



CUPERTINO

# City of Cupertino

|                   |
|-------------------|
| <b>STAFF ONLY</b> |
| Building Permit   |
| Date: _____       |
| Permit #: _____   |

## PERMIT PROVISION C.3. IMPERVIOUS SURFACE DATA FORM

**All Project Applicants with 5,000 sq. ft. or more of impervious surface on the project site must fill out this worksheet and submit it with the development project application to the Engineering Division of the Public Works Department.** Contact Public Works at (408) 777-3354 for guidance

**C.3 Regulated Projects are projects** that create and/or replace **10,000 sq. ft.** or more of impervious surface on the project site **AND All restaurants, auto service facilities, retail gasoline outlets, and uncovered parking lot projects** that create and/or replace **5,000 sq. ft.** or more of impervious surface on the project site.

**All applicants with C.3 Regulated projects must reserve a minimum of 4% of developable surface area** for the placement of storm water treatment facilities unless an alternative storm water treatment plan is approved by the Public Works Engineer.

### What is an Impervious Surface?

An impervious surface is a covering or pavement that prevents the land's natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to rooftops, walkways, paved patios, driveways, parking lots, storage areas, concrete and asphalt, and any other continuous watertight pavement or covering. Pervious pavement, underlain with pervious soil or pervious storage material (e.g., drain rock), that infiltrates rainfall at a rate equal to or greater than surrounding unpaved areas OR that stores and infiltrates the water quality design volume specified in Provision C.3.d of the Municipal Regional Stormwater Permit (MRP), is not considered an impervious surface.

Date: \_\_\_\_\_

APN # \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

Project Location: \_\_\_\_\_  
(address)

Project Name: \_\_\_\_\_ Cross Streets \_\_\_\_\_

Applicant Name: \_\_\_\_\_ Applicant's Ph #: \_\_\_\_\_

Engineer: \_\_\_\_\_ Engineer's Ph #: \_\_\_\_\_

Project Phase(s): \_\_\_\_ of \_\_\_\_

Project Description: \_\_\_\_\_

- Project Type (check all that apply):**  New Development  Redevelopment  
 Public  Commercial  Industrial  Auto Service (SIC code)  Uncovered Parking  
(5013-5014, 5541, 7532-7534, 7536-7539)  
 Residential  Restaurant  Mixed Use  Retail Gas Outlet  Other \_\_\_\_\_

If Residential, does the project consist of a single-family home that is not part of a larger common plan of development?  Yes  No

*If yes, stop here and return sheet 1 only to the Engineering Division of the Public Works Department.*

Project Watershed/Receiving Water (creek): \_\_\_\_\_

**2. Project Size:**

|   |                                  |  |     |  |
|---|----------------------------------|--|-----|--|
| a. Total Site Area: _____ acre  |                                  | b. Total Site Area Disturbed: _____ acre<br>(including clearing, grading, or excavating) |     |  |
|   | Existing Area (ft <sup>2</sup> ) | Proposed Area (ft <sup>2</sup> )   |     | Total Post-Project Area (ft <sup>2</sup> ) |
|   |                                  | Replaced   | New |  |
| <b>Impervious Area</b>  |                                  |  |     |  |
|   | Roof                             |  |     |  |
|   | Parking                          |  |     |  |
|   | Sidewalks and Streets            |  |     |  |
| <b>c. Total Impervious Area</b>   |                                  |  |     |  |
| <b>d. Total new and replaced impervious area</b>  |                                  |  |     |  |
| <b>Pervious Area</b>  |                                  |  |     |  |
|   | Landscaping                      |  |     |  |
|   | Pervious Paving                  |  |     |  |
|   | Other (e.g. Green Roof)          |  |     |  |
| <b>e. Total Pervious Area</b>   |                                  |  |     |  |
| <b>f. Percent Replacement of Impervious Area in Redevelopment Projects</b> (Replaced Total Impervious Area ÷ Existing Total Impervious Area) x 100% = _____ % |                                  |  |     |  |

**3. State Construction General Permit Applicability:**

a. Is #2.b. equal to 1 acre or more?

- Yes, applicant must obtain coverage under the State Construction General Permit (i.e., file a Notice of Intent and prepare a Stormwater Pollution Prevention Plan) (see [www.swrcb.ca.gov/water\\_issues/programs/stormwater/construction.shtml](http://www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml) for details).
- No, applicant does not need coverage under the State Construction General Permit.

**4. MRP Provision C.3 Applicability:**

a. Is #2.d. equal to 10,000 sq. ft. or more, or 5,000 sq. ft. or more for restaurants, auto service facilities, retail gas outlets, and uncovered parking?

