

STORMWATER CONTROL PLAN

for

A (Fictitious) Example Project
70 Serra Way, Milpitas

XYZ Development Corporation

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I. PROJECT SETTING

I.A. Project Description

This fictitious example project is redevelopment of a 63,500-square-foot (1.5 acre) site at 70 Serra Way in Milpitas. As shown on the accompanying Stormwater Control Plan Exhibit, the development includes three buildings:

- A 5,000-square-foot restaurant.
- A 5,500-square-foot commercial/retail building.
- A residential tower with first-floor covered parking for residents and a footprint of approximately 7,100 square feet.

The project also includes two exterior parking lots. Walkways and landscaped areas make up the remainder of the site.

I.B. Existing Site Condition

The irregular-shaped site has 350 feet of frontage on Serra Way and extends 257 feet away from the street at its deepest point. Adjacent lots are a mix of commercial and high-density residential uses.

Site topography is generally flat, with a mild slope (approximately 2' across the length of the site) to the north (away from Serra Way) and east. Surface soils are clay (Hydrologic soil group "D"). Soils of this type have low infiltration rates. Compaction of site soils by previous uses has likely further reduced soil permeability.

The site is mostly bare except for some small ruderal trees and brush. Some minor portions of the existing site are paved with gravel and asphalt. There are no significant trees.

A 30" storm drain pipe is in Serra Way, just off the curb adjacent to the site.

I.C. Opportunities and Constraints for Stormwater Control

Opportunities: For this fictitious project, the City requires a 10-foot minimum setback along Serra Way and along the boundary with adjacent lots. Stormwater treatment facilities, such as swales, may be located in these linear setback areas. In addition, the City specifies that a minimum of 10% of the site must be landscaped. These landscaped areas may be used to detain runoff or locate treatment facilities.

The 30" storm drain pipe in Serra Way provides a disposal point for treated stormwater. The depth of the pipe provides sufficient head so that underdrains from treatment facilities can be tied into the storm drain without the need for pumping.

Constraints: To maximize use of the site while meeting the City's minimum parking requirements, the project will cover most of the site with new roofs and paving. Disposal of runoff to deep infiltration is not feasible on this site due to the low permeability of the clay soils.

Generally flat topography can make it difficult to grade parking lots and driveways sufficiently to drain runoff into planters or swales located at the site perimeter.

I.D. Hydrograph Modification Management Requirements

Referring to the map attached to the San Francisco Bay Water Board's July 20, 2005 order revising Milpitas' stormwater NPDES permit, the project location is within the area represented as more than 90% built out. In these areas, projects smaller than 50 acres are encouraged, but not required, to implement hydrograph modification management requirements. Some hydrograph modification management benefit will be obtained from the swales and planters used for stormwater treatment.

II. MEASURES TO LIMIT IMPERVIOUSNESS

II.A. Measures to Make Development More Compact

The following site layout characteristics help reduce watershed imperviousness:

- The site is densely developed infill. Infill maximizes the use of existing streets and roads.
- The site is developed to maximum density and includes a multi-story residential tower. The number of parking spaces is at or near the minimum allowed by the City.
- The residential tower includes indoor parking, reducing the number of residential parking spaces that produce runoff.
- Guest parking for the residential tower is shared with the retail businesses.
- The site design includes a sizeable landscaped/urban open space area along Serra Way.

II.B. Measures to Limit Directly Connected Impervious Area

II.B.1. Selection of paving materials

Conventional concrete and conventional asphalt are used throughout the site. Permeable pavements, although feasible, are somewhat impractical for this site because of heavy vehicle use and because pavements overlie nearly impermeable, expansive clay soils.

II.B.2. Self-Retaining Areas

The project includes one self-retaining area. Area SR-1 is approximately 9,789 square feet. As shown in the Stormwater Control Plan Exhibit, it includes a landscaped lawn/garden, a portion of the restaurant building roof, and walkways and a patio surrounding the restaurant building. The roof area is 2,500 square feet and the patio/walkway area is approximately 3,789 square feet, for a total of 6,289 square feet of impervious area within Area SR-1. The pervious, landscaped area is approximately 3,500 square feet, providing a ratio of 1.8:1 impervious/pervious area, compared to the maximum 2:1 ratio allowed.

The pervious, landscaped area will be designed for passive recreational and open-space use (lawn or plantings). Pervious pavers (e.g., brick on sand) may be used for incidental walkways. The landscaped area will be graded in a concave form to ensure one inch of rainfall over the entire self-retaining area will be retained before any runoff can occur. Area drains will be located at low points and will have inlet elevations at least three inches above the surrounding grade. Portions of the area may be equipped with subdrains to provide adequate drainage for plant health and to avoid potential ponding.

