction of any materials; change in intensity of use of land; or removal of significant native vegetation, except for residential vegetable gardens that meet the conditions for an exemption from the Coastal Development Permit requirements under Section 13.4.1 of this Ordinance. For this type of development, a Water Quality Mitigation Plan for Agricultural and Confined Animal Facility Development (WQMP-Ag) shall be developed in order to minimize or prevent polluted runoff and water quality impacts resulting from the development. The WQMP-Ag shall be submitted with an application for a Coastal Development Permit and shall include the following measures:
1. Minimize erosion and prevent excessive sediment and pollutants from adversely impacting water quality by incorporating BMPs such as:
 - a. Diversions
 - b. Grassed waterways
 - c. Sediment basins
 - d. Terraces
 - e. Critical area planting
 - f. Crop residue use
 - g. Conservation cover
 - h. Filter strips

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2. Minimize the release of pesticides into the environment by implementing Integrated Pest Management (IPM) strategies that apply pesticides only when an economic benefit to the producer will be achieved and apply pesticides efficiently and at times when runoff losses are least likely shall be implemented. Pesticide runoff shall be carefully managed in a comprehensive manner, including evaluating past and current pest problems and cropping history, evaluating the physical characteristics of the site, selecting pesticides that are the most environmentally benign, using anti-backflow devices on hoses used for filling tank mixtures, and providing suitable mixing, loading and storage areas.
3. Minimize nutrient loss by developing and implementing comprehensive nutrient management plans based on crop nutrient budgets, identification of the types, amounts and timing of nutrients necessary to produce a crop based on realistic crop yield expectations and identification of onsite environmental hazards.
4. Reduce water loss to evaporation, deep percolation and runoff, remove leachate efficiently, and minimize erosion from applied water by implementing a managed irrigation system that includes the following components:
 - a. Irrigation scheduling
 - b. Efficient application of irrigation water
 - c. Efficient transport of irrigation water
 - d. Use of runoff or tailwater
 - e. Management of drainage water
5. Reduce physical disturbance of soil and vegetation and minimize direct loading of animal waste and sediment to sensitive areas by implementing the following siting and design measures for confined animal facility development:
 - a. Natural vegetation shall be maintained on site and vegetated filter strips, sediment basins and other measures to treat runoff shall be incorporated into the animal facility design.
 - b. Animal waste shall be managed, contained, and disposed of to ensure that waste is not introduced to surface runoff or groundwater.
 - c. Paddocks, stalls and bedding shall be cleaned on a regular basis and waste stored at least 100 feet away from streams or other surface waters. Wastes shall be covered with impermeable materials during the rainy season (November 1—March 31), at a minimum.

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- d. Clean water shall be diverted around feedlots, holding pens, and the storage or disposal areas for waste, compost, fertilizer, amended soil products and any other byproducts of agricultural activities.

17.3.6. Water Quality Checklist

A water quality checklist will be developed by the City and used in the permit review process to assess potential water quality impacts and appropriate mitigation measures. Examples of questions that should be asked include:

- Could the proposed project result in an increase in pollutant discharges to receiving waters? Consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical storm water pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash).
- Could the proposed project result in significant alteration of receiving water quality during or following construction?
- Could the proposed project result in increased impervious surfaces and associated increased runoff?
- Could the proposed project create a significant adverse environmental impact to drainage patterns due to changes in runoff flow rates or volumes?
- Could the proposed project result in increased erosion downstream?
- Is the project tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list. If so, can it result in an increase in any pollutant for which the water body is already impaired?
- Is the project tributary to other environmentally sensitive areas? If so, can it exacerbate already existing sensitive conditions?
- Could the proposed project have a potentially significant environmental impact on surface water quality or wetlands?
- Could the proposed project have a potentially significant adverse impact on ground water quality?
- Could the proposed project cause or contribute to an exceedance of applicable surface or ground-water receiving water quality objectives or degradation of beneficial uses?
- Could the project impact aquatic, wetland, or riparian habitat?

