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Suzanne Elledge Planning & Permitting Services
Attn: Ms. Trish Allen
800 Santa Barbara Street
Santa Barbara, CA 93101

December 9, 2009

Re: 915 E. Anapamu Street, Santa Barbara - Oak Tree Mitigation and Fuel Management

Dear Trish,
The purpose of this letter is to amend the March 25, 2009 Biological Assessment Report I prepared for the proposed project at 915 E. Anapamu Street, Santa Barbara, California. Specifically, I am amending the recommended mitigation measure for the loss of 5 coast live oak trees. In my 2009 report, I recommended that tree replacement mitigation be performed on-site at a 3:1 ratio if 15-gallon or 24-inch box size oak saplings were planted or a 10:1 replacement ratio if 1-gallon size oak seedlings were planted. The landscape architect for the project Ms. Katie O'Reilly Rogers prepared a landscape plan for the project which included 15, 15-gallon size coast live oak mitigation trees. The project landscape plans were reviewed by the City of Santa Barbara, Wildland Fire Specialist, Ms. Ann Marx and this quantity of mitigation trees were determined to be a potential fire hazard given the small size of the lot, and the fact that the lot is within a city designated high fire hazard area. The fire department has requested that the landscape plans be revised to be consistent with the city's high fire hazard landscape guidelines.

The purpose of the tree replacement mitigation was to replace the native trees that would be removed by the project and ensure that the project conforms to the City of Santa Barbara Municipal Code regarding the preservation of trees (M.C. Chapter 15-4). The impact analysis I performed for "loss of vegetation community and wildlife habitat" which included to loss of these five oak trees concluded that the project effects were adverse but less than significant given the project's urban location and low wildlife habitat value in this urban setting.

In an effort to resolve the conflict between oak tree mitigation and fire protection, I am revising my tree replacement mitigation recommendation to allow for off-site tree mitigation to occur. I am recommending a 5:1 mitigation ratio using 15-gallon size trees, with 1:1 mitigation to be performed on-site (i.e., plant 5 oak tree saplings onsite) and 4:1 mitigation) off-site (i.e., plant 20 oak tree saplings offsite). I have spoken to the project applicant and landscape architect and they are committed to finding a location such as a public park within the City where the off-site tree mitigation could be performed.

If you have any questions about the contents of this letter, please do not hesitate to call me at (805) 876-5015.

Sincerely,

Mark de la Garza
President Watershed Environmental

cc: Ms. Ann Marx
Mrs. Katie O'Reilly Rogers

Exhibit F

March 25, 2009

BIOLOGICAL ASSESSMENT

915 E. Anapamu Street (APN: 029-201-003),
Santa Barbara, California

Prepared for:
Riviera Partners, LLC
1187 Coast Village Road, #I-528
Montecito, CA 93108

Prepared by:
Watershed Environmental, Inc.
1130 E. Clark Avenue, 150-179
Santa Maria, CA 93455

Biological Assessment
915 E. Anapamu Street (APN: 029-201-003), Santa Barbara, California

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1.0 SUMMARY OF FINDINGS

This biological assessment found seven types of biological resource impacts from implementation of the proposed project and evaluates the short-term, long-term, direct, indirect, and cumulative effects of these impacts per CEQA guidelines. Two of the seven impacts identified were determined to be potentially adverse, significant, and mitigatable: short- and long-term impacts caused by removal of five native coast live oak trees and short-term impacts to water quality from erosion and sedimentation. All other impacts were found to be either less than significant or none. The cumulative effects of this project on biological resources are considered less than significant since the area where redevelopment and new development will occur is already disturbed and there is virtually no remaining undisturbed wildlife habitat within the Laguna Channel watershed. Six biological mitigation measures are recommended to ensure that potentially adverse, significant impacts are mitigated to acceptable levels and to further reduce impacts consistent with the City of Santa Barbara Conservation Element policies, and Fire Department High Fire-Hazard Area Landscape Guidelines and Minimum Brush Clearance Standards.

2.0 INTRODUCTION

This report was prepared by Watershed Environmental, Inc. under contract to the property owner, Riviera Partners, LLC (managing partner Mr. Charles Crail). It describes the existing biological resources on the 0.94-acre parcel located at 915 E. Anapamu Street (APN: 029-201-003) in the City of Santa Barbara (Figure 1). The purposes of this report are to: 1) identify existing biological resources; 2) evaluate the potential impacts of proposed development to biological resources and water quality; and 3) provide planning and design recommendations to avoid and minimize potential impacts.

The property is located within the City of Santa Barbara in the lower Riviera neighborhood. There is an existing two-story, single-family residence on the property, most of which is landscaped with ornamental trees, shrubs, and turfgrass (Figure 2). The property is bordered on the north and west by Lorena Drive, to the south by Milpas Street, and to the west by the Santa Barbara County Bowl parking lot. There is a small unnamed drainage that traverses the western portion (200 linear ft.) of the property in a north-to-south direction. The surface water from this drainage enters a 36-in.-diameter concrete storm drain pipe at the southern end of the property, runs into the below-ground storm drain system beneath the eastern portion of the City of Santa Barbara, and discharges into the Laguna Channel, which outlets to the Pacific Ocean on West Beach.

3.0 PROJECT DESCRIPTION

The project consists of 13 apartments. The main structure includes eight two-bedroom apartments and one three-bedroom apartment located above a subterranean parking structure, with private two-car garages for Units 2-9 and a one-car garage for Unit 13. A separate duplex structure with two one-bedroom units is accessed off the driveway that leads to the subterranean parking structure. Another duplex structure with a three-bedroom unit and a two-bedroom unit is on Lowena Street. There are three guest parking spaces and one shared space for the two one-bedroom units off the main driveway.

