

### C.3. New Development and Redevelopment

The goal of Provision C.3 is for the Permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development (LID) techniques.

#### C.3.a. New Development and Redevelopment Performance Standard Implementation

**i. Task Description** – At a minimum, each Permittee shall:

- (1) Have adequate legal authority to implement all requirements of Provision C.3;
- (2) Have adequate development review and permitting procedures to impose conditions of approval or other enforceable mechanisms to implement the requirements of Provision C.3. For projects discharging directly to CWA section 303(d)-listed waterbodies, conditions of approval must require that post-development runoff not exceed pre-development levels for such pollutants that are listed;
- (3) Evaluate potential water quality effects and identify appropriate mitigation measures when conducting environmental reviews, such as under CEQA;
- (4) Provide training adequate to implement the requirements of Provision C.3 for staff, including interdepartmental training;
- (5) Provide outreach adequate to implement the requirements of Provision C.3, including providing education materials to municipal staff, developers, contractors, construction site operators, and owner/builders, early in the planning process and as appropriate;
- (6) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate site design measures that may include minimizing land disturbance and impervious surfaces (especially parking lots); clustering of structures and pavement; directing roof runoff to vegetated areas; use of micro-detention, including distributed landscape-based detention; preservation of open space; protection and/or restoration of riparian areas and wetlands as project amenities;
- (7) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate source control measures to limit pollutant generation, discharge, and runoff. These source control measures should include:
  - Storm drain inlet stenciling.

- Landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs, such as Bay-Friendly Landscaping.
  - Appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas.
  - Covered trash, food waste, and compactor enclosures.
  - Plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's authority and standards:
    - Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants.
    - Dumpster drips from covered trash and food compactor enclosures.
    - Discharges from outdoor covered wash areas for vehicles, equipment, and accessories.
    - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option.
    - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option.
- (8) Revise, as necessary, General Plans to integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies (e.g., referencing the Bay-Friendly Landscape Guidelines).
- iii. Reporting** – Provide a brief summary of the method(s) of implementation of Provisions C.3.a.i.(1)–(8) in the 2016 Annual Report.

### **C.3.b. Regulated Projects**

- i. Task Description** – The Permittees shall require all projects fitting the category descriptions listed in Provision C.3.b.ii below (hereinafter called Regulated Projects) to implement LID source control, site design, and stormwater treatment onsite or at a joint stormwater treatment facility<sup>1</sup> in accordance with Provisions C.3.c and C.3.d, unless the Provision C.3.e alternate compliance options are evoked. For adjacent Regulated Projects that will discharge runoff to a joint stormwater treatment facility, the treatment facility must be completed by the end of construction of the first Regulated Project that will be discharging runoff to the joint stormwater treatment facility.

Regulated Projects, as they are defined in this Provision, do not include detached single-family home projects that are not part of a larger plan of development.

---

<sup>1</sup> **Joint stormwater treatment facility** – Stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects,

**ii. Regulated Projects are defined in the following categories:**

**(1) Special Land Use Categories**

(a) **New Development or redevelopment projects** that fall into one of the categories listed below and that create and/or replace 5000 square feet or more of impervious surface (collectively over the entire project site). This category includes development projects of the following four types on public or private land that fall under the planning and building authority of a Permittee:

(i) Auto service facilities, described by the following Standard Industrial Classification (SIC) Codes: 5013, 5014, 5541, 7532-7534, and 7536-7539;

(ii) Retail gasoline outlets;

(iii) Restaurants (SIC Code 5812); or

(iv) Stand-alone uncovered parking lots and uncovered parking lots that are part of a development project if the parking lot creates and/or replaces 5,000 square feet or more of impervious surface. This category includes the top uncovered portion of parking structures, unless drainage from the uncovered portion is connected to the sanitary sewer along with the covered portions of the parking structure.

(b) For redevelopment projects in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv), specific exclusions are:

(i) Interior remodels;

(ii) Routine maintenance or repair such as:

- roof or exterior wall surface replacement,
- pavement resurfacing within the existing footprint.

(c) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).

(d) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(2) **Other Development Projects**

New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. This category includes development projects on public or private land that fall under the planning and building authority of a Permittee. Detached single-family home projects that are not part of a larger plan of development are specifically excluded.

(3) **Other Redevelopment Projects**

Redevelopment projects that create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred. This category includes redevelopment projects on public or private land that fall under the planning and building authority of a Permittee.

Specific exclusions to this category are:

- Interior remodels.
- Routine maintenance or repair such as:
  - roof or exterior wall surface replacement, or
  - pavement resurfacing within the existing footprint.
- (a) Where a redevelopment project results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).
- (b) Where a redevelopment results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(4) **Road Projects**

Any of the following types of road projects that create 10,000 square feet or more of newly constructed impervious surface and that fall under the building and planning authority of a Permittee:

- (a) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.
- (b) Widening of existing streets or roads with additional traffic lanes.
  - (i) Where the addition of traffic lanes results in an alteration of **more than 50 percent** of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, **the entire project, consisting of all existing, new, and/or replaced impervious surfaces, shall be included in the treatment system design** (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).
  - (ii) Where the addition of traffic lanes results in an alteration of **less than 50 percent** of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, **only the new and/or replaced impervious surface of the project must be included in the treatment system design** (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from only the new traffic lanes). However, if the stormwater runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system shall be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e, the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added traffic lanes.
- (c) Construction of impervious trails that are greater than 10 feet wide or are creek-side (within 50 feet of the top of bank).
- (d) Specific exclusions to Provisions C.3.b.ii.(4)(a)-(c) include the following:
  - Sidewalks built as part of new streets or roads and built to direct stormwater runoff to adjacent vegetated areas.
  - Bicycle lanes built as part of new streets or roads but are not hydraulically connected to the new streets or roads and that direct stormwater runoff to adjacent vegetated areas.
  - Impervious trails built to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees.

- Sidewalks, bicycle lanes, or trails constructed with permeable surfaces.<sup>2</sup>
- Caltrans highway projects and associated facilities.

