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## *17 Attachment 1*

### **Appendix I Low Impact Development Guidance Manual.**

#### 1.0 INTRODUCTION

##### 1.1 Purpose

This Low Impact Development Guidance Manual (Manual) is intended for use by project developers such as architects, engineers, and building contractors, in designing and constructing projects within the City of Carmel-by-the-Sea (City) to comply with the City's Low Impact Development (LID) requirements. City staff involved in reviewing plans and issuing permits for a project will use this Manual to determine whether or not the project has been designed to meet these requirements.

##### 1.2 Background

Discharges from the City's storm drainage system are regulated under a National Pollutant Discharge Elimination System (NPDES) permit issued by the Central Coast Regional Water Quality Control Board (RWQCB) of the State of California. The initial NPDES permit was called the "General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems, Order No. 2003-0005-DWQ." The City became subject to this permit on May 1, 2008. The RWQCB periodically revises its overall storm drainage requirements and imposes them on dischargers by reissuing its General Permit under a new Order number, or by issuing specific requirements to dischargers.

This Low Impact Development Guidance Manual reflects the "Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region" adopted by the RWQCB on September 6, 2012. These are referred to herein as the "RWQCB Post-Construction Requirements."

A condition of compliance under the NPDES permit is that the City implements its Storm Water Management Program. One of the State-required components of that Program is to develop and implement a set of Best Management Practices (BMPs) to reduce storm water runoff and storm water pollution emanating from new development and redevelopment projects located within the City. This is accomplished by using the LID concepts described in this Manual during the design and construction of those projects.

LID is a development approach that (1) reduces the amount of storm water runoff by retaining a portion of the storm water on the project site where it can infiltrate into the ground or be released in a controlled manner, and (2) in some instances reduces the amount of pollutants in storm water through natural or manmade treatment processes, so that these discharges do not cause or contribute to a violation of receiving water quality standards established by the RWQCB.

##### 1.3 Authority

Chapters 17.10, 17.34, 17.42, 17.43, and 17.70 of the Carmel-by-the-Sea Municipal Code (CMC) establish certain of the BMP requirements described in this Manual. For ease of reference, citations from sections of these Chapters are designated herein as (§xx.xx.xxx). In addition, on November 3, 2009 the City Council adopted a document titled "BMP Guidance Series" contained in Appendix J to Chapter 17.43 CMC as official City policies pertaining to storm water pollution prevention from new development and redevelopment projects. Requirements taken from that document are designated herein as (BGS). The City may from time to time update the BMP Guidance Series by revising or adding to the requirements contained in that document.

The City has adopted the requirements described in this Manual to control the volume, rate, and potential pollutant load of stormwater runoff from new development and redevelopment projects as may be

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appropriate to minimize the generation, transport and discharge of pollutants as defined by Chapter 17.43 of the CMC. The City will incorporate these requirements into any construction or building-related permit to be issued for the development or redevelopment. (§17.42.020)

The purpose of the requirements in Chapter 17.43 is to protect and enhance coastal waters within the City in accordance with the policies of the City's Local Coastal Plan, the California Coastal Act, and the City's NPDES permit requirements, and to ensure that permitted development shall be sited and designed to conserve natural drainage features and vegetation, minimize the introduction of pollutants into coastal waters to the maximum extent practicable, limit the discharge of stormwater runoff, and protect the overall quality of coastal waters and resources. (§17.43.010)

### 1.4 LID BMP Implementation Tracking

In order to facilitate the design review and permitting process, when the plans for a project are submitted to the City they should include a completed copy of the "BMP Implementation Tracking Form" contained in Attachment 1. The plans should also show the locations of the BMPs that have been incorporated into the design of the project.

### 1.5 Definitions

The terms in this Section are defined as they apply in this LID Guidance Manual.

**Hillside:** Hillside means property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is 25% or greater.

**Impermeable or Impervious Surface:** These terms are used interchangeably in this LID Guidance Manual. Impermeable surface is defined in Chapter 17.70 of the City's Municipal Code to mean a surface artificially constructed so as to prevent or largely inhibit the infiltration of rainwater or runoff into the natural soils or underlying geologic materials. Impervious surface is defined in the RWQCB's Post-Construction Requirements to mean a hard, non-vegetated surface area that prevents or significantly limits the entry of water into the soil mantle, as would occur under natural conditions prior to development. Common impervious/impermeable surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater.

**Net Impervious Area:** The sum of new and replaced post-project impervious areas, minus any reduction in total imperviousness from the pre-project to post-project condition: Net Impervious Area = (New and Replaced Impervious Area) – (Reduced Impervious Area Credit), where Reduced Impervious Area Credit is the total pre-project to post-project reduction in impervious area, if any.

**New Development:** Land disturbing activities that include the construction or installation of buildings, roads, driveways and other impervious surfaces. Development projects with pre-existing impervious surfaces are not considered New Development.

**Permeable or Pervious Surface:** A surface that allows varying amounts of stormwater to infiltrate into the ground. Examples include pasture, native vegetation areas, landscape areas, and permeable pavements designed to infiltrate. Permeable pavements include pavers which are set in sand so that water can percolate between the pavers, such as those commonly used for patios, walkways, and driveways.

**Redevelopment:** On a site that has already been developed, construction or installation of a building or other structure subject to the City's planning and building authority including: 1) the creation or addition of impervious surfaces; 2) the expansion of a building footprint or addition or replacement of a structure; or 3) structural development including construction, installation or expansion of a building or other structure. It

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does not include routine road maintenance, nor does it include emergency construction activities required to immediately protect public health and safety.

Regulated Projects: Regulated Projects include all New Development or Redevelopment projects that create and/or replace >2,500 square feet of impervious surface (collectively over the entire project site).

Steep Slopes: Has the same meaning as “Hillside”.

### 1.6 Exception Discharges

Discharges of other than storm water to waters shall be effectively prohibited, except for the following non-storm water discharges which are not prohibited, provided any pollutant discharges are identified and appropriate control measures to minimize the impacts of such discharges are developed and implemented. This provision does not obviate the need to obtain any other appropriate permits for such discharges:

- a. Water line flushing;
- b. Individual residential car washing;
- c. Diverted stream flows;
- d. Rising ground waters;
- e. Uncontaminated ground water infiltration (as defined at 40 C.F.R. §35.2005(20)) to separate storm sewers;
- f. Uncontaminated pumped ground water;
- g. Discharges from potable water sources;
- h. Foundation drains;
- i. Air conditioning condensation;
- j. Springs;
- k. Water from crawl space pumps;
- l. Footing drains;
- m. Flows from riparian habitats and wetlands;
- n. Dechlorinated swimming pool discharges; and
- o. Incidental runoff of potable or recycled water from landscaped areas (as defined and in accordance with section B.4 of this Order).

Discharges or flows from fire-fighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are identified as significant sources of pollutants to waters of the U.S. If the City determines that any individual or class of non-storm water discharge(s) listed above may be a significant source of pollutants to waters of the U.S., or poses a threat to water quality standards (beneficial uses), the City may require the discharger to monitor and submit a report and to implement BMPs on the discharge.

### 2.0 DESIGN

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### 2.1 Selection of BMPs

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 Attachment 3 should be used as a guide in identifying these pollutants of concern. Pollutants generated by the development that exhibit one or more of the following characteristics will be considered the primary pollutants of concern:

1. Current loadings or historical deposits of the pollutant are impairing the beneficial uses of a receiving water.
2. 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.
3. Inputs of the pollutant are at a level high enough to be considered potentially toxic.

2.1.1 Site Design and Source Control BMPs. Site design and source control BMPs should be selected based on pollutants commonly associated with the project type, as identified in Table 1 of Attachment 3. BMPs that minimize the identified pollutants of concern should be selected from the matrix in Table 2 of Attachment 3. In the event that the implementation of a BMP listed in Table 2 of Attachment 3 is determined to be infeasible at any site, the implementation of other BMPs that will achieve the equivalent reduction of pollutants will be required.

2.1.2 Treatment Control BMPs. In many cases proper application of appropriate site design and source control BMPs will meet the City's LID requirements, and treatment control BMPs will not be necessary. However, when site design and source control BMPs are not adequate, treatment control BMP(s) will be necessary. Treatment control BMPs should be selected from the matrix in Table 3 of Attachment 3 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 should be implemented. In the event that the implementation of a BMP listed in the matrix in Table 3 of Attachment 3 is determined to be infeasible on the project site, the implementation of other treatment control BMP(s) that will achieve the equivalent reduction of pollutants will be required.

Where treatment controls are required, the BMPs (or suites of BMPs) shall be designed to infiltrate and/or treat the amount of stormwater runoff as follows:

1. For volume-based BMPs, the amount of storm water runoff produced by the eighty-fifth percentile, 24-hour storm event, based on local rainfall data.
2. For flow-based BMPs, two times the amount of storm water runoff produced by the eighty-fifth percentile, one-hour storm event, based on local rainfall data.
3. Limited Exclusion: Restaurants and retail gasoline outlets where the land area for development or redevelopment is less than 5,000 square feet are excluded from these volume- and flow-based numerical treatment control BMP design standards.

The term "treatment" includes physical, biological and chemical processes such as filtration, the use of bioswales, detention and retention ponds and adsorption media. The actual type of treatment should be suited to the pollutants generated by the development as indicated in Table 1 of Attachment 3.

