CHAPTER 1
INTRODUCTION

This document is an Environmental Impact Report (EIR) prepared in accordance with the California Environmental Quality Act of 1970 (CEQA), as amended. The City of Santa Cruz is the lead agency for the project evaluated in this EIR.

The proposal to adopt a Master Plan for Arana Gulch, a City-owned open space area, is considered a "project," as defined by the Guidelines for Implementation of the California Environmental Quality Act (*CEQA Guidelines*), Section 15378. The *CEQA Guidelines* require the preparation of an EIR when a lead agency determines that there is evidence that a project may have a significant effect on the environment (Section 15064). The need to prepare an EIR for the project was established by the City as a result of a preliminary evaluation of the likely effects of the project. A Notice of Preparation – Draft Environmental Impact Report (NOP) was issued for the proposed project on June 22, 2005, and a revised NOP was issued on October 22, 2005 due to changes in the project (see Appendix A). Response letters to both NOPs are included in Appendix A.

According to CEQA Section 21002.1: "The purpose of an EIR is to identify the significant effects of a project on the environment, to identify alternatives to the project, and to indicate the manner in which significant effects can be mitigated or avoided." As defined by *CEQA Guidelines* Section 15382, a "significant effect on the environment" means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance." The EIR process also serves to involve members of the public in the decision-making process.

This EIR has been prepared to inform the decision-makers of the City of Santa Cruz regarding whether or not to approve the proposed project. Graphics are included herein to illustrate elements of the project such as proposed trails, management areas, and sensitive biotic habitats.

PUBLIC REVIEW

The Draft EIR will be circulated for review and comment by the public and other interested parties, agencies, and organizations for a 45-day period.

Following public review, a Final EIR will be prepared that responds to comments received during the public review period. The Santa Cruz City Council, as the final City authority, will review and consider the Final EIR prior to any decision to approve, revise, or reject the proposed project. Approval of the project would be accompanied by written findings for each significant adverse environmental effect identified in the EIR and a Statement of

Overriding Considerations for any impacts that cannot be mitigated to a less-than-significant level. When making findings, the City must adopt a monitoring or reporting program for mitigation measures that are conditions of project approval and that are necessary to reduce or avoid significant effects on the environment. This monitoring or reporting program is designed to ensure CEQA compliance during project implementation. The project-specific mitigation monitoring program will be included in the Final EIR.

ORGANIZATION OF THE EIR

This Draft EIR is organized into the following sections:

Section 1, Introduction: Provides an introduction and overview that describes the intended use of this EIR, project background, the EIR process, and organization of the document.

Section 2, Summary: Briefly describes the project and concerns associated with it, identifies levels of significance for each impact addressed in the EIR, summarizes the project-specific effects of the project, and compares impacts of the project with those of alternatives to the project.

Section 3, Project Description: Contains information on the project site, project objectives, and project characteristics.

Section 4, Setting, Impacts and Mitigation Measures: Contains an analysis of environmental topics. The discussion of each topic is divided into an *Introduction* that identifies background documents used in the analysis; a *Setting* section that describes baseline environmental information; and a *Project Impacts and Mitigation Measures* section that describes project-specific impacts and mitigation measures.

Section 5, Alternatives: Assesses impacts of four alternatives to the project, including a No Project Alternative, a Revised Creek View Trail Alternative, an Unpaved Trail System With Hagemann Gulch Bridge Alternative, and an Unpaved Trail System Without Hagemann Gulch Bridge Alternative.

Section 6, CEQA Considerations: Contains sections required by CEQA, including a discussion of cumulative impacts, growth inducement, and significant unavoidable impacts.

Section 7, Report Preparation: Lists the persons directly involved in preparing this report.

Section 8, Bibliography and Persons Consulted: Lists the persons, agencies, and organizations contacted during preparation of this report.

Section 9, Appendices: Includes a number of appendices for background technical information.

CHAPTER 2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

This section briefly describes the proposed Arana Gulch Master Plan project and the environmental issues associated with it. It also summarizes the project-specific impacts and mitigation measures identified in this EIR (Table 2-1) and identifies the alternatives to the project that will be considered.

