Chapter 21.35 – Water Quality Control

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21.35.010 – Overview of Water Quality Protection Plans

Development that requires a coastal development permit and has the potential for adverse water quality or hydrologic (i.e., due to changes in runoff flows) impacts to coastal waters shall in most cases require both a construction-phase plan and a post-development plan for water quality protection. The water quality protection plans are summarized as follows:

A. Construction-Phase Plan.

1. Construction Pollution Prevention Plan. A Construction Pollution Prevention Plan (CPPP; see Section 21.35.030, below) shall be required for development that requires a coastal development permit and entails construction that has the potential for adverse water quality or hydrologic impacts to coastal waters. For the purposes of this section, construction includes clearing, grading, or other activities that involve ground disturbance; building, reconstructing, or demolishing a structure; and creation or replacement of impervious surfaces. The CPPP shall describe the temporary Best Management Practices (BMPs) the development will implement to minimize erosion and sedimentation during construction, and to minimize pollution of runoff and coastal waters by construction chemicals and materials.

B. Post-Development Plans. Development may require one of two post-development water quality protection plans:

1. Post-Development Runoff Plan. A Post-Development Runoff Plan (PDRP; see Section 21.35.040, below) shall be required for development that requires a coastal development permit and has the potential for adverse post-development water quality or hydrologic impacts to coastal waters. If the development entails activities or changes in land use other than construction (as defined in Subsection 21.35.010 (A) (1), above), including subdivision or re-division of land, the scope of the plan may be reduced accordingly. The PDRP shall describe the runoff management Site Design strategies, pollutant Source Control BMPs, and other measures the development will implement to protect coastal waters after the development is completed.
2. **Water Quality and Hydrology Plan.** A Water Quality and Hydrology Plan (WQHP; see Section 21.35.050, below) shall be required for development that requires a coastal development permit, has the potential for adverse water quality or hydrologic impacts to coastal waters, and is a Development of Water Quality Concern (see Subsection 21.35.050 (A), below). Developments of Water Quality Concern are specified categories of development that have a greater potential for adverse water quality and hydrologic impacts due to the development’s size, type of land use, and/or proximity to coastal waters.

The WQHP shall be prepared by a qualified licensed professional, and shall include a polluted runoff and hydrologic site characterization, a sizing standard for BMPs, use of a Low Impact Development (LID) approach to retain the design storm runoff volume on-site, and documentation of the expected effectiveness of proposed BMPs. Additional plan components that may be required include an alternatives analysis, and a description of the Treatment Control and/or Runoff Control BMPs the development will implement to minimize potential post-development water quality and hydrologic impacts.

21.35.020 – Information about Existing Project Site Conditions

In addition to the required content for each water quality protection plan specified in Sections 21.35.030 – 21.35.050, below, the following information about the existing project site conditions shall be submitted, if applicable to the project, to enable evaluation of the project’s potential water quality and hydrologic impacts:

A. **Location Map.** A location map, drawn to scale, showing the location of the development, and the distance from the development to the nearest coastal waters and other natural hydrologic features.

B. **Description of Existing Project Site Conditions.** A site plan that illustrates and describes the following existing project site conditions:

1. **Topography and Drainage.** General site topography and drainage, including natural hydrologic features that may provide stormwater infiltration, treatment, storage, or conveyance (such as groundwater recharge areas, stream corridors, floodplains, and wetlands), and any existing structural stormwater conveyances or BMPs.

2. **Nearby Coastal Waters and ESHA.** Location of coastal waters and Environmentally Sensitive Habitat Areas (ESHA) within two hundred (200) feet of the project site, indicating whether site runoff drains to these areas.

3. **Discharges to Impaired Waters or ASBS.** Whether runoff discharges to receiving waters listed for water quality impairment on the most recent Clean Water Act Section 303(d) list, or to an Area of Special Biological Significance (ASBS).

4. **Structures and Pavement.** Existing structures, impervious surface areas, permeable pavements, utilities, and vegetated areas. An accompanying table shall quantify the extent of such areas.
5. **Potential Contamination.** Any previous land use on the site with a potential for a historic source of contamination, and any known soil or water contamination.

### 21.35.030 – Construction Pollution Prevention Plan

The Construction Pollution Prevention Plan (CPPP) shall describe the temporary BMPs the development will implement to minimize erosion and sedimentation during construction, and to minimize pollution of runoff and coastal waters by construction chemicals and materials. The level of detail provided to address the plan’s requirements shall be commensurate with the type and scale of the development, and the potential for adverse water quality and hydrologic impacts to coastal waters.

**A. Applicability of Construction Pollution Prevention Plan.** A CPPP shall be required for development that requires a coastal development permit and entails construction that has the potential for adverse water quality or hydrologic impacts to coastal waters. For the purposes of this section, construction includes clearing, grading, or other activities that involve ground disturbance; building, reconstructing, or demolishing a structure; and creation or replacement of impervious surfaces.

To comply with the California State Water Resources Control Board (SWRCB) stormwater permit requirements, an applicant proposing certain size or types of development, including industrial facilities, may be required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that addresses construction activities. Applicants submitting a SWPPP to meet SWRCB requirements shall also submit a CPPP to meet the City’s LCP requirements for review of a coastal development permit application. Applicable information provided in the SWPPP may also be included as part of the CPPP.

