EXECUTIVE SUMMARY

CITY-WIDE CREEKS AND WETLANDS MANAGEMENT PLAN

BACKGROUND

IN THIS SECTION

- Background
- Purpose and Intent of Plan
- Methods
- Recommended Setbacks
- Watercourse Categories
- Watercourse Permit Process

The 39 miles of watercourses and wetland areas in the City are considered valuable natural resources due to the variety of aquatic and terrestrial species that these resources may support, and their function in conveying storm water and protecting water quality. The value of these resources are recognized in existing City General Plan and Local Coastal Program (LCP) policies, which promote the preservation of riparian corridors and wetlands for habitat values and protection of water quality within the watercourses and their receiving waters, the Monterey Bay.

General Plan/LCP Environmental Quality policy 4.2.2 requires a development setback of 100 feet from watercourses or wetlands, but allows for exceptions when a management plan has been adopted and implemented that provides for protection of riparian and wetland resources and water quality. A management plan also must be approved by the Coastal Commission as part of the City's LCP for properties within the coastal zone. Absent a City-wide Management Plan, the City has no ability to implement the guiding policy requiring preservation and enhancement of riparian habitats, and individual property owners do not have the ability to feasibly request exceptions to the policy for development where habitat and resource values would not be compromised. Additionally, the California Coastal Commission requested that the City clarify its policies and procedures pertaining to development activities in proximity to watercourses and wetlands and address watercourses as cohesive biological systems. It is within this context that this City-wide *Creeks and Wetlands Management Plan* (*Management Plan*) has been developed for properties adjacent to a watercourse or wetland. The *Management Plan*) has been prepared with partial funding from a Coastal Commission grant to the City.

PURPOSE AND INTENT OF THE MANAGEMENT PLAN

The purpose of the *City-wide Creeks and Wetlands Management Plan* is to identify and map the watercourses and known wetlands within the City limits; identify appropriate development setbacks based on evaluation of habitat, stream and land use characteristics; recommend management actions which promote the preservation of riparian and wetland resources, define development guidelines and standards for areas where development adjacent to watercourses may be appropriate, and provide a framework for permitting development adjacent to watercourses. The plan presents a strategic approach to stream corridor management that is intended to result in better protection, enhancement, and management of the City's riparian and wetland resources and water quality, while providing consistency and predictability of the City's permitting process. The *Management Plan* also maps known wetland areas, which would be subject to site-specific review to determine appropriate setbacks.

Locating development away from sensitive watercourse areas and requiring implementation of measures to protect, improve and/or enhance riparian areas and water quality will enable both urban and natural areas to co-exist. Long-term goals to manage these resources include:

- Reduce and/or eliminate pollutants discharged to aquatic bodies,
- Improve water quality,
- Improve and restore natural habitat,
- Increase biodiversity,
- Lower water temperatures,
- Increase public awareness of the value of watershed quality.

This *Management Plan* is intended to be a policy document, which is subject to the review and approval by the City of Santa Cruz Planning Commission and City Council. Adoption of the *Management Plan* will require amendments to the City's Zoning Ordinance. Adoption of the *Management Plan* and Zoning Ordinance amendments will also be subject to approval by the Coastal Commission as an amendment to the City's LCP upon which it will become part of the City's LCP. Following adoption of these amendments, landowners within the City, as well as City Departments, would be required to follow the approved *Management Plan* for issuance of City zoning and building permits. The *Management Plan* would be administered by the Planning and Community Development Department. Adoption of the *Management Plan* does not absolve landowners or City Departments from obtaining any required State or Federal permits.

Pursuant to the City's General Plan/LCP specific management plans have been developed and adopted for certain designated open space lands within the City. The provisions of this *Management Plan* provide recommended setbacks and/or requirements for additional biotic reviews for some areas, but do not supersede management policies and measures for riparian and wetland resources addressed in these other existing management plans or to public lands that have pending or approved management plans that address riparian resources.

METHODS

The *Management Plan* was prepared utilizing high resolution aerial photographs and a Geographic Information System (GIS) database. All City watercourses and known wetlands were mapped with delineation of the centerline the watercourse and the 100-foot setback that is required under existing City policies and regulations. Resource characteristics were inventoried for each watercourse reach to provide information about the condition and character of resources, including stream or channel type, habitat type, extent of riparian vegetation, and wildlife considerations. The inventory was used to assess the existing habitat and hydrological values for each watercourse reach, as well as potential for habitat or water quality enhancement. The inventory was based on review of aerial photographs and existing studies, biological review, and site inspections, where feasible. Land use patterns were also identified, including the average distance between the watercourse and existing development.

The extent and type of vegetation, the proximity of existing development, and the watercourse data layer were compared to each other to separate the watercourses into distinct segments based on their vegetative and land use characteristics. Each watercourse was divided into distinct channel reaches that could then be used to refine the City's existing 100-foot setback policy based on channel and habitat characteristics.