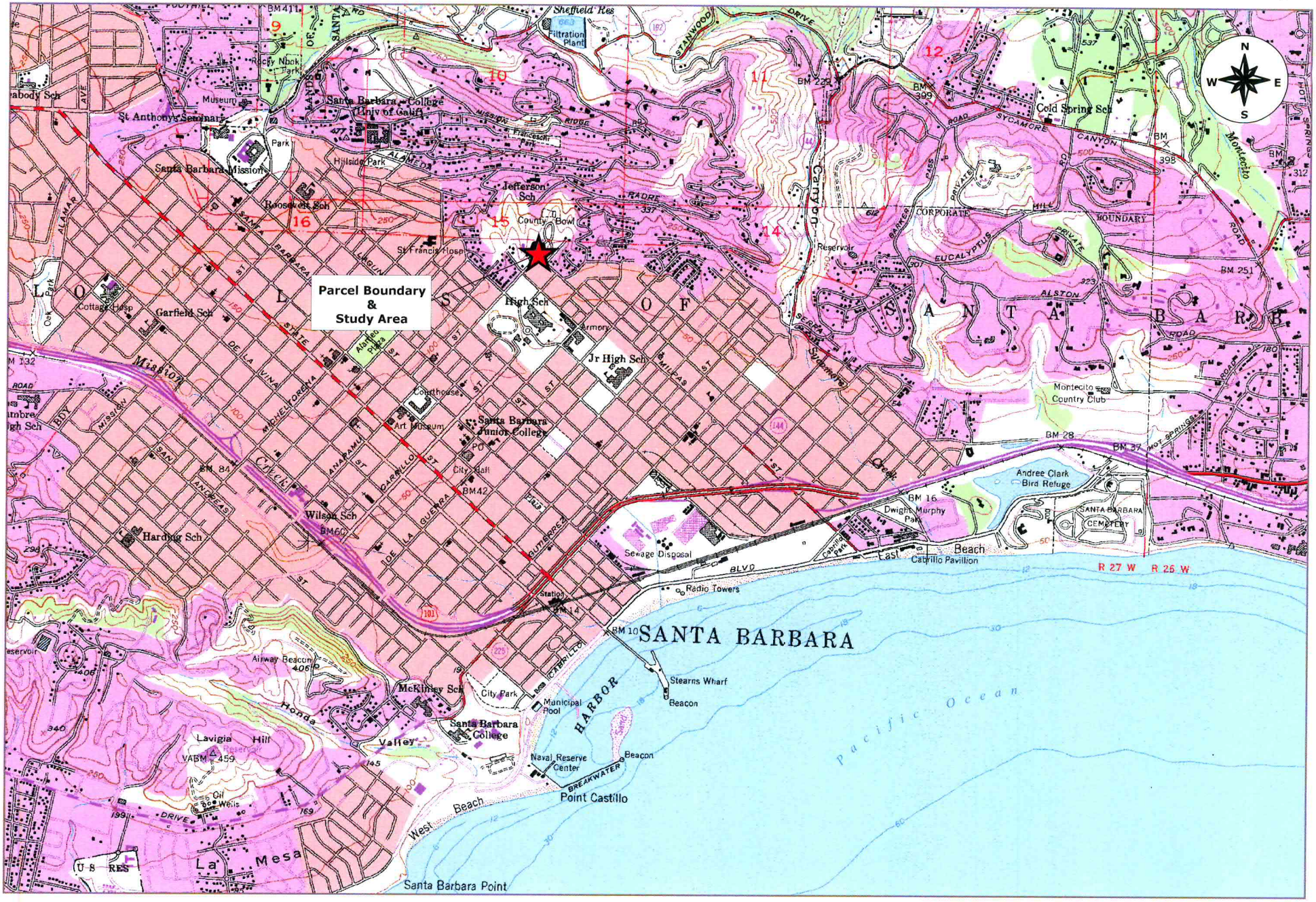

Figure 1. Location Map

★ 915 E. Anapamu St

0 0.5 Miles

Biological Assessment
915 E. Anapamu Street (APN: 029-201-003)
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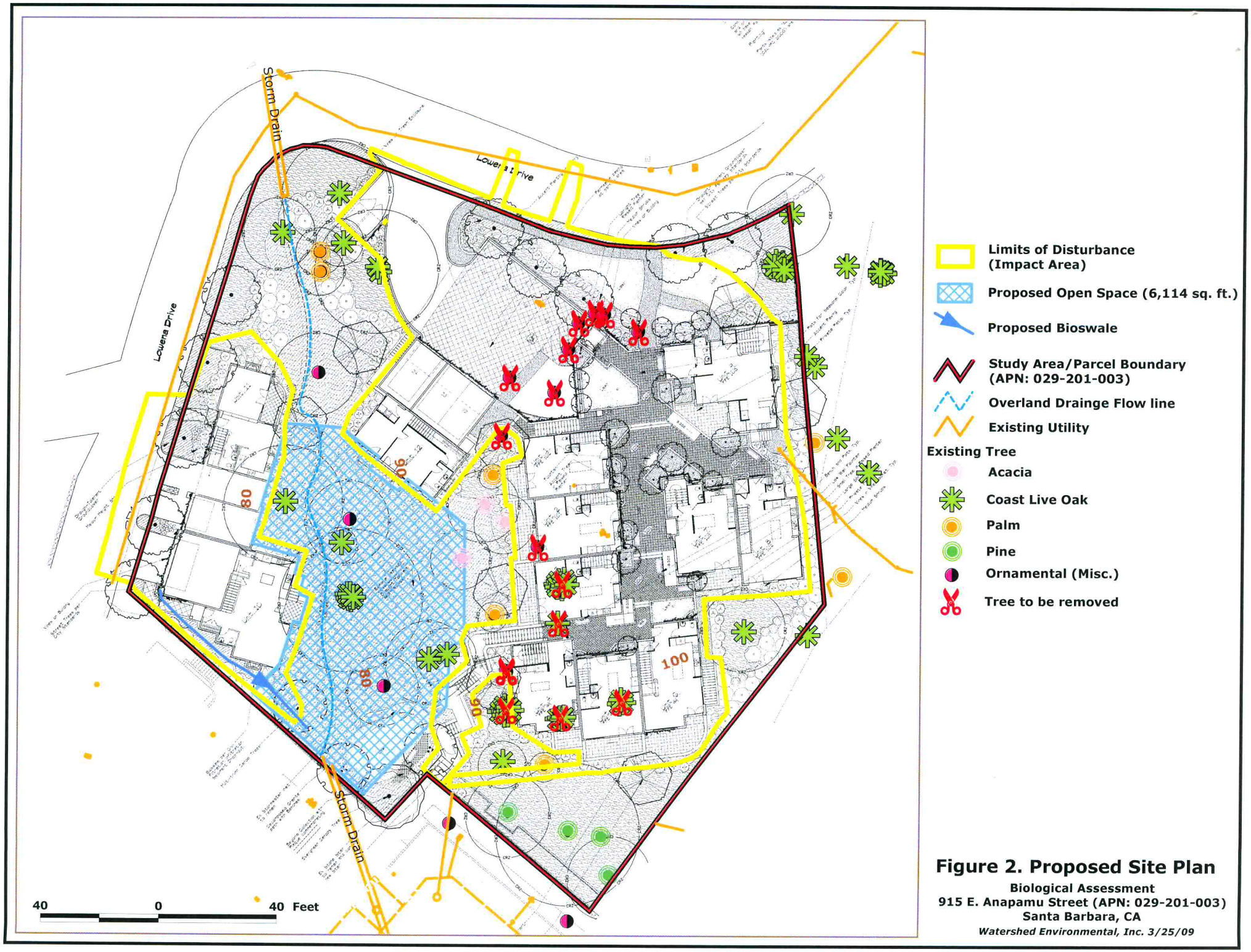

Figure 2. Proposed Site Plan

Biological Assessment
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The proposed project includes the removal of 16 trees, with 27 trees to remain. The sandstone wall along Milpas Street and the mature oak tree, as specified in the Historic Landmarks Committee conditioned approval of the historic structure/sites report dated July 16, 2007, shall be retained.

4.0 STUDY METHODOLOGY

Watershed Environmental, Inc. biologist Mark de la Garza and analyst/cartographer Melodee Hickman performed a field survey of the property on March 9, 2009 between the hours of 10:30 and 11:30 pm. The purpose of this survey was to verify that site conditions were the same as previously mapped in 2007 and/or to identify any changes to the site conditions from the surveys performed in June 2007. Prior to the March 2009 survey, Mark de la Garza performed a field survey of the property on June 28, 2007 between the hours of 10:00 AM and 1:00 PM as part of a biological assessment/environmental constraints analysis (Watershed Environmental 2007) that he performed for the property owners prior to the preparation of any development plans.

The 2007 and 2009 surveys were conducted on foot and consisted of walking the undeveloped portions of the property. Plant community types were mapped in the field on a 1-in.-equals-30 ft. color aerial photograph taken on September 6, 2006. Vegetation, wildlife, and signs of wildlife observed during this field survey, along with a general description of wildlife habitats found on the property, were recorded in field notes. The objectives of this survey were to identify any sensitive plants, wildlife, or habitat present on the property and gather information necessary for the U.S. Army Corps of Engineers (ACOE) to make a "jurisdictional determination" of the drainage channel as to whether or not it is subject to ACOE regulatory authority under the federal Clean Water Act. The ACOE made a jurisdictional determination in May 2008 (personal communication with John Markham, May 6, 2008) in which they concluded that the bottom of the drainage channel between the ordinary high-water mark for the length of the channel (approximately 3 ft. wide by 200 ft. long) is a "waters of the U.S." and as such is subject to ACOE regulatory jurisdiction.

Field notes were used to record direct observations of botanical and wildlife resources during the 2007 and 2009 surveys. Photographs of the property were taken during performance of these surveys to document existing conditions at the time of the surveys (Attachment 1). Botanical surveys were performed following the California Native Plant Society's recommended survey guidelines (CNPS 2001) and the US Fish and Wildlife Service's *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 2001). Wildlife surveys followed standard professional practices and the Santa Barbara County *Biological Survey Guidelines* (contained in the *Environmental Thresholds and Guidelines Manual,* 1995, rev. 2002).

To supplement this field survey, additional information concerning the regional and site-specific status of sensitive wildlife resources in the area was evaluated by examining occurrence records contained in the California Department of Fish and Game's (CDFG) California Natural Diversity Data Base and Rarefind (CDFG 2008), US Fish and Wildlife Service *Federal Register* publications, the City of Santa Barbara 1979 *General Plan Conservation Element,* and the 2007 County of Santa Barbara Environmentally Sensitive Habitat (ESH) GIS database.

5.0 ENVIRONMENTAL SETTING

5.1 Land Use, Policies, and Municipal Codes

The parcel is within the city limits of Santa Barbara, but is outside of the Coastal Zone. The zoning on this parcel is Residential Single Family (R-1 map symbol) and Multiple Family Residence (R-3 and map symbol). The R-1 zone is a restricted residential district of low density in which the principle use of land is for a single residential unit (SBMC §28.15.005). The R-3 zone is a restricted residential district of high density in which the principal use of land is for multiple-family dwellings (SBMC §28.21.001). The uses permitted in the R-3 zone district primarily include one-, two, and multiple-family dwellings (SBMC §28.21.030). "Multiple residential unit" is defined as "a building, or portion thereof, configured and/or occupied as three or more residential units and including apartment houses, but not including a hotel."

The parcel is also within the city's designated High Fire Hazard Area, Foothill Zone (City of Santa Barbara 2009), and as such is subject to conformance with the City Municipal Code Tile 08 Fire Protection provisions (SBMC §08.04-08.24). All structures within this high fire-hazard zone are required to maintain 30-50 ft. of defensible space. New development within a high fire-hazard zone is required to conform to the city's 2001 *High Fire Hazard Area Landscape Guidelines* and 2001 *Minimum Brush Clearance Standards,* which extend a minimum of 100 ft. from structures. However, the 100-ft.-minimum landscape guidelines and brush clearance zones may be increased by the City Fire Marshall upon review of the project architectural, grading, and landscape plans.

5.2 Topography and Drainage

The elevations within the 915 E. Anapamu property range from a high of 106 ft. in the northern portion of the lot and a low of 76 ft. in the southern portion of the property. The lot slopes toward the south and has an average slope of 19 percent.

As previously described, there is a small, unnamed drainage that traverses the western portion (200 linear ft.) of the property in a north-to-south direction. This drainage is ephemeral and only conveys surface water during and immediately following major rainfall events. It is not a US Geological Survey-mapped blue-line stream (USGS 1995), nor a tributary of any named creek or watercourse. It is also not mapped in the Santa Barbara County Flood Control (SBCO 1996) digital topographic map as a blue-line drainage. The property is not in the 100-year flood plain of any creek (FEMA 2009) or in any City-designated flood-prone area. The drainage enters the property via a 36-in.-diameter concrete storm drain pipe located beneath Lowena Drive. North of Lowena Drive the drainage is unculverted and collects surface water runoff from an approximately 12-acre contributing drainage area. The storm drain culvert beneath Lowena Drive outlets on the property onto ungrouted sandstone boulders and flows across the property in a 200-ft.-long by approximately 3-ft.-wide unlined earthen bed and bank open channel and then enters another 36-in.-diameter concrete storm drain pipe at the southern property line. The channel appears to be man-made and is periodically maintained (cleaned out) by the City when the culverts become clogged with debris. The storm drain culvert at the southern end of the property flows beneath Milpas Street and connects to the storm drain system beneath the eastern portion of the City of Santa Barbara and ultimately is discharged into the Laguna Channel, which outlets to the Pacific Ocean on West Beach.

5.3 Soils

The Soil Conservation Service *Soil Survey of Santa Barbara County, California South Coastal Part* (USDA 1981) depicts the soils on the property as Diablo clay (map symbol MdD). These soils are well drained and typically occur on terraces with 9-15 percent slopes. The clay soil surface layer is approximately 37-50 in. deep with a 60-in.-thick, mudstone subsoil. The soil permeability is classified as slow, the surface runoff medium, and erosion hazard slight. This soil type is not classified by the Natural Resources Conservation Service (1995) as a hydric soil.

6.0 DESCRIPTION OF BIOTIC RESOURCES

6.1 Vegetation and Land Cover

Vegetation and land cover mapping was performed by identifying the vegetation/landcover types on the ground during performance of the 2009 field survey and mapping the aerial extent on a 1-in.=40-ft. color 2006 aerial photograph of the property. The mapped cover types were then scanned and converted into Geographic Information System (GIS) shapefiles so that area calculations and figures could be generated. We identified four plant community types and two land cover types on the property (Table 1 and Figure 3).

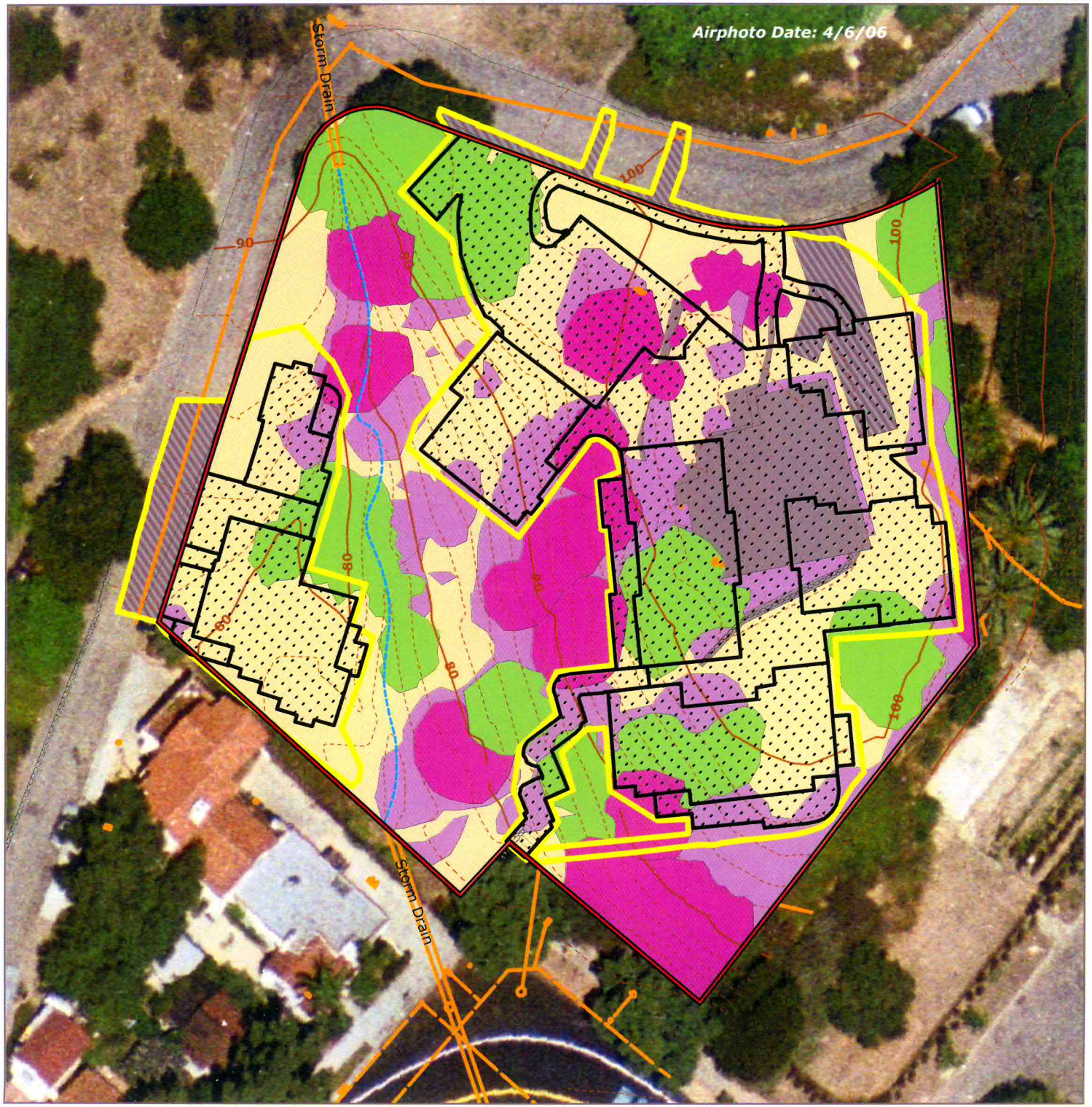
Table 1. Vegetation Community and Land Cover Types

