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A. GENERAL INQUIRIES

1. What projects are required to comply with the Stormwater Design Guidelines?

As stated in the Stormwater Management Ordinance (see www.sfwater.org/sdg), the requirements of the *Stormwater Design Guidelines* apply to development projects that disturb 5,000 square feet or more of ground surface or surface over water. Ground surface disturbance is measured cumulatively across the parcel. Activities that disturb the ground surface include, but are not limited to: the construction, modification, conversion, or alteration of any building or structure and associated grading, filling, excavation, changes in the existing topography, and the addition or replacement of impervious surface.

Disturbed ground surface does not include: pavement maintenance activities such as top-layer asphalt grinding and repaving; interior remodeling projects; re-roofing; or modifications, conversions or alterations of buildings or structures that do not increase the ground surface footprint of the building or structure. The *Stormwater Design Guidelines* do not apply to utility repair work requiring trenching or excavation with in-kind surface replacement.

2. What are the requirements of the Stormwater Design Guidelines?

Projects subject to the *Stormwater Design Guidelines* are required to:

- Determine if the project is served by the combined sewer system or the Municipal Separate Storm Sewer System (MS4) (see *Stormwater Design Guidelines*, p.10 at www.sfwater.org/sdg);
- Determine the applicable performance measure (see [questions 8-10](#) below);
- Submit a Stormwater Control Plan to the SFPUC for review and approval, demonstrating how the project will meet the required performance measure (see www.sfwater.org/sdg) (see [questions 19-21](#) below);
- Complete, sign, and record a Maintenance Agreement (Available at www.sfwater.org/sdg) (see [question 7](#) below);
- Construct stormwater management controls as designed in the approved Stormwater Control Plan; and
- Maintain the constructed stormwater management controls in perpetuity.

The *Stormwater Design Guidelines* promote the use of green infrastructure and other Low Impact Design (LID) approaches to meet the SFPUC stormwater management requirements. LID-based stormwater management solutions use ecological- and landscape-based systems that mimic pre-development drainage patterns and hydrologic processes by increasing retention, detention, infiltration, evapotranspiration, and/or treatment of stormwater at its source.

3. Do the Stormwater Design Guidelines apply to parks or other landscaped areas?

Yes, the *Stormwater Design Guidelines* apply to all project types regardless of land use or ownership type that disturb 5,000 square feet or more of ground surface or surface over water. See [question 1](#) for the definition of activities that constitute ground surface disturbance.

4. Do the Stormwater Design Guidelines apply to municipal projects?

Yes, the *Stormwater Design Guidelines* apply to all project types regardless of land use or ownership type that disturb 5,000 square feet or more of ground surface or surface over water. See [question 1](#) for the definition of activities that constitute ground surface disturbance.

5. Is there a modified compliance option or a waiver process for the Stormwater Design Guidelines requirements?

At this time the *Stormwater Design Guidelines* requirements cannot be waived and there is no modified compliance option. However, the SFPUC is currently studying forms of modified compliance and expects to complete the process in the near future. In the meantime, SFPUC project review staff is available for technical assistance and will help project teams with challenging sites find a means to comply.

6. If a project was already underway when the Stormwater Design Guidelines went into effect, is the project exempt from the requirements?

The effective date of the *Stormwater Design Guidelines* is January 12, 2010. All projects disturbing 5,000 square feet or more of the ground surface or surface over water must comply with the *Stormwater Design Guidelines* if they filed for a site permit application or building permit application on or after January 12, 2010. Projects that filed a site permit application or building permit application with the Department of Building Inspection or the Port Building Department prior to January 12, 2010 are not subject to the requirements of the *Stormwater Design Guidelines*. Subsequent revisions or addenda for a project where the site permit application or building permit application was filed prior to January 12, 2010 do not trigger application of the *Stormwater Design Guidelines*.

7. Who is required to maintain the stormwater management controls that are installed to comply with the Stormwater Design Guidelines?

The property owner is responsible for the maintenance of all stormwater management controls constructed to comply with the *Stormwater Design Guidelines* and must sign a Maintenance Agreement to acknowledge and accept this maintenance responsibility. The property owner must perform the maintenance activities as outlined in the Maintenance Plan from the approved Stormwater Control Plan. The Maintenance Agreement must be recorded at the San Francisco Office of the Assessor – Recorder prior to approval of the Final Stormwater Control Plan. The Maintenance Agreement is available on the *Stormwater Design Guidelines* web site at www.sfwater.org/sdg. If the property owner fails to adequately maintain the BMPs, they may be subject to enforcement actions. See pages 69-73 of the *Stormwater Design Guidelines* for further details (www.sfwater.org/sdg).