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17.4. DEVELOPMENT STANDARDS

17.4.1. BMP Requirements and Implementation

- A. All development shall be evaluated for potential adverse impacts to water quality and the applicant shall consider Site Design, Source Control and Treatment Control BMPs in order to minimize or prevent polluted runoff and water quality impacts resulting from the development. A SWMP requires the implementation of Site Design and Source Control BMPs, as specified in 17.3.2 of the Malibu LIP, and a WQMP requires the implementation of Site Design, Source Control and Treatment Control BMPs, as specified in 17.3.3 of the Malibu LIP. In order to maximize the reduction of water quality impacts, BMPs should be incorporated into the project design in the following progression: (1) Site Design BMPs, (2) Source Control BMPs, and (3) Treatment Control BMPs. Examples of these BMPs can be found in Section 17.5 and Appendix A of the Malibu LIP.
- B. BMP Selection Process.
1. In selecting BMPs to incorporate into the project design, the applicant should first identify the pollutants of concern that are anticipated to be generated as a result of the development. Table 1 in Appendix B should be used as a guide in identifying these pollutants of concern. These pollutants of concern should then be prioritized, identifying primary pollutants of concern using the following process:
 - a. For each of the proposed project's discharge points, identify the receiving water(s) that each discharge point proposes to discharge to, including hydrologic unit basin number(s), as identified in the most recent version of the *Water Quality Control Plan for the Los Angeles Basin*, prepared by the Los Angeles Regional Water Quality Control Board.
 - b. Identify any receiving waters, into which the developed area would discharge to, listed on the most recent list of Clean Water Act Section 303(d) impaired water bodies. List any and all pollutants for which the receiving waters are impaired.
 - c. Compare the list of pollutants for which the receiving waters are impaired with the pollutants anticipated to be generated by the project (as identified in Table 1). Any pollutants identified by Table 1 for the project that are also causing impairment of receiving waters shall be considered primary pollutants of concern.
 - d. Pollutants generated by the development that exhibit one or more of the following characteristics shall also be considered primary pollutants of concern:
 - i. Current loadings or historical deposits of the pollutant are impairing the beneficial uses of a receiving water

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- ii. Elevated levels of the pollutant are found in water or sediments of a receiving water and/or have the potential to be toxic to or bioaccumulate in organisms therein
 - iii. Inputs of the pollutant are at a level high enough to be considered potentially toxic
2. Site Design and Source Control BMPs are required based on pollutants commonly associated with the project type, as identified in Table 1. Table 2 in Appendix B should be used as guidance to determine the specific areas for each project where Site Design and Source Control BMPs are required to be implemented. BMPs that minimize the identified pollutants of concern may be selected from the examples in Appendix A and Section 17.5 of the Malibu LIP, targeting primary pollutants of concern first. In the event that the implementation of a BMP listed in Appendix A or Section 17.5 of the Malibu LIP is determined to be infeasible at any site, the implementation of other BMPs that will achieve the equivalent reduction of pollutants shall be required.
3. Treatment Control BMPs should be selected using the matrix in Table 3 in Appendix B as guidance to determine the removal efficiency of the BMP for the pollutants of concern for that project. Treatment Control BMPs that maximize pollutant removal for the identified primary pollutants of concern should receive priority for BMP selection, followed by BMPs that maximize pollutant removal for all other pollutants of concern identified for the project. The most effective combination of BMPs for polluted runoff control that results in the most efficient reduction of pollutants shall be implemented. The applicant may select from the list of BMPs in Appendix A. In the event that the implementation of a BMP listed in Appendix A is determined to be infeasible at any site, the implementation of other BMPs that will achieve the equivalent reduction of pollutants shall be required.

17.4.2. Sizing of Treatment Control BMPs

For design purposes, with case-by-case considerations, post-construction Treatment Control BMPs (or suites of BMPs) shall be designed to treat, infiltrate, or filter the amount of stormwater runoff produced by all storms up to and including the 85th percentile, 24-hour storm event for volume-based BMPs and/or the 85th percentile, 1-hour storm event (with an appropriate safety factor, i.e. 2 or greater) for flow-based BMPs. The above numerical design criteria shall apply to Treatment Control BMPs implemented as part of a WQMP (see Section 17.3.3.A. of the Malibu LIP).