Area SR-1 is shown in the Stormwater BMP Exhibit and is listed in the Table 1.

TABLE 1 - Pervious Areas

Area ID	Surface	Size (square feet)		"C" Runoff Factor	Size * C
		Self-retaining	Non-self retaining		
Area SR	Roof/Patio/Landscaped Area	9789			0
Totals		9789	0		0

III. SELECTION AND PRELIMINARY DESIGN OF STORMWATER TREATMENT BMPS

Impervious areas on the site, including all roofs, parking areas, and driveways, have been divided into three distinct areas as shown on the BMP Exhibit.

Runoff from each of these areas is managed by routing to a stormwater treatment BMP—a swale, in-ground planter box, or raised planter box—sized to treat runoff from that area.

A small area of the driveway (approximately 1,150 square feet, somewhat less than 2% of the site) slopes to Serra Way. Runoff from this area is not captured or treated. To minimize this area, the grade break has been moved as far as practicable toward the street (see Stormwater Control Plan Exhibit).

The stormwater treatment facilities adjacent to paved areas have suitable access for inspection and maintenance.

The Stormwater Control Plan Exhibit shows the treatment facilities and corresponding roof and paved areas that drain to each facility. The areas of each drainage area and corresponding swale are summarized in Table 2.

III.A. General Characteristics of the Treatment Facilities

The facilities will be designed and constructed in accordance with the illustrations and specifications in the *Stormwater C.3 Guidebook*, including a minimum 18" depth of sandy loam (minimum infiltration rate specified to be 5" per hour). All treatment facilities will be underdrained, and the underdrains will be connected to underground storm drains to convey treated runoff, as well as overflow, to the storm drain in Serra Way. All drainage into and away from the facilities is by gravity, eliminating the need to collect and pump stormwater and avoiding the need for vaults.

III.B. Specific Characteristics of Each Impervious Area and Treatment Facility

Impervious areas and treatment facilities are listed in Specific descriptions of each drainage area and swale follow:

III.B.1. Area A

Drainage Area A, as shown on the Exhibit, incorporates the rear parking area of the site. In addition, half the restaurant roof (from the ridge northward) and half the retail building's roof (from the ridge northward) are also part of Area A. A grade break in the driveway between these two buildings marks the southerly boundary of Area A. The area totals 29,192 square feet.

Drainage from this area travels by sheet flow to Swale A. Swale A is 170 feet in length and nine feet wide (1,530 square feet in surface area) and will be designed in accordance with the detail shown.

III.B.2. Area B

Drainage Area B, as shown on the Exhibit, incorporates the front parking area and the walkway areas surrounding the residential tower. The residential tower itself is drained separately (see Area C). Area B also includes half the retail building’s roof (from the ridge southward). This area totals 16,320 square feet.

Drainage from this area generally flows by sheet flow to a valley gutter running longitudinally through the middle of the parking area and then to In-ground Planter (infiltration planter) B. The design of In-ground Planter B is identical in all respects to that in the Stormwater Planter drawing in the *Stormwater C.3 Guidebook*, except that the top of the planter is set flush with the ground surface and the bottom is exposed to the underlying soil, allowing some incidental infiltration into the native clay. A perforated pipe underdrain embedded in gravel will convey most treated runoff to the storm drain in Serra Way.

In-ground Planter B is seven feet wide and 120 feet in length, for a total of 840 square feet of surface area.

III.B.3. Area C

Drainage Area C, as shown on the Exhibit, consists of the roof of the residential tower, and is about 7,103 square feet. Drains from the roof’s flat structure will be routed underneath the adjacent patio and will bubble up to a circular planter (Stormwater Planter C) a few feet away. Energy dissipaters, cleanouts, and emergency overflows will be incorporated into the design of the drains to ensure safe operation.

Stormwater Planter C is 28 feet in diameter, for a total of 616 square feet of surface area. Details and specifications will be as shown in the drawing in the *Stormwater C.3 Guidebook*.