B. PERFORMANCE MEASURES

8. What stormwater management performance measures are required by the Stormwater Design Guidelines?

For projects located within SFPUC jurisdiction, the required performance measures vary depending on whether the project is served by the combined sewer system or the separate sewer system.

For projects served by the **combined sewer system**, the requirement is equivalent to LEED Sustainable Sites Credit 6.1:

- Projects with existing imperviousness of less than or equal to 50%, must not exceed stormwater runoff rate and volume of pre-development conditions (see [question 10](#) below) for the 1- and 2-year 24-hour design storm.
- Projects with existing imperviousness of greater than 50% must decrease stormwater runoff rate and volume by 25% for the 2-year 24-hour design storm.

For projects served by the **separate sewer system**, the requirement is equivalent to LEED Sustainable Sites credit 6.2:

- Projects must capture and treat the rainfall from a design storm of 0.75 inches.

For projects located within Port jurisdiction, the required performance measures are different. Please see the *Stormwater Design Guidelines* for further information (see www.sfwater.org/sdg). To determine the appropriate jurisdiction (Port vs. SFPUC) and/or the applicable collection system (combined vs. separate) see the Separate Storm Sewer Areas map (see *Stormwater Design Guidelines*, p.10 at www.sfwater.org/sdg). Please contact the SFPUC if you have questions about which collection system serves your project.

9. Does the combined sewer performance measure require detention or retention?

The SFPUC combined sewer system area performance measure requires control of both the rate (detention) and volume (retention) of stormwater runoff. The volume control can only be met through retention strategies such as: infiltration, evapotranspiration or rainwater harvesting for non-potable applications. This is consistent with the U.S. Green Building Council (USGBC) application of the LEED Sustainable Sites 6.1 credit.

10. For sites in the combined sewer area, how does the SFPUC define “Pre-development” conditions?

The SFPUC interprets “Pre-development” as the existing conditions on the site prior to the proposed development project. “Pre-development” is not the natural condition of the site prior to human development. For projects where demolition has occurred prior to the initiation of the current development project, the pre-development condition is defined as the most recent active land use.

C. STORMWATER MANAGEMENT CONTROL DESIGN

11. What are the limitations to infiltration for stormwater management controls?

Stormwater management controls (also known as Best Management Practices or BMPs) designed to comply with the *Stormwater Design Guidelines* are limited in their ability to infiltrate on site that have the following conditions:

- Contaminated soil or groundwater
- Landslide hazards
- Known fill
- Less than 4-foot depth to bedrock
- Less than 4-foot depth to groundwater
- Native soil with an infiltration rate less than 0.5 inches per hour
- Native soils that have more than 30% clay content or 40% clay and silt combined
- For infiltration basins, infiltration trenches, and dry wells, infiltration is limited if native soils have an infiltration rate greater than 2.5 inches per hour. In this case, runoff must be treated prior to infiltration.

Additional infiltration BMP setback requirements are outlined in pages 4-5 of Appendix A: BMP Fact Sheets of the *Stormwater Design Guidelines* (see www.sfwater.org/sdg). Under certain conditions, or with written approval by a licensed structural or geotechnical professional engineer, project review staff may approve reduced setbacks.

12. Do green roofs or lined and planted stormwater management controls help meet the combined sewer area performance measure?

Yes, green roofs, and other lined and planted stormwater management controls (also known as Best Management Practices or BMPs) help to meet the *Stormwater Design Guidelines* combined sewer area performance measures. These BMPs provide rate reduction and volume reduction through evapotranspiration. Increasing the media depth, especially for green roofs, can make a significant difference in the volume reduction capability. The Combined Sewer BMP Sizing Calculator allows the design team to adjust the depth of media to increase the volume reduction capability of the BMP. The calculator is available on the *Stormwater Design Guidelines* web site at www.sfwater.org/sdg.

13. Does the SFPUC require a 48-hour maximum drawdown period for sizing stormwater management controls, including rainwater harvesting?

The SFPUC requires a 48-hour maximum drawdown time for all stormwater management controls (also known as Best Management Practices or BMPs) except cisterns. The 48-hour maximum drawdown time is required for vector control and to better insure that the BMPs will be empty when the next storm event occurs.