17.4.3. Development on Steep Slopes

- A. Soils shall be stabilized and infiltration practices incorporated during the development of roads, bridges, culverts and outfalls to prevent stream bank or hillside erosion. Project plans must include the following BMPs to decrease the potential of slopes and/or channels from eroding and impacting storm water runoff:
 - Convey runoff safely from the tops of slopes and stabilize disturbed slopes
 - Utilize natural drainage systems to the maximum extent feasible

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- Control or reduce or eliminate flow to natural drainage systems to the maximum extent feasible
 - Stabilize permanent channel crossings
 - Vegetate slopes with native or drought tolerant vegetation
 - Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion
- B. Additional measures to prevent downstream erosion, such as contour drainage outlets that disperse water back to sheet flow, shall be implemented for projects discharging onto slopes greater than 10 percent.
- C. New development on steep slopes, on sites with low permeability soil conditions, or areas where saturated soils can lead to geologic instability should incorporate BMPs that do not rely on or increase infiltration.

17.5. DEVELOPMENT-SPECIFIC DESIGN STANDARDS

17.5.1. Commercial Development

Commercial development shall be designed to control the runoff of pollutants from structures, parking and loading areas. The following measures shall be implemented to minimize the impacts of commercial development on water quality.

- A. Properly Design Loading/Unloading Dock Areas. Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:
- Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.
 - Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.
- B. Properly Design Repair/Maintenance Bays. Oil and grease, solvents, car battery acid, coolant, and gasoline from repair and maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:
- Repair/maintenance bays must be indoors or designed in such a way that doesn't allow storm water runoff or contact with storm water runoff.
 - Design a repair/maintenance bay drainage system to capture all washwater, leaks, and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance

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bays to the storm drain system is prohibited. Obtain an Industrial Waste Discharge Permit if required.

C. Properly Design Vehicle/Equipment Wash Areas. The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and equipment. This area must be:

- Self-contained and/or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer.

D. Properly Design Parking Areas. Parking lots contain pollutants such as heavy metals, oil and grease, and polycyclic aromatic hydrocarbons that are deposited on parking lot surfaces by motor vehicles. These pollutants are directly transported to surface waters. To minimize the offsite transport of pollutants, the following design criteria are required:

- Reduce impervious surface land coverage of parking areas.
- Infiltrate runoff before it reaches storm drain system.
- Treat runoff before it reaches storm drain system.

Parking lots may also accumulate oil, grease, and water insoluble hydrocarbons from vehicle drippings and engine system leaks. To minimize impacts to water quality, the following measures are required:

- Treat to remove oil and petroleum hydrocarbons at parking lots that are heavily used (e.g. fast food outlets, lots with 25 or more parking spaces, sports event parking lots, shopping malls, grocery stores, discount warehouse stores).
- Ensure adequate operation and maintenance of treatment systems particularly sludge and oil removal, and system fouling and plugging prevention control.

17.5.2. Restaurants

Restaurants shall be designed to minimize runoff of oil and grease, solvents, phosphates, and suspended solids to the storm drain system. The following measures shall be implemented to minimize the impacts of restaurants on water quality.

A. Properly Design Equipment/Accessory Wash Areas. The activity of outdoor equipment/accessory washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for the washing/steam cleaning of equipment and accessories. This area must be:

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- Self contained, equipped with a grease trap, and properly connected to a sanitary sewer.
- If the wash area is to be located outdoors, it must be covered, paved, have secondary containment and be connected to the sanitary sewer.

17.5.3. Gasoline Stations, Car Washes and Automotive Repair Facilities

Gasoline stations, car washes and automotive repair facilities shall be designed to minimize runoff of oil and grease, solvents, car battery acid, coolant and gasoline to stormwater system. The following measures shall be implemented to minimize the impacts of gasoline stations, car washes and automotive repair facilities on water quality.

- A. Properly Design Fueling Areas. Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant, and gasoline to the storm water conveyance system. Therefore, design plans for fueling areas must include the following:
- The fuel dispensing area must be covered with an overhanging roof structure or canopy. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the fueling area.
 - The fuel dispensing area must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.
 - The fuel dispensing area must have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water to the extent practicable.
 - At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.
- B. Properly Design Repair/Maintenance Bays. Oils and grease, solvents, car battery acid, coolant, and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:
- Repair/maintenance bays must be indoors or designed in such a way that doesn't allow storm water run-on or contact with storm water runoff.
 - Design a repair/maintenance bay drainage system to capture all wash-water, leaks, and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. Obtain an Industrial Waste Discharge Permit if required.

