Santa Clara Valley
Urban Runoff
Pollution Prevention Program

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Memorandum

TO: **C3PO Ad Hoc Task Group and Management Committee**

FROM: **Wendy Edde, Program Staff**

DATE: **July 9, 2003** **PROJECT:** **SC42.36**

SUBJECT: **Site Design Guidance for Review of Local Standards**

I. INTRODUCTION

Site design measures integrate basic stormwater management and hydrological concepts into site planning to create developments that mitigate the impact on stormwater quality. This often includes working with the natural topography, locating the development on the least sensitive portions of a site while protecting sensitive areas, and using design techniques to minimize and infiltrate runoff. According to Provision C.3.j. Site Design Measures Guidance and Standards Development, SCVURPPP Co-permittees must review their local design standards and guidance for opportunities to revise their site design measures that would reduce impacts to water quality. By September 15, 2003, the Co-permittees must submit a draft review and analysis of local standards and guidance, opportunities for revision, and proposed revised standards and guidance, for full implementation by September 15, 2004.

The purpose of this memorandum is to provide guidance to the Co-permittees for completing these tasks. It also provides useful policy and approval language and guidance for modifying municipal development rules to allow for better site designs measures.

- Section II provides recommended steps for municipal staff to review their local design standards and guidance. This includes a list of potential resources that should be examined.

- Section III provides example site design language and guidelines as well as a list of electronic links to useful site design resources.

- Section IV provides model site design conditions of approval.

- Section V describes a proposed process at the Program level and recommendations of actions at the local level for reviewing site design standards, including addressing potential conflicts to implementation of revised guidelines, to help ensure full implementation by the September 15, 2004 deadline.

In addition to the guidance provided in the memorandum, Program staff are working to provide additional useful resources separately, including selection tools, a compilation of additional design guidance, and a list of benefits that site planning for water quality improvement can provide to neighborhood residents and to the development community.

II. CONDUCTING THE REVIEW

Co-permittees must review their local design standards and guidance to determine areas for improvement. Fortunately, much of this work has been completed through the Program's Development Policies Comparison Project. (See www.scvurppp.org). Program staff recommends taking the following steps to review your local design standards and guidance.

1. Obtain a copy of the Program's Development Policies Comparison Project (April 2003). Each Management Committee representative received a CD-ROM with the project report, or you can download it from the Program's website (www.scvurppp.org). A link to the Development Policies Comparison Project is listed on the homepage. You will want to download the appendix for your municipality, and the reference list (Section IV). Appendix T, Examples of Good Language and Attachment I, Model Development Principles may also be useful for creating detailed policy and guidance language.

2. Within your copy of the Development Policies Comparison Project, find the appendix for your municipality. This appendix consists of a Policy, Code, and Ordinance Worksheet (PCOW) for your municipality. Attachment A to this memorandum indicates which questions in the PCOW pertain to specific site design considerations included in the Program's C.3.j. work plan. Using Attachment A as a guide, review the site design-related questions of the Policy, Code, and Ordinance Worksheet (PCOW) that was prepared for your municipality. If the site design-related question in the PCOW is not answered, Program staff felt that they did not have enough resources available to adequately answer the question. For such questions, we recommend that you collect and analyze additional information (see next item).

3. Examine the references used in the Development Policies Project (Section IV of that document) and collect any new or additional materials necessary. These references may include general or specific/precise plan policies, municipal code sections, design guidelines, standard conditions of approval, ordinances, standard specifications, CEQA checklist, and/or other guidance materials. Within these documents, focus on locating any new or additional materials on the following topics:

- ❖ Setbacks and building footprints
- ❖ Sidewalk specifications
- ❖ Rooftops (type of materials; design and construction standards)
- ❖ Commercial/Industrial and Residential Designs
- ❖ Street Width, Right-of-Way Width for streets
- ❖ Cul-de-Sacs and other dead-end streets
- ❖ Vegetated open channels or swales (e.g., curb and gutter requirements, design criteria, etc.)
- ❖ Parking ratios and codes
- ❖ Parking Lots, Structured Parking, Parking Lot Runoff
- ❖ Residential Driveways
- ❖ Stormwater Outfalls & drainage design
- ❖ Infiltration of stormwater (drainage policies, details
- ❖ Protection of riparian areas
- ❖ Cluster development
- ❖ Open Space management
- ❖ Ultimate Buildout Boundary and Buffers between Cities (Greenbelts, wildlife corridors, etc.)
- ❖ Native Vegetation and Tree Conservation
- ❖ Land Conservation Incentives (density bonuses, transferable development rights, off-site mitigation)
- ❖ Alternative Transportation Policies
- ❖ Watershed-based Planning and Zoning (Coordination with other Municipalities)

4. Analyze information from the additional references and materials that you have collected and update the PCOW for your municipality, as appropriate.

5. The PCOW contains recommendations for opportunities to revise development rules that would reduce water quality impacts using site design. Use these recommendations as a basis for developing a list of potential revisions. Attachment B to this memorandum provides a template for reporting this information for the September 15, 2003 submittal. The template includes those questions related to site design, the answers and recommendations columns from the PCOW as a guide, along with a "Co-Permittee Review Summary" column that pertains to each subsection of the PCOW (e.g., all questions regarding sidewalks). You should include the following information in this column: whether or not the section has been or will be addressed and the rationale for preserving existing language; a listing of those personnel involved in the discussion (see item 6, above); and a schedule for revisions. If any revisions have already been made, you may include this information as well. You may also include an optional discussion of any obstacles or hurdles that have or are being addressed.

6. Share potential revisions with appropriate staff and stakeholders who review development applications for their comments. Attachment A contains a column of potential hurdles or conflicts that may need to be addressed in order to effectively implement the revision, which should provide guidance on appropriate personnel to partake in the discussions. In addition, Regional Board staff have encouraged Co-permittees to include personnel from all appropriate city or county departments in the examination of the existing guidelines. (See Section V, below, for more information.)

7. Develop proposed revised standards and guidance to address these site design recommendations. Along with Sections III and IV of this memorandum, Appendix T and Attachment I of the Development Policies Project report may be useful for developing appropriate revised standards and guidance. Attachment B to this memorandum provides a template for reporting this information.

III. EXAMPLE SITE DESIGN LANGUAGE AND GUIDELINES

Attachment C to this memorandum contains example development policy language for improving water quality. The following references also contain model site design language and/or information on site design techniques.

Local Resources

a. BASMAA Start at the Source, Tom Richman and Associates, 1999 (www.scvurppp.org or www.basmaa.org (note: BASMAA website is under development))

b. BASMAA Start at the Source Tools, EOA, 2001 (contact your Management Committee representative; or Shannon Herndon (Program Staff, SCVURPPP library) at 1-800-794-2482 or (408) 720-8811)

c. BASMAA Using Site Design Techniques to Meet Development Standards for Stormwater Quality, CDM, May 2003 (www.basmaa.org, www.scvurppp.org)

d. SCVURPPP, Development Policies Comparison Project, April 2003. (www.scvurppp.org)

e. California Stormwater Quality Association (CASQA), State BMP Handbooks, CDM, et.al., 2003. (www.cabmphandbooks.com)

Additional Resources

The following are additional resources presented for informational purposes only.

a. Center for Watershed Protection: www.cwp.org
   Site Planning for Urban Stream Protection: http://www/cwp.org/SPSP/TOC.htm

   CWP's Stormwater Managers Resource Center (Includes technical resources such as publications, manuals, slide shows, example ordinances, monitoring and assessment methodology, and BMP factsheets): www.stormwatercenter.net

b. The Low-Impact Development Center, Inc. (A non-profit water resources research group based in Maine that has publications and other resources available regarding low impact development and stormwater management): www.lowimpactdevelopment.org

c. Prince George's County, Maryland, Department of Environmental Resources (See Programs and Planning Division for links to low impact site design information): http://www.goprincegeorgescounty.com/Government/AgencyIndex/DER/index.asp

d. United States Environmental Protection Agency-Office of Water (Provides BMP fact sheets for download): http://www.epa.gov/owow/nps/urban.html

e. University of British Columbia –Sustainable Communities, James Taylor Chair in Landscape & Livable Environments (Provides publications, research, and project examples for low impact designs): http://www.sustainable-communities.agsci.ubc.ca

f. Washington State Department of Ecology (Provides information on sustainability): http://www.ecy.wa.gov/programs/wq/wqhome.html

g. City of Olympia, Washington, Public Works Department (Includes the Impervious Surface Reduction Study): http://www.ci.olympia.wa.us/publicworks/default.asp (click on "reports") or, directly, http://www.ci.olympia.wa.us/publicworks/isrstudy.asp

