COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
TOM BURNS, PLANNING DIRECTOR

NOTICE OF ENVIRONMENTAL REVIEW PERIOD

SANTA CRUZ COUNTY

APPLICANT: **County of Santa Cruz Planning Department for Gregory & Olga Erlach**

APPLICATION NO.: **08-0262**

APN: **037-101-02, 037-061-66, portion of 037-061-04**

The Environmental Coordinator has reviewed the Initial Study for your application and made the following preliminary determination:

__XX__ Negative Declaration
(Your project will not have a significant impact on the environment.)

__XX__ Mitigations will be attached to the Negative Declaration.

_____ No mitigations will be attached.

_____ Environmental Impact Report
(Your project may have a significant effect on the environment. An EIR must be prepared to address the potential impacts.)

As part of the environmental review process required by the California Environmental Quality Act (CEQA), this is your opportunity to respond to the preliminary determination before it is finalized. Please contact Matt Johnston, Environmental Coordinator at (831) 454-3201, if you wish to comment on the preliminary determination. Written comments will be received until 5:00 p.m. on the last day of the review period.

Review Period Ends: February 19, 2009

Matt Johnston
Staff Planner

Phone: **(831) 454-3201**

Date: **January 12, 2009**

County of Santa Cruz

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(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
TOM BURNS, PLANNING DIRECTOR

MITIGATION MONITORING AND REPORTING PROGRAM

For the Planned Unit Development for APN: 037-101-02, 037-061-66, and portion of 037-061-04

App. 08-0262

Environmental Impacts		Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
Geology/Soils					
GEO-1	Expose people or structures to potential adverse effects, including the risk of material loss, injury, or death involving seismic ground shaking.	The April 1990 Haro, Kasunich & Associates, Inc. geotechnical report shall be updated, and residential structures shall be supported on conventional spread footings or a pier and grade beam foundation system, or an alternate foundation recommended in the updated geotechnical report.	County Planning Department	Building/Grading Permit	Project Design
GEO-2	Expose people or structures to potential adverse effects, including the risk of material loss, injury, or death involving landslides.	The April 1990 Haro, Kasunich & Associates, Inc. geotechnical report shall be updated, and residential structures shall be supported on conventional spread footings or a pier and grade beam foundation system, or an alternate foundation recommended in the updated geotechnical report.	County Planning Department	Building/Grading Permit	Project Design
GEO-4	Result in soil erosion or the substantial loss of topsoil.	Prior to approval of a grading or building permit, the project must have an approved Erosion Control Plan, which specifies detailed erosion and sediment control measures (County Code Chapter 16.22.060). The plan shall include provisions for disturbed areas to be planted with groundcover and to be maintained to minimize surface erosion.	County Planning Department	Building/Grading Permit	Prior to Issuance of Grading or Building Permit
GEO-5	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to property.	The April 1990 Haro, Kasunich & Associates, Inc. geotechnical report shall be updated, and residential structures shall be supported on conventional spread footings or a pier and grade beam foundation system, or an alternate foundation recommended in the updated geotechnical report.	County Planning Department	Building/Grading Permit	Project Design

Environmental Impacts		Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
Hydrology/Water Supply/Water Quality					
HYD-4	Deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit, or a significant contribution to an existing net deficit in available supply, or a significant lowering of the local groundwater table.	(a) All applicants for new water service from Soquel Creek Water District shall be required to offset expected water use of their respective development by a 1.2:1 ratio by retrofitting existing developed property within the Soquel Creek Water District service area so that any new development has a "zero impact" on the District's groundwater supply. Applicants for new service shall bear those costs associated with the retrofit as deemed appropriate by the District up to a maximum set by the District and pay any associated fees set by the District to reimburse administrative and inspection costs in accordance with District procedures for implementing this program. (b) Plans for a water efficient landscape and irrigation system shall be submitted to District Conservation Staff for approval. (c) All interior plumbing fixtures shall be low-flow and have the Environmental Protection Agency (EPA) Energy Star label. (d) District Staff shall inspect the completed project for compliance with all conservation requirements prior to commencing water service.	Soquel Creek Water District	Water Service	Prior to Construction
HYD-5	Degrade a public or private water supply (including the contribution of urban contaminants, nutrient enrichments, or other agricultural chemicals or seawater intrusion).	Potential siltation shall be mitigated through implementation of an Erosion Control Plan (see GEO-4). A silt and grease trap, and a plan for maintenance, shall also be installed and implemented, respectively.	County Planning Department	Building/Grading Permit	During Construction and Ongoing.

Environmental Impacts		Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
HYD-7	Alter the existing drainage pattern of the site or area, including alteration of the course of a stream or river, in a manner which could result in flooding, erosion, or siltation on or off-site.	The proposed project is located adjacent to Noble Gulch, an intermittent stream. A 20-foot buffer (for an intermittent stream in an urban arroyo with a 0-10% slope in oak or other woodland) shall be established from the break in slope to protect Noble Gulch from disturbance both during and after construction. The project shall comply with Chapter 16.22.070 (Erosion Control) of the County Code. The following measures shall be used for runoff control, and must be adequate to control runoff from a ten-year storm: (a) On soils having high permeability (more than two inches/hour), all runoff in excess of predevelopment levels shall be retained on the site. This may be accomplished through the use of infiltration basins, percolation pits or trenches, or other suitable means. This requirement may be waived where the Planning Director determines that high groundwater, slope stability problems, or other factors would inhibit or be aggravated by on-site retention, or where retention would provide no benefits for groundwater recharge or erosion control. (b) If it is determined that on-site percolation is not feasible, all runoff shall be detained or dispersed over non-erodible vegetated surfaces so that the runoff rate does not exceed the predevelopment level. On-site detention may be required by the Planning Director where excessive runoff would contribute to downstream erosion or flooding. (c) Any concentrated runoff that cannot be effectively dispersed without causing erosion, shall be carried in non-erodible channels or conduits to the nearest drainage course (Noble Gulch) designated for such purpose by the Planning Director or to on-site percolation devices. Where water will be discharged to natural ground or channels, appropriate energy dissipaters shall be installed to prevent erosion at the point of discharge. (d) Runoff from disturbed areas shall be detained or filtered by berms, vegetated filter strips, catch basins, or other means as necessary to prevent the escape of sediment from the disturbed area. (e) No earth or organic material shall be deposited or placed where it may be directly carried into a stream, marsh, slough, lagoon, or body of standing water. (f) In an effort to reduce runoff, techniques shall be required such as minimizing site disturbance, minimizing proposed impervious areas, utilizing pervious surfacing, eliminating directly connected impervious areas, and clustering development.	County Planning Department	Building/Grading Permit	During Construction and Ongoing

Environmental Impacts		Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
HYD-8	Create or contribute runoff, which would exceed the capacity of existing or planned storm water drainage systems, or create additional source(s) of polluted runoff.	All project runoff in excess of predevelopment levels for a 10-year storm event shall be detained on the site. All runoff from parking and driveway areas shall go through water quality treatment prior to discharge from the site (e.g., outsloping driveways to drain to landscaped areas for filtering prior to discharge from the site). If structural treatment is proposed, a recorded maintenance agreement will be required. This agreement shall be signed, notarized, and recorded, and a copy of the recorded agreement shall be submitted to the County Department of Public Works (DPW). The applicant shall provide permanent markings at each drainage inlet that reads: "NO DUMPING-DRAINS TO BAY" or equivalent. The property owner shall be responsible for maintaining these markings.	County Planning Department and Department of Public Works	Building/Grading Permit	Project Design and Construction
HYD-9	Contribute to flood levels or erosion in natural watercourses by discharges of newly collected runoff.	All runoff in excess of predevelopment levels for a 10-year storm event shall be detained on the site (see HYD-7 above).	County Planning Department	Building/Grading Permit	During Construction and Ongoing
HYD-10	Otherwise substantially degrade water supply or quality.	Potential siltation shall be mitigated through implementation of an Erosion Control Plan (see GEO-4). A silt and grease trap, and a plan for maintenance, shall also be installed and implemented, respectively.	County Planning Department	Building/Grading Permit	During Construction and Ongoing.
Biological Resources					
BIO-1.1	Have an adverse effect on any species identified as a candidate, sensitive, or special status species, in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, or U.S. Fish and Wildlife Service.	BIO-1.1 Prior to issuance of a grading or building permit, the applicant shall be responsible for having a qualified biologist conduct clearance-level surveys for Santa Cruz tarplant to ensure that there is no "take" of this protected species. If tarplant is discovered, the project must be sited and designed to protect the tarplant habitat and ensure that no "take" occurs. If tarplant is present, the applicant shall also be responsible for submittal of a tarplant management plan to the Planning Department for review and approval. A biotic declaration that includes the approved management plan shall be recorded on the deed for the parcel(s).	County Planning Department	Application Completeness Requirement	Prior to Issuance of Grading/Building Permit.
BIO-1.2		BIO-1.2 Prior to issuance of a grading or building permit, the applicant shall be responsible for having a qualified biologist conduct clearance-level surveys for the Ohlone tiger beetle (*Cicindela ohlone*) to ensure that there is no "take" of this protected species. If the tiger beetle is discovered, the project must be sited and designed to protect the beetle habitat and ensure that no "take" occurs. If the beetle is present, the applicant shall also be responsible for submittal of an Ohlone tiger beetle management plan to the US Fish and Wildlife Service and the Planning Department for review and approval. A biotic declaration that includes the approved management plan shall be recorded on	County Planning Department	Application Completeness Requirement	Prior to Issuance of Grading/Building Permit.

Environmental Impacts		Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
		the deed for the parcel(s).			
BIO-1.3		BIO-1.3 Prior to issuance of a grading or building permit, the applicant shall be responsible for having a qualified biologist conduct preconstruction wildlife surveys for wintering monarch butterfly (*Danaus plexippus*), nesting birds of prey and migratory birds (various species), Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*), pallid bat (*Antrozous pallidus*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). Surveys must be conducted during the appropriate breeding/roosting seasons for invertebrates, birds, and mammals. In the event any of these species are observed on the site, construction activities must be scheduled to avoid disturbance to these species unless the California Department of Fish and Game or U.S. Fish and Wildlife Service identify alternative acceptable mitigation, such as an acceptable buffer.	County Planning Department	Application Completeness Requirement	Prior to Issuance of Grading/Building Permit.
BIO-2	Have an adverse effect on a sensitive biotic community (riparian corridor), wetland, native grassland, special forest, inter-tidal zone, etc.	If during the course of the surveys required in BIO-1.3, any candidate, sensitive, or special status species are found to be on any of the subject parcels, the habitat for that species shall be considered sensitive habitat, and all impacts to that habitat shall be avoided.	County Planning Department	Application Completeness Requirement	Prior to Issuance of Grading/Building Permit.
BIO-3.1	Interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native or migratory wildlife nursery sites.	BIO-3.1 If during the course of the surveys required in BIO-1.3, active nesting birds are found to be present, all tree removal will occur after the young have fledged or when the nests are vacant, prior to the breeding season, and no disturbance zones, set by a qualified biologist based on the particular species present, will be fenced off around the occupied trees that are to be retained to ensure other construction activities do not harm sensitive species.	County Planning Department	Building/Grading Inspector	Prior to Site Disturbance
BIO-3.2		BIO-3.2 If, during the course of the required surveys, active nests are encountered on site in trees that are to be retained, the project biologist shall monitor those sites throughout the construction phase, so long as the nests are active, to ensure the effectiveness of the disturbance zones required in BIO-3.1	County Planning Department	Application Completeness Requirement	Prior to Issuance of Grading/Building Permit.
BIO-3.3		BIO-3.3 If during the course of the surveys required in BIO-1.3, the biologist finds that the trees to be removed provide over-wintering habitat for monarch butterflies, the removal will be done when the monarchs are not present.	County Planning Department	Application Completeness Requirement	Prior to Issuance of Grading/Building Permit.
BIO-3.4		BIO-3.4 In order to prevent impacts to special status bat species, before any trees are removed, a qualified biologist shall perform surveys. Roosting bats shall be excluded from trees prior to disturbance. If maternal roosts are	County Planning Department	Application Completeness Requirement	Prior to Issuance of Grading/Building Permit.

Environmental Impacts		Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
		present, disturbance shall be avoided until roosts are unoccupied.			
BIO-4	Produce nighttime lighting that will illuminate animal habitats.	All project lighting located adjacent to the riparian corridor and buffer shall be shielded away from the corridor and buffer area.	County Planning Department	Application Completeness Requirement	Prior to Issuance of Grading/Building Permit.
Visual Resources and Aesthetics					
VIS-4	Create a new source of light or glare that would adversely affect day or nighttime views in the area.	The following measures shall be reflected in the project design: (a) It shall be an objective of lighting design to relate to the site and building design and reduce off-site impacts. (b) All site, building, security and landscape lighting shall be directed onto the site and away from adjacent properties. Light sources can be shielded by landscaping, structures, fixture design, or other physical means. Building and security lighting shall be integrated into the building design. (c) All lighted parking and circulation areas shall utilize low-rise light standards or light fixtures attached to buildings. Light standards to a maximum height of 15 feet are allowed. (d) Area lighting shall be high-pressure sodium vapor, metal halide, fluorescent, or equivalent energy-efficient fixtures.	County Planning Department	Application Completeness Requirement	Prior to Issuance of Grading/Building Permit.
Cultural & Archeological Resources					
CUL-2	Cause an adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines 15064.5.	Prior to issuance of a grading or building permit, the applicant shall be responsible for having a qualified individual conduct an archeological field study to determine whether archeological resources occur on the project site. If archeological resources are identified, the project must be sited and designed to avoid and preserve the resource.	County Planning Department	Application Completeness Requirement	Prior to Issuance of Building/Grading Permit
CUL-3	Disturb any human remains, including those interred outside of formal cemeteries.	Pursuant to Section 16.40.040 of the Santa Cruz County Code, if at any time during site preparation, excavation, or other ground disturbance associated with the project, human remains are discovered, the responsible person(s) shall immediately cease and desist from all further site excavation and notify the sheriff-coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.	County Planning Department	Building/Grading Permit	During Construction

Environmental Impacts		Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
Noise					
NOI-3	Generate a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	The following noise control measures shall be incorporated into the final construction plans: (a) Construction that involves motorized equipment shall be limited to Monday through Friday from 8:00 AM to 4:30 PM to avoid the times of day and the days of the week when noise effects would cause the greatest annoyance to residents. (b) Exceptions to the specified construction hours will be allowed only for construction emergencies and approved by County Planning. (c) Signs will be posted that are clearly visible to users on Soquel Drive and Cunnison Lane that provide the phone number for the public to call to register complaints about construction-related noise problems. The applicant will be required to assign a single "disturbance coordinator" to log in and respond to all calls. All verified problems shall be resolved within 24 hours of registering the complaint.	County Planning Department	Building/Grading Permit	During Construction
Air Quality					
AQ-1	Violate any air quality standard or contribute substantially to an existing or projected air quality violation.	The following measures shall be implemented during construction: (a) All active construction areas shall be watered at least twice daily. Frequency shall be based on the type of operation, soil, and wind exposure. (b) All grading activities shall be prohibited during periods of high wind (over 15 mph). (c) Chemical soil stabilizers shall be applied to inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days). (d) Non-toxic binders (e.g., latex acrylic copolymer) shall be applied to exposed areas after cut and fill operations and to hydroseed areas. (e) Haul trucks shall maintain at least two feet of freeboard. (f) All trucks hauling dirt, sand, or loose materials shall be covered. (g) Vegetative ground cover shall be installed in disturbed areas as soon as possible. (h) Inactive storage piles shall be covered. (i) Wheel washers shall be installed at the entrance to construction sites for all exiting trucks. (j) Streets shall be swept if visible soil material is carried out from the construction site. (k) A publicly visible sign shall be posted that specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Unified Air Pollution Control District shall be visible to ensure compliance with Rule 402	County Planning Department and Monterey Bay Unified Air Pollution Control District	Building/Grading Permit	During Construction

Environmental Impacts		Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
		(Nuisance). (l) Limit the area under construction at any one time (MBUAPCD 2008).			
AQ-3	Expose sensitive receptors to substantial pollutant concentrations.	This impact would be less than significant with implementation of the measures noted above in AQ-1.	County Planning Department and Monterey Bay Unified Air Pollution Control District	Building/Grading Permit	During Construction
Public Services and Utilities					
PSU-2	Result in the need for construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	On-site retention and detention shall be required to limit runoff rates to predevelopment levels for up to a 10-year storm event (see HYD-7).	County Planning Department	Building/Grading Permit	During Construction and Ongoing

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Environmental Review
Initial Study

Application Number: 08-0262

Date: January 5, 2009
Staff Planner: Matthew Johnston

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: County of Santa Cruz

APN: 037-101-02, 037-061-66, and a portion of 037-061-04

OWNER: Gregory and Olga Erlach

SUPERVISORAL DISTRICT: 1

LOCATION: The proposed project is located on the east side of Cunnison Lane at 3250 and 3310 Cunnison Lane, and a portion of 3420 Cunnison Lane, just north of Soquel Drive within the Soquel planning area of unincorporated Santa Cruz County, California (See Figures 1 and 2).

SUMMARY PROJECT DESCRIPTION:

The project proposes a General Plan amendment, zone change, and Planned Unit Development (PUD) allowing a maximum development density of 20 dwelling units per usable acre on the project site. The PUD would also require any development proposal on the parcel to provide a minimum of forty (40) percent of the total number of units as affordable. Following project approval, future development of the project site would be by-right in that the use and density for the site would not be discretionary. The site contains a maximum of 5.1 usable (developable) acres equating to a maximum of 102 dwelling units. The project would amend the General Plan from "Urban Open Space (O-U), Urban Low (R-UL) and Medium Residential (R-UM)" to "Urban Open Space (O-U) and Urban High Residential (R-UH)" with a PUD. The Urban High Residential would be amended to allow 20 units per net developable acre with a 2,000 square foot lot size requirement. In addition, the parcels would be rezoned from "Multi-Family Residential – 4,000 square foot minimum parcel size (RM-4)" and "Single-Family Residential - 6,000 square foot minimum parcel size (R-1-6)" to "Multi-Family Residential – (RM-2)".

ALL OF THE FOLLOWING POTENTIAL ENVIRONMENTAL IMPACTS ARE EVALUATED IN THIS INITIAL STUDY. CATEGORIES THAT ARE MARKED HAVE BEEN ANALYZED IN GREATER DETAIL BASED ON PROJECT SPECIFIC INFORMATION.

____	Geology/Soils	____	Noise
____	Hydrology/Water Supply/Water Quality	____	Air Quality
X	Biological Resources	____	Public Services & Utilities
____	Energy & Natural Resources	X	Land Use, Population & Housing
____	Visual Resources & Aesthetics	X	Cumulative Impacts
X	Cultural Resources	____	Growth Inducement
____	Hazards & Hazardous Materials	____	Mandatory Findings of Significance
X	Transportation/Traffic		

DISCRETIONARY APPROVAL(S) BEING CONSIDERED

X	General Plan Amendment	X	Grading Permit
X	Land Division	____	Riparian Exception
X	Rezoning	X	Planned Unit Development
X	Development Permit	____	Other
____	Coastal Development Permit	____	

NON-LOCAL APPROVALS

Other agencies that must issue permits or authorizations:

1. California Department of Fish and Game – Section 1602 Streambed Alteration Agreement
2. Regional Water Quality Control Board Section 401 Water Quality Certification
3. Soquel Water District
4. State Water Resources Control Board – National Pollution Discharge Elimination System Permit

ENVIRONMENTAL REVIEW ACTION

On the basis of this Initial Study and supporting documents:

___ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

X I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the attached

mitigation measures have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

___ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Matt Johnston

1/8/09
Date

For: Claudia Slater
Environmental Coordinator

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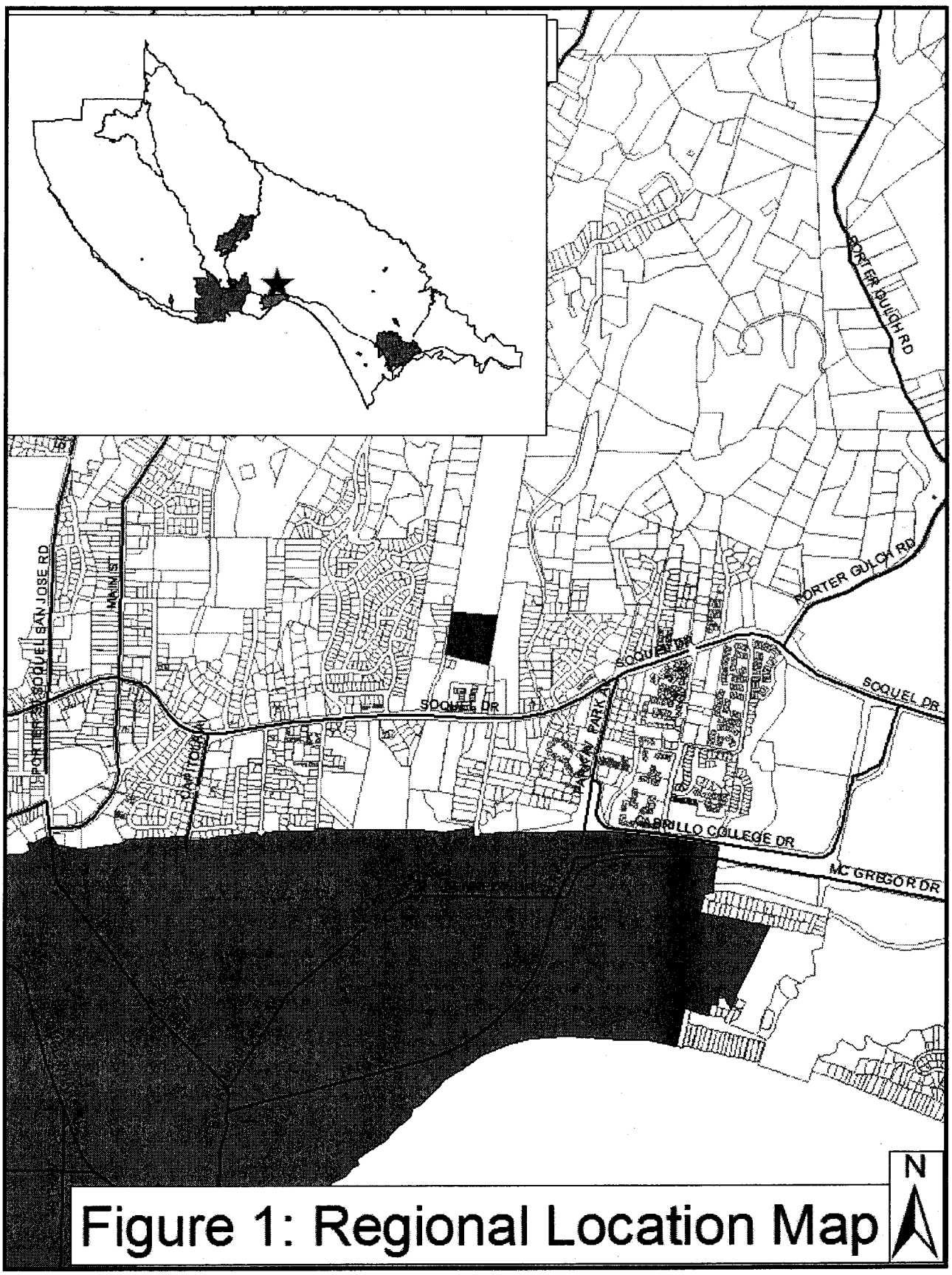

Figure 1: Regional Location Map

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DRIVEWAY
FAIRWAY
LEAVE
BRIDEWAY
FALCONER
UNNAMED
VICTORY
MAPLETHORPE
BAFFY
JIGGER
PUTTER
BALL
FAIR
HARD IN
BOGEY
TEE
GOLF
CUNNISON
ASHWOOD
BIRCHWOOD
COLLEEN
MELBA
MULBERRY
ENTRANCE
BARONIAN
PEOPLES
CLIFFWOOD
SOQUEL SOQUEL DR
SOQUEL DR
SILVER BIRCH
CHEN
LORAINE
MONTEREY
SUBEC
NATHAN
ALTURAS
PRIVATE
PARK
750
375
0
750 Feet
N
Figure 2: Location Map

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II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS

Parcel Size: 7 acres
Existing Land Use: Residential
Vegetation: Urban Landscaping and Riparian Vegetation
Slope in area affected by project: __X__ 0 - 30% ___ 31 – 100%
Nearby Watercourse: Noble Gulch Creek
Distance To: On-site

ENVIRONMENTAL RESOURCES AND CONSTRAINTS

Groundwater Supply: Not mapped
Water Supply Watershed: Not mapped
Groundwater Recharge: Yes/Partial
Timber or Mineral: Not mapped
Agricultural Resource: Not mapped
Biologically Sensitive Habitat: Not mapped
Fire Hazard: Not mapped
Floodplain: Not mapped
Erosion: Not mapped
Landslide: Not mapped
Liquefaction: Yes - portion
Fault Zone: Not mapped
Scenic Corridor: Not mapped
Historic: Not mapped
Archaeology: Not mapped
Noise Constraint: Not mapped
Electric Power Lines: No
Solar Access: Adequate
Solar Orientation: southern exposure
Hazardous Materials: No

SERVICES

Fire Protection: Central Fire Protection District
School District: Soquel School District
Sewage Disposal: Santa Cruz County Sanitation District
Drainage District: Zone 5 Flood Control District
Project Access: Cunnison Lane; County maintained road
Water Supply: Soquel Water District

PLANNING POLICIES

Zone District: R-1-6, RM-4
General Plan: Urban Open Space, Low and Medium Residential
Special Designation: N/A

Urban Services Line:	__X__ Inside	____ Outside
Coastal Zone:	_____ Inside	__X__ Outside

PROJECT SETTING AND BACKGROUND:

The 7-acre project site is located on the east side of Cunnison Lane, about 700 feet north of the intersection of Soquel Drive and Cunnison Lane; in the Soquel Planning area of unincorporated Santa Cruz County (Figures 1 and 2).

Primary vehicular access to the project site is from Cunnison Lane to the west via Soquel Drive. Cunnison Lane is paved without curb, gutter or sidewalks along the project frontage.

The project site is within the unincorporated County of Santa Cruz Soquel planning area. The site is also located within the Santa Cruz County Sanitation District, and the Soquel Water District provides water service.

The predominant land uses surrounding the project site are open space to the north, single family residential to the west, an urban medium residential development to the south, and a mobile home park across a riparian corridor to the east.

The project area consists of two parcels with single-family units and accessory structures, and a portion of a third parcel that is undeveloped.

DETAILED PROJECT DESCRIPTION:

The project proposes a General Plan amendment, zone change, and PUD allowing a maximum development density of 20 dwelling units per usable acre on the project site. The PUD would also require any development proposal on the parcel to provide a minimum of forty (40) percent of the total number of units as affordable. Following project approval, future development of the project site would be by-right in that the use and density for the site would not be discretionary. A Tentative Map approval may be requested as part of the development application but is not required. The 3-parcel project site contains 5.1 usable acres equating to a maximum of 102 dwelling units. The remaining acreage would provide open space to protect on-site riparian areas.

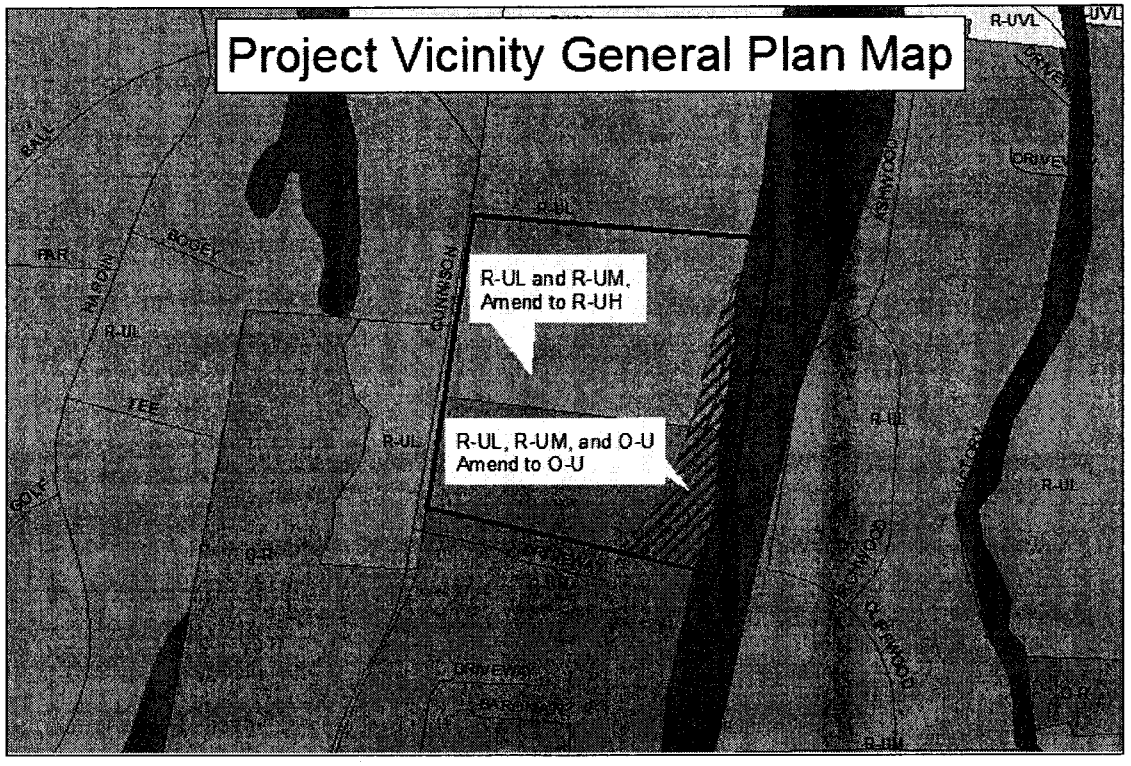
The project would rezone the parcel and amend the General Plan as shown in Table 1. Figure 3 also shows the proposed land use changes.

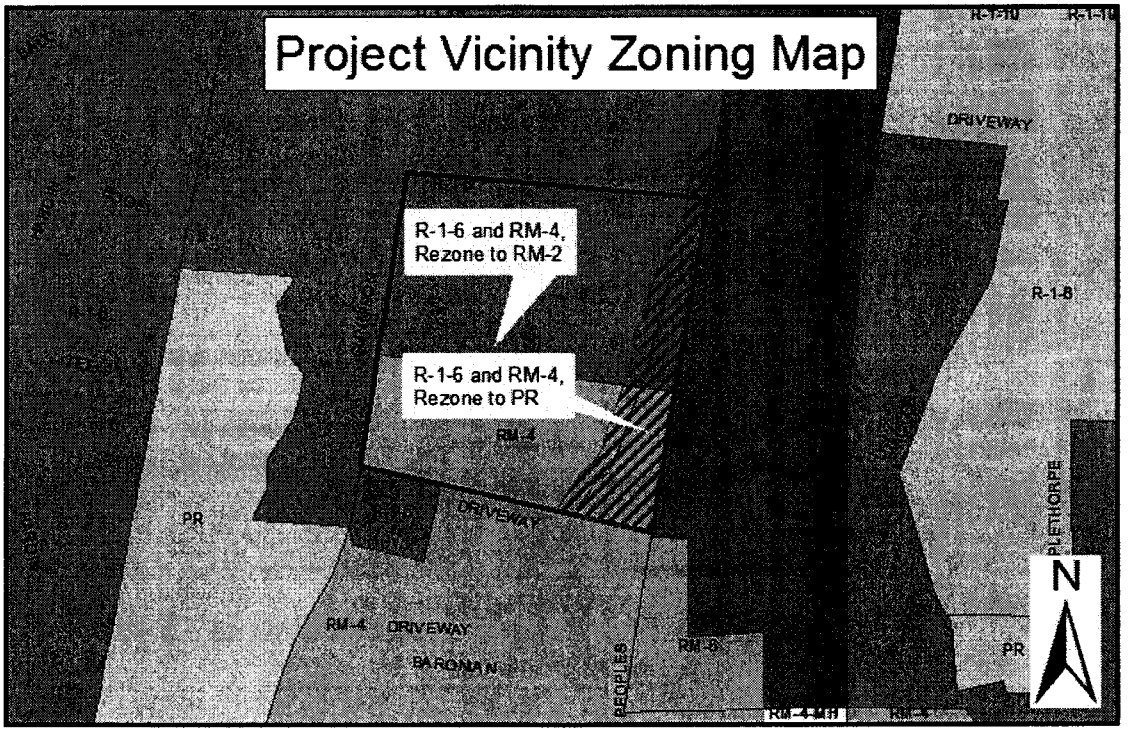
Table 1
Proposed General Plan and Zone Changes for Assessor Parcels Numbered 037-101-02, 037-061-66, 037-061-04 (portion)

	Existing	Proposed
Zoning District	Multi-Family Residential – (RM-4-L) 4,000 square feet per lot or unit. Single-Family Residential - 6,000 square foot minimum parcel size (R-1-6)	Multi-Family Residential – 2,000 square foot minimum parcel size and Regional Housing Need Site RM-2-R
General Plan Land Use Designation	Urban Low and Medium Residential (R-UL, R-UM)/Urban Open Space Lands (O-U)	Residential - Urban High (R-UH)/Urban Open Space Lands (O-U)
General Plan Density and Minimum Parcel Size	R-UH currently allows 10.9 to 17.4 units per net developable acre with a 2,500 to 4000 square foot lot size requirement	R-UH would be amended to allow 20 units per net developable acre with a 2,000 square foot lot size requirement
Planned Unit Development	No	Yes (See Appendix A)

Figure 3 – Proposed General Plan and Zone Changes

Source: County of Santa Cruz, 2008.





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All development proposals on this parcel would be required to meet the affordability requirements described in Section 17.10.030(b)(6) of the Santa Cruz County Code. Prior to Building Permit issuance or prior to filing of the Final Map, if one is required, the developer would enter into a Certification and Participation Agreement with the County of Santa Cruz to meet the Affordability Housing Requirements specified by Chapter 17.10 of the County Code.

Any future development proposal on the project site would be subject to Design Review and a public hearing limited to design issues only. No discretionary permit would be necessary for the density or use of the site. All requirements of the Site, Architectural and Landscape Design Review (Chapter 13.11 of the County Code) or successor ordinance in effect at the time a Design Review Application is deemed complete for processing would be applicable unless modified by the PUD (see the PUD contained in Appendix A for the complete text).