(\*Note that for public projects, the 5,000 sq. ft. threshold does not take effect until 12/1/12.)

- Yes, C.3. source control, site design and treatment requirements apply
- No, C.3. source control and site design requirements may apply – check with local agency

b. Is #2.f. equal to 50% or more?

- Yes, C.3. requirements (site design and source control, as appropriate, and stormwater treatment) apply to entire site
- No, C.3. requirements only apply to impervious area created and/or replaced

**5. Hydromodification Management (HM) Applicability:**

a. Does project create and/or replace one acre or more of impervious surface AND create an increase in total impervious surface from the pre-project condition?

- Yes (continue)
- No – exempt from HM, go to page 3

b. Is the project located in an area of HM applicability (green) on the HM Applicability Map? ([www.scvurppp-w2k.com/hmp\\_maps.htm](http://www.scvurppp-w2k.com/hmp_maps.htm))

- Yes, project must implement HM requirements
- No – exempt from HM, go to page 3

## 6. Selection of Specific Stormwater Control Measures:

### Site Design Measures

- Minimize land disturbed
- Minimize impervious surfaces
- Minimum-impact street or parking lot design
- Cluster structures/pavement
- Disconnected downspouts
- Pervious pavement
- Green roof
- Microdetention in landscape
- Other self-treating area
- Self-retaining area
- Rainwater harvesting and use (e.g., rain barrel, cistern connected to roof drains)<sup>1</sup>
- Preserved open space: \_\_\_\_\_ ac. or sq. ft  
(circle one)
- Protected riparian and wetland areas/buffers (Setback from top of bank: \_\_\_\_\_ft.)
- Other \_\_\_\_\_

### Source Control Measures

- Alternative building materials
- Wash area/racks, drain to sanitary sewer<sup>2</sup>
- Covered dumpster area, drain to sanitary sewer<sup>2</sup>
- Sanitary sewer connection or accessible cleanout for swimming pool/spa/fountain<sup>2</sup>
- Beneficial landscaping (minimize irrigation, runoff, pesticides and fertilizers; promotes treatment)
- Outdoor material storage protection
- Covers, drains for loading docks, maintenance bays, fueling areas
- Maintenance (pavement sweeping, catch basin cleaning, good housekeeping)
- Storm drain labeling
- Other \_\_\_\_\_

### Treatment Systems

- None (all impervious surface drains to self-retaining areas)
- #### **LID Treatment**
- Rainwater harvest and use (e.g., cistern or rain barrel sized for C.3.d treatment)
  - Infiltration basin
  - Infiltration trench
  - Exfiltration trench
  - Underground detention and infiltration system (e.g. pervious pavement drain rock, large diameter conduit)
- #### **Biotreatment**<sup>3</sup>
- Bioretention area
  - Flow-through planter
  - Tree box with bioretention soils
  - Other \_\_\_\_\_

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### ***Other Treatment Methods***

- Proprietary tree box filter<sup>4</sup>
- Media filter (sand, compost, or proprietary media)
- Vegetated filter strip<sup>5</sup>
- Dry detention basin<sup>5</sup>
- Other \_\_\_\_\_

<sup>1</sup> Optional site design measure; does not have to be sized to comply with Provision C.3.d treatment requirements.

<sup>2</sup> Subject to sanitary sewer authority requirements.

<sup>3</sup> Biotreatment measures are allowed only with completed feasibility analysis showing that infiltration and rainwater harvest and use are infeasible.

<sup>4</sup> These treatment measures are only allowed if the project qualifies as a "Special Project".

<sup>5</sup> These treatment measures are only allowed as part of a multi-step treatment process.

### Flow Duration Controls for Hydromodification Management (HM)

- Detention basin
- Underground tank or vault
- Bioretention with outlet control
- Other \_\_\_\_\_

**7. Treatment System Sizing for Projects with Treatment Requirements**

Indicate the hydraulic sizing criteria used and provide the calculated design flow or volume:

| Treatment System Component | Hydraulic Sizing Criteria Used <sup>3</sup> | Design Flow or Volume (cfs or cu.ft.) |
|----------------------------|---|---------------------------------------|
|                            |   |                                       |
|                            |   |                                       |
|                            |   |                                       |

<sup>3</sup>Key: 1a: Volume – WEF Method  
 1b: Volume – CASQA BMP Handbook Method  
 2a: Flow – Factored Flood Flow Method  
 2b: Flow – CASQA BMP Handbook Method  
 2c: Flow – Uniform Intensity Method  
 3: Combination Flow and Volume Design Basis