**B. Submittal of Construction Pollution Prevention Plan.** An applicant shall submit a preliminary CPPP (based on site conditions and project features known at the time of application) with the coastal development permit application, and shall submit a final CPPP for approval prior to construction. The information provided to address the plan’s requirements may be submitted as a stand-alone document, or incorporated into the other permit application materials. Any changes to the final CPPP after issuance of the coastal development permit shall be subject to additional authorization by the Director.

**C. Requirements of Construction Pollution Prevention Plan.** The CPPP shall demonstrate that the development complies with the following requirements:

1. **Minimize Erosion, Pollutant Discharge, and Non-Stormwater Runoff.** During construction, development shall minimize erosion, the discharge of sediment and other pollutants, and non-stormwater runoff resulting from construction activities, through the use of temporary BMPs.

   Development shall implement the following types of construction-phase BMPs, as applicable to the project:

   a. **Erosion and Sediment Control BMPs.** BMPs to minimize soil erosion and the discharge of sediment off-site or to coastal waters, including:
(1) Erosion control BMPs to prevent soil from being eroded by water or wind (such as mulch, soil binders, blankets or mats, or temporary seeding).

(2) Sediment control BMPs to trap and remove eroded sediment (such as fiber rolls, silt fences, straw bales, and sediment basins).

(3) Tracking control BMPs to prevent vehicles leaving the construction area from tracking sediment off-site (such as a stabilized construction exit, and street sweeping).

b. **Pollutant Control BMPs.** BMPs to minimize the discharge of other pollutants resulting from construction activities (such as chemicals, vehicle fluids, petroleum products, asphalt and cement compounds, trash, and debris) off-site or to coastal waters, including:

   (1) Materials management and waste management BMPs to minimize the discharge of pollutants from staging, storage, and disposal of construction chemicals and materials (such as stockpile management practices, and a debris disposal plan).

   (2) Site management “good housekeeping” BMPs to minimize the discharge of pollutants from construction activities (such as maintaining an inventory of chemicals used on site, and having a written plan for the clean-up of spills and leaks).

c. **Non-Stormwater Runoff Control BMPs.** BMPs to retain, infiltrate, or treat non-stormwater runoff resulting from construction activities (such as a concrete washout facility, dewatering tank, or dedicated vehicle wash area), to minimize the discharge of polluted runoff.

2. **Stabilize Soil as Soon as Feasible.** Soil stabilization BMPs (such as mulching, soil binders, erosion control blankets, or temporary seeding) shall be implemented on graded or disturbed areas as soon as feasible during construction, where there is a potential for soil erosion to lead to discharge of sediment off-site or to coastal waters.

3. **Minimize Land Disturbance and Soil Compaction.** Development shall minimize land disturbance during construction (e.g., clearing, grading, and cut-and-fill) and shall phase grading activities, to avoid increased erosion and sedimentation. Development shall minimize soil compaction due to construction activities, to retain the natural stormwater infiltration capacity of the soil.

4. **Minimize Damage or Removal of Vegetation.** Development shall minimize the damage or removal of non-invasive vegetation (including trees, native vegetation, and root structures) during construction, to achieve water quality benefits such as transpiration, vegetative interception, pollutant uptake, shading of waterways, and erosion control.

5. **Use Designated Fueling and Maintenance Areas.** Conduct fueling and maintenance of construction equipment and vehicles off-site, if feasible. Any
fueling and maintenance of mobile equipment conducted on-site shall take place at a designated area located at least fifty (50) feet from coastal waters, drainage courses, and storm drain inlets, if feasible (unless these inlets are blocked to protect against fuel spills). The fueling and maintenance area shall be designed to fully contain any spills of fuel, oil, or other contaminants. Equipment that cannot be feasibly relocated to a designated fueling and maintenance area (such as cranes) may be fueled and maintained in other areas of the site, provided that procedures are implemented to fully contain any potential spills.

6. **Avoid Plastic Netting in Temporary Erosion and Sediment Control Products.** Development shall avoid the use of temporary erosion and sediment control products (such as fiber rolls, erosion control blankets, mulch control netting, and silt fences) that incorporate plastic netting (such as polypropylene, nylon, polyethylene, polyester, or other synthetic fibers), in order to minimize wildlife entanglement and plastic debris pollution.

7. **Use Additional BMPs for Construction Over, In, or Adjacent to Coastal Waters.** Development shall implement additional BMPs for construction taking place over, in, or adjacent to coastal waters (including wetlands), if there is a potential for construction chemicals or materials to enter coastal waters. BMPs shall include, where applicable:

   a. **Tarps to Capture Debris and Spills.** Use tarps or other devices to capture debris, dust, oil, grease, rust, dirt, fine particles, and spills to protect the quality of coastal waters.

   b. **BMPS for Use of Preservative-Treated Wood in Aquatic Environments.** If preservative-treated wood is used, implement appropriate BMPs that meet industry standards for selection, storage, and construction practices for use of preservative-treated wood in aquatic environments. At a minimum, implement the standards identified by the Western Wood Preservers Institute, et al. in: *Treated Wood in Aquatic Environments: A Specification and Environmental Guide to Selecting, Installing and Managing Wood Preservation Systems in Aquatic and Wetland Environments* (2012, or current revision thereof).

   c. **Non-Petroleum Hydraulic Fluids.** Use non-petroleum hydraulic fluids in principal heavy equipment operated for one week or longer over, in, or adjacent to coastal waters (including wetlands and intertidal areas), if leaks or spills of hydraulic fluid from this equipment cannot be contained and could potentially enter coastal waters.

