

RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MILPITAS ADOPTING THE SANTA CLARA VALLEY WATER RESOURCES PROTECTION COLLABORATIVE GUIDELINES AND STANDARDS FOR LAND USE NEAR STREAMS, DIRECTING THAT SUCH STANDARDS BE INTEGRATED INTO THE CITY OF MILPITAS PLANNING APPROVAL PROCESS, AND FURTHER EXEMPTING EXISTING DEVELOPED LOTS IN RESIDENTIAL ZONES ON PARCELS 10,000 SQUARE FEET OR LESS IN SIZE**

**WHEREAS**, the City of Milpitas participates in the Santa Clara Valley Water Resources Protection Collaborative along with the Santa Clara Valley Water District, the County of Santa Clara, and the cities of Santa Clara County; and

**WHEREAS**, the City of Milpitas joins the Santa Clara Valley Water Resources Protection Collaborative and others in endorsing the water and watershed resources protection goals of flood management, drinking water quality and adequate quantity, surface and groundwater quality and quantity, and habitat protection and enhancement; and

**WHEREAS**, the Santa Clara Valley Water Resources Protection Collaborative developed a set of model guidelines, standards, procedures and recommendations to apply to land use activities near streams and on streamside properties, and to protect streams and streamside resources entitled “Guidelines and Standards for Land Use Near Streams”; and

**WHEREAS**, the City of Milpitas commends the Santa Clara Valley Water Resources Protection Collaborative on the development of the Guidelines and Standards for Land Use Near Streams; and

**WHEREAS**, it is recognized that local control is the key principle to the implementation of resource protection goals and that cities and the County are the primary jurisdictions for land use planning and land use permit regulation; and

**WHEREAS**, the City of Milpitas is committed to the development of a consistent, County-wide approach to streamside preservation through the implementation of existing policy and the Guidelines and Standards for Land Use Near Streams; and

**WHEREAS**, the City of Milpitas understands once it adopts and implements the guidelines and Standards for Land Use Near Streams, the Santa Clara Valley Water District will relinquish its development review of streamside properties other than those lands held in fee or easement by the Santa Clara Valley Water District; and

**WHEREAS**, the City of Milpitas understands that in adopting and implementing the Guidelines and Standards for Land Use Near Streams, the Santa Clara Valley Water District will continue to provide technical assistance and will develop best practices educational materials for the City to provide to streamside property owners; and

**WHEREAS**, under the Guidelines and Standards for Land Use Near Streams certain single-family parcels of 10,000 square feet or less in size may be exempted from development review;

**NOW, THEREFORE, BE IT RESOLVED** by the City Council of the City of Milpitas as follows:

1. Adopts the “the Guidelines and Standards for Land Use Near Streams” of the Santa Clara Valley Water Resources Protection Collaborative, incorporating future amendments that may occur from time to time; and
2. Directs that “Guidelines and Standards for Land Use Near Streams” be applied to future streamside development in the City of Milpitas to the extent feasible provided single-family parcels are approved with no discretionary review and remodels/rebuilds on existing developed lots in residential zones on parcel 10,000 square feet or less may be exempted as provided in the guidelines; and
3. Supports continuing participation in the Santa Clara Valley Water Resources Protection Collaborative on matters pertaining to watershed resource protection

PASSED AND ADOPTED this \_\_\_\_\_ day of \_\_\_\_\_, 2007, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

APPROVED:

\_\_\_\_\_  
Mary Lavelle, City Clerk

\_\_\_\_\_  
Jose S. Esteves, Mayor

APPROVED AS TO FORM:

\_\_\_\_\_  
Steven T. Mattas, City Attorney

### **3A. PREAMBLE AND INTRODUCTION TO THE PROPOSED GUIDELINES AND STANDARDS FOR LAND USE NEAR STREAMS**

#### **I. BACKGROUND**

The following set of Proposed Guidelines and Standards (G&S's) was developed by the Santa Clara Valley Water Resources Protection Collaborative (Collaborative) to address land use near streams and protect surface and groundwater quality and quantity in Santa Clara County. A primary objective of the Collaborative is to develop and implement a consistent set of G&S's to enhance water and watershed resource protection through local agency land use planning and permitting.

The G&S's are designed to compliment existing regulations, such as the City/County/SCYWD, NPDES provisions, which address some related water quality issues. It is assumed that each jurisdiction will also continue to follow other existing regulations that protect streams and/or surface water quality. The G&S's are also complimented by a set of Design Guides that provide more detail on the G&S's as well as a set of Model Enhanced Practices, which outline additional voluntary protective measures for jurisdictions and property owners. These two documents can be found in Chapters 4 and 7 respectively of this User Manual.

#### **II. IMPORTANCE OF PHYSICAL LINKAGES BETWEEN STREAMS AND ADJACENT LAND**

It is important to note that while many of the G&S's focus on in-stream activities, there is a significant physical linkage between the in-stream and near-stream biological communities that is critical to protect and restore where possible. The riparian systems that border many streams in Santa Clara County provide important habitat for aquatic invertebrates, fish, amphibians, birds and mammals. A number of species are dependent on a healthy riparian system to survive.

Although the G&S's that follow include some measures to protect this habitat, property owners are also expected to comply with the existing guidelines of State and Federal agencies, which are specifically designed to protect these biological resources. To assist property owners, the G&S's and corresponding User Manual reference those activities for which State and Federal agencies should be consulted.

#### **III. HOW THE GUIDELINES AND STANDARDS ARE TO BE USED**

The G&S's are intended to be used for the purposes of development review of proposed land use activities for new development, major redevelopment and where appropriate, single family units. In developing the G&S's, the Collaborative has considered how to make the G&S's realistic, implementable, and easy to administer. In addition, the Collaborative has considered how to ensure that single family property owners would not be unduly burdened by extensive or expensive reporting requirements.

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It is also assumed that when a local permitting agency has in place regulations, standards or guidelines, which are stricter than the Proposed G&S's, such regulations, standards or guidelines will remain in force and continue to be implemented after the adoption of final G&S's.