h. City of Portland, Oregon, Bureau of Environmental Services (2002 Stormwater Management Manual, which includes Landscaping Design Requirements Chapter 5.0). http://www.cleanrivers-pdx.org/ (click on 'technical resources') or, directly, http://www.cleanrivers-pdx.org/tech_resources/2002_swmm.htm

i. Metro, "Green Streets—Innovative Solutions for Stormwater and Stream Crossings,"2002, "Creating Livable Streets: Street Design Guidelines for 2040," and "Trees for Green Streets: An Illustrated Guide". Order form information. http://www.metro-region.org/article.cfm?ArticleID=262

j. City of Lacey, Washington, Zero Effect Drainage Discharge Ordinance (Title 14.31) (Goal of the ordinance, located in the Municipal Code Title 14 section, is to remove the impact of impervious surfaces on water resources): http://www.wa.gov/lacey/main_menu/main_set.html

k. CASQA California Stormwater BMP Handbooks: www.cabmphandbooks.com

l. Green Roofs:
www.greenroofs.com; www.roofmeadow.com; www.greenroofs.ca

IV. MODEL SITE DESIGN CONDITIONS OF APPROVAL

Attachment D to this memorandum contains model conditions of approval for requiring site design measures in projects. This model list of source control measures may be used as either up-front submittal requirements or checklists, conditions of approval, or plan check comments, etc. depending on the particular planning process used by each Co-permittee. These measures are expressed as conditions of approval to meet the intent of Provision C.3.j.

PROPOSED PROCEDURE FOR ADDRESSING POTENTIAL CONFLICTS AS PART OF CONDUCTING SITE DESIGN STANDARDS REVIEW AND REVISION

As part of a process for reviewing and modifying design standards in the Santa Clara Valley, each Co-permittee will need to address potential conflicts in their development rules that could result between modifications designed to encourage water quality friendly site designs and those designed to encourage other community benefits such as handicap access or fire safety. Ultimately the resolution of such conflicts will need to be made within the departments and with the stakeholders in each municipality. The following is a proposed process at the Program level for facilitating discussion and understanding of the potential conflicts so that they can more easily be addressed by the Co-permittees as they modify their design standards. The Program would assist only to help clarify underlying issues and provide examples of experts and local staff who have successfully overcome similar hurdles. The Program would not attempt to develop solutions that each Co-permittee would be required to accept to address the potential conflicts, so as to allow the Co-permittees flexibility to best solve any potential hurdles at the local level.

#1. Via the Site Design Work Group and the SCBWMI's Land Use Subgroup Work Group, define specific areas of potential conflicts to address and the associated stakeholders—such as representatives from public works, planning, fire, and police department staff who review development applications—who would be involved. Below is an initial list of areas of potential conflict that are discussed in detail in Section III of the Program's Development Policies Comparison Project:

- Fiscal Lenders and Risk-Fears for Innovative Designs;
- State and Federal Accessibility Requirements With Respect to Sidewalk Width;
- Fire Department Standards (Narrow Streets, Permeable Pavement, Cul-de-sac radius, Covered Trash/Recycling Bins);
- Efficient Street Design and Promoting Alternative Transportation;
- Stormwater Drainage, Sidewalks, Private Property, Park Strips and Water Conservation;
- Neighborhood Aesthetics and Impervious Surface Reduction;
- Post-Construction Controls and Vector Problems.

#2. Via the Site Design Work Group and potentially the SCBWMI's Land Use Subgroup, conduct meetings or forums involving experts and local staff knowledgeable in the area of the potential conflicts to discuss the underlying causes and reasoning behind conflicting language and measures. The forums would be open to interested municipal staff, stakeholders, and the public. Efforts will be made to find personnel who have successfully overcome hurdles to share their stories.

#3. Program staff would then compile the highlights of the forums into a document(s) that municipalities could use to increase their understanding of the underlying issues as they work to resolve potential conflicts at the local level. The draft compilation would be posted on the SCVURPPP website for public information.

V. REFERENCES CITED

Low Impact Development Center, Inc. LID Links, http://www.lowimpactdevelopment.org. Beltsville, MD, 2003.

San Mateo Countywide Stormwater Pollution Prevention Program, Model Development Policies, June 2001.

Santa Clara Valley Urban Runoff Pollution Prevention Program, Comparison of Development Policies, April 2003.

Santa Clara Valley Urban Runoff Pollution Prevention Program, Site Design Work Group Meeting Summary, June 30, 2003.

Attachment A

Site Design-related Questions of the Policy, Code, and Ordinance Worksheet

Santa Clara Valley *Urban Runoff* Pollution Prevention Program

Policy, Code & Ordinance Worksheet for the Santa Clara Basin--Site Design Measures

Questions for Site Design Measures Analysis are Noted in BOLD TYPE

Municipality:

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
SECTION I: Requirements to Implement Erosion & Sediment Controls During			
a. Is there any ordinance or condition of approval requiring that erosion and sediment controls are required prior to the start of and as part of grading and clearing?	Yes / No / NA		
b. Is there any ordinance that requires or encourages the preservation of natural vegetation at development sites?	**Yes / No / NA**	**Minimize Land Disturbance/ Preserve Native Vegetation**	**Neighborhood aesthetics concerns may result in requirements/standards for traditional landscaping; or low-water use landscaping for water conservation.**
c. Is there any ordinance or policy specifying more stringent erosion and sediment controls/requirements during the wet season?	Yes / No / NA		
d. Is there any ordinance, policy, or guideline that requires more stringent erosion and sediment controls for developments near sensitive areas (e.g., riparian or hillside areas)?	Yes / No / NA		
e. Are there any requirements that contractors, engineers, and designers be adequately trained in erosion and sediment controls?	Yes / No / NA		
f. Is there flexibility to allow for updates to erosion and control plans in response to ever-changing field conditions?	Yes / No / NA		
g. Is there any ordinance or code language that incorporates enforcement measures such as performance bonds or stop work orders to ensure compliance with erosion and sediment control regulations?	Yes / No / NA		

Policy, Code & Ordinance Worksheet for the Santa Clara Basin--Site Design Measures

Questions for Site Design Measures Analysis are Noted in BOLD TYPE

Municipality:

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
SECTION II: Policies to Limit Site Imperviousness and to Incorporate Post-			
SECTION II: Subsection A: Site Design All Types of Development **II.1. Setbacks and Building Footprints** **a. Are there policies to limit the amount of maximum impervious surface area on a lot?**	**Yes / No / NA**	**Minimize Impervious Surface**	
b. Are there more stringent setback requirements for developments adjacent to creeks/sensitive areas?	**Yes / No / NA**	**Preservation and/or restoration of riparian areas and wetlands as project amenities**	
c. Does the municipality have flexibility or offer incentives to reduce the building footprint (such as, allowing multistory buildings or tuck-under parking)?	**Yes / No / NA**	**Minimize Impervious Surface**	**Neighborhood /visual aesthetics may result in minimizing multi-story buildings. Seismic concerns may discourage tuck-under parking.**
II.2. Sidewalks **a. Is the minimum sidewalk width allowed in the community 4 feet or less?**	**Yes / No / NA**	**Minimize Impervious Surface**	**State or Federal Accessibility requirements for those with disabilities (ADA accessibility). Belief that wide sidewalks promote more pedestrian use.**
b. Are sidewalks on only one side of the street or designs without impervious sidewalks allowed?	**Yes / No / NA**	**Minimize Impervious Surface**	**Concerns with ADA accessibility. Public safety concerns that one-side of street sidewalks would promote jaywalking.**

Policy, Code & Ordinance Worksheet for the Santa Clara Basin--Site Design Measures

Questions for Site Design Measures Analysis are Noted in BOLD TYPE

Municipality:

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
c. Are sidewalks generally sloped so they drain to the front yard or park strip rather than the street?	**Yes / No / NA**	**Use of landscaping as a stormwater drainage/ treatment feature**	**Liability concerns--cannot drain to private property per Subdivision Map Act. Water Conservation concerns with overspray of park strips. Concerns that water infiltration may uncover pipes in park strips.**
d. Can alternate pedestrian networks be substituted for sidewalks (e.g., trails through common areas)?	**Yes / No / NA**	**Minimize Impervious Surface**	**Potential accessibility concerns.**
II.3. Rooftop Runoff **a. Can rooftop runoff be discharged to yard areas, open channels, detention basins, or vegetated areas?**	**Yes / No / NA**	**Lot-level design measures**	**Concern water may undermine foundation if discharges too closely. Concern that residents may pipe to drain across sidewalk to avoid "mushy" landscaping.**
b. Are the use of benign roof materials promoted?	**Yes / No / NA**	**Lot-level design measures**	**Concern that not enough "proof" that, say copper, roofs are not benign.**
c. Are roof gardens allowed?	**Yes / No / NA**	**Lot-level design measures. Use of landscaping as a stormwater drainage/treatment feature**	**Seismic concerns. Cost. Fire concerns.**