**8. Condition of Approval for Landscape Plans (use of native plants, tree preservation).**

**9. Third Party Certification**

A qualified consultant (that is not a member of the project team or City staff) will be required to review the treatment system sizing and design and certify the Stormwater Management Plan and/or Hydromodification Flow Control Facilities. A list of qualified consultants can be found at <http://www.scvurppp-w2k.com/consultants.htm>

Name of Reviewer \_\_\_\_\_

**10. Operation & Maintenance Information**

- A. Property Owner's Name \_\_\_\_\_
- B. Responsible Party for Stormwater Treatment/Hydromodification Control O&M:
  - a. Name: \_\_\_\_\_
  - b. Address: \_\_\_\_\_
  - c. Phone/E-mail: \_\_\_\_\_

\*\*\*\*\*

***This section to be completed by Municipal staff.***

|  |
|--|
| <p><b>O&amp;M Responsibility Mechanism</b><br/>                 Indicate how responsibility for O&amp;M is assured. Check all that apply:</p> <p><input type="checkbox"/> O&amp;M Agreement</p> <p><input type="checkbox"/> Other mechanism that assigns responsibility (describe below):<br/>                 _____</p> |
|--|

**STAFF ONLY - Reviewed by:**

Community Development Department                      Public Works Department  
 Planning Division: \_\_\_\_\_                      Engineering Division: \_\_\_\_\_

Return form to: Public Works Department                      Date \_\_\_\_\_



### Infiltration/Harvesting and Use Feasibility Screening Worksheet

Apply these screening criteria for C.3 Regulated Projects\* required to implement Provision C.3 stormwater treatment requirements. See the Glossary (Attachment 1) for definitions of terms marked with an asterisk (\*). Contact municipal staff to determine whether the project meets Special Project\* criteria. If the project meets Special Project criteria, it may receive LID treatment reduction credits.

**1. Applicant Info**

Site Address: \_\_\_\_\_, CA APN: \_\_\_\_\_

Applicant Name: \_\_\_\_\_ Phone No.: \_\_\_\_\_

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

**2. Feasibility Screening for Infiltration**

Do site soils either (a) have a saturated hydraulic conductivity\* (Ksat) that will NOT allow infiltration of 80% of the annual runoff (that is, the Ksat is LESS than 1.6 inches/hour), or, if the Ksat rate is not available, (b) consist of Type C or D soils?<sup>1</sup>

- Yes (continue)       No – complete the Infiltration Feasibility Worksheet. If infiltration of the C.3.d amount of runoff is found to be feasible, there is no need to complete the rest of this screening worksheet.

**3. Recycled Water Use**

Check the box if the project is installing and using a recycled water plumbing system for non-potable water use.

- The project is installing a recycled water plumbing system, and installation of a second non-potable water system for harvested rainwater is impractical, and considered infeasible due to cost considerations. Skip to Section 6.

**4. Calculate the Potential Rainwater Capture Area\* for Screening of Harvesting and Use**

Complete this section for the entire project area. If rainwater harvesting and use is infeasible for the entire site, and the project includes one or more buildings that each have an individual roof area of 10,000 sq. ft. or more, then complete Sections 4 and 5 of this form for each of these buildings.

4.1 Table 1 for (check one):  The whole project       Area of 1 building roof (10,000 sq.ft. min.)

| Table 1: Calculation of the Potential Rainwater Capture Area*   |   |   |   |  |
|---|---|---|---|--|
| <i>The Potential Rainwater Capture Area may consist of either the entire project area or one building with a roof area of 10,000 sq. ft. or more.</i> |   |   |   |  |
|   | 1   | 2   | 3 | 4  |
|   | Pre-Project Impervious surface <sup>2</sup> (sq.ft.), if applicable | Proposed Impervious Surface <sup>2</sup> (IS), in sq. ft. |   | Post-project landscaping (sq.ft.), if applicable |
| Replaced <sup>3</sup> IS  |   | Created <sup>4</sup> IS                                   |   |  |
| a. Enter the totals for the area to be evaluated:   |   |   |   |  |
| b. Sum of replaced and created impervious surface:  | N/A   |   |   | N/A  |
| c. Area of existing impervious surface that will NOT be replaced by the project.  |   | N/A   |   | N/A  |

<sup>1</sup> Base this response on the site-specific soil report, if available. If this is not available, consult soil hydraulic conductivity maps in Attachment 3.  
<sup>2</sup> Enter the total of all impervious surfaces, including the building footprint, driveway(s), patio(s), impervious deck(s), unroofed porch(es), uncovered parking lot (including top deck of parking structure), impervious trails, miscellaneous paving or structures, and off-lot impervious surface (new, contiguous impervious surface created from road projects, including sidewalks and/or bike lanes built as part of new street). Impervious surfaces do NOT include vegetated roofs or pervious pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding, unpaved landscaped areas, or that stores and infiltrates the C.3.d amount of runoff\*.  
<sup>3</sup> “Replaced” means that the project will install impervious surface where existing impervious surface is removed.  
<sup>4</sup> “Created” means the project will install new impervious surface where there is currently no impervious surface.  
\* For definitions, see Glossary (Attachment 1).