## IV. IMPLEMENTATION OF THE GUIDELINES AND STANDARDS

Each city/County will need to undertake a process to determine how it will adopt and implement the Guidelines and Standards and related Implementing Tools and then confirm this decision with SCVWD.

Some of the Proposed G&S's may need to be altered during the adoption/implementation process and it may be necessary and appropriate for each local jurisdiction to adopt modified standards or approaches to implementation as long as the modified standard or approach is consistent with the agreed upon objectives for Guidelines and Standards for Land Use Near Streams. In addition, the maintenance and enforcement issues need to be further developed to determine cost sharing and responsible party.

## V. COOPERATION BETWEEN PERMITTING AGENCIES

In those cases, where one agency has permitting authority for an activity that affects another agency's property or jurisdiction, such as a bridge, the lead permitting agency will consult with the other agency, in a timely manner, when reviewing or developing that project. The cities/County will also coordinate with decision-makers of public agencies not subject to local planning laws to inform them of the intent behind the G&S's.

## VI. NEED FOR PUBLIC OUTREACH

The final set of G&S's will be implemented through the District and each jurisdiction's permit and planning processes combined with a concerted public outreach and education effort. It is also understood that these G&S's may vary depending on property ownership and the existing site characteristics and that the County and the cities will need to balance the goals of the G&S's with other municipal, County and Water District goals in making land use planning decisions.

## V. LIST OF ACTIVITY HEADINGS

- I. Riparian Corridor Protection
- II. Bank Stability/Streambed Conditions
- III. Encroachments between the Top of Bank
- IV. Erosion Prevention and Repair
- V. Grading
- VI. Outfalls, Pump Stations and Site Drainage
- VII. Channelization
- VIII. Utility Encroachments
- IX. Trail Construction
- X. Septic Systems
- XI. Trash Control and Removal
- XII. Protection of Water Quality
- XIII. Groundwater Protection
- XIV. Flood Protection

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## 3B. GUIDELINES AND STANDARDS FOR LAND USE NEAR STREAMS

### I. Riparian Corridor Protection

Applicability of the Following Riparian Corridor Protection G&S's: The following guidelines and standards related to planting and removal of plants in this section are applicable in conjunction with a development proposal where SCVWD/city/county reviews landscaping plans.

#### I.A.1 Protection of the Riparian Zone

Enforce existing City/County/SCVWD general plans, policies, or ordinances related to riparian areas, water quality and source water protection.

#### I.A.2 Protection of the Riparian Zone

Develop criteria to determine allowable uses within riparian corridor and develop measures to protect existing riparian areas.

#### I.A.3 Protection of the Riparian Zone

Adopt, as appropriate, riparian corridor buffers consistent with onsite biotic conditions, which may be determined by a qualified professional to protect existing riparian habitat. Sensitive habitat areas should be identified and assigned appropriate buffers.

#### I.A.4 Environmental and Water Quality

Supplement CEQA guidance and checklist to include environmental impacts relative to temperature and water quality for aquatic life.

#### I.B. Native Plant Removal

Native riparian vegetation is not

allowed to be removed unless there is a threat to public health and safety including an imminent danger of induced flooding and/or a biologist/arborist confirms that it will improve the stream ecology or habitat. If vegetation is proposed for removal in conjunction with a development project, mitigation will be provided as defined through the CEQA process and as agreed to by the local agencies and appropriate regulatory agencies.

#### I.C. Planting

Non-native species are not allowed to be planted between top of banks, or within an existing riparian corridor unless approved by appropriate state and federal regulatory agencies. Non-native invasive species are not allowed to be planted adjacent to an existing riparian corridor. Recommend watershed specific natives for major development restoration landscaping.

#### I.C.2. Planting of Invasive Species

Encourage removal of and do not plant invasive species.

#### I.C.3. Planting Within Tops of Banks

Planting appropriate vegetation between top of banks as an alternative to hardscape bank protection to promote bank stability, improve habitat, and provide other water quality benefits is encouraged if it does not reduce channel capacity significantly below design flows.

#### I.C.4. Planting on Levees

No trees may be planted on a levee unless additional fill is placed against the levee.

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### **I.C5. Planting Next to Water Supply Pipelines**

Trees must not be planted within easement or right-of-way of SCVWD water supply pipelines or the minimum required by other jurisdictions, as appropriate.

### **I.D. Irrigation**

Irrigation runoff must not be allowed to cause erosion. If within outboard levee slope, irrigation must be bubbler or drip-type systems, and must be used for establishment purposes only. No main lines may be installed in levees.

### **I.D2. Irrigation and Planting**

Follow efficient water use landscape ordinance requirements for drought tolerant plants and water conservation.

### **I.E. Pesticide and Herbicide Use**

Use of pesticides and delineation of responsibility for maintenance on District property or easements shall be conducted as defined by current practice.

### **I.F. Post-Construction Water Quality**

Include post construction water quality mitigation measures in proposed development conditions.

### **I.G. Land Uses Next to Riparian Corridors/Streams:**

Avoid locating loading docks, trash enclosures, chemical storage areas and stationary noise producing mechanical equipment next to streams and riparian corridors.

Refrain from locating new paved areas, active recreational areas, agricultural growing areas and grazing activities within riparian corridors.

### **I.H. Light**

Avoid bright colors and glossy or glare producing building finishes on structures facing the stream or riparian areas. Avoid nighttime lighting in riparian corridors, direct lighting away from riparian corridor and maximize distance of lighting from riparian corridor.

### **I.I. Monitoring**

For projects subject to mitigation/monitoring requirements, riparian plantings for mitigation and bank repair/protection projects will be monitored to ensure successful establishment.

### **I.J. Protection of Fish and Aquatic Life**

Preserve in and near-stream riparian vegetation whose canopies provide shade and nutrients for aquatic life.