PROJECT UNDER REVIEW

The Draft Arana Gulch Master Plan addresses an approximately 67.7-acre natural area located approximately 1.5 miles east of downtown Santa Cruz in the eastern part of the City. The project site is bounded by the Santa Cruz Harbor to the south and residential development to the west, east, and north. The City/County line is just within the eastern boundary of most of the site. Part of the project site (8.4 acres) is within the County of Santa Cruz and may be annexed to the City of Santa Cruz.

Most of the project site was purchased by the City of Santa Cruz in 1994 as part of a phased effort to acquire Greenbelt properties. Prior to the City's ownership, the property was privately owned. Cattle were grazed on the property until the late 1980s. Since acquisition, the City Parks and Recreation Department has been responsible for management and maintenance of Arana Gulch. In 1997, the Santa Cruz City Council approved an Interim Management Plan for the Arana Gulch property. This Interim Plan was intended to outline actions necessary to manage and maintain the natural resources within Arana Gulch. Land use decisions were not part of the Interim Management Plan and were intended to be addressed at a future date when the Arana Gulch Master Plan – the subject of the EIR – was prepared. The Arana Gulch Master Plan will supersede the Interim Management Plan.

The City plans to finalize the Master Plan concurrently with the EIR, allowing the incorporation of relevant mitigation measures into the Master Plan before it is adopted. The concurrent effort is being undertaken to ensure that environmental impacts are minimized to the greatest extent possible.

AREAS OF POTENTIAL CONTROVERSY

A public scoping meeting was held for the proposed project on July 21, 2005 at the City of Santa Cruz Police Department Community Room. A Notice of Preparation (NOP) was initially prepared for the project and circulated on June 22, 2005. The NOP was revised and circulated again on October 5, 2005 because changes to the project occurred. An approximately 5.7-acre area at the north end of the project site that was previously excluded from

the Arana Gulch Master Plan boundaries was later included. Both NOPs and comments sent by agencies are included in Appendix A.

Appendix A also includes the public scoping meeting notice and a summary of comments made at the public scoping meeting. The main issues of concern focused on the following topics: use of excluded area (later included in the Master Plan) and potential for impacts if housing were developed; visual impacts of bridge over Hagemann Gulch; biological impacts, especially related to tarplant and other species; increased erosion; water quality degradation; historic and archaeological impacts; Americans with Disabilities Act (ADA) access and positive/negative impacts of increased bike use; circulation safety; enforcement of regulations for users; increased noise; and safety concerns for users.

IMPACTS AND MITIGATION MEASURES

Under CEQA, a significant effect on the environment is defined as a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by a project, including effects on land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. The criteria of significance used to determine whether or not effects are significant are included in the "Impacts and Mitigation Measures" section for each topic discussion in this EIR.

This EIR does identify one significant unavoidable impact related to habitat of Santa Cruz tarplant. All other identified impacts can be mitigated to a less-than-significant level with the implementation of the recommended mitigation measures. This EIR also addresses less-than-significant impacts for which mitigation measures are not needed.

ALTERNATIVES TO THE PROJECT

Four alternatives to the proposed project are evaluated in Chapter 5, Alternatives. They are:

- Alternative 1: No Project
- Alternative 2: Reduced Creek View Trail
- Alternative 3: Unpaved Trail System With Hagemann Gulch Bridge
- Alternative 4: Unpaved Trail System Without Hagemann Gulch Bridge

The environmental impacts of each alternative are compared. The ability of each alternative to meet project objectives is also evaluated. None of the alternatives would meet all the project objectives. Alternative 4, the Unpaved Trail System without Hagemann Gulch Bridge, would be the environmentally superior alternative.

SUMMARY TABLE

Table 2-1 summarizes project impacts and mitigation measures. The table identifies the level of impact both before and after mitigation.