Vegetation Community & Land Cover Types	Area (sq. ft.)	Area (acres)
Vegetation Communities		
Turfgrass/nonnative grassland	13,837	0.32
Ornamental trees	6,739	0.15
Ornamental shrubs and groundcover	7,178	0.16
Individual coast live oak tree canopy	8,410	0.19
Land Cover		
Structure (single-family residence and garage)	2,520	0.06
Gravel driveway	2,257	0.05
Total	**40,759**	**0.94**

Turfgrass/nonnative grassland are areas that contain nonnative annual and perennial grass species and common weeds. Dominant species within this community type include: Italian rye, wild oat, ripgut brome, annual bluegrass, Bermuda grass, smilo grass, foxtail, kikuyu grass, soft chess, English plantain, black mustard, prickly lettuce, and redstem filaree.

Ornamental trees are nonnative trees that have been planted on the property as part of the landscaping, or sprouted from seed on their own and allowed by the previous owners to grow. The ornamental tree species most prevalent on the property include Canary Island palm, Mexican fan palm, red eucalyptus, and black acacia. None of the ornamental trees observed are uncommon or unusual in size, stature, shape, or age. As part of this site assessment, we did not perform an inventory of all ornamental tree species present on the property, so this list is not intended to be all inclusive.

Ornamental shrubs and groundcover consists entirely of nonnative woody shrubs and herbaceous plants that were originally planted by the previous property owners as part of the landscaping. The following ornamental and shrubs groundcover species



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Proposed Site Plan
Limits of Disturbance (Impact Area)

Vegetation/Landuse Community
- **Non-Native Grassland**
- **Coast Live Oak**
- **Ornamental Herb/Shrub**
- **Ornamental Tree**
- **Structure**
- **Driveway/Roadway**

Parcel Boundary
Existing Drainage
Existing Utility
Major Contour Inverval (10 ft)
Minor Contour Interval (2 ft)

40 0 40 Feet

Figure 3. Vegetation/Landuse Community

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were observed on the property: hawthorn, bamboo, periwinkle, garden nasturtium, lantana, geranium, pittosporum, highway iceplant, and dew-flowered iceplant. As part of this site assessment, we did not perform an inventory of all the ornamental shrub and groundcover species present on the property, so this list is not intended to be all inclusive.

Individual coast live oak tree canopy The dominant tree in this plant community is coast live oak, which is a California native tree. There are 13 coast live oak trees on the property, ranging in size from 6-10 in. in diameter measured at breast height. The understory vegetation beneath these trees is either turfgrass/nonnative grassland or ornamental groundcover as described in the previous sections.

Structure includes the existing single-family residence.

Gravel driveway includes the existing 12-ft.-wide by 60-ft.-long gravel driveway from Lowena Drive.

6.2 Botanical Resources

During performance of the site survey, we observed 57 different plant species, 14 percent of which are native and 86 percent of which are introduced (Table 2). The number of nonnative species observed is higher than the countywide native-to-nonnative plant ratio (77 percent native to 23 percent nonnative). This high ratio of nonnative vegetation is partially due to the site's urban location and long-term residential land use history. None of the plant species observed are considered to be sensitive or rare.

Table 2. Vegetation Observed

Scientific Name	Common Name	Native/ Introduced
Acacia melanoxylan	black acacia	Introduced
Anagalis arvensis	scarlet pimpernel	Introduced
Avena fatua	wild oat	Introduced
Brassica nigra	black mustard	Introduced
Bromus diandrus	ripgut grass	Introduced
Bromus hordeaceus	soft chess	Introduced
Carduus pycnocephalus	Italian thistle	Introduced
Carpobrotus edulis	ice plant	Introduced
Crassula ovata	jade plant	Introduced
Cynodon dactylon	Bermuda grass	Introduced
Cyperus eragrostis	umbrella sedge	Native
Delosperma cooperi	hardy ice plant	Introduced
Dendrocalamus sp.	bamboo	Introduced
Drosanthemum speciosum	dew flower iceplant	Introduced
Eriobotrya japonica	loquat	Introduced
Erodium cicutarium	redstem filaree	Introduced
Eucalyptus camaldulensis	red gum eucalyptus	Introduced
Eucalyptus globulus	blue gum eucalyptus	Introduced
Eugenia sp.	eugenia	Introduced
Euphorbia lathyrus	gopher spurge	Introduced

Table 2. Vegetation Observed (cont.)

Scientific Name	Common Name	Native/ Introduced
Foeniculum vulgare	fennel	Introduced
Geranium floribunda	geranium	Introduced
Gnaphalium luteo-album	cudweed	Introduced
Heterotheca grandiflora	telegraph weed	Native
Hordeum murinum leporinum	foxtail	Introduced
Hypochaeris glabra	smooth cat's ear	Introduced
Lactuca serriola	prickly lettuce	Introduced
Lantana camara	lantana	Introduced
Lolium multiflorum	Italian ryegrass	Introduced
Malosma laurina	laurel sumac	Native
Malva parviflora	cheeseweed	Introduced
Medicago polymorpha	burr clover	Introduced
Nassella pulchra	purple needlegrass	Native
Oxalis pes-caprae	sourgrass	Introduced
Pennisetum clandestinum	kikuyu grass	Introduced
Pennisetum setaceum	fountain grass	Introduced
Phoenix canariensis	Canary Island palm	Introduced
Poa annua	annual bluegrass	Introduced
Picris echioides	bristly ox tongue	Introduced
Piptatherum millaceum	smilo grass	Introduced
Pittosporum crassifolium	pittosporum	Introduced
Plantago lanceolata	English plantain	Introduced
Pleiodlastus sp.	bamboo	Introduced
Prunus persica	prunus	Introduced
Quercus agrifolia	coast live oak	Native
Raphanus sativus	wild radish	Introduced
Raphiolepis sp.	hawthorn	Introduced
Rhus integrifolia	lemonadeberry	Native
Ricinus communis	castor bean	Introduced
Rubus ursinus	wild blackberry	Native
Silene gallica	windmill pink	Introduced
Toxicodendron diversilobum	poison oak	Native
Tropaeolum majus	garden nasturtium	Introduced
Vinca major	periwinkle	Introduced
Vulpia myuros	rat tail fescue	Introduced
Washingtonia robusta	Mexican fan palm	Introduced
Yucca elephantipes	yucca	Introduced

6.3 Wildlife Species and Habitats

Sixteen wildlife species were observed during performance of the field surveys, 14 of which were birds: acorn woodpecker, American crow, American kestrel, Anna's hummingbird, black phoebe, bushtit, California towhee, European starling, house finch, mourning dove, northern mockingbird, purple finch, western scrub jay, and

yellow-rumped warbler. One mammal (pocket gopher) and one reptile (western fence lizard) were observed, but several other mammal, amphibian, and reptile species are expected to occur and/or have the potential to occur on the property given the habitat types present and property location (Table 3).

Table 3. Wildlife Observed and/or Expected to Occur

Common Name	Scientific Name	Seasonal Status	Site Status
Amphibians and Reptiles			
black-bellied slender salamander	*Batrachoseps nigriventris*	RB	E
California tree frog	*Pseudacris (=Hyla) cadaverina*	RB	E
common kingsnake	*Lampropeltis getulus*	RB	E
gopher snake	*Pituophis catenifer*	RB	E
Pacific tree frog	*Pseudacris (=Hyla) regilla*	RB	E
southern alligator lizard	*Elgaria multicarinata*	RB	E
western fence lizard	*Sceloporus occidentalis*	RB	O
western skink	*Eumeces skiltonianus*	RB	E
western toad	*Bufo boreas*	RB	E
Birds			
acorn woodpecker	*Melanerpes formicivorus*	RB	O
Allen's hummingbird	*Selasphorus sasin*	M	E
American crow	*Corvus brachyrhynchos*	RB	O
American goldfinch	*Carduelis tristis*	WV	E
American kestrel	*Falco sparverius*	RB	O
American robin	*Turdus migratorius*	WV	E
Anna's hummingbird	*Calypte anna*	RB	O
ash-throated flycatcher	*Myiarchus cinerascens*	SB	E
band-tailed pigeon	*Columda fasciata*	RB	E
barn owl	*Tyto alba*	RB	E
Bewick's wren	*Thryomanes bewickii*	RB	E
black phoebe	*Sayornis nigricans*	RB	O
black-headed grosbeak	*Pheucticus melanocephalus*	SB	P
brown towhee	*Pipilo fuscus*	RB	E
brown-headed cowbird	*Molothrus ater*	SB	E
bushtit	*Psaltriparus minimus*	RB	O
California quail	*Callipepla californica*	RB	E
California towhee	*Pipilo crissalis*	RB	O
cedar waxwing	*Bombycilla cedrorum*	WV	P
cliff swallow	*Hirundo pyrrhonota*	SB	E
dark-eyed junco	*Junco hyemalis*	RB	E
downy woodpecker	*Picoides pubescens*	RB	P
European starling	*Sturnus vulgaris*	I	O
golden-crowned sparrow	*Zonotrichia atricapilla*	WV	E
great horned owl	*Bubo virginianus*	RB	E
house finch	*Carpodacus mexicanus*	RB	O

Table 3. Wildlife Observed (cont.)