For cisterns, vector control is less of an issue and the SFPUC recognizes that cistern drawdown varies throughout the year based on supply and demand. For projects in the combined sewer areas, a 72-hour drawdown for cisterns is therefore accepted. For

projects in separate sewer areas, cisterns should be sized to achieve 90% average annual rainfall capture, regardless of a maximum drawdown time.

The 48-hour drawdown time is also an indicator an underperforming and/or failing BMP, signaling when major maintenance, remediation or reconstruction is required.

14. What are the permitted uses of harvested rainwater in San Francisco? What are the treatment requirements for using rainwater for non-potable applications?

On-site alternate water sources may be used for a number of non-potable applications, including irrigation and toilet flushing. The SFPUC, the San Francisco Department of Public Health (DPH) and the San Francisco Department of Building Inspection (DBI) are working together to develop a program that allows the use of suitably treated on-site alternate water sources, including rainwater and stormwater, for non-potable purposes. In addition, the State of California is developing regulations regarding the safe use of rainwater as part of the 2013 triennial code update cycle. Those are anticipated to become effective on January 1, 2014. San Francisco's standards will be consistent with the forthcoming state standards.

In San Francisco, DBI will issue construction permits and DPH will issue operating permits for properly designed rainwater and stormwater harvesting systems. The three agencies will coordinate with the project team to ensure that appropriate on-site treatment systems are designed, installed, maintained and operated in a manner that ensures overall safety and compliance with existing plumbing and health and safety codes, and avoids creating a public health nuisance. Further information on the review process for these types of non-potable reuse projects can be found on the [SFPUC's Non-Potable Reuse website](#). DPH has developed [SFDPH Preliminary Guidance for On-site Water Reuse](#) which includes water quality criteria and exceptions for systems that may be operated without a permit (see <http://sfwater.org/index.aspx?page=497>).

Any project proposing to reuse on-site non-potable water should submit the On-Site Non-Potable Project Application, which is available online (see <http://sfwater.org/index.aspx?page=497>).

15. What are the time limitations for using harvested rainwater for irrigation?

In general, if rainwater is properly stored in an opaque, watertight container that is free of debris and properly maintained, there is no limit to the amount of time it may be stored. However, from a stormwater management perspective, it is optimal to use all harvested rainwater before the beginning of each rainy season to ensure the largest amount of storage capacity is available.

For the *Stormwater Design Guidelines*, the use of harvested rainwater for irrigation during the rainy season generally does not contribute to compliance. The SFPUC defines the rainy season as November through March. There may be special circumstances where application of rainwater for irrigation in the rainy season is appropriate, such as to irrigate planting located under a roof overhang or within the building. SFPUC project review staff will review Stormwater Control Plans to use harvested rainwater for irrigation in the rainy season on a case-by-case basis.

D. CALCULATION METHODS

16. What calculation methods are allowed to prove compliance with the Stormwater Design Guidelines?

The SFPUC allows project teams to use various calculation methods depending on the project's location, scale and complexity. To assist project teams in planning for and calculating compliance with the *Stormwater Design Guidelines*, the SFPUC has created two BMP Sizing Calculators: one for the separate sewer areas and one for the combined sewer areas (the calculators are available at www.sfwater.org/sdg). The SFPUC allows the use of these calculators for smaller and less complex development projects. For larger or more complex projects, the SFPUC's BMP Sizing Calculators can be used as a planning tool; however, compliance with the *Stormwater Design Guidelines* must be proven using a more robust calculation method.

The SFPUC prepared the Accepted Hydrologic Calculation Methods memorandum outlining the accepted calculation methods for different types of projects for proving compliance with the *Stormwater Design Guidelines* (the memo is available at www.sfwater.org/sdg). Each project team should select the calculation method that best suits the proposed project and proposed stormwater management system.

Please note that the BMP Sizing Calculators are periodically updated to enhance the functions and incorporate user feedback. The project teams should download the most recent version of the BMP Sizing Calculator prior to use.

17. What should I do if the SFPUC BMP Sizing Calculators do not include the stormwater management BMP proposed for my project?

The SFPUC created the BMP Sizing Calculators to assist project teams with planning and design of stormwater management controls (also known as Best Management Practices or BMPs) to comply with the *Stormwater Design Guidelines*. Not all stormwater management methods are covered by the calculators. Each project team should select the calculation method that best suits the proposed project and proposed stormwater management system. In many cases, the calculators can still be used to approximate the impact a BMP will have. Project review staff can help you use the calculators to fit your design.