TABLE 2 - Impervious Areas

Area ID	Surface	Size (square feet)	BMP to be Used	Sizing Factor	Minimum Surface Area	Surface Area as Designed
Area A	Roof/Paving	29,192	Swale "A"	0.034	993	1530
Area B	Roof/Paving	16,320	In-ground Planter "B"	0.034	555	840
Area C	Roof	7,103	Flow-through Planter "C"	0.034	242	616
Total		52,615				

Note to Table 2: The sizing factor of 0.034 is specified in Chapter Five of the City of Milpitas Stormwater C.3 Guidebook. The factor is derived by matching the design flow rate to the infiltration rate through the sandy loam in the swale, in-ground planter, or flow-through planter. The design flow rate is 0.17 inches per hour—the 85th percentile hourly rainfall intensity times two, as specified in Provision C.3.d of the City’s stormwater NPDES permit—times the tributary area. The flow through the treatment facility is 5 inches per hour—the specified minimum infiltration rate of the imported sandy loam—times the surface area of the planter. When $Q(\text{inflow}) = Q(\text{infiltration})$ at the design flow,, $C \cdot i \cdot A(\text{impervious}) = \text{infiltration rate} \cdot \text{surface area of BMP}$. Using the conservative assumption that the runoff factor $C = 100\%$, the ratio of BMP surface area to impervious area = $0.17 / 5 = 0.034$ (dimensionless).

IV. SOURCE CONTROL MEASURES

The following activities planned for this development have potential to allow pollutants to enter runoff:

- Refuse disposal for the retail building.
- Restaurant services, including refuse disposal.
- Landscape maintenance.
- Maintenance and washing of residents’ cars (prohibited on-site).

All areas where these activities occur will drain to stormwater treatment facilities. To further reduce the potential for pollutants to enter runoff, permanent and operational BMPs will be implemented as described in Table 3.

TABLE 3 - Sources and Source Control BMPs

Potential Source	Permanent BMPs	Operational BMPs
On-site drain inlets.	The drainage design eliminates on-site inlets, except for area drains in the landscaped area and overflows in the stormwater treatment BMPs. This substantially reduces the potential for dumping. Inlets that could be accessed from sidewalks and driveways will be marked with "No dumping—Drains to Creek" or similar message.	<ul style="list-style-type: none"> ▪ Inlet markings will be inspected annually and replaced or renewed as needed. ▪ Commercial tenant leases will include a clause stating: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains." ▪ Commercial and residential lessees will receive stormwater pollution prevention information to be provided by the City. ▪ Swales and related structures and features will be inspected and maintained as specified in the Stormwater Control Operation and Maintenance Plan (to be developed and submitted for approval).
Interior floor drains and elevator shaft sump pumps.	All such drains will be plumbed to the sanitary sewer.	Drains will be periodically inspected to avoid blockages and overflow.
Interior parking garages	Any floor drains in the covered parking area are to be plumbed to the sanitary sewer.	Drains will be periodically inspected to avoid blockages and overflow.
Need for future indoor and structural pest control.	Standard building design minimizes potential need for future pest control.	Lessees will receive integrated pest management information to be provided by the City.
Landscape/outdoor pesticide use.	<ul style="list-style-type: none"> ▪ Any native trees, shrubs, and ground cover on the site will be preserved to the maximum extent possible. ▪ Landscaping will be designed to minimize required irrigation and 	<ul style="list-style-type: none"> ▪ Commercial and residential lessees will receive integrated pest management information to be provided by the City. ▪ All site landscaping is to be maintained by a professional

Potential Source	Permanent BMPs	Operational BMPs
	<p>runoff, to promote surface infiltration, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.</p> <ul style="list-style-type: none"> ▪ Plantings for swales will be selected to be appropriate to anticipated soil and moisture conditions. ▪ Where possible, pest-resistant plants will be selected, especially for locations adjacent to hardscape. ▪ Plants will be selected appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, use of recycled water (where applicable), and plant interactions. 	<p>landscaping contractor. Contract to state that landscaping is to be maintained using Integrated Pest Management (IPM) principles, with minimal or no use of pesticides.</p>
Restaurant	<p>The restaurant will have an interior floor sink suitably sized for washing any floor mats, containers, or equipment, connected to a grease interceptor and thence to the sanitary sewer.</p>	<p>Applicant will implement standard conditions of approval for restaurants (<i>Stormwater C.3 Guidebook</i>, Appendix L).</p>
Refuse areas	<ul style="list-style-type: none"> ▪ Refuse areas outside the retail building and restaurant to be graded to prevent run-on to the area and bermed to prevent runoff from the area. ▪ Drain from refuse area outside retail building connected to sanitary sewer. ▪ Drain from restaurant refuse area connected to a grease interceptor and thence to the sanitary sewer. ▪ Refuse area in the residential building with floors sloped to prevent drainage to exterior. Any floor drains must connect to sanitary sewer. ▪ All dumpsters will be marked with "Do not dump hazardous materials" 	<p>Adequate litter receptacles will be provided outside the residential and retail areas. Groundskeeping crew or contractor will inspect and clean up daily. Spills will be cleaned up using dry methods.</p>