Common Name	Scientific Name	Seasonal Status	Site Status
house sparrow	*Passer domesticus*	I	E
house wren	*Troglodytes aedon*	RB	E
mourning dove	*Zenaida macroura*	SB	O
northern flicker	*Colaptes auratus*	RB	P
northern mockingbird	*Mimus polyglottos*	RB	O
northern oriole	*Icterus bullockii*	M	P
Nuttall's woodpecker	*Picoides nuttallii*	RB	P
oak titmouse	*Bacolophus ridgwayi*	RB	P
Pacific-slope flycatcher	*Empidonax difficilis*	SB	E
purple finch	*Carpodacus purpurius*	RB	O
rock pigeon	*Columba livia*	RB	E
ruby-crowned kinglet	*Regulus calendula*	WV	E
song sparrow	*Melospiza melodia*	RB	E
spotted towhee	*Pipilo maculatus*	RB	E
western gull	*Larus occidentalis*	RB	E
western screech-owl	*Otus kennicottii*	RB	E
western scrub-jay	*Aphelocoma californica*	RB	O
white-breasted nuthatch	*Sitta carolinensis*	RB	P
white-crowned sparrow	*Zonotrichia leucophrys*	WV	E
white-throated swift	*Aeronautes saxatalis*	V	P
yellow-rumped warbler	*Dendroica coronata*	WV	O
Mammals			
big brown bat	*Eptesicus fuscus*	SB	E
big-eared woodrat	*Neotoma macrotus*	RB	E
black rat	*Rattus rattus*	I	E
Botta's pocket gopher	*Thomomys bottae*	RB	O
broad-footed mole	*Scapanus latimanus*	RB	E
brush rabbit	*Sylvilagus bachmani*	RB	E
California mouse	*Peromyscus californicus*	RB	E
California myotis	*Myotis californicus*	SB	E
California vole	*Microtus californicus*	RB	E
domestic dog	*Canis lupus familiaris*	I	E
coyote	*Canis latrans*	V	E
deer mouse	*Peromyscus maniculatus*	RB	E
feral cat	*Felis catus*	I	E
ornate shrew	*Sorex ornatus*	RB	E
pallid bat	*Antrozous pallidus*	SB	E
raccoon	*Procyon lotor*	V	E
striped skunk	*Mephitis mephitis*	V	E
Virginia opossum	*Didelphis virginiana*	I	E
western harvest mouse	*Reithrodontomys megalotis*	RB	E
western spotted skunk	*Spilogale gracilis*	V	E

Codes
Seasonal Status: RB = Resident Breeder; SB = Summer Breeder; M = Migrant; V = Visitor; WV = Winter Visitor; I = Introduced Species
Site Status: E = Expected to occur at the project site; O = Observed on or in the immediate vicinity of the project site; P = Potential to occur

6.4 Sensitive Species Potentially Occurring on the Property

Sensitive species considered in this assessment are those protected by the federal Endangered Species Act and/or the California Endangered Species Act and those species meeting the California Environmental Quality Act definition of "rare." This includes all endangered or threatened species, candidates for listing, or Species of Special Concern listed by the federal and state governments and plants listed by the CNPS as List 1 or List 2, as well as plants listed by the Santa Barbara Botanic Garden (2007) as locally sensitive.

There are a few sensitive species occurrence records mapped by the California Natural Diversity Database (CDFG 2007) in the vicinity of the property (refer to Tables 2-3), but the nearest observations are more than a mile away. Sensitive species occurrence records in the vicinity include Cooper's hawk, big free-tailed bat, globose dune beetle, tidewater goby, western snowy plover, Coulter's saltbush, Nuttall's scrub oak, Santa Barbara honeysuckle, late-flowered mariposa lily, and Santa Barbara morning-glory.

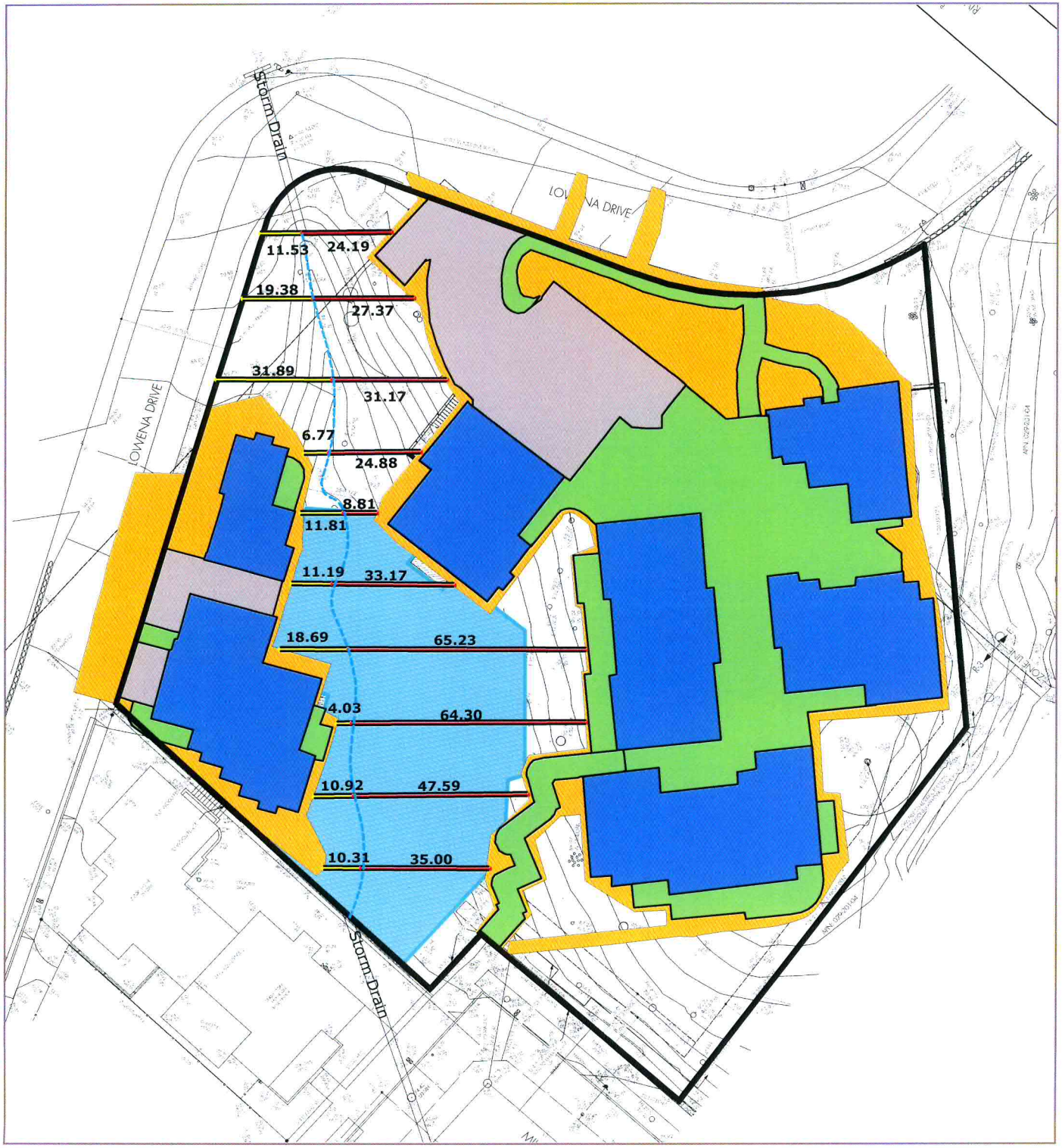
No sensitive plants or wildlife species were found during performance of the June 2007 or March 2009 survey of the property, nor are any sensitive biological resources likely to occur on this property in the future due to the lack of suitable habitat and the property's location in an urban area.

7.0 SPECIAL STUDIES REQUIRED: ANALYSIS OF BUFFER ADEQUACY

The development of previously undeveloped areas—particularly those adjacent to creeks and drainages—increases environmental stress to biota associated with riparian and wetland habitats. Aquatic biota may be exposed to higher levels of noise, light, heat, pollutant loading, storm water runoff, invasive species, and human activity. Development (i.e., paving and construction of buildings) can also affect the hydrologic regime by covering the soil surface with impervious materials and compacting it. These activities contribute to water-quality and flooding problems by increasing the rate and magnitude of storm runoff. The net result within a watershed is cumulative and often leads to a reduction in wetland and stream functional value (Castelle et al. 1994).

A common tactic for reducing or eliminating project impacts to the hydrologic regime and biologic resources in riparian and aquatic habitats is threefold: reduce the amount of impervious surfaces on structures, incorporate bioswales into the project design, and maintain a setback (buffer) from watercourses. The proposed development at 915 E. Anapamu contains all three of these design elements to reduce the proposed project effects on surface water quality, groundwater infiltration, and biological resources within and adjacent to the drainage channel. For a complete discussion of the pre- and post-project runoff calculations, please see Attachment 2 *Preliminary Drainage Report for 915 E. Anapamu St*reet (Mac Design 2009).

The proposed project as currently configured has an average buffer width of 25 ft. from the center line of the 3-ft.-wide drainage channel (Figure 4) to the edge of the project disturbance limit. While the unnamed drainage that traverses this property is not a major creek or drainage and does not currently support any riparian vegetation, the ACOE nevertheless considers it to be Waters of the U.S. The City of



N
W E
S

Parcel Boundary
Existing Drainage

Drainage Buffer w/ Distance (ft.)
Western Drainage Buffer
Eastern Drainage Buffer

Proposed Site Plan
Ancillary Structure
Driveway
Residential Structure
Limit of Disturbance
Open Space Designation

40 0 40 Feet

Figure 4. Proposed Drainage Development Setback

Biological Assessment
915 E. Anapamu Street (APN: 029-201-003)
Santa Barbara, CA
Watershed Environmental, Inc. 3/25/09

Santa Barbara does not have any development setback and/or buffer requirements for any creeks or drainages other than Mission Creek, which has a 25-ft. setback from the top-of-bank (SBMC 28.87.250). However, there are a number of policies in the City Conservation Element that seek to protect creek and riparian habitat. These include Visual Resources Policy No. 1, which states that "development adjacent to creeks shall not degrade the creeks or their riparian environments." The drainage and flood control goals and policies in the Conservation Element (4.2) also specify that "Creeks and their banks constitute a scenic open space resource within the City in their natural state; thus, the Open Space Element also recognizes the importance of keeping structures out of the stream channels for preservation of City resources." This project has been specifically designed to be consistent with the City Conservation Element goals and policies for protection of creeks and riparian environments.

7.1 Background Buffer Information

Buffers. Buffers are defined as "vegetated zones located between natural resources and adjacent areas subject to human alteration" (Castelle et al. 1994). Buffers are either measured from the outside edge of the riparian zone or include the riparian zone, but not the active channel area. A biological report on the riparian habitats of our South Coast region states: "...buffers, which include native plants, should be designed to provide some habitat values as well as aesthetic values. They should serve as a transition zone between the orderly urban landscape and the naturally random riparian forest" (Faber et al. 1989).

Buffer-Size Criteria. Four criteria have been identified for determining adequate buffer sizes for aquatic resources (Castelle et al. 1994):

1. Resource functional value
2. Intensity of adjacent land use
3. Buffer characteristics
4. Specific buffer functions required

Generally, smaller buffers are adequate when the buffer is in good condition (e.g., dense native vegetation, undisturbed soils); the wetland or stream is of relatively low functional value (e.g., high disturbance regime, dominated by nonnative plants); and the adjacent land use has low impact potential (e.g., park land, etc.). Larger buffers are necessary for high-value wetlands and streams that are buffered from intense adjacent land uses (e.g., industrial hardscape, intense agriculture, or livestock).