Under the proposed PUD, any proposed project would be required to meet the following development standards:

General Site Standards

All of the site standards contained within Chapter 13.10 would be applicable unless modified by the proposed PUD. The following development standards supersede the development standards in the County Code.

1. Parking requirements: 1.5 spaces per studio and one bedroom units; 2.0 spaces per two bedroom units; 2.5 spaces per three bedroom units; and 3.0 spaces per four bedroom units. An additional 20 percent of the total number of parking spaces would be required to accommodate guest parking.

   A reduction in the required on-site parking standard may be considered by the County with review and approval by the Board of Supervisors as part of the Level VII Design Review Permit. Any request for reduced parking would have to include an on-site parking management plan prepared by a traffic engineer.

   The maximum number of required parking spaces that may be compact in size is specified in County Code Section 13.10.553(e) or its successor ordinance. The standards for off-street parking facilities as outlined in County Code Section 13.10.554 at the time of application is deemed complete would apply.

2. Circulation Requirements: All interior roadways would be a minimum of 20 feet in width for two-way circulation and 12 feet in width for one-way circulation. A minimum of 50-foot centerline radius on all access routes would be required unless a different turning radius is specified by the fire agency.

3. Access to Site: The main access to the site would be located off of Cunnison Lane frontage, consistent with the standards contained within the adopted Design Criteria for the County of Santa Cruz.

4. Bicycle Storage: One lockable storage shed or lockable garage space would be provided for on-site bicycle storage. The lockable storage area may be located

within the storage area. At least one bicycle space would be provided for each dwelling unit.

5. Accessibility: Developments would be required to meet accessibility requirements of Title 24 of the California Building Code or successor code in effect at the time the building permit application is submitted.
    a. Accessible Parking: Accessible parking would be provided consistent with California State Law. This applies to the design and location of the parking spaces, number of accessible spaces provided, and accessible path of travel through the development.
6. Setbacks: The applicable minimum yard setbacks would be established from the perimeter of the property to structures in aggregate, and would be as follows:
    a. Cunnison Lane Frontage – 10 feet from back of sidewalk to front porches, 15 feet from back of sidewalk to buildings.
    b. 5 feet from the southern property line.
        i. The landscaping strip required by County Code Section 13.11 would be eliminated along the southern property line if reciprocal parking agreements are made with the owners of the Farm Apartments located on APN 037-101-54, directly south of the site.
    c. To the east – Outside the riparian buffer, which extends 20 feet from the top of bank (20-foot buffer for an intermittent stream in an urban arroyo with a 0-10% slope in oak or other woodland) as shown on Exhibit A.
    d. 5 feet from the northern line delineating the change in zoning.
    e. For projects involving a Tentative Map, the interior setbacks and lot size would be established through the Design Review process and would not be subject to obtaining a Residential Development Permit under County Code Section 13.10.323(d)(1)(A) or its successor ordinance.
7. Riparian Area: A riparian buffer of 20 feet (an intermittent stream in an urban arroyo with a 0-10% slope in oak or other woodland) is to be maintained. In order to clearly delineate the riparian area, the 20-foot buffer from the top of the bank would be fenced with permanent fencing.
8. Open Space: The open space requirements specified in County Code Section 13.10.323 (e)(7)(F) would not apply.
    a. The Design Review process shall determine the appropriate amount and location of open space on site, with special consideration for opportunity to incorporate a large open space area adjacent to the riparian corridor.
9. Mature Trees: To the greatest extent feasible, existing mature native trees would be preserved and incorporated into the project design. The developer would be required to submit an arborist's report regarding the health and stability of all mature trees six inches or greater in diameter at breast height and would be required to retain as many of these trees as possible.

a. Non-native Trees: The developer would be required to remove all non-native invasive trees, particularly the eucalyptus and acacia, on the subject parcels. A restoration plan that includes the removal of those trees and restoration of the riparian corridor, phased to avoid leaving the riparian corridor void of canopy, would have to be reviewed and approved by the Environmental Planning Section of the Planning Department.

10. Cunnison Lane Frontage: Structures along the Cunnison Lane frontage would be limited to two stories and 28 feet in height, and would incorporate front porches on the ground level, facing the street.

11. Lot Coverage and Floor Area Ratio: Lot Coverage and Floor Area Ratio limitations would not apply.

12. Entrances: A minimum of two entrances to the project site from Cunnison Lane would be provided. These entrances would be required to meet the Department of Public Works Design Criteria for separation.

13. Roadway Design. The following standards would apply to roadways on the project site and along the Cunnison Lane frontage:

    a. Paved Road Width: 32 feet for Cunnison Lane (24 foot travel lanes and 8 foot parking shoulder on west side only), 20 feet for two-way interior driveways, 12 feet for one-way driveways.

    b. Improvements: Construction of and the dedication of an easement for a 4-foot wide landscaping strip including street trees that are consistent with the Urban Forestry Master Plan, a 4-foot wide sidewalk connecting to existing improvements to the south along Cunnison Lane, and any associated drainage improvements that may result from the work would be required.

    c. In order to maintain a consistent roadway design, right-of-way sufficient to accommodate a 32-foot wide roadway (between 10 and 16 feet over the length of the property, depending on existing dedicated right-of-way) would be dedicated to the County along the Cunnison Lane frontage.

        i. If needed in order to meet the requirements for guest parking on-site, roadway improvements could include parking bays on the east side of Cunnison Lane fronting the project.

<u>Requirements for Structures</u>

1. Number of Stories: A maximum of three (3) stories as defined by the County Code exclusive of subsurface parking would be allowed.

    a. Three stories would be allowed except in areas restricted to a two-story maximum due to visual impacts. These areas are delineated on the map, Exhibit A of the PUD, and are more specifically described in Section I.B.4.c. of the PUD.

2. Height: Height of three-story structures would be up to 37 feet, exclusive of sub-surface parking, and the height of two-story structures would be up to 28 feet, exclusive of subsurface parking.
    a. For any structure proposed to be within 2 feet of the maximum height limit, building plans would be required to include a roof plan and a surveyed contour map of the ground surface superimposed and extended to allow height measurement of all features. Spot elevations would be required at points on the structure that have the greatest difference between ground surface and the highest portion of the structure above. This requirement is in addition to the standard requirement of detailed elevations and cross-sections and the topography of the project site, that clearly depict the total height of the proposed structure above preconstruction natural grade and finished grade.

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	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

III. ENVIRONMENTAL REVIEW CHECKLIST

A. Geology and Soils

Does the project have the potential to:

1. Expose people or structures to potential adverse effects, including the risk of material loss, injury, or death involving:

   A. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or as identified by other substantial evidence? ____ ____ X ____

The project site is located outside of the limits of the State Alquist-Priolo Special Studies Zone. The project site is located approximately seven miles southwest of the San Andreas Fault zone. The U.S. Geological Survey (2003) indicated that there is a 62 percent chance of at least one magnitude 6.7 or greater earthquake striking the San Francisco Bay region between 2003 and 2032. Therefore, the site will probably be subjected to at least one moderate to severe earthquake that will cause strong ground shaking. The October 17, 1989 Loma Prieta earthquake (magnitude 7.1) is considered to have been associated with the San Andreas Fault system. This event was the second largest earthquake in central California history. Improvements to this parcel could be subjected to the effects of seismically induced ground shaking during a large magnitude earthquake. A geotechnical investigation was prepared by Haro, Kasunich & Associates, Inc., dated April 1990 as part of an earlier proposed project that was not constructed. This report has been reviewed and accepted by the Environmental Planning Section of the Planning Department. The report concludes that fault rupture would not be a potential threat to development on the subject parcels

   B. Seismic ground shaking? ____ X ____ ____

The 1990 geotechnical investigation by Haro, Kasunich & Associates, Inc. concluded that impacts associated with seismic shaking could be mitigated through the use of conventional spread footings or pier and grade beam foundation systems. As there is no proposed development project at this time, an updated geotechnical report will be required from the applicant for the foundation design for the site based on the April 1990 report by Haro, Kasunich & Associates, Inc. (PUD Section IV.B.3)

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
C. Seismic-related ground failure, including liquefaction?		X		

A portion of the subject parcels is mapped as having a potential for liquifaction. However, the 1990 geotechnical investigation by Haro, Kasunich & Associates, Inc. concluded that the potential for liquefaction beneath the site appears unlikely. As there is no proposed development project at this time, an updated geotechnical report will be required for the foundation design for the site based on the April 1990 report by Haro, Kasunich & Associates, Inc. (PUD Section IV.D.1)

D. Landslides?			X	

The general grade from the northern edge of the parcel slopes gently downward toward the south with a maximum relief of about 20 feet. Noble Gulch Creek borders the eastern edge of the property and contains the only significant slopes with a potential for failure. The 1990 geotechnical investigation by Haro, Kasunich & Associates, Inc. studied the stability of the creek bank and found the potential for failure to be remote.

The project proposes a 20-foot buffer from the break in slope of the stream channel. Given the low potential for failure and the 20-foot riparian buffer, no significant impact is anticipated.

2. Subject people or improvements to damage from soil instability as a result of on- or off-site landslide, lateral spreading, to subsidence, liquefaction, or structural collapse?		X		

There is a potential risk from severe ground shaking. The recommendations contained in the 1990 Haro, Kasunich & Associates, Inc. report, as updated, will be implemented to mitigate for this potential hazard.

3. Develop land with a slope exceeding 30%?			X	

There are no slopes that exceed 30 percent on the property that will be included in the developable area.

4. Result in soil erosion or the substantial loss of topsoil?		X		

Some potential for erosion exists during the construction phase of the project, however, this potential is minimal because best management practices and standard erosion control measures would be a required condition of the project. Prior to approval of a grading or building permit, the applicant would be required to have an

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Erosion Control Plan, reviewed and approved by the Planning Department, which specifies detailed erosion and sedimentation control measures (County Code Chapter 16.22.060). The plan would include provisions for disturbed areas to be planted with groundcover and to be maintained to minimize surface erosion.

5. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code(1994), creating substantial risks to property?		X		

According to a geotechnical report prepared by Haro, Kasunich & Associates, Inc., dated March 1992 for a project immediately adjacent to this site, expansive soils are expected to occur within the project area. Due to the moderate expansion potential, the near surface clayey materials may be subjected to volume changes during seasonal fluctuations in moisture content. To reduce the potential for post-construction distress to the proposed structures resulting from swelling and shrinkage of these materials, residential structures shall be supported on conventional spread footings or a pier and grade beam foundation system, or an alternate foundation recommended in an update to the April 1990 geotechnical report, reviewed and approved by the Environmental Planning Section of the Planning Department, as required in sections A(1)(B) and (C) above.

6. Place sewage disposal systems in areas dependent upon soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative waste water disposal systems?				X

No septic systems are proposed.

7. Result in coastal cliff erosion?				X

The project is not located in the coastal zone. No coastal cliff erosion would occur as a result of project implementation.

B. Hydrology, Water Supply and Water Quality

Does the project have the potential to:

1. Place development within a 100-year flood hazard area?				X

According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated March 2, 2006, no portion of the project site proposed for development lies within a 100-year flood hazard area.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
2. Place development within the floodway resulting in impedance or redirection of flood flows?				X

According to the FEMA National Flood Insurance Rate Map, dated March 2, 2006, no portion of the project site proposed for development lies within the floodway.

3. Be inundated by a seiche or tsunami?				X

The site is located at an elevation of approximately 150 to 170 feet above mean sea level approximately 0.8 mile from the coast. Therefore, impacts from tsumanis are not anticipated.

4. Deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit, or a significant contribution to an existing net deficit in available supply, or a significant lowering of the local groundwater table?		X		

The proposed project would obtain water from Soquel Creek Water District, and would not rely on private well water. Although the project would incrementally increase water demand, the Soquel Creek Water District has indicated that adequate supplies are available to serve the project with implementation of the following mitigation measures.

(a) All applicants for new water service from Soquel Creek Water District are required to offset expected water use of their respective development by a 1.2:1 ratio by retrofitting existing developed property within the Soquel Creek Water District service area so that any new development has a "zero impact" on the District's groundwater supply. Applicants for new service shall bear these costs associated with the retrofit as deemed appropriate by the District up to a maximum set by the District and pay any associated fees set by the District to reimburse administrative and inspection costs in accordance with District procedures for implementing this program.

(b) Plans for a water efficient landscape and irrigation system must be submitted to District Conservation Staff for approval.

(c) All interior plumbing fixtures must be low-flow and have the Environmental Protection Agency (EPA) Energy Star label.

(d) District Staff will inspect the completed project for compliance with all conservation requirements prior to commencing water service.

A portion of the parcels to be rezoned are mapped groundwater recharge, the boundaries of which are located entirely within Noble Gulch Creek. No disturbance

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

would be allowed within 20 feet of the stream bank, and drainage into the creek would be maintained at pre-development levels, therefore, no impacts to groundwater levels would occur.

5.	Degrade a public or private water supply? (Including the contribution of urban contaminants, nutrient enrichments, or other agricultural chemicals or seawater intrusion).		X		

Runoff from this project may contain small amounts of chemicals and other household contaminants. No commercial or industrial activities are proposed that would contribute a significant amount of contaminants to a public or private water supply. The parking and driveways associated with the project would incrementally contribute urban pollutants to the environment; however, the contribution would be minimal given the size of the driveways and parking area. Potential siltation from the proposed project would be mitigated through implementation of an Erosion Control Plan (see Geology and Soils). A silt and grease trap, and a plan for maintenance, would also be required from the applicant to reduce the impact of urban pollutants and siltation to a less than significant level.

6.	Degrade septic system functioning?			X	

The parcels to the east, south, and west of the proposed project parcels are all included within and serviced by the Santa Cruz County Sanitation District (SCCSD). Future development on the subject parcels would require annexation into the SCCSD and any existing septic systems would be abandoned.

7.	Alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner which could result in flooding, erosion, or siltation on or off-site?		X		

The proposed project is located adjacent to Noble Gulch an intermittent stream. A 20-foot buffer would be established from the break in slope to protect it from disturbance both during and after construction. The proposed project would comply with Chapter 16.22.070 (Erosion Control) of the County Code. The following mitigation measures would be used for runoff control, and would be adequate to control runoff from a ten-year storm:

(a) On soils having high permeability (more than two inches/hour), all runoff in excess of predevelopment levels would be retained on the site. This may be accomplished through the use of infiltration basins, percolation pits or trenches, or other suitable means. This requirement could be waived where the Planning Director determines that high groundwater, slope stability problems, or other

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

factors would inhibit or be aggravated by on-site retention, or where retention would provide no benefits for groundwater recharge or erosion control.

(b) If it is determined that on-site percolation is not feasible, all runoff would be detained or dispersed over non-erodible vegetated surfaces so that the runoff rate does not exceed the predevelopment level. The Planning Director could require on-site detention where excessive runoff would contribute to downstream erosion or flooding.

(c) Any concentrated runoff that could not be effectively dispersed without causing erosion would be carried in non-erodible channels or conduits to the nearest drainage course (Nobel Gulch) designated for such purpose by the Planning Director or to on-site percolation devices. Where water will be discharged to natural ground or channels, appropriate energy dissipaters would be required to prevent erosion at the point of discharge.

(d) Runoff from disturbed areas would be detained or filtered by berms, vegetated filter strips, catch basins, or other means as necessary to prevent the escape of sediment from the disturbed area.

(e) No earth or organic material would be deposited or placed where it could be directly carried into a stream, marsh, slough, lagoon, or body of standing water.

(f) In an effort to reduce runoff, techniques would be required such as minimizing site disturbance, minimizing proposed impervious areas, utilizing pervious surfacing, eliminating directly connected impervious areas, and clustering development.

Implementation of the above mitigation measures would reduce impacts to below a level of significance.

8.	Create or contribute runoff which would exceed the capacity of existing or planned storm water drainage systems, or create additional source(s) of polluted runoff?	____	X	____	____

Runoff from the subject parcels currently drains via sheet flow to the southeast into Noble Gulch and to the southwest to Cunnison Lane. Via culverts, County storm drains and natural channels, runoff continues downstream into Soquel Creek and out to the Monterey Bay at Capitola Village. A drainage study by Fall Creek Engineering, Inc., December 2008 (Appendix D), found that the existing conditions of the immediate downstream drainage courses have the capacity to safely convey runoff from a 100-year, 24-hour storm event. However, analysis of the two drainages found one section in each that is not appropriately sized to convey a 100-year, 24-hour storm event. In the Nobel Gulch drainage to the east, a 48-inch culvert, approximately 1,000 feet downstream of Soquel Drive is estimated to safely convey up to a 25-year storm frequency, and the storm drain that runs along Soquel Drive to the west between Cunnison Lane and Hardin Way is estimated to safely convey up to a 5-year frequency

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storm.

In order to avoid impacts to the undersized drainpipe along Soquel Drive, future development on the subject parcels would be required to direct all storm runoff into Nobel Gulch.

All project runoff in excess of predevelopment levels for a 10-year storm event would be retained/detained on the site (See issue 7 above under Hydrology, Water Supply and Water Quality).

All runoff from parking and driveway areas would go through water quality treatment prior to discharge from the site (e.g., outsloping driveways to drain to landscaped areas for filtering prior to discharge from the site). If structural treatment were proposed, a recorded maintenance agreement would be required. This agreement would be signed, notarized, and recorded, and a copy of the recorded agreement would be submitted to the County Department of Public Works (DPW).

The developer would also be required to provide permanent markings at each drainage inlet that reads "NO DUMPING-DRAINS TO BAY," or equivalent. The property owner would be responsible for maintaining these markings.

9.	Contribute to flood levels or erosion in natural watercourses by discharges of newly collected runoff?	____	X	____	____

All runoff in excess of predevelopment levels for up to a 10-year storm event would have to be detained on the site (see issue 7 above under Hydrology, Water Supply and Water Quality).

10.	Otherwise substantially degrade water supply or quality?	____	X	____	____

As stated above, silt and grease traps, and a plan for maintenance would be required to minimize the effects of urban pollutants. In addition, an Erosion Control Plan as specified in Section 16.22.060 of the County Code, and a Storm Water Pollution Prevention Plan would be required during construction. Because the proposed project would result in a land disturbance of one acre or more, a Construction Activities Storm Water General National Pollution Discharge Elimination System (NPDES) Permit would have to be obtained from the State Water Resources Control Board. Construction activities include clearing, grading, excavation, stockpiling, and reconstruction of existing facilities involving removal and replacement.

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C. Biological Resources

Does the project have the potential to:

1. Have an adverse effect on any species identified as a candidate, sensitive, or special status species, in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, or U.S. Fish and Wildlife Service?		X		

According to the California Natural Diversity Data Base (CNDDB), maintained by the California Department of Fish and Game, there are no known special status plant or animal species in the site vicinity, and there were no special status species observed in the project vicinity.

EcoSystems West conducted an off-site biotic assessment (Appendix B) near the project site on June 30th and September 30th 2008 to determine what special status species have a potential to occur on the subject parcels (Table 1 of Appendix B). Permission to access the parcels was not granted and observations were done from the periphery of the parcels, and through a review of available literature and data sources publicly available. The following sections discuss species identified as having a potential to be found on the subject parcels.

Special Status Plants

No special-status plant species were observed in the project area from nearby vantage points. Only one species, Santa Cruz tarplant (*Holocarpha macradenia*), is considered to have a moderate potential to occur on the subject parcels due to the presence of Watsonville loam soil which is an edaphic (distinguished by soil characteristics) indicator for the tarplant and the proximity of this species just north of the parcels at the terminus of Fairway Drive. Santa Cruz tarplant is listed by the State of California as endangered and is federally listed as a threatened species. It is found in disturbed grassland and coastal prairie habitat with a high percent cover of non-native species. Disturbance such as grazing, mowing, scraping and burning has been shown to reduce the distribution and cover of species that compete with Santa Cruz tarplant and can benefit the species. Other special-status plant species with known regional occurrences in Santa Cruz County have no or very low potential to occur in the project area.

Special Status Invertebrates

The Ohlone tiger beetle *(Cicindela ohlone*) is federally listed as endangered, and is associated with coastal prairie, although it has also been found in degraded prairie remnants that are characterized by a mix of annual grasses and other ruderal plants. The beetle often occurs on Watsonville loams. California annual grassland on Watsonville loams that occur within the project site provide potential habitat for the Ohlone tiger beetle. The nearest known occurrence is approximately three miles west

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of the project site at Santa Cruz Gardens.

Monarch butterflies (*Danaus plexippus*) may also occur on the subject parcels during winter. Stands of eucalyptus (*Eucalyptus* spp.), Monterey pine (*Pinus radiata*), and Monterey cypress (*Cupressus macrocarpa*) are commonly utilized as over-wintering sites in California by the monarch butterfly. Monarch habitat is protected in the County of Santa Cruz General Plan. Location characteristics such as southeast orientation, wind protection, proximity to nectarines (nectar sources), and other abiotic and biotic factors determine habitat suitability for monarchs. Monarchs are sensitive to even the slightest changes in wind conditions, temperature, and noise disturbance. In addition, populations may fluctuate widely from year to year, depending upon a number of factors, including the timing of winter rains, winter temperatures, and adequate food supply for larva. While a stand of blue gum on the project site provides potential wintering habitat for monarchs, it may not be large enough to adequately buffer the site from winds.

Raptors and Birds

The tree stands above and surrounding the project area provide potential habitat for common bird species such as the red-shouldered hawk, red-tailed hawk, great horned owl, and many passerine birds that are not considered special-status species. The federal Migratory Bird Treaty Act and California Fish and Game Code prohibits the destruction or possession of individual birds, birds of prey, eggs or active nests without federal and/or state authorization.

Special Status Mammals

Lack of access to the structures on site prohibits making an accurate determination as to whether or not bats roost within the project site. Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*) and the pallid bat (*Antrozous pallidus*) are both state species of special concern, with potential roost sites available on the subject parcel. The fringed myotis (*Myotis thysanodes*) and long-legged myotis (*Myotis volans*) are both considered "high priority" on the Western Bat Working Group's (WBWG) Western Bat Species Regional Priority Matrix (1998) and were included on the preliminary list of revised CDFG species of special concern (CDFG 1998). If these two species are listed at the time of development of the subject parcels, they would have to be included in any surveys for bats prior to development, and if found, impacts to them would have to be avoided. All of the bats in Table 1 of Appendix B and other more common bat species may forage in or migrate through the project area.

No potential San Francisco dusky-footed woodrat nest structures were observed from the periphery of the parcel but may be present under the dense eucalyptus trees along Nobel Gulch. The project site is within the range of this special status species and potential habitat occurs within the project site.

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Implementation of the following measures would reduce impacts to below a level of significance.

Plants

Prior to issuance of building permits on this site, clearance-level surveys for the Santa Cruz tarplant must be conducted to ensure no take of this protected species. Should the surveys discover tarplant on the site, the proposed design would be redesigned to protect the colony, such that no take occurs. A management plan for the colony would be required to be submitted to the Planning Department for review and approval, and a biotic declaration that includes the management plan must be recorded on the deed of the parcel. The applicant would also be required to consult with both the US Fish and Wildlife Service (USFWS) and CDFG prior to any site disturbance.

Wildlife

Prior to issuance of any development permits, the applicant would be required to conduct preconstruction wildlife surveys for the following special-status species: The Ohlone tiger beetle, the monarch butterfly, nesting birds of prey, Townsend's western big-eared bat, the pallid bat, the western red bat, and the San Francisco dusky-footed wood rat. Surveys would be conducted during appropriate breeding/roosting seasons for invertebrates, birds, and mammals.

If surveys for the Ohlone tiger beetle encounter the species on the subject parcel, the applicant would be required to avoid all potential impacts to the beetle and its habitat and a management plan for the population would have to be reviewed and approved by the USFWS and the County of Santa Cruz Environmental Planning Section prior to issuance of any development or grading permit.

All impacts to nesting raptors and other migratory birds would have to be avoided. If surveys determine active nests are on site, all tree removal would be scheduled outside of the breeding season.

If active raptor, migratory bird, or bat nests or roosts are found in trees to be retained, a qualified biologist would be required to be on site during any initial vegetation or ground disturbance activities (e.g. vegetation clearing, grading, excavation, tree pruning/removal) that could potentially impact listed species. Roosting bats would be excluded from trees prior to any disturbance. The biologist would be responsible for setting and maintaining the disturbance buffers from active nests during construction activities, and for ensuring bat roosts are vacated. Buffers and exclusionary measures would be implemented only after consultation with CDFG.

Any woodrat nests located within a proposed disturbance area would have to be avoided or moved after consultation with CDFG.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
2. Have an adverse effect on a sensitive biotic community (riparian corridor), wetland, native grassland, special forests, intertidal zone, etc.)?	_____	X	_____	_____

Noble Gulch Creek traverses the proposed parcel along its eastern boundary. Nobel Gulch in this reach is an urban arroyo and riparian corridor, inundated with eucalyptus and acacia trees, both non-native invasive plants, and the Gulch is considered degraded sensitive habitat. As required in PUD section B.3.c.i., the developer would be required to remove all non-native invasive trees within the riparian corridor and buffer area, and a restoration plan that includes the removal of those trees and restoration of the riparian corridor, phased to avoid leaving the riparian corridor void of canopy, would have to be reviewed and approved by the Environmental Planning Section of the Planning Department.

There are no other mapped or designated sensitive biotic communities on or adjacent to the project site, however, if any of the listed species in Table 1 of Appendix B are found during the required surveys, the habitat that supports that species and the area adjacent to it would be considered sensitive habitat and all impacts to that habitat would have to be avoided.

All proposed structures would maintain the required 20-foot buffer from the top of the bank along Noble Gulch Creek. In addition, permanent fencing would be placed at the 20-foot buffer during construction.

Implementation of the above measures would reduce impacts to below a level of significance.

3. Interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native or migratory wildlife nursery sites?	_____	X	_____	_____

Noble Gulch Creek functions as a wildlife corridor that provides habitat and a wildlife migratory corridor for both birds and other wildlife. Trees on the subject parcel may provide nesting habitat for migratory songbirds, raptors, or bats. No development will be allowed within the riparian corridor, as defined by a 20-foot buffer from the top of bank of the Nobel Gulch channel, except for the removal of invasive vegetation pursuant to an approved restoration plan, and the installation of drainage features. If the required surveys find that the trees to be removed provide over-wintering habitat for monarch butterflies, the removal will be done when the monarchs are not present. If active nesting birds are found to be present, the tree removal will occur after the young have fledged or when the nests are vacant, prior to the breeding season. If active nests are present in trees to be retained, no disturbance zones, set by a qualified biologist based on the particular species present, will be fenced off around the subject tree to ensure other construction activities do not harm sensitive species. In order to

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

prevent impacts to special status bat species, before any trees are removed, a qualified biologist shall perform surveys. Roosting bats shall be excluded from trees prior to disturbance. If maternal roosts are present, disturbance shall be avoided until roosts are unoccupied.

4.	Produce nighttime lighting that will illuminate animal habitats?	____	X	____	____

Noble Gulch Creek and the associated riparian area encompasses the eastern edge of the project site. This habitat area could be adversely affected by project-generated lighting. All project lighting located adjacent to the riparian buffer shall be shielded away from the buffer area. All development in the vicinity of the riparian corridor shall be consistent with Chapter 16.30 of the County Code.

5.	Make a significant contribution to the reduction of the number of species of plants or animals?	____	X	____	____

See C.1. above.

6.	Conflict with any local policies or ordinances protecting biological resources (such as the Significant Tree Protection Ordinance, Sensitive Habitat Ordinance, provisions of the Design Review ordinance protecting trees with trunk sizes of 6 inch diameters or greater)?	____	X	____	____

As mitigated, the project would not conflict with any local policies or ordinances.

7.	Conflict with the provisions of an adopted Habitat Conservation Plan, Biotic Conservation Easement, or other approved local, regional, or state habitat conservation plan?	____	____	____	X

There are currently no Habitat Conservation Plans, Biotic Conservation Easements, or similar conservation plans that apply to the project site.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

D. Energy and Natural Resources

Does the project have the potential to:

1. Affect or be affected by land designated as "Timber Resources" by the General Plan?				X

The project site is not designated as a Timber Resource. No timber resources occur on the project site or in the project vicinity.

2. Affect or be affected by lands currently utilized for agriculture, or designated in the General Plan for agricultural use?				X

The proposed project site is not used for nor affected by agriculture.

3. Encourage activities that result in the use of large amounts of fuel, water, or energy, or use of these in a wasteful manner?			X	

The proposed project is a multi-family residential development. The Soquel Water District would provide water for future development on the subject parcels, with a requirement for water offsets that would reduce impacts to water resources to less than significant. The provisions of the proposed PUD encourage energy efficient design.

4. Have a substantial effect on the potential use, extraction, or depletion of a natural resource (i.e., minerals or energy resources)?				X

The site does not contain any mineral or energy resources.

E. Visual Resources and Aesthetics

Does the project have the potential to:

1. Have an adverse effect on a scenic resource, including visual obstruction of that resource?			X	

The project would not directly impact any public scenic resources, as designated in the County's General Plan (1994), or obstruct any public views of these visual resources.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
2. Substantially damage scenic resources, within a designated scenic corridor or public view shed area including, but not limited to, trees, rock outcroppings, and historic buildings?			X	

The project site is not located along a County designated scenic road or within a designated scenic resource area. No impacts from project implementation are anticipated.

3. Degrade the existing visual character or quality of the site and its surroundings, including substantial change in topography or ground surface relief features, and/or development on a ridgeline?			X	

The proposed project would allow 5.1 of 7.5 acres to be developed, the remainder being retained as open space and setbacks. Degradation of the character of the site would be minimized by restricting buildings to 28 feet and two stories in height within 50 feet of the Cunnison Lane frontage. The proposed PUD requires buildings facing public roads to incorporate features such as step-back heights, articulation, variations in finishes, glazing, building separation and varied roof heights. County Ordinance 16.20.010 requires all grading to be minimized. The riparian corridor located immediately to the east of the project site would undergo restoration to remove the non-native vegetation to match that of the housing project directly south of the proposed site. Mature vegetation on the site including two east to west rows of Monterey cypress, would be evaluated for health and all mature native or non-invasive trees that can be retained would be.

4. Create a new source of light or glare which would adversely affect day or nighttime views in the area?		X		

The project would contribute an incremental amount of night lighting to the visual environment. However, the following project conditions, to be addressed by Planning Department staff at the Design Review stage, would reduce this potential impact to a less than significant level:

(a) It shall be an objective of lighting design to relate to the site and building design and reduce off-site impacts.

(b) All site, building, security and landscape lighting shall be directed onto the site and away from adjacent properties. Light sources shall not be visible from adjacent properties. Light sources can be shielded by landscaping, structures, fixture design or other physical means. Building and security lighting shall be integrated into the building design.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

(c) All lighted parking and circulation areas shall utilize low-rise light standards or light fixtures attached to the buildings. Light standards to a maximum height of 15 feet are allowed.

(d) Area lighting shall be high-pressure sodium vapor, metal halide, fluorescent, or equivalent energy-efficient fixtures.

5. Destroy, cover, or modify any unique geologic or physical feature?			X	

There are no unique geological or physical features mapped or known to be on or adjacent to the site that would be destroyed, covered, or modified by the project.

F. Cultural Resources

Does the project have the potential to:

1. Cause an adverse change in the significance of a historical resource as defined in CEQA Guidelines 15064.5?			X	

There are no unique historical resources mapped or known to be on or adjacent to the site that would be affected by the project.

2. Cause an adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines 15064.5?		X		

The project site is not mapped for archaeological resources. A preliminary archaeological records search and sensitivity assessment report was completed by Archaeological Consulting (Appendix C) and found that, based upon the background research and a field assessment from the road adjacent to the property, there are fourteen recorded cultural resources and six prehistoric archaeological sites within one mile of the project site, but there are no recorded cultural resources in the immediate area. The presence on-site of a seasonal creek suggests a moderate potential for the discovery of prehistoric cultural resources. Prior to issuance of any grading or building permit, a standard site reconnaissance would be completed of the entire site. If archeological resources are identified during this reconnaissance, all impacts to significant archeological resources would have to be completely avoided.

Pursuant to Chapter 16.40.040 of the Santa Cruz County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the sheriff-coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.

3. Disturb any human remains, including those interred outside of formal cemeteries?		X		

See discussion in F.2. above.

Pursuant to Section 16.40.040 of the Santa Cruz County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner and the Planning Director. If the Coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.

4. Directly or indirectly destroy a unique paleontological resource or site?			X	

A database search of the University of California Museum of Paleontology Specimen Search was conducted on September 29, 2008. No paleontological resources are known to occur within the project area. No impacts to paleontological resources are anticipated.

G. Hazards and Hazardous Materials

Does the project have the potential to:

1. Create a significant hazard to the public or the environment as a result of the routine transport, storage, use, or disposal of hazardous materials, not including gasoline or other motor fuels?			X	

The project proposes a General Plan amendment and zone change to allow development of multi-family residential housing units. The transport, storage, use and disposal of hazardous materials are not being proposed by this project. Therefore, no significant hazard to the public would occur as a result of the proposed project.

2. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government				X

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				

The project site is not included on the September 4, 2008 list of hazardous sites in Santa Cruz County compiled pursuant to the specified code.

3. Create a safety hazard for people residing or working in the project area as a result of dangers from aircraft using a public or private airport located within two miles of the project site?			X	

The project site is located approximately eight miles northwest of the Watsonville Municipal Airport; therefore, no safety hazard for people residing or working in the project area would result.

4. Expose people to electro-magnetic fields associated with electrical transmission lines?			X	

No electrical transmission lines are located within or adjacent to the project area. Therefore, no adverse impacts are anticipated.

5. Create a potential fire hazard?			X	

The project design incorporates all applicable fire safety code requirements and would include fire protection devices as required by the Central Fire Protection District of Santa Cruz County.

6. Release bio-engineered organisms or chemicals into the air outside of project buildings?				X

The proposed multi-family residential development would not release bio-engineered organisms or chemicals into the air outside of project buildings.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
H. Transportation/Traffic				
Does the project have the potential to:				
1. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	____	____	X	____

The following discussion is a summary of the Transportation Impact Analysis prepared by Fehr & Peers Transportation Consultants dated January 18, 2008, and revised by the Department of Public Works Road Planning Section, July 30, 2008 (Appendix E). The revisions reflect a reduction in units from 143 multi-family dwelling units to 102 multi-family dwelling units.