### **I.J2. Protection of Fish and Aquatic Life**

Protect/maintain stream characteristics suitable for fish habitat, including riffles, pools, gravel beds, stable undercut banks, overhanging vegetation & in-stream woody debris

# GUIDELINES AND STANDARDS FOR LAND USE NEAR STREAMS

## II. BANK STABILITY/ STREAMBED CONDITIONS

### II.A Slope Stability Requirements for New and Major Redevelopment

**Background:** Slope stability requirements for watercourses will be determined based on geomorphic and hydrologic conditions, the bank's physical characteristics, such as composition and height, the potential for instability or erosion, other environmental considerations, structure loading and flood potential as determined by the applicant's engineer. Construction activities proposed below the top of bank and/or in the riparian corridor are subject to review and permit authorization from the Regional Water Quality Control Board, Department of Fish and Game, and in most cases, the US Army Corps of Engineers and their Federal consulting agencies.

#### II.B.1 Bank Stability for Structures Built Near Streams

Establish a bank stability requirement or trigger that applies to construction of new roads, parking lots, pools, and structures subject to the UBC. The bank stability requirement or trigger should be measured from top of bank and should be based upon stream characteristics including protection of existing riparian vegetation, natural or modified streams banks, and condition of bank.

For all new development and major redevelopment, the slope stability trigger will be set to be the greater of:

- 1) 2 to 1 structural slope stability requirement or trigger (This is measured using a hypothetical 2 horizontal to 1 vertical line projected from the toe of bank to a point where it intersects the adjacent ground.) The protection

area should allow for construction access and access around the structure. For banks of larger streams, or for streams that are deeply incised or have highly erodable banks, a permitting agency may need to increase the protection area or trigger area in order to protect water quality and other resources.

- 2) 20 feet from top of bank or property line

For construction proposed within the protection area or trigger area, the applicant would need to:

- (1) conduct a stability analysis by stream type and demonstrate that development would not require introduction of hardscape in order to maintain active floodplain or active channel slope
- (2) show how maintenance or repair of the stream could be provided

#### II.B.2 Bank Stability for Structures Built Near Streams

Supplement CEQA guidance and checklist to include stream stability impacts from and to proposed development project

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### II.C. Flood Protection for Structures Built Near Streams

Structures will meet FEMA requirements if within a special flood hazard area. Refer to SCVWD Watershed Stewardship Plans and verify with SCVWD the status of any planned or anticipated flood protection projects and their right of way requirements. SCVWD may request dedication of land rights for flood protection or maintenance access in conjunction with new or redevelopment projects.

For levee sections, recommend 18 to 25 foot building setback from toe of levee.

**EXCEPTION:** Exceptions are allowed as consistent with City or County flood hazard ordinances.

### II.D. Slope Stability Requirements for Single Family Units

The Purpose of Slope Stability Requirement For Single Family Units: Structures built near streams may negatively affect streams and streamside resources as well as the structure itself. Some potential issues include:

1. Adverse effects on streamside slopes, including effects on slope stability and erosion, and related hazards to structures built on streamside properties
2. Adverse effects on flood control facilities and related infrastructure
3. Adverse effects on local drainage facilities and related infrastructure
4. Adverse effects on riparian corridors and associated vegetation and related erosion impacts
5. Adverse effects to streams, including the effects of down-slope sedimentation and altered stream hydrology, and related impacts to water quality in streams
6. The structure itself can be undermined over time as the streambank erodes due to the dynamic nature of the stream resulting in health and safety hazards

The following Slope Stability Requirements are intended to serve



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as development standards, that when used, will help enable the location of structures on streamside properties in a manner that avoids or minimizes impacts to streams, streamside natural resources, flood control facilities, local infrastructure and the structure itself.

### **Slope Stability Requirements as a 'Geotechnical Trigger' for Permit Review**

If a structure is proposed to be located closer to the Top of Bank than indicated by the following Slope Stability Requirements, this may serve as a trigger for local permitting agencies to require site-specific technical information related to precise slope conditions. If a property owner is proposing to place structures closer to a streamside slope than allowed by the Slope Stability Requirements, the permitting agency should require further study of on-site geotechnical soil and slope stability conditions. The purpose of the study is to determine:

1. whether or not the location of a proposed structure may threaten bank stability, and
2. whether or not the bank instability may threaten structures and/or potentially cause a health and safety hazard.

For banks of larger streams, or for streams that are deeply incised or have highly erodable banks, a permitting agency may need to require on-site geotechnical analyses even if the Slope Stability Requirement are met.

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## II. E. Slope Stability Protection Area for Single-Family Units <sup>1</sup>

The "Slope Stability Protection Area" is an area between a structure and the stream <sup>2</sup>. In some cases, a range of numbers is indicated. The assumption is that each local jurisdiction will select one of the numbers based on their existing priorities, permitting processes, and on-site conditions. It is also assumed that the channel depth of most streams in urban Santa Clara County is 10 feet deep or less. For streams, deeper than 10 feet, there should be a 2 to 1 protection area as measured from the toe of the bank.

### Stability Protection Area

	Stream with Little or No Hardening	Structurally <sup>3</sup> Engineered System	Ephemeral Stream
Size of Protection Area (as measured from Top of Bank) <sup>4</sup>	25 - 20 ft.	15 ft.	10 - 15 ft

Notes: Potential Additions to the Slope

- A. For a large lot (greater than 10,000 sq. ft), add 5 feet.
- B. For a large home in which the FAR triggers a discretionary review, work with applicant to ensure that impacts such as drainage are redirected away from a stream and pursue opportunities to increase the slope stability protection area to better protect the stream (and home) from impacts. For example, consider decreasing the required front yard setback in order to accommodate an increased rear yard setback/slope stability area.

<sup>1</sup> Single Family Unit refers to both (a) new single family units on existing lots of record and (b) new single family remodels/rebuilds as defined by local regulations/policy/ guidelines

<sup>2</sup> In addition to protecting this area, BMP's should be used that are reflective of Guidelines and Standards, for activities adjacent to this areas where discretionary review is used (i.e redirecting drainage away from the stream and no removal of native riparian plants

<sup>3</sup> A "structurally engineered system" is designed to provide slope stability. It may be a concrete-lined channel (U-frame or trapezoidal) or a stream substantially modified with riprap, gabions, structurally engineered sacked concrete, etc.