Buffer Functions. According to a comprehensive review and synthesis from more than 40 scientific studies (Castelle et al. 1994), buffers serve the following essential functions:

- **Sediment removal and erosion control.** Buffers moderate storm water and overland sheet flow by slowing velocities and promoting infiltration.
- **Excess nutrient and metal removal.** Plant buffers remove metals from automobile debris and excess nutrients from landscaping runoff and domestic animals by filtering storm water and actively uptaking the pollutants.

- **Maintenance of habitat diversity.** Numerous flora and fauna are completely dependent on the aquatic-terrestrial interface for residence, nesting, and/or forage (e.g., wood ducks and Pacific tree frogs, locally).
- **Wildlife species distribution and diversity.** Bird species' diversity, richness, relative abundance, and breeding numbers have been positively correlated with wetland buffer size.
- **Reduction of human impact.** Buffers protect the riparian system from direct human impact through limiting easy access to the riparian corridor and by blocking or attenuating the conveyance of noise, light, odors, and debris.

Riparian Corridors. Riparian corridors and their buffers often afford most of the green space in urban environments. This riparian corridor and green space allows animals and birds to travel through the urban landscape with some protection from humans and domestic animals in *wildlife corridors*. An inverse relationship has been found between buffer width and direct human disturbance to wetlands and riparian corridors.

Value of Riparian Corridors. *The Ecology of Riparian Habitats of the Southern California Coastal Region* (Faber et al. 1989) study states, "There is a need to link riparian wildlife corridors whenever feasible, rather than to allow continued isolation of small riparian groves. The authors further state that there is a need to re-establish connections between riparian groves separated by development. ...Riparian corridors can add aesthetic qualities as well as biological values to the property."

Riparian Migratory Corridors. Wildlife uses the riparian-forested connectors for cover while traveling across otherwise open areas. Small mammals and birds use riparian dispersal routes to scatter from their original habitats as a result of population pressures or food or water shortages. Riparian zones provide cover, food, and water during such movements (Faber et al. 1989). The report states that, "In more urban areas, the remnants of riparian vegetation along a neglected creek often provide the only refuge for wildlife."

Three-zone buffer system. The Natural Resources Conservation Service (USDA 1999) report defines and describes a three-zone buffer system. These three zones are as follows:

- **Streamside zone** (Zone 1) protects the physical and ecological integrity of the stream ecosystem. The minimum recommended width is 15 ft. The primary function of this zone is moderation of water temperature and provision of aquatic habitat. The vegetative target is mature riparian forest.
- **Middle zone** (Zone 2) extends from the outward boundary of the streamside zone and varies in width depending on stream order, the extent of the 100-yr. floodplain, adjacent steep slopes, and protected wetland areas. Its key functions are to provide further distance between upland development and the stream. The vegetative target for this zone is also mature forest, but some clearing may be allowed for storm water management, access, and recreational uses.
- **Outer zone** (Zone 3) is the "buffer." The minimum recommended width is 25 ft. from the outer edge of the middle zone to the nearest permanent structure. The primary function of this zone is to improve water quality by

reducing the sediment load and filtering pollutants from storm water and irrigation runoff. The vegetative target for the outer zone is usually turf or lawn, although property owners are encouraged to plant trees and shrubs to provide wildlife habitat.

7.2 Analysis of Proposed Project Impact on Creek Buffer Functions

The proposed development will have a 25-ft. average setback from the center line of the unnamed drainage to the edge of disturbance. This average was calculated from 10 transects taken at 20-ft. intervals perpendicular to the flow line of the drainage channel (refer to Figure 4). The minimum setback distance is approximately 4 ft. and the maximum setback is 65 ft.

Constraints

The main constraints to biological functions of the drainage buffer zone at this site are surrounding land use and human disturbance. The property is surrounded by residential development and the drainage is culverted into a below-ground storm drainage system maintained by the City immediately south of the project site. The vegetation growing in the streamside (buffer Zone 1), middle (Zone 2), and outer buffer zones are considered to be of low biological value to wildlife due to its dominance of nonnative vegetation and proximity to urban development.

Buffer zone water quality functions of erosion control and nutrient uptake are severely limited adjacent to this drainage primarily because drainage does not have sufficient hydrology to support native riparian and/or wetland vegetation. The vegetation within and adjacent to the drainage is dominated by upland nonnative species.

Opportunities

The proposed project includes a buffer zone and open space area adjacent to the drainage. This buffer zone and open space area on the property provides an area where nonnative vegetation could be removed and native upland vegetation planted. This action would greatly improve wildlife and plant habitat functions in the area.

7.3 Buffer Recommendations

Because the drainage channel does not support any riparian vegetation and the adjacent areas are highly disturbed (i.e., dominated by nonnative vegetation), we believe that the applicant-proposed 25-ft. average development setback from the center line of the 3-ft.-wide drainage to the edge of the limit of disturbance is more than adequate to preserve the existing buffer zone functions. We recommend that the existing nonnative trees and shrubs in the open space area and drainage buffer zone be removed and that drought-tolerant, native upland vegetation be installed within these areas to improve the wildlife and plant habitat functions.

8.0 PROJECT IMPACTS

This section describes the potential short- and long-term impacts to biological resources resulting from construction and increased residential use of the property. Short-term impacts are those associated with site preparation and construction. Long-term impacts are those that would persist after construction and during the use and occupation of the new residences.

CEQA requires that the potential effects of a project be evaluated by the lead agency responsible for issuing a permit. In this case, the City of Santa Barbara is the lead agency. Factors are considered to have a "significant effect on the environment" if they cause a substantial or potentially substantial adverse change in any of the existing physical conditions within the area affected by the project (CEQA Guidelines 15382).

To facilitate the CEQA environmental review of the project, we have classified biological impacts into the following categories:
a. beneficial
b. adverse, significant, and nonmitigatable
c. adverse, significant, and mitigatable
d. adverse and not significant
e. none, no impact

8.1 Botanical Resources

Impact 1. Loss of Vegetation Communities and Wildlife Habitat
Implementation of the proposed project will require the permanent removal of 0.09 acres of individual coast live oak tree canopy, 0.05 acres of ornamental trees, 0.09 acres of ornamental shrubs and groundcover, and 0.25 acres of turfgrass/nonnative grassland. In addition, vegetation within the fuel modification zone will be thinned and maintained per the City's High Fire Hazard Area Requirements Minimum Brush Clearance Standards (City of Santa Barbara 2001). Table 4 contains a summary of impacts to vegetation communities and land cover types from the proposed project.

Table 4. Summary of Impacts to Vegetation and Land Cover Types

Vegetation Community & Land Cover Types	Area (sq. ft.)	Area (acres)
Vegetation Communities		
Turfgrass/nonnative grassland	11,004	0.25
Ornamental trees	2,243	0.05
Ornamental shrubs and groundcover	4,015	0.09
Individual coast live oak trees	4,049	0.09
Land Cover		
Structure (existing single-family residence and garage)	2,520	0.06
Gravel driveway	2,257	0.05
Total	**25,928**	**0.60**

The effects of short- and long-term loss of 0.48 acres of primarily nonnative vegetation is considered ***adverse and not significant*** because these community types that will be removed are common in the area and are not considered high-quality wildlife habitat.

Impact 2. Removal of Trees
There are no City-designated historic, landmark, or specimen trees within the project area. The edge of disturbance depicted on the preliminary grading and drainage plans prepared by MAC Design Associates (2009) does, however, show that development of the proposed project will require the removal of 15 trees, including 5 native coast live oaks. An inventory of the trees that will be removed to construct the project is provided in Table 5. The 5 native coast live oak trees that will be removed are individual trees and are not considered to be part of a larger oak grove or oak

Table 5. Inventory of Trees to Be Removed

ID No.	Common Name	Latin Name	DBH (in.)
1	blue gum eucalyptus	*Eucalyptus globulus*	14
2	coast live oak	*Quercus agrifolia*	10, 4 (multitrunk)
3	coast live oak	*Quercus agrifolia*	6, 5 (multitrunk)
4	coast live oak	*Quercus agrifolia*	6
5	coast live oak	*Quercus agrifolia*	6
6	coast live oak	*Quercus agrifolia*	8, 3 (multitrunk)
7	palm	*Palm* sp.	12
8	palm	*Palm* sp.	12 apx.
9	acacia	*Acacia* sp.	6
10	acacia	*Acacia* sp.	14
11	acacia	*Acacia* sp.	16
12	acacia	*Acacia* sp.	16
13	acacia	*Acacia* sp.	16 apx.
14	yucca	*Yucca elephantipes*	48
15	yucca	*Yucca elephantipes*	56

woodland habitat. The preliminary landscape plans prepared by landscape architect Katie O'Reilly Rogers contain Tree Protection Notes that list 10 tree protection measures that will provide adequate tree protection during construction of the proposed project. The landscape plans, do not, however, contain any mitigation/replacement trees to compensate for the loss of the 5 native coast live oak trees that will be removed as part of the project.

Short- and long-term impacts caused by the removal of 5 native coast live oak trees are considered to be ***adverse, significant, and mitigatable***. The removal of 10 nonnative trees is considered an ***adverse and not significant*** impact because these trees are not considered to be historic, landmark, or specimen trees.

Impact 3. Wildlife Habitat Loss, Migration, and Dispersal
All of the wildlife habitat that will be removed as part of the development and for fuel modification purposes is nonnative and/or landscaping except for the 5 individual coast live oak trees. These nonnative habitats are considered disturbed and are typically utilized by generalist wildlife species (i.e., they do not have specific habitat preferences) to forage. The wildlife species present within and adjacent to the project site are relatively common species that are adapted to an urban environment with frequent human disturbance. These species are considered common and are expected to relocate temporarily during site preparation and construction. Most if not all of these species will resume foraging in the project area upon completion of construction activities.

Wildlife movement within and through the project area is relatively unrestricted. Some portions of the property are currently fenced with 3-4-ft.-tall chain link fence, which is not considered to be a significant barrier to wildlife movement or dispersal. The existing approximately 200-ft.-long drainage channel on the property is not considered to be a wildlife corridor, because it ends at the southern property line and becomes a below-ground storm drain. The drainage on the property also does not serve as a movement corridor for amphibians or aquatic organisms because it does not support any standing pools or ponds of water and only has surface water flow during and immediately following rainfall events.

Short- and long-term wildlife habitat loss and migration and dispersal impacts from the proposed project are considered ***adverse and not significant***.

Impact 4. Increased Noise and Light Wildlife Disturbance
Development of the proposed project will incrementally increase the already high human presence in the area. Heavy equipment operation and construction noise will cause short-term impacts. Long-term impacts will occur with increased human utilization, a slight increase in noise, and the addition of exterior lighting around new structures.

Increased noise and light have the potential to disrupt wildlife. However, the area where development will occur is already subject to high levels of noise from vehicle traffic, and is subject to frequent human disturbance. The wildlife species potentially affected are relatively common and are already adapted to high levels of noise, frequent human disturbance, and night lighting. The addition of more night lighting will have an incrementally small adverse affect on nocturnal wildlife because most if not all of the proposed development area is already lighted at night from the existing residence on the property, the adjacent residences, and the street lights on Milpas Street.