Table 2-1: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
4.1 Land Use and Planning			
There are no significant land use and planning impacts.			
4.2 Biological Resources			
BIO-1: Construction of the Hagemann Gulch bridge and improvements to existing trails would not result in removal of riparian vegetation or habitat, but could result in indirect impacts on riparian scrub and oak woodland, which is recognized as a sensitive habitat, due to potential inadvertent erosion and damage during construction (e.g., placement of soils stockpiles at staging locations).	PS	BIO-1(a): All construction activities and equipment staging shall occur outside the riparian scrub and woodland habitat. The outside edge of the habitat shall be marked in the field by a qualified botanist. Prior to construction, 5-foot-high temporary construction mesh fencing and signs shall be installed. The location and integrity of the fencing shall be field-checked by a botanist prior to grading operations and periodically during the construction period. A construction staging area that avoids any sensitive habitat shall be clearly identified prior to construction. For example, staging for the western portion of the Hagemann Gulch bridge should occur on City-owned property to the west of Hagemann Gulch that does not include sensitive habitat. Staging for the eastern portion of the Hagemann Gulch bridge should occur outside of the riparian corridor, oak woodland, historic mapped tarplant areas, and native grassland areas. The City shall work with the Port District to identify possible staging areas in disturbed areas of Port District property adjacent to Arana Gulch that could be used temporarily during construction. BIO-1(b): Construction activities adjacent to Hagemann Gulch shall utilize standard best management practices (BMPs) to minimize effects on the nearby creek channel. BMPs shall include erosion control measures to minimize sedimentation and turbidity in the aquatic habitat. Areas disturbed by construction shall be revegetated with an erosion control seed mix. BIO-1(c): If riparian habitat is inadvertently affected during construction, the City shall implement a 2:1 on-site habitat replacement program in the fall/winter following the completion of site construction work. A qualified botanist shall determine an appropriate degraded area within Arana Gulch for restoration as riparian habitat. BIO-1(d): Any tree trimming shall comply with the City's Heritage Tree Ordinance. If any activity would disturb riparian habitat, the City shall comply with Section 1601 of the Fish and Game Code and applicable permits shall be obtained prior to construction. The combination of the above measures would reduce this impact to less than significant.	LTS

[1] PS = Potentially Significant; LTS = Less-than-Significant; SU = Significant and Unavoidable.

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
BIO-2: Construction and use of the proposed Creek View Trail within the Arana Gulch property, near the southern entrance, could impact small seasonal wetland areas, both directly and indirectly. Off-trail usage could indirectly impact wetland vegetation by trampling of soils and associated disturbance to wetland flora. Trail construction could also indirectly impact small seasonal wetlands by alteration of the subsurface hydrology. The new multi-use trail alignment could directly affect one of the small seasonal wetland areas due to the alignment location.	PS	BIO-2(a): Following preparation of detailed design for the Creek View Trail, the trail alignment and the small seasonal wetlands at the southern end of Arana Gulch that are in the vicinity of the trail alignment should be staked to verify if the trail alignment would have a direct impact on seasonal wetlands. To the maximum extent feasible, the final Creek View Trail alignment should avoid direct impacts to these scattered seasonal wetland areas. If the paved, multi-use trail cannot be realigned to avoid direct wetland impacts due to the need to maintain an ADA-compliant gradient, the City shall ensure completion of a jurisdictional delineation of the wetlands that could be directly impacted, with verification by the U.S. Army Corps of Engineers (Corps). If the wetland is determined to be a jurisdictional wetland, and based on the Corps and any other regulatory requirements, the impacted seasonal wetland areas within the Arana Gulch property shall be replaced within Arana Gulch at a 2:1 ratio, or at a ratio determined necessary by the regulatory agency, or agencies. This effort shall be under the guidance of a qualified botanist.	LTS
		BIO-2(b): Prior to construction, temporary plastic mesh fencing shall be installed along the Creek View Trail alignment to exclude the seasonal wetland areas and to provide a 20- to 30-foot buffer zone where feasible. During construction, this temporary fencing shall be monitored by City staff or a qualified botanist during construction to ensure that no indirect impacts on seasonal wetland areas occur. No soils, materials or construction materials shall be located within the buffer zone.	
		BIO-2(c): If the buffer zone is disturbed, the buffer zone near wetlands shall be revegetated with site-appropriate native vegetation. A qualified botanist shall determine the appropriate revegetation plantings.	
		BIO-2(d): The seasonal wetlands shall be monitored for indirect impacts from trail users and management options addressed in the Arana Gulch Master Plan shall be implemented.	
		BIO-2(e): Mitigation Measure HYDROLOGY-2, which addresses maintenance of flow conditions in the vicinity of paved trails, shall be implemented. The combination of the above measures would reduce this impact to less than significant.	