Some projects will still have conditions and designs that do not fit easily within the parameters of the calculators. For those projects, the SFPUC allows other calculation methods. The SFPUC prepared the Accepted Hydrologic Calculation Methods memorandum outlining the accepted calculation methods for different types of projects (see www.sfwater.org/sdg). Additionally, the calculators are periodically updated to enhance the functions and incorporate user feedback. If you have comments on the calculators, please convey your comments to the project review staff.

18. Can I use the Municipal Regional Permit (MRP) C.3 methods to prove compliance with the SFPUC's stormwater management requirements?

No. While the *Stormwater Design Guidelines* and MRP both establish water quality and quantity BMP sizing requirements, the two standards are fundamentally different. The MRP hydromodification requirements involves matching pre- and post-development flow duration curves, which is different than the quantity control requirements of the *Stormwater Design Guidelines*. Also, although the intent of the MRP and *Stormwater Design Guidelines* water quality requirements is similar, the application to local conditions results in small differences. In San Francisco, volume-based BMPs must be designed to treat runoff resulting from the 0.75 inch storm. For the MRP, volume-based BMPs must be designed to treat 80% of average annual runoff.

E. STORMWATER CONTROL PLANS

19. What is the Stormwater Control Plan review process?

Projects that disturb 5,000 square feet or more of ground surface must comply with the *Stormwater Design Guidelines* and submit a Stormwater Control Plan for review and approval. The following are the steps of the Stormwater Control Plan (SCP) review process. This process is also outlined in the SCP review process chart (available at www.sfwater.org/sdg).

1. The project team or the SFPUC determines that *Stormwater Design Guidelines* apply to the development project. The SFPUC places a hold on the issuance of the Site or Building Permit as well as the issuance of a Certificate of Final Completion (CFC) at the San Francisco Department of Building Inspection (DBI).
2. The project team is *encouraged* to schedule a pre-application meeting with project review staff to discuss the project's options for compliance.
3. The project team submits a Preliminary SCP for review. This is typically submitted at the same time as DBI's review of the Site or Building Permit application.
4. The SFPUC reviews the Preliminary SCP and provides comments to the project team. The project team may be required to resubmit the Preliminary SCP for further review.
5. The SFPUC conditionally approves the Preliminary SCP and releases the hold on the issuance of the Site or Building Permit.
6. The project team addresses the conditions identified in the approval of the Preliminary SCP and submits a Final SCP for review. In the case of a Site Permit, this is typically submitted at the same time as DBI's review of the Addenda plans. In the case of a Building Permit, this is typically done at the while the project is under construction.
7. The SFPUC reviews the Final SCP and provides comments to the project team, if necessary. The project team may be required to resubmit the Final SCP for further review.
8. The owner signs and records the Maintenance Agreement.
9. The SFPUC approves the Final SCP and releases the hold on the issuance of the Certificate of Final Completion (CFC).

20. When is a project required to submit a Stormwater Control Plan to the SFPUC?

The Stormwater Control Plan (SCP) review and approval process consists of two phases: Preliminary SCP and Final SCP.

- The Preliminary SCP must be approved by the SFPUC prior to issuance of a Site or Building Permit for a project. The Preliminary SCP is typically submitted at the design development phase of the project. This level of design is similar to the level required for planning approvals or the San Francisco Department of Building Inspection (DBI) Site Permit approval.
- The Final SCP must be approved by the SFPUC prior to issuance of a Certificate of Final Completion (CFC). The Final SCP is typically submitted at the 100% construction document phase of the project. This level of design is similar to the level required for the San Francisco Department of Building Inspection (DBI) Addenda approvals. To avoid change orders, the SFPUC recommends all comments on the SCP be incorporated into the final design drawings before construction begins.

21. How long does the Stormwater Control Plan review process take?

Both the Preliminary Stormwater Control Plan (SCP) and the Final SCP submittals typically take up to four weeks to review. Some SCP reviews may take longer if they require multi-agency coordination or policy interpretations. There is a possibility that the SFPUC may not approve the first submittal of the Preliminary or Final SCP, and approval may require multiple re-submittals. Therefore, the project applicant should schedule their project submittals accordingly.

Who do I contact if I have additional questions?

Stormwater project review staff:
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