4.2 Answer this question ONLY if you are completing this section for the entire project area. If existing impervious surface will be replaced by the project, does the area to be replaced equal 50% or more of the existing area of impervious surface? (Refer to Table 1, Row "a". Is the area in Column 2 > 50% of Column 1?)

- Yes, C.3. stormwater treatment requirements apply to areas of impervious surface that will remain in place as well as the area created and/or replaced. This is known as the 50% rule.
- No, C.3. requirements apply only to the impervious area created and/or replaced.

4.3 Enter the square footage of the Potential Rainwater Capture Area\*. If you are evaluating only the roof area of a building, or you answered "no" to Question 4.2, this amount is from Row "b" in Table 1. If you answered "yes" to Question 4.2, this amount is the sum of Rows "b" and "c" in Table 1.:

\_\_\_\_\_ square feet.

4.4 Convert the measurement of the Potential Rainwater Capture Area\* from square feet to acres (divide the amount in Item 4.3 by 43,560):

\_\_\_\_\_ acres.

**5. Feasibility Screening for Rainwater Harvesting and Use**

5.1 Use of harvested rainwater for landscape irrigation:

Is the onsite landscaping LESS than 2.5 times the size of the Potential Rainwater Capture Area\* (Item 4.3)? (Note that the landscape area(s) would have to be contiguous and within the same Drainage Management Area to use harvested rainwater for irrigation via gravity flow.)

- Yes (continue)
- No – Direct runoff from impervious areas to self-retaining areas\* OR refer to Table 11 and the curves in Appendix F of the LID Feasibility Report to evaluate feasibility of harvesting and using the C.3.d amount of runoff for irrigation.

5.2 Use of harvested rainwater for toilet flushing or non-potable industrial use:

a. Residential Projects: Proposed number of dwelling units: \_\_\_\_\_  
Calculate the dwelling units per impervious acre by dividing the number of dwelling units by the acres of the Potential Rainwater Capture Area\* in Item 4.4. Enter the result here:

\_\_\_\_\_)

Is the number of dwelling units per impervious acre LESS than 100 (assuming 2.7 occupants/unit)?

- Yes (continue)
- No – complete the Harvest/Use Feasibility Worksheet.

b. Commercial/Industrial Projects: Proposed interior floor area: \_\_\_\_\_ (sq. ft.)

Calculate the proposed interior floor area (sq.ft.) per acre of impervious surface by *dividing the interior floor area (sq.ft.) by the acres of the Potential Rainwater Capture Area\* in Item 4.4*. Enter the result here:

\_\_\_\_\_

Is the square footage of the interior floor space per impervious acre LESS than 70,000 sq. ft.?

- Yes (continue)
- No – complete the Harvest/Use Feasibility Worksheet

c. School Projects: Proposed interior floor area: \_\_\_\_\_ (sq. ft.)

Calculate the proposed interior floor area per acre of impervious surface by *dividing the interior floor area (sq.ft.) by the acres of the Potential Rainwater Capture Area\* in Item 4.4*. Enter the result here:

\_\_\_\_\_

Is the square footage of the interior floor space per impervious acre LESS than 21,000 sq. ft.?

- Yes (continue)
- No – complete the Harvest/Use Feasibility Worksheet

\* For definitions, see Glossary (Attachment 1).

d. Mixed Commercial and Residential Use Projects

- Evaluate the residential toilet flushing demand based on the dwelling units per impervious acre for the residential portion of the project, following the instructions in Item 5.2.a, except you will use a prorated acreage of impervious surface, based on the percentage of the project dedicated to residential use.
- Evaluate the commercial toilet flushing demand per impervious acre for the commercial portion of the project, following the instructions in Item 5.2.a, except you will use a prorated acreage of impervious surface, based on the percentage of the project dedicated to commercial use.

e. Industrial Projects: Estimated non-potable water demand (gal/day): \_\_\_\_\_

Is the non-potable demand LESS than 2,400 gal/day per acre of the Potential Rainwater Capture Area?

- Yes (continue)     No – refer to the curves in Appendix F of the LID Feasibility Report to evaluate feasibility of harvesting and using the C.3.d amount of runoff for industrial use.