The data that was gathered was stored within a GIS database. The foundation of the GIS database is a set of high-resolution, ortho-rectified, color aerial photographs taken in 2003. Overlaid on these photographs in the GIS database is the City of Santa Cruz parcel layer, which includes all parcels and roads within the City. Field surveys were then conducted to verify the location and habitat features of each watercourse or wetland, allowing maps to be generated depicting the watercourses and known wetlands within the City. Field surveys are based on site conditions observed during the spring, summer and fall of 2000 and 2003.

Formal delineations of wetlands using U.S. Army Corps of Engineers (ACOE), Coastal Commission, or other regulatory agency criteria were not conducted as part of this plan. The *Management Plan* did not address the capacity or flooding potential of City watercourses and wetlands. Development proposals are required to be responsible for appropriate construction methods based on individual parcel hydrological circumstances.

The location of the watercourse centerlines portrayed on the maps is suitable for planning purposes under the *Management Plan*. For some parcels, more detailed field measurements will be necessary to more accurately portray the centerline or to update to the current site condition, and additional delineation of wetlands or areas of ponding water may be required if developments are proposed in or adjacent to such features. Known parcels that may require further review because they are located adjacent to such a (potential) resource are designated as such on the aerial photo maps (provided under separate cover).

Using the GIS database and information collected from the field surveys, an analysis was conducted to determine appropriate setbacks for each watercourse or watercourse reach. This analysis examined five factors: 1) primary habitat ranking; 2) special status species ranking; 3) average width of riparian corridor or wetland ranking; 4) open areas and dispersal ranking; and 5) enhancement and restoration potential ranking, to determine the appropriate setbacks.

RECOMMENDED SETBACKS

Based on an evaluation of biological, hydrological, and land use characteristics, the *Management Plan* provides specific setback requirements. For each section of watercourse in the City, the recommended setbacks include a ***management area***, which is the area where watercourse regulations will apply, and which also includes a ***riparian corridor*** and a ***development setback***. These setback areas are briefly described below. Figure ES-1 illustrates these zones.

Management Area. The designated *management area* is the area adjacent to all watercourses. It includes a *riparian corridor*, a *development setback* area, and an additional 25 feet outward from the edge of the *development setback*. New development would be allowed from the edge of the *development setback* area outward; approval of a watercourse development permit may be required. Development located outside of the *management area* would not be subject to watercourse regulations.

Riparian Corridor. The *riparian corridor* (measured from the centerline of the watercourse) is adjacent to the watercourse and is the width of riparian vegetation and/or immediate watercourse influence area, measured outward from the centerline of the watercourse. This riparian corridor is intended to provide an adequate riparian width to maintain or enhance habitat and water quality values. Allowable uses within the *riparian corridor* are limited.

Development Setback Area. The *development setback* area is the area outward from the edge of the designated *riparian corrido*r where development is restricted, and is measured from the centerline of the watercourse. The *development setback* width is intended to provide an appropriate water quality and habitat buffer between the *riparian corrido*r and development within the remaining *management area*. New development generally would be limited in this area to landscaping and limited pervious surfaces.

The *riparian corridor* is intended to provide an adequate riparian width to maintain or enhance habitat and water quality values, and the *development setback* is intended to provide an appropriate buffer between the riparian corridor and development. The width of the designated *riparian corridor* and *development setback* area is dependent upon the type of vegetation existing along the watercourse (and/or its ability to support riparian vegetation), the general area which contains stream flows, the proximity of existing development, the channel type, known or potential presence of special status species, continuity of the corridor, connectivity to adjacent habitats and opportunities for habitat restoration and enhancement.

For wetlands and other unique areas of ponding water, the *Management Plan* recommends further site-specific biotic review (as currently required), since detailed analysis or wetland delineations were not conducted as part of the preparation of this *Management Plan*. Parcels that may require site-specific biotic review (shown by a green and yellow dot on the aerial photo maps), are parcels near ponds or known wetlands where appropriate setbacks would be determined through further study. The biotic review would only be required if the ponds would potentially be impacted (depending on the location of the development on the parcel in relation to the location of the pond or wetland).

The location of these areas, by plan view and cross-section, is depicted on Figure ES-1. These areas are also depicted on the aerial photo maps provided under separate cover that are available for review at the Department of Planning and Community Development and on the City's website at: www.ci.santa-cruz.ca.us (under the Planning and Community Development Department).

WATERCOURSE CATEGORIES

In order to determine the level of permit review required for the variety of watercourse types within the city, all watercourses and watercourse reaches have been categorized as either an "A", "B" or "C" watercourse. The "A," "B" and "C" categories are based on the quality, continuity, and enhancement potential of the riparian habitat associated with each watercourse, the potential for the watercourse to support special status species, and the ability of the habitat to be expanded based upon existing development.