Descriptions of commonly used treatment control BMPs are contained in Attachment 2. Detailed design information for treatment control BMPs, and examples, can be found in Sections 2 through 5 of the CASQA

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Handbook, and in Appendices C through E of the Santa Barbara Manual, both of which are described in Section 6.0 of this Manual.

At its discretion and for good cause, the City may waive one or more of the requirements pertaining to treatment control BMPs if impracticability for a specific property can be established. A waiver of impracticability will be granted only when all other treatment control BMPs have been considered and rejected as infeasible. Recognized Potential situations of impracticability may include, (i) extreme limitations of space for treatment on a project site, (ii) unfavorable or unstable soil conditions making a site unsuitable for infiltration, and (iii) 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 10 feet from the soil surface. A waiver may be revoked for cause and with proper notice. A waiver of requirements may be subject to prior approval by the RWQCB, depending on the type of requirement being waived.

### 2.2 Watercourse Protection

Watercourses located on private property are required to be kept free of trash, debris, excessive vegetation, stagnant pools of water and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse to the extent required by the City. Healthy bank vegetation should not be removed beyond that actually necessary for maintenance, nor should such vegetation be removed in a manner which increases the vulnerability of the watercourse to erosion. The property owner is responsible for maintaining and stabilizing that portion of the watercourse that is within their property lines to protect against erosion and degradation of the watercourse on-site and downstream. Property owners shall select “Soft Engineered” techniques when possible for maintaining and stabilizing stream banks. (§17.42.020).

### 2.3 Landscaping Requirements

In order to protect and enhance the City’s urbanized forest and landscaped amenities, to protect environmentally sensitive habitat areas from degradation, to provide for the restoration of native vegetation, and to promote water conservation the following landscaping requirements will be imposed on new development and redevelopment projects. (§17.34.010)

These requirements apply to all new development or substantial alteration of existing development proposed on private property anywhere in the City. (§17.34.020)

#### 2.3.1 Plantings:

##### 2.3.1.1 All Sites (§17.34.060):

1. In order to reduce the potential for irrigation run-off that could contribute to storm water pollution, a minimum of 75 percent of new plant materials on the project site shall be native plants and/or noninvasive drought-tolerant plants as determined by the City Forester.
2. All plants within landscaped areas on any public right-of-way adjacent to private property shall be drought-tolerant and low water use predominantly native species as determined by the City Forester.
3. A minimum of 75 percent of new plant materials in all open space areas on project sites in the commercial, R-4, and R-1 districts shall be planted with drought-tolerant and low water use species as determined by the City Forester.

##### 2.3.1.2 Residential Sites (§17.34.070):

1. All properties located in the R-1 or R-4 district shall contribute to the urbanized forest or other vegetation characteristic of the neighborhood by harboring an appropriate mix of upper and lower canopy trees and/or shrubs consistent with the neighborhood context and the neighborhood streetscape.

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2. Landscaping in public rights-of-way in the R-1 district shall be limited to native, drought-tolerant plants.

### 2.3.1.3 Commercial Sites (§17.34.080):

1. In all commercial districts a minimum of 50 percent of the required open space on the project site shall be landscaped. The combined total area of nonliving materials such as garden benches, water features and patterned paving treatments shall not comprise more than 25 percent of the required landscaping on the site. All landscaping improvements shall include upper canopy trees on-site and/or in the sidewalk in front of the property whenever possible.

2. Building sites incorporating surface parking lots shall include at least 15 percent of the site area in landscaping. To help reduce runoff into the City's storm drainage system, landscaping shall be distributed along all street frontages and pedestrian walkways that are adjacent to parking areas. Landscaping shall also be provided within the interior of surface lots to break up large expanses of paving. Parking lots with four or more vehicles shall provide interior landscaping of at least 10 square feet per vehicle.

### 2.3.2 Materials of Construction (§17.34.060):

1. Use of materials that allow for percolation of rain into the soil and reduce water run-off is encouraged.

2. Paved areas shall be designed to be small, and large continuous areas of paving shall be avoided. Paved areas shall include design features such as sand-set paving and/or drainage collection and distribution systems that enhance surface water percolation.

3. Landscaping plans for projects in any zoning district shall, where feasible, include the use of water retention storage devices such as cisterns or underground bladders to capture precipitation or surface runoff for landscape maintenance purposes or detention basins or berms to retain water on-site for natural percolation into the soil.

### 2.4 Impermeable Site Coverage (§17.10.030)

These requirements apply to all new development, or substantial alteration of existing development, proposed on private property anywhere in the City.

1. Impermeable site coverage, which is defined in Chapter 17.70 of the City's Municipal Code to mean a surface artificially constructed so as to prevent or largely inhibit the infiltration of rainwater or runoff into the natural soils or underlying geologic materials as defined in Section 1.5, shall be limited to a maximum of 22% of the base floor area allowed for the site. Allowable base floor areas for typical lot sizes are contained in Table 17.10-D of the CMC. For a typical 4,000 square-foot site the maximum allowable impermeable site coverage equals 396 square feet or approximately 10% of the site.

2. If at least 50 percent of all site coverage on the property is made of permeable or semi-permeable materials, an additional amount of site coverage of up to 4% of the site area may be allowed for use in a single driveway of up to nine feet in width.

### 2.5 Site Design

All projects shall be designed with the objectives of minimizing the introduction of pollutants that may result in water quality impacts, and controlling post-development peak runoff rates and average volumes to maintain or reduce pre-development downstream erosion rates. (§17.43.010)

All development shall be evaluated for potential adverse impacts to water quality, and the applicant is to consider site design, source control, and treatment control BMPs in order to minimize polluted runoff and water quality impacts resulting from the development. In order to maximize the reduction of water quality

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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. (§17.43.060).

### 2.5.1 Performance Requirements (RWQCB Post-Construction Requirements)

The RWQCB's Post-Construction Requirements pertain to both residential and commercial types of Regulated Projects (as defined in Section 1.5). Note that some of the requirements in this Section 2.5.1 overlap with requirements in Sections 2.5.2, 2.5.3 and/or 2.5.4.

Because of the relatively small lot sizes in the City, it is expected that the majority of projects will not be subject to the RWQCB's Post-Construction Requirements, and that only a small number of projects will be subject to Performance Requirement No. 1, which is described below.

Any project other than a detached single family home having a Net Impervious Area (as defined in Section 1.5)  $\geq 5,000$  square feet, or a detached single family home project having a Net Impervious Area  $\geq 15,000$  square feet, will be subject to the more complex requirements of Performance Requirement No. 2: Water Quality Treatment. Performance Requirement No. 2 is described in Attachment 5.

Projects having a Net Impervious Area  $\geq 15,000$  square feet, and which are not detached single family home projects, as well as single family residences  $\geq 15,000$  square feet in WMZs 1, 2, 5, 6, 8, and 9, and those portions of WMZs 4, 7, and 10 that overlie designated Groundwater Basins; and all Regulated Projects over 22,500 square feet of impervious surface area in WMZs 1, 2, 3, 6, and 9 will be subject to additional requirements as described in Attachment 5.

#### Performance Requirement No. 1: Site Design and Runoff Reduction:

All Regulated Projects that create and/or replace  $\geq 2,500$  square feet of impervious surface (collectively over the entire project site), including detached single-family home projects, are required to implement at least the following design strategies:

1. Limit disturbance of creeks and natural drainage features
2. Minimize compaction of highly permeable soils
3. Limit clearing and grading of native vegetation at the site to the minimum area needed to build the project, allow access, and provide fire protection
4. Minimize impervious surfaces by concentrating improvements on the least-sensitive portions of the site, while leaving the remaining land in a natural undisturbed state
5. Minimize stormwater runoff by implementing one or more of the following site design measures:
6. Direct roof runoff into cisterns or rain barrels for reuse
7. Direct roof runoff onto vegetated areas safely away from building foundations and footings, consistent with California building code
8. Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas safely away from building foundations and footings, consistent with California building code
9. Direct runoff from driveways and/or uncovered parking lots onto vegetated areas safely away from building foundations and footings, consistent with California building code
10. Construct bike lanes, driveways, uncovered parking lots, sidewalks, walkways, and patios with permeable surfaces

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11. The Permittee shall confirm that projects comply with Site Design and Runoff Reduction Performance Requirements by means of appropriate documentation (e.g., check lists) accompanying applications for project approval.

### 2.5.2 Development on Steep Slopes (§17.43.060)

In addition to the requirements in Section 2.5, project designs shall incorporate soil stabilization and infiltration practices during the construction 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 stormwater runoff:

1. Convey runoff safely from the tops of slopes and stabilize disturbed slopes.
2. Utilize existing natural drainage systems to the maximum extent feasible.
3. Control and minimize excess flow to natural drainage systems to the maximum extent feasible.
4. Stabilize permanent channel crossings using “soft engineering” practices when possible.
5. Vegetate slopes with native or drought-tolerant vegetation.
6. Additional measures to prevent downstream erosion, such as cisterns, infiltration pits and/or contour drainage outlets that disperse water back to sheet flow, should be implemented for projects discharging onto slopes greater than 10%.