8. **Avoid Grading During Rainy Season.** Development shall avoid grading during the rainy season (from October 15th through May 15th), unless the Director determines one of the following:

   a. **Extension.** If the Director grants an extension for a specific length of time, based on an inspection of the site, and a determination that conditions at the project site are suitable for continued work with appropriate erosion and
sedimentation control measures that will be maintained during the activity; or

b. **Emergency.** If the Director allows grading under emergency conditions, and BMPs to protect coastal resources are implemented where feasible.

9. **Manage Construction-Phase BMPs.** Appropriate protocols shall be implemented to manage construction-phase BMPs (including installation, ongoing operation, inspection, maintenance, and training), to protect coastal water quality.

10. **Use Appropriate BMP Guidance Manual.** The selection of BMPs for the Construction Pollution Prevention Plan shall be guided by the current edition of the California Stormwater Quality Association (CASQA) Construction BMP Handbook, or by the current edition of a BMP manual that has been designed to address local or regional runoff conditions and has been approved by the South Coast Regional Water Quality Control Board.

**D. Content of Construction Pollution Prevention Plan.** To comply with the CPPP requirements listed in Subsection 21.35.030 (C), above, the CPPP shall include a construction site map and a narrative description addressing, at a minimum, the following required components, if they are applicable to the development:

1. **Construction Site Plan Map.** A map delineating the construction site, construction phasing boundaries, and the location of all temporary construction-phase BMPs (such as silt fences, inlet protection, and sediment basins).

2. **Description of BMPs to be Implemented to Meet All CPPP Requirements.** A description of the BMPs that will be implemented to meet all the CPPP requirements listed in Subsection 21.35.030 (C), above, and how these BMPs will minimize pollution of runoff and coastal waters during construction. Include calculations that demonstrate proper sizing of the BMPs.

3. **Construction Phasing Schedule.** A construction phasing schedule, if applicable to the project, with a description and timeline of significant land disturbance activities.

4. **Schedule of BMP Installation and Construction Phasing.** A schedule for installation and removal of temporary erosion and sedimentation control BMPs, and identification of temporary BMPs that will be converted to permanent post-development BMPs.

5. **BMP Management Plan.** A description and schedule for the inspection, training, operation, and maintenance of construction-phase BMPs, including temporary erosion and sedimentation control BMPs, as needed to ensure that the coastal development permit’s water quality requirements are met.

**21.35.040 – Post-Development Runoff Plan**

The Post-Development Runoff Plan (PDRP) shall describe the runoff management Site Design strategies, pollutant Source Control BMPs, and other measures the development will implement.
to minimize stormwater pollution and changes in runoff flows from the site after development is completed, in order to protect and, where feasible, restore the quality of coastal waters. The level of detail provided to address the plan’s requirements shall be commensurate with the type and scale of the project, and the potential for adverse water quality and hydrologic impacts to coastal waters.

A. Applicability of Post-Development Runoff Plan. A PDRP shall be required if the development requires a coastal development permit and has the potential for adverse post-development water quality or hydrologic impacts to coastal waters. If the development entails activities of changes in land use other than construction as defined in Subsection 21.35.010 (A) (1), above (e.g., allowing motorized vehicle use of a trail previously restricted to pedestrians), including subdivision or re-division of land, the scope of the plan may be reduced accordingly.

B. Submittal of Post-Development Runoff Plan. An applicant shall submit a preliminary PDRP (based on site conditions and project features known at the time of application) with the coastal development permit application, and shall submit a final PDRP prior to issuance of the coastal development permit. Any changes to the final PDRP after issuance of the coastal development permit shall be subject to additional authorization by the Director.

C. Requirements of Post-Development Runoff Plan. The PDRP shall demonstrate that the development complies with the following requirements:

1. Address Runoff Management Early in Site Design Planning. All development shall address runoff management early in site design planning and alternatives analysis, and shall implement appropriate and feasible Site Design strategies for runoff management.

   Site Design strategies for runoff management are project design and site layout techniques that integrate existing site characteristics that affect runoff (such as topography, drainage patterns, vegetation, soil conditions, natural hydrologic features, and infiltration conditions) into the design of strategies to minimize post-development changes in the runoff flow regime, control pollutant sources, and where necessary remove pollutants.

2. Give Precedence to Low Impact Development Approach to Stormwater Management. All development shall give precedence to the use of a Low Impact Development (LID) approach to stormwater management, to preserve the natural hydrologic functions of the site and minimize post-development changes in the site’s runoff flow regime.

   LID emphasizes preventive Site Design strategies, integrated with small-scale, distributed BMPs that replicate the site’s pre-development hydrologic balance through infiltration, evapotranspiration, harvesting for later on-site use, detention, or retention of stormwater close to the source. By reducing runoff, LID also reduces the transport of pollutants from the site.

   In implementing an LID approach, priority shall be given to the use of LID Site Design strategies (such as reducing impervious surface area) to minimize post-development changes in the site’s stormwater flow regime, supplemented by
the use of structural LID BMPs (such as a bioretention system) if needed to mitigate any unavoidable changes in runoff flows. Use of LID Site Design strategies can reduce the volume of stormwater runoff generated, and thus reduce the need for and size of structural LID BMPs required.

LID Site Design strategies and BMPs include, but are not limited to, the following:

a. **Protect and Restore Natural Hydrologic Features.** Plan, site, and design development to protect and, where feasible, restore natural hydrologic features that provide stormwater infiltration, treatment, storage, or conveyance. Examples include:

   (1) Preserve natural drainage patterns, drainage swales, groundwater recharge areas, floodplains, and topographical depressions that can provide storage of small storm volumes.