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- C. Properly Design Vehicle/Equipment Wash Areas. The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and equipment. This area must be:
- Self-contained and/or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer or to a permit disposal facility.
- D. Properly Design Loading/Unloading Dock Areas. Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:
- Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.
 - Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.

17.5.4. Outdoor Material Storage Areas

Outdoor material storage areas refer to storage areas or storage facilities used solely for the storage of materials. Improper storage of materials outdoors may provide an opportunity for toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to enter the storm water conveyance system. Outdoor material storage areas shall be designed to prevent stormwater contamination from stored materials. Where proposed project plans include outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system, the following measures are required:

- Materials with the potential to contaminate storm water must be: (1) placed in an enclosure such as a cabinet, shed or similar structure that prevents contact with runoff or spillage to the storm water conveyance system; or (2) protected by secondary containment structures such as berms, dikes or curbs.
- The storage areas must be paved and sufficiently impervious to contain leaks and spills.
- The storage area must have a roof or awning to minimize collection of storm water within the secondary containment area.

17.5.5. Trash Storage Areas

A trash storage area refers to an area where a trash receptacle or receptacles are located for use as a repository for solid wastes. Loose trash and debris can be easily transported by the forces of water or wind into nearby storm drain inlets, channels, and/or creeks. Trash storage areas shall be designed to prevent stormwater contamination by loose trash and debris. All trash container areas must meet the following requirements (individual family residences are exempt from these requirements):

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- Trash container areas must have drainage from adjoining roofs and pavement diverted around the area(s).
- Trash container areas must be screened or walled to prevent off-site transport of trash.

17.5.6. Pools and Spas

Chlorinated and brominated pool and spa drainage have the potential to negatively impact both aquatic and marine plant and animal species. To minimize impacts to water quality, and to ensure that any runoff or drainage from the pool or spa will not include excessive amounts of chemicals that may adversely affect water quality or environmentally sensitive habitat area, the following design criteria are required:

- Alternative sanitization methods are required for all pools and spas. This may include no chlorine or low chlorine sanitization methods.
- Prohibit discharge of chlorinated pool water.
- Prohibit discharge of non-chlorinated pool water into a street, storm drain, creek, canyon, drainage channel, or other location where it could enter receiving waters.

17.6. PROHIBITED ACTIVITIES

Design, construction and implementation of development in the City of Malibu shall take into consideration the prohibitions on discharges to the Municipal Separate Storm Sewer System (MS4) from the Malibu Storm Water Code (Section 5.4.05). Development in the City of Malibu shall also be designed, constructed and implemented in a manner that minimizes or eliminates these types of discharges to other watercourses, water bodies, potable groundwater and wetlands within the City.

17.7. GOOD HOUSEKEEPING PROVISIONS

Design, construction and implementation of development in the City of Malibu shall take into consideration the good housekeeping provisions from the Malibu Storm Water Code (Section 5.4.07). Development in the City of Malibu shall also be designed, constructed and implemented in a manner that encourages these types of practices.

17.8. HYDROMODIFICATION

A. Alterations or disturbance of streams or natural drainage courses or human-made or altered drainage courses that have replaced natural streams or drainages and serve the same function, shall be prohibited, except for:

- Necessary water supply projects where no feasible alternative exists
- Flood protection for existing development where there is no other feasible alternative

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- The improvement of fish and wildlife habitat
- B. Any channelization or stream alteration permitted for one of these three purposes shall minimize impacts to coastal resources, including the depletion of groundwater, and shall include maximum feasible mitigation measures to mitigate unavoidable impacts. Bioengineering, unless no feasible alternative exists, is the only acceptable method of bank stabilization and flood protection for new development, and the preferred method for redevelopment. Where armoring of stream banks has failed, streambanks shall be stabilized using bioengineered structures, unless no feasible alternative exists. Any permitted stream alterations shall include BMPs such as incorporating vegetation in structure design, deflecting flow from eroding stream banks, and reshaping the eroding bank and establishing vegetation.
- C. Any channelization or dam proposals shall be evaluated as part of a watershed planning process, evaluating potential benefits and/or adverse impacts. Potential adverse impacts of such projects include effects on wildlife migration, downstream erosion, dam maintenance (to remove silt and trash) and interruption of sand supplies to beaches.

