Biological and Resource Survey Results

TRA THOMAS REID ASSOCIATES
ENVIRONMENTAL CONSULTANTS
560 Waverley Street, Suite 201, P.O. BOX 880, Palo Alto, CA 94301
Tel: (650) 327-0429 ☐ Fax: (650) 327-4024 ☐ www.TRAenviro.com

545 MIDDLEFIELD
SUITE 200

June 9th, 2003

The Chamberlain Group
655 Sky Way, Suite 230
San Carlos, CA 94070
(415) 595-5582
Attn: Jack Chamberlain

Dear Mr. Chamberlain:

This letter is to inform you of the results of the biological and resource survey that I conducted on your behalf for the Highland Estates Residential Development Project. This survey was conducted in order to update the biological resource section of the Environmental Impact Report previously prepared by EIP Associates (1998). The data sources I consulted in performing this update included:

- Biotic Resources Assessment – Bunker Hill Estates Property, San Mateo County, CA (John Stanley and Associates, 1989);
- Spring Survey and Habitat Assessment of Rare, Threatened and Endangered Species, Highland Estates, San Mateo County, CA (Stanley and Associates, 1990);
- Highland Estates Residential Development Environmental Impact Report, April 1998, State Clearinghouse # 91063010 (EIP Associates, 1998);
- Site Plan Drawings prepared by BKF Engineers Surveyors Planners (BKF, 2002);
- California Department of Fish and Game Natural Diversity Data Base (CNDDB) query of the following nine USGS 7.5 minute quadrangles: *Half Moon Bay*, *Hunters Point*, *Montara Mountain*, *Palo Alto*, *Redwood Point*, *San Francisco South*, *San Leandro*, *San Mateo*, and *Woodside* (CDFG-NDDB, 2002).
- California Native Plant Society Sixth Inventory of Rare and Endangered Plants query of the following nine USGS 7.5 minute quadrangles: *Half Moon Bay*, *Hunters Point*, *Montara Mountain*, *Palo Alto*, *Redwood Point*, *San Francisco South*, *San Leandro*, *San Mateo*, and *Woodside* (CNPS, 2001);
- U.S. Fish and Wildlife Services Species List for the *San Mateo* 7.5 minute quadrangle (USFWS, 2003).

Before visiting the site I determined which rare and endangered species had the potential to occur in the area. I performed a nine quad survey of the CNDDB and reviewed the Environmental Impact Report (1998) and other pertinent data concerning the project area. I surveyed the project site on May 19, 2003. My survey efforts were particularly focused on the parcels where development is proposed (approximately 15 acres), which are shown on the overall site plan (page 1 of 9) of the CAD Drawings prepared by BKF (BKF, 2002). However, I performed representative intuitive surveys in all of the habitats present in the entire project area (approximately 98 acres).

Site Description

The project site encompasses approximately 98 acres of east to northeast facing slopes and ridgelines that primarily drain to Polhemus Creek, a tributary of San Mateo Creek. The site is bounded by Polhemus Road to the east, Ticonderoga Drive to the south and Bunker Hill Drive to the north. It is located in Township 5 South, Range 4 West of the San Mateo 7.5 minute USGS Quadrangle. Elevations at the site range from 325 to 750 feet above mean sea level. The slopes of the project site are drained by several spring and seep-fed intermittent and ephemeral drainages. Seeps, streambeds and small wetland areas characterize the lower forested slopes of the project area. Numerous sandstone rock outcrops and emergent boulders are present on the property, especially along the upper slopes and ridges.

The plant communities and wildlife habitats present in the project area do not appear to have changed significantly since the previous EIR was prepared. These habitats were classified using *A Manual of California Vegetation* (Sawyer & Keeler-Wolf, 1995). The communities present include:

Blue Blossom Series

Blue blossom (*Ceanothus thyrsiflorus*) was one of the dominant shrubs in sections of the coastal scrub habitat present on the property. Associated shrub species were diverse and included holly-leaf cherry (*Prunus ilicifolia*), toyon (*Heteromeles arbutifolia*), coast silk tassel (*Garrya elliptica*), pitcher sage (*Lepichinia calycina*), yerba santa (*Eriodictyon californica*), poison oak (*Toxicodendron diversilobum*), blue elderberry (*Sambucus mexicana*) and oceanspray (*Holodiscus discolor*). Associated herbs included miner's lettuce (*Claytonia perfoliata*), blue-eyed grass (*Sisynchrium bellum*) and phacelia (*Phacelia ramosissima*). These shrub communities provide habitat for numerous mammal, reptile and bird species including coyote (*Canis latrans*), California quail (*Callipepla californica*), Anna's hummingbird (*Calypte anna*) and southern alligator lizard (*Gerrhonotus multicarinatus*). Due to the heterogeneous and patchy nature of the shrub-dominated habitats at the site, these areas may best be viewed as Coastal Bluff Scrub as classified by the earlier NDDB/Holland type.

California Annual Grassland Series

This plant community is dominated by annual exotic grasses including wild oats (*Avena barbata*), soft chess (*Bromus hordeaceus*) and sterile brome (*Bromus sterilis*). These communities have strong associations of native herbs including purple needlegrass (*Nassella pulchra*), narrow-leaved mule's ear (*Wyethia angustifolia*), owl's clover (*Castilleja densiflora*), lupine (*Lupinus formosus*) and California poppy (*Eschscholzia californica*). This community provides foraging habitat for many raptor species including red-tailed hawks (*Buteo jamaicensis*), northern harrier (*Circus*

cyaneus) and American kestrel (*Falco sparverius*). Other wildlife species that utilize these habitats include black-tailed jackrabbit (*Lepus californicus*).

California Sagebrush Series

California sagebrush (*Artemisia californica*) dominates sections of the coastal scrub habitat present on the property. Associated shrub species include poison oak, yerba santa, California broom (*Lotus scoparius*), blue witch (*Solanum umbelliferum*), black sage (*Salvia mellifera*). Associated herbs include cudweed (*Gnaphalium canescens*), blue wildrye (*Elymus glaucus*), and silver puffs (*Uropappus lindleyi*). These shrub communities provide habitat for numerous mammal, reptile and bird species including ringneck snake (*Diadophis punctatus*), Bushtit (*Psaltriparus minimus*), Allen's hummingbird (*Selasphorus sasin*) and western rattlesnake (*Crotalus viridis*). Due to the heterogeneous and patchy nature of the shrub-dominated habitats at the site, these areas may best be viewed as Coastal Bluff Scrub as classified by the earlier NDDB/Holland type.

Coast Live Oak Series

Coast live oak forests dominate the majority of the project site that is proposed for development and a significant portion of the entire property. These stands have dense canopy layers and associated canopy species include California buckeye, and California bay (*Umbellularia californica*). Shrub species associated with these habitats include coyote brush (*Baccharis pilularis*), California blackberry (*Rubus ursinus*), canyon gooseberry (*Ribes menziesii*) and toyon. Herb cover is diverse in these forests and includes wood fern (*Dryopteris arguta*), hawkweed (*Hieracium albiflorum*), sweet cicely (*Osmorhiza chilensis*), Douglas iris (*Iris douglasiana*), fairy lantern (*Calochortus albus*) California brome (*Bromus carinatus*) and streamside orchid (*Epipactus gigantea*). These forested habitats provide habitat for numerous wildlife species including mule deer (*Odocoileus hemonius*), striped skunk (*Mephitis mephitis*) and scrub jay (*Aphelocoma insularis*).

Coyote Brush Series

Coyote brush dominates stands bordering ridgetop grasslands and other coastal scrub habitats in the project site. Associated shrubs include toyon, poison oak and California broom. Herbs associated with these habitats include aster (*Aster chilensis*), mouse-eared chickweed (*Cerastium glomeratum*) and catchfly (*Silene gallica*). These shrub communities provide habitat for numerous mammal, reptile and bird species including western fence lizard (*Sceloporus occidentalis*), chesnut–backed chickadee (*Poecile rufescens*), Downy woodpecker (*Picoides pubescens*) and common garter snake (*Thamnophis sirtalis*). Due to the heterogeneous and patchy nature of the shrub-dominated habitats at the site, these areas may best be viewed as Coastal Bluff Scrub as classified by the earlier NDDB/Holland type.