<sup>4</sup> Area measured for Slope Stability Requirement to be measured based on location of Top of Bank, whether stream is on or off of property.

## III. ENCROACHMENTS BETWEEN THE TOP OF BANK

### Related Resource Agency

**Permits:** In addition to the G&S's below, any construction activities proposed below the top of bank are subject to review and permit authorization from the Regional Water Quality Control Board, California Department of Fish and Game, and in most cases, the US Army Corps of Engineers and their Federal consulting agencies. Applicants may choose to complete a JARPA (Joint Aquatic Resource Permit Application) if permits are required from more than one Resource Agency.

### III.A Overhang Top of Bank

1. Decks, pathways, buildings or any other structures (excluding road crossings, outfalls, and bank protection structures) may not overhang or encroach beyond or within the top of bank.
2. When illegal structures are identified, which cause public health and safety problems and/or damage to stream resources, appropriate jurisdiction should take actions to have them removed or modified.

### III.B1. Design/Construction Related to Encroachments between the Top of Bank

The construction of clear span structures is preferred for new and replacement bridges. Bridge piers may be allowed if length of span makes clear span infeasible as determined by the local jurisdiction.

### III.B2. Design/Construction Related to Encroachments between the Top of Bank

If a structure must be placed in the active channel due to structural requirements, feasibility, or otherwise, a geomorphic, biological impacts, and/or hydraulic analysis will be required and will be reviewed by SCVWD and other state and federal agencies. For construction of new bridges, loss of riparian, or aquatic habitat beneath the bridge should be mitigated and located as close to the new bridge as possible.

### III.B3. Design/Construction Related to Encroachments between the Top of Bank

Have footings and pile caps that are designed based on channel scour to prevent erosion. The appropriate foundation depth should be determined by a licensed engineer and should be at minimum three (3) feet below active channel invert.

If depth of waterway allows, clearance under the bridge should be a minimum 12 feet for maintenance access or access to the stream should be provided from road.

### III.B4. Design/Construction Related to Encroachments between the Top of Bank

Structures must not reduce the active channel or active floodplains' conveyance area or redirect flow to the detriment of another bank or the river bed. Designs in SCVWD jurisdictional areas must be capable of conveying 100-year design flow and meet SCVWD's freeboard requirements explained in Design Guides.

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**EXCEPTION:** If structure may reduce the conveyance area or encroach into freeboard area, a hydraulic analysis will be required to demonstrate no increase in erosive velocity or flood elevations. Hydraulic analysis must be in HECII or HEC-RAS format (small rural streams may utilize simpler hydraulic analysis methods) and must model debris loading on piers (3 times the pier width) and include a scour analysis. Analysis must be acceptable to SCVWD.

### **III.B5. Design/Construction Related to Encroachments between the Top of Bank**

Encroachments in active channels and active floodplains must provide for fish passage and not impact aquatic life.

**EXCEPTION:** Consideration of exceptions for fisheries impacts must be coordinated with NMFS, USFWS, CDFG, RWQCB and would require biological impacts analysis as well as a Streambed Alternation Agreement.

### **III.C. Water Rights Related to Encroachments between the Top of Bank**

SCVWD permits required for diversion of surface water (removal of water from stream) in areas where District releases water to stream. Construction-related water diversions must also conform to DFG water diversion guidelines, and are subject to a biological assessment.

**EXCEPTION:** Stream owners may have riparian rights to water in stream. Owners must file statements with State Water Resources Control Board.

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## IV. EROSION PREVENTION AND REPAIR

### Related Resource Agency

**Permits:** In addition to the G&S's below, any activity that may impact a watercourse requires at minimum notification to the Regional Water Quality Control Board, California Department of Fish and Game, and in most cases, the US Army Corps of Engineers and their Federal consulting agencies. Applicants may choose to complete a JARPA (Joint Aquatic Resource Permit Application) if permits are required from more than one Resource Agency.

### IV.A. Erosion Repair

#### IV.A. 1. Root cause of erosion

Where known, the root cause and extent of any erosion must be identified, described and reported to the appropriate agency or agencies prior to any attempts to repair erosion site.

#### IV.A. 2. Remediation of erosion

Property owner to remediate source of erosion if onsite.

#### IV.A. 3. Evaluation of effects of adjacent properties

All repair project proposals should include an evaluation for the potential impacts on both downstream and upstream banks.

#### IV.A. 4. Evaluation of impacts on channel dynamics

If erosion protection extends into active channel, evaluate post construction erosion potential due to change in stream dynamics caused by design.

#### IV.A. 5. Hydraulic analysis

If the repair method reduces stream cross-section or increases stream roughness, a hydraulic analysis is required to demonstrate no increase in flood elevations.

#### IV.A. 6. Construction on slopes

For construction on slope greater than 5%, require implementation of erosion and sediment control measures. (See the "Erosion and Sediment Control Field Manual" developed by the Water Quality Control Board.)

### IV.B. Project Design/Construction

#### IV.B. 1. Use of Soft Erosion Repair Techniques

Design of erosion protection must utilize the softest possible method appropriate for the stream characteristics; use of hardscape materials or retaining walls within the banks of the watercourse should be avoided.

#### IV.B. 2. Use of Hardscape/Retaining Walls

If hardscape or a retaining wall is to be used, it must be demonstrated that (1) all softer methods have been evaluated, (2) the proposed method will reduce erosion and (3) the proposed method will not cause erosion or negatively impact proper stream function in other areas.

#### IV.B. 3. Use of Hardscape/Retaining Walls

If used, hardscape elements will require project proponents to mitigate impacts by planting appropriate native riparian vegetation onsite or at another suitable location. Mitigation requirements will need approval by regulatory agencies.