17.9. AGRICULTURE AND CONFINED ANIMAL FACILITIES

- A. New and/or expanded agricultural development, including vineyards and orchards, and the development of confined animal facilities, shall require a Coastal Development Permit if it involves placement or erection of any solid material or structure; grading, removing, dredging, mining, or extraction of any materials; change in intensity of use of land; or removal of significant native vegetation, except for residential vegetable gardens that meet the conditions for an exemption from the Coastal Development Permit requirements under Section 13.4.1 of the LIP. For this type of development, a Water Quality Mitigation Plan for Agricultural and Confined Animal Facility Development (WQMP-Ag) shall be developed in order to minimize or prevent polluted runoff and water quality impacts resulting from the development. The WQMP-Ag shall be submitted with an application for a Coastal Development Permit, as specified in 17.3.5 of the Malibu LIP.
- B. In addition to the requirement of the WQMP-Ag, agricultural and confined animal facility development shall comply with the following:
1. Development shall not result in the placement of compost, fertilizer, or amended soil products in or within 100 feet of streams or other surface waters.
 2. Development shall not result in the disposal of animal wastes, wastewater, or any other byproducts of agricultural activities in or within 100 feet of streams or other surface waters.
 3. Confined animal facility development shall not produce sedimentation or polluted runoff on any public road, adjoining property, or in any drainage channel. (Ord. 303 § 3, 2007)

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Appendix A STORM WATER BEST MANAGEMENT PRACTICES

The following are a list of BMPs that may be used to minimize or prevent the introduction of pollutants of concern that may result in significant impacts to receiving waters. Other BMPs approved by the City as being equally or more effective in pollutant reduction than comparable BMPs identified below are acceptable. All BMPs must comply with local zoning and building codes and other applicable regulations.

Site Design BMPs

Minimizing Impervious Areas

- Reduce sidewalk widths
- Incorporate landscaped buffer areas between sidewalks and streets.
- Design residential streets for the minimum required pavement widths
- Minimize the number of residential street cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.
- Use open space development that incorporates smaller lot sizes
- Increase building density while decreasing the building footprint
- Reduce overall lot imperviousness by promoting alternative driveway surfaces and shared driveways that connect two or more homes together
- Reduce overall imperviousness associated with parking lots by providing compact car spaces, minimizing stall dimensions, incorporating efficient parking lanes, and using pervious materials in spillover parking areas

Increase Rainfall Infiltration

- Use permeable materials for private sidewalks, driveways, parking lots, and interior roadway surfaces (examples: hybrid lots, parking groves, permeable overflow parking, etc.)
- Direct rooftop runoff to pervious areas such as yards, open channels, or vegetated areas, and avoid routing rooftop runoff to the roadway or the urban runoff conveyance system

Maximize Rainfall Interception

- Maximizing canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs

Minimize Directly Connected Impervious Areas (DCIAs)

- Draining rooftops into adjacent landscaping prior to discharging to the storm drain
- Draining parking lots into landscape areas co-designed as biofiltration areas
- Draining roads, sidewalks, and impervious trails into adjacent landscaping

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Slope and Channel Protection

- Use of natural drainage systems to the maximum extent feasible
- Stabilized permanent channel crossings
- Planting native or drought tolerant vegetation on slopes
- Energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels

Maximize Rainfall Interception

- Cisterns
- Foundation planting

Increase Rainfall Infiltration

- Dry wells

Source Control BMPs

- Storm drain system stenciling and signage
- Regular street and parking lot sweeping
- Outdoor material and trash storage area designed to reduce or control rainfall runoff
- Efficient irrigation system

Treatment Control BMPs

Biofilters

- Grass swale
- Grass strip
- Wetland vegetation swale
- Bioretention

Detention Basins

- Extended/dry detention basin with grass lining
- Extended/dry detention basin with impervious lining

Infiltration Basins

- Infiltration basin
- Infiltration trench

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- Porous asphalt
- Porous concrete
- Porous modular concrete block