Background conditions include existing traffic volumes plus traffic generated from approved but not yet constructed or occupied projects and serve as the basis for identifying project impacts. Level of service (LOS) calculations were conducted for the key intersections to evaluate their operations under existing conditions, background conditions, background plus build out on the subject parcels (project), cumulative (long-term) without the project, cumulative plus the project, and cumulative with the project and with the build out of the remainder of parcel 037-061-04 (Table 2).

The proposed project is expected to generate 746 daily trips, 53 AM peak-hour trips (10 inbound and 43 outbound), and 74 PM peak-hour trips (48 inbound and 26 outbound).

According to the County of Santa Cruz General Plan, significant impacts at signalized intersections are defined to occur when:

(a) The addition of project traffic causes intersection operations to degrade from LOS D or better to LOS E or F, or

(b) Project traffic is added to an intersection operating at LOS E or F, resulting in a one-percent increase in the volume-to-capacity ratio of the sum of all critical movements.

Significant impacts at unsignalized intersections are defined to occur when:

(c) The addition of project traffic causes intersection operations to degrade from LOS D or better to LOS E or F, and the peak-hour signal warrant from the Manual on Uniform Traffic Control Devices (MUTCD) is satisfied, or

(d) Project traffic is added to an intersection operating at LOS E or F, and the peak-hour signal warrant from the MUTCD is satisfied.

Three intersections were analyzed for this project; Soquel Drive at Porter Street (signalized), Soquel Drive at Cunnison (not signalized), and Soquel Drive at Park Ave (signalized).

Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

Existing Conditions

As shown in Table 2, the intersections currently at Soquel Drive/Cunnison Lane and Soquel Drive/Park Avenue operate at acceptable levels during both the AM and PM peak hours under existing conditions. The Soquel Drive/Porter Street intersection currently operates at LOS D during both the AM and PM peak hours.

Table 2
Intersection Peak Hour Level of Service

Intersection	Control	Peak Hour	Existing Conditions		Background Conditions		Project Conditions		Cumulative No Project Conditions		Cumulative Plus Project Conditions		Cumulative +Project+56 additional SFDU	
			Delay*	LOS**	Delay*	LOS**	Delay*	LOS**	Delay*	LOS**	Delay*	LOS**	Delay*	LOS**
Soquel Dr/Porter St	Signal	AM	43.8	D	45.7	D	50.7	D	73.3	E	74.6	E		
		PM	53.6	D	58	E	60	E	81.8	F	84.8	F		
Soquel Drive/Cunnison Ln	Stop Sign	AM	0.6(29.1)	A(D)	0.6(29.9)	A(D)	1.4(35.7)	A(E)	0.8(48.7)	A(E)	2.0(67.6)	A(F)	3.4(94.2'	A/F\
		PM	0.4(30.9)	A(D)	0.4(31.7)	A(D)	0.9(39.6)	A(E)	0.4(48.7)	A(E)	1.0(67.0)	A(F)	1.8(93.4'	A/F\
Soquel Dr/Park Ave	Signal	AM	18.5	B	18.9	B	19.9	B	23.2	C	23.4	C		
		PM	27.7	C	28	C	29.8	C	40.1	D	41.2	D		

* Whole intersection weighted avg. control delay expressed in seconds per vehicle calculated using methods described in the 2000 HCM.
For side-street stop-controlled intersections, total delay for the worst movement is presented in parenthesis.

**LOS= Level of service. LOS calculations conducted using the Synchro level of service analysis software package.

" Critical V/C ratio is less than 1% ; No mitigation required

Background Conditions

All intersections shown are projected to operate at the same LOS as with existing

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

conditions levels, with the exception of the Soquel Drive/Porter Street intersection during the PM peak hours, and would experience a small increase in delay. The Soquel Drive/Porter Street intersection is projected to degrade from LOS D to LOS E without development of a multi-family housing project on the subject parcels.

Background Plus Project Conditions

The Soquel Drive/Porter Street intersection is projected to degrade incrementally with the development of a multi-family housing project on the subject parcels, however the increase is projected to be less than one percent of the background LOS and therefore is not considered significant. The other study intersections are projected to continue operating at the same LOS with the additional traffic generated from the proposed project.

Based on the criteria listed above, the proposed project would have a less-than-significant impact at study area intersections. Therefore, no roadway mitigation measures are required.

2. Cause an increase in parking demand which cannot be accommodated by existing parking facilities? ____ ____ X ____

The parking provided would be consistent with the requirements outlined in the PUD (Attachment A). The development of 1.5 spaces per studio and one bedroom unit, 2.0 parking spaces for a two-bedroom unit, 2.5 spaces for a three-bedroom unit, and 3.0 spaces for a four-bedroom unit. In addition, a minimum of 20 percent of the total residential parking spaces would be provided for on site guest parking in addition to the on site residential parking requirement. Thus, the project meets the code requirements for the required number of parking spaces; and therefore, new parking demand would be accommodated on site. No impacts are anticipated.

3. Increase hazards to motorists, bicyclists, or pedestrians? ____ ____ X ____

The proposed project would comply with current road requirements to prevent potential hazards to motorists, bicyclists, and/or pedestrians. The applicant would be required to submit and secure approval of engineered improvement plans from the Department of Public Works and the Planning Department for all roads, curbs and gutters, storm drains, erosion control, and other improvements specified.

Sidewalks are located on both sides of Soquel Drive and Porter Street and Park Avenue in the project vicinity. Sidewalks are located on both sides of Cunnison Lane south of the project site, and would be a requirement to install along the frontage of the project site.

According to the County General Plan, significant impacts to pedestrian and bicycle facilities are defined to occur when the project conflicts with existing or planned pedestrian or bicycle facilities, or it creates pedestrian and bicycle demand without

providing adequate facilities.

Significant impacts to transit facilities are defined to occur when the project conflicts with existing or planned transit facilities, or it generates potential transit trips without providing adequate facilities for pedestrians and bicyclists to access transit routes and stops.

The project would generate new pedestrian trips, and the sidewalks along the project frontage and near the project site can accommodate this demand. All bicycle improvements identified in the General Plan for the reach of Soquel Drive in the vicinity of the subject parcels have been made. Based on existing transit usage patterns in Santa Cruz County, the project is expected to generate fewer than five transit trips during the peak hour. These trips can be spread between several different buses during the peak hour, resulting in a minimal increase in transit demand. The existing pedestrian, bicycle, and transit facilities can accommodate the project-generated demand. The impacts to these facilities would be less than significant and no mitigation measures are required.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
4. Exceed, either individually (the project alone) or cumulatively (the project combined with other development), a level of service standard established by the county congestion management agency for designated intersections, roads or highways?	____	____	X	____

The proposed project is expected to generate 746 daily trips, 53 AM peak-hour trips (10 inbound and 43 outbound), and 74 PM peak-hour trips (48 inbound and 26 outbound).

According to the County of Santa Cruz General Plan, significant impacts at signalized intersections are defined to occur when:

(a) The addition of project traffic causes intersection operations to degrade from LOS D or better to LOS E or F, or

(b) Project traffic is added to an intersection operating at LOS E or F, resulting in a one-percent increase in the volume-to-capacity ratio of the sum of all critical movements.

Significant impacts at unsignalized intersections are defined to occur when:

(a) The addition of project traffic causes intersection operations to degrade from LOS D or better to LOS E or F, and the peak-hour signal warrant from the Manual on Uniform Traffic Control Devices (MUTCD) is satisfied, or

(b) Project traffic is added to an intersection operating at LOS E or F, and the peak-hour signal warrant from the MUTCD is satisfied.

Three intersections were analyzed for this project. Soquel Drive at Porter Street (signalized), Soquel Drive at Cunnison (not signalized), and Soquel Drive at Park Ave

Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

(signalized).

All three intersections are projected to operate at the same level of service under the cumulative with project, and cumulative with project and remaining parcel build out (Year 2025) scenarios as in the cumulative without project scenario. According to the impact criteria presented above, the project's impact to this location is less than significant.

I. Noise

Does the project have the potential to:

1.	Generate a permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	____	____	X

The project would create an incremental increase in the existing noise environment. However, this increase would be small, and would be similar in character to noise generated by the surrounding existing residential land uses.

2.	Expose people to noise levels in excess of standards established in the General Plan, or applicable standards of other agencies?	____	____	X

County General Plan Policy 6.9.1 requires all new development to conform with the Land Use Compatibility Guidelines. All new residential and noise sensitive land developments should conform to a noise exposure standard of 60 decibels (dB) L_{dn} (day/night average noise level) for outdoor noise and 45 dB L_{dn} for indoor noise. New development of land, which cannot be made to conform to this standard, shall not be permitted (County of Santa Cruz 1994).

The dominant source of vehicular noise in the area is the traffic on Soquel Drive, which is approximately 600 feet south of the project site. Noise levels at the project site generated from traffic on Soquel Drive are reduced because of the noise-shielding effects of roadside and residential structures, the distance from the source, and elevated topography and natural noise barriers (e.g., vegetation and trees). Outdoor noise levels at the project site are estimated to be 45 to 55 dB L_{dn}.

For residential structures, normally acceptable interior noise levels are 45 dB L_{dn} or less. Because typical residential structures reduce the exterior noise level by approximately 12–18 dBA, residential structures constructed in areas with 60 dB L_{dn} or less typically meet the acceptable interior noise level. No significant adverse impact from vehicular generated noise is anticipated.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
3. Generate a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	_____	X	_____	_____

Noise generated during construction would temporarily increase the ambient noise levels for adjoining areas. In order to minimize impacts associated with short-term construction noise, the County Planning Department would ensure that the following noise control measures are incorporated into the final construction design plans for the proposed project:

(a) Construction that involves motorized equipment would be limited to Monday through Friday from 8:00 AM to 4:30 PM to avoid the times of day and the days of the week when noise effects would cause the greatest annoyance to residents.

(b) Exceptions to the specified construction hours would be allowed only for construction emergencies and pre-approved by County Planning; and

(c) Signs would be posted that are clearly visible to users on Soquel Drive and Cunnison Lane that provide the phone number for the public to call to register complaints about construction-related noise problems. The applicant would be required to assign a single "disturbance coordinator" to log in and respond to all calls. All verified problems would be resolved within 24 hours of registering the complaint.

Implementing these mitigation measures would reduce potential significant construction-related noise impacts to a less than significant level.

J. Air Quality

Does the project have the potential to:
(Where available, the significance criteria established by the MBUAPCD may be relied upon to make the following determinations).

1. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	_____	X	_____	_____

The North Central Coast Air Basin does not meet state standards for ozone and particulate matter (PM_{10}). Therefore, the regional pollutants of concern that would be emitted by the project are ozone precursors (Volatile Organic Compounds [VOCs], nitrogen oxides [NOx]), and dust.

The proposed project is expected to generate 746 daily trips, 53 AM peak-hour trips (10 inbound and 43 outbound), and 74 PM peak-hour trips (48 inbound and 26 outbound). The carbon monoxide (CO) thresholds outlined in Section 5.4 of the Monterey Bay Unified Air Pollution Control District (MBUAPCD) CEQA Guidelines would not be exceeded by the proposed project (MBUAPCD 2004). The proposed project would not significantly affect levels of service at intersections or road segments

Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

that would cause or substantially contribute to violation of state or national Ambient Air Quality Standards (AAQS) for carbon monoxide.

Construction activities (e.g., excavation, grading, on-site vehicles) that directly generate 82 pounds per day or more of PM_{10} (dust) would result in a significant impact on local air quality if located nearby and upwind of sensitive receptors. Although project construction may result in a short-term, localized decrease in air quality due to generation of dust, the implementation of standard best management practices would reduce PM_{10} levels well below 82 pounds per day. The following mitigation measures would reduce construction-related emissions to a less than significant level.

- All active construction areas would be watered at least twice daily. Frequency would be based on the type of operation, soil, and wind exposure.
- All grading activities would be prohibited during periods of high wind (over 15 mph).
- Chemical soil stabilizers would be applied to inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Non-toxic binders (e.g., latex acrylic copolymer) would be applied to exposed areas after cut and fill operations and to hydroseed areas.
- Haul trucks would maintain at least two feet of freeboard.
- All trucks hauling dirt, sand, or loose materials would be covered.
- Vegetative ground cover would be installed in disturbed areas as soon as possible.
- Inactive storage piles would be covered.
- Wheel washers would be installed at the entrance to construction-sites for all exiting trucks.
- Streets would be swept if visible soil material is carried out from the construction-site.
- A publicly visible sign would be posted that specifies the telephone number and person to contact regarding dust complaints. This person would respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Unified Air Pollution Control District would be visible to ensure compliance with Rule 402 (Nuisance).
- The area under construction would be limited at any one time (MBUAPCD 2008).

Typical construction equipment would be used such as dump trucks, scrapers, bulldozers, compactors and front-end loaders, which temporarily emit precursors of ozone [i.e., volatile organic compounds (VOC) or oxides of nitrogen (NOx)]. However, these construction-related pollutants are taken into consideration in the emission inventories of state- and federally-required air plans, therefore the proposed project

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

would not have a significant impact on the attainment and maintenance of ozone AAQS.

2.	Conflict with or obstruct implementation of an adopted air quality plan?	____	____	X	____

The project would not conflict with or obstruct implementation of the regional air quality plan. See J-1, Air Quality above.

3.	Expose sensitive receptors to substantial pollutant concentrations?	____	X	____	____

There would be a short-term air quality impact from emissions generated during site preparation (including soil stabilization efforts) and building construction. Dust from grading and emissions from heavy equipment would incrementally increase emissions over the short-term. However, this impact would be mitigated to a less than significant level (See J-1 Air Quality mitigation).

4.	Create objectionable odors affecting a substantial number of people?	____	____	X	____

The project is not expected to create objectionable odors. No impacts are anticipated.

K. Public Services and Utilities

Does the project have the potential to:

1.	Result in the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
	a. Fire protection?	____	____	X	____

The project site is situated within the Central Fire Protection District located at 4747 Soquel Drive, Soquel, California. The station is located approximately one mile west of the project site. There would be an incremental increase in demand for fire protection services with project implementation, but not sufficient to warrant additional personnel or equipment.

	b. Police protection?	____	____	X	____

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

The project site is within the jurisdiction of the County of Santa Cruz Sheriff's Department located at 701 Ocean Street in Santa Cruz. The Sheriff's Department is located approximately four miles west of the proposed project site. However, the Live Oak Service Center is located at 870-B 17th Ave., about two miles from the project site. The Live Oak Service Center is staffed with a sergeant and a team of volunteers.

Response time depends on the character of the call, the availability of an officer, and the office's proximity to the site. Emergency response time to the project site is estimated at three minutes (for burglaries in progress or domestic violence) to two hours (for investigations of a non-emergency nature). The department also maintains a service agreement with the California Highway Patrol. No significant impacts are anticipated.

c. Schools? ____ ____ X ____

The proposed project site is located within the Santa Cruz High School District and the Soquel Union Elementary School District. While the project represents an incremental contribution to the need for services, the increase would be minimal. School, park, and transportation fees to be paid by the applicant would be used to offset the incremental increase in demand for schools.

d. Parks or other recreational activities? ____ ____ X ____

The proposed project site is located within the jurisdiction of the County of Santa Cruz Department of Parks, Open Space and Cultural Services. While the project represents an incremental contribution to the need for services, the increase would be minimal. School, park, and transportation fees to be paid by the applicant would be used to offset the incremental increase in demand for recreational facilities.

e. Other public facilities; including the maintenance of roads? ____ ____ X ____

While the project represents an incremental contribution to the need for services, the increase would be minimal. Moreover, the project meets all of the standards and requirements identified by the local fire agency as applicable, and school, park, and transportation fees to be paid by the applicant would be used to offset the incremental increase in demand for public roads.

2. Result in the need for construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? ____ X ____ ____

The drainage study by Fall Creek Engineering, Inc., December 2008, found that the

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

existing conditions of the immediate downstream drainage courses have the capacity to safely convey runoff from a 100-year, 24-hour storm event. Nobel Gulch has downstream limitations in capacity approximately 1000 feet below Soquel Drive where a culvert limits conveyance to safely pass up to a 25-year storm event, and approximately one mile downstream where the final 1,700 feet of Nobel Gulch is underground in a recently upgraded culvert that can safely pass up to a 10-year storm event.

On-site retention and detention would be required to limit runoff rates to pre-development levels for up to a 10-year storm event, reducing down stream impacts to less than significant. See B.4. for required mitigation.

3.	Result in the need for construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	____	____	X	____

The subject parcels are currently served by the Soquel Water district. No new water conveyance facilities would be required. The parcels to the east, south, and west of the proposed project parcels are all included within and serviced by the Santa Cruz County Sanitation District (SCCSD). Future development on the subject parcels would require annexation into the SCCSD.

4.	Cause a violation of wastewater treatment standards of the Regional Water Quality Control Board?	____	____	X	____

The project's wastewater flows would not violate any wastewater treatment standards.

5.	Create a situation in which water supplies are inadequate to serve the project or provide fire protection?	____	____	X	____

The proposed project would obtain water from Soquel Creek Water District, and would not rely on private well water. Although the project would incrementally increase water demand, the Soquel Creek Water District has indicated that adequate supplies are available to serve the project with implementation of the following mitigation measures.

(a) All applicants for new water service from Soquel Creek Water District are required to offset expected water use of their respective development by a 1.2:1 ratio by retrofitting existing developed property within the Soquel Creek Water District service area so that any new development has a "zero impact" on the District's groundwater supply. Applicants for new service shall bear these costs associated with the retrofit as deemed appropriate by the District up to a maximum set by the District and pay any associated fees set by the District to

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

reimburse administrative and inspection costs in accordance with District procedures for implementing this program.

(b) Plans for a water efficient landscape and irrigation system must be submitted to District Conservation Staff for approval.

(c) All interior plumbing fixtures must be low-flow and have the Environmental Protection Agency (EPA) Energy Star label.

(d) District Staff will inspect the completed project for compliance with all conservation requirements prior to commencing water service.

Soquel Creek Water District has determined that adequate supplies are available to serve the project, including supplies required for fire protection.

6.	Result in inadequate access for fire protection?	____	____	X	____

The project's road access meets County standards and has been approved by the Central Fire Protection District. In addition, all interior driveways would be required to meet standards for fire access.

7.	Make a significant contribution to a cumulative reduction of landfill capacity or ability to properly dispose of refuse?	____	____	X	____

The project would make an incremental contribution to the reduced capacity of regional landfills. However, this contribution would be relatively small and would be of similar magnitude to that created by existing land uses around the project.

8.	Result in a breach of federal, state, and local statutes and regulations related to solid waste management?	____	____	X	____

The proposed project would not breach federal, state or local statutes or regulations related to solid waste management.

L. Land Use, Population, and Housing

Does the project have the potential to:

1.	Conflict with any policy of the County adopted for the purpose of avoiding or mitigating an environmental effect?	____	____	X	____

General Plan policy 5.1.12 requires the restoration of degraded sensitive habitat as a condition of development approval. Any future development on the subject parcels will require the removal of non-native invasive plants within, and restoration of, the riparian

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

corridor. The proposed project does not conflict with any policies adopted for the purpose of avoiding or mitigating an environmental effect.

2. Conflict with any County Code regulation adopted for the purpose of avoiding or mitigating an environmental effect?	____	____	X	____

The proposed project does not conflict with any regulations adopted for the purpose of avoiding or mitigating an environmental effect.

3. Physically divide an established community?	____	____	X	____

The project would not include any element that would physically divide an established community.

4. Have a potentially significant growth inducing effect, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	____	____	X	____

Although the project proposes a General Plan amendment and zone change, the construction of 102 multi-family residences would not result in a potentially significant direct growth inducing effect. The project proposes a maximum development density of 20 dwelling units per usable acre on the project site. The project would rezone the parcel and amend the General Plan from "Single-Family Residential - 10,000 square foot minimum parcel size (R-1-10)" and "Urban Low Residential (R-UL)" to "Multi-Family Residential – Regional Housing Need (RM-R)" and "Urban High Residential" with a PUD.

The Regional Housing Need "R" Combining District (Chapter 13.10.477 and 478) proposes to increase the supply of affordable housing in the County of Santa Cruz by designating sites for development at 20 units per acre. Development projects on-sites designated with the Regional Housing Need "R" Combining District are required to provide 40 percent of the units as affordable housing. In addition, the Regional Housing Need "R" Combining District shall only be applied to those parcels identified by the Board of Supervisors in advance of housing element adoption, as part of the housing element, or as part of the implementation of housing element policies. For sites to be designated under the Regional Housing Need "R" Combining District, the site must:

(a) Be located within the Urban Services Line; and

(b) Be identified by the County to satisfy the Regional Housing Need. A private

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

landowner may not apply for designation under the Regional Housing Need "R" Combining District without the concurrence of the Board of Supervisors prior to application.

Therefore, the density of the surrounding development would not be affected by the proposed project. No growth inducing impacts are anticipated.

In addition, the proposed project does not propose to extend roads or other infrastructure, and therefore, would not result in potentially significant indirect growth inducing impacts.

5.	Displace substantial numbers of people, or amount of existing housing, necessitating the construction of replacement housing elsewhere?	_____	_____	X	_____

The proposed project would entail a net gain in housing units.

M. Non-Local Approvals

Does the project require approval of federal, state, or regional agencies? Yes X No ____
See page 2 for list of agencies.

N. Mandatory Findings of Significance

1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant, animal, or natural community, or eliminate important examples of the major periods of California history or prehistory? Yes ____ No X

2. Does the project have the potential to achieve short term, to the disadvantage of long-term environmental goals? (A short term impact on the environment is one which occurs in a relatively brief, definitive period of time while long term impacts endure well into the future) Yes ____ No X

3. Does the project have impacts that are individually limited, but cumulatively considerable ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, and the effects of reasonably foreseeable future projects which have entered the Environmental Review stage)? Yes ____ No X

4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? Yes ____ No X

References

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California Geological Survey Probabilistic Seismic Hazards Assessment Model, 2002. http://redirect.conservation.ca.gov/cgs/rghm/pshamap/pshamain.html

County of Santa Cruz 1994.
1994 General Plan and Local Coastal Program for the County of Santa Cruz, California. Adopted by the Board of Supervisors on May 24, 1994, and certified by the California Coastal Commission on December 15, 1994.

Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, March 2, 2006

Geotechnical Investigation for Minor Land Division
APN 037-101-43, 3361 Cunnison Lane, Soquel, California
Haro, Kasunich & Associates, March 1992

MBUAPCD 2008
Monterey Bay Unified Air Pollution Control District CEQA Air Quality Guidelines

MBUAPCD 2004
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Preliminary Geotechnical Investigation for 43 Lot Subdivision, Cunnison Lane, Santa Cruz County, California. Haro, Kasunich & Associates, April 1990

Soquel Creek Water District Water Demand Offset Requirements,
http://www.soquelcreekwater.com/WDO_Info.htm

U.S. Geological Survey, 2003
U.S. Department of Interior, U.S. Geological Survey, Fact Sheet 039-03

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APPENDIX A

ORDINANCE GRANTING A PLANNED UNIT DEVELOPMENT AS ALLOWED BY SANTA CRUZ COUNTY CODE RELATING TO ESTABLISHMENT OF DEVELOPMENT STANDARDS FOR APN: 037-101-02, 037-061-66, AND A PORTION OF 037-061-04

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ORDINANCE NO. _____

ORDINANCE GRANTING A PLANNED UNIT DEVELOPMENT AS ALLOWED BY SANTA CRUZ COUNTY CODE RELATING TO ESTABLISHMENT OF DEVELOPMENT STANDARDS FOR APNS: 037-101-02, 037-061-66, 037-061-04

The Board of Supervisors of the County of Santa Cruz ordains as follows:

SECTION I

A Planned Unit Development is hereby granted to the property located on the east side of Cunnison Lane about 700 feet north of the intersection of Soquel Drive and Cunnison Lane; in the Soquel Planning Area, also known as the Erlach Housing Site, and shown on Exhibit A attached hereto and subject to the conditions shown on Exhibit B, attached hereto.

SECTION II

This ordinance shall become effective 31 days after adoption.

PASSED AND ADOPTED this _____ day of _____ 2008 by the Board of Supervisors of the County of Santa Cruz by the following vote:

AYES:	SUPERVISORS
NOES:	SUPERVISORS
ABSENT:	SUPERVISORS
ABSTAIN:	SUPERVISORS

_____
Chairman of the Board of Supervisors

Attest: _____
Clerk of the Board

APPROVED AS TO FORM:

_____
County Counsel

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EXHIBIT A

Planned Unit Development
Conditions of Approval

Property located on the east side of Cunnison Lane about 700 feet north of the intersection of Soquel Drive and Cunnison Lane; in the Soquel Planning Area.

APNs: 037-101-02, 037-061-66, 037-061-04

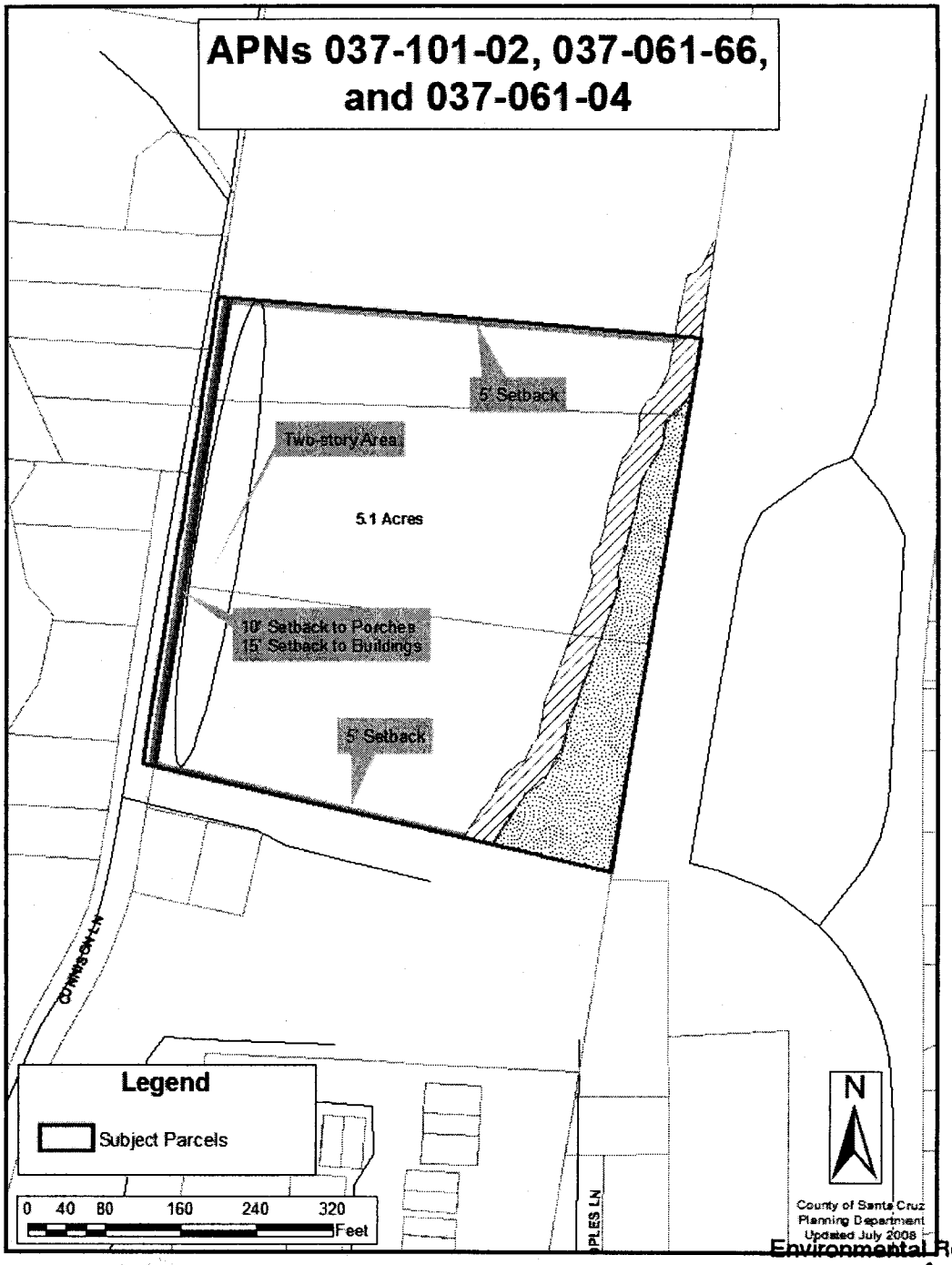

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EXHIBIT B

Planned Unit Development
Conditions of Approval

Property located on the east side of Cunnison Lane about 700 feet north of the intersection of Soquel Drive and Cunnison Lane; in the Soquel Planning Area.

APNs: 037-101-02, 037-061-66, 037-061-04

This site contains 5.1 useable (developable) acres, equating to 102 dwelling units, of these, 15 affordable units and an in leiu fee for .3 of a unit are required under County Code Section 17.10.030(b)(1) and 26 affordable units are required under County Code Section 17.10 .030(b)(6). Development of this site is by-right in that the use and density for the site are not discretionary. A Level VII design review hearing is required.

I) General Site Standards

A) All requirements and standards contained in Section 13.10.475 through 13.10.478 of the County Code (Regional Housing Needs "R" Combining District) shall be applicable unless expressly modified by the conditions of this Planned Unit Development (PUD).

B) Development Standards. The following development standards supersede the development standards in the County Code. Unless specifically defined below, developments must meet all required development standards in the County Code at the time the Design Review application is deemed complete. All of the site standards contained within Chapter 13.10 shall be applicable unless modified by this Planned Unit Development.

1) Circulation and Parking Requirements

(a) Parking requirements.

(i) 1.5 spaces per studio or one-bedroom unit;

(ii) 2.0 spaces for two-bedroom unit;

(iii) 2.5 spaces for three-bedroom unit; and

(iv) 3.0 spaces per four-bedroom unit.

(v) An additional 20% of the total number of parking spaces to accommodate guest parking.

(vi) A reduction to the required on-site parking standard above may be considered by the Board of Supervisors as part of the Design Review Permit. Any request shall include an on-site parking management plan prepared by a traffic engineer.

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(vii) The maximum number of required parking spaces that may be compact in size shall be as specified in County Code Section 13.10.553 (e) or its successor ordinance.

(viii) The standards for off-street parking facilities as outlined in County Code Section 13.10.554 at the time of application is deemed complete shall apply.

(b) Circulation Requirements. All interior driveways shall be a minimum of 20 feet in width for two-way circulation and 12 feet in width for one-way circulation. A minimum 50-foot centerline radius on all access routes is required.

(c) Bicycle Storage. A minimum of one lockable storage space for bicycle storage shall be provided for each dwelling unit. This lockable storage area may be located within the storage area, as required in Section III.D.1(d).

(d) Accessibility. Developments must meet accessibility requirements of Title 24 of the Building Code or successor code in effect at the time the Building Permit application is submitted.

(i) Accessible parking shall be provided consistent with California State Law. This applies to the design and location of parking spaces, number of accessible spaces provided, and accessible path of travel through the development and to the public right-of-way.

2) Requirements for Structures

(a) Number of Stories. A maximum of three (3) stories as defined by the County Code exclusive of subsurface parking is allowed.

(i) Three stories are allowed except in areas restricted to a two-story maximum due to visual impacts. These areas are delineated on the map, Exhibit A, and are more specifically described below in Section I.B.4.c.

(b) Height. Height of three-story structures may be up to 37 feet, exclusive of sub-surface parking, and the height of two-story structures may be up to 28 feet, exclusive of subsurface parking.

(i) For any structure proposed to be within 2 feet of the maximum height limit, the building plans shall include a roof plan and a surveyed contour map of the ground surface, superimposed and extended to allow height measurement of all features. Spot elevations shall be provided at points on the structure that have the greatest difference between ground surface and the highest portion of the structure above. This requirement is in addition to the standard requirement of detailed elevations and cross-sections and the topography of the project site, that clearly depict the total height of the proposed structure above preconstruction natural grade and finished grade.

3) Site Standards

(a) Lot Coverage and Floor Area Ratio. Lot Coverage Site Standards and Floor Area Ratio Site Standards specified in County Code Section 13.10.323 (b) do not apply.

(b) Setbacks. The following setbacks are established from the perimeter of the subject property, as shown on Exhibit A, to the structures in aggregate and are as follows:

(i) North: 5 feet

(ii) East: Outside the riparian buffer area shown on Exhibit A.

(iii) West: 10 feet from back of sidewalk to front porches, 15 feet from back of sidewalk to buildings

(iv) South: 5 feet

- The landscaping strip required by County Code Section 13.11 will be eliminated along the southern property line if reciprocal parking agreements are made with the owners of the Farm Apartments located on APN 037-101-54, directly south of the site.

(v) For projects involving a Tentative Map, the interior setbacks and lot size shall be established through the Design Review process and are not subject to obtaining a Residential Development Permit under County Code Section 13.10.323(d)(1)(A) or its successor ordinance.

(c) Riparian Area. A riparian buffer of 20 feet shall be maintained.

(i) In accordance with General Plan Policy 5.1.12, the developer shall improve the degraded sensitive habitat of Nobel Gulch in accordance with a restoration plan approved by County Planning Department Staff. The restoration plan shall include the removal of non-native species from the riparian corridor, the establishment of native tree species in their place, a plan for the long term maintenance of the corridor, and additional restoration commensurate with the scope of the project, as determined by Staff.

(d) Mature Trees. Recognizing that the required density on the site will require many trees to be removed, to the greatest extent feasible, existing mature native trees shall be preserved and incorporated into the project design. The developer shall submit an arborist's report regarding the health and stability of all mature trees 6 inches or greater in diameter at breast height and shall retain as many of these trees as possible.

(e) Cunnison Lane Frontage. Structures along the Cunnison Lane frontage(the area within 50 feet of the edge of the roadway) shall be limited to two stories and 28 feet in height for, and shall incorporate front porches on the ground level, facing the street.

(f) Entrances. A minimum of two entrances to the property from Cunnison Lane shall be provided. These entrances shall meet the Department of Public Works Design Criteria for separation.

(g) Open Space. The open space requirements specified in County Code Section 13.10.323 e(6)F shall not apply.

(i) The Design Review process shall determine the appropriate amount and location of open space on-site, with special consideration for opportunity to incorporate a large open space area adjacent to the riparian corridor.