Nodding Needlegrass Series

Stands of native grasses occur in openings along edges of oak woodlands and coastal scrub, and also on rock outcrops and ridgetops in the project area. These stands are dominated by nodding needlegrass (*Nassella cernua*). Other herbaceous species associated with these communities include purple needlegrass, California brome, mule's ear (*Wyethia helenoides*), columbine (*Aquilegia formosa*), and coastal larkspur (*Delphinium californicum* ssp. *californicum*). These grasslands provide habitat for numerous wildlife species.

Red Willow Series

Arroyo willow (*Salix lasiolepis*) dominates sections of the intermittent drainages in the project site. Associated canopy species include coast live oak (*Quercus agrifolia*) and California buckeye (*Aesculus californica*). Associated herb species include common rush (*Juncus patens*), nutsedge (*Cyperus eragrostis*) and curly dock (*Rumex crispus*). These wetland habitats provide potential foraging, nesting and resting habitat for numerous wildlife species including mammals, migratory songbirds, raptors, Pacific tree frog (*Hyla regilla*) and other amphibians.

Results

The project area provides potential habitat for many rare and endangered species. One rare and endangered plant species, western leatherwood (*Dirca occidentalis*) a CNPS List 1B species was located during this survey This native species is endemic to California and known only from occurrences in the San Francisco Bay Area. The species was identified during previous surveys, and was included in the previous EIR analysis. However, the status of the species has changed from a CNPS List 4 (Watchlist) to a CNPS List 1B during the last five years because of its increasing rarity. Approximately fourteen western leatherwood shrubs are located in the project area. These shrubs were previously mapped and tagged by The Habitat Restoration Group (i.e. John Stanley and Associates). These shrubs occur within coastal scrub on slopes within areas that are proposed for development. Specifically, these shrubs are located on parcels 18, 19, 20, 23, and 24 northeast of Cobblehill Place and southwest of Polhemus Road (BKF, 2002). This species meets the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and is eligible for state listing. Removal of these plants during proposed construction activities would be considered a significant direct impact requiring mitigation.

This survey occurred in the middle of the bloom period and many sensitive plant species would have been in identifiable phenology. However, the results of this survey, in combination with the biological surveys performed for the previous biological assessments (John Stanley & Associates, 1989; John Stanley & Associates, 1990; EIP & Associates, 1998), indicate that there is a low potential for other rare or endangered vascular plants to be impacted by the proposed project. A list of vascular plant species identified at the site, including those observed during previous surveys is attached (**Appendix A**). Nomenclature follows that used in the Jepson Manual (Hickman, 1996). Presented below in **Table 1** are those sensitive-status species that have the potential to occur in the project site, their habitat associations, current status and potential to occur in the project area. Species with a medium or higher potential to occur in the project area are in bold.

Table 1. Potential Species of Concern for Highland Estates Property

Vascular Plants	Status Federal/State/ CNPS	Habitat Associations	Potential to Occur
Acanthomintha duttonii San Mateo thorn-mint	FE/CE/1B	Mixed evergreen forests, valley and foothill grasslands and chaparral, typically on serpentine.	Low. Though suitable habitat for this species occurs in the project area, the species was not located during current and previous surveys.
Arctostaphylos hookeri ssp. *franciscana* Franciscan manzanita	--/--/1A	Coastal bluff scrub and chaparral, typically on serpentine.	Unlikely. Though suitable habitat for this species occurs in the project area, the species was not located during current and previous surveys. No manzanitas were located during current or previous surveys.
Arctostaphylos hookeri ssp. *ravenii* Presidio manzanita	FE/CE/1B	Chaparral and coastal prairie, typically on serpentine.	Unlikely. Though suitable habitat for this species occurs in the project area, the species was not located during current and previous surveys. No manzanitas were located during current or previous surveys.
Arctostaphylos imbricata San Bruno Mtn. Manzanita	--/CE/1B	Coastal scrub and chaparral, known from five occurrences on San Bruno Mountain	Unlikely. Though suitable habitat for this species occurs in the project area, the species was not located during current and previous surveys. No manzanitas were located during current or previous surveys.
Arctostaphylos montaraensis Montara manzanita	--/--/1B	Coastal scrub and chaparral, known from approximately ten occurrences in San Mateo County near Montara Mountain	Unlikely. Though suitable habitat for this species occurs in the project area, the species was not located during current and previous surveys. No manzanitas were located during current or previous surveys.
Cirsium fontinale var. *fontinale* Fountain thistle	FE/CE/1B	Valley and foothill grasslands, typicallly on serpentine soils.	Unlikely. Though potential habitat for this species occurs in the project area, the species was not located during current and previous surveys.
Collinsia multicolor San Francisco collinsia	--/--/1B	Closed-cone coniferous forests and coastal scrub, often on serpentine. Occurs rarely in Monterey, Santa Clara, Santa Cruz, San Francisco and San Mateo Counties	Low. Though the project area provides limited suitable habitat for the species, the species was not observed during current or previous surveys.
Dirca occidentalis Western leatherwood	--/--/1B	Broadleaved upland forest, chaparral, riparian scrub, oak woodland, typically associated with moist or shady locations	High. The species occurs in the project area. Approximately fourteen plants were mapped and tagged during previous surveys by John Stanley & Associates and were located during the current survey. Direct impacts to all of these plants will occur from the proposed project.