Short- and long-term impacts of increased noise and light on wildlife is considered ***adverse and not significant.***

Impact 5. Direct and Indirect Impacts to Sensitive Species
Surveys for sensitive wildlife and plants were performed within and adjacent to the project site. No sensitive wildlife species, sensitive wildlife breeding habitat, or sensitive plants were found. Surveys were also performed for active and inactive raptor nests within and adjacent to (within 500 ft. of) the proposed project site. None were found, nor are there any known communal raptor roost sites in or adjacent to the development area.

Short- and long-term direct and indirect project impacts to sensitive species are considered to be ***none, no impact.***

Impact 6. Direct and Indirect Impacts to Waters of the U.S.
The proposed project includes grading of approximately 4,300 cu. yds. of dirt from within the disturbance area identified on the preliminary grading and drainage plans. This earthwork will occur in areas adjacent to the unnamed drainage channel in the eastern portion of the property, but not within the approximately 200-ft.-long by 3-ft.-wide area identified by the ACOE as Waters of the U.S.

The project as currently configured will not have a direct impact on this federal- or state-regulated Waters of the U.S. However, given the close proximity of grading to this drainage, we have concluded that it has the potential to cause short-term indirect effects to federal- and state-regulated Waters of U.S. Should the project be redesigned or accidentally cause a direct effect to the 3-ft.-wide bed of this drainage, the property owners would need to obtain a 404 permit from the ACOE, a 1602 Streambed Alteration Agreement from the CDFG, and a 401 Water Quality Certification from the California Regional Water Quality Control Board.

Short-term indirect impacts to federal- and state-regulated waters are considered to be ***adverse, significant, and mitigatable***. The proposed project will not have any direct impact to any federal- or state-regulated waters, so direct impacts to wetlands and waters are classified as ***none, no impact.***

Long-term direct and indirect impacts to federal- and state-regulated waters are considered to be ***none, no impact***.

Impact 7. Erosion and Sedimentation of Unnamed Drainage
Erosion causes sedimentation of water courses and degrades water quality. Suspended sediment is detrimental to aquatic biota and can smother invertebrates and amphibian eggs, elevate water temperatures, and correspondingly decrease dissolved oxygen levels. The unnamed drainage in the western portion of the property is part of the Laguna Channel watershed that flows into the Pacific Ocean near Laguna Street. The greatest potential for sediment release is during the winter and the site preparation and grading phases of this project. After project completion, when the landscaping has been installed, the project is expected to have no effect on erosion and sediment discharge from the property.

Short-term impacts to water quality from erosion and sedimentation are considered ***adverse, significant, and mitigatable*** due to the proximity of grading near the drainage channel.

Long-term impacts to water quality from erosion and sedimentation are considered ***none, no impact***.

9.0 RECOMMENDED MITIGATION MEASURES

CEQA requires that feasible mitigation measures or alternatives be incorporated into the project description in order to avoid or mitigate the effects to a point at which clearly no significant effect on the environment will occur. The actual incorporation of mitigation into the project description depends on the type of CEQA document prepared, and can consist of applicant-proposed mitigation and/or lead agency permit condition requirements. In either case, mitigation measures are required for impacts identified as adverse and potentially significant.

Impacts identified as "adverse, significant, and nonmitigatable" are those for which the implementation of mitigation measures will not reduce the impact to an insignificant level. Adverse, significant, and nonmitigatable impacts require a finding of overriding consideration by the lead agency. Impacts identified as "adverse, significant, and mitigatable" are those that can be reduced to an insignificant level by implementation of appropriate mitigation measures. Mitigation measures are not required under CEQA for impacts identified as "adverse and not significant." However, the lead agency can recommend mitigation measures to further reduce impacts consistent with local policy goals and objectives.

Mitigation 1. Loss of Vegetation Communities and Wildlife Habitat
Mitigation is not required because the short- and long-term impacts, while adverse, are not considered significant.

Mitigation 2. Removal of Trees
The project will require the removal of 5 coast live oak trees during site development and construction. The Tree Protection Notes on the preliminary landscape plans should be formally adopted as a required short-term mitigation measure.

The landscape plans should also include onsite replacement mitigation for the 5 coast live oak trees that will be removed. The minimum tree replacement shall be 3:1 if 15-gal. or 24-in.-box-size saplings are planted, or 10:1 if small, 1-gal.-container-size tree seedlings are planted.

Mitigation 3. Wildlife Habitat Loss, Migration, and Dispersal
Mitigation is not required because the short- and long-term impacts, while adverse, are not considered significant.

Mitigation 4. Increased Noise and Light Wildlife Disturbance
Mitigation is not required because the short- and long-term impacts, while adverse, are not considered significant.

Mitigation 5. Direct and Indirect Impacts to Sensitive Species
No short- or long-term mitigation is needed for direct or indirect impacts to sensitive species because no impacts (none) are anticipated.

Mitigation 6. Direct and Indirect Impacts to Waters of the U.S.
Mitigation for short-term indirect impacts is necessary to protect the Waters of the U.S. that exist in the bottom of the drainage in the western portion of the property. In order to prevent any accidental or inadvertent impacts during grading and construction, we recommend that a 6-ft.-tall chain-link fence be installed between the drainage channel and the edge of the disturbance area and that silt fencing be attached to the chain link fence and keyed into the ground per the manufacturer's recommendations. The purpose of the fencing is to provide a visual and physical barrier to equipment, vehicles, and slough from grading operations and construction traffic. Upon completion of construction, the chain link fencing and silt fencing may be removed.

10.0 CUMULATIVE EFFECTS

This section assesses the incremental biological and water quality effects of the project in connection with those of past, current, and probable future projects.

The project is located within the Laguna Channel watershed in an area of Santa Barbara that is developed with commercial and residential development. There is very little undeveloped open space within this watershed that is zoned for development and could be developed in the future. Most of the future development in this watershed will consist of remodeling, replacement of existing structures, and lot splits where possible. This project is itself a redevelopment project. The cumulative effects of this project on biological resources are considered less than significant since the area where redevelopment and new development will occur is already disturbed and there is virtually no remaining undisturbed wildlife habitat within the Laguna Channel watershed.

The project has been designed to have a minimal effect on surface- and ground-water quality. It includes several bioswales, permeable paving, a buffer (setback) from the unnamed drainage channel, and a Stormtec™ below-ground surface water filtration and retention system. The project has been designed to maintain the runoff volume and rate on the property at or below the current levels. This proposed project, with the implementation of the recommended biological mitigation

measures, will not significantly contribute to the cumulative loss of biological resources within the Laguna Channel watershed.

11.0 AGENCY PERMITTING REQUIREMENTS IN WATERS OF THE U.S.

Should the proposed project encroach into the bed of the unnamed drainage channel, an ACOE 404 permit would be needed. Should acquisition of a Corps permit be required, a Section 401 water quality certification from the RWQCB Central Coast Region would then also be necessary. In addition to these two permits, a CDFG 1603 Streambed Alteration Agreement may also be needed.

12.0 CONCLUSIONS

This biological assessment found 6 types of biological resource impacts from implementation of the proposed project:

1. Loss of Vegetation Communities and Wildlife Habitat
2. Removal of Trees
3. Wildlife Habitat Loss, Migration, and Dispersal
4. Increased Noise and Light Wildlife Disturbance
5. Direct and Indirect Impacts to Sensitive Species
6. Direct and Indirect Impacts to Waters of the U.S.

The short- and long-term effects of these impacts were evaluated per the CEQA guidelines.

Two of the impacts were determined to be potentially adverse, significant, and mitigatable:

- short- and long-term impacts caused by removal of 5 native coast live oak trees
- short-term impacts to water quality from erosion and sedimentation

Four of the impacts were determined to be adverse but less than significant:

- Short- and long-term impacts caused by loss of vegetation communities and wildlife habitat
- Short- and long-term impacts caused by removal of 10 nonnative trees and vegetation thinning and management activities within the Fire Department-required fuel modification zone
- Short- and long-term wildlife habitat loss and migration and dispersal impacts
- Short- and long-term increased noise, light, and human disturbance of wildlife

Two of the impacts were determined to be none, no impact:

- Short- and long-term direct and indirect impacts to sensitive species
- Long-term impacts to water quality from erosion and sedimentation

The proposed project—with the implementation of the recommended mitigation measures described below—will ensure that potentially adverse, significant impacts are mitigated to acceptable levels:

1. Tree protection measures contained in the preliminary landscape plans shall be implemented prior to any demolition, clearing, or grading occurring on the property and will be maintained throughout the duration of construction activities as mitigation for short-term impacts to native trees.

2. The landscape plans should include replacement (mitigation) coast live oak trees. The minimum tree replacement shall be 3:1 if 15-gal. or 24-in.-box-size saplings are planted, or 10:1 if small, 1-gal.-container-size seedlings are planted. A minimum of 15 15-gal.-size or 24-in.-box-size trees shall be planted as mitigation for the 5 coast live oak trees that will be removed.

In addition to the mitigation measures described above, the following mitigation measures are recommended to further reduce impacts consistent with the City of Santa Barbara Conservation Element policies, High Fire Hazard Area Landscape Guidelines, and Hillside Design District standards:

3. Obtain vegetation removal permit for trees and vegetation that will be removed as part of the project, including tree and vegetation removal performed for fire hazard reduction.
4. All landscaping around the habitable structures shall conform to the City of Santa Barbara Fire Prevention Bureau, High Fire Hazard Area Landscape Guidelines (Ordinance #5257).
5. All exterior lighting shall use low-watt fixtures and will be shielded to point downward.

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US Geological Survey. 1995. "Santa Barbara 7.5-Minute Topographic Quadrangle Map, photorevised 1995." USGS: Washington, D.C.

U.S. Fish and Wildlife Service. 2001. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants.* USFWS: Ventura, California.

Attachment 1.

Photographs of Project Site

Attachment 1. Photos

Photo 1. Existing two-story, single-family residence planted with variety of nonnative landscape vegetation. Lot is on corner fronting Lowena Drive.