   (2) Preserve natural stream corridors, rivers, and wetlands, and establish appropriate buffer areas.

b. **Preserve or Enhance Vegetation.** Plan, site, and design development to preserve or enhance non-invasive vegetation, in order to achieve water quality benefits such as transpiration, interception of rainfall, pollutant uptake, shading of waterways to maintain water temperature, and erosion control. Examples include:

   (1) Minimize removal of natural non-invasive vegetation.

   (2) Plant additional trees and other non-invasive vegetation, preferentially native plants.

c. **Maintain or Enhance On-Site Infiltration.** Plan, site, and design development to maintain or enhance on-site infiltration of runoff, where appropriate and feasible, in order to preserve natural hydrologic conditions, recharge groundwater, attenuate runoff flows, retain dry-weather runoff on-site, and minimize transport of pollutants. Examples include:

   (1) Avoid building impervious surfaces on highly permeable areas. Cluster buildings and other impervious areas onto the site’s least permeable soils.

   (2) Minimize unnecessary soil compaction, which can greatly reduce the infiltrative capacity of soils. Amend soil if needed to enhance its infiltration and pollutant removal capacity.

   (3) Install an infiltration/evapotranspiration BMP such as a bioretention system, vegetated swale, or rain garden.

d. **Minimize Impervious Surface Area.** Plan, site, and design development to minimize the installation of impervious surfaces (including pavement, sidewalks, driveways, patios, parking areas, streets, and roof-tops), in
order to reduce runoff. Where feasible, increase the area of pervious surfaces in re-development. Examples include:

(1) Downsize impervious coverage by minimizing the footprint of buildings and impervious pavement (such as a shorter driveway, narrower road, or smaller parking lot).

(2) Where pavement is required, install a permeable pavement system (e.g., interlocking concrete pavers, porous asphalt, permeable concrete, or reinforced grass or gravel), where appropriate and feasible. Design permeable pavements so that runoff infiltrates into a subsurface recharge bed and the underlying soil, if feasible, to reduce runoff, enhance groundwater recharge, and filter out pollutants.

e. Disconnect Impervious Surface Areas from Storm Drain System. Plan, site, and design development to minimize directly-connected impervious areas, which are areas covered by a building, impermeable pavement, or other impervious surfaces that drain directly into the storm drain system without first flowing across permeable areas (such as vegetative landscaping). Convey runoff from impervious surfaces into permeable areas in a non-erosive manner. Examples include:

(1) Direct roof-top runoff into permeable landscaped areas.

(2) Direct runoff from impervious pavement into distributed permeable areas such as turf, recreational areas, medians, parking islands, and planter boxes.

(3) Design curbs, berms, and similar structures to avoid isolation of vegetative landscaping and other permeable areas, and allow runoff to flow from impervious pavement to permeable areas for infiltration.

(4) Install an infiltration BMP such as a vegetated swale or filter strip to intercept runoff sheet flow from impervious surfaces.

(5) Install a rainwater harvesting BMP, such as a rain barrel or cistern, to capture and store roof-top runoff for later use in on-site irrigation.

3. Use Alternative BMPs Where On-Site Infiltration is Not Appropriate. If on-site infiltration of runoff may potentially result in adverse impacts (including, but not limited to, geologic instability, flooding, or pollution of coastal waters), the development shall substitute alternative BMPs that do not involve on-site infiltration, to minimize changes in the runoff flow regime to the extent appropriate and feasible. Alternative BMPs shall also be used where infiltration BMPs are not adequate to treat a specific pollutant of concern attributed to the development, or where infiltration practices would conflict with regulations protecting groundwater. Examples of alternatives to infiltration BMPs include:
a. **Install Green Roof or Flow-through Planter.** Install a vegetated “green roof” or flow-through planter box that does not infiltrate runoff into the ground, and instead uses evapotranspiration to reduce runoff.

b. **Install Rainwater Harvesting System.** Install a rainwater harvesting system (such as a rain barrel or cistern) to capture and store roof-top runoff for later on-site use of non-potable water that drains to the sanitary sewer or storm drain system (such as flushing toilets).

c. **Direct Runoff to Off-site Infiltration Facility.** Direct runoff from the development to an off-site regional infiltration facility.

d. **Direct Runoff to Storm Drain System.** If appropriate and feasible BMPs have been implemented to reduce runoff volume, velocity, and flow rates, direct runoff to the storm drain system.

4. **Use Source Control BMPs.** All development shall implement appropriate and feasible long-term, post-development pollutant Source Control BMPs to minimize the transport of pollutants in runoff from the development.

Source Control BMPs are structural features or operational practices that control pollutant sources and keep pollutants segregated from runoff. Examples include covering outdoor storage areas, using efficient irrigation, proper application and clean-up of potentially harmful chemicals and fertilizers, and proper disposal of waste.

5. **Address Runoff from Impervious and Semi-Pervious Surfaces.** Runoff from all new and/or replaced impervious and semi-pervious surfaces shall be addressed in the plan. For sites where the area of new and/or replaced impervious and semi-pervious surfaces is greater than or equal to 50% of the pre-existing impervious and semi-pervious surfaces, runoff from the entire developed area, including the pre-existing surfaces, shall be addressed in the plan.