### 2.5.3 Residential Projects

For residential projects, in addition to the applicable requirements in Section 2.5, 17.43.080, and described elsewhere within this Manual, the following additional LID principles are to be incorporated into the design of all residential projects, as appropriate:

#### 2.5.3.1 Small Residential Projects

For small residential projects that must only go through a ministerial review process and conform to the site zoning requirements, such as either a new single-family unit or minor modifications to an existing single family unit or a single structure, LID objectives are to be accomplished by applying the following principles to the design (§17.43.080 and BGS):

1. Use low-maintenance drought-tolerant landscaping that does not require frequent fertilizer, pesticide and herbicide application.
2. Label all storm drain inlets and catch basins within the project area with prohibitive language (such as: “NO DUMPING – DRAINS TO OCEAN”) and/or graphical icons to discourage illegal dumping.
3. Minimize areas that are directly connected to the City’s storm drainage system by directing roof gutters and other impervious areas to landscaped areas where possible. Roof drains may be eliminated only in one to two-story buildings in residential and some commercial areas. Where these cannot be eliminated, direct the downspout of the gutter to landscaped areas or into an infiltration trench. Install several gutters to distribute the flow.
4. Minimize impervious areas and increase rainfall infiltration by using alternate paving materials (pavers), landscaping, mulch, gravel and cobbles where appropriate to provide ground cover, and reduce the use of asphalt or other impervious pavement. Pavers are recommended for driveways, walkways, and patios in single-family residences if Americans with Disabilities Act (ADA) requirements do not have to be met.

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### 2.5.3.2 Large Residential Projects

For large residential projects that must go through a discretionary design review process and which typically require a use permit or a subdivision map, LID objectives are to be accomplished by applying the following principles to the design (§17.43.010 and BGS):

1. Maintain and use existing natural drainage courses and vegetation by not filling in the natural drainage features at the site, preserving riparian areas and wetlands, maintaining invert/streambeds to maximize capacity, and providing vegetated setbacks or buffer strips outside of the maximum water surface level.
2. 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.
3. Protect slopes and channels from eroding and impacting storm water runoff by:
  - i. Conveying runoff safely from the tops of slopes and stabilizing disturbed slopes.
  - ii. Utilizing natural drainage systems to the maximum extent practicable.
  - iii. Stabilizing permanent channel crossings.
  - iv. Vegetating slopes with native or drought tolerant vegetation, as appropriate.
  - v. Installing energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels
4. Minimize the amount of directly connected impervious surface and total area of impervious surface.
5. Minimize the length of driveways and avoid installing curb and gutter along driveways and streets where appropriate, so that runoff from these areas can flow into adjacent landscaped or other permeable areas.
6. In low-traffic areas, reduce sidewalk widths as much as possible while still being in compliance with ADA requirements.
7. Incorporate or connect to existing on-site retention and infiltration measures.
8. Direct rooftop runoff to permeable areas rather than driveways or impervious surfaces to reduce the amount of stormwater leaving the site.
9. Minimize clearing and grading, and set aside open space to the extent feasible.
10. Use alternate paving materials (e.g., porous asphalt, pervious concrete, and pavers), landscaping, mulch, gravel and cobbles where appropriate to provide ground cover, and reduce the use of asphalt or other impervious pavement. Pavers are recommended for driveways, walkways, and patios in single-family residences if ADA requirements do not have to be met. In non-residential areas, pavers are recommended for emergency access roads, overflow parking areas, and non-handicapped parking stalls, keeping in mind that some types of alternate paving materials may not be suitable where heavy loads such as trucks.
11. In new residential areas reduce street width by eliminating on-street parking (where such actions do not pose a safety hazard). In addition to reducing the impervious area, this control has the added benefit of removing cars from streets and making street sweeping easier and more effective. If on-street parking in residential areas is eliminated, the developer must provide adequate off-street visitor parking.
12. If alleys are included in a proposed development, width should be minimized or alternate paving materials should be used.

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13. Provide green areas in new residential developments where people can walk their pets and keep pet excrement away from sidewalks and streets where it may contribute to storm water pollution.
14. Install landscaping or other cover materials to minimize erosion from graded surfaces. Promote the use of natural vegetation by using parking lot islands and other landscaped areas. Use of native plant materials is recommended because native plants require less maintenance and irrigation. Since native plants take longer to cover slopes, during the first few years supplemental protection (erosion blanket, mulch, etc.) may be necessary.
15. Use low-maintenance landscaping that does not require frequent fertilizer, pesticide and herbicide application.
16. Label all storm drain inlets and catch basins within the project area with prohibitive language (such as: “NO DUMPING – DRAINS TO OCEAN”) and/or graphical icons to discourage illegal dumping. Legibility of stencils and signs must be maintained.
17. Where possible, eliminate gutters/roof drains or direct runoff to landscaped areas. Roof drains can be eliminated only in one to two-story buildings. Where these cannot be eliminated, direct the downspout of the gutter to landscaped areas or into an infiltration trench. Install several gutters to distribute the flow.
18. In new residential developments involving more than 50 units, construct a designated vehicle wash area so that the runoff from vehicle washing can be properly treated and/or disposed. Contact the local wastewater authority to determine if the discharge can be plumbed to the sanitary sewer. If not, provide appropriate treatment and disposal of this runoff.
19. Grade and pave outdoor waste receptacle areas to prevent run-on of storm water, and install a low containment berm around it. Alternately, construct a covered enclosure with wash-down capabilities plumbed into the sanitary sewer, after first contacting the local wastewater authority to verify that this practice will be acceptable.

### 2.5.4 Commercial Projects

For commercial projects, in addition to the applicable requirements in Section 2.5 and described elsewhere within this Manual, the following LID principles are to be incorporated into the design of all commercial projects, as appropriate (§17.43.070 and BGS):

#### 2.5.4.1 Commercial Developments – General Requirements

##### 2.5.4.1.1 Loading/Unloading Dock Areas

1. Shall be covered or designed to minimize run-on and runoff of stormwater.
2. Shall have no direct connections to storm drains from depressed loading docks (truck wells).
3. Should have valve(s) on storm drain inlets receiving runoff from non-depressed loading docks to control runoff in the event of spills.

##### 2.5.4.1.2 Vehicle/Equipment Washing/Steam Cleaning Areas

1. Shall be self-contained and/or covered.
2. Shall be equipped with a clarifier or other pretreatment facility.
3. Shall be properly connected to a sanitary sewer.

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### 2.5.4.1.3 Parking Areas and Parking Lots

1. Shall be designed to minimize impervious surface land coverage.
2. Shall be designed to infiltrate runoff as much as feasible before it reaches the storm drain system.
3. Parking lots that are heavily used, e.g. lots with 25 or more parking spaces, performing arts parking lots, shopping malls, or grocery stores shall have treatment controls installed to treat any remaining runoff before it reaches the storm drain system. The treatment controls shall be designed to remove oil and petroleum hydrocarbons, and shall be operated and maintained to ensure that sludge and oil is removed at a frequency that will prevent the treatment controls from fouling or plugging.
4. If feasible, build underground or multi-story parking structures so that not only is impervious surface minimized but the parking surfaces are under a roof and not exposed to storm water.
5. Where possible use cooperative or shared parking. This may be a cooperative effort between commercial entities or between commercial entities and the City.

### 2.5.4.1.4 Outdoor Material Storage Areas (areas or facilities used solely for the storage of materials)

1. Shall be designed to prevent stormwater contamination from stored materials.
2. Where outdoor areas for storage of materials are included that may contribute pollutants to the stormwater conveyance system, those materials shall be placed in an enclosure such as a cabinet, shed or similar structure that prevents contact with runoff or spillage to the stormwater conveyance system, or shall be protected by secondary containment structures such as berms, dikes or curbs.
3. Shall be paved and sufficiently impervious to contain leaks and spills.
4. Shall have a roof or awning to minimize collection of stormwater within the secondary containment area.

### 2.5.4.1.5 Trash Storage Areas (areas where a trash receptacle or receptacles are located for use as a repository for solid wastes):

1. Shall be designed to prevent stormwater contamination by loose trash and debris.
2. Shall have drainage from adjoining roofs and pavement diverted around the area(s).
3. Shall be screened or walled to prevent off-site transport of trash.

### 2.5.4.2 Restaurants – Additional Specific Requirements

1. Shall be designed to minimize runoff of oil and grease, solvents, phosphates, and suspended solids to the storm drain system.
2. Shall include an area for the washing/steam cleaning of equipment and accessories and which is 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, and have secondary containment which is connected to the sanitary sewer.

### 2.5.4.3 Retail Gasoline Outlets and Automotive Repair Facilities – Additional Specific Requirements

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### 2.5.4.3.1 Fuel Dispensing Area

1. Shall 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. As an alternative, the site must be served by an oil/water separator or other source or treatment control BMPs that will achieve equivalent mitigation.
2. Shall be paved with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete is not allowable.
3. Shall 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 stormwater to the extent practicable.
4. Shall at a minimum 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 one foot (0.3 meter), whichever is less.

### 2.5.4.3.2 Repair/Maintenance Bays

1. Shall be indoors or designed in such a way that does not allow stormwater runoff or contact with stormwater runoff.
2. Shall have drainage systems designed to capture all wash water, leaks, and spills.
3. Shall have drains connected to a sump for collection and disposal.
4. Shall have no direct connections to the storm drain system.
5. Shall be covered by a State-issued Industrial Waste Discharge Permit, if so-required by the RWQCB.

