



Engineering Division

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COMMERCIAL, MULTI-FAMILY AND SUBDIVISION GRADING & DRAINAGE GUIDELINES

PURPOSE

The goals of the grading and drainage guidelines are to manage possible sources of water pollution (source control), ensure that site drainage does not affect neighboring properties (site design) and remove contaminants from on-site stormwater run-off before it drains into the City Street or Storm Drain System (treatment measures). Application of these methods shall be implemented on both regulated and non-regulated projects.

REGULATED PROJECTS

All projects that create and/or replace **10,000 square feet** or more of impervious surface, including roof areas and pavement. (New single family or duplex home projects not part of a PUD or other multi dwelling unit project are exempt.)

All restaurants, auto service facilities, retail gas outlets and uncovered parking lot projects (stand-alone or part of another development project, including the top uncovered portion of parking structures) that create and/or replace **5,000 square feet** or more of impervious surface.

CONCEPT

1. Post-development stormwater discharge volume must be equal to or less than pre-development discharge for all projects adding net new impervious area irrespective of whether it is a regulated project or not.
2. The grading and drainage design for the project shall control stormwater runoff and pollutants using the [San Mateo County's C.3 Stormwater Technical Guidance](#) criteria.
3. Project shall meet the minimum requirements of the [Municipal Regional Stormwater NPDES Permit CAS612008](#).
4. Drainage systems shall be designed to prevent erosion and vectors (e.g., mosquito spawning grounds).
5. Projects shall limit total impervious area where practicable with use of permeable materials (e.g. permeable pavers, pervious concrete, etc.)
6. Sites with over one acre of new or improved impervious surface, or significant redevelopment projects affecting more the 50 % of the site, are required to file a "Notice of Intent" with the RWQCB, prepare a SWPPP and provide stormwater control measures.

WRITTEN HYDROLOGY REPORT REQUIREMENTS (PLANNING REVIEW)

(Required for all commercial, multi-family and subdivision projects)

INTRODUCTION - *The introduction should include but is not limited to the following:*

1. State the nature of the project
2. State the existing on-site and off-site conditions. State the existing total site composite run-off coefficient, total lot impervious area, and the total lot run-off rate $Q_{10\text{-year}}$ and $Q_{100\text{-year}}$.
3. State the proposed on-site and off-site conditions. State the proposed total site composite run-off coefficient, total lot impervious area, and the total lot run-off rate $Q_{10\text{-year}}$ and $Q_{100\text{-year}}$.
4. Identify the drainage basin (San Francisquito Creek, Atherton Channel, or San Francisco Bay). See attached map showing the drainage basins. (Attachment A).

BODY - *The body of the report can be written in any format but must include the following as a minimum requirement:*

5. Describe in detail the existing on-site and off-site conditions. Include any pertinent information from the May 2003 City-wide Storm Drain Study regarding the condition/capacity of the City's existing system in the vicinity of the project. The study can be found at <http://www.menlopark.org/DocumentCenter/View/1017>. Specify the location and size of the existing off-site storm drain system receiving the project site run-off.
6. Analyze whether upstream drainage patterns will be altered by the proposed project and any possible offsite impacts resulting from such alterations. Analyze how downstream sites are affected by existing and proposed new on-site runoff. Describe, if any, drainage facilities proposed to protect affected upstream and downstream sites.
7. Summarize the hydrology calculation method used in this report.
8. Indicate the basis of design (i.e., the HGL shall be 1' below the top of curb) and mitigation measures proposed for the development in order for it to comply with design criteria applicable to the project.
9. The proposed project shall be designed with the top of curb elevation and all proposed new finished floor elevation to be at least one foot above the project HGL. If the project does not include a vertical curb, then the flow line of the gutter shall be at least six inches above the project HGL. Below grade facilities, such as basements and underground parking garages, shall be protected from infiltration of surface water.
10. Itemize any important information, assumptions, or findings.