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
BIO-3: Construction and use of the proposed Creek View Trail segment through the Port District property (south of Arana Gulch) could impact wetlands indirectly due to off-trail usage that could damage wetland vegetation by trampling of soils and associated disturbance of wetland flora.	PS	BIO-3(a): Prior to construction, temporary plastic mesh fencing shall be placed along the trail alignment to limit construction-related impacts to the maximum extent possible. During construction, the fencing placement shall be monitored by City staff, or a qualified botanist, to ensure that no indirect impacts on wetlands occur. No soils, materials or construction equipment shall be stored within this fenced trail corridor. All staging and equipment storage shall be within the developed area of the Upper Harbor. BIO-3(b): After construction of the trail, native species shall be planted within the 100-foot wetland buffer zone to further enhance the restoration efforts previously undertaken for the Upper Harbor dry storage area project. BIO-3(c): After construction, permanent fencing shall be installed along the entire length of the Creek View Trail within the Port District property and extending along the north side of the trail. This fencing shall either be black, vinyl-coated chain link fencing (approximately 4 feet high), wood frame fencing with small wire mesh to prevent dogs from entering the wetland buffer zone, or other type of fencing acceptable to the Port District that prevents trail users and dogs from entering the buffer zone but that also maintains visibility of the creek. Solid fencing is not recommended because of graffiti and security concerns. BIO-3(d): An interpretive display shall be posted along the trail route to highlight the significance of wetland and riparian habitats and to discourage inappropriate behavior that could damage such resources. BIO-3(e): Mitigation Measure HYDROLOGY-2, which addresses maintenance of flow conditions in the vicinity of the paved trails, shall be implemented. The combination of the above measures would reduce this impact to less than significant.	LTS
BIO-4: The proposed Canyon Trail east of Hagemann Gulch would pass through, or near the boundary of, Santa Cruz tarplant (SCT) Area B. The proposed Arana Meadow Trail would pass through, or near the boundary of, SCT Area C. The proposed Creek View Trail and Coastal Prairie Loop Trail would pass through, or near the boundary of, SCT Area D, and the proposed Marsh Vista Trail would pass close to the lower (eastern) boundary of Area D. The proposed Coastal Prairie Loop Trail would pass close to the boundaries of SCT Area A, which is also a known historic locality for Choris's popcorn-flower.	PS	BIO-4(a): To the maximum extent feasible, all trail segments shall be aligned to avoid the mapped historic extent of the four Santa Cruz tarplant areas. Prior to construction, staging areas shall be identified that are outside historic tarplant areas, as addressed in Mitigation Measure BIO-1(a). All trail alignments shall have a fenced construction corridor to minimize disturbance to habitat outside this corridor and the corridor width shall be the minimum necessary to allow trail construction. The fencing shall be maintained through the construction phase and periodically monitored to ensure protection of tarplant habitat.	SU

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
Trail construction through or near the SCT areas, coupled with increased human activity in the area, may result in impacts on the SCT and popcorn-flower.		BIO-4(b): The Santa Cruz Tarplant Management Program (BMP Ecosciences, 2005) shall be fully implemented. This management program would incorporate the following elements: (1) Active management practices and techniques, including, but not limited to, the following: ▪ Mowing with removal of cut material. ▪ Prescribed burning. ▪ Soil disturbance. ▪ Removal of invasive non-native plant species. (2) Continued experimental research directed toward refining understanding of the management regime that maximizes long-term success of tarplant. (3) Ongoing monitoring on an annual basis to determine the success of management measures, to monitor the overall well-being of tarplant colonies on the site, and to identify potential threats to tarplant persistence on the site. (4) Revision of the management prescriptions and remedial actions as appropriate to enhance long-term viability of tarplant on the site.	
		BIO-4(c): For any trail alignments that would cross the historic mapped tarplant areas, soil shall be mechanically scraped under the approval of a qualified botanist and with the approval of the Adaptive Management Working Group (AMWG) for the Santa Cruz tarplant. Redistribution of scraped soil material shall also be under the approval of a qualified botanist and the AMWG as identified in the Santa Cruz Tarplant Adaptive Management Program.	
		BIO-4(d): Trail maintenance and management actions, such as repair of pavement or mowing of the grass edge, shall be conducted in a manner conducive to the management of the tarplant population. Maintenance actions shall be coordinated with the City Parks and Recreation Department and shall comply with the Santa Cruz Tarplant Adaptive Management Program.	