### 3.0 EROSION AND DRAINAGE CONTROL PLANS (§17.43.030)

An Erosion and Drainage Control Plan (EDCP) to minimize during- and post-construction polluted runoff containing the following information shall be included in the submitted design plans for new development that (a) increases site coverage by more than five percent of the site area, or (b) involves grading that will affect drainage patterns on or off the site, or (c) involves either a rebuild or construction of a new building:

1. Site design and source control BMPs that will be implemented to minimize post-construction polluted runoff, including details regarding how the project will use these BMPs to minimize adverse effects of the project on water quality.
2. Drainage improvements (e.g., locations of infiltration basins).
3. Potential flow paths where erosion may occur after construction.
4. Methods to accommodate on-site percolation, revegetation of disturbed portions of the site, address on-site and/or off-site impacts and construction of any necessary improvements.
5. Storm drain pollution prevention measures including all construction elements and BMPs to address the following goals in connection with both construction and long-term operation of the site:
  - 1) Maximize on-site retention and infiltration measures including directing rooftop runoff to permeable areas rather than driveways.

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2) Maximize, to the extent practicable, the percentage of permeable surfaces and limit impervious areas that are directly connected to the City's storm drainage system in order to allow more percolation of runoff into the ground.

### 4.0 WATER QUALITY MITIGATION PLANS (§17.43.030 AND BGS)

A Water Quality Mitigation Plan (WQMP) is required for any project which requires an EDCP and which either:

(1) Fails to adequately address water quality impacts using appropriate site design and source control measures, or

(2) Is in one of the following categories of development:

1. Single-Family Hillside Residences. 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 or greater.

2. Industrial/Commercial Developments.

3. Automotive Repair Shops.

4. Retail Gasoline Outlets.

5. Restaurants.

6. Home Subdivisions with 10 or more housing units

7. Parking lots 5,000 square feet or more of impervious surface area or with 25 or more parking spaces and potentially exposed to storm water runoff

8. Projects that discharge to an Environmentally Sensitive Area (ESA) or coastal water. Such projects are defined as being all development and redevelopment located within or directly adjacent to or discharging directly to an environmentally sensitive area (where discharges from the development or redevelopment will enter receiving waters within the environmentally sensitive area). "Directly adjacent" means situated within 200 feet of the environmentally sensitive area. "Discharging directly to" means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands.

In addition to the site design and source control BMPs being provided in the project, the WQMP shall include treatment control BMPs identified in Table 3 of Attachment 3 to minimize post-construction runoff of the types of pollutants listed in Table 1 of Attachment 3, which are characteristic of this type of project. The WQMP shall also include an operation and maintenance plan for these treatment control BMPs.

The WQMP shall be certified by a California Registered Civil Engineer or Licensed Architect approved by the City, and shall include the following information:

1. Site design, source control and treatment control BMPs that will be implemented to minimize post-construction polluted runoff.

2. Pre-development peak runoff rate and average volume.

3. Drainage improvements (e.g., locations of diversions/conveyances for upstream runoff).

4. Potential flow paths where erosion may occur after construction.

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5. Methods to accommodate on-site percolation, revegetation of disturbed portions of the site, address on-site and/or off-site impacts, and construction of any necessary improvements.

6. Measures to treat, infiltrate, and/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 on or downslope of the subject parcel, the need for upgrades to the City's storm drainage system, 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 biofilters and grasses waterways, on-site desilting basins, detention ponds, dry wells, etc.

7. Where treatment controls are required, information describing how the BMPs (or suites of BMPs) have been designed to infiltrate and/or treat the amount of stormwater runoff produced by all storms as described in Section 2.1.2 of this Manual. The actual type of treatment should be linked to the pollutants generated by the development as indicated in Table 1 of Attachment 3.

8. A long-term plan and schedule for the monitoring and maintenance of all drainage-control devices. All treatment control 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 will determine if the treatment control BMPs require monitoring, and if so, the City must approve the monitoring program.

### 5.0 ONGOING MAINTENANCE OF TREATMENT CONTROL BMPS (§17.43.040 AND BGS)

If a project is required to include treatment control BMPs, the applicant will be required to provide verification of maintenance provisions for these BMPs through such means as may be appropriate, including, but not limited to legal agreements, covenants, CEQA mitigation requirements and/or 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:

1. 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
2. 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
3. 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
4. Any other legally enforceable agreement acceptable to the City that assigns responsibility for the maintenance of post-construction structural and treatment control BMPs.

A sample form of Agreement to accomplish these objectives is contained in Attachment 4.

Printed educational materials will be required to accompany the first deed transfer to highlight the existence of the requirement and to provide information on what storm water management facilities are present, signs that maintenance is needed, and how the necessary maintenance can be performed. The transfer of this information will also be required with any subsequent sale of the property.

### 6.0 SOURCES OF ADDITIONAL INFORMATION

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Two excellent sources of additional information on many of the site design, source control, and treatment control topics and concepts discussed in this Manual are the California Stormwater Quality Association (CASQA) “New Development and Redevelopment Handbook,” dated 2003, and the “City of Santa Barbara Storm Water BMP Guidance Manual (Technical Guidance Manual for Post-Construction Storm Water Management),” dated June 2008.

The CASQA document may be viewed and downloaded at the following website:

<http://www.cabmphandbooks.com>

The Santa Barbara document may be viewed and downloaded at the following website:

[http://www.santabarbaraca.gov/Resident/Community/Creeks/Low\\_Impact\\_Development.htm](http://www.santabarbaraca.gov/Resident/Community/Creeks/Low_Impact_Development.htm)

The BGS also contains a listing of reference documents on many of these same topics, but those may or may not be accessible via the internet.

The Monterey Stormwater Education Alliance website at <http://www.montereysea.org> also contains links to numerous sites with information on these topics.

### ATTACHMENT 1

#### BMP Implementation Tracking Form

#### BMP IMPLEMENTATION TRACKING FORM

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 that are equally or more effective in pollutant reduction than the comparable BMPs listed below may also be acceptable, if approved by the City. All BMPs must comply with local zoning and building codes and other applicable regulations.

In order to facilitate the design review and permitting process, when the application for the project is submitted to the City it should include a copy of this form with the Project Information filled-in and the applicable check boxes marked to indicate which of these BMPs have been incorporated into the design of the project. The locations of these BMPs should also be shown on the site plan for the project.

#### Project Information

Owners Name: \_\_\_\_\_

Blk/Lot/APN: \_\_\_\_\_

Address: \_\_\_\_\_

Project Type (see Sections 2.5.2.3 and 2.5.3.4 of this Manual for Project Type descriptions):

Small  Large  
Residential Residential

If either of the above boxes is checked, the project will be subject to the Residential Project requirements described in Section 2.5.3.

Commercial (describe type of business): \_\_\_\_\_

If this box is checked, the project will be subject to the Commercial Project requirements described in Section 2.5.4.

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1.5 The project will create and/or replace  $\geq 2,500$  square feet of impervious surface (collectively over the entire project site), including detached single-family home projects. If this box is checked the project will be subject to Performance Requirement No. 1 as described in Section 2.5.1.

The project is not a detached single family home but has a Net Impervious Area (as defined in Section 1.5)  $\geq 5,000$  square feet, or is a detached single family home project and has a Net Impervious Area  $\geq 15,000$  square feet. If this box is checked it will be subject to the more complex requirements of Performance Requirement No. 2: Water Quality Treatment described in Attachment 5.

1.6 The project has a Net Impervious Area  $\geq 15,000$  square feet, and is not a detached single family home. If this box is checked the project will be subject to additional requirements, and the applicant should meet with City staff to discuss and determine what those requirements will be.

1.7 Some part of the project site has a natural slope that is 25% or greater. If this box is checked the project will be subject to additional requirements for development on steep slopes as described in Section 2.5.2.

### Site Design BMPs

#### Minimize Impervious Areas

- Reduce sidewalk widths where it is practicable
- 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

- Maximize 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

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- Draining parking lots into landscape areas co-designed as biofiltration areas

- Draining roads, sidewalks, and impervious trails into adjacent landscaping

### Slope and Channel Protection

- Use of existing natural drainage systems to the maximum extent feasible

- Stabilizing permanent channel crossings

- Planting native or drought-tolerant vegetation on slopes

- Using 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

- Grassy 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

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- ☐ Infiltration basin
- ☐ Infiltration trench
- ☐ 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

## ATTACHMENT 2

### Descriptions of Treatment Control BMPs

Source: Best Management Practices Guidance Series (BGS)

The BMPs described below are treatment control BMPs that can be built at new development and redevelopment sites to capture and treat the polluted runoff before it enters the City's storm drain system or other receiving waters. Many of these are included in Table 3 of Attachment 3. When site design and source control BMPs alone are inadequate to fulfill the City's storm water pollution prevention requirements for a proposed project, treatment control BMPs which are feasible for the proposed development should be incorporated into its design.

## ZONING

Treatment controls must be designed such that volumes and flows in excess of the design rainfall event bypass the unit, otherwise there is the possibility of aggravating flooding and also causing resuspension of previously captured sediments or other constituents. Also, all of the treatment BMPs described below require some inspection, maintenance, and disposal of solids to ensure optimum performance and often to avoid flooding.