EXHIBITS

1. Include a site plan delineating watershed partitions (drainage areas) for the existing condition. On the same plan, provide the following:
 - a. Show topo lines on the plan and use flow arrows to indicate directions of run-off,
 - b. Show the paths used for calculating time of concentration for each watershed,
 - c. Show the average run-off coefficient for each watershed,
 - d. Show the area in acres and ft² for each watershed, and
 - e. Show the existing storm drain system within 100 feet of the project site and label the size of each pipe.
2. Include a site plan delineating watershed partitions for the proposed condition. On the same plan, provide the following:
 - a. Use flow arrows to show directions of run-off,
 - b. Show the paths used for calculating time of concentration for each watershed,
 - c. Show the average run-off coefficient for each watershed,
 - d. Show the area in acres and ft² for each watershed, and
 - e. Show the proposed storm drain system and label the size of each pipe.
3. Complete and attach impervious area worksheet.
4. Include a site plan detailing impervious areas for the existing conditions.
5. Include a site plan detailing impervious areas for the proposed conditions.
6. Include an aerial photo showing the existing project site and its surrounding.
7. Include hydraulic profiles for the 10-year and 100-year storm for all proposed drainage pipelines from the furthest onsite inlet to the point of connection to the City's storm drain system. The profiles should show:
 - a. Rim and invert elevations at all catch basins and manholes
 - b. Energy Grade Lines and Hydraulic Grade Lines

STORMWATER MANAGEMENT PLAN REPORT REQUIREMENTS (PLANNING REVIEW)

(Required for regulated projects only)

The development permit applicant is responsible for submitting a Stormwater Management Plan that meets the design requirements of the [San Mateo County's C.3 Stormwater Technical Guidance Manual](#). The minimum information submitted for support of a Stormwater Management Plan shall be as follows:

1. Common address, parcel number and legal description of the site.
2. Contact information for all persons having a legal interest in the property.

3. Vicinity map.
4. A completed "[C.3 Data Form](#)" that provides total site area, disturbed area, as well as preproject and postproject impervious surface data.
5. A completed "Infiltration / Harvesting and Use Feasibility Screening Worksheet," as needed. If results from the screening worksheet determine that additional information is needed, submit completed "Infiltration Feasibility Worksheet" and / or "Stormwater Harvesting and Use Feasibility Worksheet."
6. For Downtown Specific Plan area and / or TOD projects that will apply for LID treatment reduction credits, submit a completed Special Projects Worksheet and LID treatment infeasibility analysis.
7. Geotechnical investigations, and site-specific recommendations and any additional information necessary to support the proposed stormwater management design.
8. A list of all stormwater management facilities and practices to be employed at the site. Include a map showing the site divided into discrete drainage management areas (DMAs), and showing the stormwater management facilities / treatment controls for each DMA.
9. Numeric BMP sizing criteria computations according to the "C.3 Stormwater Handbook"

STORMWATER MANAGEMENT PLAN REPORT REQUIREMENTS (BUILDING REVIEW)

(Required for regulated projects only)

1. List of source control measures for the project.
2. Structural and construction details for all components of the proposed drainage system or systems and stormwater management facilities, including facility dimensions, and inlet and outlet structures.
3. Detailed hydraulic sizing calculations for each treatment of hydromodification management measure.
4. A list of any regular on-site cleaning activities to be used as stormwater pollutant source controls (e.g., pavement sweeping) and the schedules for these cleaning activities.
5. BMP operation and maintenance procedures, including maintenance tasks, inspection and maintenance schedule and the parties responsible for BMP operation and maintenance.
6. Certification by the owner / developer that all stormwater management construction will be done according to this Stormwater Management Plan.
7. An as-built certification signature block to be executed by the responsible registered civil

engineer after project completion.