6. **Prevent Adverse Impacts to Environmentally Sensitive Habitat Areas from Runoff.** In areas in or adjacent to an Environmentally Sensitive Habitat Area (ESHA), development shall be planned, sited, and designed to protect the ESHA from any significant disruption of habitat values resulting from the discharge of stormwater or dry weather flows.

7. **Minimize Discharges of Dry Weather Runoff to Coastal Waters.** Development shall be planned, sited, and designed to minimize discharges of dry weather runoff to coastal waters, to the maximum extent feasible. Examples include:

a. **Use Efficient Irrigation.** Use efficient irrigation techniques that minimize off-site runoff.

b. **Design Vehicle Washing Areas to Minimize Runoff.** Design vehicle washing areas so that wash water is conveyed to an infiltration system, recycling system, or sanitary sewer system, to minimize off-site runoff.
8. **Minimize Adverse Impacts of Discharges from Stormwater Outfalls.** Development shall be planned, sited, and designed to avoid the adverse impacts of discharging concentrated flows of stormwater or dry weather runoff through stormwater outfalls to coastal waters, intertidal areas, beaches, bluffs, or stream banks.

Development shall comply with the following requirements:

a. **Avoid Construction of New Stormwater Outfalls.** Avoid construction of new stormwater outfalls, and direct stormwater to existing facilities with appropriate treatment and filtration, where feasible.

b. **Minimize Adverse Impacts to Coastal Resources from Unavoidable Stormwater Outfalls.** Where new development or redevelopment of a stormwater outfall that discharges directly to coastal waters, intertidal areas, beaches, bluffs, or stream banks cannot be avoided, plan, site, design, and manage outfalls to minimize adverse impacts to coastal resources.

To minimize adverse impacts, development shall:

(1) Consolidate existing and new stormwater outfalls, where appropriate.

(2) Implement design and management features to minimize discharges of dry weather runoff through stormwater outfalls.

(3) Implement design and management features to minimize adverse impacts to coastal resources resulting from discharges of stormwater or dry weather runoff through stormwater outfalls.

9. **Prevent Erosion at Stormwater Outlets.** Protective measures shall be used to prevent erosion at stormwater outlets (including outlets of pipes, drains, culverts, ditches, swales, or channels), if the discharge velocity will be sufficient to potentially cause erosion from concentrated runoff flows.

The type of measures selected for outlet erosion prevention shall be prioritized in the following order, depending on the characteristics of the site and the discharge velocity:

a. **Use Vegetative Bioengineered Measures.** Vegetative bioengineered measures for outlet protection (such as plant wattles) shall be given preference, rather than hardened structures, where site conditions are favorable for these measures to be feasible and effective. Where plant wattles are not feasible, other bioengineered measures (such as rock and plant pole cuttings) shall be considered for outlet erosion prevention.

b. **Use Hardened Structure Consisting of Loose Material.** Where a vegetative bioengineered measure is not feasible or effective, a hardened structure consisting of loose material (such as a rip-rap apron or rock slope protection) shall be considered for outlet erosion prevention.
c. **Use Fixed Energy Dissipation Structure.** Where none of the above measures would be feasible or effective, a fixed energy dissipation structure (such as a concrete apron, grouted rip-rap, or baffles) designed to handle the range of flows exiting the outlet shall be used for outlet erosion prevention. It is anticipated that larger outlets will require a fixed energy dissipation structure.

10. **Manage BMPs for Life of Development.** Appropriate protocols shall be implemented to manage post-development BMPs (including ongoing operation, maintenance, inspection, and training) in all development, to protect coastal water quality for the life of the development.

11. **Use Appropriate BMP Guidance Manual.** The selection of BMPs for the Post-Development Runoff Plan shall be guided by the current edition of the California Stormwater Quality Association (CASQA) BMP Handbooks, or by the current edition of a BMP manual that has been designed to address local or regional runoff conditions and has been approved by the South Coast Regional Water Quality Control Board.

D. **Content of Post-Development Runoff Plan.** To comply with the PDRP requirements listed in Subsection 21.35.040 (C), above, the PDRP shall include a site plan and a narrative description addressing, at a minimum, the following required components, if they are applicable to the development:

1. **PDRP Site Plan.** A site plan showing post-development structural BMPs, stormwater conveyances and discharges, structures, pavements, and utilities, with contour intervals appropriate to identify post-development topography, finished grades, and drainage patterns.

2. **Identification of Pollutants Potentially Generated.** Identification of pollutants potentially generated by the proposed development that could be transported off the site by runoff.

3. **Estimate of Changes in Impervious and Semi-Pervious Surface Areas.** An estimate of the proposed changes in impervious surface area on the site, including pre-project and post-project impervious coverage area and the percentage of the property covered with impervious surfaces. Include an estimate of the proposed changes in the amount of directly-connected impervious areas, which drain directly into the storm drain system without first flowing across permeable areas. Also include an estimate of changes in site coverage with permeable or semi-permeable pavements.

4. **Description of BMPs to be Implemented to Meet All PDRP Requirements.** A description of the BMPs that will be implemented to meet all the PDRP requirements listed in Subsection 21.35.040 (C), above, and how these BMPs will minimize stormwater pollution and post-development changes in runoff flows from the development.

5. **Description of Low Impact Development Approach to Stormwater Management to be Implemented.** A description of the Low Impact Development
(LID) approach to stormwater management (see Subsection 21.35.040 (C) (2), above) that will be implemented, or a justification if an LID approach is not selected.