Category "A" includes watercourses and/or watercourse reaches that support high quality riparian habitat, with a vegetated corridor that is continuous and with few gaps. Category "A" watercourses abut undeveloped lands or rural residential yard areas that provide ability for wildlife to utilize these adjacent areas, with some available area for riparian vegetation to expand within the corridor over time. This category generally has the known presence of a special status species, or a high potential for presence due to habitat conditions. The goals of this category include protecting and restoring existing vegetated watercourses as wildlife movement corridors through removal of invasive non-native plant species and restoration of

native vegetation, as well as protection and improvement of water quality with implementation of proper erosion control and best management practices, and planting of appropriate species.

Category "B" includes watercourses and/or watercourse reaches that are located in urban areas and that function primarily as a drainage system. This category includes watercourses with limited riparian habitat that is generally confined by adjacent land uses which limits its ability for the corridor to expand. Issues of water quality and flow conveyance are the focus for this category. The goals of this category include improving habitat by removal of invasive, non-native plant species and improving water quality and flow with implementation of proper erosion control and best management practices, and planting of appropriate species.

Category "C" includes drainage channels that are concrete or man-made, and above or below ground culverts with very low to no habitat value. The corridor is fragmented or non-existent, with little to no room for restoration without significant land acquisition or easements. The primary function of these watercourses is flow conveyance and water quality is a concern. Category "C" watercourses are exempt from these watercourse regulations.

Table ES-1 depicts the recommended watercourse category for each watercourse or watercourse reach, as well as the recommended *riparian corridor*, *development setback* area, and *management area*. Refer to the aerial photos provided under separate cover for a visual depiction of these setback recommendations. The map page(s) that correspond with each watercourse reach is also provided in Table ES-1. The aerial photos are available for review at the Department of Planning and Community Development and on the City's website at: www.ci.santa-cruz.ca.us (under the Planning and Community Development Department).

WATERCOURSE DEVELOPMENT PERMIT PROCEDURES

Development projects and specified activities within the *management area* would be subject to City review to assure compliance with *Management Plan* and zoning requirements, and to determine whether an activity is exempt or requires a watercourse development permit. This would include review of some activities that are not subject to building, grading, or other permits, such as landscaping and installation of decks and paving. Except for specified exempt projects, all development projects in the *management area* would be subject to administrative review and approval of a Watercourse Development Permit by City staff (Zoning Administrator) without a public hearing unless the permit is part of larger project that requires a hearing. Generally, watercourse development permits would be required for allowed uses within any zone of a Category A watercourse and for allowed uses within the riparian corridor and development setback areas of a Category B watercourse. Development activities within Category C watercourses are exempt. Development outside of the *management area* for any watercourse would not require a watercourse permit.

The *Management Plan* recommends that certain activities would be exempt from watercourse regulations (exempt from a permit), where those activities clearly would not have an impact on watercourse resource values. Exempt projects are summarized on Table ES-2.

Allowed uses with approval of a Watercourse Development Permit are summarized in Table ES-3. Although the *riparian corridor* is meant to serve primarily as an area for water to flow and as a vegetated corridor, the *Management Plan* recommends that certain activities be allowed, such as restoration projects. The development setback area is meant to serve as a

buffer between development and the *riparian corridor*, but the *Management Plan* recommends that additional non-intensive activities be allowed within the *development setback area* with approval of a permit. Additionally, new development adjacent to Category A watercourses would be allowed throughout the remaining *management area* with approval of a permit.

Allowable projects or activities would be required to comply with the applicable Watercourse Development Standards, and management guidelines are identified that property owners will be encouraged to implement. The standards address the issues identified below. Table ES-4 summarizes the types of measures that would be required for these development standards.

- Use of permeable paving;
- Drainage and water quality protection;
- Use of suitable plant materials;
- Use of appropriate lighting;
- Habitat enhancement;
- Construction Best Management Practices;
- Management in High Fire Hazard Areas; and
- Erosion control and bank protection measures.