### iii. Reporting

#### (1) Annual Reporting – C.3.b.ii. Regulated Projects

For each Regulated Project approved during the fiscal year reporting period, the following information shall be reported electronically in the fiscal year Annual Report, in tabular form (as set forth in the attached Provision C.3.b. Sample Reporting Table):

- (a) Project Name, Number, Location (cross streets), and Street Address;
- (b) Name of Developer, Phase No. (if project is being constructed in phases, each phase should have a separate entry), Project Type (e.g., commercial, industrial, multi-unit residential, mixed-use, public), and description;
- (c) Project watershed;
- (d) Total project site area and total area of land disturbed;
- (e) Total new impervious surface area and/or total replaced impervious surface area;
- (f) If redevelopment or road widening project, total pre-project impervious surface area and total post-project impervious surface area;
- (g) Status of project (e.g., application date, application deemed complete date, project approval date);
- (h) Source control measures;
- (i) Site design measures;
- (j) All post-construction stormwater treatment systems installed onsite, at a joint stormwater treatment facility, and/or at an offsite location;
- (k) Operation and maintenance responsibility mechanism for the life of the project;
- (l) Hydraulic Sizing Criteria used;
- (m) Alternative compliance measures for Regulated Project (if applicable)
  - (i) If alternative compliance will be provided at an offsite location in accordance with Provision C.3.e.i.(1), include information required in Provision C.3.b.v.(a) – (l) for the offsite project; and
  - (ii) If alternative compliance will be provided by paying in-lieu fees in accordance with Provision C.3.e.i.(2), provide information required in Provision C.3.b.v.(a) – (l) for the Regional Project. Additionally, provide a summary of the Regional Project's goals, duration, estimated completion date, total estimated cost

---

<sup>2</sup> **Permeable surfaces** include pervious concrete, porous asphalt, unit pavers, and granular materials.

of the Regional Project, and estimated monetary contribution from the Regulated Project to the Regional Project; and

- (n) Hydromodification (HM) Controls (see Provision C.3.g.) – If not required, state why not. If required, state control method used.

### **C.3.c. Low Impact Development (LID)**

The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.

#### **Task Description**

- i. The Permittees shall, at a minimum, implement the following LID requirements:

(1) **Source Control Requirements**

Require all Regulated Projects to implement source control measures onsite that at a minimum, shall include the following:

- (a) Minimization of stormwater pollutants of concern in urban runoff through measures that may include plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's authority and standards:
- Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants;
  - Dumpster drips from covered trash, food waste and compactor enclosures;
  - Discharges from covered outdoor wash areas for vehicles, equipment, and accessories;
  - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option; and
  - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option;
- (b) Properly designed covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas;
- (c) Properly designed trash storage areas;
- (d) Landscaping that minimizes irrigation and runoff, promotes surface infiltration, minimizes the use of pesticides and fertilizers, and incorporates other appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping;

- (e) Efficient irrigation systems; and
  - (f) Storm drain system stenciling or signage.
- (2) **Site Design and Stormwater Treatment Requirements**
- (a) Require each Regulated Project to implement at least the following design strategies onsite:
    - (i) Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;
    - (ii) Conserve natural areas, including existing trees, other vegetation, and soils;
    - (iii) Minimize impervious surfaces;
    - (iv) Minimize disturbances to natural drainages; and
    - (v) Minimize stormwater runoff by implementing one or more of the following site design measures:
      - Direct roof runoff into cisterns or rain barrels for reuse.
      - Direct roof runoff onto vegetated areas.
      - Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
      - Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
      - Construct sidewalks, walkways, and/or patios with permeable surfaces.
      - Construct driveways, bike lanes, and/or uncovered parking lots with permeable surfaces.
    - (vi) Permeable surfaces must be designed and installed in accordance with (*we intend to cite accepted design guidance for pervious pavement and pavers*).
  - (b) Require each Regulated Project to treat 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.
    - (i) LID treatment measures are harvesting and re-use, infiltration, evapotranspiration, or biotreatment.
    - (ii) A properly engineered and maintained biotreatment system may be considered only if it is infeasible to implement harvesting and re-use, infiltration, or evapotranspiration at a project site. For each Regulated Project approved to install biotreatment systems,



- a Permittee shall document the basis of infeasibility used to establish technical and/or economic infeasibility.
- (iii) Infeasibility to implement harvesting and re-use, infiltration, or evapotranspiration at a project site may result from conditions including the following:
- Locations where seasonal high groundwater would be within 10 feet of the base of the LID treatment measure.
  - Locations within 100 feet of a groundwater well used for drinking water.
  - Development sites where pollutant mobilization in the soil or groundwater is a documented concern.
  - Locations with potential geotechnical hazards.
  - Smart growth and infill or redevelopment sites where the density and/or nature of the project would create significant difficulty for compliance with the onsite volume retention requirement.
  - Locations with tight clay soils that significantly limit the infiltration of stormwater.
- (iv) Biotreatment (or bioretention) systems shall be designed to have a surface area no smaller than what is required to accommodate a 5 inches/hour stormwater runoff surface loading rate, and infiltrate runoff at a minimum of 5 inches per hour during the life of the facility. The soil media for biotreatment (or bioretention) systems shall be designed to sustain healthy, vigorous plant growth and maximize stormwater runoff retention and pollutant removal. Permittees shall ensure that Regulated Projects use biotreatment soil media that meet the minimum specifications set forth in Attachment L and any subsequent revisions developed and formally adopted as guidance by the Permittees collectively, subject to Executive Officer approval.
- (v) Green roofs may be considered biotreatment systems that treat roof runoff only if they meet certain minimum specifications. Permittees shall ensure that green roofs installed at Regulated Projects meet the following minimum specifications:
- (i) The green roof system planting media shall be sufficiently deep to provide capacity within the pore space of the media for the required runoff volume specified by Provision C.3.d.i.(1).
  - (ii) The green roof system planting media shall be sufficiently deep to support the long term health of the vegetation selected for the green roof, as specified by a landscape architect or other knowledgeable professional.

- (c) Require any Regulated Project that does not comply with Provision C.3.c.i.(2)(b) above to meet the requirements established in Provision C.3.e for alternative compliance.

**iii. Reporting**

For specific tasks listed above that are reported using the reporting tables required for Provision C.3.b.v, a reference to those tables will suffice.

**C.3.d. Numeric Sizing Criteria for Stormwater Treatment Systems**

- i. Task Description** – The Permittees shall require that stormwater treatment systems constructed for Regulated Projects meet at least one of the following hydraulic sizing design criteria:
  - (1) **Volume Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to:
    - (a) The maximized stormwater capture volume for the area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998), pages 175–178 (e.g., approximately the 85th percentile 24-hour storm runoff event); or
    - (b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in Section 5 of the California Stormwater Quality Association’s Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.
  - (2) **Flow Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat:
    - (a) 10 percent of the 50-year peak flowrate;
    - (b) 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
    - (c) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.
  - (3) **Combination Flow and Volume Design Basis** – Treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data.
- iv. Implementation Level** – The Permittees shall immediately require the controls in this task.