(h) Roadway Design. The following standards shall apply to roadways on the project site and along the Cunnison Lane frontage:

(i) Paved Road Width: 32 foot for Cunnison Lane (two 12-foot travel lanes and an 8-foot parking shoulder on west side only), 20' for two-way interior driveways, 12' for one-way driveways

- In order to maintain a consistent roadway design, right-of-way sufficient to accommodate a 32-foot wide roadway, (between 10 and 16 feet over the length of the property, depending on existing dedicated right-of-way) shall be dedicated to the County along the Cunnison Lane frontage.

(ii) Improvements: Construction of and the dedication of an easement for a 4' landscaping strip including street trees that are consistent with the Urban Forestry Master Plan, a 4' sidewalk connecting to existing improvements to the south along Cunnison Lane, and any associated drainage improvements that may result from the work.

- If needed in order to meet the requirements for guest parking on-site, roadway improvements may include parking bays on the east side of Cunnison Lane fronting the project.

(i) Any signs shall comply with Section 13.10.580 or any successor ordinance and the location and design shall be reviewed and approved as part of the Design Review process. The following signs are allowed:

(i) A non-illuminated temporary sign pertaining to the sale, lease or rental of a dwelling and limited to six square feet in size or less.

(ii) A permanent identification sign, in-directly illuminated, of 12 square feet or less.

4) Building Design Standards

(a) It shall be an objective of building design that the basic architectural design principles of balance, harmony, order and unity prevail, while not excluding the opportunity for unique design.

(b) The requirements of Chapter 13.10 relating to distance between structures shall not apply.

(c) To reduce bulk and mass, efforts shall be made to provide articulation and architectural features and to provide a transition from the adjacent properties. This transition shall be achieved by the following:

(i) Restricting buildings to 28 feet and two stories in height within 50 feet of the Cunnison Lane frontage.

(ii) Strongly encouraging buildings facing public roads to incorporate features such as step-back heights, articulation, variations in finishes, glazing, building separation and varied roof heights.

II) Project Review

A) Entitlements. All entitlements, with the exception of the building permit application review shall be processed concurrently at Level VII, subject to the processing provisions of 18.10.210, 18.10.332, and 18.10.211.

B) Tentative Map. If a Tentative Map approval is required, it must be included in the application. A Residential Development Permit, normally required by Section 13.10.323(d)(1)(A) is not required.

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1) Development that includes approval of a Tentative Map is subject to the provisions of the Subdivision Map Act and Chapter 14.01. Where a Tentative Map is proposed, the public hearing shall be expanded to address findings necessary under the Subdivision Map Act. Wherever possible the environmental review performed at the time the PUD is adopted will be utilized in the processing of the Tentative Map unless the Environmental Coordinator determines that additional California Environmental Quality Act (CEQA) review is required based upon the available information.

III) Affordable Housing

A) Affordability Level. All development proposals for this parcel are required to provide a minimum of forty (40) percent of the total number of units as affordable, as required by County Code Section 13.10.475.

B) Financial Liability

1) In the event that a developer believes that the affordable housing requirements for a project proposed for this site renders the project financially infeasible, the developer may request relief from a proportional amount of the affordability requirements. That request shall be submitted to the Planning Director with all supporting information, including the development pro forma for the project. The Planning Director shall analyze that request and make suitable recommendations to the Board of Supervisors. In the event that the Board finds that the developer has provided evidence that fulfillment of the affordable housing requirements renders the project financially infeasible, the Board shall grant an increase in the allowed unit resale price, above the price restrictions contained in Section 17.10.030(b)(1) and Chapter 17.10.030(b)(6) of the County Code, in an amount equal to that required to render the project financially feasible. In the event that such price modifications are granted, the developer shall grant the County Redevelopment Agency the option to purchase units at the revised sales price for the purpose of writing them down to suitable levels of affordability, consistent with the intent of this PUD.

C) Participation Agreement

1) Prior to Building Permit issuance or prior to filing of the Final Map, if one is required, the developer shall enter into a Certification and Participation Agreement with the County of Santa Cruz to meet the Affordable Housing Requirements specified by Chapter 17.10 of the County Code and as noted in III.A.1 and 2.

D) Clustering

(a) To the extent that greater than 40% of the housing units built on the site are made affordable to households of moderate or lower income, an application made to develop the portion of APN 037-061-04 north of the PUD area either concurrently with or within 7 years of the approval for development of the PUD area may count those units toward the affordability requirements of section 17.10.030 of the County Code on a bedroom-for-bedroom basis.

IV) Design Review

A) Public Hearings

1) Development proposals shall undergo Design Review and a public hearing process limited to design issues only. No discretionary permit is required for the by-right density or use of the site. For development proposals under these by-right provisions, applicants

must apply for a Level VII Design Review, which requires review at public hearing by the Planning Commission and Board of Supervisors. The Design Review Permit is valid for a maximum of two (2) years. In order for the Design Review Permit to be exercised, the building permit shall be issued within the two year period.

(a) Requests for a time extension for the Design Review Permit shall be processed as a Level VII permit review. The permit may be extended for one year up to five (5) times for a total permit life of seven years.

B) Development Standards

1) All requirements of the Site, Architectural and Landscape Design Review (Chapter 13.11) or successor ordinance in effect at the time a Design Review application is deemed complete for processing shall be applicable unless modified by this PUD.

2) All applicable requirements and standards of the Zoning Regulations (Title 13, Chapter 13.10) and Environmental and Resource Protection Regulations (Title 16) in effect at the time a Design Review application is deemed complete for processing shall apply unless modified by this PUD.

3) An updated geotechnical report shall be prepared for the site based on the April 1990 Haro, Kasunich & Associates geotechnical investigation. Four copies of the report shall be submitted to the County for review at the time of project application and accepted prior to the application being determined complete. All requirements and recommendations of the approved report shall be incorporated into the project design. A Plan Review letter shall be submitted as part of the Design Review submittal and Building Permit Submittal. All future development on the site shall comply with the requirements of the accepted updated geotechnical report prepared by a licensed geotechnical engineer.

4) A restoration plan for the riparian corridor surrounding Nobel Gulch shall be prepared and submitted to the Planning Department for review at the time of project application, as required by Section I.B.3.c(i) of this PUD.

5) All future development on the site shall comply with the requirements of the traffic study prepared by Fehr and Peers dated January 2008, or an update thereof.

C) Minor Variations

1) Minor variations to this permit that do not affect the overall concept or density may be approved by the Planning Director at the request of the applicant or staff.

D) Level VII Design Review Submittal Requirements

1) Preliminary Architectural and Site Plans

(a) Preliminary architectural and site plans, prepared by a licensed architect, meeting the standards established by the Planning Department for multi-family residential application submittal, shall be submitted. The plans shall incorporate, but not be limited to, all requirements contained in this PUD.

(b) The site plan shall clearly delineate all non-usable areas, including but not limited to:

(i) Riparian area and buffer, as shown on Exhibit A.

2) Utilities, Roads and Services

(a) Submit preliminary engineered improvement plans to the Planning Department for all roads, curbs and gutters, storm drains, erosion control, and other improvements proposed or required by this PUD. Form and content of the plans shall meet the standards established by the Planning Department for multi-family residential application submittal.

(i) Preliminary improvement plans shall meet the following requirements:

- All improvements shall be prepared by a registered civil engineer and shall meet the requirements of the County of Santa Cruz Design Criteria except as modified herein. Plans shall also comply with applicable provisions of Title 24 (Accessibility) of the State Building Code.
- Preliminary drainage details including existing and proposed contours, plan views and centerline profiles of all driveway improvements, complete drainage calculations and all volumes of excavated and fill soils. This includes off-site work.
- Preliminary grading plans must be submitted at time of application. The project design shall minimize grading on-site and off-site to the maximum extent possible. This includes designing the grading and foundations to follow existing topography as much as possible. The grading plans shall include existing and proposed contours, plan views and centerline profiles of all driveway improvements, locations, and heights of all retaining walls, preliminary drainage design, grading cross sections through proposed building pads, and all volumes of excavated and fill soils. This includes all on-site and off-site work.
- Submit preliminary sanitation plans to the Department of Public Works for all sanitary improvements proposed or required by this PUD.

(ii) All road plans shall comply with all requirements of the Department of Public Works Road Engineering and shall be consistent with the County's Design Criteria.

3) A sign plan indicating the location and size of all signs on the site shall be submitted. The signs shall be consistent with the provisions of this PUD.

4) A current water will-serve letter from the Soquel Creek Water District shall be submitted to the Planning Department.

5) A current sanitary sewer will-serve letter from the County Sanitation District shall be submitted to the Planning Department.

(a) The Local Agency Formation Commission (LAFCo) approval of an annexation into the Sanitation District will be required prior to the issuance of a will-serve letter.

(b) All existing septic systems shall be properly abandoned per County requirements

(c) Due to the property's topography, a private pump station may be required to sewer some or all of the developments structures. The pump station shall be designed and constructed to resemble the development and shall be privately maintained. An onsite private generator will be required to run the sewer pump(s) in case of power outage. Odor control shall be required on the pump.

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V) Final Map Requirements and Timing.

If the project includes a Map, the following requirements shall be met prior to the final filing:

A) Drainage. Final engineered drainage details shall be submitted to the County Planning and Public Works departments for both on- and off-site drainage work. Drainage plans shall show that the release rate to Rodeo Gulch will not exceed the pre-development 10-year storm level. Drainage from road improvements shall be filtered and released into the new drainage system along Soquel Avenue. A Construction Activities Stormwater General National Pollution Discharge Elimination System (NPDES) Permit shall be obtained form the State Water Resources Control Board.

B) Roads. Final engineered road improvement plans shall be submitted to the County Planning and Public Works departments for both on- and off-site road improvements.

C) Sanitation. The applicant shall form a homeowner's association with ownership and maintenance responsibilities for all on-site sewers for this project. Reference to the homeowners association shall be included on the Final Map and in the Association's Covenants, Conditions &Restrictions, which shall be recorded and include District-approved language on maintenance responsibilities.

1) The applicant shall provide a copy of the CC&Rs to the District prior to the filing of the Final Map.

D) Recorded Conditions. Proof must be submitted that the conditions of all required permits (such as Design Review, NPDES) have been recorded in the official records of the County Recorder.

E) Affordable Housing. The developer must enter into an Affordable Housing Participation Agreement with the County of Santa Cruz.

F) Fees. All applicable in-lieu fees shall be paid.

1) Unless otherwise satisfied by meeting the requirements of County Code Chapter 15.01 or its successor ordinance, park dedication in-lieu fees shall be paid for each dwelling unit. The fees in effect at the time of filing of a Final Map, if applicable, shall be paid.

2) Unless otherwise satisfied by meeting the requirements of County Code Chapter 15.04 or its successor ordinance, Child Care Development fees shall be paid for each dwelling unit. The fees in effect at the time of filing of a Final Map, if applicable, shall be paid.

3) Transportation improvement fees shall be paid for each dwelling unit. The fees in effect at the time of filing of a Final Map, if applicable, shall be paid. A credit may be allowed for installation of improvements off-site that are part of the Capital Improvement Program.

4) Roadside improvement fees shall be paid for each dwelling unit. The fees in effect at the time of filing of a Final Map, if applicable, shall be paid. A credit may be allowed for installation of improvements off-site that are part of the Capital Improvement Program.

VI) Building Permit Requirements and Timing.

Prior to the issuance of any building permit, all of the following conditions shall be met, some of which may have been met at the Final Map stage:

A) Plans shall be consistent with the Design Review approved project and all requirements of this PUD.

B) Final engineered drainage details shall be submitted to the Department of Public Works, Drainage for both on–site and off-site drainage work.

1) The allowable release rate from the site shall be limited to the 10-year predevelopment flow rates or less based on an assessment performed by a drainage engineer and reviewed and approved by the Department of Public Works Drainage. The safe overflow paths for any proposed mitigation system shall be described and analyzed, and techniques such as minimizing site disturbance, minimizing impervious areas, utilizing pervious surfacing, eliminating directly connected impervious areas, clustering development, etc shall be considered.

2) All runoff from parking and driveway areas shall go through water quality treatment prior to discharge from the site.

3) Depending on the nature of the proposed development, Public Works staff may inspect the construction of the drainage related items.

4) Zone 5 fees will be assessed on the net increase in impervious area due to the development project. Semi-pervious surfaces will be charged at a 50% rate.

C) Final engineered road improvement plans shall be submitted to the Department of Public Works, Road Engineering for both on–site and off-site road improvements.

D) Submit proof that the conditions of all required permits (such as Design Review, Tentative Map) and all required Declarations of Restriction and Statements of Acknowledgment have been recorded in the official records of the County Recorder.

E) All applicable in lieu fees shall be paid, if not paid at the time of the filing of the Final Map.

1) Unless otherwise satisfied by meeting the requirements of County Code Chapter 15.01 or its successor ordinance, park dedication in-lieu fees shall be paid for each dwelling unit. The fees in effect at the time of building permit issuance shall be paid.

2) Unless otherwise satisfied by meeting the requirements of County Code Chapter 15.04 or its successor ordinance, Child Care Development fees shall be paid for each dwelling unit. The fees in effect at the time of building permit issuance shall be paid.

3) Transportation improvement fees shall be paid for each dwelling unit. The fees in effect at the time of building permit issuance shall be paid. A credit may be allowed for installation of improvements off-site that are part of the Capital Improvement Program.

4) Roadside improvement fees shall be paid for each dwelling unit. The fees in effect at the time of building permit issuance shall be paid. A credit may be allowed for installation of improvements off-site that are part of the Capital Improvement Program.

5) Submit a written statement signed by an authorized representative of the school district in which the project is located confirming payment in full of all applicable developer fees and other requirements lawfully imposed by said school district in which the project is located at the time of building permit issuance. The applicant/developer is advised that the development may be subject to inclusion in a Mello-Roos Community Facilities District.

F) Plan review letters shall be obtained from the technical report authors indicating that the plans comply with the County approved technical report and all of their recommendations have been incorporated into the project plans.

G) All requirements of the Central Fire Protection District shall be met with respect to access, turnarounds, fees, water availability and design features.

H) The units shall be connected for sewer service to the Sanitation District. All regulations, conditions and hookup charges of the Sanitation District shall be met. Off-site improvements may be required. Final engineered plans shall be submitted, which comply with all requirements and standards of the Sanitation District.

1) Payment equivalent to the required flow metering and odor control equipment will be collected at the time sewer connection permits are obtained.

2) If a private pump station is proposed as part of the project, a private pump station and sewer system maintenance and response manual shall be outlined by the applicant and submitted to the District for review and approval.

I) All units shall be served by the Soquel Creek Water District. All requirements of that water district including the payment of connection charges shall be met. Engineered improvement plans for all water line extensions required by the Soquel Creek Water District shall be submitted for the review and approval of the water agency. Off-site improvements may be required.

J) Final engineered plans shall be submitted complying with all requirements and standards of the Soquel Creek Water District.

K) The developer shall enter into an Affordable Housing Participation Agreement.

L) Prior to the final inspection or clearance of the building permit, all of the site improvements shown on the approved building permit plans and Design Review Approval shall be installed/ implemented.

VII) Construction Phase Requirements

A) Prior to any site disturbance or physical construction on the subject property the following condition shall be met:

1) Pre-Construction Meeting: In order to ensure that the mitigation measures are communicated to the various parties responsible for constructing the project, prior to any disturbance on the property the applicant shall convene a pre-construction meeting on the site. The following parties shall attend: applicant, grading contractor supervisor, project arborist, and Santa Cruz County Environmental Planning staff. The temporary construction fencing demarcating the edge of the riparian corridor setback and the tree protection fencing will be inspected at that time. Approval of the results of the pre-construction biotic surveys will be reaffirmed at this time. The receiving site for any exported fill will also be identified and County approved grading permits presented.

B) All work adjacent to or within a County road shall be subject to the provisions of Chapter 9.70 of the County Code, including obtaining an encroachment permit where required. Where feasible, all improvements adjacent to or affecting a County road shall be coordinated with any planned County-sponsored construction on that road. The developer shall obtain an Encroachment Permit from the Department of Public Works for any work performed in the

public right-of-way. All work shall be consistent with the Department of Public Works Design Criteria unless otherwise specifically excepted by this Planned Unit Development.

C) No land clearing, grading or excavating shall take place between October 15 and April 15 unless the Planning Director grants a separate winter grading permit, which may or may not be granted.

D) No land disturbance shall take place prior to issuance of building permits (except the minimum required to install required improvements, provide access for County required tests or to carry out work required by the conditions of an entitlement permit).

E) Unless determined to be unnecessary by an archaeological field survey, an archaeologist shall be present on-site during all ground disturbance on the site.

F) In the event that threatened or endangered plant or animal species are discovered on the site, the habitat areas for these species shall be avoided and no disturbance will be permitted.

G) Pursuant to Sections 16.40.040 and 16.42.100 of the County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this development, any artifact or other evidence of an historic archaeological resource or a Native American cultural site is discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner if the discovery contains human remains, or the Planning Director if the discovery contains no human remains. The procedures established in Sections 16.40.040 and 16.42.100, shall be observed.

H) To minimize noise, dust and nuisance impacts of surrounding properties to insignificant levels during construction, the owner/applicant shall or shall have the project contractor, comply with the following measures during all construction work:

1) Limit all construction to the time between 7:30 am and 4:30 pm weekdays unless a temporary exception to this time restriction is approved in advance by County Planning to address an emergency situation; and

2) Each day it does not rain, wet all exposed soil frequently enough to prevent significant amounts of dust from leaving the site.

I) The applicant shall designate a disturbance coordinator and a 24-hour contact number shall be conspicuously posted on the job site. The disturbance coordinator shall record the name, phone number, and nature of all complaints received regarding the construction-site. The disturbance coordinator shall investigate complaints and take remedial action, if necessary, within 24 hours of receipt of the complaint or inquiry.

J) One (1) "construction/security trailer" (maximum 12 feet by 60 feet) is allowed on the site during construction. The size and location of the unit shall conform to all yard setbacks contained in the PUD and shall be shown on the plot plan. Compliance with Section 13.10.683 or any successor ordinance is required. A building permit is required for the installation of the construction trailer.

VIII) Mitigation Monitoring Program

A) The mitigation measures listed under this heading have been incorporated in the conditions of this approval in order to mitigate or avoid significant effects on the environment. As required by Section 21081.6 of the California Public Resources Code, a monitoring and reporting program for the mitigations is hereby adopted as a condition of approval. The purpose of this monitoring is to ensure compliance with the environmental mitigations identified in the

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implementation and operation. Failure to comply with the conditions contained within the PUD, including the terms of the adopted mitigation monitoring program, may result in the revocation of the PUD pursuant to section 18.10.462 of the Santa Cruz County Code.

IX) Mitigation Measures

A) *(To be incorporated following CEQA Review Comment Period)*

B)

C)

APPENDIX B

BIOTIC ASSESSMENT FOR THE ERLACH PROPERTY PREPARED BY ECOSYSTEMS WEST CONSULTING GROUP, JANUARY 2009

BIOTIC ASSESSMENT FOR THE ERLACH PROPERTY SANTA CRUZ COUNTY, CALIFORNIA

Prepared for

County of Santa Cruz
Planning Department
701 Ocean Street
Santa Cruz, CA 95062

Prepared by

EcoSystems West Consulting Group
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December 2008

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INTRODUCTION

This report presents the methodologies and findings of a botanical and wildlife assessment conducted by EcoSystems West Consulting Group for the proposed Erlach 5.1 acre project site in central coastal Santa Cruz County, California. The objectives of the botanical and wildlife assessment were:

- To generally characterize the vegetation in the proposed project area.
- To identify the wildlife resources (habitats and species) in the vicinity of the project area.
- To identify special-status plant and wildlife species and sensitive habitats occurring, or potentially occurring, in the project area.

SITE DESCRIPTION AND LOCATION

The 5.1-acre project site is located on the east side of Cunnison Lane at 3250 and 3310 Cunnison Lane, about 700 feet north of its intersection with Soquel Drive; in the Soquel planning area of unincorporated Santa Cruz County (Figures 1 and 2). The proposed project area consists of two full parcels and a portion of a third parcel designated as APNs 037-101-02, 66, and 04.

Primary vehicular access to the project site is from Cunnison Lane to the west via Soquel Drive. Cunnison Lane is paved without curb, gutter or sidewalks along the project frontage. The site is also located within the Santa Cruz County Sanitation District, and the Soquel Water District provides water service.

The predominant land uses surrounding the project site are open space to the north, single family residential to the west, an urban residential development to the south, and a mobile home park across a riparian corridor to the east. The soils on the Erlach parcels are primarily mapped as Watsonville loam, thick surface (2 to 15% slopes) by the Soil Conservation Service (1989). This soil type occurs on coastal terraces formed in alluvium. They exhibit very slow permeability with slow to medium runoff and slight to moderate erosion hazard. The Watsonville loam series is identified as hydric, meeting the hydric criteria as a soil in the Aquic suborder, poorly drained and frequently occurring water table at less than 1.5 feet from the surface for a significant period during the growing season, and if permeability is less than 6.0 in/hr in any layer within 20 inches (USDA-Soil Conservation Service 1992).

The project area consists of two parcels with single-family units and accessory structures, and a portion of a third parcel that is undeveloped.

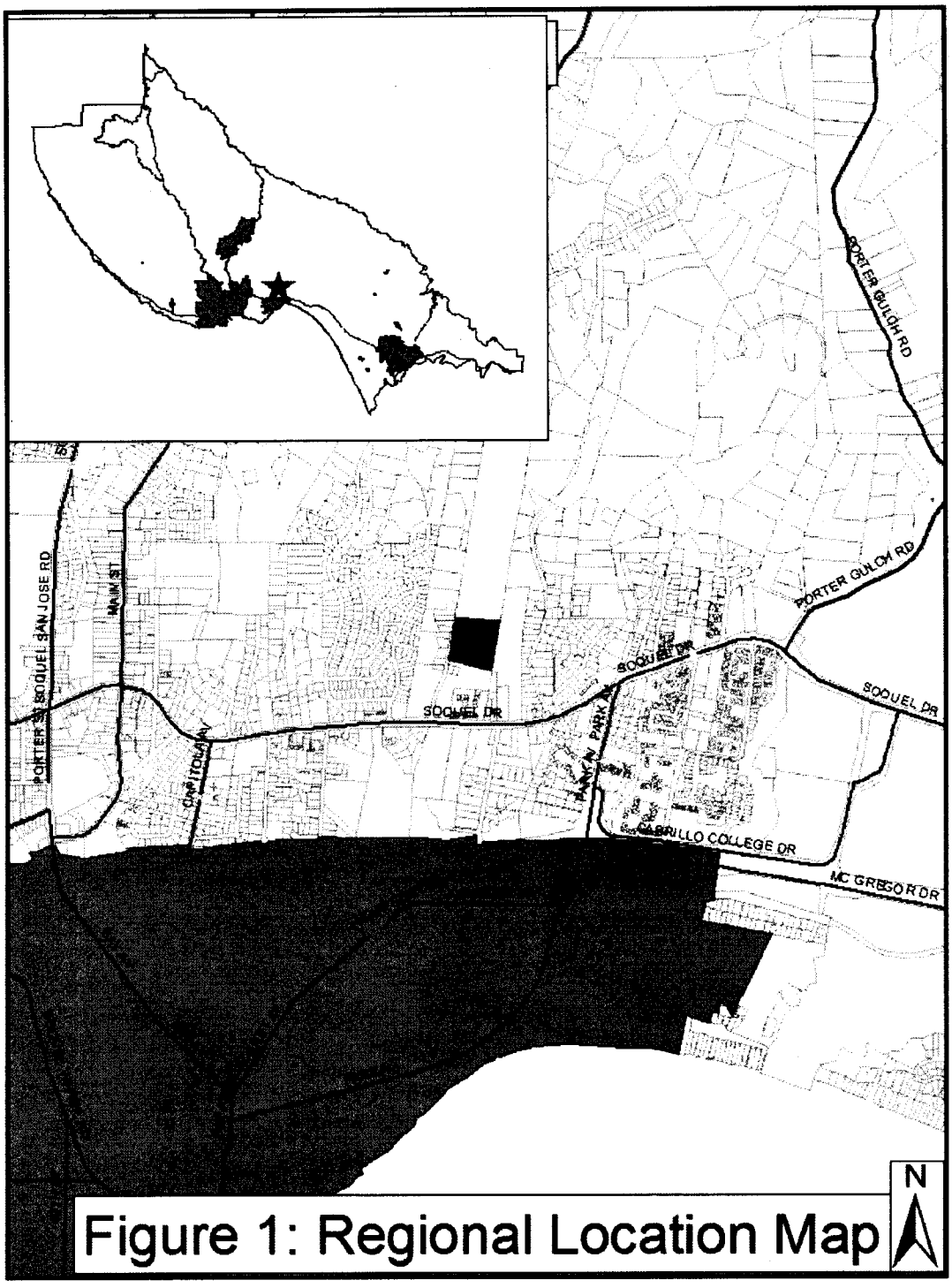

Figure 1: Regional Location Map

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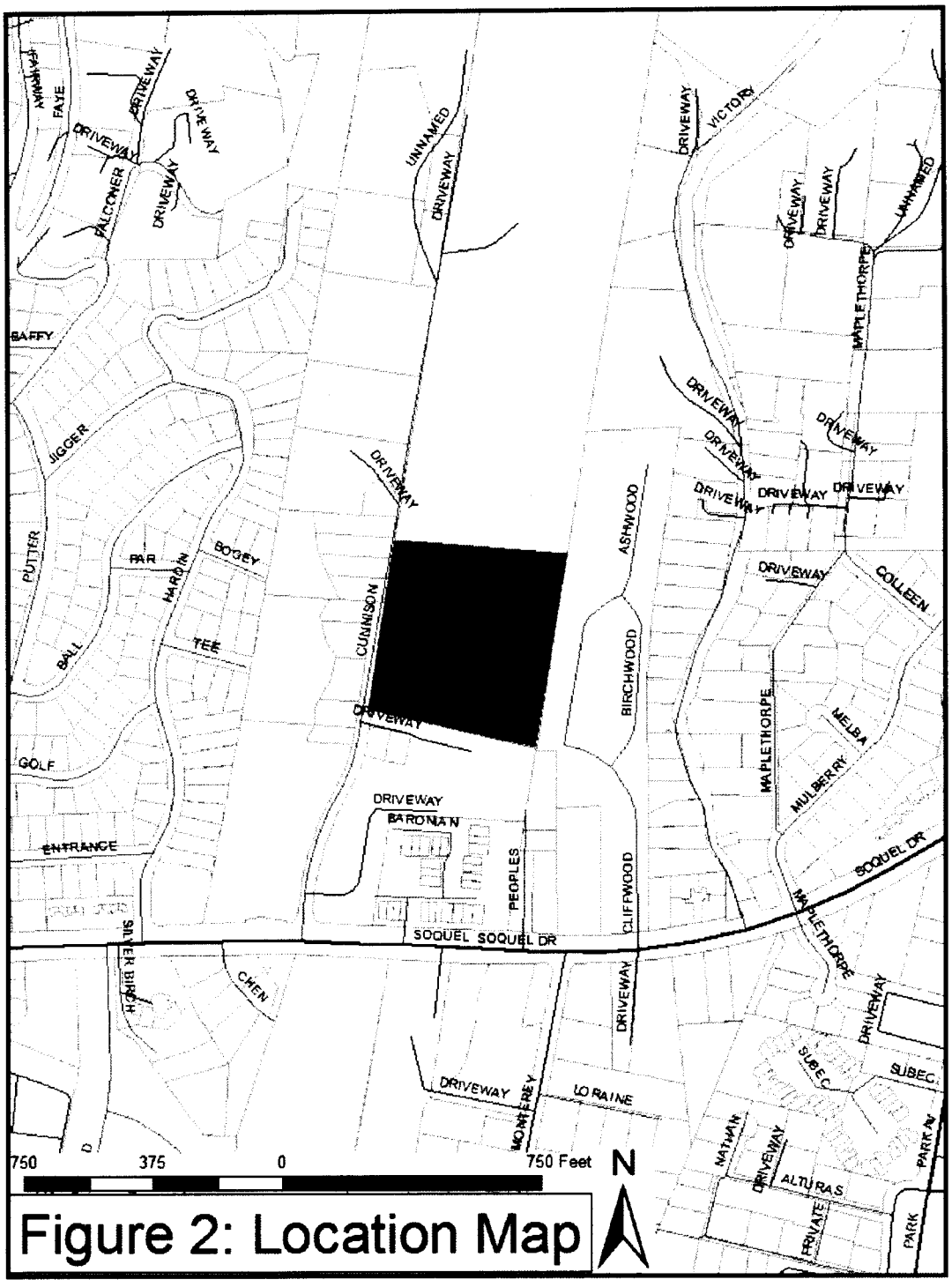

Figure 2: Location Map

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DETAILED PROJECT DESCRIPTION:

The project proposes a General Plan amendment, zone change, Riparian Exception, and PUD allowing a maximum development density of 20 dwelling units per usable acre on the project site. The PUD would also require any development proposal on the parcel to provide a minimum of forty (40) percent of the total number of units as affordable. Following project approval, future development of the project site would be by-right in that the use and density of the site would not be discretionary. A Tentative Map approval may be requested as part of the development application but is not required. The 3-parcel project site contains 5.1 usable acres equating to a maximum of 102 dwelling units. The remaining acreage would provide open space to protect on-site riparian areas.

METHODS

Botany

Review of Literature and Data Sources

An EcoSystems West botanist reviewed literature and botanical resource databases to identify special-status plant species and sensitive habitat types with potential to occur in the Erlach project area. Sources reviewed include California Natural Diversity Data Base (CNDDB) occurrence records for the Soquel USGS 7.5 minute quadrangle; county occurrence records, USGS quadrangle occurrence records in the California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California (Tibor 2001; CNPS 2007) for the Soquel quadrangle and the seven surrounding quadrangles, and local and regional floras (Thomas 1960; Munz and Keck 1973; Hickman 1993; Morgan et al. 2005).

Sources consulted for current agency status information include U.S. Fish and Wildlife Service (USFWS) (2008a, b, c) for federally listed species (including federal Proposed and Candidate species) and California Department of Fish and Game (CDFG) (2008a) for State of California listed species. Special-status species also include species listed on List 1A (Plants Presumed Extinct in California), List 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere), or List 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere) of the CNPS Inventory (Tibor 2001; CNPS 2007). These species fall under state regulatory authority under the provisions of the California Environmental Quality Act (CEQA) Guidelines.

Also considered special-status species are species included on List 3 (Plants About Which We Need More Information -- A Review List) or List 4 (Plants of Limited Distribution - A Watch List) of the CNPS Inventory. These species are considered to be of lower sensitivity, and generally do not fall under specific state or federal regulatory authority. Specific mitigation considerations are not generally required for species in these categories.

Based on information from the above sources, we developed a target list of special-status plants with potential to occur in the vicinity of the Erlach Project Area. This table is presented in Appendix A.

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Sensitive habitats may include riparian corridors, wetlands, habitats for legally protected species and CDFG Species of Special Concern, areas of high biological diversity, areas providing important wildlife habitat, and unusual or regionally restricted habitat types. Habitat types considered sensitive include those listed on the CNDDB working list of "high priority" habitats for inventory (i.e., those habitats that are rare or endangered within the borders of California) (Holland 1986; CDFG 2003). EcoSystems West botanists reviewed the CNDDB list of "high priority" habitats and local Santa Cruz County riparian protection and sensitive habitat ordinances (Santa Cruz County General Plan 1994).

Preliminary Field Survey

EcoSystems West botanists conducted an off-site reconnaissance botanical assessment of the proposed project area June 30 and September 30, 2008. At the time, the County of Santa Cruz was not permitted access to the parcels and therefore, characterizations were made from Cunnison Lane and the parking lot of the Farm Apartments on the south side of the Erlach parcel. All vascular plant species that were in identifiable condition at the time the site visits were conducted, regardless of regulatory status, were identified to species or infraspecific taxon using keys and descriptions in Thomas (1960); Munz and Keck (1973); and Hickman (1993). The timing of the surveys was appropriate for identification of the late flowering special-status species listed in Appendix A; however, because some potential habitat occurs in portions of the parcel not visible from our vantage points, a clearance level survey for rare plants could not be conducted.

In classifying the habitat types on the site, we consulted the generalized plant community classification schemes of Holland (1986); Sawyer and Keeler-Wolf (1995); and CDFG (2003). Our final classification and characterization of the habitat types of the study area was based on our constrained field observations.

Wildlife

Review of Literature and Data Sources

Prior to our site visit, EcoSystems West biologists reviewed CNDDB occurrence records of special-status wildlife species for the USGS 7.5 minute Soquel quadrangle. In addition, we reviewed documents for previous projects in the vicinity that contained sensitive wildlife species lists for Santa Cruz County. Sources consulted for up-to-date agency status information include the USFWS (2000, 2005a, 2006, and 2008 b,c,d) for federally listed species and/or designations of critical habitats, and the CDFG for state species listed as 'Threatened' or 'Endangered' or as 'Species of Special Concern', (CDFG 2008b). Maps produced by the Biogeographic Information and Observation System (BIOS) (CDFG 2008c) were also reviewed to obtain distribution information for special-status species.

The preliminary list of Revised CDFG Mammal Species of Special Concern (CDFG 1996) was reviewed, as was the list of species considered 'High Priority' by the Western Bat Working Group (WBWG) (1998). According to the CDFG Special Animals List, species designated as 'High Priority' by WBWG are defined as "imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats" (CDFG 2008b). These

species fall under State regulatory authority under the provisions of the CEQA Guidelines. From these sources we developed a target list of special status wildlife species and their habitat requirements to consider while assessing the Erlach project area (Table 1).

Distribution Information and Preliminary Field Visit

EcoSystems West biologists reviewed distribution information and conducted site visits on 30 June and 30 September 2008. Our objective during these visits was to evaluate the site to determine if the identified target wildlife species (Table 1) are present or if potential habitat for these species occurs in the vicinity of the proposed project site. Focused-level wildlife surveys were not conducted as part of this assessment due to lack of access to the properties. Habitat evaluation methods for specific taxa are described below.

INVERTEBRATES

Based on our site visit, review of site characteristics, and distribution information, our biologists assessed the availability and suitability of potential habitat for the invertebrates listed in Table 1.