**6. Use of Biotreatment**

If only the “Yes” boxes were checked for all questions in Sections 2 and 5, or the project will have a recycled water system for non-potable use (Section 3), then the applicant may use appropriately designed bioretention facilities for compliance with C.3 treatment requirements. The applicant is encouraged to maximize infiltration of stormwater if site conditions allow.

**7. Results of Screening Analysis**

Based on this screening analysis, the following steps will be taken for the project (check all that apply):

- Implement biotreatment measures (such as an appropriately designed bioretention area).
- Conduct further analysis of infiltration feasibility by completing the Infiltration Feasibility Worksheet.
- Conduct further analysis of rainwater harvesting and use (check one):
  - Complete the Rainwater Harvesting and Use Feasibility Worksheet for:
    - The entire project
    - Individual building(s), if applicable, describe: \_\_\_\_\_
  - Evaluate the feasibility of harvesting and using the C.3.d amount of runoff for irrigation, based on Table 11 and the curves in Appendix F of the LID Feasibility Report
  - Evaluate the feasibility of harvesting and using the C.3.d amount of runoff for non-potable industrial use, based on the curves in Appendix F of the LID Feasibility Report.

\* For definitions, see Glossary (Attachment 1).



# Infiltration Feasibility Worksheet

## Municipal Regional Stormwater Permit (MRP)

### Stormwater Controls for Development Projects

Complete this worksheet for C.3 Regulated Projects\* for which the soil hydraulic conductivity (Ksat) exceeds 1.6. Use this checklist to determine the feasibility of treating the C.3.d amount of runoff\* with infiltration. Where it is infeasible to treat the C.3.d amount of runoff\* with infiltration or rainwater harvesting and use, stormwater may be treated with biotreatment\* measures. See Glossary (Attachment 1) for definitions of terms marked with an asterisk (\*).

#### 1. Enter Project Data.

- 1.1 Project Name: \_\_\_\_\_
- 1.2 Project Address: \_\_\_\_\_
- 1.3 Applicant/Agent Name: \_\_\_\_\_
- 1.4 Applicant/Agent Address: \_\_\_\_\_
- 1.5 Applicant/Agent Email: \_\_\_\_\_ Applicant / Agent Phone: \_\_\_\_\_

#### 2. Evaluate infiltration feasibility.

Check "Yes" or "No" to indicate whether the following conditions apply to the project. If "Yes" is checked for any question, then infiltration is infeasible, and you can continue to Item 3.1 without answering any further questions in Section 2. If all of the answers in Section 2 are "No," then infiltration is feasible, and you may design infiltration facilities\* for the area from which runoff must be treated. Items 2.1 through 2.3 address the feasibility of using infiltration facilities\*, as well as the potential need to line bioretention areas.

- |  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| 2.1 Would infiltration facilities at this site conflict with the location of existing or proposed underground utilities or easements, or would the siting of infiltration facilities at this site result in their placement on top of underground utilities, or otherwise oriented to underground utilities, such that they would discharge to the utility trench, restrict access, or cause stability concerns? (If yes, attach evidence documenting this condition.) | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.2 Is there a documented concern that there is a potential on the site for soil or groundwater pollutants to be mobilized? (If yes, attach documentation of mobilization concerns.)   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.3 Are geotechnical hazards present, such as steep slopes, areas with landslide potential, soils subject to liquefaction, or would an infiltration facility need to be built less than 10 feet from a building foundation or other improvements subject to undermining by saturated soils? (If yes, attach documentation of geotechnical hazard.)   | <input type="checkbox"/> | <input type="checkbox"/> |

Respond to Questions 2.4 through 2.8 only if the project proposes to use an infiltration device\*.

- |   |                          |                          |
|---|--------------------------|--------------------------|
| 2.4 Do local water district or other agency's policies or guidelines regarding the locations where infiltration may occur, the separation from seasonal high groundwater, or setbacks from potential sources of pollution prevent infiltration devices from being implemented at this site? (If yes, attach evidence documenting this condition.) | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.5 Would construction of an infiltration device require that it be located less than 100 feet away from a septic tank, underground storage tank with hazardous materials, or other potential underground source of pollution? (If yes, attach evidence documenting this claim.)  | <input type="checkbox"/> | <input type="checkbox"/> |



# Infiltration Feasibility Worksheet

- |   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| 2.6 Is there a seasonal high groundwater table or mounded groundwater that would be within 10 feet of the base of an infiltration device* constructed on the site? (If yes, attach documentation of high groundwater.)  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.7 Are there land uses that pose a high threat to water quality – including but not limited to industrial and light industrial activities, 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, or nurseries? (If yes, attach evidence documenting this claim.) | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.8 Is there a groundwater production well within 100 feet of the location where an infiltration device would be constructed? (If yes, attach map showing the well.)  | <input type="checkbox"/> | <input type="checkbox"/> |