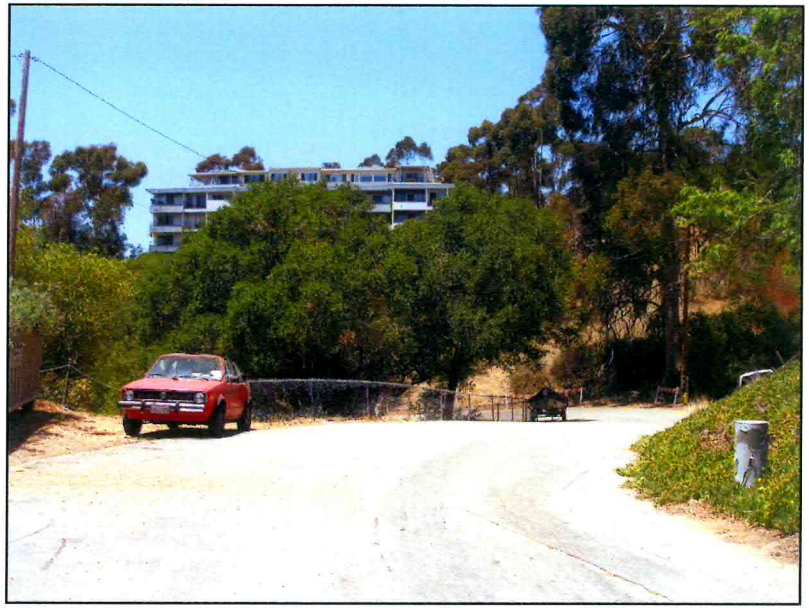
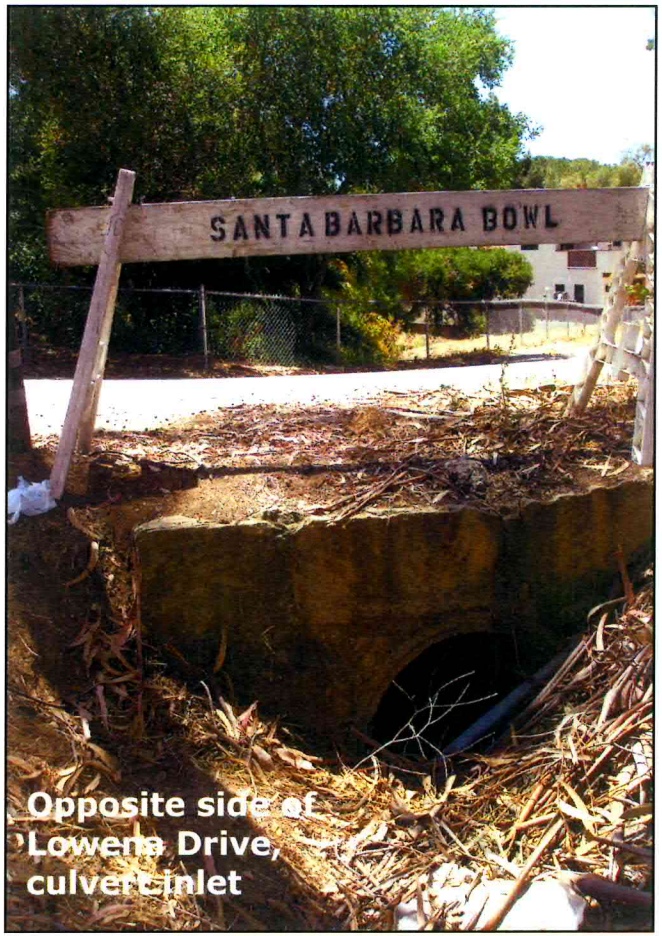
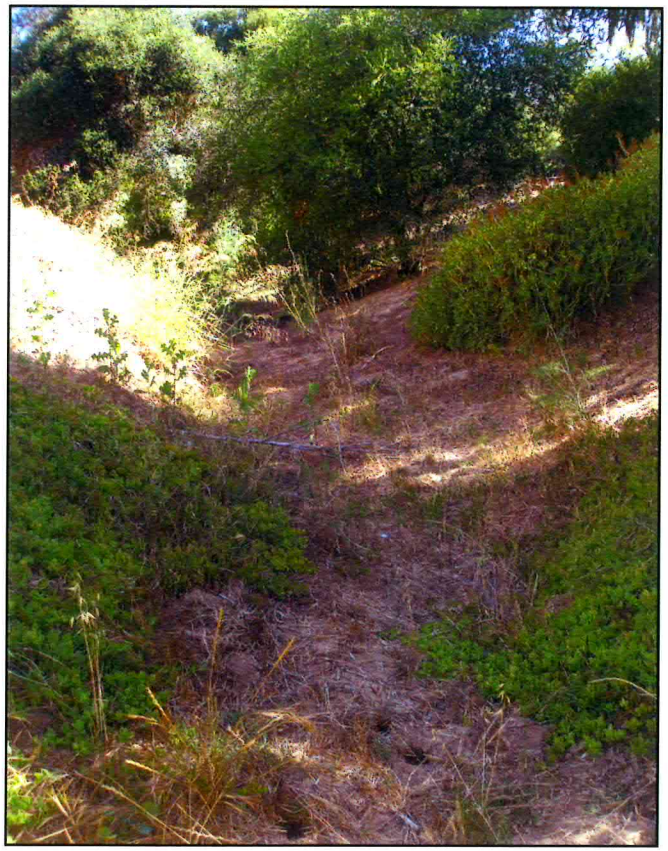
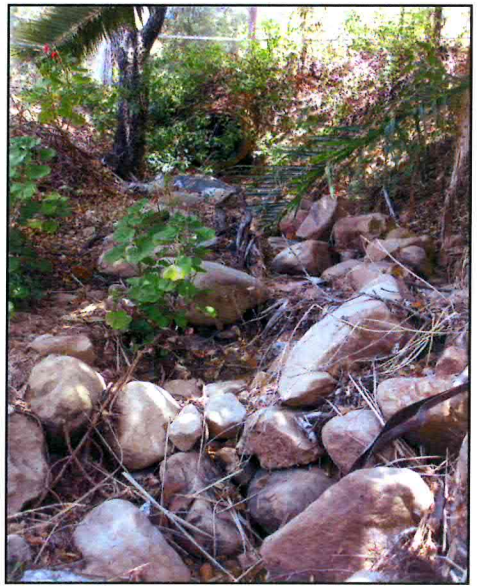


Photo 2. Project site (left) of Lowena Drive roadway; view facing southwest.

Photos 3, 4, 5. Drainage channel and 36-in. RCP culvert at Lowena Drive







Photos 6, 7, 8. Drainage channel characteristics found at 915 E. Anapamu

Photos 9, 10, 11. Drainage channel characteristics and 36-in. RCP culvert found at southern end of 915 E. Anapamu property site closest to Milpas Street

Attachment 2.
Preliminary Drainage Report

PRELIMINARY
DRAINAGE REPORT

FOR

915 E. ANAPAMU STREET

CLIENT: Mr. Charles Crail
1187 Coast Village Road
Suite I-528
Santa Barbara, CA 93101

PREPARED BY: Dale W. Weber, P.E.
MAC Design Associates
1933 Cliff Drive, Suite 6
Santa Barbara, CA 93110

DATE: March 9, 2009

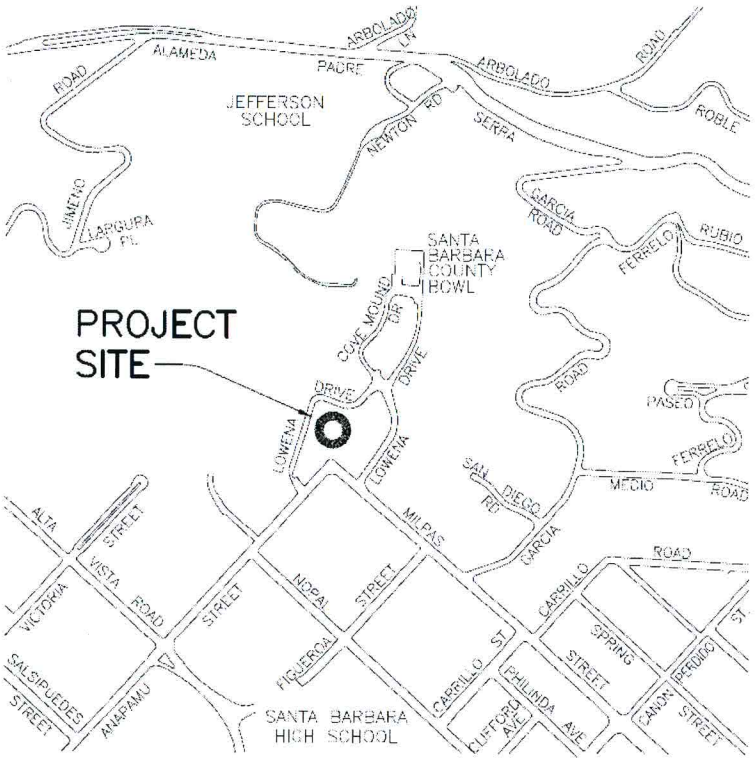
W.O. 0357

MAC DESIGN ASSOCIATES

PURPOSE OF REPORT

The purpose of this report is to summarize the pre and post project runoff from the 915 E. Anapamu Street project site.

LOCATION OF SITE



VICINITY MAP

NO SCALE

METHODOLOGY

The property is approximately 0.92 acres in size, and was previously developed as a single family dwelling. Currently, there is approximately 1,700 SF of impervious area on the property. The property is bisected by a small drainage course with a tributary watershed of approximately 15 acres, which drains to an existing 24" diameter City storm drain. This small drainage course hydraulically separates the project into an eastern project site and a western project site.

The project proposes to demolish the existing house and redevelop the property with 13 residential rental units. For post-development runoff calculations, this report will assume the proposed project will result in 20,000 SF of impervious area. This is a conservative assumption, considering the proposed courtyard area will be constructed with permeable pavers and will have

several rain gardens that will collect roof water, and for calculation purposes these areas have been included as impervious.

Water quality measures include bioswales, rain gardens, permeable pavers, and the subsurface Stormtech chamber system. The primary source of water quality impacts for a multi-unit residential project is typically considered to be vehicles. This project proposes 29 parking stalls, with 25 of those parking stalls being located within parking garages and not being subject to rainfall. The remaining 4 exterior parking stalls will be subject to rainfall, however it is proposed to use a permeable pavement material for these stalls. Roof water will be drained through bio-swales and rain gardens before discharging to the Stormtech system and on-site drainage course.

A preliminary drainage plan has been prepared, and is attached. Runoff from the eastern project site impervious areas will be routed to a subsurface Stormtech chamber system. The Stormtech system will provide filtration and retention of runoff to below pre-development levels. Outflow from the Stormtech system will be routed to the on-site drainage course in a non-erosive manner. Runoff from the western project site impervious areas will be routed to bio-swales and then to on-site drainage course. Increased runoff from the western project site will be accounted and mitigated for by providing additional retention in the Stormtech system on the eastern project site.

The anticipated storm water runoff was calculated using HydroCad software, with the Santa Barbara Urban Hydrograph (SBUH) method. All input parameters are in accordance the Santa Barbara County Flood Control District (SBCFD) standards.

The time of concentration was established using Santa Barbara County nomograph. Due to the small size of the site, the pre-project time of concentration was at the minimum of 12 minutes. Therefore, the post-project time of concentration was also at the minimum of 12 minutes. Hydrologic Soil Group for the project site is Group D (highest runoff potential) per the Natural Resources Conservation Service (NRCS) Web Soil Survey, as attached.

CONCLUSIONS

The project has been designed with the following Low Impact Design measures:

- Bio-Swales
- Rain Gardens
- Permeable Pavements
- Garaged parking
- Stormtech subsurface system

Through the use of these LID measures, no water quality or flood control impacts are anticipated from this project. Runoff calculations are included below, and indicate that no increase in runoff will occur due to the project.