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## **IV.B. 4. Design of Hardscape/ Retaining Walls**

Design cutoff walls or keys to anticipate scour depth. Must be minimum 3 feet deep.

## **IV.B. 5. Design of Channel Repairs**

Channel repairs should match the contour of the upstream and downstream banks to prevent constrictions and increased potential for erosion.

## **IV.B. 6. Design of Channel Repairs**

Over-steepened banks should be laid back to a more stable configuration whenever possible.

## **IV.B. 7. Treatment of Bare Slopes**

Bare earthen slopes resulting from work must be treated to minimize erosion and prevent sediment from entering streams and other aquatic habitats. See Design Guide for recommendations for seed mixes to be used with/without native plants.

## **V. GRADING**

### **Related Resource Agency**

**Permits:** In addition to the G&S's below, any grading activities proposed below the top of bank and/or in the riparian corridor are subject to review and permit authorization Regional Water Quality Control Board, California Department of Fish and Game (i.e. Streambed Alteration Agreement), and in most cases, the US Army Corps of Engineers and their Federal consulting agencies. Applicants may choose to complete a JARPA (Joint Aquatic Resource Permit Application) if permits are required from more than one Resource Agency.

## **V.A. Drainage Related to Grading**

Grading must address drainage. Drainage that avoids the need for outfalls, or reduces the size and/or number of outfalls is encouraged.

## **V.B. Construction Related to Grading**

Grading adjacent to streams must be in compliance with NPDES general permit, where applicable, and must at a minimum provide for buffer areas and vegetated swales between the stream and graded areas.

In compliance with the statewide General Permit for Construction, grading activities that disturb one acre or more of land require the project proponent to prepare and have on site a Storm Water Pollution Prevention Plan.

**EXCEPTION:** Exceptions are allowed per each municipality's drainage ordinance and NPDES permits. Exceptions from swale and BMP's are allowed if there are other run-off controls in place.

## **V.B.2. Construction Related to Grading**

Recommend that fill be placed adjacent to dry side of the levee to minimize the levee height unless it causes drainage problems, disturbs wetlands, creates safety concerns, or impacts aesthetics of property.

## **V.B.3. Construction Related to Grading**

Modifications to levees are allowed if a slope stability analysis is performed and any structure that provides support to the levee is designed with long-term life span (50-100 years).

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**EXCEPTION:** Exceptions are allowed (although discouraged) to cuts in levees if for a temporary purpose and repair is completed by the beginning of October and a performance bond is used to assure completion.

## **V.B.4. Construction Related to Grading**

Grading adjacent to drinking water reservoirs (Calero, Anderson, Lexington, Coyote, Almaden) must be acceptable to the District, which may require water quality monitoring depending on project's potential for adverse impacts. Consider protective measures in source water protection zones and sensitive areas of reservoir watersheds. Erosion and sediment control measures are required to prevent sediment contribution from the construction area to the reservoir.

## **VI. OUTFALLS, PUMP STATIONS AND SITE DRAINAGE**

### **Related Resource Agency**

**Permits:** In addition to the G&S's below, a discharge to a watercourse requires notification to Regional Water Quality Control Board, California Department of Fish and Game (i.e. Streambed Alteration Agreement), and in most cases, the US Army Corps of Engineers and their Federal consulting agencies. Applicants may choose to complete a JARPA (Joint Aquatic Resource Permit Application) if permits are required from more than one Resource Agency.

### **VI.A.1 Site Drainage**

Runoff must not be directed across stream watershed boundaries as a result of grading or through storm drain system design.

### **VI.A.2 Site Drainage**

Direct site drainage through vegetated areas or stilling basins prior to discharge or collection in storm drain system.

### **VI.A.3 Site Drainage**

No concentrated overbank drainage is allowed (e.g. roof overhangs or downspouts). If overbank drainage will occur, use vegetative buffer strips or direct drainage to landscaped areas.

### **VI.B.1 Outfalls**

Prefer that there are no new outfalls, However, if there is no way to avoid new outfalls then the following applies:

1. Minimize the number of outfalls.
2. New channel outfalls must conform to the local municipality's drainage master plan.
3. Slope protection for outfalls must meet SCVWD minimum engineering standards using softer slope protection methods if possible (see Standard Details and Specifications). Outfalls should not overhang the bank or bed as this can lead to excessive channel erosion.
4. Minimum diameter is 12 inches and discharge must be oriented downstream and pipe invert should be at least 2 feet above the stream bottom in areas where sediment deposition is anticipated.
5. Flap gates will be installed when 100-year water surface is above adjacent ground at inlet. Outfalls with flap gates require dormers or

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similar designs to isolate the flap gate and keep them out of flow area (see Standard Details and Specifications).

6. Outfalls on federal projects (Coyote Creek downstream of Montague Expressway, Guadalupe River downstream of Blossom Hill, Llagas Creek downstream of Buena Vista, and Uvas Creek downstream of Santa Teresa) must be submitted to SCVWD to coordinate federal review and approval.
7. In conjunction with new or redevelopment, abandoned outfall pipes and slope protection must be removed and the stream bank restored to similar condition existing upstream and downstream of site.
8. Permits are needed from Dept of Fish and Game, U.S. Army Corps, and RWQCB. See Standard Details and Specifications.

## VI.B.2. Outfalls

Discharge must not pollute receiving water or cause channel erosion. Non storm water discharges not already subject to existing NPDES requirement will be subject to approval and permit from RWQCB.

## VI.C1. Storm Drainage Pump Stations

Limit pump discharges to the extent feasible during peak flows to minimize potential impacts from flooding. When a development requires a storm drain pump station that discharges to a stream, require discharge management plan that addresses pump operation during high water (flood) events.

## VII. CHANNELIZATION

### Related Resource Agency

**Permits:** In addition to the G&S's below, these activities may require notification to Regional Water Quality Control Board, California Department of Fish and Game (i.e. Streambed Alteration Agreement), and in most cases, the US Army Corps of Engineers and their Federal consulting agencies. Applicants may choose to complete a JARPA (Joint Aquatic Resource Permit Application) if permits are required from more than one Resource Agency.