Policy, Code & Ordinance Worksheet for the Santa Clara Basin--Site Design Measures

Questions for Site Design Measures Analysis are Noted in BOLD TYPE

Municipality:

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
Commercial/Industrial/Campus/Institutional Only **II.4. Commercial/Industrial/Institutional Site Design** **a. Are outdoor vehicle/equipment maintenance areas, food service equipment cleaning areas, and garbage dumpsters/recycling collection areas required to be covered?**	**Yes / No / NA**	**Lot-level design measures**	**Fire concerns resulting in sprinklers needed resulting in high cost.**
b. Does the community encourage inclusion of turf play yards or courtyards that also serve as infiltration areas or overflow parking areas?	**Yes / No / NA**	**Lot-level design measures. Parking area design standards. Use of landscaping as a stormwater drainage/treatment feature. Other features to reduce the velocity of, detain, store, and/or infiltrate stormwater runoff.**	**Perception of pollutants in play areas.**
c. Are industrial sites required to provide spill control at storm drain inlets; covered storage areas; and other storm water BMPs?	**Yes / No / NA**	**Lot-level design measures**	
SECTION II: Subsection B: Streets **II.5. Street Width** **a. Is the minimum pavement width allowed for streets in low density residential developments that have less than 500 average daily trips (ADT) between 18-22 feet?**	**Yes / No / NA**	**Urban and rural street design standards.**	**Fire Department and Garbage/Recycling Truck Access. Perception that residents want wide streets--perceived safety.**
b. Does the municipality have flexibility or offer incentives to reduce pavement width for parking, (such as, allowing parking pull-outs or landscape reserves, or allowing parking planes to serve as traffic lanes)?	**Yes / No / NA**	**Urban and rural street design standards.**	**Fire Department and Garbage/Recycling Truck Access. Perception that residents want wide streets--perceived safety.**

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
II.6. Right-of-Way Width **a. Is the minimum right of way (ROW) width for a residential street less than 45 feet?**	**Yes / No / NA**	**Urban and rural street design standards.**	**Fire Department and Garbage/Recycling Truck Access. Perception that residents want wide streets--perceived safety.**
II.7. Cul-de-Sacs **a. Is the minimum radius allowed for cul-de-sacs less than 35 feet?**	**Yes / No / NA**	**Urban and rural street design standards.**	**Concerns that fire and garbage/recycling trucks will not be able to turn around.**
b. Is the minimum radius allowed for cul-de-sacs between 36 to 45 feet?	**Yes / No / NA**	**Urban and rural street design standards.**	**Concerns that fire and garbage/recycling trucks will not be able to turn around.**
c. Can a landscaped island be created within the cul-de-sac?	**Yes / No / NA**	**Urban and rural street design standards.**	**Concerns that fire and garbage/recycling trucks will not be able to turn around--could get stuck in landscaping.**
d. Are alternative turnarounds such as "hammerheads" allowed on short streets in low density residential developments?	**Yes / No / NA**	**Urban and rural street design standards.**	**Concerns that fire and garbage/recycling trucks will not be able to turn around.**
e. Are cul-de-sacs discouraged to allow for efficient street layout?	**Yes / No / NA**	**Urban and rural street design standards.**	**Public neighborhood aesthetics/perception of safety (via less traffic) on cul-de-sac.**

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
II.8. Vegetated Open Channels/Swales **a. Are alternatives allowed to curb and gutters for most residential street sections?**	**Yes / No / NA**	**Urban and rural street design standards.**	**Safety--perception that curbs prevent cars from driving on walkways.**
b. Are there established design criteria or guidance for swales that can provide stormwater quality treatment (i.e., dry swales, biofilters, or grass swales)?	**Yes / No / NA**	**Urban and rural street design standards. Parking area design standards. Use of landscaping as a stormwater drainage/treatment feature.**	
SECTION II: Subsection C: Parking **II.9. Parking Ratios** **a. Are parking requirements set as maximum or median (rather than minimum) requirements?**	**Yes / No / NA**	**Parking area design standards.**	**Concern by fiscal lenders not enough parking so project won't sell.**
b. Is the minimum parking ratio for a professional office building (per 1,000 sq. ft. of gross floor area) less than 3.0 spaces?	**Yes / No / NA**	**Parking area design standards.**	**Concern by fiscal lenders not enough parking so project won't sell.**
c. Is the minimum required parking ratio for shopping centers (per 1,000 sq. ft. gross floor area) 4.5 spaces or less?	**Yes / No / NA**	**Parking area design standards.**	**Concern by fiscal lenders not enough parking so project won't sell.**
d. Is the minimum required parking ratio for single family homes (per home) less than or equal to 2.0 spaces?	**Yes / No / NA**	**Parking area design standards.**	**Concern by fiscal lenders not enough parking so project won't sell.**
II.10. Parking Codes **a. Is the use of shared parking arrangements promoted?**	**Yes / No / NA**	**Parking area design standards.**	**Concern that if land use changes then not enough parking.**

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
b. Are model shared parking agreements provided?	**Yes / No / NA**	**Parking area design standards.**	**See above.**
c. If mass transit is provided nearby, is the parking ratio reduced?	**Yes / No / NA**	**Parking area design standards.**	**Concern by fiscal lenders not enough parking so project won't sell.**
II.11. Parking Lots **a. Can pervious materials be used for overflow or spillover parking areas?**	**Yes / No / NA**	**Parking area design standards. Minimize impervious surface.**	**Concern higher maintenance.**
b. Is the minimum stall width for a standard parking space 9 feet or less?	**Yes / No / NA**	**Parking area design standards.**	**Concern over public complaints not large enough for SUVs/larger autos/trucks.**
c. Is the minimum stall length for a standard parking space 18 feet or less?	**Yes / No / NA**	**Parking area design standards.**	**Concern over public complaints not large enough for SUVs/larger autos/trucks.**
d. Are at least 30% of the spaces at larger commercial parking lots required to have smaller dimensions for compact cars?	**Yes / No / NA**	**Parking area design standards.**	**Concern over public complaints not large enough for SUVs/larger autos/trucks.**
II.12. Structured Parking **a. Are there any incentives to developers to provide parking within garages rather than surface parking lots?**	**Yes / No / NA**	**Parking area design standards. Minimize impervious surface. Clustering of structures and pavement.**	**Cost. Potential safety concerns if not designed well.**

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
II.13. Parking Lot Runoff **a. Is the routing of runoff to bioswales encouraged in parking lot design or within landscaped areas along roadways?**	**Yes / No / NA**	**Parking area design standards. Urban and rural street design standards. Use of landscaping as a stormwater drainage/treatment feature.**	**Perception that pollutants may accumulate to level that they must be disposed as hazardous waste.**
b. Is a minimum percentage of a parking lot required to be landscaped?	**Yes / No / NA**	**Parking area design standards. Minimize impervious surface. Use of landscaping as a stormwater drainage/treatment feature.**	
II.14. Residential Driveways **a. Is the minimum driveway width specified in the community 9 feet or less (one lane) or 18 feet (two lanes)?**	**Yes / No / NA**	**Lot-level design measures. Minimize impervious surface.**	**Concern over public complaints not large enough for SUVs/larger autos/trucks. Neighborhood aesthetics.**
b. Can pervious materials be used for single family home driveways (e.g., grass, gravel, porous pavers, etc.)?	**Yes / No / NA**	**Lot-level design measures. Minimize impervious surface.**	**Fire Dept. concerns regarding loading issues. Maintenance concerns. Concerns that if pervious area in driveway, residents may use savings to pave other parts of yard--aesthetic issue. Concern that car may slide on wet grass driveway on slope--public safety. Concern of tracking gravel into street.**
c. Can a "Hollywood driveway," or "two track," design be used at single family driveways?	**Yes / No / NA**	**Lot-level design measures. Minimize impervious surface.**	**Potential neighborhood concern regarding aesthetics.**

Policy, Code & Ordinance Worksheet for the Santa Clara Basin--Site Design Measures

Questions for Site Design Measures Analysis are Noted in BOLD TYPE

Municipality:

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
d. Are shared driveways permitted in residential developments?	**Yes / No / NA**	**Lot-level design measures. Minimize impervious surface.**	**Potential neighborhood perception.**