Potential Source	Permanent BMPs	Operational BMPs
	here" or similar.	
Outdoor storage of equipment or materials	Restaurant and retail area drain to visible swales, planters, and landscaped area, reducing the potential for spills to enter storm drains.	Leases will prohibit storage or display of materials outside.
Vehicle and equipment cleaning	All paved areas drain to swales rather than directly to storm drains. Hose bibs will have automatic shutoff or be will require keys to operate.	Residential and commercial leases will prohibit maintenance, repair, or cleaning of vehicles or other equipment on site.
Fire sprinklers	Sprinkler test and system drain water shall not discharge into the storm drain. Provisions to direct water to the sanitary sewer or landscape or other approved means shall be provided. Sprinkler system design shall include the proposed method for drainage of sprinkler system discharge.	
Miscellaneous drain or wash water	<ul style="list-style-type: none"> ▪ Condensate drain lines will discharge to the sanitary system or to landscaped areas. ▪ Rooftop mounted equipment will be roofed or covered to prevent pollutants from entering runoff. ▪ Roofing, gutters, and trim shall not be copper or other unprotected metal that could leach into runoff. 	Drainage sumps shall be cleaned of accumulated litter, debris, and sediment, and material properly disposed.
Patios and walkways	Plaza areas drain to swales and not directly to storm drains.	Plazas, sidewalks, parking lots, and common areas shall be swept regularly to prevent accumulation of litter and debris. Debris from pressure washing shall be collected and not allowed to enter the storm drain system. Washwater containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and not discharged to a storm drain.

V. PERMITTING AND CODE COMPLIANCE ISSUES

There are no known conflicts between the proposed stormwater control plan and City of Milpitas ordinances or policies. Any conflicts that are found will be resolved through the design review process or during subsequent permitting.

VI. BMP OPERATION AND MAINTENANCE

VI.A. Means to Finance and Implement BMP Maintenance

Proper operation and maintenance of Stormwater Management Facilities will be the responsibility of the property owner in perpetuity. The property owner will be subject to an annual fee (set by the City's standard fee schedule) to offset the cost of inspecting the site or verifying that stormwater management facilities are being maintained.

The applicant will prepare and submit, for the City's review, an acceptable Stormwater Control Operation and Maintenance Plan prior to completion of construction and will execute a Stormwater Management Facilities Operation and Maintenance Agreement before sale, transfer, or permanent occupancy of the site. The applicant accepts responsibility for maintenance of stormwater management facilities until such responsibility is transferred to another entity.

VI.B. Summary of Maintenance Requirements

Swales and stormwater planters remove pollutants primarily by filtering runoff slowly through an active layer of soil. Routine maintenance is needed to insure that flow is unobstructed, that erosion is prevented, and that soils are held together by plant roots and are biologically active. Typical routine maintenance consists of the following:

- Inspect inlets for channels, exposure of soils, or other evidence of erosion. Clear any obstructions and remove any accumulation of sediment. Examine rock or other material used as a splash pad and replenish if necessary.
- Inspect outlets for erosion or plugging.
- Inspect side slopes for evidence of instability or erosion and correct as necessary.
- Observe soil in the swale or planter for uniform percolation throughout. If portions of the swale or filter do not drain within 48 hours after the end of a storm, the soil should be tilled and replanted. Remove any debris or accumulations of sediment.
- Confirm that any check dams and flow spreaders are in place and level and that channelization within the swale or filter is effectively prevented.
- Examine the vegetation to insure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Replenish mulch as necessary, remove fallen leaves and debris, prune large shrubs or trees, and mow turf areas. Confirm that irrigation is adequate and not excessive. Replace dead plants and remove invasive vegetation.
- Abate any potential vectors by filling holes in the ground in and around the swale and by insuring that there are no areas where water stands longer than 48 hours following a storm. If mosquito larvae are present and persistent, contact the Santa Clara County Vector Control District for information and advice. Mosquito larvicides should be applied only when absolutely necessary and then only by a licensed individual or contractor.