**Due Date for Full Implementation** – Immediate, including any development project approved prior to any Provision C.3. stormwater treatment requirements (under previous MS4 stormwater permits issued by the Board) that does not meet any of the numeric sizing criteria contained in Provision C.3.d.i, and that has not begun construction by the effective date of this Permit.

v. **Reporting** – Permittees shall use the reporting tables required in Provision C.3.b.v.

vi. **Limitations on Use of Infiltration Devices in Stormwater Treatment Systems**

- (1) For Regulated Projects, each Permittee shall review planned land use and proposed treatment design to verify that installed stormwater treatment systems with no under-drain, and that function primarily as infiltration devices, should not cause or contribute to the degradation of groundwater quality at project sites. An infiltration device is any structure that is deeper than wide and designed to infiltrate stormwater into the subsurface and, as designed, bypass the natural groundwater protection afforded by surface soil. Infiltration devices include dry wells, injection wells, and infiltration trenches (includes french drains).
- (2) For any Regulated Project that includes plans to install stormwater treatment systems which function primarily as infiltration devices, the Permittee shall require that:
  - (a) Appropriate pollution prevention and source control measures are implemented to protect groundwater at the project site, including the inclusion of a minimum of two feet of suitable soil to achieve a maximum 5 inches/hour infiltration rate for the infiltration system;
  - (b) Adequate maintenance is provided to maximize pollutant removal capabilities;
  - (c) The vertical distance from the base of any infiltration device to the seasonal high groundwater mark is at least 10 feet. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater vertical distance from the base of the infiltration device to the seasonal high groundwater mark may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety);
  - (d) Unless stormwater is first treated by a method other than infiltration, infiltration devices are not approved as treatment measures for runoff from areas of industrial or light industrial activity; areas subject to high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway); automotive repair shops; car washes; fleet

storage areas (e.g., bus, truck); nurseries; and other land uses that pose a high threat to water quality;

- (e) Infiltration devices are not placed in the vicinity of known contamination sites unless it has been demonstrated that increased infiltration will not increase leaching of contaminants from soil, alter groundwater flow conditions affecting contaminant migration in groundwater, or adversely affect remedial activities; and
- (f) Infiltration devices are located a minimum of 100 feet horizontally away from any known water supply wells, septic systems, and underground storage tanks with hazardous materials. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater horizontal distance from the infiltration device to known water supply wells, septic systems, or underground storage tanks with hazardous materials may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety).

**C.3.e. Alternative or In-Lieu Compliance with Provision C.3.b.**

- i. The Permittees may allow a Regulated Project to provide alternative compliance with Provision C.3.b in accordance with one of the two options listed below:

(1) **Option 1: LID Treatment at an Offsite Location**

Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at an offsite project in the same watershed. The offsite LID treatment measures must provide hydraulically-sized treatment (in accordance with Provision C.3.d) of an equivalent quantity of both stormwater runoff and pollutant loading and achieve a net environmental benefit.

(2) **Option 2: Payment of In-Lieu Fees**

Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** pay equivalent in-lieu fees<sup>3</sup> to treat the remaining portion of the Provision

---

<sup>3</sup> **In-lieu fees** – Monetary amount necessary to provide both hydraulically-sized treatment (in accordance with Provision C.3.d) with LID treatment measures of an equivalent quantity of stormwater runoff and pollutant loading, and a proportional share of the operation and maintenance costs of the Regional Project.

C.3.d runoff with LID treatment measures at a Regional Project.<sup>4</sup> The Regional Project must achieve a net environmental benefit.

- (3) For the alternative compliance options described in Provision C.3.e.i.(1) and (2) above, offsite and Regional Projects must be completed within three years after the end of construction of the Regulated Project. However, the timeline for completion of a Regional Project may be extended, up to five years after the completion of the Regulated Project, with prior Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

## ii. Special Projects

- (1) When considered at the watershed scale, certain land development projects characterized as smart growth, high density, or transit-oriented development can either reduce existing impervious surfaces, or create less “accessory” impervious areas and automobile-related pollutant impacts. Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these Special Projects, which are Regulated Projects that meet the specific criteria listed below in Provision C.3.e.ii.(2). For any Special Project, the allowable incentive LID Treatment Reduction Credit is the maximum percentage of the amount of runoff identified in Provision C.3.d. for the Special Project’s drainage area, that may be treated with one or a combination of the following two types of non-LID treatment systems:

- Tree-box-type high flowrate biofilters
- Vault-based high flowrate media filters

The allowed LID Treatment Reduction Credit recognizes that density and space limitations for the Special Projects identified herein may make 100% LID treatment infeasible.

- (2) Prior to granting any LID Treatment Reduction Credits, Permittees must first establish all the following:
  - (a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project’s drainage area with LID treatment measures onsite;
  - (b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project’s drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at an offsite or Regional Project; and

---

<sup>4</sup> **Regional Project** – A regional or municipal stormwater treatment facility that discharges into the same watershed that the Regulated Project does.

- (c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards at an offsite or Regional Project.

For each Special Project, a Permittee shall document the basis of infeasibility used to establish technical and/or economic infeasibility.

Under Provision C.3.e.vi, each Permittee is required to report on the infeasibility of 100% LID treatment in each scenario described in Provision C.3.e.ii.(2)(a)-(c) above, for each of the Special Projects for which LID Treatment Reduction Credit was applied.

(3) Category A Special Project Criteria

- (a) To be considered a Category A Special Project, a Regulated Project must meet all of the following criteria:

- (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.
- (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.
- (iii) Create and/or replace one half acre or less of impervious surface area.
- (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, Americans with Disabilities Act (ADA) accessibility, and passenger and freight loading zones.
- (v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.

- (b) Any Category A Special Project may qualify for 100% LID Treatment Reduction Credit, which would allow the Category A Special Project to treat up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(4) Category B Special Project Criteria

- (a) To be considered a Category B Special Project, a Regulated Project must meet all of the following criteria:

- (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.