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
SECTION III: Requirements for Drainage Design			
III.1. Stormwater Outfalls & Drainage Design **a. Is storm water required to be routed through a filtration or infiltration device to improve its quality prior to discharge??**	**Yes / No / NA**	**Other features.**	**Perception that pollutants may accumulate to level that they must be disposed as hazardous waste.**
b. Does a floodplain management ordinance that restricts or prohibits development within the 100 year floodplain exist?	**Yes / No / NA**	**Preservation and/or restoration of riparian areas and wetlands as project amenities. Preserve high-quality open space.**	**Requirements that municipalities provide enough housing/affordable housing.**
c. Does the municipality promote limiting runoff to pre-development levels (e.g. through detention or retention, limits on impervious surface area, etc.)?	**Yes / No / NA**	**Minimize impervious surface. Reduce effects of hyrdromodification, as needed. Lot-level design measures.**	**Cost. Space.**
d. Does the municipality's policies/guidance cover protection of streams from hydrologic impacts from development in a manner that avoids altering natural drainage systems?	**Yes / No / NA**	**Reduce effects of hydromodification, as needed. Preservation and/or restoration of riparian areas and wetlands as project amenities.**	
e. Are there design criteria for stormwater best management practices?	**Yes / No / NA**	**Urban and rural street design standards.**	
f. Is pretreatment required before stormwater can be discharged into a jurisdictional wetland, sole source aquifer or sensitive area?	Yes / No / NA		
g. Does the municipality have or require drainage policies, standard specifications, and details to allow for infiltration of stormwater and separation of directly-connected impervious areas?	**Yes / No / NA**	**Minimize impervious surface. Other features.**	

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
h. Does the municipality's CEQA checklist address stormwater and hydrologic impacts?	**Yes / No / NA**	**Reduce effects of hydromodification, as needed.**	
SECTION IV: Other Stormwater Pollution Controls Required by			
a. Does the municipality discourage the use of herbicides and pesticides on city-owned properties?	Yes / No / NA		
b. Does the municipality discourage the use of pesticides and/or encourage pest-resistant landscaping at new developments?	Yes / No / NA		
c. Does the municipality have policies, procedures and/or ordinances for eliminating mercury from controllable sources (e.g., identify mercury-containing products and schedule for phase out)?	Yes / No / NA		
d. Does the municipality have policies or other guidance to encourage recycling of fluorescent lights and/or to establish "take back" programs for public collection of mercury-containing household products?	Yes / No / NA		

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
SECTION V: Natural Resource Protection/Restoration			
SECTION V: Subsection A. Stream Buffers **V.1. Buffer Systems** **a. Is there a stream buffer ordinance/policy/guidelines in the community?**	**Yes / No / NA**	**Preservation and/or restoration of riparian areas and wetlands as project amenities.**	
b. If so, is the minimum buffer width (*from top of bank*) 75 feet or more?	**Yes / No / NA**	**Preservation and/or restoration of riparian areas and wetlands as project amenities.**	
c. Is expansion of the buffer to include freshwater wetlands, steep slopes or the 100-year floodplain required?	**Yes / No / NA**	**Preservation and/or restoration of riparian areas and wetlands as project amenities.**	
V.2. Buffer Maintenance ***Note: If you do not have stream buffer requirements in your community, circle NA.*** **a. Does the stream buffer ordinance specify that at least part of the stream buffer be maintained with native vegetation?**	**Yes / No / NA**	**Preservation and/or restoration of riparian areas and wetlands as project amenities. Minimize land disturbance/reserve native vegetation.**	
b. Does the stream buffer ordinance outline allowable uses within the buffer?	**Yes / No / NA**	**Preservation and/or restoration of riparian areas and wetlands as project amenities. Minimize land disturbance/ preserve/reserve native vegetation.**	
c. Does the ordinance specify enforcement and education mechanisms?	**Yes / No / NA**	**Preservation and/or restoration of riparian areas and wetlands as project amenities.**	
SECTION V: Subsection B: Open Space			

Policy, Code & Ordinance Worksheet for the Santa Clara Basin--Site Design Measures

Questions for Site Design Measures Analysis are Noted in BOLD TYPE

Municipality:

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
V.3. Cluster/Open Space Design **a. Are open space or cluster development designs allowed/required in the community?** ***If your answer is NO, circle NA for the remaining parts of this question.***	**Yes / No / NA**	**Clustering of structures and pavement.**	**Concern that public perception would make project less marketable.**
b. Is land conservation, impervious cover reduction, or other types of water quality protection a major goal or objective to the open space design guidance?	**Yes / No / NA**	**Preserve high-quality open space.**	
c. Are flexible site design criteria available for developers that preserve open space and utilize cluster design options (e.g., setbacks, road widths, lot sizes)?	**Yes / No / NA**	**Preserve high-quality open space. Clustering of structures and pavement.**	**Too many hoops for developer to jump through--easier for developer to use standard ways/means.**
d. Are the submittal or review requirements for cluster development/open space design less than or equal to those for conventional development?	**Yes / No / NA**	**Preserve high-quality open space. Clustering of structures and pavement.**	**Too many hoops for developer to jump through even with PUDs--easier for developer to use standard ways/means.**

Policy, Code & Ordinance Worksheet for the Santa Clara Basin--Site Design Measures

Questions for Site Design Measures Analysis are Noted in BOLD TYPE

Municipality:

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
V.4. Open Space Management **Circle NA for these questions and skip to question No. V.5 if open space, cluster, or conservation developments are not allowed in your community.** **a. Does the community have enforceable requirements to establish community associations or third party administrator (e.g. land trust or park) that can effectively manage open space?**	**Yes / No / NA**	**Preserve high-quality open space.**	**Cost to oversee. Liability. Concern if management does not occur.**
b. Are open space areas encouraged to be consolidated into larger units?	**Yes / No / NA**	**Preserve high-quality open space.**	**Cost.**
c. Does a minimum percentage of open space near sensitive areas have to be managed in a natural condition?	**Yes / No / NA**	**Preserve high-quality open space. Preservation and /or restoration of riparian areas and wetlands as project amenities.**	
d. Are allowable and unallowable uses for open space in residential developments defined?	**Yes / No / NA**	**Preserve high-quality open space.**	
e. Are erosion and sediment control policies incorporated for off-road vehicle or trail use?	Yes / No / NA		
f. Does the community encourage minimization of impervious surface areas in recreational open space areas?	**Yes / No / NA**	**Preserve high-quality open space. Minimize impervious surface.**	**Neighborhood perceptions... interest groups for recreation requiring impervious area (basketball, tennis, etc.)**
V.5. Policies to Promote Urban Boundaries a. Does your municipality contain policies outlining an ultimate buildout boundary/description to encourage contiguous growth within the planning area?	Yes / No / NA		

Policy, Code & Ordinance Worksheet for the Santa Clara Basin--Site Design Measures

Questions for Site Design Measures Analysis are Noted in BOLD TYPE

Municipality:

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
b. Does your municipality encourage distinct low-impervious buffers between cities (e.g., greenbelts, open space, wildland corridors, agricultural areas)?	**Yes / No / NA**	**Preserve high-quality open space.**	**Concern need land for housing requirements. Already built out. Effort/cost to work with/communicate with other municipalities.**
SECTION V: Subsection C: Resource Conservation			
V.6. Native Vegetation and Tree Conservation **a. If specimen trees or forests or native vegetation are present at development sites, does some of the vegetation have to be preserved?**	**Yes / No / NA**	**Minimize land disturbance/preserve native vegetation.**	
b. Are the limits of disturbance shown on construction plans adequate for preventing clearing of natural vegetative cover during construction?	**Yes / No / NA**	**Minimize land disturbance/preserve native vegetation.**	
c. Is tree canopy coverage promoted (e.g. street trees)?	**Yes / No / NA**	**Lot-level design measures. Other features.**	
d. Is native or pest-resistant vegetation promoted for use in landscaped areas such as street ROW, parking lot islands, etc.?	**Yes / No / NA**	**Minimize land disturbance/preserve native vegetation.**	**Takes an expert to determine pest-resistant vegetation for specific site. Using standard list, may result in less diversity of species...could result pests.**
V.7. Land Conservation Incentives **a. Are there any incentives to developers or landowners to conserve non-regulated land (open space design, density bonuses, stormwater credits or lower property tax rates)?**	**Yes / No / NA**	**Preserve high-quality open space.**	**Additional hoops for developer/oversight by City. Potential equity concerns.**