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
BIO-4 *continued*		BIO-4(e): If annual monitoring indicates that substantial adverse indirect impacts on the tarplant are occurring due to human use of the area, fencing shall be erected as necessary to discourage unauthorized human encroachment into the tarplant colonies. If tarplant areas do not demonstrate evidence of adverse impacts, permanent fencing should be avoided to allow for greater flexibility for mowing and other management practices. The combination of the above measures would reduce this impact, but the impact would remain significant and unavoidable because it cannot be fully ensured that all tarplant habitat would be protected.	
BIO-5: Increased human activities on the site resulting from the new entrance and multi-use trails may cause indirect impacts on sensitive habitats.	PS	BIO-5(a): At strategic points along the multi-use trails, interpretive signs shall be posted to inform users when they are passing through a sensitive habitat or area of significant wildlife use. Descriptions of the habitats and their importance may be presented to increase pedestrians' understanding and respect for the resources of Arana Gulch. Guidelines regarding trail use shall be posted. BIO-5(b): Annual monitoring of sensitive resources shall be conducted for a 5-year period following construction and operation of the multi-use and pedestrian trails. If there is evidence of adverse effects on sensitive resources, permanent fencing of affected habitats such as the wetlands and riparian areas shall be considered and implemented, as necessary. The combination of the above measures would reduce this impact to less than significant.	LTS
BIO-6: Trail construction may remove or disturb native perennial bunchgrasses that are intermixed among the grassland. The bunchgrasses are indicators of remnant coastal terrace prairie, a sensitive habitat that should be protected.	PS	BIO-6: The trail alignments shall attempt to avoid clumps of native grasses to the greatest extent feasible. Materials excavated during trail construction should not be side-cast onto adjacent native grasses. Areas temporarily disturbed by trail construction shall be reseeded with native grasses and native herbaceous plant species (locally-obtained seed). Seeding shall occur in the fall following construction.	LTS
BIO-7: Construction of the bridge over Hagemann Gulch and the multi-use trail above the Arana Gulch Creek culverts may result in impacts on the California red-legged frog (CRLF), if this species is documented to occur in the area prior to construction. However, earlier surveys have not identified red-legged frogs on the site.	PS	BIO-7: Focused surveys for the California red-legged frog (CRLF) shall be conducted in the season immediately prior to construction activities. Surveys shall be conducted in accordance with current USFWS protocol (USFWS, 2005f). If CRLF are encountered during pre-construction surveys, during the inspection conducted immediately prior to ground-moving activities, or during project activities, all work on the site and adjacent staging area parcels shall cease. The USFWS and CDFG shall be notified immediately to determine whether additional avoidance measures or further action should be	LTS

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
BIO-7 *continued*		implemented to prevent possible take of this species. Depending on the results of the pre-construction surveys, the following measures shall be implemented to avoid impacts on the species: ▪ Initial construction activities (including grading and vegetation removal) shall occur during dry weather, during the day, and preferably before newly metamorphosed frogs disperse and when CRLF are less likely to be moving around. Initial ground-disturbing activities shall occur between May 15 and October 15. ▪ The riparian habitat shall be inspected by a USFWS-approved biologist before any clearing of vegetation, to avoid killing, injuring or harming individual frogs, if present, during these activities. ▪ A USFWS-approved biologist shall meet with the construction crew at the onset of construction to (1) provide CRLF life history information and habitat descriptions, (2) provide education regarding the workers' need to examine the ground before and during debris and vegetation removal and during initial ground disturbance activities, and (3) provide education about the need to halt activities and avoid handling or moving any CRLF or other special-status wildlife if encountered in the work area.	
BIO-8: The construction of the Hagemann Gulch bridge could have an impact (e.g., noise affecting breeding during construction) on avian species that reside in or utilize all habitats in the project area (see Table 4.2-2) such as raptors, yellow warblers, and great blue herons.	PS	BIO-8(a): Before construction begins, nest and roost surveys shall be conducted by a qualified wildlife biologist during the period from March through July. These surveys shall be conducted for special-status birds, and all birds (and their nests) protected under the Migratory Bird Treaty Act (MBTA). Surveys shall include the multi-use trail/bridge site and a 300-foot-wide buffer to examine nearby tree stands and structures for nesting special-status avian species. If an active nest is found, the City Parks and Recreation Department shall consult with the appropriate resource agencies (CDFG, USFWS) to determine appropriate construction buffers or other avoidance measures. If nesting birds are not found, no further action would be necessary. BIO-8(b): As suggested in the Santa Cruz Harbor Wetland Consultation (Habitat Restoration Group, 1992), a temporary 300-foot-wide buffer zone from a heron nest tree shall be maintained during May through July, if/when young are present.	LTS