## 3. Results of Feasibility Determination

- |  | Infeasible               | Feasible                 |
|--|--------------------------|--------------------------|
| 3.1 Based on the results of the Section 2 feasibility analysis, infiltration is (check one): | <input type="checkbox"/> | <input type="checkbox"/> |

→ If "FEASIBLE" is indicated for Item 3.1, then the amount of stormwater requiring treatment must be treated with infiltration (or rainwater harvest and use, if feasible). **Infiltration facilities\*** may be designed for the area from which runoff must be treated.

→ If "INFEASIBLE" is checked for item 3.1, then the applicant may use appropriately designed **biotreatment facilities\*** for compliance with C.3 treatment requirements. The applicant is encouraged to maximize infiltration of stormwater if site conditions allow.

\_\_\_\_\_  
Name of Applicant (Print)

\_\_\_\_\_  
Name of Applicant (Sign)

\_\_\_\_\_  
Date



**Rainwater Harvesting and Use Feasibility Worksheet**  
**Municipal Regional Stormwater Permit (MRP)**  
**Stormwater Controls for Development Projects**

Complete this worksheet for all C.3 Regulated Projects\* for which the project density exceeds the screening density\* provided by municipal staff. Use this worksheet to determine the feasibility of treating the C.3.d amount of runoff\* with rainwater harvesting and use for indoor, non-potable water uses. Where it is infeasible to treat the C.3d amount of runoff with either harvesting and use or infiltration, stormwater may be treated with biotreatment\* measures. See Glossary (Attachment 1) for definitions of terms marked with an asterisk (\*).

Complete this worksheet for the entire project area. If the project includes one or more buildings that each individually has a roof area of 10,000 square feet or more, complete a separate copy of this form for each of these buildings.

**1. Enter Project Data.**

1.1 Project Name: \_\_\_\_\_

1.2 Project Address: \_\_\_\_\_

1.3 Applicant/Agent Name: \_\_\_\_\_

1.4 Applicant/Agent Address: \_\_\_\_\_

*(For projects with a potential non-potable water use other than toilet flushing, skip to Question 5.1)*

1.5 Project Type: \_\_\_\_\_ If residential or mixed use, enter # of dwelling units: \_\_\_\_\_

1.6 \_\_\_\_\_ Enter square footage of non-residential interior floor area.: \_\_\_\_\_

1.7 **Potential rainwater capture area\*:** \_\_\_\_\_ sq.ft.

1.8 If it is a Special Project\*, indicate the percentage of LID treatment\* reduction: \_\_\_\_\_ percent  
*(Item 1.8 applies only to entire project evaluations, not individual roof area evaluations.)*

1.9 Total potential rainwater capture area that will require LID treatment: \_\_\_\_\_ 0 sq.ft.  
*(This is the total rain capture area remaining after any Special Project LID treatment reduction is applied.)*

**2. Calculate Area of Self-Treating Areas, Self-Retaining Areas, and Areas Contributing to Self-Retaining Areas.**

*(For areas within the Potential Rain Capture Area only)*

2.1 Enter square footage of any self-treating areas\* in the area that is being evaluated: \_\_\_\_\_ sq.ft.

2.2 Enter square footage of any self-retaining areas\* in the area that is being evaluated: \_\_\_\_\_ sq.ft.

2.3 Enter the square footage of areas contributing runoff to self-retaining area\*: \_\_\_\_\_ sq.ft.

2.4 TOTAL of Items 2.1, 2.2, and 2.3: \_\_\_\_\_ - sq.ft.

**3. Subtract credit for self-treating/self-retaining areas from area requiring treatment.**

3.1 Subtract the TOTAL in Item 2.4 from the potential rainwater capture area in Item 1.9: \_\_\_\_\_ - sq.ft.

3.2 Convert the remaining area required for treatment in Item 3.1 from square feet to acres: \_\_\_\_\_ 0.00 acres

**4. Determine feasibility of use for toilet flushing based on demand**

4.1 Project's dwelling units per acre of adjusted potential rain capture area (Divide the number in 1.5 by the number in 3.2) \_\_\_\_\_ dwelling units/acre

4.2 Non-residential interior floor area per acre of adjusted potential rain capture area (Divide the number in 1.6 by the number in 3.2) \_\_\_\_\_ Int. non-res. floor area/acre