AMPHIBIANS AND REPTILES

Our habitat evaluation of the site was conducted for both the California red-legged frog (CRLF) and for the western pond turtle (WPT) (Table 1). Frogs and turtles depend on both aquatic and non-aquatic habitats for substantial portions of the year. Information was gathered from aerial maps and from BIOS maps (CDFG 2008c) showing the location of potential aquatic and upland habitat conditions and locations of documented resources within one mile for the amphibians and reptile species in Table 1 (USFWS 2005). Museum and data base records were also reviewed. With this information, an evaluation was made to determine the likelihood that transient frogs would migrate from nearby known locations through the project site.

RAPTORS AND BIRDS

EcoSystems West biologists conducted a visual assessment to evaluate the suitability of available habitat in order to determine which birds could potentially nest, migrate through, or winter on the site and which species would not be expected to occur within the project site.

MAMMALS

During our site visit, our biologists assessed the availability and suitability of potential habitat for the five special-status bats listed in Table 1. Areas assessed included the tree stand canopy and fallen trees within the project area.

Table 1. Conservation status and habitat requirements for special-status wildlife species that may occur in the vicinity of the proposed Erlach Project Area, Santa Cruz County, California.

Common Name *Scientific Name*	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
Invertebrates					
Ohlone tiger beetle (*Cicindela ohlone*)	E	-	-	Coastal prairie and open grassland with barren areas for burrow construction.	**Possible** California annual grasslands on Watsonville loams provided potential habitat.
Monarch butterfly (wintering sites) *Danaus plexippus*	-	-	G5S3; GP	Eucalyptus, Monterey Pine, or Monterey Cypress tree groves.	**Possible** Eucalyptus stands provide potential habitat for temporary roosts or overwintering roosts. Potential habitat is marginal due to the narrow strip of trees, that may not provide an adequate buffer from wind.
Amphibians and Reptiles					
California red-legged frog *Rana aurora draytonii*	FT	SC	-	Requires the presence of surface water until mid to late summer for reproduction; utilizes ephemeral and/or perennial systems with standing or slow moving flows; upland habitat includes leaf litter, burrows and crevices; adults may travel over 2 miles overland between aquatic sites.	**Not Expected** Project site does not provide aquatic habitat. Nearest historic record (1963) is over two-miles northeast of project area off of Cathedral Drive near Mangles Gulch (Kittleson & Biosearch 2005). Nearest known breeding population is from Millsap Pond approximately 6 mi SE of project site.
Western pond turtle *Actinemys marmorata*	-	SC	-	Found in ponds, marshes, rivers, streams, and ditches containing aquatic vegetation; usually seen sunning on logs, banks, or rocks. Moves up to 3-4 miles within a creek system; nests in burrows in upland areas up to several hundred feet away from aquatic habitat, in woodlands, grasslands, or open forest.	**Not Expected** Project site lacks perennial aquatic habitat.
Raptors and Birds (Nesting and/or Wintering)					
Nesting birds of prey (Various species)	-	-	3503.5	Variety of woodland , riparian, and savanna habitats	**Possible** Tree stands in project area provides potential for nesting birds of prey including owls and hawks.
Golden eagle *Aquila chrysaetos*	-	SC; FP	BCC	Resident in open mountains, foothills, canyons, and open fields of Santa Cruz County. Nests in a mass of sticks on cliffs or in trees.	**Not Expected** Study area lacks suitable nesting habitat; May forage or occur as migrant.
White-tailed kite *Elanus leucurus*	-	FP	-	Nests in conifers on the margins of open areas including grasslands and sloughs containing a high abundance of small mammals and lizards.	**Not Expected** Study area lacks suitable nesting habitat. May forage over site or occur as migrant.

Common Name *Scientific Name*	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
Merlin *Falco columbarius*	-	SC	-	Does not nest in California. Rare but widespread winter visitor to the Central Valley and coastal areas. Forages along coastline in open grasslands, savannas, and woodlands. Often forages near lakes and other wetlands	**Possible (wintering)** May forage or migrate through site.
Long-eared owl *Asio otus*	-	SC	-	Utilizes abandoned stick nests of other large birds or squirrel nests in a variety of wooded areas, including orchards and usually near aquatic and open areas for foraging; forages mostly on rodents.	**Not Expected** Tree stands in project area lack potential nesting habitat Nearest recent (2008) detections is approx. 3 miles west at O'Neill Ranch Open Space in Soquel. May forage or migrate through site.
Willow flycatcher *Empidonax traillii*	-	SE	-	Nests in riparian areas and large wet meadows with abundant willows. Usually found in riparian habitats during migration	**Not Expected** Study area lacks dense willow riparian stand for nesting; may forage or occur as migrant.
Yellow-breasted chat *Icteria virens*	-	SC	-	Nests in dense riparian vegetation 1-8 ft. above the ground, with a well-developed understory.	**Not Expected** Study area lacks dense riparian vegetation for nesting; may forage or occur as migrant.
Yellow warbler *Dendroica petechia brewsteri*	-	SC	-	Nests in deciduous riparian woodland with open canopy along streams or other watercourses; forages in dense understory of riparian woodland.	**Not Expected** Study area lacks dense willow riparian vegetation for nesting; may forage or occur as migrant.
Vaux's swift *Chaetura vauxi*	-	SC	-	Nests communally, usually in large diameter hollow trees, less commonly in chimneys. Nesting habitat is forest, either coniferous or mixed, but primarily old growth with snags for nesting and roosting. Foraging habitat is open sky over woodlands, lakes, and rivers, where flying insects are abundant	**Not Expected** Nearest historical nesting record (1999) is from a chimney of a private home near the corner of Trout Gulch Road and Valencia Street. Also known from Nisene Marks State Park. (Suddjian personal communication 2008). May forage over site or occur as migrant.
Mammals					
Townsend's western big-eared bat *Corynorhinus townsendii townsendii*	-	SC	HP	Roost sites are highly associated w/ caves and mines; buildings must offer "cave-like" features; known to roost in tree hollows, under bridges, in residential attics and under decks.	**Possible** Potential roost sites available in structures in study area.
Pallid bat *Antrozous pallidus*	-	SC	HP	Roost sites are primarily associated with oak, redwood, ponderosa pine, and giant sequoia forests. Will also roost under bridges and in buildings and rock outcrops.	**Possible** Potential roost sites available in structures in study area. May forage over site or occur as migrant.
Western red bat *Lasiurus blossevillii*	-	SC	HP;**	Roosts in foliage, primarily in riparian and wooded habitats.	**Not Expected** Potential roosting habitat in riparian and/wooded canopy. May forage over site or occur as seasonal migrant.

Common Name *Scientific Name*	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
Fringed myotis *Myotis thysanodes*	-	-	HP: **	Roosts sites in California are primarily in buildings or mines; will also roost in large conifer snags and caves.	**Possible** Potential roost sites available in structures in study area. May forage over site or occur as migrant.
Long-legged myotis *Myotis volans*	-	-	HP;**	Roosts primarily in large hollow tree snags or live trees with exfoliating bark; also uses rock crevices, mines, and buildings.	**Possible** Potential roost sites available in structures, snags, and trees with exfoliating bark in study area. May forage over site or occur as migrant.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	-	SC	-	Associated with riparian, oak woodland and redwood forest habitats. Builds stick nests under or in buildings, hollow trees, or in tree canopy.	**Possible** May occur on site in the understory of the drainage tree canopy. Potential habitat occurs among other scattered oaks and old structures.

Table 1 Notes:

***Federal Status* (USFWS 2008d; CDFG 2008b)**

FT=Threatened: Any species, which is likely to become an endangered species within the foreseeable future throughout all, or a significant portion of its range.

Delisted= Delisted from the federal Endangered Species List.

***State Status* (CDFG 1996; CDFG 2008b)**

SE=Endangered: A native species or subspecies of animal which is in serious danger of becoming extinct throughout all, or a significant portion of its range, due to loss of habitat, change in habitat, over exploitation, predation, competition and/or disease.

ST=Threatened: A native species or subspecies that, although no presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

SC=CDFG 'Species of Special Concern' are taxa given special consideration because they are biologically rare, very restricted in distribution, declining throughout their range, or at a critical stage in their life cycle when residing in California or taxa that are closely associated with a habitat that is declining in California (e.g., wetlands).

FP= Fully Protected: This classification was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

***Other* (WBWG 1998; CFGC 2006; CDFG 2008b)**

AFS-E= Fish species considered 'Endangered' by the American Fisheries Society under a set of criteria developed from peer review and expert scientific opinion.

3503.5 = Protected birds of prey (Order Falconiformes and Strigiformes) under California Fish and Game Code 3503.5.

HP =Considered "High Priority" on the Western Bat Working Group's (WBWG) Western Bat Species Regional Priority Matrix (1998).

BCC=Species of migratory nongame birds that USFWS considers to be of concern in the United States because of (1) documented or apparent population declines, (2) small or restricted populations, (3) dependence on restricted or vulnerable habitats.

****=Included on preliminary list of revised CDFG Mammal Species of Special Concern (CDFG 1996).

GP = Over-wintering sites, adequate buffers around the sites, and nectar sources are protected by the local County of Santa Cruz General Plan policy.

G5S3 = CNDDB Ranking; state ranking indicates a restricted range for the butterfly, and rare based on the number of individuals per area of occupied habitat.

RESULTS

Botany

Habitat Characterization

The majority of vegetation consists of an assortment of weedy grasses and herbaceous species with Coast live oak, eucalyptus and acacia scattered throughout the project site and introduced stands of Monterey cypress that were planted on the parcels for wind and view shed protection.

We recognize three predominant habitat types occurring in the study area: California annual grassland, Eucalyptus woodland, and ruderal/disturbed areas. California annual grassland habitat is typically comprised of a dense assortment of naturalized grasses and forbs of Eurasian origin.

CALIFORNIA ANNUAL GRASSLAND

This habitat type corresponds to the California annual grassland series of Sawyer Keeler-Wolf (1995) and to a phase of the non-native grassland type described by Holland (1986). California annual grassland occurs on the flat to gently sloped areas throughout the majority of undeveloped portions of the project site. It is most prominent within the undeveloped parcel on the north side of the Erlach project footprint. This parcel is fenced and actively grazed by cattle. On the two adjacent parcels to the south, the annual grassland occurs underneath the groves of trees and between existing structures. Due to the extensive existing landuse impacts and its proximity to urban development, annual grassland within the site is highly disturbed and comprised primarily of weedy, non-native species.

Within the Erlach project area, California annual grassland is dominated by brome grasses (*Bromus diandrus*, *B. hordeaceus*), wild oats (*Avena barbata*), foxtail barley (*Hordeum leporinum*), Italian ryegrass (*Lolium multiflorum*), filaree (*Erodium botrys*), wild radish (*Raphanus sativus*), English plantain (*Plantago lanceolata*), and rough cat's ear (*Hypochaeris radicata*). A large percentage of plant species identified within this habitat type are listed as invasive weeds with "moderate to high ecological impacts" by the California Invasive Plant Council (Cal-IPC).

BLUE GUM WOODLAND

The Blue Gum woodland habitat type corresponds to the Eucalyptus series of Sawyer Keeler-Wolf (1995). This habitat type is present primarily along and adjacent to the intermittent Noble Gulch drainage and near the frontage of Cunnison Lane in the southwest corner of the southern most parcels.

Within the project site, blue gum woodland contains an overstory dominated almost entirely by mature blue gum eucalyptus (*Eucalyptus globulus*) with scattered individuals of coast live oak trees (*Quercus agrifolia*) and green wattle acacia (*Acacia decurrens*), cotoneaster (*Cotoneaster pannosus*). The understory is comprised of a sparse mixture of shrubs including California blackberry (*Rubus ursinus*), Himalayan blackberry (*Rubus discolor*) and poison oak (*Toxicodendron diversilobum*), with a couple of scattered individuals of pampas grass (*Cortaderia selloana*).

RUDERAL/DISTURBED

Ruderal areas are not described by Sawyer Keeler-Wolf or Holland. Within the project area, ruderal communities consist of highly disturbed, weedy areas immediately adjacent to existing structures or untended landscaped areas and orchards. Ruderal vegetation is comprised of aggressive, non-native species, in this case similar to those observed in the annual grassland. In addition, the two southern parcels support windrows of mature, planted Monterey cypress (*Cupressus macrocarpa*), Monterey pine (*Pinus radiata*), coast redwood (*Sequoia sempervirens*), English walnut (*Juglans regins*), and remnant fruit trees. The understory supports scattered mature silverleaf cotoneaster (*Cotoneaster selloana*) shrubs. Perwinkle (*Vinca major*) and poison oak grow along Cunnison Road along the fence line.

Special-Status Plant Species

We did not observe any special-status plant species occurring in the project area during the assessment site visit (Appendix A). Only one species, Santa Cruz tarplant (*Holocarpha macradenia*), is considered to have a moderate potential for occurrence within the study area due to the presence of Watsonville loam soil on the terrace portion of the parcels which is an edaphic indicator for the species and the proximity of extant occurrences of these species just north of the parcels at the terminus of Fairway Drive (Appendix A). Santa Cruz tarplant is often found in disturbed grassland and coastal prairie habitat with a high percent cover of non-native species (Bainbridge 2003). Disturbance such as grazing, mowing, scraping and burning has been shown to reduce the distribution and cover of species that compete with Santa Cruz tarplant for resources (Hayes 1998). Due to lack of access to the parcel, clearance-level surveys could not be completed. Other special-status plant species identified in Appendix A with know regional occurrences in Santa Cruz County have no or very low potential to occur in the project area.

Significant Tree Protection

The County of Santa Cruz prohibits the removal of "significant trees" within the urban service boundary that contains the Erlach Project site. Significant trees are those greater than 20 inches in diameter at breast height (DBH) for single stemmed trees; any sprout clump of five or more stems each of which is greater than 12 inches DBH; or any group consisting of five or more trees on one parcel, each of which is greater than 12 inches DBH (County of Santa Cruz Panning Dept., 1994). Exceptions are made for trees that are diseased or deemed hazardous to public safety; or pursuant to a Timber Harvest Plan or Fire Protection Plan submitted to and approved by the California Department of Forestry. Removal of significant trees within the urban service boundary requires a permit issued by the County of Santa Cruz Planning Department and would likely necessitate mitigation including, but not limited to, planting of replacement trees at a ratio and species composition determined by the Planning Director.

Within the Erlach project area there are several significant trees that would require removal as a result of the proposed project, including blue gum, Monterey cypress, coast redwood, and coast live oak.

Sensitive Habitats

Potential Wetlands and "Other Waters" of the United States

Wetlands and "other waters" of the United States (U.S) including streams, ponds and lakes are regulated by the U.S Army Corps of Engineers (Corps) Sections 404 of the Clean Water Act.

Wetlands are defined as, "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (EPA, 40 CFR 230.3, and CE 33 CFR 328.3). No Section 404 jurisdictional wetlands were observed within the project area.

Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation, such as lakes and ponds, or convey water, such as streams, are also subject to Section 404 jurisdiction. Along the Central California coast, these "other waters" can include intermittent and ephemeral streams, as well as lakes, and rivers. "Other waters' are identified by the presence of an ordinary high water (OHW) mark, a defined river or stream bed, a bank, or by the absence of emergent vegetation in ponds or lakes. An OHW mark is defined as the natural line on the shore established by fluctuations of water. The project area was concurrently evaluated for the potential presence of "other waters" at the time of the off-site assessment visits. The drainage identified by the County of Santa Cruz as Noble Gulch along the eastern edge of the parcels may have connected hydrology to other waters.

Waters of the State of California

Section 401 of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Act (2002) assign overall responsibility for water rights and water quality protection to the State Water Resource Control Board (SWRCB) and direct the nine statewide Regional Water Quality Control Boards (RWQCBs) to develop and enforce water quality standards within their boundaries. Under California State law, "waters of the state" pertains to "any surface water or groundwater, including saline waters, within the boundaries of the state." As a result, water quality laws and permitting authority apply to both surface and groundwater.

Following the 2001 U.S. Supreme Court decision in Solid Waste Agency of Northern Cook County v. Army Corps of Engineers (SWANCC) the SWRCB released a legal memorandum confirming the State's jurisdiction over isolated wetlands. The memorandum stated that under the California Porter-Cologne Water Quality Control Act, discharges to wetlands and other "waters of the state" are subject to State regulation, including wetlands isolated from navigable waters or their tributaries. In general, the RWQCB regulates discharge into isolated waters in much the same way as they do for Federal-jurisdictional waters, using Porter-Cologne rather than Section 404 authority (SWRCB 2001).

One small, seasonal drainage occurs on the eastern boundary of the project area. This drainage appears to be a square eroded bank channel that handles seasonal storm event hydrology with no impoundments or slack water areas adjacent to the three parcels. Vegetation adjacent to this

drainage is primarily introduced blue gum woodland with green wattle and a few scattered coast live oaks. None of these trees are stream dependent and do not represent azonal vegetation structure indicative of riparian woodland hydrology dependent habitat.

Wildlife

Invertebrates

OHLONE TIGER BEETLE

The Ohlone tiger beetle is associated with coastal prairie, although it has also been found in degraded prairie remnants that are characterized by a mix of annual grasses and other ruderal plants. The beetle often occurs on Watsonville loams (Bowman et al.1980). Other factors that influence habitat suitability include soil particle size, moisture, and depth (D. Arnold pers. comm. 2006).

California annual grassland on Watsonville loams that occur within the project site provide potential habitat for the Ohlone tiger beetle. Nearest known occurrence is approximately 3 miles west of project site at Santa Cruz Gardens.

MONARCH BUTTERFLY

Stands of eucalyptus (*Eucalyptus* spp.), Monterey pine (*Pinus radiata*), and Monterey cypress (*Cupressus macrocarpa*) are commonly utilized as over-wintering sites in California (Dayton and Bell 1992). Location characteristics such as southeast aspect, wind protection, proximity to nectaries, and other abiotic and biotic factors determine habitat suitability for monarchs. Monarchs are sensitive to even the slightest changes in wind conditions, temperature, and noise disturbance. In addition, populations may fluctuate widely from year to year, depending upon a number of factors, including the timing of winter rains, winter temperatures, and adequate food supply for larva (J. Dayton pers. comm. 2007).

While a stand of blue gum in the project site provides potential habitat for monarchs, it may not be large enough to adequately buffer the site from winds.

Amphibians and Reptiles

CALIFORNIA RED-LEGGED FROG

A historic record (1963) documents a CRLF occurrence within three miles and northeast of the project site along Mangles Gulch (Kittleson and Biosearch 2005). The nearest known breeding CRLF are located approximately 7 miles southeast of the project site at Millsap Pond (Kittleson and Biosearch 2005). No other museum or current records document CRLF occurring in the Soquel Creek watershed. CRLF are not expected to occur within the project area. The site does not provide suitable aquatic habitat or occur within potential CRLF dispersal routes between currently known breeding populations. The project area does not occur in federally designated CRLF critical habitat (USFWS 2006).

WESTERN POND TURTLE

The project site lacks suitable aquatic habitat for WPT. The nearest record for WPT is approximately 2 miles northwest of the site within the Soquel Creek watershed. No other museum or current records document WPT occurring in the Soquel Creek watershed. WPT are not expected to utilize the project site because of the distance and number of the urban barriers and roadways between their known locality and the project area, as well as the lack of occurrence records for WPT in nearby Noble and Porter Gulch creeks and lack of permanent water in the drainage.

Raptors and Birds

No stick-nest structures were observed from our vantage point but some may occur within the tree canopy of the project area near the drainage on the east side of the properties. At the time of our s summer season site visits, we did not observe any special-status raptors or their active nests within the project area (Table 1). The nearest records of special status raptors are for long-eared owls occurring approximately 3 miles west of the project vicinity at O'Neill Ranch Open Space Area in Soquel (Suddjian 2008). The nearest records of special-status birds are for Vaux's swifts nesting in a chimney of a private residence at the corner of Valencia Street and Trout Gulch Road (Suddjian, personal observation 1999; Sterling and Paton 1996). The swifts have not utilized the chimney since the top has been covered with a spark arrestor (Suddjian, personal communication 2008). Many of the bird species listed in Table 1 are not expected to nest within the project site.

The tree stands above and surrounding the project area provide potential habitat for more common species such as the red-shouldered hawk, red-tailed hawk, great horned owl, and many other passerine birds that are not considered special-status species. The federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Codes (CFGC) prohibit the destruction or possession of individual birds, birds of prey, eggs or active nests without federal and/or State authorization.

Mammals

BATS

Our lack of access to the structures on site prohibits us from making an accurate determination as to whether or not bats roost within the project site. The project site is also within the range of more common bat species found in California. These species include but are not limited to the big brown bat (*Eptesicus fuscus*), California myotis (*Myotis californicus*), and hoary bat (*Lasiurus cinerueus*). All of the bats in Table 1 and other more common bat species may forage in or migrate through the project area.

The California Fish and Game Codes (CFGC) continue to protect non-listed bat species and their roosting habitat, including individual roosts and maternity colonies. These include CFGC Section 86; 2000; 2014; 3007; 4150, along with several sections under Title 14 of California Code of Regulations (CFGC 2006). EcoSystems West recommends examining the interior of structures offering potential roosting habitat and conducting acoustic and emergence bat surveys

prior to any project-related activities (e.g. tree removal or barn relocation) to confirm that bats are not roosting within the project area.

SAN FRANCISCO DUSKY-FOOTED WOODRAT

No potential San Francisco dusky woodrat nest structures were observed during our reconnaissance surveys but may be present under the dense Eucalyptus trees along the ephemeral drainage on the east edge of the parcel. The project site is within the range of the species and potential habitat occurs within the project site. EcoSystems West recommends conducting focused surveys to document any other nest structures prior to project-related activities, especially vegetation removal, excavation, or grading.

RECOMMENDED BEST MANAGEMENT PRACTICES

EcoSystems West recommend incorporating the following Best Management Practices prior to and during project activities in order to minimize any potential impacts to botanical and/or wildlife resources within the project area. These recommendations **do not** allow any activity that may require federal, state, or local authorizations or permits.

Botany

- Minimize removal of, or disturbance to vegetation, trees and their root systems. Do not remove any trees greater than 12-inches DBH from the riparian forest prior to obtaining authorization from the California Department of Fish and Game (CDFG). To the maximum extent feasible, confine project activities and operation of equipment and vehicles, including site access and parking, to previously altered areas. Minimize construction equipment and vehicles within the woodland habitat for a minimum of 40 feet beyond the break in bank of the drainage.

- Prior to development activities, complete a phenology based special-status plant survey of the entire project area. If special-status plants are encountered, avoid the occurrence entirely and buffer the occurrence to a minimum of 50 feet from the edge of the population.

- Remove and eradicate all noxious weeds including pampas grass, Himalaya berry, and green wattle and replace with native coast live oak and native shrubs and vines. Blue gum should be removed and replace in a systematic way as to not to leave a totally unvegetated section of the drainage corridor.

Wildlife

- EcoSystems West recommends conducting preconstruction wildlife surveys for special-status species included in Table 1. Surveys should be conducted during appropriate breeding/roosting seasons for invertebrates, amphibians, reptiles, birds, and mammals. Following the federal CRLF protocol guidelines (2005), it will be necessary to consult with USFWS to determine whether CRLF surveys should be done prior to project activities.

- Install a wildlife barrier fence along the perimeter of the proposed work area. The barrier fence should maintain a height of at least 36 inches and be sealed at the bottom to prevent wildlife from crawling underneath it.

- We recommend a qualified biologist be on site during any initial vegetation or ground disturbance activities (e.g. vegetation clearing, grading, excavation, tree pruning/removal) that could potentially impact possible foraging or aestivating CRLF, WPT, nesting raptors, woodrats, or roosting bats in the area. In the event any special-status species (Table 1) are observed within the work area prior to, or during project activities, further guidance from USFWS and CDFG will be necessary. It is a violation of federal and state laws to disturb, harm, or destroy special-status wildlife species. Violations could result in fines and/or prosecution.

Natural Resource Protection

- Install and utilize silt control measures throughout the duration of the project where silt and/or earthen material may threaten to enter Noble Gulch drainage. Monitor silt control measures for effectiveness and repair/and or replace them as needed. Promptly remove any build up of silt/soil behind any silt fence and/or repair control measures if there any breaches or undermined areas along the fence.

- To the greatest extent possible, stabilize all exposed or disturbed areas within the project site. We recommend installing erosion control measures such as silt fences, weed-free straw bales, plywood, straw wattles, water check bars, gravel or rock lined ditches or road surfaces, and broadcasted weed-free straw where ever silt laden water has the potential to leave the work site and enter Noble Gulch, repair, and/or replace erosion control measures as needed. Any proposed work done along the bank should be reviewed and authorized by the resource agencies.

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APPENDIX A. SPECIAL-STATUS PLANTS WITH POTENTIAL TO OCCUR ON THE ERLACH PROJECT SITE

Appendix A. Status, distribution and habitat of special-status plants with potential to occur in the vicinity of the proposed Erlach project site near Soquel, Santa Cruz County, California.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Amsinckia lunaris bent-flowered fiddleneck	None	None	List 1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub	ALA, CCA, COL, LAK, MRN, NAP, SBT, SCL, SCR, SHA?, SIS?, SMT, SON, YOL	March-June	**LOW.** Poor quality grassland habitat within the project site. Nearest known occurrence in Scotts Valley.
Arabis blepharophylla bent-flowered fiddleneck	None	None	List 4.3	Broadleaved upland forest, lower montane coniferous forest, North Coast coniferous forest; damp rock and soil on outcrops, usually on roadcuts	CCA, MRN, SCR, SFO, SMT, SON	February-May	**NONE.** Suitable habitat not present within the project site.
Arctostaphylos andersonii Santa Cruz manzanita	None	None	List 1B.2	Chaparral; openings in and edges of broadleaved upland forest and north coast coniferous forest	SCL, SCR, SMT	November-April	**NONE.** Broadleaved forest habitat suitable to support manzanita not present within the project site.
Arctostaphylos pajaroensis Pajaro manzanita	None	None	List 1B.1	Sandy soil, chaparral	MNT, SBT, SCR*	December-March	**NONE.** Suitable habitat not present within the project site.
Arctostaphylos silvicola Bonny Doon manzanita	None	None	List 1B.2	Inland marine sands in chaparral, closed-cone coniferous forest, sand parkland, sandhill ponderosa pine forest	SCR	February-March	**NONE.** Suitable habitat not present within the project site.
Arenaria paludicola marsh sandwort	Endangered	Endangered	List 1B.1	Freshwater marshes	LAX*, SBD*, SCR*, SFO*, SLO, Washington*	May-August	**NONE.** Suitable habitat not present within the project site.

Appendix A. (continued)

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Calandrinia breweri Brewer's calandrinia	None	None	List 4.2	Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns	CCA, LAX, MEN, MNT, MPA, MRN, NAP, SBA, SBD, SCL, SCR, SCZ, SDG, SLO, SMT, SON, VEN, BA	March-June	**NONE.** Suitable habitat not present within the project site.
Callitropsis abramsiana Santa Cruz Cypress	Endangered	Endangered	List 1B.2	Closed cone coniferous forest, chaparral, lower montane coniferous forest; sandstone or granitic substrates	SCR, SMT	N/A	**NONE.** Suitable habitat not present within the project site
Calochortus umbellata Oakland mariposa lily	None	None	List 4.2	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland; often serpentinite.	ALA, CCA, MRN, SCL, SCR*, SMT	March-May	**NONE.** Presumed extirpated from Santa Cruz County. Almost always associated with serpentinite.
Calyptridium parryi var. *hesseae* Santa Cruz Mtns. pussypaws	None	None	List 3	Chaparral, cismontane woodland	MNT, SBT, SCL, SCR*	May-July	**NONE.** Suitable habitat not present within the project site.
Campanula californica swamp harebell	None	None	List 1B.2	Moist places; bogs and fens, closed-cone coniferous forest, coastal prairie, meadows, freshwater marshes and swamps, north coast coniferous forest	MEN, MRN, SCR*, SON	June-October	**NONE.** Perennial flowing waterways not typical mesic habitat for this species. Other suitable wetland types not present within project site.
Carex comosa bristly sedge	None	None	List 2.1	Marshes and swamps, lake margins, coastal prairie, valley and foothill grassland	CCA, LAK, MEN, SAC, SBD*, SCR*, SFO*, SHA, SJQ, SON, Idaho, Oregon, Washington, other states	May-September	**NONE.** Perennial wetland types associated with this species not present within the project site. Presumed extirpated from Santa Cruz County.

Appendix A. (continued)

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Carex saliniformis deceiving sedge	None	None	List 1B.2	Coastal prairie, coastal scrub, meadows, coastal salt marshes	HUM, MEN, SCR*, SON	June-July	**NONE.** Perennial saline wetland habitat not present within the project site.
Castilleja latifolia Monterey paintbrush	None	None	List 4.3	Closed cone coniferous forest, cismontane woodland (openings), coastal dunes, coastal scrub; sandy soils	MNT, SCR	February-September	**NONE.** Suitable habitat not present within the project site.
Ceanothus cuneatus var. *rigidus* Monterey ceanothus	None	None	List 4.2	Closed cone coniferous forest, chaparral, coastal scrub; sandy soils	MNT, SLO, SCR*	April-June	**NONE.** Suitable habitat not present within the project site.
Ceanothus ferrisiae Coyote ceanothus	Endangered	None	List 1B.1	Chaparral, coastal scrub, valley and foothill grassland; serpentinite	SCL	January-March	**NONE.** Serpentinite soils not present within project site. Not known from Santa Cruz County.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	None	None	List 1B.2	Valley and foothill grassland; alkaline soils	ALA*, CCA*, MNT, SCL(*?), SCR*, SLO, SOL*	May-November	**NONE.** Alkaline soils not present within the project site.
Chorizanthe pungens var. *hartwegiana* Ben Lomond spineflower	Endangered	None	List 1B.1	Inland marine sands in chaparral, closed-cone coniferous forest, sand parkland, sandhill ponderosa pine forest	SCR	April-July	**NONE.** Suitable habitat not present within the project site.
Chorizanthe pungens var. *pungens* Monterey spineflower	Threatened	None	List 1B.2	Maritime chaparral, cismontane woodland coastal dunes, coastal scrub, valley and foothill grassland; sandy soils	MNT, SCR	April-June	**LOW.** Disturbed grassland with sandy loam soils not likely to provide suitable habitat for this species.

Appendix A. (continued)

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Chorizanthe robusta var. *hartwegii* Scotts Valley spineflower	Endangered	None	List 1B.1	Meadows, grasslands in sandy or mudstone soil	SCR	April-July	**NONE.** Suitable sandstone or mudstone habitat not present within the project site.
Chorizanthe robusta var. *robusta* robust spineflower	Endangered	None	List 1B.1	Coastal dunes, coastal scrub, openings in cismontane woodland, in sandy or gravelly soil	ALA*, MNT, MRN, SCL*, SCR, SFO, SMT*	April-September	**NONE.** Suitable habitat not present within the project site.
Clarkia concina ssp. *automixa* Santa Clara red ribbons	None	None	List 4.3	Cismontane woodland	ALA, SCL	April-July	**NONE.** Suitable habitat not present within the project site.
Cordylanthus rigidus ssp. *litoralis* seaside bird's beak	None	Endangered	List 1B.1	Closed cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, coastal scrub; sandy often disturbed sites	MNT, SBA	May-September	**NONE.** Suitable habitat not present within the project site.
Cyperidium fasciculatum clustered lady's slippers	None	None	List 4.2	Lower montane coniferous forest, North Coast coniferous forest; usually serpentinite seeps and streambanks	BUT, DNT, HUM, NEV, PLU, SCL, SCR*, SHA, SIE, SIS, SMT, TEH, TRI, YUB, ID, OR, UT, WA+	March-July	**NONE.** Suitable habitat not present within the project site.
Cyperidium montanum mountain lady's slipper	None	None	List 4.2	Broadleaved upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest	DNT, HUM, MAD, MEN, MOD, MPA, PLU, SIE, SIS, SMT, SON, TEH, TRI, TUO, OR, WA++	March-July	**NONE.** Low quality broadleaved upland forest within the project site does not provide suitable mesic habitat for this species.

Appendix A. (continued)

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Elymus californicus California bottle-brush grass	None	None	List 4.3	Broadleaved upland forest, cismontane woodland, North Coast coniferous forest, riparian woodland	MNT, MRN, SCR, SMT, SON	July-September	**LOW.** Very limited potential for occurrence within low quality broadleaved upland forest habitat within the project site.
Eriogonum nudum var. *decurrens* Ben Lomond buckwheat	None	None	List 1B.1	Inland marine sands in chaparral, closed-cone coniferous forest, sand parkland, sandhill ponderosa pine forest	ALA, SCL, SCR	June-October	**NONE.** Suitable habitat not present within the project site.
Erysimum ammophilum sand-loving wallflower	None	None	List 1B.2	Chaparral, coastal dunes, coastal scrub; sandy openings	SCR	March-July	**NONE.** Suitable habitat not present within the project site.
Erysimum fransicanum San Franciso wallflower	None	None	List 4.2	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland; often serpentinite or granitic substrates, roadcuts	MRN, SCL, SCR, SFO, SMT, SON	March-June	**NONE.** Granitic or serpentine soils not present within the project site. Nearest know occurrence north of Santa Cruz.
Erysimum teretifolium Santa Cruz wallflower	Endangered	Endangered	List 1B.1	Inland marine sands in chaparral, closed-cone coniferous forest, sand parkland, sandhill ponderosa pine forest	SCR	March-July	**NONE.** Suitable habitat not present within the project site.
Fritillaria agrestis stinkbells	None	None	List 4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland; clay or serpentinite.	ALA, CCA, FRE, KRN, MEN, MNT, MPA, PLA, SAC, SBT, SCR*, SMT*, STA, TUO, VEN, YUB	March-April	**NONE.** Poor quality grassland habitat within the project site does not contain clayey or serpentine soils.