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
BIO-8 *continued*		BIO-8(c): A yellow warbler nest survey shall be conducted in the riparian scrub prior to construction. If nests are found within 300 feet of the multi-use trail/bridge site, construction shall be delayed from April through July, or until the young have fledged. BIO-8(d): While no lighting is proposed at this time, any future lighting should be limited. Any trail lighting shall consist of low-intensity lights, no higher than 3 feet off the ground, that would focus light on the trail and minimize lighting of natural areas adjacent to the trail and bridge. The combination of the above measures would reduce this impact to less than significant.	
BIO-9: Construction of the portion of the multi-use trail near Arana Gulch Creek could affect special-status roosting bats due to activity during construction. If trimming of trees is undertaken, bat roosts could be removed.	PS	BIO-9: The following measures are recommended to avoid impacts to roosting bats: ▪ Conduct surveys in late April or early May when bats are establishing maternity colonies but before females give birth. If roosting bats are found at this time, they should be excluded from establishing maternity colonies. ▪ Protect maternity colonies that have young not yet able to fly (pre-volant). The project biologist must confirm there are no pre-volant young present before a colony is displaced. It is assumed that after September 1 colonies have no pre-volant young. ▪ For any trees that could provide roosting space for bats, the trees shall be thoroughly evaluated prior to trimming to determine if a colony is present. Visual inspection, trapping, and acoustic surveys may be utilized as initial techniques. ▪ If a tree is not an active roost site, it may be immediately trimmed. If the tree is not trimmed within four days, the night surveys shall be redone. ▪ If a tree is an active roost site, the CDFG shall be contacted immediately and the bat species identified if possible. Active roost trees may still be trimmed after consultation. ▪ Removal of any native riparian tree, if necessary, shall be preceded by a thorough visual inspection to reduce the risk of displacing foliage-roosting bats. ▪ Removal of any occupied tree, if necessary, shall be mitigated for by the creation of a snag or other artificial roost structure.	LTS

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
BIO-10: Monarch butterflies could be displaced if colonial wintering roost sites occur on the site and if trees are trimmed on such sites.	PS	BIO-10: Focused surveys for roosting colonies of monarch butterflies shall be conducted over the winter season (November to March) prior to construction activities. An examination of tree stands near and/or adjacent to the project area shall follow survey methods specified by the Xerces Society for Invertebrate Conservation (Xerces, 2004). The City shall avoid removing or trimming trees utilized by monarch butterflies or trees adjacent to the winter roost to prevent indirect changes to the humidity, wind exposure, and temperature within the immediate vicinity of the roost site. Any routine tree trimming shall be done between April and August to eliminate the risk of disturbance to monarch colonies, and shall be conducted under the guidance of a qualified monarch butterfly specialist if butterflies have been documented in the project area.	LTS
4.3 Geology and Soils			
GEO-1: The project has the potential to expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, due to liquefaction in the floodplain area of the site.	PS	GEO-1: A project geotechnical investigation shall be conducted and reviewed and approved by the City Engineer prior to issuance of a grading permit. This report shall address the stability of fill materials at the Arana Gulch Creek area and the nature and stability of materials apparently deposited as fill on the slope where the elevated multi-use trail is proposed across Hagemann Gulch. Measures outlined in the feasibility study shall be incorporated into the construction plans. Measures to reduce the potential impacts from slope instability may include but are not limited to: ▪ Slope reconstruction. ▪ Installation of buttresses or engineered fills. ▪ Installation of lateral restraint structures. ▪ Installation of pile supports. ▪ Re-location of the proposed trails. With the incorporation of all geotechnical recommendations into the project design and construction, this impact would be reduced to less than significant.	LTS