### VII.A. Undergrounding Creeks

1. Streams must not be buried or put into culverts.
2. The exception for culverts only is for road crossings though they should be clear-span whenever possible. If culverts are used they must carry the bankfull flow, accommodate a modified floodplain drainage and where feasible accommodate a 100-year flow rate. This is accomplished with multi-stage culverts with cross-sections designed to carry different flows.
3. Regional debris or sediment basins that will be owned or maintained by SCVWD must be designed for 50-year sediment capacity.
4. Filling creeks to accommodate grading and construction for developments is not permissible until impact avoidance and minimization efforts are maximized. In the event that impacts are determined to be unavoidable, adequate mitigation must be proposed.



# GUIDELINES AND STANDARDS FOR LAND USE NEAR STREAMS

5. CEQA document must be prepared to provide mitigation for impacts of burying stream and appropriate regulatory agency permits, such as a Streambed Alteration Agreement (SAA) must be obtained. The city/county storm drain system, whether in pipes or roadside ditches, is not included in this standard.

## VII.B. Open Channel Modification

1. The design must consider stream dynamics and induced flooding. A hydraulic analysis acceptable to SCVWD will be required.
2. Recommend restoration of natural stream processes if possible.
3. Impacts to habitat must be avoided or mitigated.
4. Stream conveyance area must be designed for 100-year design flow with freeboard, if along a SCVWD jurisdictional area.
5. SCVWD may request dedication of right-of-way for stream modification projects, including an 18-22 foot wide maintenance area.
6. Notify and secure appropriate state and regulatory permits, such as a SAA.

**EXCEPTION:** If active channel and floodplain will not contain the design 100-year flow, then the design can be based on existing capacity with the allowance for providing additional active floodplain width in the future to contain the design 100-year flow. Streams to be dedicated to SCVWD must include an 18-22 foot wide maintenance area. In addition, flood capacity less than the 100-year flow is acceptable if the community in the flood zone is willing to accept less protection and ongoing flood insurance requirements.

## VIII. UTILITY ENCROACHMENTS

### Related Resource Agency

**Permits:** In addition to the G&S's below, utility encroachments may require notification to Regional Water Quality Control Board, California Department of Fish and Game (i.e. Streambed Alteration Agreement), and in most cases, the US Army Corps of Engineers and their Federal consulting agencies. Applicants may choose to complete a JARPA (Joint Aquatic Resource Permit Application) if permits are required from more than one Resource Agency.

### VIII.A. Longitudinal (parallel) encroachments.

Longitudinal (parallel) encroachments are not allowed in SCVWD right-of-way.

**EXCEPTION:** Longitudinal encroachments are discouraged and may only be considered with demonstration that all other Alterations have been considered, there is a benefit to SCVWD and future removal will not be necessary considering SCVWD interests. No water pipelines may be installed within a levee.

### VIII.B. Utilities Crossings

1. Utility pipes or conduits must go under the stream or be in or attached to the downstream face of a bridge and must go under any levees. Provide locations for future utility crossings in design of new or replacement bridges.
2. Any utilities under the stream must be concrete encased or placed in sleeve.
3. Borings must be 5 feet below lined channels and 8 feet below unlined channels. Recommend under-channel utilities be installed by directional bore.

## GUIDELINES AND STANDARDS FOR LAND USE NEAR STREAMS

4. For cut and cover, clearance must be a minimum of three (3) feet and based on scour depth. Replacement of fill in levees is subject to SCVWD specifications.
5. Any aerial utility crossings (e.g. PG&E and phone lines) meet minimum OSHA vertical clearance criteria. (22 feet for non-power lines, 26 feet for power lines less than 600 volts, 30 feet for power lines from 600 to 50,000 volts) to allow safe use of maintenance equipment.
6. Crossings of treated (potable and recycled) water pipelines must meet Department of Health Services clearance requirements. (see Standard Details and Specifications for standards for crossings of SCVWD pipelines and City/ County requirements for other pipeline clearances)
7. Directional drilling projects using bentonite or other lubricants to go beneath or near streams and aquatic habitats will require development of a fracout prevention and response plan describing how water quality will be protected in the event of fracout

### **EXCEPTIONS:**

If not feasible to go under or attach to the downstream face of bridge, the utility crossing may be located on the upstream face of bridge if the design would not catch debris, would be capable of surviving impacts from floating debris in high flow, and would not hinder emergency debris removal or maintenance operations.

## IX. TRAIL CONSTRUCTION

### **Related Resource Agency**

**Permits:** In addition to the G&S's below, trail construction may require notification to Regional Water Quality Control Board, California Department of Fish and Game (i.e. Streambed Alteration Agreement), and in most cases, the US Army Corps of Engineers and their Federal consulting agencies. Applicants may choose to complete a JARPA (Joint Aquatic Resource Permit Application) if permits are required from more than one Resource Agency.

### **IX.A. Design/Construction Related to Trail Construction**

Joint Use Pedestrian/Bicycle Paths are encouraged along creeks. Trails must be located so as to avoid impacts to the stream and riparian areas. Paved multi use trails should be placed so as to maximize distance from stream and riparian areas. Construction must not require deep excavation within tree root zones.

**EXCEPTION:** Exceptions may be allowed if impacts are addressed and determined to be unavoidable in a CEQA document and approved by appropriate regulatory agencies.

# GUIDELINES AND STANDARDS FOR LAND USE NEAR STREAMS

## **IX.A2. Design/Construction Related to Trail Construction**

Design must be consistent with the Santa Clara County Parks and Recreation Department's Interjurisdictional Trail Guidelines. Night lighting of trails along riparian corridors should be avoided.

**EXCEPTION:** Exceptions may be allowed if impacts are addressed and mitigated in a CEQA document and approved by appropriate regulatory agencies.