OVERALL CHANGE IN RUNOFF – ALL STORM EVENTS

Storm Event	Overall Project increase (cfs)	Reduction from Stormtech (cfs)	Overall change in runoff (cfs)
2year	+0.34	-0.26	+0.08
5year	+0.34	-0.43	-0.09
10year	+0.34	-0.56	-0.22
25year	+0.33	-0.70	-0.37
50year	+0.31	-0.81	-0.50
100year	+0.31	-0.89	-0.58

CALCULATIONS

PRE PROJECT 25-YEAR STORM EVENT

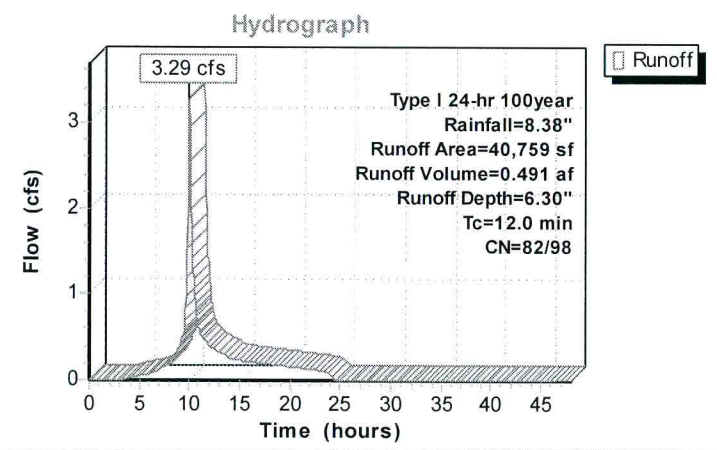
Summary for Subcatchment 1S: Existing Condition

Runoff = 3.29 cfs @ 9.99 hrs, Volume= 0.491 af, Depth= 6.30"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type I 24-hr 100year Rainfall=8.38"

Area (sf)	CN	Description
39,059	82	Woods/grass comb., Fair, HSG D
1,700	98	Paved parking & roofs
40,759	83	Weighted Average
39,059	82	Pervious Area
1,700	98	Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					**Direct Entry,**



PRE-PROJECT RUNOFF – ALL EVENTS

Events for Subcatchment 1S: Existing Conditio

Event	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2year	0.78	0.125	1.60
5year	1.44	0.218	2.80
10year	1.89	0.284	3.65
25year	2.46	0.368	4.72
50year	2.89	0.431	5.52
100year	**3.29**	**0.491**	**6.30**
BMP	0.01	0.001	0.01

POST PROJECT 25-YEAR STORM EVENT

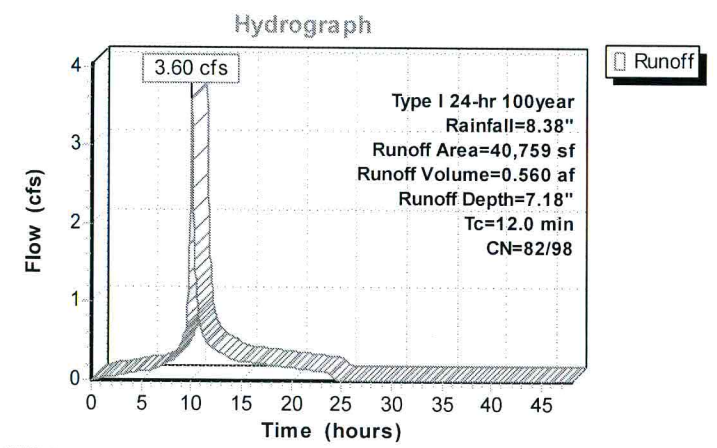
Summary for Subcatchment 5S: Proposed Condition

Runoff = 3.60 cfs @ 9.98 hrs, Volume= 0.560 af, Depth= 7.18"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type I 24-hr 100year Rainfall=8.38"

Area (sf)	CN	Description
20,486	82	Woods/grass comb., Fair, HSG D
20,273	98	Paved parking & roofs
40,759	90	Weighted Average
20,486	82	Pervious Area
20,273	98	Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					**Direct Entry,**



POST-PROJECT RUNOFF – ALL EVENTS

Events for Subcatchment 5S: Proposed Condit

Event	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2year	1.12	0.175	2.25
5year	1.78	0.277	3.55
10year	2.23	0.346	4.44
25year	2.79	0.433	5.55
50year	3.20	0.497	6.38
100year	**3.60**	**0.560**	**7.18**
BMP	0.09	0.007	0.08

STORMTECH SYSTEM

POST PROJECT INFLOW/OUTFLOW – EASTERN PROJECT SITE STORMTECH SYSTEM – 25YEAR EVENT

Summary for Pond 8P: Stormtech

Inflow Area =	0.391 ac,100.00% Impervious, Inflow Depth = 6.47" for 25year event				
Inflow =	1.32 cfs @	9.98 hrs, Volume=	0.211 af		
Outflow =	0.62 cfs @	10.31 hrs, Volume=	0.211 af, Atten= 53%, Lag= 19.5 min		
Primary =	0.62 cfs @	10.31 hrs, Volume=	0.211 af		

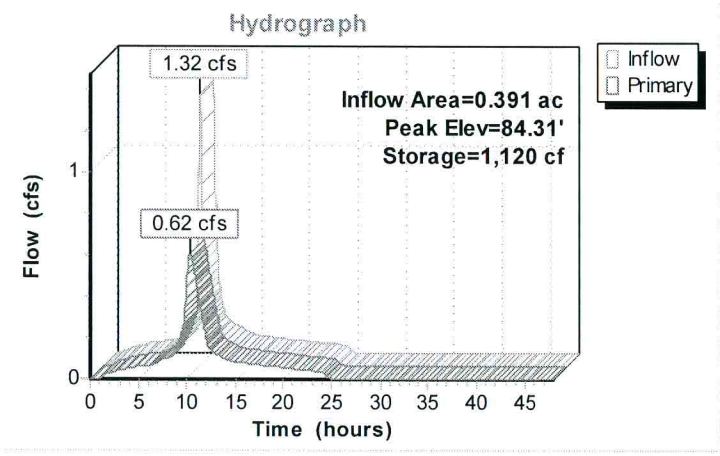
Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 84.31' @ 10.31 hrs Surf.Area= 686 sf Storage= 1,120 cf

Plug-Flow detention time= 16.0 min calculated for 0.211 af (100% of inflow)
Center-of-Mass det. time= 16.0 min (712.8 - 696.8)

Volume	Invert	Avail.Storage	Storage Description
#1	82.00'	730 cf	**22.50'W x 30.50'L x 4.00'H Prismatoid**
			2,745 cf Overall - 919 cf Embedded = 1,826 cf x 40.0% Voids
#2	82.50'	919 cf	**44.6"W x 30.0"H x 7.12'L StormTech SC-740** x 20 Inside #1
		1,649 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	82.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.62 cfs @ 10.31 hrs HW=84.31' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.62 cfs @ 7.05 fps)



POST PROJECT INFLOW/OUTFLOW FROM EASTERN PROJECT SITE STORMTECH SYSTEM – ALL STORM EVENTS

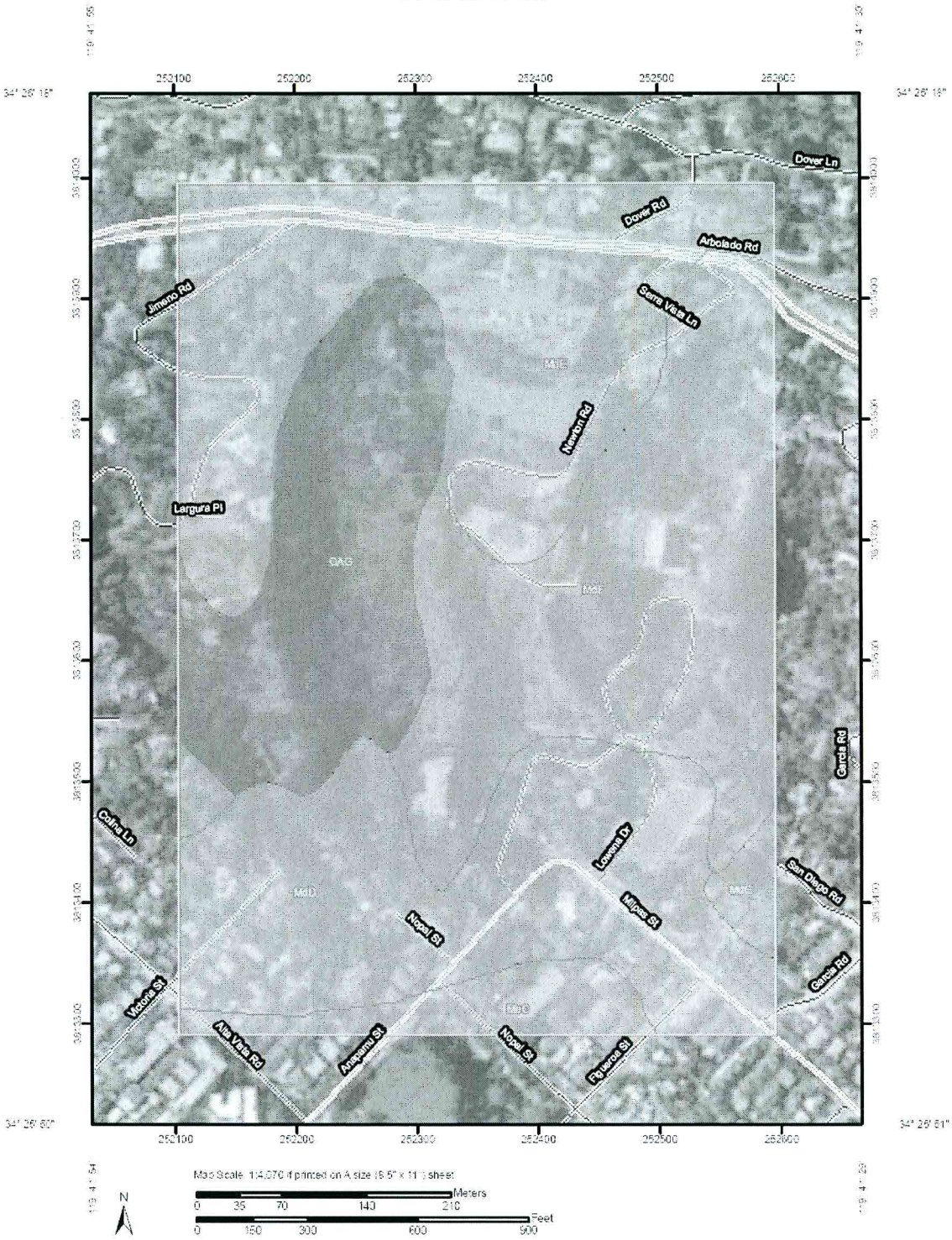
Events for Pond 8P: Stormtech

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2year	0.62	0.36	82.91	379
5year	0.90	0.47	83.40	656
10year	1.09	0.53	83.78	858
25year	1.32	0.62	84.31	1,120
50year	1.49	0.68	84.80	1,317
100year	**1.65**	**0.76**	**85.46**	**1,500**
BMP	0.07	0.05	82.15	42

OVERALL CHANGE IN RUNOFF – ALL STORM EVENTS

Storm Event	Overall Project increase (cfs)	Reduction from Stormtech (cfs)	Overall change in runoff (cfs)
2year	+0.34	-0.26	+0.08
5year	+0.34	-0.43	-0.09
10year	+0.34	-0.56	-0.22
25year	+0.33	-0.70	-0.37
50year	+0.31	-0.81	-0.50
100year	+0.31	-0.89	-0.58

Hydrologic Soil Group—Santa Barbara County, California, South Coastal Part
(915 E. Anapamu/Crail)



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