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
b. Is there flexibility to meet regulatory or conservation restrictions (density compensations, buffer averaging, transferable development rights, off-site mitigation) offered to developers?	**Yes / No / NA**	**All**	**Additional hoops for developer/oversight by City. Potential equity concerns.**
c. Are applicants encouraged to define the development envelope in their site designs, including the identification of protected areas such as existing trees, steep slopes, erosive soils, riparian areas setbacks, easements, etc.?	**Yes / No / NA**	**Minimize land disturbance/preserve native vegetation; Reduce effects of hydromodification, as needed. Preserve high-quality open space. Clustering of structures and pavement. Lot-level design measures. Preservation and/or restoration of riparian areas and wetlands as project amenities. Other features.**	
SECTION VI: Policies to Limit Auto Use/Promote Alternative			
VI.1. Policies to Promote Alternative Transportation			
a. Does the municipality promote comprehensive pedestrian and bike trail corridors through a well-connected network of streets and pathways?	**Yes / No / NA**	**Urban and rural street design standards**	**Cost. Some municipalities nearly built out.**
b. Are there policies to promote convenient regional and local linking of mass transit opportunities?	Yes / No / NA		
c. Does the municipality participate in and locally support a regional transportation process?	Yes / No / NA		
d. Does the municipality promote arranging mass transit with higher density, mixed-use land uses and activity centers?	Yes / No / NA		

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
e. Does the municipality offer flexibility or incentives to promote reduced number of car trips via carpooling, telecommuting or delivery services?	Yes / No / NA		
f. Does the municipality consider ease of access to freight routes when planning or zoning for commercial/industrial areas?	Yes / No / NA		
g. Does the municipality promote neighborhood greenbelts with walkways and bike paths?	**Yes / No / NA**	**Minimize impervious surface. Urban and rural street design standards. Preserve high-quality open space.**	**Cost. Some municipalities nearly built out.**
h. Do street standards promote street layouts that reduce overall impervious surface area and/or trip length?	**Yes / No / NA**	**Minimize impervious surface. Urban and rural street design standards.**	**Cost. Some municipalities nearly built out.**
SECTION VII: Policies to Promote Regional/Watershed-based			
VII.1 Watershed-based Planning & Zoning **a. Does the municipality have policies to work with other jurisdictions in the watershed and/or subwatershed to identify watershed resources and to develop coordinated plans and regulations based on a collaborative watershed-based planning strategy to guide growth and protect prioritized resources?**	**Yes / No / NA**	**Related to: Preserve high-quality open space**	**Cost.**
b. Does the General Plan outline a watershed-based or ecosystem-based planning approach?	Yes / No / NA		
c. Are watershed-based zoning options (e.g. overlay districts, performance zoning, incentive zoning, imperviousness overlay zoning, or planned development zoning) available?	**Yes / No / NA**	**Related to: Minimize impervious surface; Clustering of structures and pavement; Preserve high-quality open space**	**Cost. Resources.**

Policy, Code & Ordinance Worksheet for the Santa Clara Basin--Site Design Measures

Questions for Site Design Measures Analysis are Noted in BOLD TYPE

Municipality:

	Answer	Comments--Site Design Measure	Potential Conflicts/ Hurdles to Implementing Better Site Measures
d. Does the municipality's CEQA checklist, or the municipality's definition of "cumulative impacts," consider overall watershed planning goals?	Yes / No / NA		
e. Does the municipality promote coordination with other municipalities in the region to consolidate open space planning?	Yes / No / NA		
f. Does the municipality have a mechanism to prepare a specific plan in conjunction with flood control planning and watershed planning to minimize and address changes to the hydrograph resulting from development?	Yes / No / NA		

Notes:

This worksheet was adapted with appreciation from the Center for Watershed Protection's "Code and Ordinance Worksheet" in *Better Site Design: A Handbook for Changing Development Rules in Your Community* (Aug. 1998).

Unlike the Center for Watershed Protection's worksheet, this worksheet does not contain a point system for rating the municipalities. The questions are in no particular order and some categories have more questions than others. Consequently, one will not be able to simply add up the number of "yes" answers and claim that one municipality is doing better or worse than another.

Attachment B

Site Design Standards Review Reporting Template

Santa Clara Valley Urban Runoff Pollution Prevention Program
Site Design Measures Guidance and Standards Development Review Summary

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
SECTION I: Requirements to Implement Erosion & Sediment Controls During Construction					
1	b. Is there any ordinance that requires or encourages the preservation of natural vegetation at development sites?	Yes		Minimize Land Disturbance; Preserve Native Vegetation.	
SECTION II: Policies to Limit Site Imperviousness and to Incorporate Post-Construction BMPs Into Development Projects					
SECTION II: Subsection A: Site Design					
All Types of Development					
II.1. Setbacks and Building Footprints					
2	a. Are there policies to limit the amount of maximum impervious surface area on a lot?	No	Encourage limiting the amount of impervious surface area on a lot by establishing maximums. This may help minimize NPDES permit requirements. Consider placing regulations on flat or concrete work (e.g., Any flatwork that creates x amount of impervious area of lot, must get permit)	Minimize Impervious Surface.	

Santa Clara Valley Urban Runoff Pollution Prevention Program
Site Design Measures Guidance and Standards Development Review Summary