6. **BMP Installation or Implementation Schedule.** A schedule for installation or implementation of all post-development BMPs.

7. **Description of BMP Management.** A description of the ongoing management of post-development BMPs (including operation, maintenance, inspection, and training) that will be performed for the life of the development, as needed for the BMPs to function properly.

### 21.35.050 – Water Quality and Hydrology Plan

A Water Quality and Hydrology Plan (WQHP) shall be required for Developments of Water Quality Concern (see Subsection (A) of this section), which are specified categories of development that have a greater potential for adverse water quality and hydrologic impacts due to the development size, type of land use, and/or proximity to coastal waters. The WQHP shall be prepared by a qualified licensed professional, and shall include a polluted runoff and hydrologic site characterization, a sizing standard for BMPs, use of an LID approach to retain the design storm runoff volume on-site, and documentation of the expected effectiveness of the proposed BMPs. Additional plan components that may be required include an alternatives analysis, and a description of the Treatment Control and/or Runoff Control BMPs the development will implement to minimize potential post-development water quality and hydrologic impacts.

#### A. Applicability of Water Quality and Hydrology Plan

A WQHP shall be required for a Development of Water Quality Concern that requires a coastal development permit and has the potential for adverse water quality or hydrologic impacts to coastal waters, including development that (1) entails construction (as defined in Subsection 21.35.010 (A), above), or (2) entails activities or changes in land use other than construction.

Developments of Water Quality Concern shall include the following categories:

1. **Residential.** Residential development that creates and/or replaces five or more dwelling units.

2. **Hillside.** Hillside development on a slope greater than fifteen (15) percent, on a site with erodible soil.

3. **75% Impervious Surface Area.** Development where seventy-five (75) percent or more of the site’s surface area will be impervious surfaces.

4. **10,000 Sq. Ft. Impervious Surface Area.** Development that creates and/or replaces a cumulative site total of ten thousand (10,000) square feet or more of impervious surface area.

5. **Parking Lot.** Development of a parking lot that creates and/or replaces a cumulative site total of five thousand (5,000) square feet or more of impervious surface area that may potentially contribute to stormwater runoff.
6. **Vehicle Service Facility.** Development of a vehicle service facility, including a retail gasoline outlet, commercial car wash, or vehicle repair facility.

7. **Street, Road, or Highway Facility.** Development of a street, road, or highway facility that creates and/or replaces a cumulative site total of five thousand (5,000) square feet or more of impervious surface area.

8. **Restaurant.** Development of a restaurant that creates and/or replaces a cumulative site total of five thousand (5,000) square feet or more of impervious surface area.

9. **Outdoor Storage Area.** Development of a commercial or industrial outdoor storage area that creates and/or replaces a cumulative site total of five thousand (5,000) square feet or more of impervious surface area (or an area determined by the Director based on the use of the storage area), where used for storage of materials that may potentially contribute pollutants to coastal waters or the storm drain system.

10. **Commercial or Industrial Development Generating a High Pollutant Load.** Commercial or industrial development with a potential for generating a high pollutant load that may potentially enter coastal waters or the storm drain system.

11. **Contaminated Soil.** Development on land where the soil has been contaminated by a previous land use, and where the contaminated soil has the potential to be eroded or to discharge the contaminants into runoff or coastal waters.

12. **Near or Discharges Directly to Coastal Waters.** Development that creates and/or replaces a cumulative site total of two thousand five hundred (2,500) square feet or more of impervious surface area, if the development is located within one hundred (100) feet of coastal waters (including the ocean, estuaries, wetlands, rivers, streams, and lakes) or discharges directly to coastal waters (i.e., does not discharge to a public storm drain system).

13. **Other.** Any other development determined by the Director to be a Development of Water Quality Concern.

B. **Submittal of Water Quality and Hydrology Plan.** An applicant shall submit a preliminary WQHP (based on site conditions and project features known at the time of application) with the coastal development permit application, and shall also submit a final WQHP prior to issuance of the coastal development permit. Any changes to the final WQHP after issuance of the coastal development permit shall be subject to additional authorization by the Director.

C. **Requirements of Water Quality and Hydrology Plan.** The WQHP shall demonstrate that a Development of Water Quality Concern complies with the following requirements:

1. **Prepare Plan by Qualified Licensed Professional.** A California-licensed professional (e.g., Registered Professional Civil Engineer, Geotechnical Engineer, Geologist, Engineering Geologist, Hydrogeologist, or Landscape Architect) qualified to complete this work shall be in responsible charge of preparing the Water Quality and Hydrology Plan for a Development of Water Quality Concern.
2. **Conduct Polluted Runoff and Hydrologic Site Characterization.** A polluted runoff and hydrologic characterization of the existing site (e.g., potential pollutants in runoff, soil properties, infiltration rates, depth to groundwater, and the location and extent of hardpan and confining layers) shall be conducted, as necessary to design the proposed BMPs.

3. **Address Runoff from Impervious and Semi-Pervious Surfaces.** Runoff from all new and/or replaced impervious and semi-pervious surfaces shall be addressed in the plan. For sites where the area of new and/or replaced impervious and semi-pervious surfaces is greater than or equal to 50% of the pre-existing impervious and semi-pervious surfaces, runoff from the entire developed area, including the pre-existing surfaces, shall be addressed in the plan.