TABLE 4 - Construction Plan C.3 Checklist

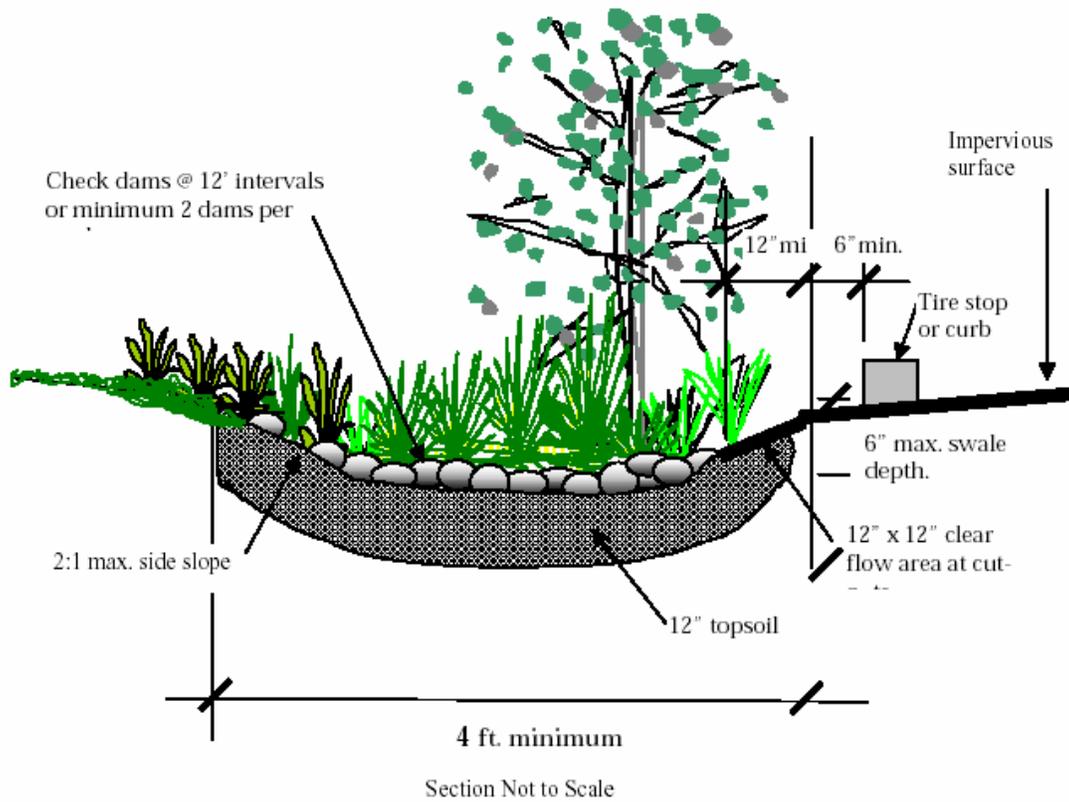
Stormwater Control Plan Reference	BMP Description	Plan Sheet Number
Table 1, Exhibit, and Section II.B.2	Area "SR" graded to route drainage into landscaped area. Landscaped area in self-retaining Area SR graded to retain first inch of rainfall.	
Section II.B.2	Area drains in Area "SR" have inlets at least three inches above surrounding grade.	
Table 2, Exhibit, and Sections III.B.1 and III.B.2	Areas "A" and "B" graded to route drainage from areas to Swale "A" and Infiltration Planter "B" as delineated on Exhibit.	
Table 2, Exhibit, and Section III.B.1	Swale "A" is sized and designed as specified.	
Table 2, Exhibit, and Section III.B.2	Infiltration Planter "B" is sized and designed as specified.	
Table 2, Exhibit, and Section III.B.3	Drainage from residential tower roof (Area "C") is piped to Flow-through Planter "C"	
Table 2, Exhibit, and Section III.B.3	Flow-through Planter "C" is sized and designed as specified.	
Table 3	No on-site drain inlets except area drains in landscaped areas and overflows from stormwater treatment facilities.	
Table 3	Inlets that could be accessed from sidewalks or driveways (if any) to be marked with "no dumping" message.	
Table 3	All interior floor drains, including in residential indoor parking area, are plumbed to sanitary sewer.	
Table 3	Plant selection to minimize irrigation, minimize use of fertilizers and pesticides, and for pest resistance.	
Table 3	Appropriate plantings are specified for swale and planters.	
Table 3	Restaurant has suitably sized interior floor sink for mat and equipment washing, connected to sanitary sewer via a grease interceptor. Size 1 interceptor coordinated with San Jose/Santa Clara Water Pollution Control Plant.	
Table 3 and Exhibit	Drain from trash enclosure outside restaurant connected to sanitary sewer via a grease interceptor.	
Table 3 and Exhibit	Trash enclosure adjacent to retail building graded and bermed and roofed. Drain discharge to sanitary sewer.	