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
3	b. Are there more stringent setback requirements for developments adjacent to creeks/sensitive areas?	Yes		Preservation and/or restoration of riparian areas and wetlands as project amenities.	
4	c. Does the municipality have flexibility or offer incentives to reduce the building footprint (such as, allowing multistory buildings or tuck-under parking)?	Yes		Minimize Impervious Surface.	
II.2. Sidewalks					
5	a. Is the minimum sidewalk width allowed in the community 4 feet or less?	Yes		Minimize Impervious Surface.	
6	b. Are sidewalks on only one side of the street or designs without impervious sidewalks allowed?	Yes	Consider allowing sidewalks on only one side of the street or designs utilizing permeable pavement.	Minimize Impervious Surface.	
7	c. Are sidewalks generally sloped so they drain to the front yard or park strip rather than the street?	Yes	Work through SCVURPPP to address conflicts with sidewalk water draining to private property.	Use of landscaping as a stormwater drainage/treatment feature.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
8	d. Can alternate pedestrian networks be substituted for sidewalks (e.g., trails through common areas)?	Yes/NA	Consider for apartment buildings, planned developments, community buildings.	Minimize Impervious Surface.	
II.3. Rooftop Runoff					
9	a. Can rooftop runoff be discharged to yard areas, open channels, detention basins, or vegetated areas?	Potentially Conflicting; In practice, Yes	Consider revising conflicting notes to be consistent with practice.	Lot-level design measures.	
10	b. Are the use of benign roof materials promoted?	Yes		Lot-level design measures.	
11	c. Are roof gardens allowed?	Yes		Lot-level design measures. Use of landscaping as a stormwater drainage/treatment feature.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
Commercial/Industrial/Campus/Institutional Only **II.4. Commercial/Industrial/Institutional Site Design**					
12	a. Are outdoor vehicle/equipment maintenance areas, food service equipment cleaning areas, and garbage dumpsters/recycling collection areas required to be covered?	Yes		Lot-level design measures.	
13	b. Does the community encourage inclusion of turf play yards or courtyards that also serve as infiltration areas or overflow parking areas?	Yes		Lot-level design measures. Parking area design standards. Use of landscaping as a sotrmwater drainage/treatment feature. Other features to reduce the velocity of, detain,store, and/or infiltrate stormwater runoff.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
14	c. Are industrial sites required to provide spill control at storm drain inlets; covered storage areas; and other storm water BMPs?	Yes		Lot-level design measure.	
SECTION II: Subsection B: Streets					
II.5. Street Width					
15	a. Is the minimum pavement width allowed for streets in low density residential developments that have less than 500 average daily trips (ADT) between 18-22 feet?	No		Urban and rural street design standards.	
16	b. Does the municipality have flexibility or offer incentives to reduce pavement width for parking, (such as, allowing parking pull-outs or landscape reserves, or allowing parking lanes to serve as traffic lanes)?	Yes	Work through SCVURPPP to address conflicts with Fire Department standards.	Urban and rural street design standards.	
II.6. Right-of-Way Width					
17	a. Is the minimum right of way (ROW) width for a residential street less than 45 feet?	No		Urban and rural street design standards.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
II.7. Cul-de-Sacs					
18	a. Is the minimum radius allowed for cul-de-sacs less than 35 feet?	Yes		Urban and rural street design standards.	
19	b. Is the minimum radius allowed for cul-de-sacs between 36 to 45 feet?	No		Urban and rural street design standards.	
20	c. Can a landscaped island be created within the cul-de-sac?	Yes		Urban and rural street design standards.	
21	d. Are alternative turnarounds such as "hammerheads" allowed on short streets in low density residential developments?	Yes		Urban and rural street design standards.	
22	e. Are cul-de-sacs discouraged to allow for efficient street layout?	Yes		Urban and rural street design standards.	
II.8. Vegetated Open Channels/Swales					
23	a. Are alternatives allowed to curb and gutters for most residential street sections?	Yes		Urban and rural street design standards.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
24	b. Are there established design criteria or guidance for swales that can provide stormwater quality treatment (i.e., dry swales, biofilters, or grass swales)?	Yes		Urban and rural street design standards. Parking area design standards. Use of landscaping as a stormwater drainage/ treatment feature.	
SECTION II: Subsection C: Parking **II.9. Parking Ratios**					
25	a. Are parking requirements set as maximum or median (rather than minimum) requirements?	No	Working with other SCVURPPP and Bay Area agencies, consider setting parking requirements as a maximum or median rather than a minimum in attempt to minimize a site's impervious surface area.	Parking area design standards.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
26	b. Is the minimum parking ratio for a professional office building (per 1,000 sq. ft. of gross floor area) less than 3.0 spaces?	No	Consider reducing minimum parking ratio for a professional office building to 3 spaces per 1, 000 sq. ft. May wish to work through SCVURPPP for regional consistency.	Parking area design standards.	
27	c. Is the minimum required parking ratio for shopping centers (per 1,000 sq. ft. gross floor area) 4.5 spaces or less?	No	Consider reducing minimum parking ratio for a shopping center to 4.5 spaces per 1, 000 sq. ft. May wish to work through SCVURPPP for regional consistency.	Parking area design standards.	
28	d. Is the minimum required parking ratio for single family homes (per home) less than or equal to 2.0 spaces?	Yes		Parking area design standards.	
II.10. Parking Codes					
29	a. Is the use of shared parking arrangements promoted?	Yes		Parking area design standards.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
30	b. Are model shared parking agreements provided?	Partial		Parking area design standards.	
31	c. If mass transit is provided nearby, is the parking ratio reduced?	Yes		Parking area design standards.	
II.11. Parking Lots					
32	a. Can pervious materials be used for overflow or spillover parking areas?	Partial	Consider updating the Municipal Code to reflect current practices.	Parking area design standards. Minimize impervious surface.	
33	b. Is the minimum stall width for a standard parking space 9 feet or less?	Yes		Parking area design standards.	
34	c. Is the minimum stall length for a standard parking space 18 feet or less?	Partial		Parking area design standards.	
35	d. Are at least 30% of the spaces at larger commercial parking lots required to have smaller dimensions for compact cars?	Partial		Parking area design standards.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
II.12. Structured Parking					
36	a. Are there any incentives to developers to provide parking within garages rather than surface parking lots?	Yes		Parking area design standards. Minimize impervious surface. Clustering of structures and pavement.	
II.13. Parking Lot Runoff					
37	a. Is the routing of runoff to bioswales encouraged in parking lot design or within landscaped areas along roadways?	Yes	Consider developing city-specific or distributing existing guidance regarding bioswales for parking lot designs/landscaped areas along roadways.	Parking area design standards. Urban and rural street design standards. Use of landscaping as a stormwater drainage/ treatment feature.	
38	b. Is a minimum percentage of a parking lot required to be landscaped?	Yes	When updating Zoning Code, consider modifying landscaping section for parking lots to reflect stormwater control ideals (encouraging bioswales, pest-resistant plants, etc.)	Parking area design standards. Minimize impervious surface. Use of landscaping as a stormwater drainage/ treatment feature.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
II.14. Residential Driveways					
39	a. Is the minimum driveway width specified in the community 9 feet or less (one lane) or 18 feet (two lanes)?	Yes		Lot-level design measures. Minimize impervious surface.	
40	b. Can pervious materials be used for single family home driveways (e.g., grass, gravel, porous pavers, etc.)?	Yes		Lot-level design measures. Minimize impervious surface.	
41	c. Can a "Hollywood driveway," or "two track," design be used at single family driveways?	Yes		Lot-level design measures. Minimize impervious surface.	
42	d. Are shared driveways permitted in residential developments?	Yes		Lot-level design measures. Minimize impervious surface.	
SECTION III: Requirements for Drainage Design					
III.1. Stormwater Outfalls & Drainage Design					
43	a. Is storm water required to be routed through a filtration	No	Meet requirements of the SCVURPPP NPDES	Other features.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
44	b. Does a floodplain management ordinance that restricts or prohibits development within the 100 year floodplain exist?	Yes		Preservation and/or restoration of riparian areas and wetlands as project amenities. Preserve high-quality open space.	
45	c. Does the municipality promote limiting runoff to pre-development levels (e.g. through detention or retention, limits on impervious surface area, etc.)?	Yes	Meet requirements of SCVURPPP NPDES permit Provision C.3.	Minimize impervious surface. Reduce effects of hydromodification, as needed. Lot-level design measures.	
46	d. Does the municipality's policies/guidance cover protection of streams from hydrologic impacts from development in a manner that avoids altering natural drainage systems?	Yes		Reduce effects of hyrdomodification, as needed. Preservation and/or restoration of riparian areas and wetlands as project amenities.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
47	e. Are there design criteria for stormwater best management practices?	Yes	Continue to develop library of design criteria/guidance through information provided by SCVURPPP, BASMAA,. And state BMP handbooks, among others.	Urban and rural street design standards.	
48	g. Does the municipality have or require drainage policies, standard specifications, and details to allow for infiltration of stormwater and separation of directly-connected impervious areas?	Partial	Continue to develop library of standard specifications/details to allow for infiltration and separation of DCIA via SCVURPPP, BASMAA, and statewide materials (e.g., BMP handbooks) Meet requirements of Provision C.3. For updating general plan policies	Minimize impervious surface. Other features.	
49	h. Does the municipality's CEQA checklist address stormwater and hydrologic impacts?	Yes	Update as per requirements of SCVURPPP NPDES permit Provision C.3.	Reduce effects of hydromodification, as needed.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
SECTION V: Natural Resource Protection/Restoration					
SECTION V: Subsection A. Stream Buffers **V.1. Buffer Systems**					
50	a. Is there a stream buffer ordinance/policy/guidelines in the community?	Yes		Preservation and/or restoration of riparian areas and wetlands as project amenities.	
51	b. If so, is the minimum buffer width (*from top of bank*) 75 feet or more?	NA	Through SCVURPPP, review and provide comment on proposed revisions to SCVWD's Water Resources Protection Ordinance that may extend the buffer area, and work with SCVWD once updated ordinance is finalized.	Preservation and/or restoration of riparian areas and wetlands as project amenities.	
52	c. Is expansion of the buffer to include freshwater wetlands, steep slopes or the 100-year floodplain required?	Yes		Preservation and/or restoration of riparian areas and wetlands as project amenities.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
V.2. Buffer Maintenance					
53	a. Does the stream buffer ordinance specify that at least part of the stream buffer be maintained with native vegetation?	Partial	Promote landscaping with native vegetation along creeks.	Preservation and/or restoration of riparian areas and wetlands as project amenities. Minimize land disturbance/preserve native vegetation.	
54	b. Does the stream buffer ordinance outline allowable uses within the buffer?	Partial	Consider developing a specific stream buffer ordinance.	Preservation and/or restoration of riparian areas and wetlands as project amenities. Minimize land disturbance/preserve native vegetation.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
55	c. Does the ordinance specify enforcement and education mechanisms?	Partial	Working through SCVURPPP and the West Valley Clean Water Program, work on creek/watershed education through the Watershed Outreach Campaign and other local/regional PIP efforts.	Preservation and/or restoration of riparian areas and wetlands as project amenities.	
SECTION V: Subsection B: Open Space **V.3. Cluster/Open Space Design**					
56	a. Are open space or cluster development designs allowed/required in the community? *If your answer is **NO**, circle NA for the remaining parts of this question.*	Yes		Clustering of structures and pavement.	
57	b. Is land conservation, impervious cover reduction, or other types of water quality protection a major goal or objective to the open space design guidance?	Yes		Preserve high-quality open space.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
58	c. Are flexible site design criteria available for developers that preserve open space and utilize cluster design options (e.g., setbacks, road widths, lot sizes)?	Yes		Preserve high-quality open space. Clustering of structures and pavement.	
59	d. Are the submittal or review requirements for cluster development/open space design less than or equal to those for conventional development?	Yes		Preserve high-quality open space. Clustering of structures and pavement.	
V.4. Open Space Management					
60	**Circle NA for these questions and skip to question No. V.5 if open space, cluster, or conservation developments are not allowed in your community.** a. Does the community have enforceable requirements to establish community associations or third party administrator (e.g. land trust or park) that can effectively manage open space?	Yes		Preserve high-quality open space.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
61	b. Are open space areas encouraged to be consolidated into larger units?	Yes		Preserve high-quality open space.	
62	c. Does a minimum percentage of open space near sensitive areas have to be managed in a natural condition?	No	Consider designating a minimum percentage of open space near sensitive areas that must be managed in a natural condition.	Preserve high-quality open space. Preservation and/or restoration of riparian areas and wetlands as project amenities.	
63	d. Are allowable and unallowable uses for open space in residential developments defined?	Yes		Preserve high-quality open space.	
64	f. Does the community encourage minimization of impervious surface areas in recreational open space areas?	Yes		Preserve high-quality open space. Minimize impervious surface.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
V.5. Policies to Promote Urban Boundaries					
65	b. Does your municipality encourage distinct low-impervious buffers between cities (e.g., greenbelts, open space, wild land corridors, agricultural areas)?	NA		Preserve high-quality open space. Minimize impervious surface.	
SECTION V: Subsection C: Resource Conservation					
V.6. Native Vegetation and Tree Conservation					
66	a. If specimen trees or forests or native vegetation are present at development sites, does some of the vegetation have to be preserved?	Yes		Minimize land disturbance/preserve native vegetation.	
67	b. Are the limits of disturbance shown on construction plans adequate for preventing clearing of natural vegetative cover during construction?	Yes		Minimize land disturbance/preserve native vegetation.	
68	c. Is tree canopy coverage promoted (e.g. street trees)?	Yes		Lot-level design measures. Other features.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
69	d. Is native or pest-resistant vegetation promoted for use in landscaped areas such as street ROW, parking lot islands, etc.?	Yes	Consider rewording language to include "pest-resistant" vegetation as well.	Minimize land disturbance/preserve native vegetation.	
V.7. Land Conservation Incentives					
70	a. Are there any incentives to developers or landowners to conserve non-regulated land (open space design, density bonuses, stormwater credits or lower property tax rates)?	Yes		Preserve high-quality open space.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
71	b. Is there flexibility to meet regulatory or conservation restrictions (density compensations, buffer averaging, transferable development rights, off-site mitigation) offered to developers?	Yes		Minimize land disturbance/ preserve native vegetation. Reduce effects of hydromodification, as needed. Preserve high-quality open space. Clustering of structures and pavement. Lot-level design measures. Preservation and/or restoration of riparian areas and wetlands as project amenities. -Or- Other features.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
72	c. Are applicants encouraged to define the development envelope in their site designs, including the identification of protected areas such as existing trees, steep slopes, erosive soils, riparian areas setbacks, easements, etc.?	Yes		Minimize land disturbance/ preserve native vegetation. Reduce effects of hydromodification, as needed. Preserve high-quality open space. Clustering of structures and pavement. Lot-level design measures. Preservation and/or restoration of riparian areas and wetlands as project amenities. -Or- Other features.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
SECTION VI: Policies to Limit Auto Use/Promote Alternative Transportation					
VI.1. Policies to Promote Alternative Transportation					
73	a. Does the municipality promote comprehensive pedestrian and bike trail corridors through a well-connected network of streets and pathways?	Yes		Urban and rural street design standards.	
74	g. Does the municipality promote neighborhood greenbelts with walkways and bike paths?	Yes		Minimize impervious surface. Urban and rural street design standards. Preserve high-quality open space.	
75	h. Do street standards promote street layouts that reduce overall impervious surface area and/or trip length?	Yes		Minimize impervious surface. Urban and rural street design standards.	