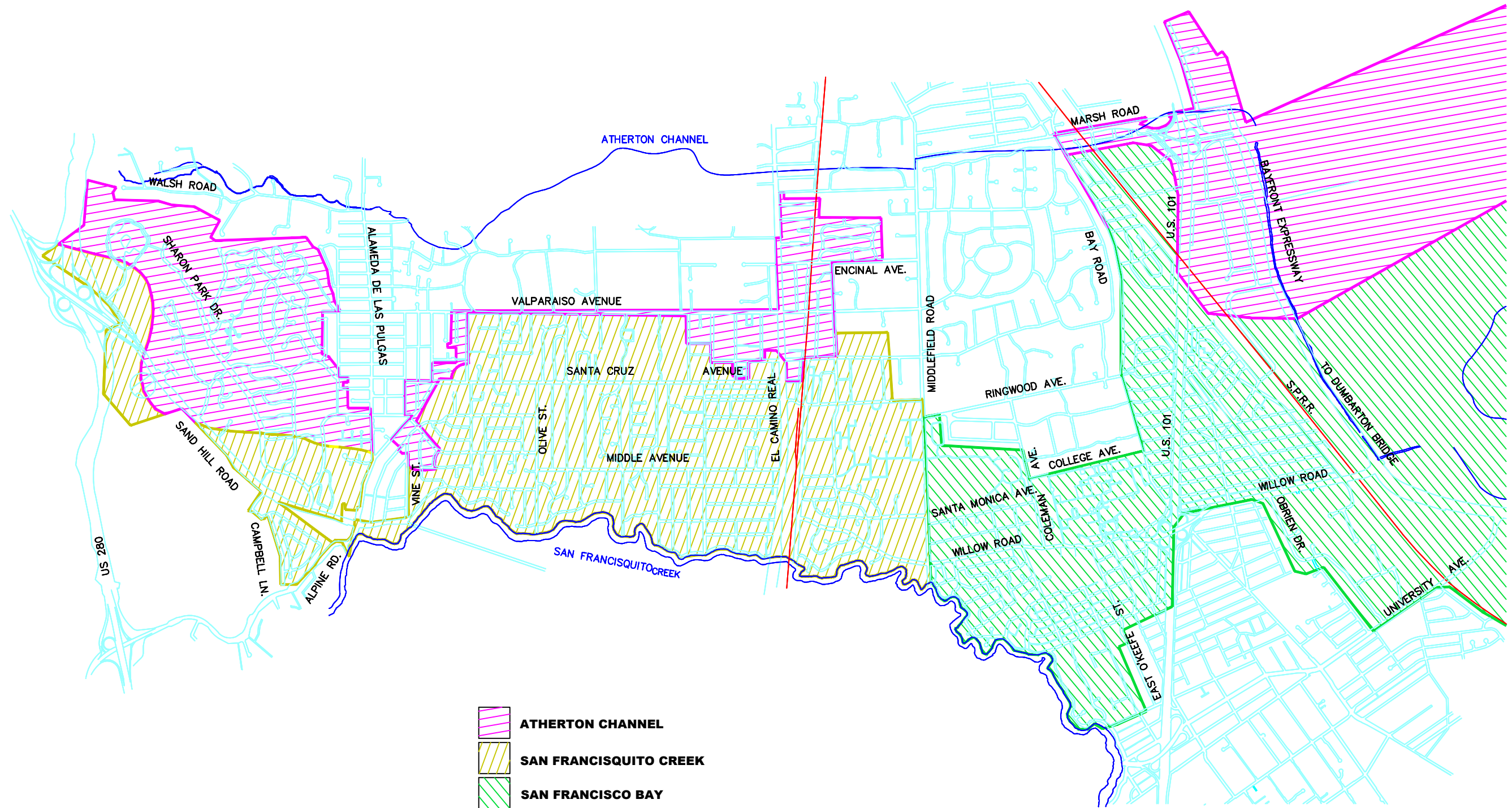
8. Stormwater Management Plans submitted to the City must include a stamped and signed certification by a qualified engineer, stating that the Stormwater Management Plan complies with the City's guidelines and the NPDES permit issued by the Regional Water Quality Control Board. Stormwater Management Plans with a stamped and signed certification by a qualified civil engineer will be accepted as complete and in full compliance with these requirements.
9. Prior to final sign-off of any building or occupancy permit requiring stormwater management BMPs, the owner(s) of the site shall enter into a formal written stormwater BMP operation and maintenance agreement with the City. The City shall record this agreement, against the property or properties involved, with the County of San Mateo and it shall be binding on all subsequent owners of land served by the stormwater management treatment BMPs. See how to assemble the agreement, how to record and agreement and agreement template. [Stormwater BMP Operation and Maintenance Agreement](#)

ADDITIONAL INFORMATION REGARDING REGULATED PROJECTS

1. If the new or replaced or the combined total of new and replaced impervious surface is **less than or equal to** 50 percent of the existing impervious surfaces, the project shall include permanent BMPs sufficient to reduce water quality impacts of stormwater runoff from only the new and replaced impervious surfaces for the life of the project.
2. If the new or replaced or the combined total of new and replaced impervious surface is **greater than** 50 percent of the existing impervious surfaces, and the existing development was not subject to stormwater treatment measures, then the project shall include permanent BMPs sufficient to reduce water quality impacts of stormwater runoff from the entire project site for the life of the project. If the existing development was subject to stormwater treatment measures, then the project shall include permanent BMPs sufficient to reduce water quality impacts of stormwater runoff for only the combined total of new and replaced impervious surface for the life of the project.



ATTACHMENT A DRAINAGE BASIN MAP



-  **ATHERTON CHANNEL**
-  **SAN FRANCISQUITO CREEK**
-  **SAN FRANCISCO BAY**

NOT TO SCALE