1. Rooftop Catchment Systems – These are rooftops which can sometimes be designed into large commercial and industrial sites to pool stormwater which, following the storm, evaporates. This effectively eliminates rooftop runoff from the storm drain system, and thereby reduces the hydraulically-connected impervious area. Another function of these systems is to slow down the runoff to reduce peaks. Problems with rooftop catchment systems are mainly related to leakage.
2. Vegetated Filter Strips – Vegetated filter strips, buffer strips, or riparian buffer zones are strips of vegetation placed between receiving waters (e.g., along streams) and pollutant sources. The effectiveness of the strips depends primarily on the width of the strip, and the vegetation type and condition. Strips of 100-300 feet in width are often considered. Such strips have been successfully applied to urban, agricultural, and forestry situations. Vegetation type selection must take into account the climate and usually should be drought-resistant. Maintenance is primarily annual cutting. Such strips are recommended for developments located along receiving waters such as streams, rivers and lakes, but outside the flood control boundary.
3. Vegetated Swales – Swales are shallow low gradient channels that are vegetated. They are commonly applied in rural residential areas in lieu of traditional curb/gutters and underground stormwater drainage pipes. Water quality improvement is achieved primarily through filtration, and performance is dependent on the swale hydraulic capacity and vegetation type and condition. Influent water should be relatively free of coarse sediment to avoid burying the vegetation. Where sediment loads are of concern, sediment settling basins can be provided upstream of the swales. Maintenance consists primarily of vegetation management and settling basin cleanouts. Swales are generally recommended for low-density residential developments located in relatively flat terrain.
4. Infiltration Basins – Infiltration basins store and infiltrate stormwater into the surficial groundwater aquifer. Performance is critically dependent on soil porosity and adequate depth to groundwater. Such conditions are typical of inland valleys, in contrast to low lying coastal areas. In order to maintain recharge rates, influent water may require pretreatment to remove sediments. Infiltration basins are effective at reducing runoff rates and volumes and can provide water supply benefits through aquifer recharge. Maintenance primarily consists of periodic removal of accumulated trash, debris and sediments to maintain recharge rates. Infiltration basins are generally recommended in areas where the depth to groundwater is relatively high and the soils are highly pervious. Where such conditions exist, this technology is generally applicable to the entire range of urban development, although the potential for groundwater contamination is often of concern in industrial areas.
5. Infiltration Trenches – Infiltration trenches are shallow drains filled with high porosity materials (e.g. gravel). Stormwater discharged to these trenches is stored during the runoff event and infiltrates into the groundwater during dry weather periods. As with infiltration basins, performance requires porous subsoils and adequate depth to the groundwater table. The acceptability and designs of infiltration trenches must take into consideration the potential for infiltrating water to adversely affect soil strength around foundations. Infiltration trenches are generally not recommended for roof runoff near buildings because of building code requirements; but can be effective as part of the overall open channel drainage system.
6. Dry Detention Ponds/Basins – These are basins designed to temporarily store and treat storm water prior to gradually releasing it downstream. Such basins can provide flood control and storm water treatment benefits. Treatment performance depends on storage volume (12-24 hours of residence time is considered a good rule of thumb), and good circulation (avoidance of short circuiting). A major factor limiting good performance is that, during larger storm runoff events, water entering a dry basin may resuspend previously

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settled material in which case the ponds may act as a source of sediment and associated chemicals. In general dry basins are not as effective as wet basins (discussed below), however, in certain arid areas, wet basins are not feasible. Performance of dry basins can be improved by incorporating slow release outlet structures. Such basins are generally applicable to residential, commercial, and industrial development in areas where there is insufficient runoff to maintain wet basins.

7. Retention Ponds/Wet Basins – These are basins that contain a permanent pool of water. Such ponds can provide flood control, ecological, and water quality benefits. The performance of wet basins depends on the size of the basin, watershed characteristics, and influent conditions. The primary treatment process in retention ponds is settling. Maintenance is required for removing debris, vegetation management, and maintaining the inlet and outlet structures. Accumulation rates in such basins typically require that accumulated sediment be removed about once every 10-20 years. Retention ponds are generally applicable to most urban situations, as long as there is adequate space for the facility and acceptable geological conditions.

8. Constructed/Restored Wetlands – In addition to providing flood control and water supply benefits through artificial recharge of groundwater, constructed wetlands designed for stormwater management provide water quality benefits through a number of processes including sedimentation, filtration, absorption, biological processes, and nutrient uptake. Pollutant removal performance depends on the size of the wetland relative to the watershed, the design of the wetland, and the type and composition of wetland vegetation. Wetlands also provide additional ecological and recreational benefits. If a significant amount of sedimentation is anticipated, a deep settling basin could be constructed (which the water would enter prior to reaching the wetland). The basin would require periodic maintenance to remove accumulated sediment. Constructed wetlands require maintenance, especially in the first 5-10 years during which vegetation is growing and natural seeding is occurring. Providing suitable hydrologic conditions for vegetation growth and water treatment is key to successful performance of constructed wetlands. Constructed wetlands are generally applicable to most urban situations, as long as there is adequate space for the facility, an adequate source of water, and appropriate soils. In California, such wetlands would likely be seasonal in nature. The cost of urban lands often precludes this type of treatment in the more densely developed portions of urban areas.

A variation of this control is the use of existing wetlands for urban runoff treatment. Existing wetlands at or downstream of a new development/redevelopment project can be enhanced to improve hydrology, and runoff from the development project can be directed to the wetlands. Note that the dry detention ponds/basins, retention ponds/wet basins, and the constructed wetlands need to be periodically monitored for accumulation of toxic materials, and provisions made for cleanout and disposal pretreatment may be added (to remove heavy sediment trash and debris) to reduce maintenance. If a significant amount of sediment is anticipated, a deep settling basin could be constructed. This would also need to be periodically cleaned out to maintain capacity.

9. Filtration Systems – Filtration systems convey stormwater through filter media (e.g., sand, compost, charcoal) to treat the storm water. The chemicals treated vary depending on the type of media and may include fine sediment, colloidal material, hydrocarbons, organics, nutrients and dissolved metals. Such systems come in many sizes and designs including: (1) inserts placed in individual storm drain inlets, (2) linear units that treat stormwater from small impervious areas such as parking lots, and (3) large 1-2 acre sand filters that treat runoff from urban catchments. Filters are effective as long as the capacity of the filter is not exceeded, and the filter is not allowed to clog. Filter inserts are particularly problematic in this regard, and recent testing and evaluation questions their applicability where material in runoff will clog or block the filter. In stormwater applications filter systems are required to remove blocking materials (leaves, trash, debris, sediments, oil and grease) and storage to better manage flowrates. Experience to date with filter type inserts for drain inlets suggest that the units are easily clogged with sediment and debris, with resultant bypassing of most of the flows. Therefore, inserts are not recommended unless require frequent inspection

## ZONING

and cleaning is performed. Filtration systems will have limited application in small well-maintained parking lots.

10. Oil/Grit Separators – Oil/grit (gravity) separators are usually multi-chambered treatment units that are placed underground and treat stormwater from a drainage catchment. The individual chambers often are designed to trap grit and floatables, and adsorb hydrocarbons. Flows in excess of the design capacity should be diverted around the unit, otherwise there is the possibility that sediment previously trapped in the chambers will be resuspended and flushed downstream. Inspection and maintenance is required to ensure that the units are not filling up with sediment, as accumulation can affect performance. Traditional gravity oil/water separators that utilize skimming devices and coalescing plates (to increase droplet size and capture) are generally not applicable to stormwater conditions where total hydrocarbon concentrations are generally less than 10 mg/l. The performance of oil/grit separators varies depending on the chosen design. Research should be done before selecting any separators to verify that they will perform as desired. In general, oil/grit separators are useful only at sites where there are chances that oil spills could occur and to a limited degree at development sites that have high oil and grease loadings such as petroleum storage yards and vehicle storage facilities.

### ATTACHMENT 3

#### BMP IMPLEMENTATION TABLES

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

Priority Project Categories	General Pollutant Categories								
	Sediments	Nutrients	Heavy Metals	Organic Compounds	Trash and Debris	Oxygen Demanding Substances	Oil and Grease	Bacteria and Viruses	Pesticides
Detached Residential Development	X	X			X	X	X	X	X
Attached Residential Development	X	X			X	p <sup>(1)</sup>	p <sup>(2)</sup>	P	X
Commercial Development >100,000 ft. <sup>2</sup>	p <sup>(1)</sup>	p <sup>(1)</sup>		p <sup>(2)</sup>	X	p <sup>(5)</sup>	X	p <sup>(3)</sup>	p <sup>(5)</sup>
Automotive Service Facilities			X	X <sup>(4)(5)</sup>	X		X		
Retail Gasoline Outlets			X	X <sup>(4)(5)</sup>	X		X		
Restaurants					X	X	X	X	
Hillside Development	X	X			X	X	X		X
Parking Lots	p <sup>(1)</sup>	p <sup>(1)</sup>	X		X	p <sup>(1)</sup>	X		p <sup>(1)</sup>
Streets, Highways and Freeways	X	p <sup>(1)</sup>	X	X <sup>(4)</sup>	X	p <sup>(5)</sup>	X		

X = anticipated

P = potential

(1) A potential pollutant if landscaping exists on-site

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- (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**

Specific Areas for Implementation of Site Design and Source Control BMPs									
Priority Project Categories	Driveways, Roads, and Guest Parking	Loading/ Unloading Dock Areas	Repair/ Maintenance Bays	Vehicle/ Equipment Washing/ Steam Cleaning Areas	Parking Areas	Fueling Areas	Outdoor Material Storage Areas	Trash Storage Areas	Pools and Spas
Small Residential Development	R								R
Large Residential Development	R	R		R	R			R	R
General Commercial Development	R	R		R	R		R	R	
Automotive Service Facilities	R	R	R	R	R	R	R	R	
Retail Gasoline Outlets	R	R	R	R	R	R	R	R	
Restaurants	R	R		R	R		R	R	

R = Required – minimize pollutants of concern by selecting appropriate site design and source control BMPs

**Table 3. Treatment Control BMP Selection Matrix<sup>(1)</sup>**

Pollutant of Concern	Treatment Control BMP Categories						
	Biofilters	Detention Basins	Infiltration Basins <sup>(2)</sup>	Wet Ponds or Wetlands	Drainage Inserts	Filtration	Hydrodynamic Separator Systems <sup>(3)</sup>
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 and 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 and Grease	M	M	U	U	L	H	L
Pesticides	U	U	U	U	L	U	L

(1) The City is encouraged to periodically assess the performance characteristics of many of these BMPs to update this table.