Municipality: Campbell

	Site Design Question	Answer	Recommendations from Development Policies Comparison Project	Site Design Measure(s) Addressed	Co-Permittee Review Summary
SECTION VII: Policies to Promote Regional/Watershed-based Planning and Zoning					
VII.1 Watershed-based Planning & Zoning					
76	a. Does the municipality have policies to work with other jurisdictions in the watershed and/or subwatershed to identify watershed resources and to develop coordinated plans and regulations based on a collaborative watershed-based planning strategy to guide growth and protect prioritized resources?	Yes		Preserve high-quality open space.	
77	c. Are watershed-based zoning options (e.g. overlay districts, performance zoning, incentive zoning, imperviousness overlay zoning, or planned development zoning) available?	Yes		Minimize impervious surface. Clustering of structures and pavement. Preserve high-quality open space.	

Notes:

Protection's "Code and Ordinance Worksheet" in *Better Site Design: A Handbook for*
Unlike the Center for Watershed Protection's worksheet, this worksheet does not contain a point system for rating the municipalities. The questions are in no particular order and some categories have more questions than others. Consequently, one will

Attachment C

Example Development Policies for Improving Water Quality

Attachment C
Example Site Design-Related Development Policies for Improving Water Quality
May 16, 2003

Introduction

The model development policies presented here are based on model development policies developed and approved by the San Mateo Countywide Stormwater Pollution Prevention Program as well as the example policies provided by Regional Board staff in the Santa Clara Valley Urban Runoff Pollution Prevention Program's NPDES permit provision C.3.l (these latter policies are indicated by *italicized* text). The following policies and measures serve as models and need not be incorporated verbatim. Each municipality has a different writing style and format to its general plan. Furthermore some of the policies may already be covered in existing general plan language or may not be applicable to a specific municipality. In rewriting any of the recommended model development policies, however, each municipality should make sure that the intent of the model policies is maintained in the municipality's version.

In addition, local example guidelines are provided for minimizing impervious surface area. Municipalities that wish to include more detailed language to outline programs and ideas are encouraged to refer to the sections of BASMAA's *Start at the Source Tools* (June 2000) manual that focus on general and specific plan language and the Association of Bay Area Governments' (ABAG's) "Improving our Bay-Delta Estuary Through Local Plans and Programs," (1995) checklist and/or the Model Development Principles developed in conjunction with the Santa Clara Basin Watershed Management Initiative (and included as Attachment I of the Program's Development Policies Comparison Project).

Example General Plan Policies

Goals:
To minimize the discharge of pollutants in municipal storm water runoff, thereby decreasing the effects of such pollutants on the beneficial uses of creeks, marshlands, [lagoons] and San Francisco Bay or the Pacific Ocean.

To provide, to the extent practicable, hydrologic systems that will maintain the existing water flow and volume characteristics of the watershed.

Objectives:
Continue to implement a municipal stormwater pollution prevention program, in cooperation with the Santa Clara Valley Urban Runoff Pollution Prevention Program

(SCVURPPP) or equivalent program, designed to substantially reduce pollutants to the maximum extent practicable entering local storm drains and creeks.

Prevent increases in stormwater pollutants, and minimize changes that increase stormwater flow and volume (such as increased imperviousness), due to new development and urbanization of the watershed.

General Stormwater Pollution Prevention

Policies:

The [municipality] will prohibit the discharge of pollutants to the maximum extent practicable and effectively prohibit the illicit dumping of wastes into storm drains, creeks, and other waterways.

The [municipality] will use its authority under the California Environmental Quality Act (CEQA) to require mitigation measures for potential stormwater pollutant impacts of projects on which it conducts environmental review, as appropriate.

The [municipality] will encourage the consideration of pest-resistant landscaping and design features, and the incorporation of stormwater detention and retention techniques in the design and landscaping of proposed development projects.

The [municipality] will *implement pollution prevention methods supplemented by pollutant source controls and treatment.* The [municipality] will *use small collection strategies located at, or as close as possible to, the source (i.e., the point where water initially meets the ground) to minimize the transport of urban runoff and pollutants offsite and into an MS4.*

Erosion and Sediment Controls

Policies:

The [municipality] will require that construction and post-construction best management practices and source controls be implemented for new development and redevelopment projects to control the discharge of sediments to and/or from municipally-owned storm drains to creeks and the Bay [and the ocean] to the maximum extent practicable.

The [municipality] will require the incorporation of stormwater pollution prevention measures addressing erosion and sediment controls into the planning, design, and construction phases of development and redevelopment with the [municipality].

The [municipality] may establish development guidelines to protect areas that are particularly susceptible to erosion and sediment loss. The [municipality] will discourage grading during the wet season and will require that development projects with significant erosion potential and planned construction activity during the wet season implement adequate erosion and/or sediment control measures.

The [municipality] will require that adequate measures be implemented to prevent erosion, sedimentation and stormwater pollution during construction; and that sensitive areas be adequately protected during the construction process.

The [municipality] will a*void development of areas that are particularly susceptible to erosion and sediment loss; or establish development guidance that identifies these areas and protects them from erosion and sediment loss.*

Post-Construction Controls

Policies:

The [municipality] will require that post-construction best management practices and source controls be implemented for new development and redevelopment projects to control the discharge of pollutants to and/or from municipally-owned storm drains to creeks and the Bay [and the ocean] to the maximum extent practicable.

The [municipality] will require the incorporation of post-construction stormwater pollution prevention measures into the planning, design, and construction phases of development and redevelopment with the [municipality] to the maximum extent practicable.

The [municipality] will support measures to reduce pollutants and impervious surface areas associated with motorized vehicles, and increased number of motor vehicle trips resulting from development.