*Note: formulas in Items 4.1 and 4.2 are set up, respectively, for a residential or a non-residential project. Do not use these pre-set formulas for mixed use projects. For mixed use projects, evaluate the residential toilet flushing demand based on the dwelling units per acre for the residential portion of the project (use a prorated acreage, based on the percentage of the project dedicated to residential use). Then evaluate the commercial toilet flushing demand per acre for the commercial portion of the project (use a prorated acreage, based on the percentage of the project dedicated to commercial use).*

# Rainwater Harvesting and Use Feasibility Worksheet

- 4.3 Refer to the applicable countywide table in Attachment 2. Identify the number of dwelling units per impervious acre needed in your Rain Gauge Area to provide the toilet flushing demand required for rainwater harvest feasibility.
- 4.4 Refer to the applicable countywide table in Attachment 2. Identify the square feet of non-residential interior floor area per impervious acre needed in your Rain Gauge Area to provide the toilet flushing demand required for rainwater harvest feasibility.

|  |                               |
|--|-------------------------------|
|  | dwelling units/acre           |
|  | int. non-res. floor area/acre |

Check "Yes" or "No" to indicate whether the following conditions apply. If "Yes" is checked for any question, then rainwater harvesting and use is infeasible. As soon as you answer "Yes", you can skip to Item 6.1. If "No" is checked for all items, then rainwater harvesting and use is feasible and you must harvest and use the C.3.d amount of stormwater, unless you infiltrate the C.3.d amount of stormwater\*.

- 4.5 Is the project's number of dwelling units per acre of adjusted area requiring treatment (listed in Item 4.1) LESS than the number identified in Item 4.3?  Yes  No
- 4.6 Is the project's square footage of non-residential interior floor area per acre of adjusted area requiring treatment (listed in Item 4.2) LESS than the number identified in Item 4.4?  Yes  No

## 5. Determine feasibility of rainwater harvesting and use based on factors other than demand.

- 5.1 Does the requirement for rainwater harvesting and use at the project conflict with local, state, or federal ordinances or building codes?  Yes  No
- 5.2 Would the technical requirements cause the harvesting system to exceed 2% of the Total Project Cost, or has the applicant documented economic hardship in relation to maintenance costs? (If so, attach an explanation.)  Yes  No
- 5.3 Do constraints, such as a slope above 10% or lack of available space at the site, make it infeasible to locate on the site a cistern of adequate size to harvest and use the C.3.d amount of water? (If so, attach an explanation.)  Yes  No
- 5.4 Are there geotechnical/stability concerns related to the surface (roof or ground) where a cistern would be located that make the use of rainwater harvesting infeasible? (If so, attach an explanation.)  Yes  No
- 5.5 Does the location of utilities, a septic system and/or **heritage trees\*** limit the placement of a cistern on the site to the extent that rainwater harvesting is infeasible? (If so, attach an explanation.)  Yes  No

Note 1: It is assumed that projects with significant amounts of landscaping will either treat runoff with landscape dispersal (self-treating and self-retaining areas) or will evaluate the feasibility of harvesting and using rainwater for irrigation using the curves in Appendix F of the LID Feasibility Report.

## 6. Results of Feasibility Determination

- 6.1 Based on the results of the feasibility analysis in Item 4.4 and Section 5, rainwater harvesting/use is (check one):  Infeasible  Feasible

→ If "FEASIBLE" is indicated for Item 6.1 the amount of stormwater requiring treatment must be treated with harvesting/use, unless it is infiltrated into the soil.

→ If "INFEASIBLE" is checked for Item 6.1, then the applicant may use appropriately designed *bioretention* <sup>\*1</sup> facilities for compliance with C.3 treatment requirements. If  $K_{sat} > 1.6$  in./hr., and infiltration is unimpeded by subsurface conditions, then the bioretention facilities are predicted to infiltrate 80% or more average annual runoff. If  $K_{sat} < 1.6$ , maximize infiltration of stormwater by using bioretention if site conditions allow, and remaining runoff will be discharged to storm drains via facility underdrains. If site conditions preclude infiltration, a lined bioretention area or flow-through planter may be used.

\_\_\_\_\_  
Applicant (Print)

\_\_\_\_\_  
Applicant (Sign)

\_\_\_\_\_  
Date

\* See definitions in Glossary (Attachment 1)

# Special Projects Worksheet



Project Name:

Project Address:

Applicant/Developer Name:

## 1. "Special Project" Determination:

### Special Project Category "A"

Does the project have ALL of the following characteristics?