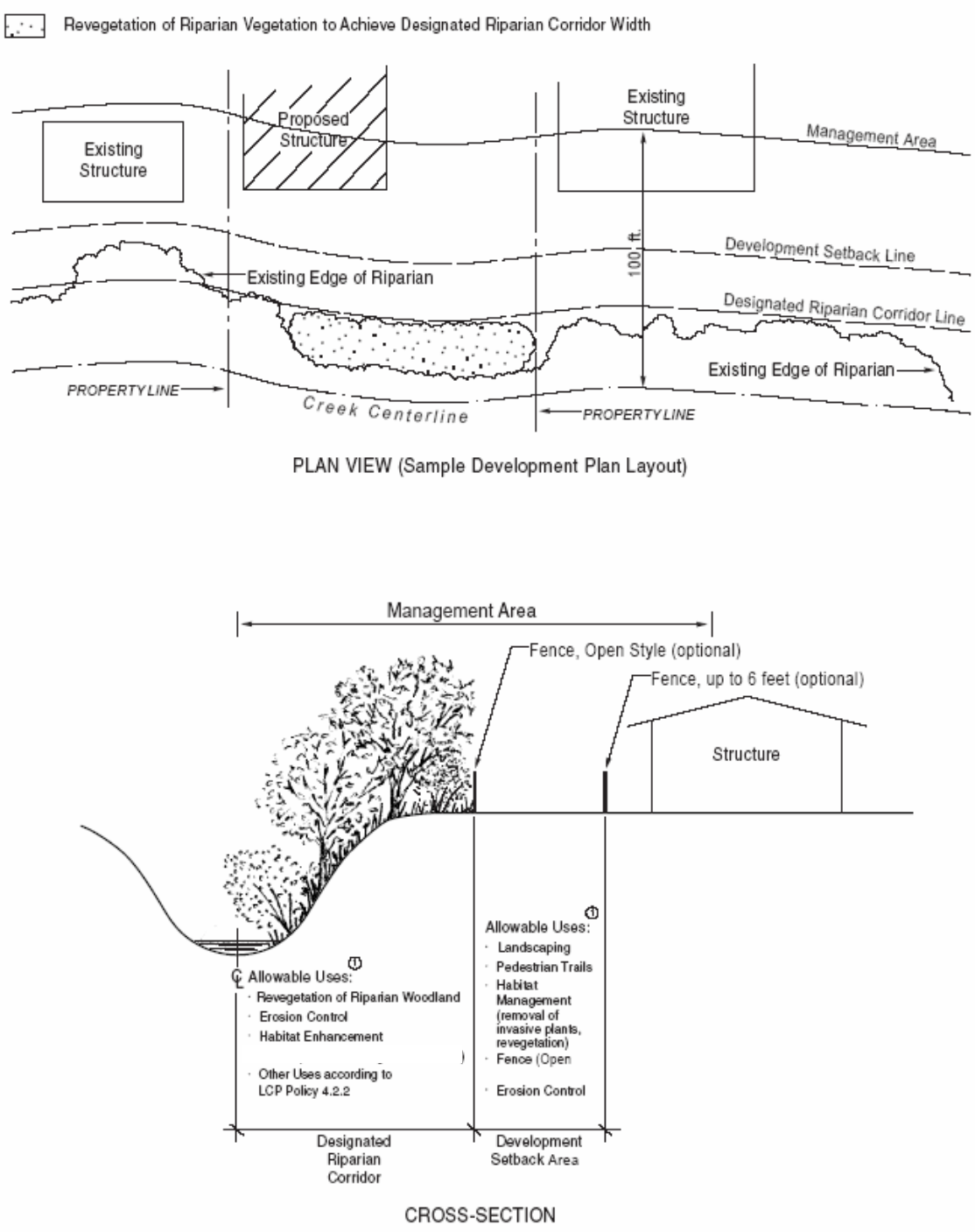
The *Management Plan* recommends a Variance procedure for projects that do not comply with development setbacks or projects requesting exceptions to the Watercourse Development Standards. A watercourse variance is not encouraged nor is it a situation that is expected to arise often. However, there may be limited situations in which a variance may be requested based on more site-specific data available than is included in the *Management Plan*. A variance process is therefore included, consistent with other provisions of the City's Zoning Ordinance. The variance would be subject to Planning Commission review and approval as a Watercourse Variance with a public hearing. Lesser setbacks would be permitted only if application of the minimum setback standards would render the parcel physically unusable for a principal permitted use as allowed in the City's Zoning Ordinance. In allowing a reduction in the minimum setbacks, the setback would be reduced only to the point at which a principal permitted use (as modified as much as is practical from a design standpoint) can be accommodated. The variance request would be required to submit technical biological and hydrological studies that demonstrate no impacts would occur to the habitat and watercourse resources.

Project components to be considered (as determined to be feasible or appropriate for the given project) when granting exceptions to the required setback include:

- Habitat restoration using native plant materials.
- The reduced setback maintains to the greatest extent feasible the width of the riparian corridor and development setback area.
- Erosion control and bank stabilization.
- Retrofitting existing parking areas adjacent to watercourses. using permeable materials, incorporating storm water quality management facilities, and berming to direct surface flows away from the watercourse.
- Passive park and open space dedication.
- Trail construction consistent with General Plan/LCP goals and policies.
- Removal of fish passage barriers.

The *Management Plan* would be reviewed by the Planning Commission in five years to evaluate how successful implementation of the *Management Plan* has been and to determine what, if any, components of the *Management Plan* may need to be modified to assure continuing adequate protection of watercourse and wetland resources. Any modifications would require a public hearing. At this time, if a watercourse has been restored to such an extent that it may be upgraded to a different category, it would be evaluated through the public hearing process.