4. **Size LID, Runoff Control, and Treatment Control BMPs Using 85th Percentile Design Storm Standard.** Any LID, Runoff Control, or Treatment Control BMP (or suite of BMPs) implemented to comply with WQHP requirements shall be sized, designed, and managed to infiltrate, retain, or treat, at a minimum, the runoff produced by the 85th percentile 24-hour storm event for volume-based BMPs, or two times the 85th percentile 1-hour storm event for flow-based BMPs.

5. **Use LID Approach to Retain Design Storm Runoff Volume On-Site.** The development shall implement an LID approach to stormwater management that will retain on-site (by means of infiltration, evapotranspiration, or harvesting for later on-site use) the runoff volume produced by the 85th percentile 24-hour design storm (see Subsection (C) (4) of this section), to the extent appropriate and feasible.

6. **Conduct Alternatives Analysis if Design Storm Runoff Volume Will Not be Retained On-Site Using LID Approach.** If the proposed development will not retain on-site the runoff volume produced by the 85th percentile 24-hour design storm (Subsection (C) (4) of this section) using an LID approach, an alternatives analysis shall be conducted. The alternatives analysis shall demonstrate that:
   
   a. **There are No Feasible Alternative Project Designs.** Demonstrate that there are no appropriate and feasible alternative project designs (such as a reduced project footprint) that would enable on-site retention of the runoff volume produced by the 85th percentile 24-hour design storm, giving precedence to an LID approach.
   
   b. **On-Site Runoff Retention is Maximized.** Demonstrate that on-site runoff retention is maximized to the extent appropriate and feasible, giving precedence to an LID approach.
   
   c. **Feasibility of Off-Site Runoff Retention is Considered.** If Subsection (C) (6) (a) and (b) of this section, above, are demonstrated, some or all of the runoff volume produced by the 85th percentile 24-hour design storm may be retained off-site, if it is demonstrated that off-site options will feasibly contribute to meeting the development’s runoff retention and treatment requirements.
7. **Use Treatment Control BMPs to Remove Pollutants if Necessary.** Treatment Control BMPs are structural systems designed to remove pollutants from runoff by processes such as gravity settling of particulate pollutants, filtration, biological uptake, media adsorption, or other physical, biological, or chemical process. Examples include vegetated swales, detention basins, and storm drain inlet filters.

The following applicability and performance standards shall be required for Treatment Control BMPs:

a. **Use Treatment Control BMPs to Remove Pollutants from any Design Storm Runoff Not Retained On-Site.** The development shall implement a Treatment Control BMP (or suite of BMPs) to remove pollutants of concern from any portion of the runoff produced by the 85th percentile 24-hour design storm (see Subsection (C) (4) of this section) that will not be retained on-site.

b. **Use Treatment Control BMPs Prior to Infiltration Where Necessary and Effective.** Where infiltration BMPs are not adequate to remove a specific pollutant of concern attributed to the development, an effective Treatment Control BMP (or suite of BMPs) shall be required prior to infiltration of runoff, or else an alternative BMP that does not involve infiltration shall be substituted for the infiltration BMP.

c. **Select Treatment Control BMPs Effective for Pollutants of Concern.** Where a Treatment Control BMP is required, a BMP (or suite of BMPs) shall be selected that has been shown to be effective in reducing the pollutants of concern generated by the proposed land use.

8. **Use Runoff Control BMP if Development Will Add More Than 15,000 Square Feet of Impervious Surface Area.** When a development results in a large impervious surface area, implementing Site Design strategies and LID BMPs may potentially not be sufficient to minimize adverse post-development changes in runoff volume, flow rate, timing, and duration, which could adversely impact coastal waters, habitat, and property through hydromodification. A proposed development that will add a net total of more than fifteen thousand (15,000) square feet of impervious surface area shall implement a Runoff Control BMP, sized for the appropriate design storm (as specified in Subsection (C) (8) (a) and (b) of this section), to capture and retain a portion of the anticipated increase in runoff volume after the site is developed.

Runoff Control BMPs are structural systems designed to minimize post-development changes in runoff flow characteristics by processes such as infiltration, evapotranspiration, harvesting for later on-site use, detention, or retention of runoff. Examples include retention structures such as basins, ponds, topographic depressions, and stormwater vaults.

The following applicability and performance standards shall be required for Runoff Control BMPs, as determined by the net increase in impervious surface area:
a. **Runoff Control BMPs Using Flow Retention Techniques.** If a proposed development will add a net total of more than fifteen thousand (15,000) square feet of impervious surface area, the development shall implement a Runoff Control BMP that uses Flow Retention techniques to capture and retain any portion of the runoff volume produced by the 85th percentile, 24-hour design storm (see Subsection (C) (4) of this section) that will not be retained on-site using an LID approach. Flow Retention techniques shall optimize on-site infiltration, and shall use stormwater storage, harvesting for later on-site use, and/or evapotranspiration to address any of the required runoff flow retention volume that cannot be infiltrated.

b. **Runoff Control BMPs Using Peak Management Techniques.** In addition to using Flow Retention techniques, a proposed development that will add a net total of more than twenty-two thousand five hundred (22,500) square feet of impervious surface area shall also implement a Runoff Control BMP that uses Peak Management techniques to prevent the post-development runoff peak flows discharged from the site from exceeding pre-project peak flows for the 2-year through 10-year storm events.