Wet Ponds and Wetlands

- Wet pond (permanent pool)
- Constructed wetland

Drainage Inserts

- Oil/Water separator
- Catch basin insert
- Storm drain inserts
- Catch basin screens

Filtration Systems

- Media filtration
- Sand filtration

Hydrodynamic Separation Systems

- Swirl Concentrator
- Cyclone Separator

Appendix B BMP IMPLEMENTATION TABLES

Table 1. Anticipated and Potential Pollutants Generated by Land Use Type

<i>Priority Project Categories</i>	General Pollutant Categories								
	Sediments	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Bacteria & Viruses	Pesticides
Detached residential development	X	X			X	X	X	X	X
Attached residential development	X	X			X	p ⁽¹⁾	p ⁽²⁾	P	X
Commercial development >100,000 ft ²	p ⁽¹⁾	p ⁽¹⁾		p ⁽²⁾	X	p ⁽⁵⁾	X	p ⁽³⁾	p ⁽⁵⁾

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Automotive service facilities			X	X ⁽⁴⁾⁽⁵⁾	X		X		
Retail gasoline outlets			X	X ⁽⁴⁾⁽⁵⁾	X		X		
Restaurants					X	X	X	X	
Hillside development	X	X			X	X	X		X
Parking lots	P ⁽¹⁾	P ⁽¹⁾	X		X	P ⁽¹⁾	X		P ⁽¹⁾
Streets, highways & freeways	X	P ⁽¹⁾	X	X ⁽⁴⁾	X	P ⁽⁵⁾	X		

X = anticipated
P = potential
(1) A potential pollutant if landscaping exists on-site
(2) A potential pollutant if the project includes uncovered parking areas
(3) A potential pollutant if land use involves food or animal waste products
(4) Including petroleum hydrocarbons
(5) Including solvents

Table 2. Site Design and Source Control BMP Selection Matrix

<i>Priority Project Categories</i>	<i>Specific Areas for Implementation of Site Design and Source Control BMPs</i>													
	Private Roads	Residential Driveways & Guest Parking	Loading/Unloading Dock Areas	Repair/Maintenance Bays	Vehicle Wash Areas	Outdoor Processing Areas	Equipment Wash Areas	Parking Areas	Roadways	Fueling Areas	Hillside Landscaping	Outdoor Material Storage Areas	Trash Storage Areas	Pools and Spas
Detached residential development	R	R									R			R
Attached residential development	R												R	R
Commercial development >100,000 ft ²			R	R	R	R						R	R	
Automotive service facilities			R	R	R		R			R		R	R	
Retail gasoline outlets			R	R	R		R			R		R	R	

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Restaurants			R				R					R	R	
Hillside development	R										R			
Parking lots								R					R	
Streets, highways & freeways									R					
R = Required - minimize pollutants of concern by selecting appropriate Site Design and Source Control BMPs														

Table 3. Treatment Control BMP Selection Matrix(1)

<i>Pollutant of Concern</i>	<i>Treatment Control BMP Categories</i>						
	Biofilters	Detention Basins	Infiltration Basins ⁽²⁾	Wet Ponds or Wetlands	Drainage Inserts	Filtration	Hydrodynamic Separator Systems ⁽³⁾
Sediment	M	H	H	H	L	H	M
Nutrients	L	M	M	M	L	M	L
Heavy Metals	M	M	M	H	L	H	L
Organic Compounds	U	U	U	U	L	M	L
Trash & Debris	L	H	U	U	M	H	M
Oxygen Demanding Substances	L	M	M	M	L	M	L
Bacteria	U	U	H	U	L	M	L
Oil & Grease	M	M	U	U	L	H	L
Pesticides	U	U	U	U	L	U	L
<p>(1) The City is encouraged to periodically assess the performance characteristics of many of these BMPs to update this table.</p> <p>(2) Including trenches and porous pavement</p> <p>(3) Also known as hydrodynamic devices and baffle boxes</p> <p>L: Low removal efficiency M: Medium removal efficiency H: High removal efficiency U: Unknown removal efficiency</p> <p>Sources: <i>Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters</i> (1993), <i>National Stormwater Best Management Practices Database</i> (2001), and <i>Guide for BMP Selection in Urban Developed Areas</i> (2001).</p>							