Vascular Plants	Status Federal/State/ CNPS	Habitat Associations	Potential to Occur
Elymus californicus California bottle-brush grass	--/--/List 4	Openings in broadleaved upland forests, cismontane woodland, coniferous forests, riparian woodlands and glades. Known from the Crystal Springs watershed.	Low. Though grasslands, meadows and glades occur in the project area, the species was not observed during current or previous surveys.
Eriophyllum latilobum San Mateo woolly sunflower	FE/CE/1B	Occurs in cismontane woodland, on serpentine. Known from only one occurrence near Crystal Springs Road.	Low. Though suitable habitat for this species occurs in the project area, the species was not located during current and previous surveys. The species occurs within 1 mile of the project area.
Fritillaria liliacea Fragrant fritillary	--/--/1B	Cismontane woodland, coastal prairie, coastal scrub and grasslands, often on serpentine. The species occurs nearby on serpentine grasslands southwest of the project area.	Low. Though suitable habitat for this species occurs in the project area, the species was not located during current and previous surveys. The species occurs within 1 mile of the project area.
Helianthella castanea Diablo helianthella	--/--/1B	Cismontane woodland, coastal prairie, coastal scrub and grasslands. Closest known occurrence is San Bruno Mountain	Unlikely. Though potential habitat for this species occurs in the project area, the species was not located during current and previous surveys.
Hesperolinon cogestum Marin western flax	FT/CT/1B	Coastal scrub and coastal prairie, often on serpentine. Closest occurrence is less than one mile from project area.	Low. Though suitable habitat for this species occurs in the project area, the species was not located during current and previous surveys. The species occurs within 1 mile of the project area.
Lessingia arachnoidea Crystal Springs lessingia	--/--/1B	Cismontane woodland, coastal prairie, coastal scrub and grasslands, often on serpentine. Known from seven occurrences near Crystal Springs Reservoir.	Low. Though suitable habitat for this species occurs in the project area, the species was not located during current and previous surveys. The species occurs within 1 mile of the project area.
Pedicularis dudleyi Dudley's lousewort	--/CR/1B	Maritime chaparral, cismontane woodland, valley and foothill grasslands.	Low. Though abundant potential habitat for this species occurs in the project area, only the more common Indian warrior (*Pedicularis densiflorus*) has been located on the property.
Pentachaeta bellidiflora White-rayed pentachaeta	FE/CE/1B	Valley and foothill grassland, on serpentine. Known from one extant occurrence near Woodside south of the project area, historically occurred near Edgewood County Park.	Low. Though suitable habitat for this species occurs in the project area, the species was not located during current and previous surveys. The species occurs within 5 miles of the project area.
Silene verecunda ssp. *verecunda* San Francisco Campion	--/--/1B	Coastal bluff scrub, chaparral, coastal prairie, valley and foothill grassland, often on rock outcrops or sandy sites. Occurs in adjacent quadrangles to project area.	Unlikely. Though potential habitat for this species occurs in the project area, the species was not located during current and previous surveys.