FIGURE ES-1. PROPOSED SETBACK AREAS



SOURCE: Biotic Resource Group, 2001

TABLE ES-1. SUMMARY OF WATERCOURSE CATEGORIES & RECOMMENDED SETBACKS

Watercourse Name and Reach	Category (A, B, C)	Riparian Corridor	Development Setback	Management Area	Map Page(s)
		(In feet, measured outward from centerline of watercourse)			
Antonelli Pond	(see map)	(see map)	(see map)	(see map)	K03, K04
Arana Gulch Creek 1a	B	60	80	105	R08, R09
Arana Gulch Creek 1b	B	20	25	50	R08
Arana Gulch Creek 1c	A	100	130	155	R09, R10, R11, R12
Arana Gulch Creek 1d	B	40	60	85	R09, R10
Arana Gulch Creek 1e	A	55	75	100	R10
Arana Gulch Creek 1f	A	55	75	100	R10, R11
Arana Gulch Creek 1g	A	55	75	100	R11
Arana Gulch Creek 1h	A	55	75	100	R12
Arana Gulch Creek 2	B	10	15	40	R09
Arana Gulch Creek 3a	B	20	30	55	R09
Arana Gulch Creek 3b	B	5	5	30	R09
Arana Gulch Creek 3c	B	15	20	45	R09, R10
Arana Gulch Creek 3d	A	55	75	100	R10
Arana Gulch Creek 4a	B	10	15	40	Q09, R09
Arana Gulch Creek 4b	C	0	0	0	Q09
Arana Gulch Creek 4c	B	5	10	35	Q09, Q10
Arana Gulch Creek 4d	A	55	75	100	Q10, Q11
Arana Gulch Creek 4e	A	55	75	100	Q10
Arana Gulch Creek 5a	C	0	0	0	Q09
Arana Gulch Creek 5b	B	10	15	40	Q09
Arana Gulch Creek 5c	B	20	30	55	Q09, Q10
Arana Gulch Creek 5d	A	40	60	85	Q10
Arana Gulch Creek 5e	A	55	75	100	Q10
Arana Gulch Creek 6a	C	0	0	0	Q09
Arana Gulch Creek 6b	B	20	30	55	P09, P10
Arana Gulch Creek 6c	A	55	75	100	P10, Q10
Arana Gulch Creek Harbor	(see map)	(see map)	(see map)	(see map)	Q04, Q05, Q06
Arana Wetland	(see map)	(see map)	(see map)	(see map)	Q06, Q07, R07, R08
Arroyo de San Pedro Regaldo 1	B	10	20	45	N08
Arroyo de San Pedro Regaldo 2a	B	10	20	45	M09, N08, N09
Arroyo de San Pedro Regaldo 2b	C	0	0	0	M08, N08, N09
Arroyo de San Pedro Regaldo 3	B	40	60	85	M08, M09
Arroyo Seco 1	C	0	0	0	L02, L03
Arroyo Seco 2	B	15	20	45	L03
Arroyo Seco 3a	A	30	80	95	L03, L04
Arroyo Seco 3b	A	50	70	95	LO3, LO4
Arroyo Seco 4	B	15	20	45	L04

TABLE ES-1. SUMMARY OF WATERCOURSE CATEGORIES & RECOMMENDED SETBACKS

Watercourse Name and Reach	Category (A, B, C)	Riparian Corridor	Development Setback	Management Area	Map Page(s)
		(In feet, measured outward from centerline of watercourse)			
Arroyo Seco 5	B	60	100	125	L04, L05, L06, L07
Arroyo Seco 6	B	40	60	85	L05, L06
Arroyo Seco 7	B	40	60	85	L05
Arroyo Seco 8	B	40	60	85	L06
Arroyo Seco 9a	B	20	50	75	L06, L07
Arroyo Seco 9b	B	5	10	35	L07
Arroyo Seco 10a	B	20	30	55	L07
Arroyo Seco 10b	B	5	10	35	L07
Bay Avenue Creek 1	B	5	5	30	M06
Bay Avenue Creek 2	B	20	30	55	L06, M06
Bay Avenue Creek 3	B	5	10	35	L07
Bayona Creek	B	20	30	55	L05, L06, M05
Bethany Creek 1	B	20	30	55	M03
Bethany Creek 2	B	5	5	30	M04
Branciforte Creek 1	B	30	50	75	O06, O07, O08, P08
Branciforte Creek 2	A	50	70	95	P08, P09, P10, P11, Q11, Q12
Carbonera Creek	A	50	70	95	O10, O11, P09, P10, P11, P12
Chrystal Gulch	B	10	15	40	N06
Dodero Spring Creek 1a	B	5	10	35	M06, M07
Dodero Spring Creek 1b	C	0	0	0	M07
Dodero Spring Creek 2	B	25	30	55	M07, M08
Dodero Spring Creek 3	B	10	15	40	M08
Dodero Spring Creek 4	B	25	30	55	M08
Dodero Spring Creek 5	B	10	15	40	L08, M08
Glen Canyon Creek	A	50	70	95	P11, P12
Hagemann Gulch 1	B	40	60	85	Q06, Q07
Hagemann Gulch 2	B	10	15	40	Q07
Hagemann Gulch Harbor	(see map)	(see map)	(see map)	(see map)	Q06
Jessie Street Channel	B	10	15	40	P05, P06
Jessie Street Marsh	(see map)	(see map)	(see map)	(see map)	P06
Kalkar Quarry Spring	(see map)	(see map)	(see map)	(see map)	L08, M08
Laurel Creek 1	B	20	30	55	N05
Laurel Creek 2	B	10	15	40	N05, N06
Laurel Creek 3	B	20	30	55	N06
Laurel Creek 4	B	10	15	40	M06, N06
Laurel Creek 5	C	0	0	0	M06
Laurel Creek 6	B	10	15	40	M06
Laurel Creek 7	B	20	30	55	M06, M07