- Located in a municipality'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<sup>1</sup>;
  - Creates and/or replaces 0.5 acres or less of impervious surface;
  - Includes no surface parking, except for incidental parking for emergency vehicle access, ADA access, and passenger or freight loading zones;
  - Has at least 85% coverage of the entire site by permanent structures. The remaining 15% portion of the site may be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping and stormwater treatment.
- No (continue)       Yes – complete Section 2 of the Special Project Worksheet

### Special Project Category "B"

Does the project have ALL of the following characteristics?

- Located in a municipality'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<sup>1</sup>;
  - Creates and/or replaces an area of impervious surface that is greater than 0.5 acres, and no more than 2.0 acres;
  - Includes no surface parking, except for incidental parking for emergency access, ADA access, and passenger or freight loading zones;
  - Has at least 85% coverage of the entire site by permanent structures. The remaining 15% portion of the site may be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping and stormwater treatment;
  - Minimum density of either 50 dwelling units per acre (for residential projects) or a Floor Area Ratio (FAR) of 2:1 (for commercial or mixed use projects)
- No (continue)       Yes – complete Section 2 of the Special Project Worksheet

### Special Project Category "C"

Does the project have ALL of the following characteristics?

- At least 50% of the project area is within 1/2 mile of an existing or planned transit hub<sup>2</sup> or 100% within a planned Priority Development Area<sup>3</sup>;
  - The project is characterized as a non-auto-related use<sup>4</sup>; and
  - Minimum density of either 25 dwelling units per acre (for residential projects) or a Floor Area Ratio (FAR) of 2:1 (for commercial or mixed use projects)
- No                       Yes – complete Section 2 of the Special Project Worksheet

<sup>1</sup> And built as part of a municipality's stated objective to preserve/enhance a pedestrian-oriented type of urban design.

<sup>2</sup> "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. (A bus stop with no supporting services does not qualify.)

<sup>3</sup> A "planned Priority Development Area" is an infill development area formally designated by the Association of Bay Area Government's / Metropolitan Transportation Commission's FOCUS regional planning program.

<sup>4</sup> Category C specifically excludes stand-alone surface parking lots; car dealerships; auto and truck rental facilities with onsite surface storage; fast-food restaurants, banks or pharmacies with drive-through lanes; gas stations; car washes; auto repair and service facilities; or other auto-related project unrelated to the concept of transit oriented development.

## Special Projects Worksheet



### 2. LID Treatment Reduction Credit Calculation:

| Category                  | Impervious Area Created/Replaced (acres) | Site Coverage (%) | Project Density or FAR | Density/Criteria                                 | Allowable Credit (%) | Applied Credit (%) |
|---------------------------|--|-------------------|------------------------|--|----------------------|--------------------|
| A                         |  |                   | N.A.                   | N.A.   | 100%                 |                    |
| B                         |  |                   |                        | Res ≥ 50 DU/ac or FAR ≥ 2:1                      | 50%                  |                    |
|                           |  |                   |                        | Res ≥ 75 DU/ac or FAR ≥ 3:1                      | 75%                  |                    |
|                           |  |                   |                        | Res ≥ 100 DU/ac or FAR ≥ 4:1                     | 100%                 |                    |
| C                         |  |                   |                        | <b>Location credit (select one)<sup>5</sup>:</b> |                      |                    |
|                           |  |                   |                        | Within ¼ mile of transit hub                     | 50%                  |                    |
|                           |  |                   |                        | Within ½ mile of transit hub                     | 25%                  |                    |
|                           |  |                   |                        | Within a planned PDA                             | 25%                  |                    |
|                           |  |                   |                        | <b>Density credit (select one):</b>              |                      |                    |
|                           |  |                   |                        | Res ≥ 30 DU/ac or FAR ≥ 2:1                      | 10%                  |                    |
|                           |  |                   |                        | Res ≥ 60 DU/ac or FAR ≥ 4:1                      | 20%                  |                    |
|                           |  |                   |                        | Res ≥ 100 DU/ac or FAR ≥ 6:1                     | 30%                  |                    |
|                           |  |                   |                        | <b>Parking credit (select one):</b>              |                      |                    |
|                           |  |                   |                        | ≥ 10% at-grade surface parking <sup>6</sup>      | 10%                  |                    |
| No surface parking        | 20%                                      |                   |                        |  |                      |                    |
| <b>TOTAL TOD CREDIT =</b> |  |                   |                        |  |                      |                    |

<sup>5</sup> To qualify for the location credit, at least 50% of the project's site must be located within the ¼ mile or ½ mile radius of an existing or planned transit hub, as defined on page 1, footnote 2. 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. To qualify for the PDA location credit, 100% of the project site must be located within a PDA, as defined on page 1, footnote 3.

<sup>6</sup> The at-grade surface parking must be treated with LID treatment measures.