Stormwater Control Plan Reference	BMP Description	Plan Sheet Number
Table 3	Dumpsters to be marked with "No dumping of hazardous materials" or similar	
Table 3	Adequate litter receptacles throughout commercial area.	
Table 3	Hose bibs on residential buildings to have automatic shutoff or require keys to operate.	
Table 3	Condensate drain lines discharge to landscaped areas or sanitary sewer.	
Table 3	Rooftop mounted equipment to be covered to prevent pollutants from entering runoff.	
Table 3	Sprinkler test and system drain water shall not discharge into the storm drain. Provisions to direct water to the sanitary sewer or landscape or other approved means shall be provided. Sprinkler system design shall include the proposed method for drainage of sprinkler system discharge.	
Table 3	No roofing, gutters, and trim made of copper or unprotected metals that may leach into runoff.	

VII. CERTIFICATION

The selection, sizing, and preliminary design of treatment BMPs and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order 01-119, as amended.

FIGURE 1 - Landscape Swale BMP



Minimum length: 20 feet.

Maximum slope: 6%.

Soils in the top 12" to be equivalent to a sandy loam with a minimum infiltration rate of 5 inches/hour.

Irrigation required to maintain plant viability.

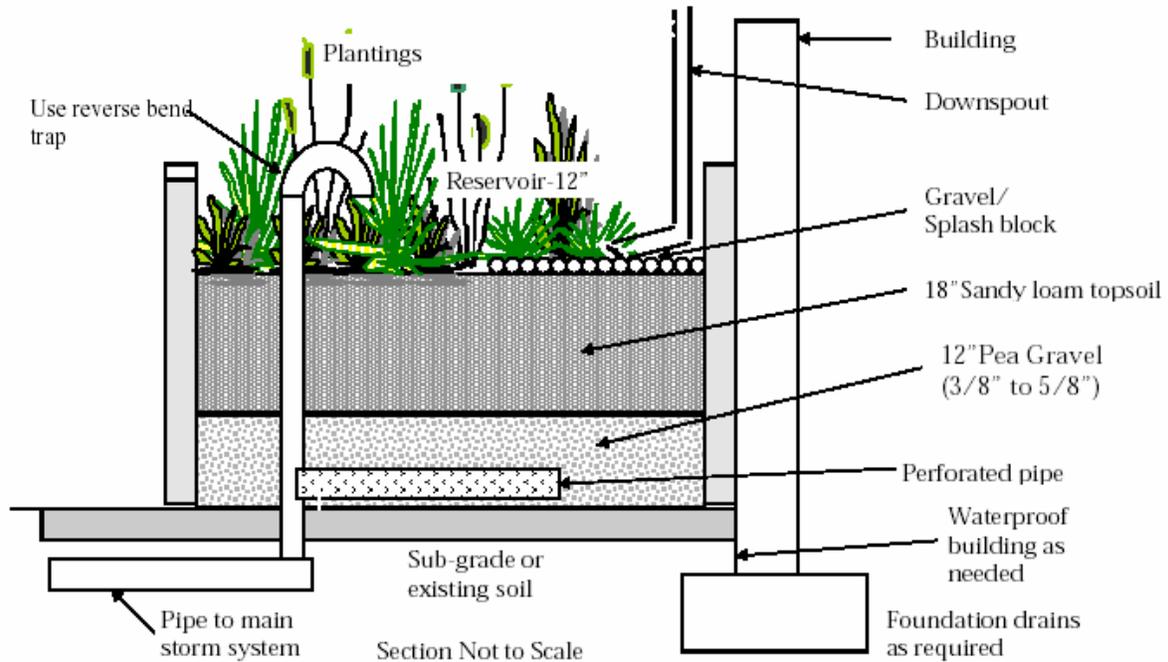
Check dams should extend the width of the swale, be 12" in length along the swale, 3"-5" high and constructed of rock, old brick, concrete, or similar.

No bypass required for larger storms.

Provide liner where required to protect groundwater. Provide underdrain system in "D" soils or where liner is required.

Drawing courtesy City of Portland, OR.

FIGURE 2 - Stormwater Planter BMP



Can be used in any soil type (A,B,C,D). Can be used adjacent to building and within setback area.

Sandy loam topsoil to have a minimum infiltration rate of 5 inches/hour.

Minimum width: 18".

Minimum length: none.

May be constructed of concrete, stone, or other durable material. Monolithic precast concrete recommended.

Irrigation required to maintain plant viability.

Install filter fabric between soil and gravel underdrain and around perforated pipe.

Size overflow trap for building code design storm; set trap below top of box.

Planter wall set against building should be higher to avoid overflow to that side.

Drawing courtesy City of Portland, OR.