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
GEO-2: The proposed Master Plan elements have the potential to result in substantial soil erosion or the loss of topsoil.	PS	GEO-2(a): The contractor for the project must comply with the City of Santa Cruz Best Management Practices (BMPs) for Construction Work. The BMPs shall be incorporated into the project plans and shall be approved by the City Engineer prior to issuance of a grading permit. If the total area to be disturbed by the project is one or more acres, the City shall obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity and shall submit a Storm Water Pollution and Prevention Plan (SWPPP), as required by the Regional Water Quality Control Board. GEO-2(b): All grading shall be conducted during the dry season (April 15 through October 15) only, and all areas of exposed soil shall be replanted within three months of completion of grading activities or prior to the first rainfall or prior to October 31, whichever is earlier, to minimize erosion and subsequent sedimentation. GEO-2(c): All trails shall be constructed in accord with best management practices defined in "Best Management Practices For Erosion Control During Trail Maintenance and Construction" (NHDRED 2004), or an equivalent document such as the United States Forest Service, Trail Construction and Maintenance Notebook 2004 Edition (USFS, 2004). The combination of the above mitigation measures would reduce project impacts to less than significant.	LTS
GEO-3: The project could potentially result in, on- or off-site landslides, lateral spreading, subsidence, or collapse.	PS	GEO-3: Refer to Mitigation Measure GEO-1.	LTS
GEO-4: Elements of the Master Plan have the potential to be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life and property.	PS	GEO-4: A geotechnical investigation shall be conducted and reviewed and approved by the City Engineer prior to issuance of a grading permit. See Mitigation Measure GEO-1. Measures outlined in the geotechnical investigation shall be incorporated into the construction plans. Measures to reduce the potential impacts from slope instability may include but are not limited to: ▪ Slope reconstruction. ▪ Excavation of expansive soils to bedrock. ▪ Employment of piles to support and stabilize bridge footing. This mitigation measure would reduce the potential impact to less than significant.	LTS

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
4.4 Hydrology and Water Quality			
HYDOLOGY-1: The project has the potential to violate water quality standards or waste discharge requirements.	PS	HYDROLOGY-1(a): Before initiating any grading at the site, the City shall prepare an erosion control plan incorporating construction-phase measures to limit and control erosion and siltation. The erosion control plan shall incorporate components such as phasing of grading, limitations on areas of disturbance, designation of restricted entry zones, diversion of runoff away from disturbed areas, protective measures for sensitive areas, and provisions for revegetation and mulching, as required. The plan shall also prescribe treatment measures to trap sediment once it has been mobilized. HYDROLOGY -1(b): The contractor for the project must comply with the City of Santa Cruz Best Management Practices (BMPs) for Construction Work. If the total area to be disturbed by the project is one or more acres, the City shall prepare a Storm Water Pollution Prevention Plan (SWPPP) for the project. The SWPPP shall include water quality control measures to reduce the potential risks of surface water and groundwater contamination during construction and post-construction stages of development. The SWPPP shall incorporate the erosion control measures outlined in Mitigation Measure HYDROLOGY-1(a) and shall be consistent with the treatment requirements contained in the City of Santa Cruz Storm Water Management Program. HYDROLOGY -1(c): The City's project engineer shall complete a hydrologic and hydraulic analysis and computations to determine the appropriate location of the clear span bridge abutments and other appropriate design details for Hagemann Gulch. A scour analysis shall be completed if any structures would be located in the channel to demonstrate that the abutment or pier protection and channel scour protection design are adequate. All of these analyses and design refinements shall comply with State of California engineering standards. The combination of the above mitigation measures would reduce the potential impact to a less-than-significant level.	LTS
HYDROLOGY-2: The project has the potential to substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation on- or off-site.	PS	HYDROLOGY-2(a): To maintain natural surface runoff conditions on the site, the paved multi-use trails shall be designed to minimize concentration of discharges. Possible approaches may include, but are not limited to, outsloping of the trail to diffuse the runoff downslope or to more frequent discharges that would minimize concentration of discharge points.	LTS