- (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.
  - (iii) Create and/or replace greater than one-half acre but no more than 2 acres of impervious surface area.
  - (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
  - (v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.
- (b) For any Category B Special Project, the maximum LID Treatment Reduction Credit allowed is determined based on the density achieved by the Project in accordance with the criteria listed below. Density is expressed in Floor Area Ratios (FARs<sup>5</sup>) for commercial development projects, in Dwelling Units per Acre (DU/Ac) for residential development projects, and in FARs and DU/Ac for mixed-use development projects.
- (i) 50% Maximum LID Treatment Reduction Credit
    - For any commercial or mixed-use Category B Special Project with a FAR of at least 2:1, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
    - For any residential or mixed use Category B Special Project with a gross density<sup>6</sup> of at least 50 DU/Ac, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
  - (ii) 75% Maximum LID Treatment Reduction Credit
    - For any commercial or mixed use Category B Special Project with a FAR of at least 3:1, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may

---

<sup>5</sup> **Floor Area Ratio** – The Ratio of the total floor area on all floors of all buildings at a project site to the total project site area.

<sup>6</sup> **Gross Density** – The total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses.

- be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential or mixed use Category B Special Project with a gross density of at least 75 DU/Ac, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- (iii) 100% Maximum LID Treatment Reduction Credit
- For any commercial or mixed use Category B Special Project with a FAR of at least 4:1, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
  - For any residential or mixed use Category B Special Project with a gross density of at least 100 DU/Ac, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- (5) Category C Special Project Criteria (Transit-Oriented Development)
- (a) Transit-Oriented Development refers to the clustering of homes, jobs, shops and services in close proximity to rail stations, ferry terminals or bus stops offering access to frequent, high-quality transit services. This pattern typically involves compact development and a mixing of different land uses, along with amenities like pedestrian-friendly streets. To be considered a Category C Special Project, a Regulated Project must meet all of the following criteria:
- (i) Be characterized as a non-auto-related land use project. That is, Category C specifically excludes any Regulated Project that is a stand-alone surface parking lot; car dealership; auto and truck rental facility with onsite surface storage; fast-food restaurant, bank or pharmacy with drive-through lanes; gas station, car wash, auto repair and service facility; or other auto-related project unrelated to the concept of Transit-Oriented Development.
  - (ii) If a commercial or mixed-use development project, achieve at least an FAR of 2:1.
  - (iii) If a residential or mixed-use development project, achieve at least a gross density of 25 DU/Ac.
- (b) For any Category C Special Project, the total maximum LID Treatment Reduction Credit allowed is the sum of three different types of credits that the Category C Special Project may qualify for, namely: Location, Density and Minimized Surface Parking Credits.



- (c) Location Credits
- (i) A Category C Special Project may qualify for the following Location Credits:
    - a. 50% Location Credit: Located within a ¼ mile radius of an existing or planned transit hub.
    - b. 25% Location Credit: Located within a ½ mile radius of an existing or planned transit hub.
    - c. 25% Location Credit: Located within a planned Priority Development Area (PDA), which is an infill development area formally designated by the Association of Bay Area Government's / Metropolitan Transportation Commission's FOCUS regional planning program. FOCUS is a regional incentive-based development and conservation strategy for the San Francisco Bay Area.
  - (ii) Only one Location Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Location Credits.
  - (iii) At least 50% or more of a Category C Special Project's site must be located within the ¼ or ½ mile radius of an existing or planned transit hub to qualify for the corresponding Location Credits listed above. One hundred percent of a Category C Special Project's site must be located within a PDA to qualify for the corresponding Location Credit listed above.
  - (iv) Transit hub is defined as a rail, light rail, or commuter rail station, ferry terminal, or bus transfer station served by three or more bus routes (i.e., a bus stop with no supporting services does not qualify). A planned transit hub is a station on the MTC's Regional Transit Expansion Program list, per MTC's Resolution 3434 (revised April 2006), which is a regional priority funding plan for future transit stations in the San Francisco Bay Area.
- (d) Density Credits: To qualify for any Density Credits, a Category C Special Project must first qualify for one of the Location Credits listed in Provision C.3.e.ii.(4)(c) above.
- (i) A Category C Special Project that is a commercial or mixed-use development project may qualify for the following Density Credits:
    - a. 10% Density Credit: Achieve an FAR of at least 2:1.
    - b. 20% Density Credit: Achieve an FAR of at least 4:1.
    - c. 30% Density Credit: Achieve an FAR of at least 6:1.
  - (ii) A Category C Special Project that is a residential or mixed-use development project may qualify for the following Density Credits:

- a. 10% Density Credit: Achieve a gross density of at least 30 DU/Ac.
  - b. 20% Density Credit: Achieve a gross density of at least 60 DU/Ac.
  - c. 30% Density Credit: Achieve a gross density of at least 100 DU/Ac.
- (iii) Commercial Category C Projects do not qualify for Density Credits based on DU/Ac and residential Category C Projects do not qualify for Density Credits based on FAR.
- (iv) Only one Density Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Density Credits.
- (e) Minimized Surface Parking Credits: To qualify for any Minimized Surface Parking Credits, a Category C Special Project must first qualify for one of the Location Credits listed in Provision C.3.e.ii.(4)(c) above.
- (i) A Category C Special Project may qualify for the following Minimized Surface Parking Credits:
    - a. 10% Minimized Surface Parking Credit: Have 10% or less of the total post-project impervious surface area dedicated to at-grade surface parking. The at-grade surface parking must be treated with LID treatment measures.
    - b. 20% Minimized Surface Parking Credit: Have no surface parking except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
  - (ii) Only one Minimized Surface Parking Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Minimized Surface Parking Credits.
- (6) Any Regulated Project that meets all the criteria for multiple Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project) may only use the LID Treatment Reduction Credit allowed under one of the Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project may use the LID Treatment Reduction Credit allowed under Category B or Category C, but not the sum of both.)

### iii. Effective Date

- (1) Immediate for Provision C.3.e.i.
- (2) Immediate for Provision C.3.e.ii. until the Permit expiration date specified in Provision C.19. With development of Green Infrastructure Plans by

each Permittee and identification of potential green street projects in each jurisdiction (as required under Provision C.3.j) the need for LID Treatment Reduction Credits for Special Projects should diminish and disappear by the end of the Permit term. Therefore, LID Treatment Reduction Credits for Special Projects will no longer be allowed beyond this Permit term.

**iv. Implementation Level**

- (1) Provisions C.3.e.i-ii supersede any Alternative Compliance Policies previously approved by the Executive Officer
- (2) For all offsite projects and Regional Projects installed in accordance with Provision C.3.e.i-ii, the Permittees shall meet the Operation & Maintenance (O&M) requirements of Provision C.3.h.