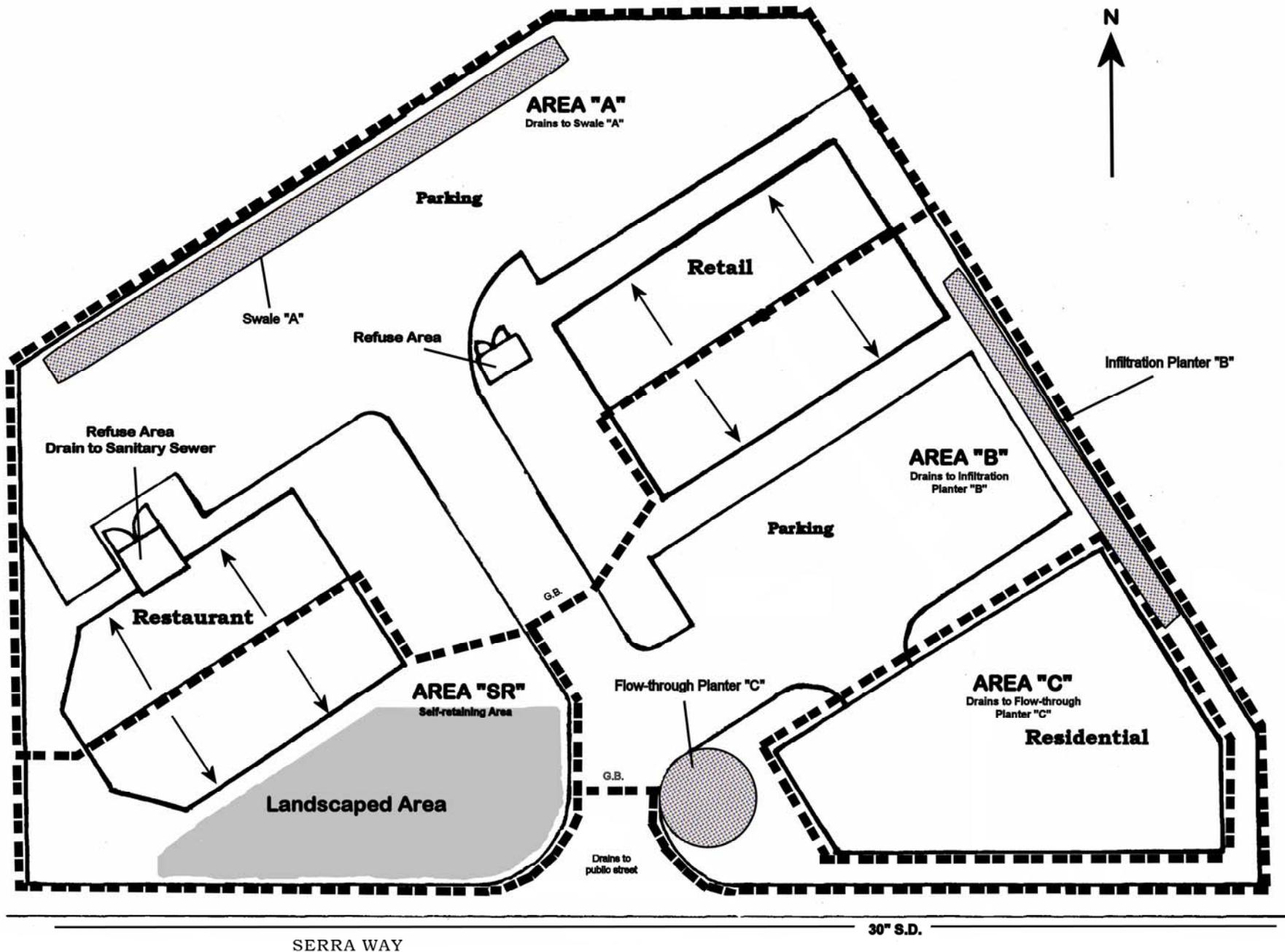


Figure 3 BMP Exhibit Example Stormwater Control Plan for 70 Serra Way

FIGURE 4
DETENTION, RETENTION, AND BMP SIZING WORKSHEET

See City of Milpitas Stormwater C.3 Guidebook, Chapter 5 for Instructions

Information from Planning and Zoning Application

Project Name Fictitious Example Project
Address/Location 70 Serra Way **Assessor's Parcel Number**
Applicant Name XYZ Corporation
Applicant Address
Phone **Fax** **Email**

Information from C.3 Data Form

Project Site Size (sq. ft.) 63554 **New impervious surface to be added (sq. ft.)** 52615
Existing impervious surface area (sq. ft.) 0 **New total impervious surface area (sq. ft.)** 52615
Existing impervious surface area (sq. ft.) 0

Use a separate sheet for each catchment area

Total Area of this Catchment:

Table 1. Pervious Areas					
Area ID	Surface	Size (square feet)		Runoff factor "C"	Size * C
		Self-retaining	Non-self retaining		
Area SR	Roof/Patio/LS	9789			
Totals		9789	0		0