## **IX.A3. Design/Construction Related to Trail Construction**

Memorial plaques along trail corridors on SCVWD right of way are subject to jurisdiction review and approval. With appropriate planning and community contribution, a memorial area recognizing community members will be considered.

**IX.B.** Trails on District right of way require an agreement that defines maintenance, management, and liability responsibilities of facilities.

## **X. SEPTIC SYSTEMS**

### **X.A. Design Of Septic Systems**

Follow requirements of RWQCB or Santa Clara County as applicable including: Leach field setback 100' from top of bank, 50' from swale, 200' from high water mark of reservoir, prohibited in 10 year floodplain or areas observed to flood from field observations. Consult with SCVWD to determine whether land feature is an active floodplain or swale

and assist in determining high water marks at reservoirs.

**EXCEPTION:** Exceptions or variances are allowed per RWQCB or Santa Clara County requirements. Please note that since 10-year floodplain maps do not exist, any area of historical flooding should be assumed to be in the 10-year floodplain.

## **XI. TRASH CONTROL AND REMOVAL**

### **XI.A. Location of Trash Bins**

Locate trash bins away from streams and follow other measures outlined in NPDES guidance.

## **XII. PROTECTION OF WATER QUALITY**

### **XII.A. Water Quality**

1. Cities, County, and SCVWD should comply with applicable provisions of NPDES stormwater permits. Implement Infiltration Guidelines in the SCVRPPP C.3 handbook, where appropriate.
2. Retention ponds and infiltration trenches that do not meet guidelines will be reviewed by SCVWD and the Regional Water Quality Control Board.

## **XIII. GROUNDWATER PROTECTION**

### **XIII.A. Groundwater**

Require groundwater resource assessments when potential for significant groundwater supply or groundwater quality impacts. The changes in land use where these impacts may be significant are anticipated to be subject to CEQA

## GUIDELINES AND STANDARDS FOR LAND USE NEAR STREAMS

### **XIII.A2 Groundwater**

To protect Santa Clara County groundwater recharge areas, new high risk activities defined by Department of Health Services (DHS) should be prohibited in well head protection areas as designated on District GIS Maps. Manage (limit, monitor and implement best management practices) existing high risk activities in recharge areas of basin.

### **XIII.A3. Groundwater**

The owners must show any existing wells on the plans. The wells must be properly registered with the SCVWD and either be maintained or destroyed in accordance with SCVWD standards.

## **XIV. FLOOD PROTECTION**

### **XIV.A. Flooding Protection**

1. For development within special flood hazard zones A, AE, AH, AO, the project must comply with FEMA requirements as implemented by the City or County.

2. Consider when and how to recommend increased levels of protection as described in Dept of Water Resources Model Floodplain Ordinance, recommendations of California Floodplain Management Task Force (Dec 2002), and FEMA's Community Rating System Program.

**EXCEPTION:** Exceptions or variances allowed per City or County Ordinances, Policies, or other implementation documents.

### **XIV.A2. Flooding Protection**

In zone A (areas where base flood elevations have not been determined) require a hydraulic analysis to determine the base flood elevation for subdivisions greater than 5 acres or 50 lots whichever is lesser. For other construction and substantial improvements, utilize any other available base flood elevation data as criteria for meeting NFIP requirements.

### **XIV.A3. Flooding Protection**

If a proposed project will result in a significant increase in land use density<sup>1</sup> (i.e. an agricultural area changes to residential or industrial), the local jurisdiction should work cooperatively with SCVWD to determine (1) what information is needed on a project specific basis to evaluate potential increases in flood flows and (2) what mitigation measures can be implemented to mitigate for impacts to flood conveyance capacity and/or flood protection.

Detention basins may be used to mitigate the impact, but they must be properly designed and maintained. Design should be in concert with hydromodification facilities and consider regional solutions.

## GUIDELINES AND STANDARDS FOR LAND USE NEAR STREAMS

### **XIV.A4. Flood Protection**

For major developments near streams subject to CEQA review that are compatible with the General Plan utilized for developing District hydrology and FEMA floodmaps, development must not, increase site runoff so as to increase depth (0.1 foot increase in water surface) or lateral extent of flooding or increase discharge in local streams as outlined in the storm water permit for the SCVURPPP.

A hydraulic analysis prepared by registered civil engineer demonstrating that any flood impacts will not be created is required.

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<sup>1</sup> The District's hydrology and design flood flow rates were developed in the late 1970's using the land use designations shown on General Plans in place at that time. These flow rates have recently been updated, but the impact has not yet been analyzed. In general, the changes in land use that could significantly impact runoff quantities are typically those outside the urban service area, in south county and those developments where the change in land use will be subject to CEQA review. The impacts to be addressed are to flood conveyance facilities designed using 1978 (or prior) flow rates and built to provide 100 year flood protection and impacts to flood prone areas which were also determined using the 1978 flow rates.

# Bank Stability for Structures Built Near Streams

## Handout 4 of 7

Slope-stability protection areas along watercourses are determined by the engineering and scientific analyses of geomorphic, hydraulic and hydrologic conditions. The potential for instability or erosion is influenced by the velocity, quantity and frequency of stream flow, the stream bank's physical characteristics, such as height and slope and soil type, and the weight or loading of the proposed structure.

Buildings and structures built too close to a stream bank can be affected by the natural forces of a stream. Structures built near streams can also negatively affect streams and streamside resources. Structures built too close to the stream can :

1. Have adverse effects on streamside slopes, and on existing flood protection or drainage facilities. Roof runoff, outfalls or overbank drainage can cause erosion to the bank. The weight or loading of a structure can impact adjacent drainage or flood protection structures.
2. Have adverse effects on riparian corridors and vegetation.
3. Have adverse effects on streams, including sedimentation, altered stream hydrology, erosion and water quality degradation.
4. Be undermined over time as the stream bank naturally erodes.

## Slope Stability Protection Trigger Area

Projects that include construction of new roads, parking lots, pools and structures subject to the Uniform Building Code near a stream, must comply with local permit agency requirements for construction near a stream bank.