TABLE ES-1. SUMMARY OF WATERCOURSE CATEGORIES & RECOMMENDED SETBACKS

Watercourse Name and Reach	Category (A, B, C)	Riparian Corridor	Development Setback	Management Area	Map Page(s)
		(In feet, measured outward from centerline of watercourse)			
Lighthouse Drainage	(see map)	(see map)	(see map)	(see map)	N02, N03
Longview Creek 1a	B	5	10	35	M06, M07
Longview Creek 1b	C	0	0	0	M07
Moore Creek 1	A	100	130	155	K02, K03
Moore Creek 2	A	100	150	175	K04, K05, K06, K07,L05
Moore Creek 3	A	100	130	155	K07, K08
Moore Creek 4	A	100	150	175	J07, K05, K06, K07
Moore Creek 5	A	70	100	125	K06, K07
Natural Bridges Creek	A	80	100	125	K02, L02, L03
Neary Lagoon	(see map)	(see map)	(see map)	(see map)	N04, N05, O04,
Ocean Villa Creek	B	50	70	95	P05, P06
Ojos de Agua 1	B	5	10	35	M06, M07
Ojos de Agua 2	C	0	0	0	M07
Ojos de Agua 3	B	5	10	35	M07
Ojos de Agua 4	C	0	0	0	M07
Pasatiempo Creek 1	C	0	0	0	O08
Pasatiempo Creek 2	C	0	0	0	O08, O09
Pasatiempo Creek 3	A	80	100	125	O09, O10
Pilkington Creek 1	B	30	40	65	P05
Pilkington Creek 2	B	10	15	40	P05
Pogonip Creek 1	C	0	0	0	N09
Pogonip Creek 2	B	40	60	85	N09
Pogonip Creek 3	A	70	100	125	M09, M10, N09
Redwood Creek	A	60	90	115	M11, N11
Salz Pond	(see map)	(see map)	(see map)	(see map)	N09
San Lorenzo River Lower	(see map)	(see map)	(see map)	(see map)	N08, O05, O06, O07, O08, P04, P05
San Lorenzo River Upper East Bank	A	120	150	175	N08, N09, N10, N11
San Lorenzo River Upper West	A	100	120	145	N08, N09, N10, N11
Tick Drainage	B	5	10	35	N09, N10
Wagner Seep 1	B	50	70	95	M08, N08
Wagner Seep 2	B	50	70	95	N08
Westlake Pond	(see map)	(see map)	(see map)	(see map)	M07
Woods Creek 1	B	20	30	55	Q05, Q06
Woods Creek 2	B	10	15	40	Q06
Woods Creek Harbor	(see map)	(see map)	(see map)	(see map)	Q05

TABLE ES-2. PROJECTS EXEMPT FROM WATERCOURSE DEVELOPMENT PERMITS

(In the Coastal Zone, the following list of projects are exempt only if the criteria of Zoning Ordinance Section 24.08.230.1 regarding coastal permit exemptions are met)

Development and Structural Improvements

- Any development on a "C" Category watercourse.
- Development projects within a Category B watercourse located outside of the designated *riparian corridor* and *development setback* area (in the remaining *management area*).
- Any development adjacent to a closed culverted section of a watercourse.
- Any development that has an established road right-of-way between the subject parcel and the watercourse or has a separate legally developed parcel located between the subject parcel and the watercourse.
- Interior remodeling of an existing legal structure within the existing structure footprint.
- Repair and maintenance of existing legal structures.
- Demolition of existing structures outside the *riparian corridor*, in accordance with City demolition regulations, provided that no mechanized machinery is utilized and no disturbance occurs within the *riparian corridor*.
- Reconstruction of a damaged nonconforming structure where nonconformance only relates to watercourse setbacks provided the applicable watercourse development standards are implemented.