**v. Reporting** – Annual reporting shall be done in conjunction with reporting requirements under Provision C.3.b.v.

Any Permittee choosing to require 100% LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e, shall include a statement to that effect in each Annual Report.

**vi. Reporting on Special Projects**

- (1) Permittees shall track any identified potential Special Projects, including those projects that have submitted planning applications but that have not received final discretionary approval.
- (2) In each Annual Report, Permittees shall report to the Water Board on these tracked potential Special Projects using Table 3.1 found at the end of Provision C.3. All the required column entry information listed in Table 3.1 shall be reported for each potential Special Project. Any Permittee with no Special Projects shall so state.

For each Special Project listed in Table 3.1, Permittees shall include a narrative discussion of the feasibility or infeasibility of 100% LID treatment onsite, offsite, and at a Regional Project. The narrative discussion shall address each of the following:

- (a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite.
- (b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at a Regional Project.
- (c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards a Regional Project.

Both technical and economic feasibility or infeasibility shall be discussed, as applicable. The discussion shall also contain enough technical and/or economic detail to document the basis of infeasibility used.

- (3) Once a Special Project has final discretionary approval, it shall be reported in the Provision C.3.b. Reporting Table in the same reporting year that the project was approved. In addition to the column entries contained in the Provision C.3.b. Reporting Table, the Permittees shall provide the following supplemental information for each approved Special Project:
  - (a) Submittal Date: Date that a planning application for the Special Project was submitted.
  - (b) Description: Type of project, number of floors, number of units (commercial, mixed-use, residential), type of parking, and other relevant information.
  - (c) Site Acreage: Total site area in acres.
  - (d) Gross Density in DU/Ac: Number of dwelling units per acre.
  - (e) Density in FAR: Floor Area Ratio.
  - (f) Special Project Category: For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.
  - (g) LID Treatment Reduction Credit: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit applied. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits applied.
  - (h) Stormwater Treatment Systems: List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff identified in Provision C.3.d. for the Project's drainage area that will be treated by each treatment system.
  - (i) List of Non-LID Stormwater Treatment Systems: List all non-LID stormwater treatment systems approved. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

#### **C.3.f. Alternative Certification of Stormwater Treatment Systems**

- i. **Task Description** – In lieu of reviewing a Regulated Project's adherence to Provision C.3.d, a Permittee may elect to have a third party conduct detailed review and certify the Regulated Project's adherence to Provision C.3.d. The third party reviewer must be a Civil Engineer or a Licensed Architect or Landscape Architect registered in the State of California, or staff of another Permittee subject to the requirements of this Permit.

- ii. **Implementation Level** – Any Permittee accepting third-party reviews must make a reasonable effort to ensure that the third party has no conflict of interest with regard to the Regulated Project in question. That is, any consultant or contractor (or his/her employees) hired to design and/or construct a stormwater treatment system for a Regulated Project shall not also be the certifying third party. The Permittee must verify that the third party certifying any Regulated Project has current training on stormwater treatment system design (within three years of the certification signature date) for water quality and understands the groundwater protection principles applicable to Regulated Project sites.

Training conducted by an organization with stormwater treatment system design expertise (such as a college or university, the American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, California Water Environment Association (CWEA), BASMAA, National Association of Flood & Stormwater Management Agencies, California Stormwater Quality Association (CASQA), or the equivalent, may be considered qualifying training.

- iii. **Reporting** – Projects reviewed by third parties shall be noted in reporting tables for Provision C.3.b.

#### C.3.g. Hydromodification Management

- i. **Hydromodification Management (HM) Projects** are Regulated Projects that create and/or replace one acre or more of impervious surface and are not specifically excluded within the requirements of Attachments B–F. A project that does not increase impervious surface area over the pre-project condition is not an HM Project. All HM Projects shall meet the Hydromodification Management Standard of Provision C.3.g.ii.

- ii. **HM Standard**

Stormwater discharges from HM Projects shall not cause an increase in the erosion potential of the receiving stream over the pre-project (existing) condition. Increases in runoff flow and volume shall be managed so that post-project runoff shall not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The demonstration that post-project stormwater runoff does not exceed estimated pre-project runoff rates and durations shall include the following:

- (1) **Range of Flows to Control:** For Alameda, Contra Costa, San Mateo, and Santa Clara Permittees, HM controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10% of the pre-project 2-year peak

flow<sup>7</sup> up to the pre-project 10-year peak flow. For Fairfield-Suisun Permittees, HM controls shall be designed such that post-project stormwater discharge rates and durations shall match from 20 percent of the 2-year peak flow up to the pre-project 10-year peak flow.

- (2) **Goodness of Fit Criteria:** The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.
- (3) **Precipitation Data:** Precipitation data used in the modeling of HM controls shall, at a minimum, be 30 years of hourly rainfall data representative of the area being modeled. Where a longer rainfall record is available, the longer record shall be used.
- (4) **Calculating Post-Project Runoff:** Retention and detention basins shall be considered impervious surfaces for purposes of calculating post-project runoff. Pre- and post-project runoff shall be calculated and compared for the entire site, without separating or excluding areas that may be considered self-retaining.
- (5) **Existing HM Control Requirements:** The Water Board has adopted HM control requirements for all Permittees, and these adopted requirements are attached to this Order as listed below. The Permittees shall comply with all requirements in their own Permittee- specific Attachment, unless otherwise specified by this Order. In all cases, the HM Standard shall be achieved.
  - Attachment B for Alameda Permittees
  - Attachment C for Contra Costa Permittees
  - Attachment D for Fairfield-Suisun Permittees
  - Attachment E for San Mateo Permittees
  - Attachment F for Santa Clara Permittees
  - Attachment G for Vallejo Permittees

**iii.** Types of HM Controls

Projects shall meet the HM Standard using any of the following HM controls or a combination thereof.

---

<sup>7</sup> Where referred to in this Order, the 2-year peak flow is determined using a flood frequency analysis based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35-50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

- (1) **Onsite HM controls** are flow duration control structures and hydrologic source controls that collectively result in the HM Standard being met at the point(s) where stormwater runoff discharges from the project site.
- (2) **Regional HM controls** are flow duration control structures that collect stormwater runoff discharge from multiple projects (each of which shall incorporate hydrologic source control measures as well) and are designed such that the HM Standard is met for all the projects at the point where the regional HM control discharges.
- (3) **In-stream measures** shall be an option only where the stream, which receives runoff from the project, is already impacted by erosive flows and shows evidence of excessive sediment, erosion, deposition, or is a hardened channel.