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- (2) Including trenches and porous pavement
- (3) Also known as hydrodynamic devices and baffle boxes
- L: Low removal efficiency
- M: Medium removal efficiency
- H: High removal efficiency
- U: Unknown removal efficiency

Sources: Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (1993), National Stormwater Best Management Practices Database (2001), and Guide for BMP Selection in Urban Developed Areas (2001).

ATTACHMENT 4

Sample Form of Agreement for Ongoing Maintenance of Treatment Control BMPs

Source: Best Management Practices Guidance Series (BGS)

Agreement Regarding Maintenance of Treatment Control BMPs (Best Management Practices)

for APN No. \_\_\_\_\_

\_\_\_\_\_, being the owner of the real property located at \_\_\_\_\_, California, consents and agrees to inspect and maintain annually, prior to September 30 of each year, the Treatment Control BMPs (such as silt and/or grease traps or detention systems) on the subject property as shown on the improvement plans dated \_\_\_\_\_, on file with the City of \_\_\_\_\_. I agree to forward a letter providing proof of inspection and maintenance to the City of \_\_\_\_\_ Public Works Department prior to October 15 of each year.

In order to transfer the property to a private or public owner, I shall require the recipient to assume responsibility for maintenance of any Treatment Control BMPs in the sales or lease agreement for that property.

The condition of transfer shall include a provision that the new property owner agrees to forward a letter providing proof of BMP inspection and maintenance to the City of \_\_\_\_\_ Public Works Department prior to October 15 of each year.

Printed educational materials will be required to accompany the first deed transfer to highlight the existence of the requirement and to provide information on what storm water management facilities are present, signs that maintenance is needed, and how the necessary maintenance can be performed. The transfer of this information shall also be required with any subsequent sale of the property.

I have read the above agreement and understand it.

\_\_\_\_\_

Owner

\_\_\_\_\_

Date

ATTACHMENT 5

Additional RWQCB Post-Construction Performance Requirements

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Source: "Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region" adopted by the RWQCB on July 12, 2013.

### 1) Performance Requirement No. 2: Water Quality Treatment

a) The Permittee shall require Regulated Projects, except detached single-family homes,  $\geq 5,000$  square feet of Net Impervious Area, and detached single-family homes  $\geq 15,000$  square feet of Net Impervious Area, to treat stormwater runoff as required in the Water Quality Treatment Performance Requirements in Section B.3.b. to reduce pollutant loads and concentrations using physical, biological, and chemical removal.

i) Net Impervious Area is the total (including new and replaced) post-project impervious areas, minus any reduction in total imperviousness from the pre-project to post-project condition: Net Impervious Area = (New and Replaced Impervious Area) – (Reduced Impervious Area Credit), where Reduced Impervious Area Credit is the total pre-project to post-project reduction in impervious area, if any.

b) The Permittee shall require each Regulated Project subject to Water Quality Treatment Performance Requirements to treat runoff generated by the Regulated Project site using the onsite measures below, listed in the order of preference (highest to lowest). Water Quality Treatment Performance Requirements shall apply to the runoff from existing, new, and replaced impervious surfaces on sites where runoff from existing impervious surfaces cannot be separated from runoff from new and replaced impervious surfaces.

i) Low Impact Development (LID) Treatment Systems – Implement harvesting and use, infiltration, and evapotranspiration Stormwater Control Measures that collectively achieve the following hydraulic sizing criteria for LID systems:

(1) Hydraulic Sizing Criteria for LID Treatment Systems – LID systems shall be designed to retain stormwater runoff equal to the volume of runoff generated by the 85th percentile 24-hour storm event, based on local rainfall data.

ii) Biofiltration Treatment Systems – Implement biofiltration treatment systems using facilities that must be demonstrated to be at least as effective as<sup>1</sup> a biofiltration treatment system with the following design parameters:

(1) Maximum surface loading rate appropriate to prevent erosion, scour and channeling within the biofiltration treatment system itself and equal to 5 inches per hour, based on the flow of runoff produced from a rain event equal to or at least:

(a) 0.2 inches per hour intensity; or

(b) Two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depth

(2) Minimum surface reservoir volume equal to the biofiltration treatment system surface area times a depth of 6 inches

(3) Minimum planting medium depth of 24 inches. The planting medium must sustain a minimum infiltration rate of 5 inches per hour throughout the life of the project and must maximize runoff retention

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<sup>1</sup> Facilities or a combination of facilities, of a different design than in Section B.3.b.ii. may be permitted if all of the following measures of equivalent effectiveness are demonstrated: 1) equal or greater amount of runoff infiltrated or evapotranspired; 2) equal or lower pollutant concentrations in runoff that is discharged after biofiltration; 3) equal or greater protection against shock loadings and spills; and 4) equal or greater accessibility and ease of inspection and maintenance

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and pollutant removal. A mixture of sand (60%-70%) meeting the specifications of American Society for Testing and Materials (ASTM) C33 and compost (30%-40%) may be used. A Regulated Project may utilize an alternative planting medium if it demonstrates its planting medium is equal to or more effective at attenuating pollutants than the specified planting medium mixture.

- (4) Proper plant selection<sup>2</sup>
- (5) Subsurface drainage/storage (gravel) layer with an area equal to the biofiltration treatment system surface area and having a minimum depth of 12 inches
- (6) Underdrain with discharge elevation at top of gravel layer
- (7) No compaction of soils beneath the biofiltration facility (ripping/loosening of soils required if compacted)
- (8) No liners or other barriers interfering with infiltration, except for situations where lateral infiltration is not technically feasible.

iii) Non-Retention Based Treatment Systems – Implement Stormwater Control Measures that collectively achieve at least one of the following hydraulic sizing criteria for non-retention based treatment systems:

(1) Hydraulic Sizing Criteria for Non-Retention Based Treatment Systems:

(a) Volume Hydraulic Design Basis – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to the volume of runoff generated by the 85th percentile 24-hour storm event, based on local rainfall data.

(b) Flow Hydraulic Design Basis – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat:

(i) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or

(ii) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.

c) Stormwater Control Plan Requirements – For each Regulated Project subject to the Water Quality Treatment Performance Requirement, the Permittee shall require the Project Applicant to provide the below information in a Stormwater Control Plan. The Permittee shall not grant final project approval, until the Stormwater Control Plan for the Regulated Project sufficiently demonstrates the Regulated Project design meets the Water Quality Treatment Performance Requirements.

i) Project name, application number, location including address and assessor's parcel number

ii) Name of Applicant

iii) Project Phase number (if project is being constructed in phases)

iv) Project Type (e.g., commercial, industrial, multi-unit residential, mixed-use, public), and description

v) Total project site area

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<sup>2</sup> Technical guidance for designing bioretention facilities is available from the Central Coast LID Initiative. The guidance includes design specifications and plant lists appropriate for the Central Coast climate. ([http://www.centralcoastlidi.org/Central\\_Coast\\_LIDI/LID\\_Structural\\_BMPs.html](http://www.centralcoastlidi.org/Central_Coast_LIDI/LID_Structural_BMPs.html))

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- vi) Total new impervious surface area, total replaced impervious surface area, total new pervious area, and calculation of Net Impervious Area
- vii) Statement of Water Quality Treatment Performance Requirements that apply to the Project
- viii) Summary of Site Design and Runoff Reduction (Performance Requirement No. 1) measures selected for the project
- ix) Description of all post-construction structural Stormwater Control Measures
- x) Supporting calculations used to comply with the applicable Water Quality Treatment Performance Requirements
- xi) Documentation certifying that the selection, sizing, and design of the Stormwater Control Measures meet the full or partial Water Quality Treatment Performance Requirement
- xii) Water quality treatment calculations used to comply with Water Quality Treatment Performance Requirement and any analysis to support infeasibility determination
- xiii) Statement of Compliance:
  - (1) Statement that Water Quality Treatment Performance Requirement has been met on-site, or, if not achievable:
    - (a) Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance requirements.
    - (b) Statement of intent to comply with Water Quality Treatment Performance Requirement through Alternative Compliance
  - 2) Performance Requirement No. 3: Runoff Retention
    - a) The Permittee shall require Regulated Projects, except detached single-family homes, that create and/or replace  $\geq 15,000$  square feet of impervious surface (collectively over the entire project site), and detached single-family homes  $\geq 15,000$  square feet of Net Impervious Area, in WMZs 1, 2, 5, 6, 8 and 9, and those portions of WMZs 4, 7, and 10 that overlie designated Groundwater Basins (Attachment B) to meet the Runoff Retention Performance Requirements in Sections B.4.b. and B.4.c. using the LID Development Standards in Section B.4.d. for optimal management of watershed processes.
    - b) Adjustments to the Runoff Retention Performance Requirements for Redevelopment – Where the Regulated Project includes replaced impervious surface, the below adjustments apply. These adjustments are accounted for in the Retention Tributary Area calculation in Attachment D.
      - i) Redevelopment Projects outside an approved Urban Sustainability Area, as described in Section C.3. – The total amount of replaced impervious surface shall be multiplied by 0.5 when calculating the volume of runoff subject to Runoff Retention Performance Requirements.
      - ii) Redevelopment Projects located within an approved Urban Sustainability Area (Section C.3.) – The total amount of runoff volume to be retained from replaced impervious surfaces shall be equivalent to the pre-project runoff volume retained.
    - c) The Permittee shall require Regulated Projects, subject to the Runoff Retention Performance Requirements, to meet the following Performance Requirements:

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i) Watershed Management Zone 1 and portions of Watershed Management Zones 4, 7 and 10 which overlie designated Groundwater Basins:

(1) Retain 95th Percentile Rainfall Event – Prevent offsite discharge from events up to the 95th percentile 24-hour rainfall event as determined from local rainfall data.<sup>3</sup>

(2) Compliance must be achieved by optimizing infiltration. Compliance for retention of the remaining volume must be achieved via storage, rainwater harvesting and/or evapotranspiration.

ii) Watershed Management Zone 2:

(1) Retain 95th Percentile Rainfall Event – Prevent offsite discharge from events up to the 95th percentile 24-hour rainfall event as determined from local rainfall data.

(2) Compliance must be achieved via storage, rainwater harvesting, infiltration, and/or evapotranspiration.

iii) Watershed Management Zones 5 and 8:

(1) Retain 85th Percentile Rainfall Event – Prevent offsite discharge from events up to the 85th percentile 24-hour rainfall event as determined from local rainfall data.

(2) Compliance must be achieved by optimizing infiltration. Compliance for retention of the remaining volume must be achieved via storage, rainwater harvesting and/or evapotranspiration.

iv) Watershed Management Zones 6 and 9:

(1) Retain 85th Percentile Rainfall Event – Prevent offsite discharge from events up to the 85th percentile 24-hour rainfall event as determined from local rainfall data.

(2) Compliance must be achieved via storage, rainwater harvesting, infiltration, and/or evapotranspiration.

d) LID Development Standards – The Permittee shall require Regulated Projects, subject to Runoff Retention Performance Requirements, to meet Runoff Retention Performance Requirements (Sections B.4.b. and B.4.c.) using the following LID Development Standards:

i) Site Assessment Measures – Permittees shall require the applicant for each Regulated Project to identify opportunities and constraints to implement LID Stormwater Control Measures. Permittees shall require the applicant to document the following, as appropriate to the development site:

- Site topography
- Hydrologic features including contiguous natural areas, wetlands, watercourses, seeps, or springs
- Depth to seasonal high groundwater
- Locations of groundwater wells used for drinking water
- Depth to an impervious layer such as bedrock
- Presence of unique geology (e.g., karst)

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<sup>3</sup> Use either the methodology provided in Part I.D of the December 2009 Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act, or, rainfall statistics provided by the Central Coast Water Board, whichever produces a more accurate value for rainfall depth.

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- Geotechnical hazards
- Documented soil and/or groundwater contamination
- Soil types and hydrologic soil groups
- Vegetative cover/trees
- Run-on characteristics (source and estimated runoff from offsite which discharges to the project area)
- Existing drainage infrastructure for the site and nearby areas including the location of municipal storm drains
- Structures including retaining walls
- Utilities
- Easements
- Covenants
- Zoning/Land Use
- Setbacks
- Open space requirements
- Other pertinent overlay(s)

ii) Site Design Measures – Permittees shall require the applicant for each Regulated Project to optimize the use of LID site design measures, as feasible and appropriate at the project site. Regulated Projects subject to Performance Requirement No. 3 must augment design strategies required by Performance Requirement No. 1 (Section B.2.a.i-v) with the following:

- Define the development envelope and protected areas, identifying areas that are most suitable for development and areas to be left undisturbed
- Conserve natural areas, including existing trees, other vegetation, and soils
- Limit the overall impervious footprint of the project
- Construct streets, sidewalks, or parking lot aisles to the minimum widths necessary, provided that public safety or mobility uses are not compromised
- Set back development from creeks, wetlands, and riparian habitats
- Conform the site layout along natural landforms
- Avoid excessive grading and disturbance of vegetation and soils

iii) Delineation of discrete Drainage Management Areas (DMAs) – The Permittee shall require each Regulated Project to delineate DMAs to support a decentralized approach to stormwater management.

(1) The Permittee shall require the applicant for each Regulated Project to provide a map or diagram dividing the entire project site into discrete DMAs

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(2) The Permittee shall require the applicant for each Regulated Project to account for the drainage from each DMA using measures identified in Sections B.4.d.iv. and B.4.d.v., below.

iv) Undisturbed and Natural Landscape Areas – Permittees shall require each Regulated Project to implement appropriate Site Design (Section B.4.d.ii.), and Runoff Reduction Measures in Performance Requirement No. 1, to reduce the amount of runoff for which retention and treatment is required. Runoff reduction measures that can be used to account for this reduction also include the below measures. The Retention Tributary Area calculation in Attachment D accounts for these reductions.

(1) Undisturbed or areas planted with native, drought-tolerant, or LID appropriate vegetation that do not receive runoff from other areas may be considered self-treating and no additional stormwater management is required.

(2) Runoff from impervious surfaces, generated by the rainfall events identified in Section B.4.c, may be directed to undisturbed or natural landscaped areas. When the applicant can demonstrate that this runoff will be infiltrated and will not produce runoff to the storm drain system, or a surface receiving waterbody, or create nuisance ponding that may affect vegetation health or contribute to vector problems, then no additional stormwater management is required for these impervious surfaces.

v) Structural Stormwater Control Measures – Where Regulated Project Applicants have demonstrated in their Stormwater Control Plans, and the Permittee has confirmed, that use of Site Design measures listed in Section B.4.d.ii., Runoff Reduction measures listed in Performance Requirement No. 1, and undisturbed and natural landscape areas discussed in Section B.4.d.iv., has been maximized to the extent feasible, Structural Stormwater Control Measures designed for water quality treatment and/or flow control shall be used to comply with Performance Requirement No. 3.

(1) The Permittee shall require the Regulated Project applicant to use structural Stormwater Control Measures that optimize retention and result in optimal protection and restoration of watershed processes, such as Structural Control Measures associated with small-scale, decentralized facilities designed to infiltrate, evapotranspire, filter, or capture and use stormwater.

vi) Hydrologic Analysis and Structural Stormwater Control Measure Sizing – To determine Stormwater Control Measure sizing and design, Permittees shall require Regulated Project applicants to use one of the following: 1) hydrologic analysis and sizing methods as outlined in Attachment D; 2) locally/regionally calibrated continuous simulation model that results in equivalent optimization of on-site runoff volume retention; or 3) hydrologic analysis and sizing methods, equally effective in optimizing on-site retention of the runoff generated by the rainfall event specified in Section B.4.c, that have been approved by the Central Coast Water Board Executive Officer.

e) Ten Percent Adjustment for Sites with Technical Infeasibility – Where technical infeasibility, as described in Section C.1.c., prevents full on-site compliance with the Runoff Retention Performance Requirement, on-site retention of the full Retention Volume per Section B.4.d.vi. is not required and the Regulated Project is required to dedicate no less than ten percent of the Regulated Project's Equivalent Impervious Surface Area<sup>4</sup> to retention-based Stormwater Control Measures.

i) Use the Attachment E instructions to calculate the ten percent adjustment for applying the Runoff Retention Performance Requirement.

ii) The Water Quality Treatment Performance Requirement is not subject to this adjustment, i.e., mitigation to achieve full compliance with the Water Quality Treatment Performance Requirement is required on- or off-site.