Exterior Improvements

- Exterior treatments such as painting, roofing, surface treatments, window replacement, that do not increase the density or intensity of land use, or increase surface coverage.
- Exterior safety lighting in the *development setback area*, including low-level walkway, motion detector security, driveway, and entry lighting, that is hooded & directed downward, away from the watercourse.
- Open style fencing (e.g. wire strand or split rail) that permits the free passage of wildlife, limited to the outer edge of the *riparian corridor*.
- Installation of pervious surfaces (outside of the *riparian corridor*), including at-grade decks, patios, and walkways, when the total square footage is less than 25 percent of the *development setback area,* provided that the pervious surfaces meet those requirements specified in the Watercourse Development Standards.

Landscaping and Vegetation Removal

- Landscaping with non-native vegetation within the *development setback area*, provided non-invasive species are used.
- Minor vegetation removal of invasive or exotic plant species, except removal of mature eucalyptus trees in known Monarch butterfly habitat areas.
- Thinning of riparian vegetation within a flood or high fire hazard area when required by the City Fire Department for public safety with review and approval of a fire-vegetation management plan or when required by the City Public Works Department for flood protection maintenance with review and approval of a maintenance plan.
- Removal of tree(s) that are hazardous or likely to have an adverse effect upon the structural integrity of a building, utility, or public right of way, or a tree with that has the physical condition such as disease or infestation which warrants alteration or removal, in accordance with the City's Heritage Tree Ordinance and with a plan prepared by a qualified professional.
- Removal of impervious surfaces outside of the *riparian corridor*.
- Mowing and grazing on public lands (outside of the riparian corridor within the Coastal Zone), consistent with an adopted Parks or Fire Management Plan.

Roads, Public Facilities and Utilities

- Road maintenance of existing legal public roads, private roads and driveways (no expansion or improvements).
- Construction of public trails and bridges on public lands, consistent with an adopted Parks Master Plan or Management Plan, including the location and siting of trails and bridges.
- Maintenance of non-structural and structural storm water Best Management Practices (BMPs).
- Installation and improvements to non-structural BMPs within the *development setback* area.
- Repair, maintenance, or minor alteration of existing public utility, drainage, flood control, and water storage and provision facilities, including pumps and other appurtenant structures where there is no or negligible expansion of use.

Others

- Projects that concurrently are reviewed and approved by another authorizing permitting agency (CDFG, NOAA, USFWS or ACOE) for maintenance, flood protection, restoration or enhancement of a natural resource where the regulatory process involves procedures for protection of the environment provided proof of permit approval is submitted to the Planning Director.
- Removal of fish passage barriers and installation of in-stream aquatic habitat enhancement structures, in accordance with a plan for said activities prepared by a qualified professional and approved by the City Planning Director.
- Interpretative signage designed to provide information about the value and protection of the resource that is limited to the outer edge of the *riparian corridor*, and must meet other City sign regulations.
- Installation of new and maintenance of existing water flow gauges.
- Water quality testing.
- Continued operation and maintenance of existing cemetery plots.

TABLE ES-3. ALLOWABLE USES AND ACTIVITIES WITH A WATERCOURSE DEVELOPMENT PERMIT

Allowable uses and activities in the *riparian corridor* include:

- Watercourse and wetland restoration, major removal of invasive and/or exotic vegetation where appropriate, minor removal of mature eucalyptus trees in known Monarch butterfly habitat areas subject to biological review and consistency with the Monarch butterfly resource protection policies of the LCP, removal of non-hazardous trees (i.e. invasive species and/or for habitat or fire management), in accordance with the City's Heritage Tree Ordinance and a plan prepared by a qualified professional, and removal of impervious surfaces in the riparian corridor, .
- Demolition of existing structures inside the *riparian corridor*, in accordance with City demolition regulations.
- Installation of and improvements to storm water BMPs provided that removal of riparian vegetation is avoided whenever possible.
- Channel bank protection and the repair of existing channel bank protection structures. Soft" measures (e.g., landscaping with appropriate native plants that will provide bank stabilization) rather than hardened structures should be used where possible.
- Improvements to existing roads, trails, and crossings, including replacement of existing bridge footings and abutments, as well as consideration of new footings, when technical studies prepared by qualified professionals demonstrate that the existing or new bridge footings and abutments will not substantially decrease biological values, cause an increase in floodwater surface elevations, redirect flow, or cause erosion to an extent greater than the existing structure, except for uses on public lands that are consistent with an adopted Parks Master or Management Plan. The goal of the replacement and/or improvements would be to reduce the hydrologic and geomorphic impacts of the existing roads and bridge structures, consistent with the City's floodplain management regulations.
- Property line fences that provide adequate room for flow conveyance and wildlife movement.
- Incidental public works facilities, including but not limited to, the installation of new, replacement of existing, or improvements to existing buried cables, pipes, and culverts, or inspection of piers and improvements to existing intake and outfall lines, when special studies prepared by qualified professionals have demonstrate that there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects.
- Channel maintenance, including, but not limited to vegetation management and removal of downed trees, in accordance with a channel maintenance plan prepared by a qualified professional and approved by the City.
- Flood protection when no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing legal development, when special studies prepared by qualified professionals demonstrate that the flood protection use shall not diminish creek capacity, percolation rates, and/or habitat values, if applicable. Channel redirection or hardening may be permitted only if less intrusive flood control/bank stabilization designs have been considered and have been found to be infeasible, including, but not limited to integrated bank repair structures, vegetation, vegetative erosion control, and soil bioengineering.
- Under channel borings at sufficient depth when special studies prepared by qualified professionals have been submitted and approved by the City's Planning Director that demonstrate that the under channel borings will result in no adverse impact to the watercourse, *riparian corridor*, or the *development setback area*.