Appendix A. (continued)

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Gilia tenuiflora ssp. *arenaria* sand gilia	Endangered	Threatened	List 1B.2	Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy openings	MNT	April-June	**NONE.** Not known from Santa Cruz County, sandy openings not present within the project site.
Grindelia hirsutula var. *maritima* San Francisco gumplant	None	None	List 1B.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; sandy or serpentinite soils	MNT, MRN, SCR, SFO, SLO, SMT	June-September	**NONE.** Not known from Santa Cruz County, sandy openings not present within the project area.
Hoita strobilina Loma Prieta hoita	None	None	List 1B.1	Moist sites in chaparral, cismontane woodland, riparian woodland, often serpentinite soil	ALA*, CCA*, SCL, SCR	May-July (August-October)	**NONE.** Suitable habitat not present within the project site.
Holocarpha macradenia Santa Cruz tarplant	Threatened	Endangered	List 1B.1	Coastal prairie, valley and foothill grassland, coastal scrub, often in clay or sandy soils	ALA*, CCA*, MNT, MRN*, SCR, SON*	June-October	**MODERATE.** Suitable low quality grassland habitat with Watsonville sandy loam soils present within the project area. Nearby extant occurrences located within one mile of the project site.
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	None	None	List 1B.1	Openings in closed-cone coniferous forest, maritime chaparral, coastal scrub, coastal prairie, in sandy or gravelly soil	ALA*, MRN*, MNT, SBA, SCR, SFO*, SLO, SMT	April-September	**NONE.** Suitable habitat not present within the project site.
Horkelia marinensis Point Reyes horkelia	None	None	List 1B.2	Coastal dunes, coastal prairie, coastal scrub, in sandy soil	MEN, MRN, SCR, SMT, SON	May-September	**NONE.** Suitable habitat not present within the project site.

Appendix A. (continued)

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Leptosiphon ambiguous serpentine leptosiphon	None	None	List 4.2	Cismontane woodland, coastal scrub, valley and foothill grassland; serpentinite	ALA, CCA, MER, SBT, SCL, SCR, SJQ, SMT, STA	March-June	**NONE.** Serpentinite not present within the project site.
Leptosiphon grandiflorus large-flowered leptosiphon	None	None	List 4.2	Coastal bluff scrub, closed cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland; usually sandy	ALA, KRN, MAD, MER, MNT, MRN, SBA*, SCL, SCR*, SFO, SLO, SMT, SON	April-August	**LOW.** Low quality grassland habitat exists within the project site; however, no recent extant occurrences known from Santa Cruz County.
Lessingia micradenia var. *glabrata* smooth lessingia	None	None	List 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, roadsides, usually in serpentine soils	SCL	July-November	**NONE.** Not known from Santa Cruz County. Serpentine soils not present within the project site.
Lilium rubescens redwood lily	None	None	List 4.2	Broadleaved upland forest, lower montane coniferous forest, North Coast coniferous forest, upper montane coniferous forest; sometimes serpentinite and/or roadsides	DNT, HUM, LAK, MEN, NAP, SCR*, SHA, SIS	June-July	**NONE.** Suitable habitat not present within the project site.
Lomatium parvifolium small-leaved lomatium	None	None	List 4.2	Closed cone coniferous forest, chaparral, coastal scrub, riparian woodland; serpentinite soils	MNT, SCR, SLO	February-June	**NONE.** Suitable habitat not present within the project site.

Appendix A. (continued)

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Lotus formosissimus harlequin lotus	None	None	List 4.2	Moist to wet places, broadleaved upland forest, coastal scrub, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, meadows and seeps, marshes, north coast coniferous forest, valley and foothill grassland	DNT, HUM, MEN, MNT, MRN, SBT, SCR, SFO, SLO, SMT, SON, Oregon, Washington	March-July	**LOW.** Low quality grassland and broadleaved upland forest present within the project. No documented occurrences in nearby vicinity of the project site.
Malacothamnus arcuatus arcuate bush mallow	None	None	List 1B.2	Chaparral, cismontane woodland	SCL, SCR, SMT	April-September	**NONE.** Suitable habitat not present within the project site.
Micropus amphibolus Mt. Diablo cottonweed	None	None	List 3.2	Rocky areas in broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grassland, coastal scrub	ALA, CCA, COL, LAK, MNT, MRN, NAP, SBA, SCL, SCR, SJQ, SLO, SOL, SON	March-May	**LOW.** Low quality broadleaved upland forest and grassland habitat located within the project site. Several extant occurrences documented throughout Santa Cruz County.
Microseris paludosa marsh microseris	None	None	List 1B.2	Moist places in closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland	MEN, MNT, MRN, SBT, SCR, SFO*, SLO, SMT*, SON	April-June	**NONE.** Mesic, marshy habitat required for this species not present within the project site.
Mimulus rattanii ssp. decurtatus Santa Cruz County monkeyflower	None	None	List 4.2	Chaparral, lower montane coniferous forest/margins; gravelly substrates	SCR	May-July	**NONE.** Suitable habitat not present within the project site.

Appendix A. (continued)

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Monardella undulata curly leaved monardella	None	None	List 4.2	Closed cone coniferous forest, chaparral, coastal dunes, coastal prairie, coastal scrub, lower montane coniferous forest (pine sandhills); sandy areas	MNT,MRN, SBA, SCR,SFO,SLO, SMT, SON	May-July	**NONE.** Sandhill habitat or true sand soils not present within the project site.
Monardella villosa var. *globosa* robust monardella	None	None	List 1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, valley and foothill grassland	ALA, CCA, HUM, LAK, MRN, NAP, SMT, SON	June-August	**NONE.** Low quality broadleaved upland forest and grassland habitat has limited potential to support this species. Nearest known occurrence on eastern slope of Santa Cruz mountains.
Pedicularis dudleyi Dudley's lousewort	None	Rare	List 1B.2	Maritime chaparral, north coast coniferous forest, cismontane woodland, valley and foothill grassland	MNT, SCR*, SLO, SMT	April-June	**NONE.** Last known record for Santa Cruz County dates to 1884 collection. Extant occurrences in adjacent counties occur primarily in mixed evergreen forest habitat.
Penstemon rattanii var. *kleei* Santa Cruz Mtns. Beardtongue	None	None	List 1B.2	Chaparral, lower montane coniferous forest, North Coast coniferous forest, often in sandy soil	SCL, SCR	May-June	**NONE.** Suitable habitat not present within the project site.
Pentachaeta bellidiflora white-rayed pentachaeta	Endangered	Endangered	List 1B.1	Valley and foothill grassland, coastal scrub, coastal prairie	MNT, MRN*, SCR*, SMT	March-May	**NONE.** Nearest extant occurrence north of Santa Cruz near Eagle Rock. Presumed extirpated in Santa Cruz County.

Appendix A. (continued)

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	None	None	List 4.2	Moist sites in coastal prairie, broadleaved upland forest, chaparral, valley and foothill grassland, vernal pools	CCA, DNT, KRN, LAX*, MEN, MNT, MRN, NAP, ORA*, SBT, SCL, SCR, SDG*, SLO, SMT(*?), SOL, SON	June-October	**NONE.** Moist areas in broadleaved upland forest or grassland habitat not present within the project site. Low quality seasonal wetland in project dominated entirely by non-native weedy species.
Pinus radiata Monterey pine	None	None	List 1B.1	Closed cone coniferous forest, cismontane woodland	MNT, SCR, SLO, SMT, BA, GU	N/A	**NONE.** Suitable habitat not present within the project site. Monterey pine only considered native to three stands in California: Cambria, Monterey Peninsula, Swanton Ranch.
Piperia candida white-flowered rein orchid	None	None	List 1B.2	Lower montane coniferous forest, North Coast coniferous forest; sometimes serpentinite	DNT, HUM, MEN, SCR, SIS, SMT, SON, TRI, OR, WA+	May-August	**NONE.** Suitable habitat not present within the project site.
Piperia michaelii Michael's rein orchid	None	None	List 4.2	Coastal bluff scrub, closed cone coniferous forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest	ALA, CCA, HUM, MNT, MRN, SBT, SCR, SCZ, SFO, SLO, SMT	May-August	**NONE**. Suitable habitat not present within the project site
Plagiobothrys chorisianus var. chorisianus Choris' popcorn-flower	None	None	List 1B.2	Moist places in chaparral, coastal prairie, coastal scrub	ALA(*?), SCR, SFO, SMT	March-June	**NONE.** Suitable habitat not present within the project site.

Appendix A. (continued)

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Plagiobothrys chorisianus var. *hickmanii* Hickman's popcorn-flower	None	None	List 4.2	Moist places in closed-cone coniferous forest, chaparral, coastal scrub, marshes and swamps, vernal pools	MNT, SBT, SCL, SCR, SLO, SMT?	April-June	**NONE.** Suitable habitat not present within the project site.
Plagiobothrys diffusus San Francisco popcornflower	None	Endangered	List 1B.1	Coastal prairie, valley and foothill grassland	ALA, SCR, SFO*, SMT	March-June	**NONE.** This species occurs almost exclusively in coastal prairie or seasonally wet areas. The low quality seasonal wetland within the project site is not expected to support this species.
Polygonum hickmanii Scotts Valley polygonum	Endangered	Endangered	List 1B.1	Valley and foothill grassland; sandstone	SCR	May-August	**NONE.** This sandstone specific species is known only from two small populations in Scotts Valley.
Ranunculus lobbii Lobb's aquatic buttercup	None	None	List 4.2	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools; mesic areas	ALA, CCA, MEN, MRN, NAP, SCL, SOL, SON	March-April	**NONE.** Not known from Santa Cruz County. Small seasonal wetland depression within project site supports mix of ruderal weedy species.
Rosa pinetorum pine rose	None	None	List 1B.2	Closed cone coniferous forest	MNT, SCR	May-July	**NONE.** Suitable habitat not present within the project site.
Sanicula hoffmannii Hoffmann's sanicle	None	None	List 4.3	Broadleaved upland forest, mixed evergreen forest, chaparral, coastal scrub; serpentinite or clay	MNT, SBA, SCR, SCZ, SLO, SMT, SRO	March-May	**NONE.** Low quality broadleaved upland forest within the project site

Appendix A. (continued)

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Sidalcea malachroides maple-leaved checkerbloom	None	None	List 4.2	Broadleaved upland forest, coastal prairie, coastal scrub, valley and foothill grassland; sandy areas	HUM, MEN, MNT, SCL, SCR, OR	May-August	**LOW.** Typically found in mesic forest habitats. Limited potential for occurrence in understory of low quality broadleaved upland forest within the project site.
Silene verecunda ssp. *verecunda* San Francisco campion	None	None	List 1B.2	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, valley and foothill grassland, in sandy or rocky soil	SCR, SFO, SMT, SUT	March-August	**NONE.** Known mainly from rocky areas and rock outcrops. Nearest documented occurrence north of Santa Cruz near Wadell Beach.
Trifolium buckwestiorum Santa Cruz clover	None	None	List 1B.1	Coastal prairie; margins of broadleaved upland forest, cismontane woodland	MEN, MNT, SCL, SCR, SMT, SON	April-October	**NONE.** Known primarily from mesic meadows, suitable habitat not present within the project site.
Tifolium depauperatum var. *hydrophyllum* saline clover	None	None	List 1B.2	Marshes and swamps, mesic valley and foothill grassland, vernal pools; alkaline soils	ALA, COL(?), MNT, NAP, SBT, SCL, SCR, SLO, SMT, SOL, SON	April-June	**NONE.** Mesic habitat with alkaline soils not present within the project site.
Zigadenus micranthus var. *fontanus* marsh zigadenus	None	None	List 4.2	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, marshes and swamps,	LAK, MEN. MNT, MRN, NAP, SBT, SCR, SLO, SMT, SON	April-July	**NONE.** Suitable habitat not present within the project site.

Appendix A (continued)

Notes:

[1]Nomenclature follows Hickman (1993); Tibor (2001); California Native Plant Society (2007).
[2]U.S. Fish and Wildlife Service (2007a, b, c).
[3]Section 1904, California Fish and Game Code (California Department of Fish and Game 2007a).
[4]Tibor (2001); California Native Plant Society (2007).
CNPS Lists: List 1A: Presumed extinct in California. List 1B: Rare, Threatened, or Endangered in California and elsewhere. List 2: Rare, Threatened, or Endangered in California, more common elsewhere. List 3: Plants about which more information is needed. List 4: Plants of limited distribution: a watch list.
Threat Code extensions: .1: Seriously endangered in California. .2: Fairly endangered in California. .3 Not very endangered in California.
[5]Thomas (1960); Munz and Keck (1973); Hickman (1993); Tibor (2001); California Native Plant Society (2007); and unpublished information.
[6]Tibor (2001); California Native Plant Society (2007); and unpublished information; counties abbreviated by a three-letter code (below); occurrence in other states as indicated.
[7]Munz and Keck (1973); Tibor (2001); California Native Plant Society (2007)

ALA: Alameda
AMA: Amador
BUT: Butte
CCA: Contra Costa
COL: Colusa
DNT: Del Norte
FRE: Fresno
GLE: Glenn
HUM: Humboldt
KRN: Kern
LAK: Lake
LAX: Los Angeles
MAD: Madera
MEN: Mendocino
MER: Merced
MNT: Monterey
MOD: Modoc
MPA: Mariposa
MRN: Marin
NAP: Napa
NEV: Nevada
ORA: Orange
PLA: Placer
PLU: Plumas
RIV: Riverside
SAC: Sacramento
SBA: Santa Barbara
SBD: San Bernardino
SBT: San Benito
SCL: Santa Clara
SCR: Santa Cruz
SCZ: Santa Cruz Island (SBA Co.)
SDG: San Diego
SFO: San Francisco
SHA: Shasta
SIE: Sierra
SIS: Siskiyou
SJQ: San Joaquin
SLO: San Luis Obispo
SMT: San Mateo
SOL: Solano
SON: Sonoma
SRO: Santa Rosa Island (SBA Co.)
STA: Stanislaus
SUT: Sutter
TEH: Tehama
TRI: Trinity
TUL: Tulare
TUO: Tuolumne
VEN: Ventura
YOL: Yolo
YUB: Yuba

* Presumed extinct in these counties or state

APPENDIX C

PRELIMINARY ARCHAEOLOGICAL RECORDS SEARCH AND SENSITIVITY REPORT FOR THE ERLACH PROPERTY IN SOQUEL, SANTA CRUZ COUNTY CALIFORNIA, PREPARED AUGUST 6, 2008

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ARCHAEOLOGICAL CONSULTING

P.O. BOX 3377
SALINAS, CA 93912
(831) 422-4912

PRELIMINARY ARCHAEOLOGICAL RECORDS SEARCH AND SENSITIVITY ASSESSMENT REPORT FOR THE ERLACH PROPERTY IN SOQUEL, SANTA CRUZ COUNTY, CALIFORNIA

by

Mary Doane, B.A., and Gary S. Breschini, Ph.D., RPA

August 6, 2008

Prepared for

County of Santa Cruz

SUMMARY: PROJECT 4204
RESULTS: SEE TEXT
ACRES: 5.1
SITES: NONE
UTMG: NE 5.9440/40.9422, SE 5.9438/40.9400, SW 5.9422/40.9404 AND NW 5.9424/40.9418
MAP: USGS 7.5 MINUTE SOQUEL QUADRANGLE

Note: *SOPA,* the Society of Professional Archaeologists, has been superseded by the new Registry of Professional Archaeologists. Registered Professional Archaeologists are designated by RPA.

INTRODUCTION

In July 2008 Archaeological Consulting was authorized by Julie Conway, Santa Cruz County Housing Project Manager, to complete an Archaeological Background Records Search and Sensitivity Assessment for the proposed affordable housing project area on a portion of the Erlach Property on Cunnison Lane in Soquel, Santa Cruz County, California. This study was undertaken to determine if there are any recorded archaeological resources within the project area or in the immediate vicinity, and whether the project area has been included in any previous archaeological research or reconnaissance projects, as well as to provide a preliminary assessment of the potential cultural resources sensitivity of the property.

The background research for this project included an examination of the archaeological site records, maps, and project files of the Northwest Regional Information Center of the California Historical Resources Information System, located at Sonoma State University, Rohnert Park. In addition, our own extensive files and maps were examined for supplemental information, such as rumors of historic or prehistoric resources in the general project area.

The Regional Information Centers have been established by the California Office of Historic Preservation as the local repository for all archaeological reports which are prepared under cultural resource management regulations. The literature search at the appropriate Regional Information Center is required by state guidelines and current professional standards. Following completion of the project, a copy of the report must be deposited with that organization.

In addition, we made a brief field assessment of the property from the western edge on Cunnison Lane because the property owners have not yet granted access to the property for a standard pedestrian reconnaissance. The following report contains the results of these investigations and our conclusions.

PROJECT LOCATION AND DESCRIPTION

The Erlach property is located on the eastern side of Cunnison Lane in Soquel, Santa Cruz County, California (see Maps 1 and 2). The proposed project area includes portions of Assessor's Parcels Number 037-101-02, 037-061-66 and 037-061-04. The Universal Transverse Mercator Grid (UTMG) coordinates for the approximate corners of the project area are as follows: Northeast 5.9440/40.9422, Southeast 5.9438/40.9400, Southwest 5.9422/40.9404 and Northwest 5.9424/40.9418 on the USGS 7.5 minute Soquel Quadrangle (1954, photorevised 1968).

RESULTS OF THE BACKGROUND RESEARCH

The search of the files at the Northwest Regional Information Center found that there are fourteen recorded cultural resources, including six prehistoric archaeological sites, located within one mile of the project area. In addition, an unrecorded "Chinese fishing village" site is reputed to be in New Brighton State Park along with five recorded historic cultural resources. The major prehistoric occupation sites in the general area are located along the year-round Soquel and Aptos Creeks. On the bluffs above the mouth of Soquel Creek and on the flats in the City of Capitola several prehistoric sites have been identified. Other prehistoric sites have been found along the Soquel Creek drainage at greater distance from the coastline. Large prehistoric sites have also been located in the lower Aptos Creek drainage. Smaller prehistoric deposits have been identified along some of the intermittent drainages at short distances from the shore.

The California Inventory of Historical Resources (March 1976), California Historical Landmarks, and the National Register of Historic Places were checked for listed cultural resources which might be present in the project area; none were discovered. The project area lies within the Shoquel Rancho land grant. The Plat of the Shoquel Rancho, finally confirmed to Martina Castro, 1858, depicts no structures in the project area. The "Road from Santa Cruz", now Soquel Drive, is depicted on the Rancho Plat as well as on the 1860 and 1891 GLO Plats. No other potential historic resources are found in or near the project area on any of these historic maps.

The record search found that the project area has not been included in a previous study. The adjacent property to the south and west was the subject of a reconnaissance survey (Simpson-Smith et al. 1990). Numerous other studies have been conducted within one mile of the project area.

BRIEF ETHNOGRAPHY

The project area lies within the currently recognized ethnographic territory of the Costanoan (often called Ohlone) linguistic group. Discussions of this group and their territorial boundaries can be found in Breschini, Haversat, and Hampson (1983), Kroeber (1925), Levy (1978), Margolin (1978), and other sources. In brief, the group followed a general hunting and gathering subsistence pattern with partial dependence on the natural acorn crop. Habitation is considered to have been semi-sedentary and occupation sites can be expected most often at the confluence of streams, other areas of similar topography along streams, or in the vicinity of springs. These original sources of water may no longer be present or adequate. Also, resource gathering and processing areas, and associated temporary campsites, are frequently found on the coast and in other locations containing resources utilized by the group. Factors which influence the location of these sites include the presence of suitable exposures of rock for bedrock mortars or other milling activities, ecotones, the presence of specific resources (oak groves, marshes, quarries, game trails, trade routes, etc.), proximity to water, and the availability of shelter. Temporary camps or other activity areas can also be found along ridges or other travel corridors.

PERIPHERAL FIELD ASSESSMENT

On August 5, 2008 the flat to gently sloping project area was examined from the Cunnison Lane periphery by Mary Doane, B.A. Very few patches of native soil were visible from the road because of the substantial dry grass cover. Some gopher activity provided patches of subsurface soil to view.

CONCLUSIONS

Based upon the background research and the brief field assessment, we have concluded that there are no recorded cultural resources in the project area. However, there also has been no previous archaeological study of the area. The nearest study proved negative for prehistoric cultural materials but suggested a potential for historic findings.

Even though the drainage in the riparian corridor along the eastern side of the project area is seasonal, the proximity of fresh water would suggest a moderate potential for the discovery of prehistoric cultural resources on the property. With this in mind, we recommend that a standard field study of the area should be undertaken, when access is possible, in order to complete the full level of reconnaissance required for undertakings of this scope.

Because of the possibility of unidentified (e.g., buried) cultural resources being found during future construction, we recommend that the following standard language, or the equivalent, be included in any permits issued for the project area:

- If archaeological resources or human remains are accidentally discovered during construction, work shall be halted within 50 meters (150 feet) of the find until it can be evaluated by a qualified professional archaeologist. If the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented.

REFERENCES

Breschini, G. S., T. Haversat, and R. P. Hampson

1983 **A Cultural Resources Overview of the Coast and Coast-Valley Study Areas [California].** Coyote Press, Salinas.

Kroeber, A. L.

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Levy, R.

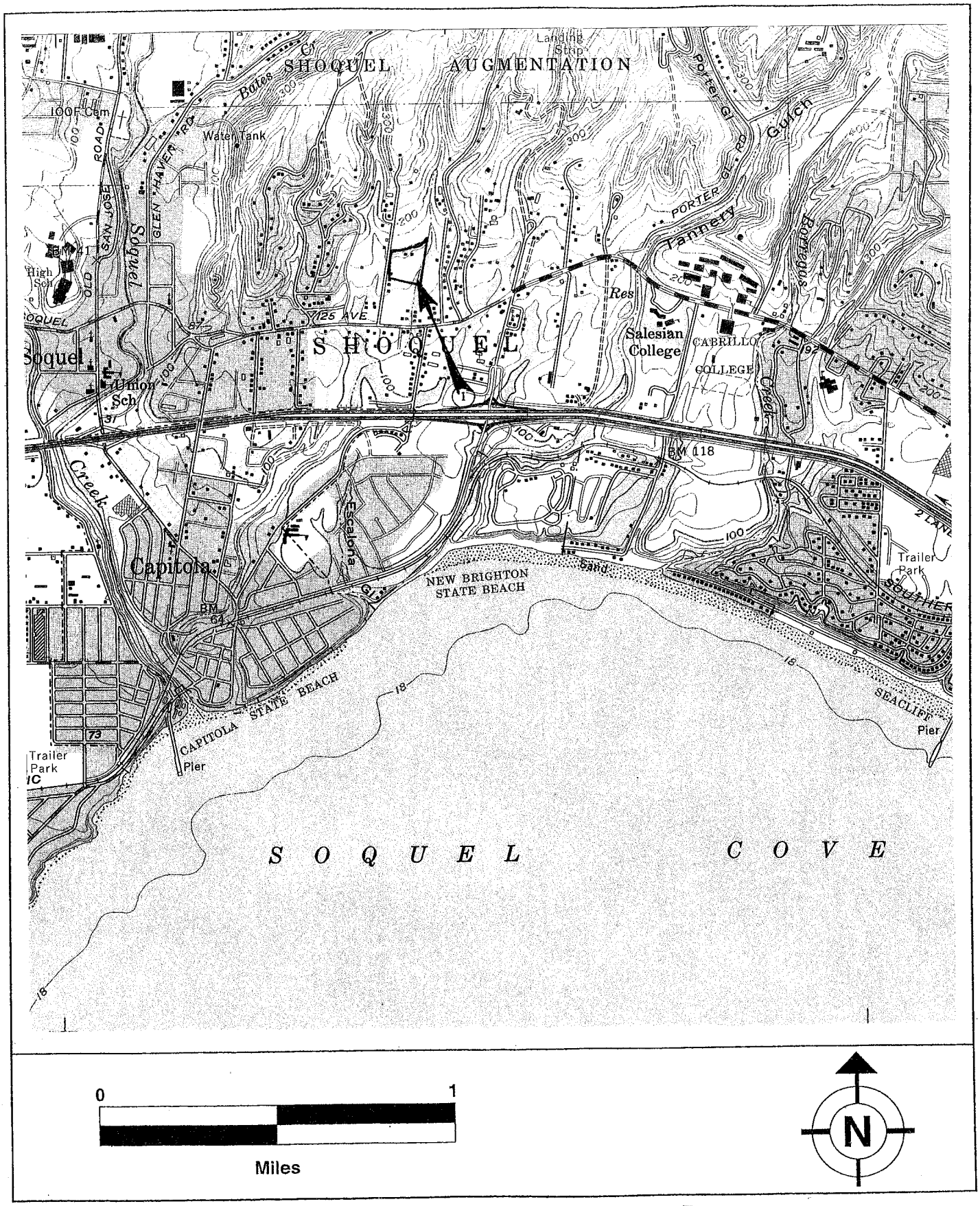
1978 Costanoan. Pp. 485-495 in **Handbook of North American Indians, Vol. 8, California.** Smithsonian Institution, Washington, D.C.

Margolin, M.

1978 **The Ohlone Way.** Heyday Books, Berkeley.

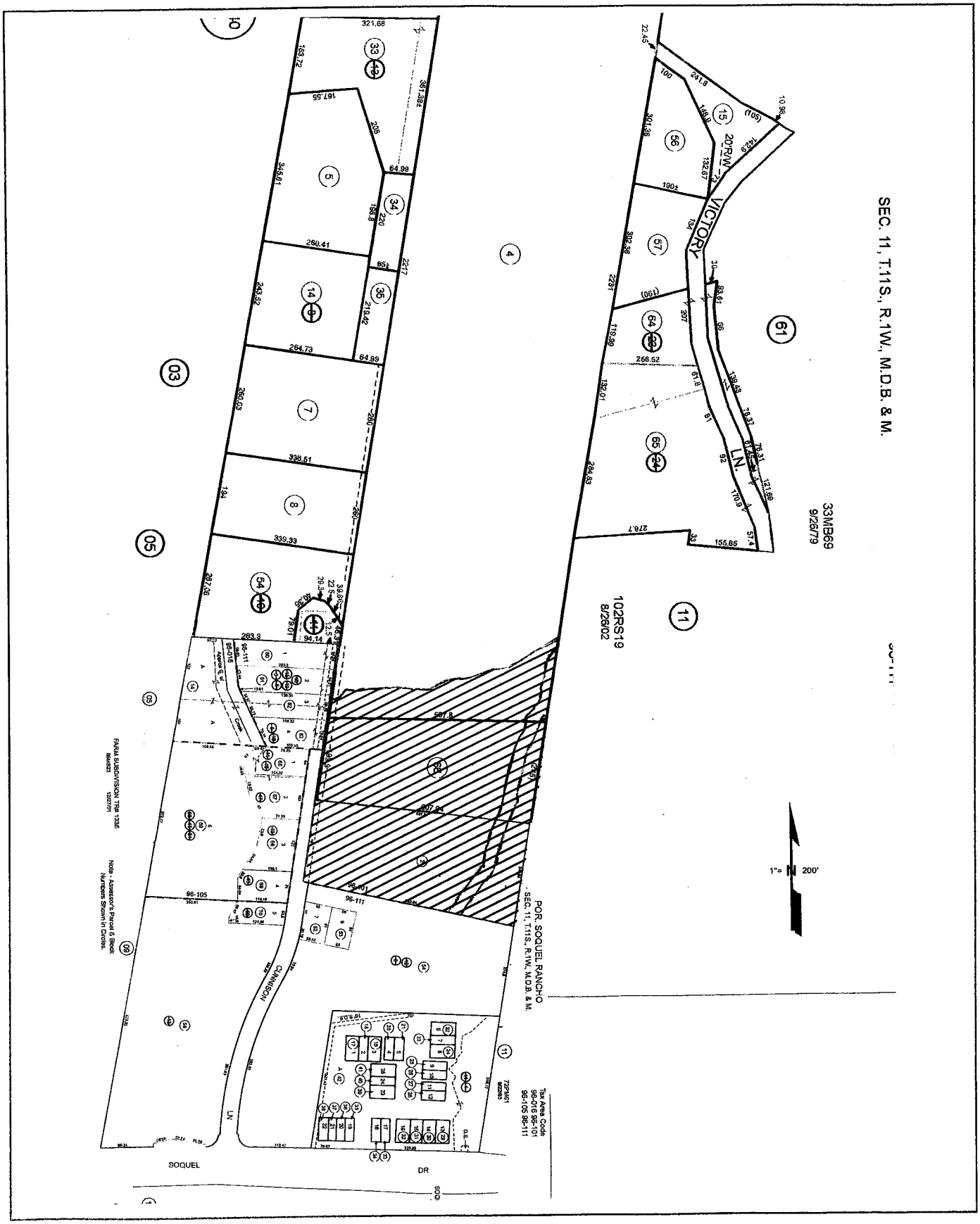
Simpson-Smith, C., A. Runnings, and G. S. Breschini

1990 **Preliminary Cultural Resources Reconnaissance of APN 37-10-13 and Portions of APN 37-10-8 & -12, Soquel, Santa Cruz County, California.** On file with the Northwest Regional Information Center, Sonoma State University (S-11799).



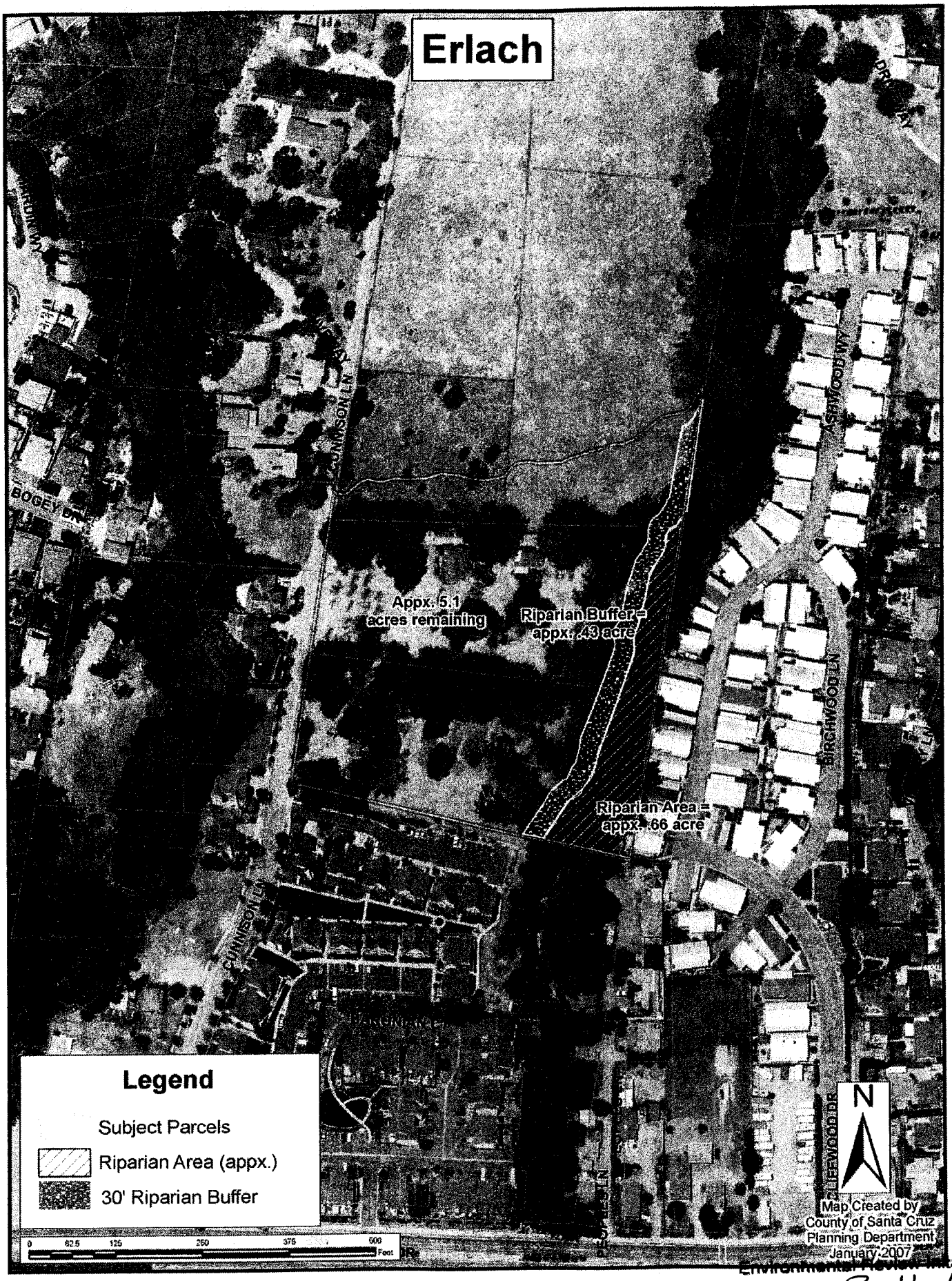
Map 1. Project Location.

Environmental Review Inital Study
ATTACHMENT 3, 9 of 11
APPLICATION 08-0262



Map 2. Project Location.

Environmental Review Inital Study
ATTACHMENT 3, 10 of 11
APPLICATION 08-0262



Environmental Review Initial Study

ATTACHMENT 3, 11 of 11

APPLICATION 08-0262

APPENDIX D

PRELIMINARY DRAINAGE STUDY FOR A PORTION OF ERLACH PROPERTYAND DOWNSTREAM DRAINAGE COURSE IN SOQUEL, SANTA CRUZ COUNTY, CALIFORNIA, PREPARED DECEMBER 2008

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Preliminary Drainage Study
For a Portion of
Erlach Property and Downstream Drainage Course
Soquel, Santa Cruz County, California

Prepared for:

County of Santa Cruz
Planning Department, Housing Division
Attn: Matt Johnston
701 Ocean Street, 4th Floor
Santa Cruz, CA 95060

December 2008

FALL CREEK ENGINEERING, INC.
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December 10, 2008

Matt Johnston
County of Santa Cruz
Planning Department – Housing Division
701 Ocean Street, 4th Floor
Santa Cruz, CA 95060

Subject: **Preliminary Drainage Study for a Portion of Erlach Property and Downstream Drainage Course (APN: 037-061-66, 037-101-02 and a portion of 037-061-04)**

Dear Mr. Johnston:

Fall Creek Engineering, Inc. (FCE) is pleased to present this letter report summarizing the Drainage Study conducted for a portion of the Erlach Property and downstream drainage course in Soquel, CA. The Drainage Study was conducted to determine existing runoff paths from the parcels. Additionally, this study provides an assessment of the downstream drainage conditions and capacity based on the routing of the 25-, 50-, and 100-year 24 hour storm events.

The results of the study indicate that the existing conditions of the immediate downstream drainage have the capacity to convey the routing of a 100-year, 24-hour frequency storm. The existing drainage conditions, further downstream, have a capacity of less than or equal to the routing of a 25-year, 24-hour frequency storm. Dependant upon future property development, these downstream drainage portions may need to be upgraded.

The following sections provide a more detailed description of the site, hydrologic modeling methods, results, conclusions and recommendations.