9. **Use Appropriate BMPs For High-Pollutant Land Uses.** Commercial and industrial developments with a potential for a high concentration of pollutants (including, but not limited to, outdoor work and storage areas, restaurants, roads and highways, parking lots, and vehicle service facilities) shall implement appropriate Site Design and Source Control BMPs to keep pollutants out of stormwater, and shall either use Treatment Control BMPs to remove pollutants of concern before discharging runoff to coastal waters or the storm drain system, or shall connect the pollutant-generating area to the sanitary sewer.

10. **Design and Manage Parking Lots to Minimize Polluted Runoff.** A parking lot over five thousand (5,000) square feet in area shall be designed to minimize impervious surfaces, and the parking lot runoff shall be treated and/or infiltrated before it discharges to coastal waters or the storm drain system, so that heavy metals, oil and grease, and polycyclic aromatic hydrocarbon pollutants on parking lot surfaces will not enter coastal waters. Parking lot design and management shall include:

a. **Parking Lot Landscaping.** The design of landscaped areas for parking lots shall consider, and may, where appropriate, be required to include provisions for the on-site detention, retention, and/or infiltration of stormwater runoff, in order to reduce and slow runoff, and provide pollutant cleansing and groundwater recharge. Where landscaped areas are designed for detention, retention, and/or infiltration of stormwater runoff from the parking lot, recessed landscaped catchments (below the elevation of the pavement) shall be required. Curb cuts shall be placed in curbs bordering landscaped areas, or else curbs shall not be installed, in order to allow stormwater runoff to flow from the parking lot into landscaped areas. All surface parking areas shall be provided a permeable buffer between the parking area and adjoining streets and properties.
b. **Parking Lot Vacuuming.** Accumulations of particulates that may potentially be contaminated by oil, grease, or other pollutants shall be removed from heavily used parking lots (e.g., fast food outlets, lots with twenty-five (25) or more parking spaces, sports event parking lots, shopping malls, grocery stores, and discount warehouse stores) by dry vacuuming or equivalent techniques.

c. **Filter Maintenance.** Filter treatment systems, particularly for hydrocarbon removal BMPs, shall be adequately maintained.

11. **Manage BMPs for Life of Development.** Appropriate protocols shall be implemented to manage BMPs (including ongoing operation, maintenance, inspection, and training), to protect coastal water quality for the life of the development.

D. **Content of Water Quality and Hydrology Plan.** To comply with the WQHP requirements listed in Subsection (C) of this section, the WQHP shall include, at a minimum, the following required components, if they are applicable to the development:

1. **Post-Development Runoff Plan Information.** All of the information required for the Post-Development Runoff Plan (see Section 21.35.040), including Site Design strategies and pollutant Source Control BMPs.

2. **Documentation of Polluted Runoff and Hydrologic Site Characterization.** A polluted runoff and hydrologic characterization of the existing site (e.g., potential pollutants in runoff, soil properties, infiltration rates, depth to groundwater, and the location and extent of hardpan and confining layers) as necessary to design the proposed BMPs.

3. **Description of BMPs to be Implemented to Meet All WQHP Requirements.** A description of the BMPs that will be implemented to meet all the WQHP requirements listed in Subsection (C) of this section, and how these BMPs will minimize stormwater pollution and changes in runoff flows from the development. Include documentation of the expected effectiveness of the proposed BMPs, including a characterization of post-development pollutant loads, and calculations, per applicable standards, of changes in the stormwater runoff flow regime (i.e., volume, flow rate, timing, and duration of flows) resulting from the proposed development when implementing the proposed BMPs.

4. **Calculations for Sizing BMPs Using 85th Percentile Design Storm Standard.** Calculations that demonstrate that the proposed BMP (or suite of BMPs) implemented to comply with WQHP requirements (see Subsection (C) of this section) has been sized and designed to infiltrate, retain, or treat, at a minimum, the runoff produced by the 85th percentile 24-hour storm event for volume-based BMPs, or two times the 85th percentile 1-hour storm event for flow-based BMPs.

5. **Documentation that Runoff from Impervious and Semi-Pervious Surfaces is Addressed as Required.** A table quantifying the site’s new, replaced, and pre-existing impervious and semi-pervious surface areas. Documentation that runoff from all new and/or replaced impervious and semi-pervious surfaces is addressed. For sites where the area of added and/or replaced impervious and
semi-pervious surfaces is greater than or equal to 50% of the pre-existing impervious and semi-pervious surfaces, documentation that runoff from the entire developed area, including pre-existing surfaces, is addressed (pursuant to Subsection (C) (3) of this section).

6. **Description of LID Approach Used to Retain Design Storm Runoff Volume On-Site.** A description of the LID approach to stormwater management to be implemented, documenting that LID Site Design strategies have been given priority, and a description of the LID BMPs that will be used to retain on-site (by means of infiltration, evapotranspiration, or harvesting for later on-site use) the runoff produced by the 85th percentile 24-hour design storm (see Subsection (C) (4) of this section), to the extent appropriate and feasible.

7. **Alternatives Analysis Documenting Site-Specific Constraints.** Where an alternatives analysis is required (pursuant to Subsection (C) (6) of this section), document the site-specific engineering constraints and/or physical conditions to justify the determination that there are no appropriate and feasible alternative project designs that would retain on-site the runoff produced by the 85th percentile 24-hour design storm, giving precedence to an LID approach. Also demonstrate that on-site runoff retention is maximized to the extent appropriate and feasible, and that the feasibility of off-site runoff retention is considered.

8. **Description of BMP Management.** A description of the ongoing management of post-development BMPs (including operation, maintenance, inspection, and training) that will be performed for the life of the development, as needed for the BMPs to function properly.