Requirements may relate to the location of a proposed structure to avoid impacts to the riparian corridor, and may consider the stability of the stream bank and impacts to the bank from the proposed construction. To guide the implementation of these requirements, a slope stability protection area, or trigger area has been established.

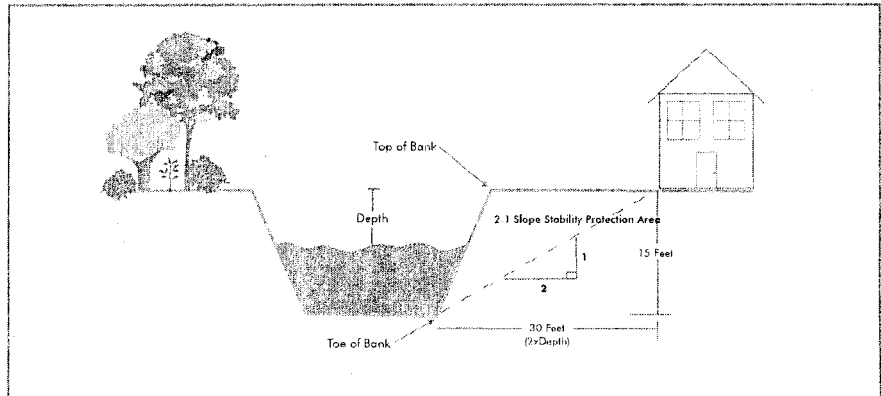


Figure 1. Protection or trigger area for a trapezoidal shaped channel.

The slope stability protection or trigger area is measured from top of bank and is based upon stream characteristics. Implementation of a protection area is intended to help place structures on streamside properties in a location and manner that avoids or minimizes impacts to streams, streamside natural resources, flood protection and local drainage infrastructure and the proposed structure.

## Slope Stability Protection Area for New Development

For all new development and major redevelopment, the slope stability trigger area is the greater of:

1. A 2 to 1 slope stability protection or trigger area measured using a hypothetical 2 horizontal to 1 vertical line projected from the toe of bank to a point where it intersects the adjacent ground. A diagram showing this concept is shown in this handout. The protection area should allow for construction access and access around the structure. For banks of large streams, or for streams that are deeply incised or have highly erodible banks, the local permitting agency may increase the protection area in order to protect water quality, the riparian corridor, and other resources.
2. Twenty (20) feet from top of bank or property line. Buildings and improvements should be located outside the areas defined by the slope stability protection area or a geotechnical analysis as described below will be required.

## Slope Stability Protection Area for Single Family Units

Every municipality and the county each have varying requirements and regulations for the placement of homes and accessory buildings which may not follow those described for new development. The slope stability protection area should be used as a guide for the placement of any structures, including pools and accessory buildings next to stream banks, for the safety of property owners and protection of their investment.

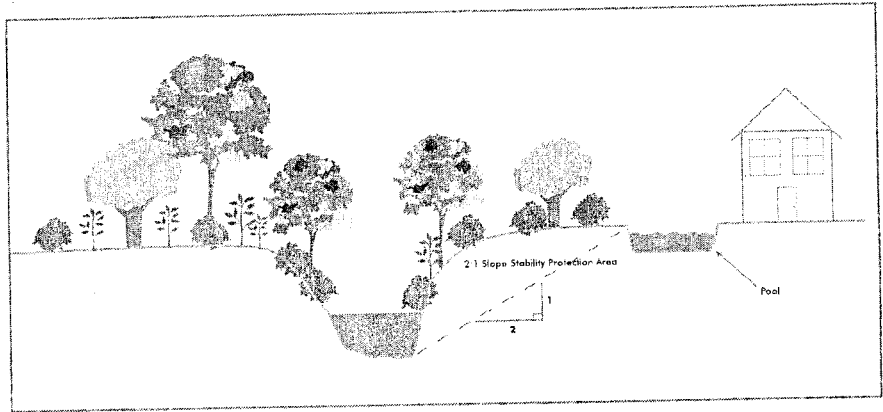


Figure 2. Protection or trigger area for a natural stream.

## Slope Stability Protection Area Triggers Geotechnical Study

If a structure is proposed closer to the stream bank than defined by the slope stability protection or trigger area, the applicant is required to conduct a study of on-site geotechnical and slope stability conditions.

The purpose of the study is to determine:

1. Whether the location of a proposed structure may threaten bank stability, and
2. Whether the bank is in an unstable or potentially unstable condition that may threaten structures and/or potentially cause a health and safety hazard.

The study needs to include a geotechnical analysis of soil conditions, a slope stability analysis

that considers static conditions and the action of the stream on the bank. The study must :

- 1) Demonstrate that development would not require introduction of hardscape in order to maintain a stable slope and
2. Show how maintenance or repair of the stream could be provided should it become necessary.

For banks of larger streams, or for streams that are deeply incised or have highly erodable banks, a permitting agency may require on-site geotechnical analyses even if the structure is outside the slope stability protection or trigger area.

## Flood Protection for Structures Built Near Streams

Structures must meet Federal Emergency Management Agency (FEMA) and local flood hazard ordinance requirements if within a special flood hazard area. The Santa Clara Valley Water District recommends in many cases that higher standards than those required by FEMA be followed. An example of one of these requirements relates to the elevation of the lowest floor elevation of habitable building. FEMA requires that the lowest floor of habitable buildings be constructed above the base flood elevation. The water district recommends that the lowest floor be placed at least one foot and, preferably, two feet above the base flood elevation.

Refer to the district's Watershed Stewardship Plans and verify the status of any planned or anticipated flood protection projects. The district may request dedication of land rights for flood protection or maintenance access in conjunction with new or redevelopment projects.

For streams protected by levees, the water district recommends including an 18 to 25 foot building setback from the toe of levee to allow for potential emergency operations.

For more information, contact your local planning department, or SCVWD staff in the Community Projects Review Unit **(408) 265-2607** ext **2650**