Introduction

FCE was retained by the County of Santa Cruz Planning Department (CSCPD) to perform a drainage analysis for the above referenced project located in Santa Cruz County, California. The project site is located to the north of Highway One off of Soquel Drive, between Cunnison Lane and Cliffwood Drive. Figures 1 and 2 show the project vicinity and location.

Currently, the project site is minimally developed with a small residence and utility buildings; however, the CSCPD is considering the site for rezoning to high density

housing. The purpose of this study is to identify and determine the current condition and capacity of drainage features at and downstream of the project site.

A hydrologic analysis was performed to evaluate the condition and capacity of the existing drainage features for the required design and overflow storms. The stormdrain systems along Cunnison Lane, Soquel Drive and Nobel Gulch were evaluated.

The hydrologic analysis utilized the U.S. Army Corps of Engineer's (USACE) Hydrologic Engineering Center's Hydrologic Modeling System (HEC-HMS) software to evaluate runoff from the site for the existing site conditions. The following presents the project description, methodology, drainage analysis results, conclusions, and recommendations.

Project Description

The project site is located in the lower Soquel Creek watershed. Drainage from the site is generally conveyed to the south in a system of natural channels and pipe networks that drain into Soquel Creek and ultimately discharge into the Monterey Bay.

The Erlach property is a partially developed site with minimal site improvements. The site consists of mostly open, unimproved terrain with several large stands of Eucalyptus trees to the east. The site is on a general southern facing slope and does receive runoff from upslope areas. The majority of the site drains, via sheet flow, to the southeast and into Nobel Gulch. A portion of the site drains to the west via sheet flow and is intercepted by the stormdrain system along Cunnison Lane and conveyed to the County's stormwater system along Soquel Drive. Another portion of the property appears to drain towards the Farm Townhouses. Since permission to enter the property was not given, and a detailed topographic survey was not available, FCE was not able to accurately quantify drainage areas on site.

FCE assessed approximately 685 feet of Nobel Gulch. FCE walked the length of the Gulch from the culvert under Soquel Drive to the farthest accessible point to the north. FCE also inspected Nobel Gulch immediately downstream of Soquel Drive. Figure 3 shows the reach of channel evaluated and selected cross sections. During the assessment, FCE noted the channel shape, condition, material, soil, top width, bottom width, and depth at various locations along the channel. Table 1 summarizes the information collected and Figure 3 identifies the approximate location of each station along Noble Gulch.

Table 1. Parameters Collected for Selected Reach of Nobel Gulch

Station ID	Station (ft)	Shape	Depth of Channel (ft)	Bottom Width (ft)	Top Width (ft)
A	0+00	Trapezoid	5.6	3.5	16
B	0+37	Rectangular	4.5	3	3
C	0+68	Trapezoid/Rectangular	NM	NM	NM
D	1+20	NC	NM	NM	NM
E	3+00	NC	NM	NM	NM
F	3+64	NC	NM	NM	NM
G	4+96	NC	NM	4	18
Gg	5+32				
H	6+85	Trapezoid	~4.5	~3	~3

NC – No Change; NM – Not Measured

FCE determined that The Farm and Soquel Village Green Townhouses, located along the Southern boundary for the subject parcel, do not appear to drain onto the site. A small unimproved portion of each of these developments does however appear to drain into Nobel Gulch. The remaining portions of The Farm and Soquel Village Green Townhouses have stormwater collection systems that drain towards the west and into the stormdrain system along Cunnison Lane, which discharges into the stormdrain main located along the north side of Soquel Drive.

After the initial site assessment was completed, a follow-up meeting was held on October 15th with staff from the County of Santa Cruz Public Works Department (PWD) to review existing drainage information for the area. The PWD provided FCE with plans that included design information pertaining to the stormdrain systems associated with The Farm and Village Green Townhouses, four (4) lots along Cunnison Lane, and the stormdrain system located on the north side of Soquel Drive. Additional information was obtained from the Zone 5 Master Drainage Plan (Z5MDP) and an Existing Conditions Report and Recommendations for the Proposed Farm Neighborhood Park and Community Center (Moore Iacofano Goltsman, Inc., May 2008), supplied by the Santa Cruz County Redevelopment Agency.

Data collected from the site visit and subsequent meeting with the County was utilized in the HEC-HMS evaluation of the site. Detailed information regarding the HEC-HMS study is provided in the following sections.

Computational Methods

The USACE HEC-HMS software was utilized to analyze hydrologic conditions at the site. HEC-HMS is a numeric computer model that simulates watershed, channel, and water-control structure behavior, and predicts flow, stage, and timing. HEC-HMS calculates runoff by computing the volume of water that is intercepted, infiltrated, stored, evaporated, or transpired, and subtracts it from the precipitation. The sum of these parameters, with the exception of precipitation, is collectively referred to as losses.

The runoff volume computations were conducted employing the SCS Curve Number Loss Method and SCS Unit Hydrograph (UH) Model for transformation of direct runoff and an estimation of constant monthly baseflow. The SCS Curve Number Loss Method implements the curve number methodology of incremental losses. The program computes incremental precipitation during a storm by recalculating the infiltration volume at the end of each time interval[1]. The SCS UH Model is an empirical model, which "transforms" excess precipitation into peak runoff and calculates the volume of runoff over a specified time period. The SCS UH model is based upon average unit hydrographs derived from gauged rainfall and runoff events for a large number of small agricultural watersheds throughout the United States.

HEC-HMS requires the user to input information describing the drainage basin (Basin Model), the rainfall event (Meteorological Model), and model control information. For the Basin Model the user must input information about the sub-basin and water control structures. The sub-basin characteristics including: area, loss rate method, transform method, and base flow method. For water control structures, including the detention ponds, the user inputs a storage method and outflow curves for each of the structures. The user must also define the precipitation method. Rainfall data for the 25-, 50- and 100-year rainfall events were obtained from the Santa Cruz County Design Criteria Manual (Fig. SWM-3) and the Santa Cruz County Storm Water Master Plan (Fig. 2-1). The rainfall data was then checked against the NOAA Atlas 2: Precipitation-Frequency Atlas of the Western United States, Volume XI- California for accuracy.

The project site was divided into separate sub-basins for the purpose of modeling. The sub-basins were delineated based on available topography and the Z5MDP which encompasses the project site. Sub-basin and reach naming schemes were kept consistent with the Z5MDP. Impervious areas (roadways, rooftops, driveways) were assumed based on aerial photographs available from the County GIS website. SCS Lag times were calculated and assigned based on the specific land use, basin slope, and length of drainage course. A summary of the input parameters for each sub basin is presented in Attachment 1.

[1] November 2006. Hydrologic Modeling System HEC-HMS, User's Manual Version 3.1.0. US Army Corps of Engineers Hydrologic Engineering Center.

Project Analysis

FCE performed a hydrologic analysis for the existing site conditions. The existing condition analysis evaluated drainage from the project site and included surrounding drainage areas contributing to the projects drainage courses. The eastern drainage, Nobel Gulch, was assessed from its' origin northeast of the project site, to approximately 1,000 feet south of the 48" diameter culvert under Soquel Drive. The western drainage system was assessed along Cunnison Lane and approximately 450 feet along Soquel Drive.

A total of approximately 138 acres of overland area was separated into sub-basins for each drainage system. Sub-basin delineation was based on the areas presented in the Z5MDP and verified utilizing the USGS topographic information. Figure 4 depicts the sub-basin delineation as presented in the Z5MDP and Figure 5 presents the Basin Model Schematic which shows how the sub-basins were depicted in the HEC-HMS model.

HEC-HMS was utilized to determine the peak discharge associated with the 25-, 50-, and 100-year storm events. The peak discharge was compared with the full flow capacity of the drainage courses to determine the percentage of the full flow capacity under existing conditions.

Manning's equation was used to evaluate the drainage capacity at seven locations within the drainage analysis area. Of these seven locations, four (locations 1-4) are located to the East-Southeast of the project site along the Noble Gulch drainage course and three (locations 5-7) are located to the West-Southwest of the project site along Cunnison Lane and Soquel Drive. Approximately 25% of the project site drains to the Eastern drainage basin (Noble Gulch), 21% drains to the Southeast drainage basin (Noble Gulch), and the remaining 54% drains to the West-Southwest drainage basin (Cunnison Lane). However, FCE was not allowed on site to verify he accuracy of these percentage. The locations evaluated are show in Figure 4.

The following section presents the results of the drainage analysis.

Analysis Results

HEC-HMS was run for the existing conditions scenario to determine the peak discharge for the variable drainage locations. The existing conditions scenario was evaluated under the 25-, 50-, and 100-year, 24-hour return periods. The results of the drainage capacity for the seven locations within the drainage analysis area are presented in Table 2.

Table 2. Capacity of Existing Drainage for 25-, 50-, and 100-year Frequency Storms

Site	Description	Peak Discharge (cfs) Existing			Capacity (cfs)	Safely Convey Frequency Storm
		25-year	50-year	100-year		
1	Natural Channel - Noble Gulch, Station 5+32 (No. 7b)	84.8	100.1	115.4	**296.28**	100-Year
2	Natural Channel - Noble Gulch, Station 1+00 (No. 1)	83.6	98.7	113.9	**559.00**	100-Year
3	48" Culvert under Soquel Drive	90.7	106.8	123.1	**236.35**	100-Year
4	48" Drainage Pipe (Reach - 063052-063054)	101.9	120.0	138.2	**112.48**	25-year
5	18" Storm Drain (Reach - Upper Cunnison Lane)	4.7	5.4	6.1	**27.68**	100-Year
6	18" Storm Drain (Reach - Lower Cunnison Lane)	6.1	7.1	8.1	**20.99**	100-Year
7	18" Storm Drain (Reach - Cunnison Lane/Hardin Way)	17.0	19.6	22.2	**13.03**	5-Year*

*Additional HEC-HMS analysis of the 2-, 5-, and 10-year frequency storm determined peak discharge values of 7.2, 10.6, and 13.4 cfs, respectively.

Five of the seven drainage analysis sites (Site 1, 2, 3, 5, and 6) downstream of the project area have the capacity to safely convey a 100-year frequency storm. During the 100-year frequency storm event, theses sites are conveying flows that range from 20% (114/559 x 100) to 52 % (123/236 x 100) of the total capacity of the channel sections. Of the two remaining sites, Site 4 on Nobel Gulch approximately 200 feet down stream of the culvert under Soquel Drive, will safely convey a 25-year frequency storm which translates to 91 % (120/113 x 100) of the total capacity of the piped drainage section. The final site, Site 7 along Cunnison Lane, will safely convey a 5-year frequency storm, conveying 81% (13/11 * 100) of the total capacity of the piped drainage section.

The Z5MDP indicates that a drainage section in the same location and with the same approximate length as the reach associated with Site 7 has the capacity to safely convey a 2-year frequency storm and less than a 5-year frequency storm. However, FCE observed that the Z5MDP analyzed this section from a simplified modeling approach due the large scale of the project. This suggests that our analysis of the drainage reach may be more accurate based on a more complete inventory of the drainage information.

Attachment 2 and 3 includes the complete Capacity Calculation and HEC-HMS model results.

Conclusions and Recommendations

1. Based on our field assessment and documentation review, runoff from the subject property drains via sheet flow to the Southeast into Noble Gulch and Southwest to Cunnison Lane. Via culverts, county storm drains, and natural channels, runoff

continues downstream into Soquel Creek which ultimately discharges into Monterey Bay at Capitola Village.

2. The results of the study indicate that the existing conditions of the immediate downstream drainage courses have the capacity to safely convey runoff from a100-year, 24-hour storm event. However, analysis of the existing conditions of the two furthest drainage reaches associated with Site 4 and Site 7 are not appropriately sized to safely convey a 100-year frequency storm. Site 4 will safely convey a 25-year frequency storm (91 % of the total section capacity) and Site 7 will safely convey a 5-year frequency storm (81% of the total section capacity).

3. Natural channel sections of Nobel Gulch, downstream of the culvert under Soquel Drive, can safely convey runoff events greater than a 100-year frequency storm. However, results from the drainage analysis reveal that the drainage reach (063052-063054) associated with Site 4 will safely convey a 25-year frequency storm only. If the County requires this drainage reach to safely convey runoff from a 100-year, 24-hour storm event a 54" diameter storm-drain pipe may need to replace the existing 48" diameter pipe. Another option may be the removal of the existing 48" diameter pipe and restoring the piped reach to be natural channel with a bottom width of approximately 5 feet, depth of 3 feet and side slope of 2(H):1(V).

4. The drainage reach associated with Site 7 has the capacity to safely convey between a 2-year and 5-year frequency storm. This drainage reach may require a 30% increase in design capacity to convey a 25-year, 24-hour storm event. If the County requires this drainage reach to safely convey runoff from a 100-year, 24-hour storm event a 24" diameter storm drain pipe may need to replace the existing 18" diameter pipe.

5. Based on the proposed redevelopment of the site to high density development it is likely that either on site retention/detention facilities would be required to limit runoff from the site. Downstream improvements in Noble Gulch may also be required to increase flow conveyance in the channel.

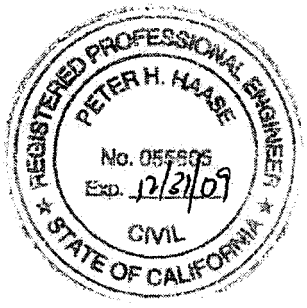
6. Retention/Detention facilities may be possible on-site, dependant upon soil conditions and the proposed design of the project area. Further studies including, but not limited to, a site specific topographic survey and a soil investigation would be necessary in order to engineer on-site retention/detention facilities.

This concludes our drainage study. Thank you for the opportunity to provide professional services and assist you with this project. If you have any questions or require additional information, please contact me at (831) 426-9054.

Sincerely,

PETER HAASE, P.E.
Principal Engineer

Attachments



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FIGURES

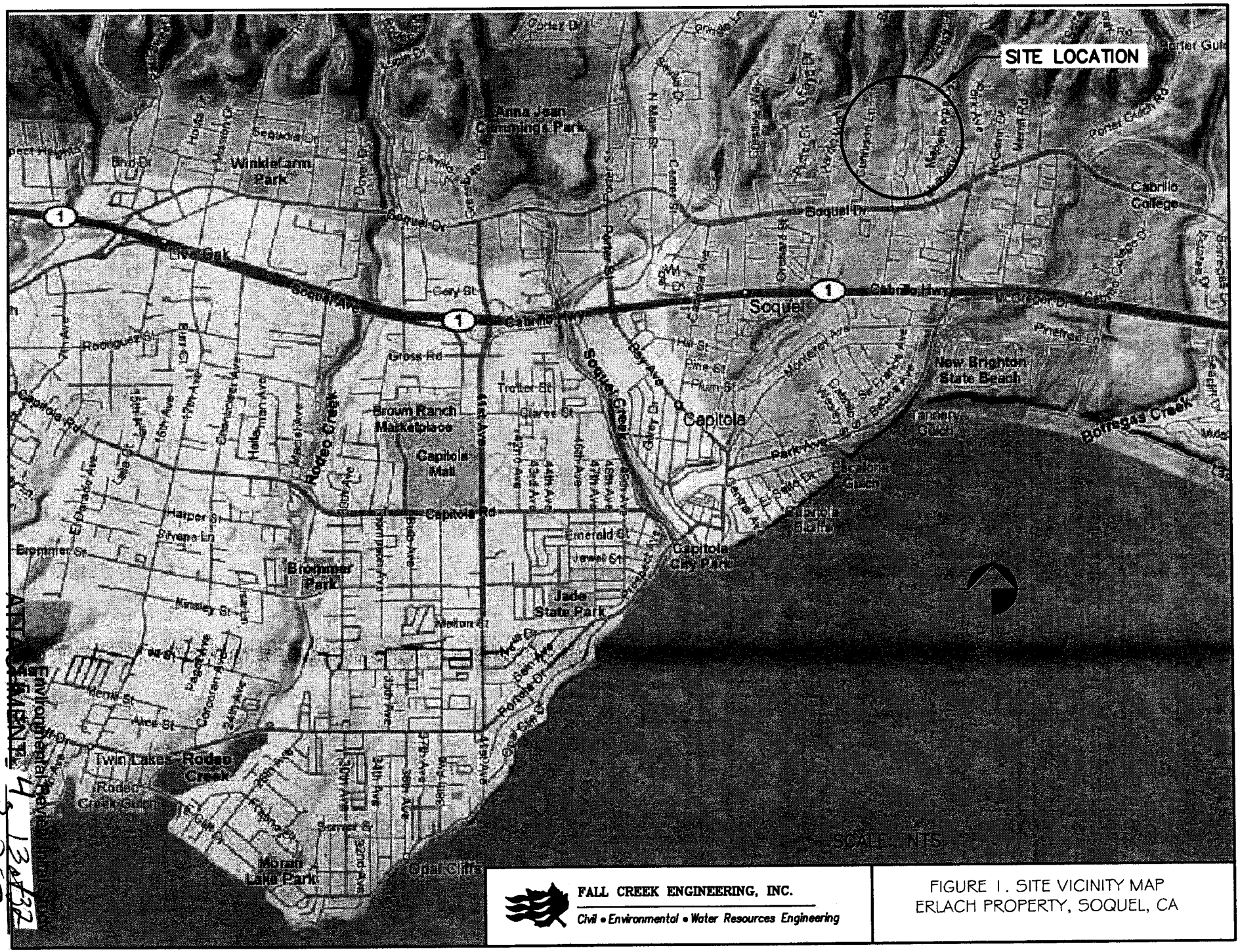

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FIGURE 1. SITE VICINITY MAP
ERLACH PROPERTY, SOQUEL, CA

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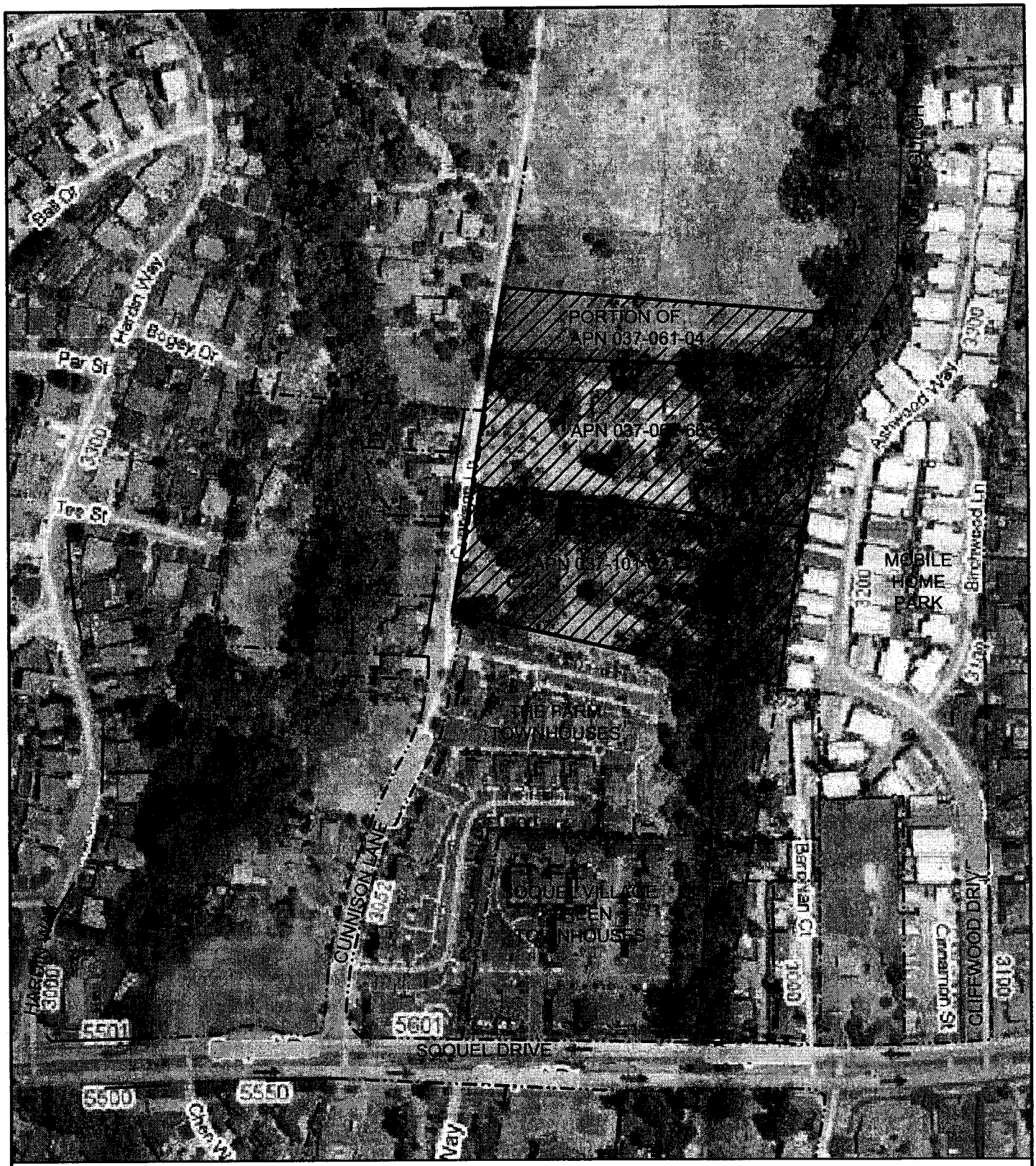

LEGEND

PARCEL BOUNDARY

PROJECT AREA

0 200' 400'

SCALE: 1"=200'

NORTH

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FIGURE 2. SITE LOCATION MAP
ERLACH PROPERTY
SOQUEL, CALIFORNIA

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FIGURE 3. NOBLE GULCH FIELD ASSESSMENT STATIONS, ERLACH PROPERTY, SOQUEL, CA

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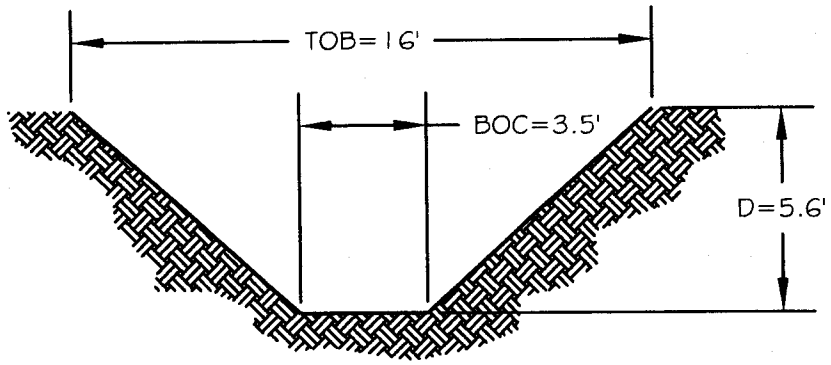
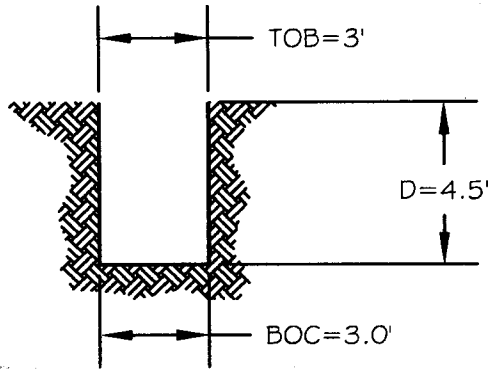
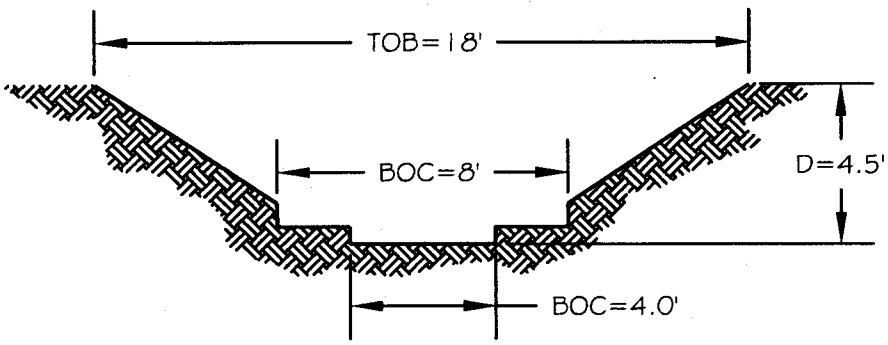


STA. NO. 1
STATION 0+00



STA. NO. 2
STATION 0+37



STA. NO. 7a - 7b
STATION 4+96 - 5+32

LEGEND

D - CHANNEL DEPTH
TOB - TOP OF BANK WIDTH
BOC - BOTTOM OF CHANNEL WIDTH
NATIVE SOIL

0 5' 10'

SCALE: 1"=5'

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FIGURE 3a. SELECTED CROSS-SECTIONS IN NOBEL GULCH, SOQUEL, CA

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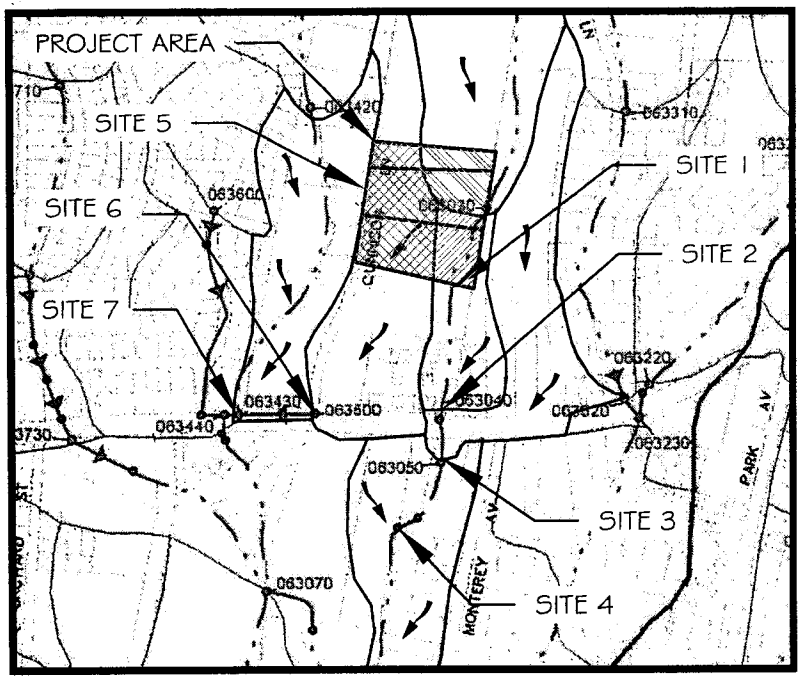
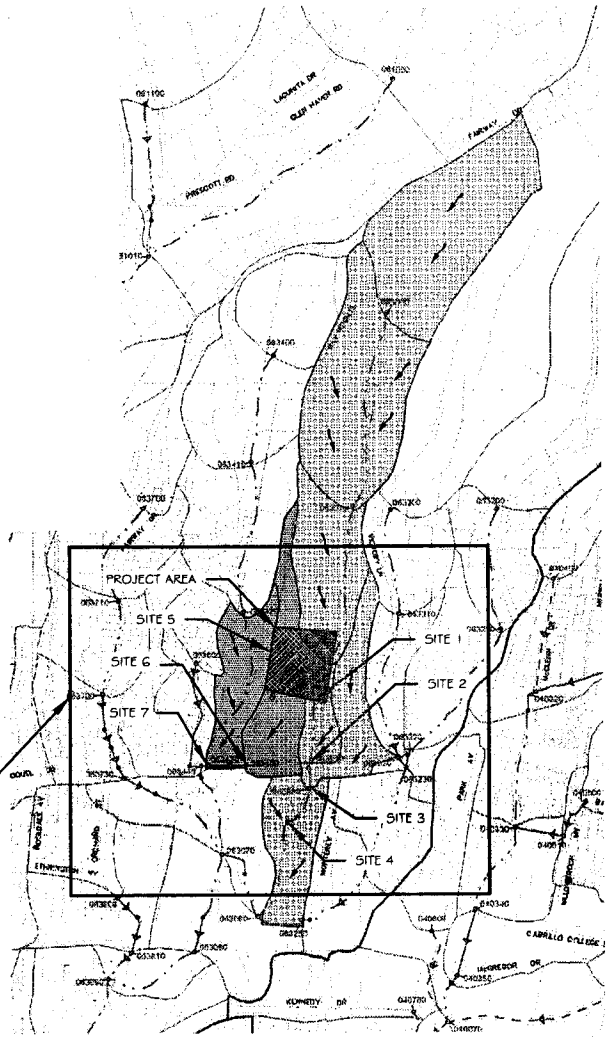


PROJECT AREA DETAIL

SCALE: 1"=500'

LEGEND:

- AREA DRAINING TO EASTERN BASIN (25%)
- AREA DRAINING TO SOUTHEASTERN BASIN (21%)
- AREA DRAINING TO WEST-SOUTHWEST BASIN (54%)



PROJECT AREA DETAIL CALLOUT

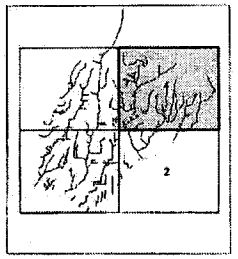
County of Santa Cruz Modeled Stormwater System

N

1000' 0 1000'

LEGEND

- Analysis Node
- Storage Basin
- Basin Boundary
- Drainage Area
- Roadway Reach
- Channel
- Pipe/Culvert
- PROJECT AREA
- WESTERN DRAINAGE
- EASTERN DRAINAGE
- DIRECTION OF FLOW



Map Index

NOTE:

ORIGINAL MAP OBTAINED FROM STORM WATER MASTER PLAN AND MANAGEMENT PROGRAM, VOLUME 1, ZONE 5 MASTER DRAINAGE PLAN (MAP 4, COUNTY OF SANTA CRUZ MODELED STORMWATER SYSTEM)

FIGURE 4. SUB-BASIN DELINIATION, ERLACH PROPERTY, SOQUEL, CA

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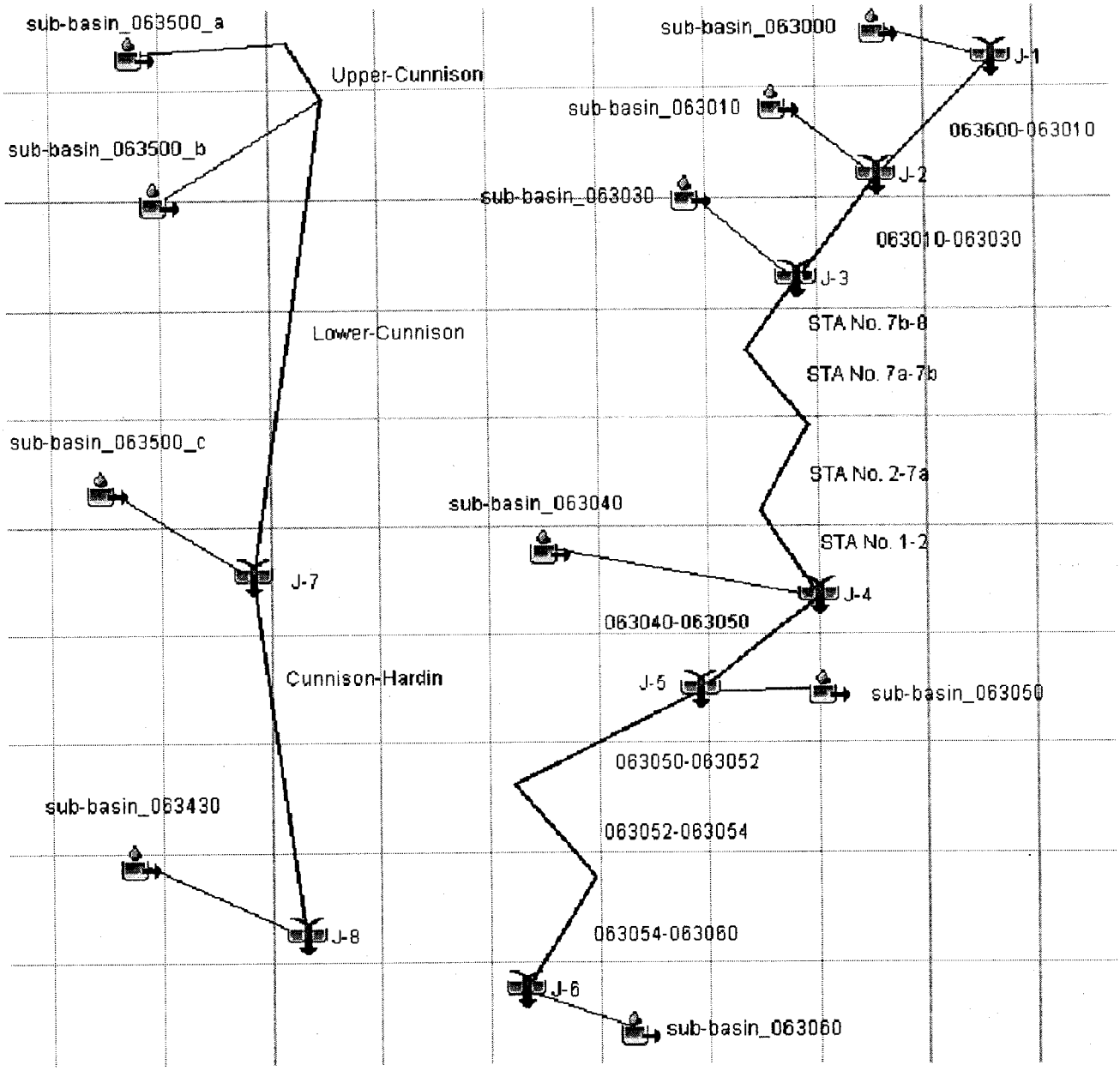

NOT TO SCALE

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FIGURE 5. HEC-HMS EXISTING SCHEMATIC, ERLACH PROPERTY, SOQUEL, CA

Environmental Review Inital Study
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ATTACHMENT 1

HEC-HMS MODEL INPUT PARAMETERS

Sub-Basin Information

The SCS Curve Number Loss method was selected to account for loss of precipitation on overland surfaces. A summary of sub-basin data entered into the HEC-HMS model for existing conditions is presented in Table A1.