In-stream measures involve modifying the receiving stream channel slope and geometry so that the stream can convey the new flow regime without increasing the potential for erosion and aggradation. In-stream measures are intended to improve long-term channel stability and prevent erosion by reducing the erosive forces imposed on the channel boundary.

In-stream measures, or a combination of in-stream and onsite controls, shall be designed to achieve the HM Standard from the point where the project(s) discharge(s) to the stream to the mouth of the stream or to achieve an equivalent degree of flow control mitigation (based on amount of impervious surface mitigated) as part of an in-stream project located in the same watershed. Designing in-stream controls requires a hydrologic and geomorphic evaluation (including a longitudinal profile) of the stream system downstream and upstream of the project. As with all in-stream activities, other regulatory permits must be obtained by the project proponent.<sup>8</sup>

#### iv. Reporting

For each HM Project approved during the reporting period, the following information shall be reported electronically in tabular form. This information shall be added to the required reporting information specified in Provision C.3.b.v.

- (1) Device(s) or method(s) used to meet the HM Standard, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control;
- (2) Method used by the project proponent to design and size the device or method used to meet the HM Standard; and

---

<sup>8</sup> In-stream control projects require a Stream Alteration Agreement from the California Department of Fish & Game, a CWA section 404 permit from the U.S. Army Corps of Engineers, and a section 401 certification from the Water Board. Early discussions with these agencies on the acceptability of an in-stream modification are necessary to avoid project delays or redesign.

- (3) Other information as required in the Permittee's existing HM requirements, as shown in Attachments B–G.

**C.3.h. Operation and Maintenance of Stormwater Treatment Systems**

- i. Task Description** – Each Permittee shall implement an Operation and Maintenance (O&M) Verification Program.
- ii. Implementation Level** – At a minimum, the O&M Verification Program shall include the following elements:
  - (1) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that, at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:
    - (a) The project proponent's signed statement accepting responsibility for the O&M of the installed onsite, joint, and/or offsite stormwater treatment system(s) and HM control(s) (if any) until such responsibility is legally transferred to another entity;
    - (b) Written conditions in the sales or lease agreements or deed for the project that requires the buyer or lessee to assume responsibility for the O&M of the onsite, joint, and/or offsite installed stormwater treatment system(s) and HM control(s) (if any) until such responsibility is legally transferred to another entity;
    - (c) Written text in project deeds, or conditions, covenants and restrictions (CCRs) for multi-unit residential projects that require the homeowners association or, if there is no association, each individual owner to assume responsibility for the O&M of the installed onsite, joint, and/or offsite stormwater treatment system(s) and HM control(s) (if any) until such responsibility is legally transferred to another entity; or
    - (d) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the O&M responsibility for the installed onsite, joint, and/or offsite treatment system(s) and HM control(s) (if any) to the project owner(s) or the Permittee.
  - (2) Coordination with the appropriate mosquito and vector control agency with jurisdiction to establish a protocol for notification of installed stormwater treatment systems and HM controls.
  - (3) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that require the granting of site access to all representatives of the Permittee, local mosquito and vector control agency staff, and Water Board staff, for the sole purpose of performing O&M inspections of the installed stormwater treatment system(s) and HM control(s) (if any).
  - (4) A database or equivalent tabular format of the following:



- (a) All pervious pavement or paver installations of 5000 square feet or more installed at smaller projects that do not trigger the Regulated Project impervious surface area thresholds.
  - (b) All pervious pavement or pavers installed at Regulated Projects, offsite, or at a joint or Regional Project.
  - (c) All stormwater treatment systems installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.
  - (d) All HM controls installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.
- (5) The database or equivalent tabular format required in Provision C.3.h.ii.(4) include the following information for each project:
- (a) Name and address of the project;
  - (b) Address and specific location(s) of the installed pervious pavement or paver installation, stormwater treatment systems, and/or HM controls, including those installed at smaller non-Regulated Projects (applicable to pervious pavement or paver installations only), Regulated Projects, offsite locations and at joint or Regional Projects built and/or funded (in-part or wholly) by the Regulated Project.
  - (c) Names of the owner(s) and operator(s) of the installed pervious pavement or paver installation, stormwater treatment systems, and/or HM controls;
  - (d) Specific description of the location (or a map showing the location) of the installed pervious pavement or pavers, stormwater treatment system(s), and HM control(s) (if any);
  - (e) Date(s) that the pervious pavement or pavers, stormwater treatment system(s), and HM controls (if any) is/are installed;
  - (f) Description of the type and size of the pervious pavement or pavers, stormwater treatment system(s), and HM control(s) (if any) installed;
  - (g) Responsible operator(s) of each pervious pavement or paver installation, stormwater treatment system, and HM control (if any);
  - (h) Dates and findings of inspections (routine and follow-up) of the pervious pavement or paver installation, stormwater treatment system(s), and HM control(s) (if any) by the Permittee; and
  - (i) Any problems and corrective or enforcement actions taken.
- (6) A prioritized O&M Inspection Plan for inspecting all pervious pavement or pavers of 5000 square feet or more installed at smaller non-Regulated Projects and all pervious pavement or paver installations, stormwater treatment systems and HM controls installed at Regulated Projects, offsite locations, and/or at joint or Regional Projects.

At a minimum, the O&M Inspection Plan must specify the following for each fiscal year:

- (a) Inspection by the Permittee of all newly installed pervious pavement or pavers of 5000 square feet or more (at smaller non-Regulated Projects) and all newly installed pervious pavement or paver installations, stormwater treatment systems, and HM controls (at Regulated Projects, offsite locations, and/or at joint or Regional Projects) at the time of installation to ensure approved plans have been followed;
  - (b) Inspection by the Permittee of at least 20 percent of the total number (at the end of the preceding fiscal year) of installed pervious pavement or pavers, stormwater treatment systems, and HM controls;
  - (c) Inspection by the Permittee of at least 20 percent of the total number (at the end of the preceding fiscal year) of installed vault-based stormwater treatment systems; and
  - (d) Inspection by the Permittee of all installed pervious pavement or pavers, stormwater treatment systems, and HM controls subject to Provision C.3, at least once every five years.
- (7) An Enforcement Response Plan (ERP) for all O&M inspections that serves as a reference document for inspection staff so that consistent enforcement actions can be taken to bring development projects into compliance. At a minimum, the ERP must contain the following:
- (a) Enforcement Procedures – A description of the Permittee’s procedures from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for recognizing common problems with the different types of pervious pavement or paver installation, stormwater treatment systems, and/or HM controls, remedies for the problems, and appropriate enforcement actions, follow-up inspections, and appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.
  - (b) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools appropriate for different field scenarios of problems identified with the pervious pavement or paver installation, stormwater treatment systems, and/or HM controls as well as for different types of inadequate response to enforcement actions taken.
  - (c) Timely Correction of Identified Problems – A description of the Permittee’s procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all identified problems with the pervious pavement or paver installations, stormwater treatment systems, and/or HM controls.