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<sup>4</sup> Calculate Equivalent Impervious Surface Area using guidance in Attachment E

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f) Off-Site Mitigation – Off-site mitigation is required when Regulated Projects do not retain the full Retention Volume per Section B.4.b and B.4.c, and 1) fail to demonstrate technical infeasibility of full retention; or 2) demonstrate technical infeasibility of full retention AND fail to dedicate at least ten percent of the Regulated Project’s Equivalent Impervious Surface Area to retention-based Stormwater Control Measures.

i) Use the Attachment F instructions to calculate the Off-Site retention requirements when a Regulated Project subject to the Runoff Retention Performance Requirement does not allocate the full ten percent of the project site’s Equivalent Impervious Surface Area to retention-based Stormwater Control Measures.

g) Reporting Requirements – For each Regulated Project subject to the Runoff Retention Performance Requirement, the Permittee shall require the Project Applicant to provide the below information in a Stormwater Control Plan. The Permittee shall not grant final project approval, until the Stormwater Control Plan for the Regulated Project sufficiently demonstrates the Regulated Project design meets the Water Quality Treatment and Runoff Retention Performance Requirements.

i) Project Name, application number, and location including address and assessor’s parcel number

ii) Name of Applicant

iii) Project Phase number (if project is being constructed in phases)

iv) Project Type (e.g., commercial, industrial, multiunit residential, mixed-use, public), and description

v) Total project site area

vi) Total new and/or replaced impervious surface area

vii) Statement of Water Quality Treatment and Runoff Retention Performance Requirements that apply to the Project

viii) Adjusted Requirements based on the local jurisdiction’s approval, that the Project is allowed a Special Circumstance, Watershed or Regional Plan, or Urban Sustainability Area designation

ix) Site assessment summary

x) LID Measures used:

(1) Site design measures

(2) Runoff Reduction Measures

(3) Post-construction structural Stormwater Control Measures

xi) Summary of Runoff Reduction Measures and Structural Stormwater Control Measures, by Drainage Management Area, as well as for the entire site

xii) Supporting calculations used to comply with the applicable Water Quality Treatment and Runoff Retention Performance Requirements

xiii) Documentation demonstrating infeasibility where Site Design and Runoff Reduction measures cannot retain required runoff volume

xiv) Documentation demonstrating infeasibility where retention-based Stormwater Control Measures cannot retain and/or treat the required runoff volume

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- xv) Documentation demonstrating infeasibility where on-site compliance cannot be achieved
- xvi) Documentation demonstrating percentage of the project's Equivalent Impervious Surface Area dedicated to retention-based Stormwater Control Measures
- xvii) Documentation of certification that the selection, sizing, and design of the Stormwater Control Measures meets the applicable Water Quality Treatment and Runoff Retention Performance Requirement
- xviii) O&M Plan for all structural Stormwater Control Measures to ensure long-term performance
- xix) Owner of facilities
- xx) Statement of Compliance:

(1) Statement that the Water Quality Treatment and Runoff Retention Performance Requirements have been met on-site, or, if not achievable:

(a) Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance volume.

(b) Statement of intent to comply with Water Quality Treatment and Runoff Retention Performance Requirements through an Alternative Compliance agreement.

### 5) Performance Requirement No. 4: Peak Management

The Permittee shall require all Regulated Projects that create and/or replace  $\geq 22,500$  square feet of impervious surface (collectively over the entire project site) in Watershed Management Zones 1, 2, 3, 6, and 9 to manage peak stormwater runoff as required below (Section B.5.a.i.), and to meet Water Quality Treatment and Runoff Retention Performance Requirements.

a) The Permittee shall apply the following Peak Management Performance Requirements:

i) Post-development peak flows, discharged from the site, shall not exceed pre-project peak flows for the 2-through 10-year storm events.

b) Reporting Requirements – For each Regulated Project subject to the Peak Management Performance Requirement, the Permittee shall require the Project Applicant to provide the below information in a Stormwater Control Plan. The Permittee shall not grant final project approval, until the Stormwater Control Plan for the Regulated Project sufficiently demonstrates the Regulated Project design meets the Water Quality Treatment, Runoff Retention, and Peak Management Requirements.

i) Project Name, application number, and location including address and assessor's parcel number

ii) Name of Applicant

iii) Project Phase number (if project is being constructed in phases)

iv) Project Type (e.g., commercial, industrial, multiunit residential, mixed-use, public), and description

v) Total project site area

vi) Total new and/or replaced impervious surface area

vii) Statement of Water Quality Treatment, Runoff Retention, and Peak Management Performance Requirements that apply to the Project

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viii) Adjusted Requirements based on the local jurisdiction's approval, that the Project is allowed a Special Circumstance, Watershed or Regional Plan, or Urban Sustainability Area designation

ix) Site assessment summary

x) LID Measures used:

(1) Site design measures

(2) Runoff Reduction Measures

(3) Post-construction structural Stormwater Control Measures

xi) Summary of Runoff Reduction Measures and Structural Stormwater Control Measures, by Drainage Management Area, as well as for the entire site

xii) Supporting calculations used to comply with the applicable Water Quality Treatment, Runoff Retention, and Peak Management Performance Requirements

xiii) Documentation demonstrating infeasibility where on-site compliance cannot be achieved

xiv) Documentation of certification that the selection, sizing, and design of the Stormwater Control Measures meets the applicable Water Quality Treatment, Runoff Retention, and Peak Management Performance Requirements

xv) O&M Plan for all structural SCMs to ensure long-term performance

xvi) Owner of facilities

xvii) Statement of Compliance:

(1) Statement that the Water Quality Treatment, Runoff Retention, and Peak Management Performance Requirements have been met on-site, or, if not achievable:

(a) Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance requirements.

(b) Statement of intent to comply with Water Quality Treatment, Runoff Retention, and Peak Management Performance Requirements through an Alternative Compliance agreement.

4) Performance Requirement No. 5: Special Circumstances

The Permittee may designate Regulated Projects as subject to Special Circumstances based on certain site and/or receiving water conditions. The Special Circumstances designation exempts a Regulated Project from Runoff Retention and/or Peak Management Performance Requirements where those Performance Requirements would be ineffective to maintain or restore beneficial uses of receiving waters. The Regulated Project subject to Special Circumstances must still comply with the Water Quality Treatment Performance Requirements.

a) Special Circumstances include:

i) Highly Altered Channel Special Circumstance:

The Permittee may designate Regulated Projects as subject to Special Circumstances for Highly Altered Channels for the following conditions:

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(1) Project runoff discharges into stream channels that are concrete-lined or otherwise continuously armored from the discharge point to the channel's confluence with a lake, large river (>200-square mile drainage area).

(2) Project runoff discharges to a continuous underground storm drain system that discharges directly to a lake, large river (>200-square mile drainage area), the San Lorenzo River in the City of Santa Cruz, or marine nearshore waters

(3) Project runoff discharges to other areas identified by the Central Coast Water Board

(4) Under no circumstance described in 6.a.i. can runoff from the Regulated Project result in adverse impacts to downstream receiving waters

ii) Intermediate Flow Control Facility Special Circumstance:

(1) The Permittee may designate Regulated Projects as subject to Special Circumstances for Intermediate Flow Control Facilities if the project runoff discharges to an existing (as of the date when the Central Coast Water Board approved Resolution R3-2012-0025) flow control facility that regulates flow volumes and durations to levels that have been demonstrated to be protective of beneficial uses of the receiving water downstream of the facility.

(2) The flow control facility must have the capacity to accept the Regulated Project's runoff.

(3) Demonstration of facility capacity to accept runoff and to regulate flow volumes and durations must include quantitative analysis based on numeric, hydraulic modeling of facility performance.

(4) Under no circumstance described in Section B.6.a.ii. can runoff from the Regulated Project result in adverse impacts to downstream receiving waters.

iii) Historic Lake and Wetland Special Circumstance:

(1) The Permittee may designate Regulated Projects as subject to Special Circumstances for Historic Lakes and Wetlands for the following conditions:

(a) Project is located where there was once a historic lake or wetland where pre-development hydrologic processes included filtration and storage but no significant infiltration to support downstream receiving water.

(b) The Special Circumstance has been established based on a delineation of the historic lake or wetland approved by the Central Coast Water Board Executive Officer

b) Performance Requirements for Highly Altered Channel and/or Intermediate Flow Control Facility Special Circumstances:

i) For Regulated Projects that: 1) create and/or replace  $\geq 22,500$  square feet of impervious surface; 2) are located in WMZs 1, 2, 5, and 8, and those portions of WMZs 4, 7, and 10 that overlie a designated Groundwater Basin:

(1) Water Quality Treatment (Performance Requirement No. 2)

(2) Runoff Retention (Performance Requirement No. 3)

ii) For Regulated Projects that: 1) create and/or replace  $\geq 22,500$  square feet of impervious surface; and 2) are located in WMZs 3, 6, and 9, and those portions of WMZs 4, 7, and 10 that do not overlie a designated Groundwater Basin:

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(1) Water Quality Treatment (Performance Requirement No. 2)

c) Performance Requirements for Historic Lake and Wetland Special Circumstances

i) For Regulated Projects that create and/or replace  $\geq 15,000$  and  $< 22,500$  square feet of impervious surface and meet the Historic Lake and Wetland Special Circumstance:

(1) Water Quality Treatment (Performance Requirement No. 2)

(2) Detention: Detain runoff such that the post-project peak discharge rate does not exceed the pre-project rate for all runoff up to the 95th percentile 24-hr rainfall event, or a more protective rate consistent with the Permittee's own development requirements

ii) For Regulated Projects that create and/or replace  $\geq 22,500$  square feet of impervious surface and meet the Historic Lake and Wetland Special Circumstance:

(1) Water Quality Treatment (Performance Requirement No. 2)

(2) Peak Management: Detain runoff such that the post-project peak discharge rate does not exceed the pre-project rate for the 95th percentile 24-hr rainfall event and the 2- through 10-yr storm events or a more protective rate consistent with the Permittee's own development requirements.

d) Documentation and Approval of Special Circumstances – The Permittee shall provide reasonable documentation to justify that a Regulated Project is more appropriately categorized under the Special Circumstances category.

i) Historic Lake and Wetland Special Circumstance – Prior to granting a Regulated Project Special Circumstances, the Permittee shall submit a proposal to the Central Coast Water Board Executive Officer for review and approval. The proposal shall include, at a minimum:

(1) Delineation of historic lakes and wetlands and any supporting technical information to substantiate the requested Special Circumstances designation; and

(2) Documentation that the proposal was completed by a registered professional engineer, geologist, architect, and/or landscape architect.

(Ord. 2014-01 § 1 (Exh. A), 2014).