Table A1. Sub-Basin Information – Existing Conditions

Basin	Area (acres)	Initial Abstraction (in)	Curve Number	Imperviousness (%)	SCS Lag* (minutes)
063000	33.92	0.2	82	0	18.9
063010	32.00	0.2	82	0	8.7
063030	17.28	0.2	86	0	4.9
063040	5.76	0.2	89	0	6.8
063050	10.88	0.2	84	0	10.9
063060	11.52	0.2	83	0	16.2
063500-a	3.82	0.2	88	0	7.7
063500-b	1.48	0.2	88	0	7.7
063500-c	8.79	0.2	88	0	7.7
063430	12.16	0.2	89	0	6.6

*SCS Lag Time. The lag time is calculated based on the SCS Equation for Natural Watersheds (50<=CN<=95)

Reach Information

The Muskingum-Cunge method was selected to account for the routing conditions of the existing and proposed conveyance surfaces. A summary of reach data entered into the HEC-HMS model for existing and proposed conditions is presented in Table A2.

Table A2. Reach Information – Existing Conditions

Reach Name	Routing Method	Length (ft)	Slope (ft/ft)	Manning's n	Invert Elevation (ft)	Shape	Bottom Width (ft)	Side Slope (xH:xV)
063600-063010	Musk-Cunge	1,705	0.059	0.0350	200	Trap	20	1
063010-063030	Musk-Cunge	1,356	0.037	0.0350	150	Trap	20	1
STA No. 1-2	Musk-Cunge	37	0.017	0.0365	130	Trap	4	1
STA No. 2-7a	Musk-Cunge	459	0.017	0.0365	129	Trap	3	1
STA No. 7a-7b	Musk-Cunge	36	0.017	0.0365	122	Trap	6	1
STA No. 7b-8	Musk-Cunge	153	0.017	0.0365	121	Trap	3	1
063040-063050	Musk-Cunge	184	0.023	0.0130	117.7 (exit)	Circle	48" dia	NA
063050-063052	Musk-Cunge	257	0.023	0.0350	120 (exit)	Trap	20	1
063052-063054	Musk-Cunge	94	0.005	0.0130	120 (exit)	Circle	48" dia	NA
063054-063060	Musk-Cunge	863	0.032	0.0350	92 (exit)	Trap	20	1
Upper Cunnison Way	Musk-Cunge	242	0.060	0.0130	169	Circle	18" dia.	NA
Lower Cunnison Way	Musk-Cunge	1,008	0.035	0.0130	155	Circle	18" dia.	NA
Cunnison Way to Hardin	Musk-Cunge	450	0.013	0.0130	118	Circle	18" dia.	NA

Rainfall Frequency and Duration Data

Data for the design storms was obtained from the Santa Cruz County Design Criteria Manual, Rainfall Intensity Duration Curves (Figure SWM-3) and the Santa Cruz County Storm Water Master Plan – Zone 5 (Figure 2-1). Adjustments to the P60 rainfall intensities, as read from the Figure 2-1, where made pursuant to Santa Cruz County conversion factors (noted on Fig. SWM-3). Table A3 summarizes the rainfall data used in the HEC-HMS model.

Table A3. Meteorological Input Data

Frequency Storm		
Return Period	**Duration (hr)**	**Depth (in)**
25	24	6.87
50	24	7.73
100	24	8.59

ATTACHMENT 2

CAPACITY CALCULATION RESULTS

Flow Master - Parameters and Results

Site 1 - Natural Channel - Noble Gulch, Station 5+32 (No. 7b)

Parameters	
Mannings Coefficient	0.0365
Channel Slope (ft/ft)	0.0168
Depth (ft)	5.6
Left Side Slope (H:V)	1.12
Right Side Slope (H:V)	1.12
Bottom Width (ft)	3.5
Discharge (cfs)	**559.00**

Results	
Flow Area (ft2)	54.72
Wetted Perimeter (ft)	20.32
Top Width (ft)	16.04
Critical Depth (ft)	5.53
Critical Slope (ft/ft)	0.0177
Velocity (ft/s)	10.22
Velocity Head (ft)	1.62
Specific Energy (ft)	7.22
Froude Number	0.98

Site 2 - Natural Channel - Noble Gulch, Station 1+00 (No. 1)

Parameters	
Mannings Coefficient	0.0365
Channel Slope (ft/ft)	0.0168
Depth (ft)	4.5
Left Side Slope (H:V)	1.00
Right Side Slope (H:V)	1.00
Bottom Width (ft)	3
Discharge (cfs)	**296.28**

Results	
Flow Area (ft2)	33.75
Wetted Perimeter (ft)	15.73
Top Width (ft)	12.00
Critical Depth (ft)	4.32
Critical Slope (ft/ft)	0.0198
Velocity (ft/s)	8.78
Velocity Head (ft)	1.20
Specific Energy (ft)	5.70
Froude Number	0.92

Site 3 - 48" Culvert under Soquel Drive

Parameters	
Mannings Coefficient	0.013
Channel Slope (ft/ft)	0.0234
Depth (ft)	4
Diameter (in)	48
Discharge (cfs)	219.72

Results	
Flow Area (ft2)	12.57
Wetted Perimeter (ft)	12.57
Top Width (ft)	0.00E+00
Critical Depth (ft)	3.89
Percent Full	100
Critical Slope (ft/ft)	0.0207
Velocity (ft/s)	17.48
Velocity Head (ft)	4.75
Specific Energy (ft)	FULL
Froude Number	FULL
Maximum Discharge	**236.35**
Full Flow Capcity (cfs)	219.72
Full Flow Slope (ft/ft)	0.0234

Site 4 - 48" Drainage Pipe (Reach - 063052-063054)

Parameters	
Mannings Coefficient	0.013
Channel Slope (ft/ft)	0.0053
Depth (ft)	4
Diameter (in)	48
Discharge (cfs)	104.57

Results	
Flow Area (ft2)	12.57
Wetted Perimeter (ft)	12.57
Top Width (ft)	0.00E+00
Critical Depth (ft)	3.1
Percent Full	100
Critical Slope (ft/ft)	0.0059
Velocity (ft/s)	8.32
Velocity Head (ft)	1.08
Specific Energy (ft)	FULL
Froude Number	FULL
Maximum Discharge	**112.48**
Full Flow Capcity (cfs)	104.57
Full Flow Slope (ft/ft)	0.0053

Site 5 - 18" Storm Drain (Reach - Upper Cunnison Way)

Parameters	
Mannings Coefficient	0.013
Channel Slope (ft/ft)	0.0600
Depth (ft)	1.5
Diameter (in)	18
Discharge (cfs)	25.73

Results	
Flow Area (ft2)	1.77
Wetted Perimeter (ft)	4.71
Top Width (ft)	0.00E+00
Critical Depth (ft)	1.49
Percent Full	100
Critical Slope (ft/ft)	0.0557
Velocity (ft/s)	14.56
Velocity Head (ft)	3.29
Specific Energy (ft)	FULL
Froude Number	FULL
Maximum Discharge	**27.68**
Full Flow Capcity (cfs)	25.73
Full Flow Slope (ft/ft)	0.06

Site 6 - 18" Storm Drain (Reach - Lower Cunnison Way)

Parameters	
Mannings Coefficient	0.013
Channel Slope (ft/ft)	0.0345
Depth (ft)	1.5
Diameter (in)	18
Discharge (cfs)	19.51

Results	
Flow Area (ft2)	1.77
Wetted Perimeter (ft)	4.71
Top Width (ft)	0.00E+00
Critical Depth (ft)	1.46
Percent Full	100
Critical Slope (ft/ft)	0.0306
Velocity (ft/s)	11.04
Velocity Head (ft)	1.89
Specific Energy (ft)	FULL
Froude Number	FULL
Maximum Discharge	**20.99**
Full Flow Capcity (cfs)	19.51
Full Flow Slope (ft/ft)	0.0345

Site 7 - 18" Storm Drain (Reach - Cunnison Way/Hardin Way)

Parameters	
Mannings Coefficient	0.013
Channel Slope (ft/ft)	0.0133
Depth (ft)	1.5
Diameter (in)	18
Discharge (cfs)	12.11

Results	
Flow Area (ft2)	1.77
Wetted Perimeter (ft)	4.71
Top Width (ft)	0.00E+00
Critical Depth (ft)	1.32
Percent Full	100
Critical Slope (ft/ft)	0.0118
Velocity (ft/s)	6.85
Velocity Head (ft)	0.73
Specific Energy (ft)	FULL
Froude Number	FULL
Maximum Discharge	**13.03**
Full Flow Capcity (cfs)	12.11
Full Flow Slope (ft/ft)	0.0133

ATTACHMENT 3

HEC-HMS RESULTS

Project: Erlach_Property_HEC-HMS Simulation Run: 25-YEAR, 24-HOUR

Start of Run: 01Jan2009, 12:00
End of Run: 02Jan2009, 13:00
Compute Time: 05Nov2008, 11:47:32

Basin Model: EXISTING_REV
Meteorologic Model: 25-YEAR 24-hour
Control Specifications: Control 1

Volume Units: IN

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
063010-063030	0.103	65.0	01Jan2009, 22:00	4.79
063040-063050	0.139	90.7	01Jan2009, 22:00	4.92
063050-063052	0.156	102.1	01Jan2009, 22:00	4.93
063052-063054	0.156	101.9	01Jan2009, 22:00	4.93
063054-063060	0.156	99.9	01Jan2009, 22:00	4.93
063600-063010	0.053	33.8	01Jan2009, 22:00	4.78
Cunnison-Hardin	0.022	17.0	01Jan2009, 22:00	5.45
J-1	0.053	35.5	01Jan2009, 22:00	4.78
J-2	0.053	33.8	01Jan2009, 22:00	4.78
J-3	0.130	85.2	01Jan2009, 22:00	4.88
J-4	0.139	90.8	01Jan2009, 22:00	4.92
J-5	0.156	102.7	01Jan2009, 22:00	4.93
J-6	0.174	112.3	01Jan2009, 22:00	4.93
J-7	0.022	17.1	01Jan2009, 22:00	5.45
J-8	0.041	32.2	01Jan2009, 22:00	5.50

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Lower-Cunnison	0.008	6.1	01Jan2009, 22:00	5.45
STA No. 1-2	0.130	83.6	01Jan2009, 22:00	4.88
STA No. 2-7a	0.130	83.7	01Jan2009, 22:00	4.88
STA No. 7a-7b	0.130	84.7	01Jan2009, 22:00	4.88
STA No. 7b-8	0.130	84.8	01Jan2009, 22:00	4.88
sub-basin_063000	0.053	35.5	01Jan2009, 22:00	4.78
sub-basin_063010	0.050	33.5	01Jan2009, 22:00	4.78
sub-basin_063030	0.027	20.2	01Jan2009, 22:00	5.22
sub-basin_063040	0.009	7.2	01Jan2009, 22:00	5.56
sub-basin_063050	0.017	12.1	01Jan2009, 22:00	5.00
sub-basin_063060	0.018	12.4	01Jan2009, 22:00	4.89
sub-basin_063430	0.019	15.2	01Jan2009, 22:00	5.56
sub-basin_063500_a	0.006	4.7	01Jan2009, 22:00	5.45
sub-basin_063500_b	0.002	1.6	01Jan2009, 22:00	5.45
sub-basin_063500_c	0.014	11.0	01Jan2009, 22:00	5.45
Upper-Cunnison	0.006	4.7	01Jan2009, 22:00	5.45

Project: Erlach_Property_HEC-HMS Simulation Run: 50-YEAR, 24-HOUR

Start of Run: 01Jan2009, 12:00
End of Run: 02Jan2009, 13:00
Compute Time: 05Nov2008, 11:59:37

Basin Model: EXISTING_REV
Meteorologic Model: 50-YEAR 24-hour
Control Specifications: Control 1

Volume Units: IN

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
063010-063030	0.103	77.0	01Jan2009, 22:00	5.59
063040-063050	0.139	106.8	01Jan2009, 22:00	5.74
063050-063052	0.156	120.2	01Jan2009, 22:00	5.75
063052-063054	0.156	120.0	01Jan2009, 22:00	5.75
063054-063060	0.156	117.8	01Jan2009, 22:00	5.75
063600-063010	0.053	40.0	01Jan2009, 22:00	5.59
Cunnison-Hardin	0.022	19.6	01Jan2009, 22:00	6.28
J-1	0.053	41.9	01Jan2009, 22:00	5.58
J-2	0.053	40.0	01Jan2009, 22:00	5.59
J-3	0.130	100.5	01Jan2009, 22:00	5.69
J-4	0.139	107.0	01Jan2009, 22:00	5.74
J-5	0.156	120.9	01Jan2009, 22:00	5.74
J-6	0.174	132.4	01Jan2009, 22:00	5.74
J-7	0.022	19.8	01Jan2009, 22:00	6.28
J-8	0.041	37.1	01Jan2009, 22:00	6.34

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Lower-Cunnison	0.008	7.1	01Jan2009, 22:00	6.29
STA No. 1-2	0.130	98.7	01Jan2009, 22:00	5.69
STA No. 2-7a	0.130	98.8	01Jan2009, 22:00	5.69
STA No. 7a-7b	0.130	100.0	01Jan2009, 22:00	5.69
STA No. 7b-8	0.130	100.1	01Jan2009, 22:00	5.69
sub-basin_063000	0.053	41.9	01Jan2009, 22:00	5.58
sub-basin_063010	0.050	39.5	01Jan2009, 22:00	5.58
sub-basin_063030	0.027	23.4	01Jan2009, 22:00	6.05
sub-basin_063040	0.009	8.3	01Jan2009, 22:00	6.40
sub-basin_063050	0.017	14.1	01Jan2009, 22:00	5.82
sub-basin_063060	0.018	14.6	01Jan2009, 22:00	5.70
sub-basin_063430	0.019	17.5	01Jan2009, 22:00	6.40
sub-basin_063500_a	0.006	5.4	01Jan2009, 22:00	6.28
sub-basin_063500_b	0.002	1.8	01Jan2009, 22:00	6.28
sub-basin_063500_c	0.014	12.7	01Jan2009, 22:00	6.28
Upper-Cunnison	0.006	5.4	01Jan2009, 22:00	6.28

Project: Erlach_Property_HEC-HMS Simulation Run: 100-YEAR, 24-HOUR

Start of Run: 01Jan2009, 12:00
End of Run: 02Jan2009, 13:00
Compute Time: 05Nov2008, 11:57:04

Basin Model: EXISTING_REV
Meteorologic Model: 100-YEAR 24-hour
Control Specifications: Control 1

Volume Units: IN

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
063010-063030	0.103	89.1	01Jan2009, 22:00	6.41
063040-063050	0.139	123.1	01Jan2009, 22:00	6.56
063050-063052	0.156	138.5	01Jan2009, 22:00	6.57
063052-063054	0.156	138.2	01Jan2009, 22:00	6.57
063054-063060	0.156	135.9	01Jan2009, 22:00	6.57
063600-063010	0.053	46.3	01Jan2009, 22:00	6.41
Cunnison-Hardin	0.022	22.2	01Jan2009, 22:00	7.12
J-1	0.053	48.3	01Jan2009, 22:00	6.40
J-2	0.053	46.3	01Jan2009, 22:00	6.41
J-3	0.130	115.9	01Jan2009, 22:00	6.51
J-4	0.139	123.3	01Jan2009, 22:00	6.56
J-5	0.156	139.3	01Jan2009, 22:00	6.57
J-6	0.174	152.6	01Jan2009, 22:00	6.57
J-7	0.022	22.4	01Jan2009, 22:00	7.12
J-8	0.041	42.0	01Jan2009, 22:00	7.18

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Lower-Cunnison	0.008	8.1	01Jan2009, 22:00	7.12
STA No. 1-2	0.130	113.9	01Jan2009, 22:00	6.51
STA No. 2-7a	0.130	114.0	01Jan2009, 22:00	6.51
STA No. 7a-7b	0.130	115.3	01Jan2009, 22:00	6.51
STA No. 7b-8	0.130	115.4	01Jan2009, 22:00	6.51
sub-basin_063000	0.053	48.3	01Jan2009, 22:00	6.40
sub-basin_063010	0.050	45.6	01Jan2009, 22:00	6.40
sub-basin_063030	0.027	26.7	01Jan2009, 22:00	6.88
sub-basin_063040	0.009	9.4	01Jan2009, 22:00	7.24
sub-basin_063050	0.017	16.2	01Jan2009, 22:00	6.64
sub-basin_063060	0.018	16.8	01Jan2009, 22:00	6.52
sub-basin_063430	0.019	19.8	01Jan2009, 22:00	7.24
sub-basin_063500_a	0.006	6.2	01Jan2009, 22:00	7.12
sub-basin_063500_b	0.002	2.1	01Jan2009, 22:00	7.12
sub-basin_063500_c	0.014	14.4	01Jan2009, 22:00	7.12
Upper-Cunnison	0.006	6.1	01Jan2009, 22:00	7.12

APPENDIX E

TRANSPORTATION IMPACT ANALYSIS FOR THE ERLACH HIGH-DENSITY HOUSING SITE IN SANTA CRUZ COUNTY, CALIFORNIA, PREPARED BY FEHR & PEERS TRANSPORTATION CONSULTANTS, JANUARY 18, 2008

UPDATED BY THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF SANTA CRUZ, JULY 30, 2008

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ERLACH HIGH-DENSITY HOUSING SITE PROJECT

Anwar Mirza
Asst. Civil Engineer
Road Planning, Department of Public Works
County of Santa Cruz

July 30, 2008

Environmental Review Inital Study
ATTACHMENT 5.3.a of 10
APPLICATION 08-0262

ERLACH TRAFFIC STUDY UPDATE-JULY 2008

This report describes the findings for an update Erlach Housing Site review on Cunnison Lane. The original memorandum for a 143 multi-family dwelling unit High-Density Housing Traffic Impact Analysis was prepared and submitted on January 18, 2008, by Fehr & Peers Transportation Consultants. Since that time, the scope of the project was reduced to 102 multi-family dwelling units. Staff from the County Department of Public Works has revised the study accordingly and has included the updated analysis and findings.

This report also describes an additional cumulative analysis at the Soquel Drive and Cunnison Lane intersection that incorporates an additional future 56 SFDU project on Cunnison Lane as the future use for the reminder of the Erlach property.

Trip Generation and Trip Distribution:

The traffic volume expected to be generated by a proposed 102 unit development was estimated by applying the same trip generation rates from ITE's book Trip Generation (7^{th} Edition) used in the original Fehr & Peers report. Trips currently generated by the existing two single-family dwelling units on the property were credited against the trips generated by the project. As shown in **Table A** the revised project (102 units) is expected to generate 746 net new daily trips,53 net new AM peak-hour trips (10 inbound and 43 outbound),and 74 net new PM peak-hour trips (48 inbound and 26 outbound). The previous 143 unit project was estimated to generate 991 new daily trips,72 net new AM peak-hour trips (14 inbound and 58 outbound), and 94 net new PM peak-hour trips (61 inbound and 33 outbound) per Fehr & Peers. (See attached Table 4)

The trip distribution pattern remains the same as on Figure 1 from the Fehr & Peers analysis and the project trips were assigned to the roadway system using this distribution pattern.

The future use of the remaining Erlach property was analyzed based upon build out information from the Planning Department in order to evaluate the impact specifically at the intersection of Soquel Drive and Cunnison Lane. It is estimated that the future 56 SFDU's are expected to generate 536 additional daily trips,43 new AM peak-hour trips (11 inbound and 32 outbound),and 57 new PM peak-hour trips (36 inbound and 21 outbound) using the same trip generation rates as the Fehr & Peers report noted for the existing SFDU's on the property.

The additional new trips were assigned to the roadway system using the same trip distribution pattern as mentioned above and were added to the "Cumulative plus project" conditions that were previously increased by 10 trips and 5 trips outbound for the AM and PM peak-hours respectively.

Intersection Impacts for Background Plus Project Conditions

The revised 102unit project would not have a significant impact on the study intersections due to the decrease in new trips. This is in contrast to the impact analysis of the 143-unit project. The amount of traffic generated and distributed to the study intersections for the 102-unit project would not increase the critical volumes by more than 1 %.

Although the 102-unit project does not require mitigation to the Soquel Drive/Porter Street intersection, staff did run an optimization analysis and determined that the LOS E for both AM and PM peak hours can be improved to LOS D.

Intersection Impacts for Cumulative Plus Project Conditions

The 102-unit project would not significantly impact the study intersections in the cumulative analysis. Mitigations are not warranted for this scenario.

Cumulative Plus Project Plus Additional 56 SFDU's Analysis

An additional cumulative analysis at the Soquel Drive/Cunnison Lane intersection for the AM and PM peak hours indicated that the control delay(s) for the southbound left turn will increase from 67.6 sec (LOS F) to 94.2 sec (LOS F) and from 67.0 sec(LOS F) to93.4 sec (LOS F) respectively. The analysis also indicated that the AM and PM operations level of service for the Cunnison Lane approach would degrade from LOS E to LOS F by the year 2025. However, the overall intersection level of service will remain at LOS A. Therefore, the intersection will not require mitigations. In addition, the intersection did not meet traffic signal warrants.

Fee Calculations:

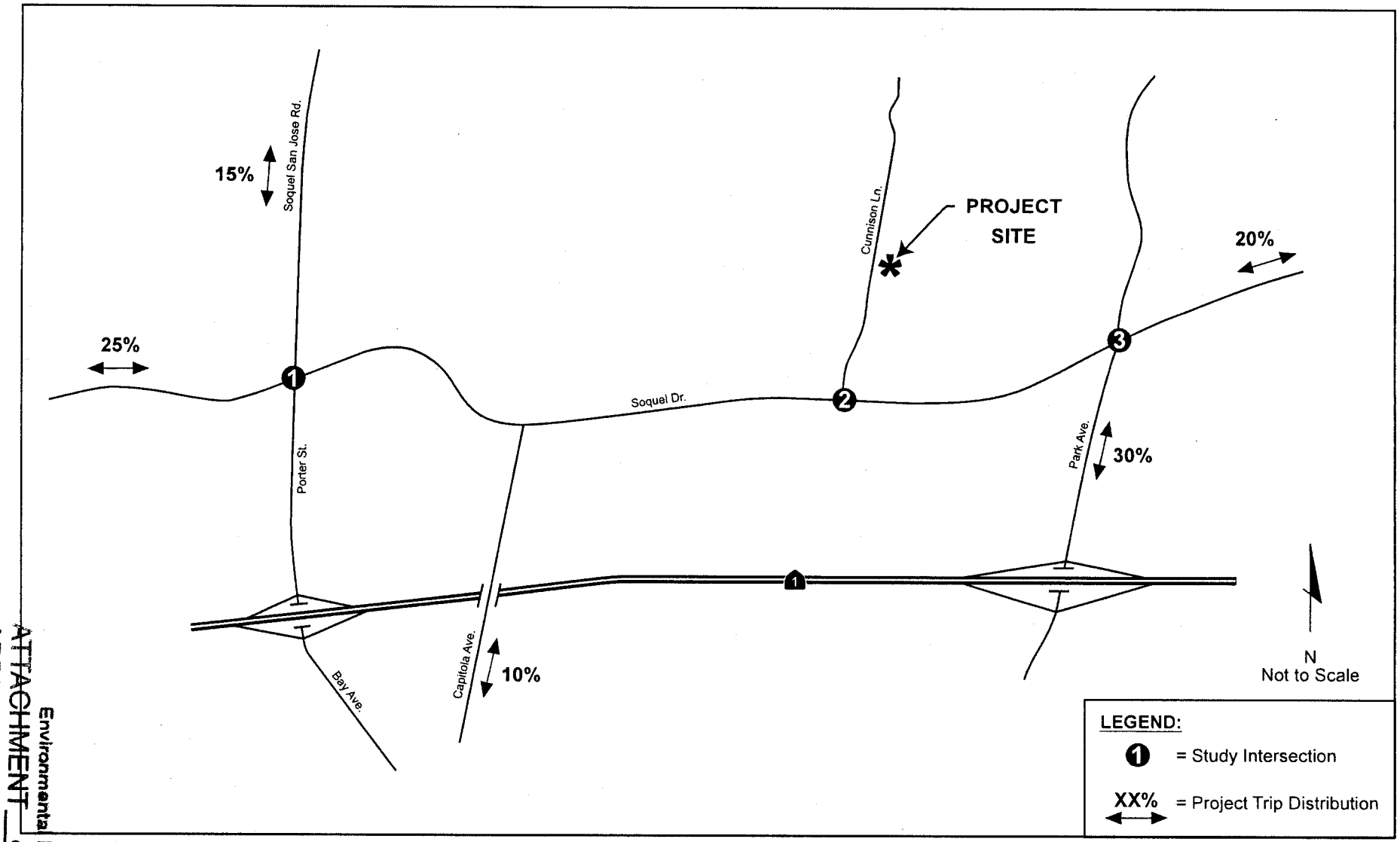
Transportation Improvement Area Fees of 102 units will be charged for proposed project with fee credit issued for the existing two SFDU's.

2 x $ 1775.00 x 102 units= $ 362,100.00 (Proposed Project)
- 2 x $ 2540.00 x 2 units = $ 10,160.00 (Existing SFDU)

= $ 351,940.00 (Net TIA fees at current rates)

Anwar Mirza
Asst. Civil Engineer
Public Works Department
County of Santa Cruz
July 2008

Environmental Review Inital Study
ATTACHMENT 5, 5 of 10
APPLICATION 08-0262



Erlach High-Density Housing Site

PROJECT LOCATION, STUDY INTERSECTIONS, AND PROJECT TRIP DISTRIBUTION

FIGURE 1

FEHR & PEERS
TRANSPORTATION CONSULTANTS

April 2007
SJ07-908

Environmental Review Initial Study
ATTACHMENT 5
APPLICATION 08-0262

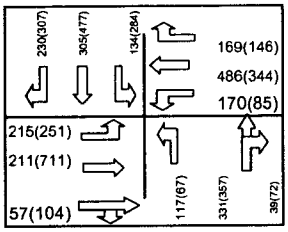
Table A

PROJECT TRIP GENERATION AND ESTIMATES								
Land Use	Size	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Trip Rates								
Apartment*		7.5	0.11	0.43	0.54	0.48	0.26	0.74
Single Family Detached Housing**		9.57	0.19	0.56	0.75	0.64	0.37	1.01
Trip Estimates								
Proposed Apartments	102	765	11	44	55	49	27	76
Existing Single-Family	2	(19)	(1)	(1)	(2)	(1)	(1)	(2)
Total New Trips		746	10	43	53	48	26	74
Additional 56 SFD Units	56	536	11	32	43	36	21	57
New Trips with additional 56 SFD		1282	21	75	96	84	47	131

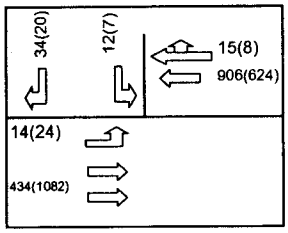
Notes:
* Fitted curve equations used for ITE land use code 220.
** Average rates for ITE land use code 210.
Source: Trip Generation (7th Edition), Institute of Transportation Engineers, 2003.

PEAK HOUR TRAFFIC VOLUMES AND INTERSECTION CONFIGURATIONS

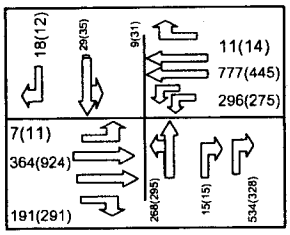
Existing Conditions



Intersection #1
Soquel Dr/Porter St

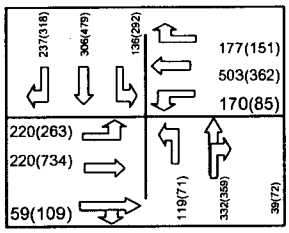


Intersection # 2
Soquel Dr/Cunnison Ln

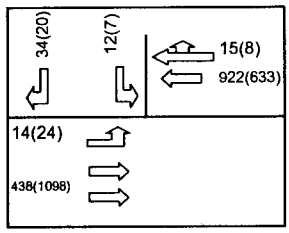


Intersection #3
Soquel Dr/Park Ave

Background Conditions



Intersection #1



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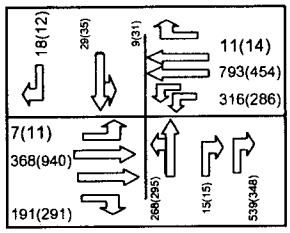
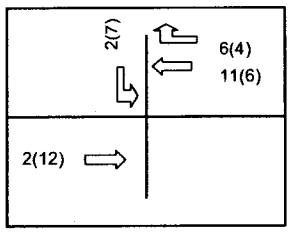


Intersection #3

Project Trip Assignment for 102 Unit Project



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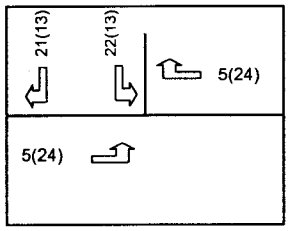

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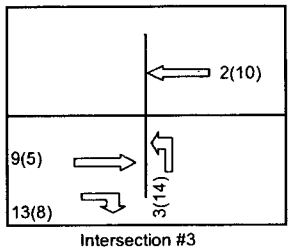
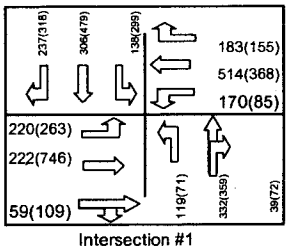


Intersection #3

Project Conditions for 102 Unit Project



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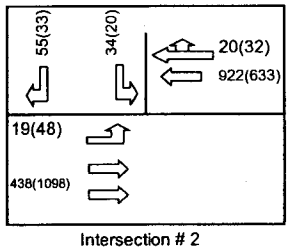

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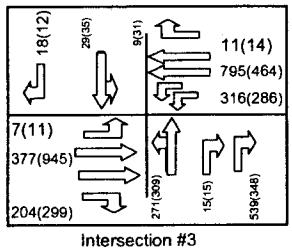
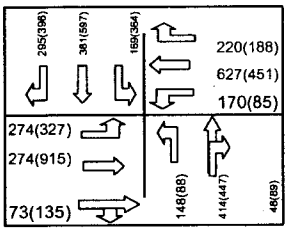


Intersection #3

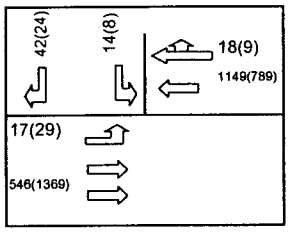
FIGURE A

Environmental Review Inital Study
ATTACHMENT 5 8 of 10
APPLICATION 05-0262

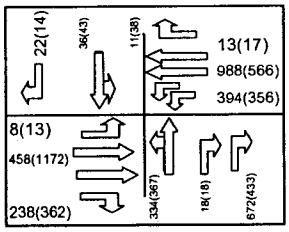
Cumulative No Project Conditions



Intersection #1
Soquel Dr/Porter St

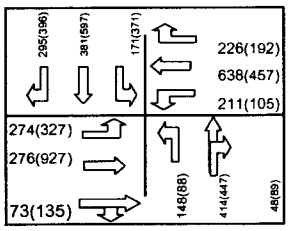


Intersection # 2
Soquel Dr/Cunnison Ln

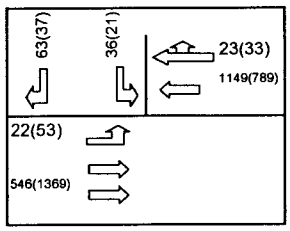


Intersection #3
Soquel Dr/Park Ave

Cumulative Plus 102 Unit Project Conditions



Intersection #1



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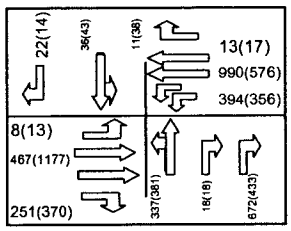
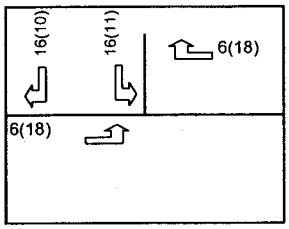


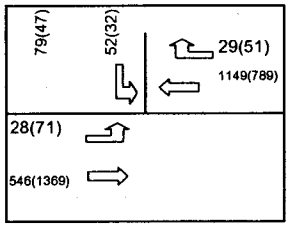
Intersection #3

Project Trip Assignments for 56 SFDU's



Intersection # 2

Cumulatuve Plus Project Plus Additional 56 SFDU's Conditions



Intersection # 2

Intersection #1 Soquel Dr/Porter St (Signalized)
Intersection #2 Soquel Dr/Cunnison Ln (Unsignalized)
Intersection #3 Soquel Dr/Park Ave (Signalized)

Project Conditions: Background Cond.+Project Trips
Cumulative No Project:Background (1+i)^n
Cumulative Plus Project: Background(1+i)^n + Project Trips

i= Growth Factor~1.3 n= 17 yrs (year 2025)

FIGURE A

Table 3A

Intersection Peak Hour Level of Service														
Intersection	Control	Peak Hour	Existing Conditions		Background Conditions		Project Conditions		Cumulative No Project Conditions		Cumulative Plus Project Conditions		Cumulative +Project+56 additional SFDU	
			Delay*	LOS**	Delay*	LOS**	Delay*	LOS**	Delay*	LOS**	Delay*	LOS**	Delay*	LOS**
Soquel Dr/Porter St	Signal	AM	43.8	D	45.7	D	50.7	D	73.3	E	74.6	E		
		PM	53.6	D	58	E	60	E	81.8	F	84.8	F		
Soquel Drive/Cunnison Ln	Stop Sign	AM	0.6(29.1)	A(D)	0.6(29.9)	A(D)	1.4(35.7)	A(E)	0.8(48.7)	A(E)	2.9(67.6)	A(F)	3.4(94.2)	A(F)
		PM	0.4(30.9)	A(D)	0.4(31.7)	A(D)	0.9(39.6)	A(E)	0.4(48.7)	A(E)	1.0(67.0)	A(F)	1.8(93.4)	A(F)
Soquel Dr/Park Ave	Signal	AM	18.5	B	18.9	B	19.9	B	23.2	C	23.4	C		
		PM	27.7	C	28	C	29.8	C	40.1	D	41.2	D		

* Whole intersection weighted avg. control delay expressed in seconds per vehicle calculated using methods described in the 2000 HCM.
For side-street stop-controlled intersections, total delay for the worst movement is presented in parenthesis.

**LOS= Level of service. LOS calculations conducted using the Synchro level of service analysis software package.

" Critical V/C ratio is less than 1% ; No mitigation required

(critical v/c)=(v/s)*[total cycle length/(cycle length-lost time)

Environmental Review Initial Study
ATTACHMENT 5
APPLICATION 08-0262