Corrective actions shall be implemented no longer than 30 days after a problem is identified by an inspector. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 30 days are required for compliance, a rationale

shall be recorded in the electronic database or equivalent tabular system.

**iii. Maintenance Approvals:** The Permittees shall ensure that all pervious pavement or pavers of 5,000 square feet or more, stormwater treatment systems, and HM controls installed onsite, offsite, or at a joint or Regional Project by development proponents are properly operated and maintained for the life of the projects. In cases where the responsible party for a pervious pavement or paver installation, stormwater treatment system or HM control has worked diligently and in good faith with the appropriate State and federal agencies to obtain approvals necessary to complete maintenance activities, but these approvals are not granted, the Permittees shall be deemed to be in compliance with this Provision. Permittees shall ensure that constructed wetlands installed by Regulated Projects and used for urban runoff treatment shall abide by the Water Board's Resolution No. 94-102: Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control and the O&M requirements contained therein.

**iv. Reporting**

- (1) For each Regulated Project inspected during the reporting period (fiscal year) the following information shall be reported to the Water Board electronically in tabular form as part of the Annual Report (as set forth in the Provision C.3.h. Sample Reporting Table attached):
  - Name of facility/site inspected.
  - Location (street address) of facility/site inspected.
  - Name of responsible operator for installed pervious pavement or pavers, stormwater treatment systems and HM controls.
  - For each inspection:
    - Date of inspection.
    - Type of inspection (e.g., initial, annual, follow-up, spot).
    - Type(s) of pervious pavement or pavers inspected.
    - Type(s) of stormwater treatment systems inspected (e.g., swale, bioretention unit, tree well, etc.) and an indication of whether the treatment system is an onsite, joint, or offsite system.
    - Type of HM controls inspected.
    - Inspection findings or results (e.g., proper installation, proper operation and maintenance, system not operating properly because of plugging, bypass of stormwater because of improper installation, maintenance required immediately, etc.).
    - Enforcement action(s) taken, if any (e.g., verbal warning, notice of violation, administrative citation, administrative order).
- (2) On an annual basis, before the wet season, provide a list of newly installed (installed within the reporting period) pervious pavement or pavers, stormwater treatment systems, and HM controls to the local mosquito and

vector control agency and the Water Board. This list shall include the facility locations and a description of the pervious pavement or pavers installations, stormwater treatment measures and HM controls installed.

- (3) Each Permittee shall report the following information in the Annual Report each year:
  - (a) A discussion of the inspection findings for the year and any common problems encountered with various types of treatment systems and/or HM controls. This discussion should include a general comparison to the inspection findings from the previous year.
  - (b) A discussion of the effectiveness of the Permittee's O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness of program).

**C.3.i. Required Site Design Measures for Small Projects and Detached Single-Family Home Projects**

**i. Task Description** – The Permittees shall require all development projects, which create and/or replace  $\geq 2500 \text{ ft}^2$  to  $< 10,000 \text{ ft}^2$  of impervious surface, and detached single-family home projects,<sup>9</sup> which create and/or replace 2,500 square feet or more of impervious surface, to install one or more of the following site design measures:

- Direct roof runoff into cisterns or rain barrels for reuse.
- Direct roof runoff onto vegetated areas.
- Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Construct sidewalks, walkways, and/or patios with permeable surfaces.
- Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.<sup>2</sup>

This provision applies to all development projects that require approvals and/or permits issued under the Permittee's' planning, building, or other comparable authority.

**ii. Reporting** – On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.

---

<sup>9</sup> **Detached single-family home project** – The building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development.

### **C.3.j. Green Infrastructure Planning and Implementation**

The Permittees shall complete and implement a Green Infrastructure Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements.

The plan is intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff Total Maximum Daily Load (TMDL) wasteload allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters. The plan also precludes expanding the definition of Regulated Projects prescribed in Provision C.3.b to include all new and redevelopment projects that create or replace 5,000 square feet or more of impervious surface areas and road projects that just replace existing impervious surface area. It also provides a mechanism to establish and implement alternative or in lieu compliance options for Regulated Projects and to account for and justify Special Projects in accordance with Provision C.3.e.

Over the long term, the plan is intended to describe how the Permittees will shift their impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff.

The plan shall also identify means and methods to prioritize particular areas and projects within each Permittee's jurisdiction, at appropriate geographic and time scales, for implementation of green infrastructure projects. Further, it shall include means and methods to track the area within each Permittee's jurisdiction that is treated by green infrastructure controls and the amount of directly connected impervious area. As appropriate, it shall incorporate plans required elsewhere within this Permit, and specifically plans required for the monitoring of and to ensure appropriate reductions in trash and PCBs, mercury, and other pollutants.

The Permittees may comply with any requirement of this Provision through a collaborative effort.

#### **i. Green Infrastructure Program Plan Development**

Each Permittee shall:

- (1) Prepare a framework for development of its Green Infrastructure Plan and have the framework approved by the Permittee's governing body, mayor, city manager, or county manager by June 30, 2016.