Allowable Uses and activities in the *development setback* area include:

- All uses allowed in the *riparian corridor*.
- Upper floor additions to existing legal structures (where permitted by the Zoning Ordinance) within the existing footprint area.
- Retaining walls.
- Solid fencing that meets the City fencing regulations.
- Kennels and animal containment areas that comply with storm water BMPS.

Allowable Uses and activities in the remaining *management* area include:

- All other development projects within Category A watercourses allowed by the Municipal Code located in the remaining *management area* (outside of the designated *riparian corridor* and *development setback area*.

NOTE: Some allowable uses and activities may also require approval from the California Department of Fish and Game, the U.S. Army Corps of Engineers, and/or the National Marine Fisheries Service.

TABLE ES-4. SUMMARY OF WATERCOURSE DEVELOPMENT STANDARDS AND GUIDELINES

Development Standard	REQUIRED	RECOMMENDED
USE OF PERMEABLE PAVING	1. Use permeable paving materials (see list in *Management Plan*). 2. Construct pedestrian walkways or patios with loose aggregate or well-spaced paving stones within the *development setback area*.	▪ Retain permeable vegetated zones such as overflow parking or emergency access lanes, where possible. ▪ Encourage use of permeable paving for parking areas.
DRAINAGE AND WATER QUALITY	3. Direct drainage from impervious surfaces into City-approved drainage system, utilizing a method that facilitates filtration of pollutants whenever possible (i.e. drainage swales, French drains). 4. Implement water quality BMPS, as appropriate, including application of native or other appropriate erosion-control hydroseed to exposed soils to prevent erosion.	▪ Plant riparian vegetation to facilitate filtration of pollutants from runoff. ▪ Encourage implementation of measures to decrease non-point source pollutants, such as limiting use of fertilizers and pesticides (see list in Plan).
LANDSCAPING	5. Plant only native riparian and wetland species within the *riparian corridor* (see list on Table 4.5). 6. Prohibit use of non-native invasive species (see list on Table 4.6).	▪ Avoid using non-native plants in development setback areas, and encourage planting native plants.
USE OF APPROPRIATE LIGHTING	7. Prohibit lighting in *riparian corridor r*, except for lighting on public lands and facilities for safety or security, consistent with an adopted Management Plan 8. Limit exterior lighting in the *development setback area* to low-level walkway, motion detector security, driveway, or entry lighting. 9. Design lighting to be hooded and directed downward, away from the watercourse.	
HABITAT ENHANCEMENT	10. Prohibit mowing or removal of riparian vegetation. 11. For Category A watercourses (riparian corridor), require the following: plant a variety of native plants; prohibit clearing of dense riparian understory, unless necessary to remove nonnative plant species or to complete a restoration plan; remove and control the spread of non-native species; and prohibit the planting of non-native species. 12. Pre-construction bird nesting surveys adjacent to identified habitat areas.	▪ For Category A and B watercourses encourage the following: use organic compost; remove weeds by hand; and use integrated pest management. ▪ For Category B watercourses strongly encourage to the maximum extent feasible the following in the development setback area: plant a variety of native plants; prohibit clearing of riparian understory; remove and control spread of non-native species; and avoid planting non-native species. ▪ Consider other enhancement measures specified for certain watercourse reaches (See Table 3.4 in Chapter 3.0).
CONSTRUCTION BEST MANAGEMENT PRACTICES	13. Implement Best Management Practices (BMPs) during construction to protect water quality in adjacent watercourse in accordance with City requirements.	
HIGH FIRE HAZARD AREAS	14. Protect riparian vegetation within the *riparian corridor* and *development setback area*. Prohibit planting of combustible vegetation in high fire hazard areas (see list on Table 4-7). 15. Require design of new development with fire-resistant or retardant features and landscaping. Increase development setback if necessary to protect structures without removal of riparian vegetation.	
EROSION CONTROL AND BANK STABILIZATION	16. Apply native or other appropriate erosion-control hydroseed mix on exposed soils and slopes and use biotechnical bank stabilization to the maximum extent feasible. Use bio-engineered structures (e.g. rootwads, cribwalls, instream woody debris) or natural materials for needed bank stabilization, when possible (see Plan text for further details).	▪ Expand native woody riparian vegetation to stabilize eroded channels. ▪ Property owners should implement measures to treat small erosion problems using revegetation and biotechnical slope protection measures when possible.