The [municipality] will, *prior to making land use decisions, utilize methods available to estimate increases in pollutant loads and flows resulting from projected future development.* The [municipality] will *require incorporation of structural and non-structural BMPs to mitigate the projected increases in pollutant loads and flows;*

Impervious Surface Area Minimization

Policies:

The [municipality] will *minimize the amount of impervious surfaces and directly connected impervious surfaces in areas of new development and redevelopment and where feasible maximize on-site infiltration of runoff.*

Local Example Guidelines:

Minimize the use of surface parking in large office complexes and multi-family development to preserve open space and reduce visual effects. Below grade parking facilities are encouraged. (City of Sunnyvale)

Multi-story buildings are preferred over single-story buildings with the same floor areas to reduce the building footprint and minimize impermeable surfaces. (City of San Jose)

Limit large continuous expanse of asphalt by measures such as: overflow parking on pervious surfaces, an increase in the tree canopy coverage, the encouragement of shared parking with adjacent and compatible uses. (City of Saratoga)

Drainage Design and Watershed Planning

Policies:

The [municipality] will require that site designs work with the natural topography and drainages to the extent practicable to reduce the amount of grading necessary and limit disturbance to natural water bodies and natural drainage systems.

The [municipality] will minimize stormwater flow and volume impacts resulting from development to protect creeks and waterways from flooding and erosion impacts by minimizing impervious surface area.

In making zoning and land use decisions, the [municipality] will consider whether development of specific areas is likely to increase urban runoff pollutants or adversely affect watershed characteristics. The [municipality] will work to avoid, minimize, and/or mitigate such effects.

Where such measures do not conflict with other municipal purposes or goals, the [municipality] will encourage, via zoning ordinances, compact development located away from creeks, wetlands, and other sensitive areas.

The [municipality] will encourage development projects to follow watershed-based planning and zoning by examining the project in the context of the entire watershed or subwatershed.

The [municipality] will *limit disturbances of natural water bodies and natural drainage systems caused by development including roads, highways, and bridges.*

The [municipality] will *reduce pollutants associated with vehicles and increased traffic resulting from development.*

Sensitive Area Protection

Policies:

The [municipality] will p*reserve, and where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones.* The [municipality] will *encourage land acquisition of such areas.*

References

Association of Bay Area Governments, *Improving our Bay-Delta Estuary Through Local Plans and Programs, A Guidebook for City and County* Governments, December 1995.

Bay Area Stormwater Management Agencies Association (BASMAA), *Start at the Source Tools,* June 2000.

California Regional Water Quality Control Board, San Francisco Bay Region staff, "Order No. 01-110, NPDES Permit No. CAS029718, Amendment Revising Provision C.3 of Order No. 01-024," Santa Clara Valley Urban Runoff Management Program, October, 2001.

California Regional Water Quality Control Board, San Francisco Bay Region, Letter to Mr. Robert Davidson (STOPPP), "Conditional Acceptance of Phase I Pollutant Control Study, San Mateo Countywide Stormwater Pollution Prevention Program, San Mateo County," December 22, 2000.

California Regional Water Quality Control Board, San Francisco Bay Region staff, "Draft Revised Provision 3. Planning (New and Redevelopment) Performance Standard Continuous Improvement," Santa Clara Valley Urban Runoff Management Program, December 11, 2000.

EOA, Inc., *Toward Policies for Long-term Control of Stormwater Pollutants from New Development,* STOPPP New Development Subcommittee, August 1995.

San Mateo Countywide Stormwater Pollution Prevention Program, *Stormwater Management Plan July 1998—June 2003*, City/County Association of Governments, July 1999.

Santa Clara Valley Urban Runoff Pollution Prevention Program Program, "Santa Clara Basin Model Development Principles," WMI Land Use Subcommittee, April 2003.

San Jose, City of, Residential Design Guidelines, p. 76A.

Saratoga, City of, General Plan Open Space Element, scenic Open Space Implementation Programs for Parking Lots.

Sunnyvale, City of, City-wide Design Guidelines, Section III, Parking and Circulations—General A.1, 1992.

Attachment D

Site Design
Model Conditions of Approval

ATTACHMENT D

MODEL SITE DESIGN CONDITIONS OF APPROVAL (5/16/03)

This model list of source control measures may be used as either up-front submittal requirements or checklists, in 30-day letters, as conditions of approval, or plan check comments, etc. depending on the particular planning process used by each Co-permittee. These measures are expressed as conditions of approval to meet the intent of Provision C.3.j.

General

1. The project will incorporate site design measures for reducing water quality impacts of the project, in compliance with the [City/Town's] NPDES stormwater permit Provision C.3. requirements. Guidance on approved site design measures is available from the [Public Works/Planning Department]. Final approval for site design measures must be obtained from the [Planning/Community Development/Public Works Department].

Minimize Land Disturbance

1. Significant natural features and resources on site such as undisturbed forest area, setbacks, easements, trees, steep slopes, erosive soils, wetlands or riparian areas shall be identified within the area to be developed and protected during construction and during future use of the site.
2. Site layout shall conform to natural landforms on-site. Buildings shall be located to utilize natural drainage systems as much as possible and avoid unnecessary disturbance of vegetation and soils. Development on unstable or easily erodible soils shall be avoided due to their greater erosion potential.

Minimize Impervious Surfaces

1. Directly connected impervious surfaces shall be minimized. Runoff from impervious areas shall be channeled to pervious areas (e.g., park strips, vegetated planters) where possible prior to discharge to the storm drain.
2. Site permeability shall be maximized by clustering buildings, reducing building footprints, minimizing impervious surfaces, and paving with permeable materials where feasible.
3. The project shall cluster structures and incorporate smaller lot sizes where feasible to reduce overall impervious surface coverage and provide more undisturbed open space, for protection of water resources.

Preserve Open Space

1. The amount of open space on the site shall be maximized and the open space area maintained in a natural manner.

2. Undisturbed natural areas such as forested conservation areas and stream buffers shall be utilized to treat and control stormwater runoff from other areas of the site with proper design.

Reduce Effects of Hydromodification

1. The project shall utilize infiltration measures to reduce stormwater discharge to the greatest extent feasible.
2. The applicant shall minimize increases in stormwater flow and volume resulting from the development project to protect creeks and waterways from flooding and erosion impacts.

Street Design

1. Where density, topography, soils, slope and safety issues permit, vegetated open channels or other landscape measures shall be used in the street right of way to convey and treat stormwater runoff from roadways.
2. Sidewalks shall be sloped to drain to adjacent vegetated park strips.

Parking Lots

1. Where feasible, parking lots and other impervious areas shall be designed to drain stormwater runoff to vegetated drainage swales, filter strips, and/or other treatment devices that can be integrated into required landscaping areas and traffic islands prior to discharge into storm drain systems.
2. The amount of impervious area associated with parking lots shall be minimized by providing compact car spaces, reducing stall dimensions, incorporating efficient parking lanes, and using permeable pavement in overflow parking areas where feasible.
3. Curb cuts (one every 10 feet), tire stops, or other means shall be provided to protect landscaped areas and allow maximum flow of stormwater into landscaped areas.
4. The use of permeable paving for parking and driveway surfaces is encouraged, to reduce runoff from the site. Such paving should meet fire department requirements and be structurally appropriate for the location.

Landscaping as a Stormwater Drainage/Treatment Feature

1. Projects shall be designed to direct stormwater runoff into landscaping or natural vegetation where feasible.
2. Large landscaped areas shall be designed to collect and infiltrate stormwater where feasible. Overflow drains shall be placed so that landscaped areas can store runoff and drain at capacity. Such collection areas shall be designed and maintained to meet vector control requirements.
3. Where possible, runoff from impervious areas such as rooftops, roadways and parking lots shall be directed to pervious areas, open channels or vegetated areas prior to discharge to the storm drain system.

Riparian Areas

1. Naturally vegetated buffers shall be delineated and preserved along perennial streams, rivers, lakes and wetlands.

References

1. Atlanta Regional Commission, *Georgia Stormwater Management Manual Volume 2 (Technical Handbook),* August 2001
2. City of Palo Alto, Municipal Code Title 18.12.050 Site Development Regulations.
3. City of Portland Environmental Services, *Stormwater Management Manual,* September 2002.
4. City of San Bruno Community and Economic Development Department, *San Bruno Redevelopment Project Area Plan Draft Environmental Impact Report*, prepared by Environmental Science Associates, March 1999.
5. City of Sunnyvale, *Industrial Pretreatment/Urban Runoff Program,* August 1998.
6. San Mateo Countywide Stormwater Pollution Prevention Program New Development Subcommittee, *Model Development Policies*, May 2001
7. Washington State Department of Ecology, *Stormwater Management Manual for Western Washington*, August 2001.