- (2) Prepare a Green Infrastructure Plan, which contains the following elements:
- (a) A mechanism (e.g., SFEI's GreenPlanIT tool) to prioritize and map areas for potential projects and planned projects, on a drainage-area-specific basis, for implementation over the following time schedules: from the date of plan preparation or July 2018, whichever is earlier, through: 2023 and 2028 (i.e., 5 and 10-year time horizons). The mechanism shall include criteria for prioritization (e.g., specific logistical constraints, water quality drivers (e.g., TMDLs), opportunities to treat runoff from private parcels in retrofitted street right-of-way, etc.) and outputs (e.g., maps, project lists, etc.) that can be incorporated into Permittees' long-term planning and capital improvement processes.
  - (b) Outputs from the mechanism described above, including, but not limited to, the prioritization criteria, maps, lists, and all other information, as appropriate. Individual project-specific reviews completed using this mechanism are not required to be submitted with the plan, but shall be made available upon request.
  - (c) Targets for the amount of impervious surface within the Permittees' jurisdiction to be retrofitted over the following time schedules: from the date of plan preparation or July 2018, whichever is earlier, through: 2023, 2028, 2043, and 2068 (i.e., 5-, 10-, 25-, and 50-year time horizons)
  - (d) A process for tracking and mapping completed projects, and making the information publically available (e.g., SFEI's GreenPlanIT tool).
  - (e) General guidelines for overall streetscape and project design and construction so that projects have a unified, complete design that implements the range of functions associated with the project. For example, for streets, these functions include street use for stormwater management, including treatment, safe pedestrian travel, use as public space, and for bicycle, transit, and vehicle movement. The guidelines should call for the Permittee to coordinate, for example, street improvement projects so that related improvements are constructed simultaneously to minimize conflicts that may impact green infrastructure.
  - (f) Standard specifications and, as appropriate, typical design details and related information necessary for the Permittee to incorporate green infrastructure into projects in its jurisdiction. The specifications shall be sufficient to address the different street and project types within a Permittee's jurisdiction, as defined by land use and transportation characteristics.
  - (g) Requirement(s) that projects be designed to meet the treatment and hydromodification sizing requirements in Provision C.3.d. Permittees may, collectively, propose a single approach with their Green Infrastructure Plan for how to proceed should project constraints

preclude fully meeting the C.3.d sizing requirements. Such an approach shall identify the specific constraints that would preclude meeting the sizing requirements and the design approach(es) to take in that situation, plus all other information, as appropriate (e.g., how to account for load reduction for the PCBs or mercury TMDLs).

- (h) A summary of the planning documents the Permittee has updated or otherwise modified to appropriately incorporate green infrastructure requirements, such as: General Plans, Specific Plans, Complete Streets Plans, Active Transportation Plans, Storm Drain Master Plans, Pavement Work Plans, Urban Forestry Plans, and other plans that may affect the future alignment, configuration, or design of impervious surfaces within the Permittee's jurisdiction, including, but not limited to, streets, alleys, parking lots, sidewalks, plazas, roofs, and drainage infrastructure. Permittees are expected to complete these modifications as a part of completing the Green Infrastructure Plan, and by not later than the end of the permit term.
  - (i) To the extent not addressed above, a workplan identifying how the Permittee will ensure that green infrastructure and low impact development measures are appropriately included in future plans (e.g., new or amended versions of the kinds of plans listed above).
  - (j) A workplan to complete prioritized projects identified as part of a Provision C.3.e Alternative Compliance program or part of Provision C.3.j Early Implementation.
  - (k) An evaluation of prioritized project funding options, including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, state, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.
- (3) Adopt policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this provision.
  - (4) Conduct outreach and education in accordance with the following:
    - (a) Conduct public outreach on the requirements of this provision, including outreach coordinated with adoption or revision of standard specifications and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professionals involved in infrastructure planning and design.
    - (b) Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this provision and methods of implementation.
    - (c) Educate appropriate Permittee elected officials (e.g., mayors, city council members, County Supervisors, District Board Members, etc.) on the requirements of this provision and methods of implementation.

- (5) Report on Green Infrastructure Planning as follows:
  - (a) Each Permittee shall submit documentation that the its framework for development of its Green Infrastructure Plan was approved by its governing body, mayor, city manager, or county manager by June 30, 2016, with the 2016 Annual Report.
  - (b) Each Permittee shall submit its completed Green Infrastructure Plan with the 2019 Annual Report.
  - (c) Each Permittee shall submit documentation of its legal mechanisms to ensure implementation of its Green Infrastructure Plan with the 2019 Annual Report.
  - (d) Each Permittee shall submit a summary of its outreach and education efforts in each Annual Report.

**ii. Early Implementation of Green Infrastructure Projects (No Missed Opportunities)**

Each Permittee shall:

- (1) Prepare and maintain a list of green infrastructure projects that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for green infrastructure measures.
- (2) Submit the list with each Annual Report and a summary of planning or implementation status for each green infrastructure project, and a summary of how each infrastructure project with green infrastructure potential will be implemented will include green infrastructure measures to the maximum extent practicable during the permit term. Where implementation of green infrastructure measures is not practicable, submit a brief description of the project and the reasons green infrastructure measures were impracticable to implement.

**iii. Participate in Processes to Promote Green Infrastructure**

- (1) The Permittees shall, individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, state, and federal agencies to plan, design, and fund incorporation of green infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding from different sources, changes to standard designs and design criteria, ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.
- (2) In each Annual Report, Permittees shall report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote green infrastructure.



- (3) In the 2019 Annual Report, Permittees shall submit a plan and schedule for new and ongoing efforts to participate in processes to promote green infrastructure.

**iv. Tracking and Reporting Progress**

- (1) The Permittees shall, individually or collectively, develop and implement regionally-consistent methods to track and report implementation of green infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.
- (2) In each Annual Report, Permittees shall report progress on development and implementation of the tracking methods.
- (3) In the 2019 Annual Report, Permittees shall submit the tracking methods and report implementation of green infrastructure measures including treated area, and connected and disconnected impervious area on both public and private parcels within their jurisdictions.

**Table 3.1 Standard Tracking and Reporting Form for Potential Special Projects**

<b>Project No.</b>	<b>Permittee</b>	<b>Address</b>	<b>Application Submittal Date</b>	<b>Description</b>	<b>Site Total Acreage</b>	<b>Gross Density DU/Ac</b>	<b>FAR</b>	<b>Special Project Category</b>	<b>LID Treatment Reduction Credit</b>	<b>Stormwater Treatment Systems</b>

**Project No:** Number of the Special Project as it appears in Table 3.1

**Permittee:** Name of the Permittee in whose jurisdiction the Special Project will be built.

**Address:** Address of the Special Project; if no street address, state the cross streets.

**Submittal Date:** Date that a planning application for the Special Project was submitted; if a planning application has not been submitted, include a projected application submittal date.

**Description:** Type of project (commercial, mixed-use, residential), number of floors, number of units, type of parking, and other relevant information.

**Site Acreage:** Total site area in acres.

**Gross Density in DU/Ac:** Number of dwelling units per acre.

**FAR:** Floor Area Ratio

**Special Project Category:** For each Special Project Category, indicate applicability. If a Category is applicable, list the specific criteria applied to determine applicability.

**LID Treatment Reduction Credit:** For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit available. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits available.

**Stormwater Treatment Systems:** List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff identified in Provision C.3.d. for the Project’s drainage area that will be treated by each treatment system.