Runoff factors for non-self-retaining pervious areas

Surface	"C"
Turf	0.1
Landscape	0.1
Crushed aggregate	0.1
Pervious Concrete	0.6
Pervious Asphalt	0.55

Table 2. Impervious Areas						
Area ID	Surface	Size (square feet)	BMP to be used	Sizing Factor	Minimum Surface Area	Surface Area as designed
Area A	Roof/Paving	29192	Swale "A"	0.034	992.528	1530
Area B	Roof/Paving	16320	In-ground Planter "B"	0.034	554.88	840
Area C	Roof	7103	Flow-through Planter "C"	0.034	241.502	616
Total		52615				

Sizing Factors		
BMP	Factor	
Landscape Swale	0.034	
Vegetative Filter	0.034	
Stormwater Planter	0.034	
Bioretention	0.034	
Sand Filter	0.034	

Total Area Served by Integrated/Distributed BMPs 52,615
Remaining DCIA not Served by Integrated/Distributed BMPs 0
Total Remaining Connected Area in This Catchment 0

Structural BMP Water Quality Volume (California BMP Method)	
Percent remaining directly connected impervious area	0%
Enter unit basin storage volume (from nomograph)	0.04
Water Quality Volume (cubic feet)	0

Structural BMP Design Flow Rate	
Runoff factor for non-self-retaining area	0
Design Rainfall Intensity (inches/hour)	0.2
Design Flow Peak Rate (cubic feet/hour)	0.0

d. **NEW** Impervious Surface Area to be Added or Replaced 52,615 SF

e. **TOTAL** Impervious Surface Area (b-c+d) 52,615 SF

50% Rule (only applies to existing developments NOT subject to stormwater treatment measures):

f. Percent Impervious Surface Area in Final Design (e/a x 100%) 83 %

For Significant Redevelopments (check appropriate box):

- If 50% or more, the entire project must be included in the treatment measure design.
- If less than 50%, only that affected portion must be included in the treatment measure design.

g. **Total Land Disturbance** During Construction 63,500 SF
Includes clearing, grading, and excavating.

5. Pesticide Reduction Measures Used (Check all that apply):

- None - Doesn't Apply
- Education
- Conditions of Approval
- Physical and Mechanical Horticultural Measures
- Environmental Measures
- Biological Measures
- Chemical Measures
- Other _____

6. Stormwater Control Measures Used (Check the appropriate boxes that apply to the project):

SITE DESIGN

- Minimize land disturbance
- Minimize impervious surfaces
- Minimum-impact street design
- Minimum-impact driveway or parking lot design
- Cluster structures/pavement
- Disconnect downspouts
- Alternative driveway design
- Microdetention in landscape
- Preserve open space: _____ sq. ft.
- Protect riparian and wetland areas, riparian buffers (setback from top of bank: _____ ft.)
- Minimize change in runoff hydrograph
- Other: _____

STORMWATER TREATMENT

- Bioretention
- Drain Insert
- Exfiltration Trench
- Extended Detention Basin
- Hydrodynamic Separators
- Infiltration Basin
- Infiltration Trench
- Media Filter
- Multiple Systems
- Planter Boxes
- Porous Pavement
- Retention/Irrigation
- Roof Gardens
- Underground Detention Systems
- Vegetated Buffer Strip
- Vegetated Swale
- Vortex Separator*
- Water Quality Inlet
- Wet Pond
- Wet Vault
- Wetland
- Other: _____

SOURCE CONTROLS

- Alternative building materials
- Wash area/racks, drain to sanitary sewer
- Covered dumpster area, drain to sanitary sewer
- Swimming pool/fountain drain to sanitary sewer
- Beneficial landscaping (minimizes irrigation, runoff, pesticides and fertilizers; promotes treatment)
- Outdoor material storage protection
- Covers, drains for loading docks, maintenance bays, fueling areas
- Maintenance (street sweeping, catch basin cleaning)
- Permeable pavement
- Storm Drain Signage
- Green or Blue Roofs
- Other: _____

FOR CITY STAFF ONLY

PRIVATE PROJECTS

Planning:
Date Received: _____
By (Name): _____
Permit #: _____
Project #, if applicable: _____
Master Permit #, if applicable: _____

Date Entered into Database: _____
By (Name): _____

PUBLIC PROJECTS

Design & Construction Engineering / Special Projects:
Date Received: _____
By (Name): _____
Permit #: _____
Project #, if applicable: _____
Master Permit #, if applicable: _____

Date Entered into Database: _____
By (Name): _____