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
HYDROLOGY-2 *continued*		HYDROLOGY -2(b): To maintain natural shallow subsurface flow conditions in the coastal prairie grassland area, the sub-base of the paved trail shall use a permeable type system, such as the CU Structural Soil™ or equivalent system. The combination of the above mitigation measures would reduce the potential impact to a less-than-significant level.	
4.5 Aesthetics			
AESTHETICS-1: Construction of the Creek View Trail and the paved multi-use trail with associated retaining walls and railing over Arana Gulch Creek north of the Upper Harbor (Figure 4.5-6, Viewpoint 4) would change the visual character of the open space area.	PS	AESTHETICS-1: City staff shall work with the project engineer to determine, through the use of samples checked at the project site, if uncolored block would be the most neutral color for the retaining walls so as to provide maximum blending with surrounding natural features, and thus minimize visual impact. Use of colored blocks in earth tones should be considered. Implementation of this mitigation measure would make this impact less than significant.	LTS
4.6 Recreation			
REC-1: The Master Plan includes trail improvements and other changes within Arana Gulch that could potentially impact vegetation and wildlife, geology, hydrology, and other environmental conditions. These impacts are addressed throughout this EIR.	PS	REC-1: The City Parks and Recreation Department and Public Works Department shall carry out mitigation measures identified in other sections of this EIR to reduce the environmental impacts of the proposed trail improvements and other project provisions for Arana Gulch.	LTS
4.7 Transportation/Traffic			
There are no significant transportation/traffic impacts.			
4.8 Air Quality			
AIR-1: Construction of new pedestrian and multi-use trails could generate dust emissions during construction.	PS	AIR-1: The following controls shall be implemented during construction: ▪ Water all active construction areas at least twice daily; ▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard; ▪ Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites; ▪ Sweep daily (with water sweepers) nearby paved access roads, parking areas and staging areas at construction sites; and ▪ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent streets.	LTS

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
4.9 Noise			
NOISE-1: Construction of the proposed project (bridge, retraining walls, trail improvements, etc.) would cause temporary noise that could disturb Arana Gulch visitors, as well as residents of adjoining neighborhoods and people visiting the Upper Harbor.	PS	NOISE-1: The City shall carry out the following mitigation measures during construction activities: ▪ A sign visible at a distance of approximately 50 feet shall be posted at the construction site. The sign shall indicate the dates and duration of the construction activities, as well as provide a telephone number for residents to call with questions or complaints about the construction process. ▪ A "noise disturbance coordinator" shall be designated. The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and would be required to implement reasonable measures such that the complaint is resolved. Notices shall be sent to residential units within 300 feet of the construction site and shall list the telephone number for the disturbance coordinator. ▪ Construction shall be limited to the hours of 8:00 a.m. to 5:00 p.m., or shall comply with the City's Noise Ordinance, whichever is stricter. ▪ Construction shall not occur on Sundays or holidays. ▪ Stationary equipment shall be located as far as possible from noise sensitive land uses. If necessary, temporary plywood noise barriers shall be installed around fixed equipment.	LTS
4.10 Cultural Resources			
CULT-1: Construction of the Master Plan elements (paved pathways, retaining walls and bridge) could result in the disturbance of previously undiscovered historic or prehistoric cultural resources, deposits, or artifacts.	PS	CULT-1: If any indicators of the presence of cultural resources are discovered during the construction of the project, earth-disturbing work shall be halted in an area within a radius of 10 meters (33 feet) around the suspected deposits, and an archaeologist or cultural resource specialist shall be consulted in accordance with applicable laws and regulations. If deemed appropriate under CEQA, data and artifact recovery shall be conducted during the period when construction work is halted.	LTS
CULT-2: Construction of the proposed project could disturb previously-unknown human burial sites of Native American groups, a potentially significant impact.	PS	CULT-2: If human remains are discovered during the construction of the project elements, an appropriate representative of Native American groups and the County Coroner shall be informed and consulted, as required by law. Mitigation Measure CULT-1 shall also apply in such a situation.	LTS
4.11 Hazards and Hazardous Materials			
There are no significant hazards and hazardous materials impacts.			

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation[1]	Mitigation Measures	Level of Significance With Mitigation
4.12 Population and Housing			
There are no significant population and housing impacts.			
4.13 Public Services			
There are no significant public services impacts.			
4.14 Utilities and Service Systems			
There are no significant utilities and service systems impacts.			
4.15 Agricultural Resources			
There are no significant agricultural resources impacts.			
4.16 Mineral Resources			
There are no significant mineral resources impacts.			