Amphibians	Status Federal/State/ CNPS	Habitat Associations	Potential to Occur
Ambystoma californiense California tiger salmander	E/SCE/--	Disperses in oak woodlands, broadleaved hardwood forests and grasslands, breeds in vernal pools, stockponds and streams; estavates in small mammal burrows (i.e. ground squirrel). Occurs near Stanford University.	Low. The intermittent drainages in the project area do not provide breeding areas for this species, though adjacent uplands and grasslands provide dispersing habitat. The species is known to occur near the project area. The species has not been located in the project area during current and previous surveys.
Rana aurora draytonii California red-legged frog	FT/CSC/--	Breeds in pools in perennial and intermittent streams and ponds. Known to occur in a broad range of upland habitats including oak woodlands, broadleaved and coniferous forests in the Coast Ranges.	Medium. The intermittent drainages in the project area provide potential foraging habitat and marginal breeding habitat for this species, while adjacent uplands provide dispersing habitat. The species is known to occur near the project area. The species has not been located in the project area during current and previous surveys.
Birds	**Status Federal/State/ CNPS**	**Habitat Associations**	**Potential to Occur**
Accipiter cooperi Cooper's hawk (nesting)	--/CSC/--	Nests in trees near riparian forests and woodlands, canyon bottoms. Forages from perches in forests, woodlands and grasslands.	Medium. The project area provides abundant potential nesting and foraging habitat for this species.
Athene cunicularia Western burrowing owl (burrow sites)	--/CSC/--	Nests in small mammal burrows, forages in open grasslands and oak woodlands.	Low. Though limited grassland foraging habitat occurs in the project area, the site does not contain potential nesting habitat.
Calypte costae Costa's hummingbird (nesting)	FSC/CSC/--	Breeds in Central California and eastward into Nevada and Utah, winters in Southern California and Mexico; nests in shrubs or small trees. Often found in chaparral and shrub-dominated communities. Feeds on insects and nectar.	Medium. The project area provides abundant potential foraging and nesting habitat for this species. The species was not observed during surveys of the project area.
Circus cyaneus Northern harrier (nesting)	--/CSC/--	Forages and nests in open grasslands and rolling hills. Nests on the ground, typically in tall grass or at the base of shrubs.	Low. The project area provides limited foraging and nesting habitat for the species. The species was not observed during surveys of the project area.
Dendroica petechia brewsteri Yellow warbler (nesting)	--/CSC/--	Lives in moist thickets, especially along streams and in swampy areas. Nests in small trees. Winters in tropics.	Medium. The project area contains abundant potential foraging and nesting habitat in the proximity of the seeps, creeks and wetlands associated with the oak forests, willow thickets and coastal scrub of the project area.

Birds	Status Federal/State/ CNPS	Habitat Associations	Potential to Occur
Elanus leucurus White-tailed kite	--/CSC/--	Open grasslands and farmlands often with scattered woodlands and/or fencelines. Nests in trees.	Low. The project area provides limited foraging and nesting habitat for the species. The species was not observed during surveys of the project area.
Falco peregrinus anatum Peregrine falcon (nesting)	--/CE/--	Nests in cliffs and rock outcrops adjacent to forests, canyons and grasslands. Hunts other birds from the air.	Low. The project area provides foraging habitat for the species. The species was observed foraging in the area during previous surveys of the project area by John Stanley & Associates. Limited marginal nesting habitat at site.
Geothlypis trichas sinuosa Saltmarsh common yellowthroat	FSC/CSC/--	Resident of the San Francisco Bay Region in freshwater and saltmarsh habitats. Prefers moist thickets and grassy marshes for nesting. Historical nesting sites occur west of Adobe Point near Upper Crystal Springs Reservoir, near Polhemus Road and near the Pulgas Water Temple.	Low. Limited nesting and foraging habitat occur in the project area for this species.
Phalacrocorax auritus Double-crested cormorant (breeding)	--/CSC/--	Found in lakes, rivers, swamps, and coasts; breeds. Nests in colonies on rocky islands or cliffs.	Unlikely. No potential habitat for this species occurs in the project area, the species was not located during current and previous surveys.
Riparia riparia Bank swallow (nesting)	--/SCE/--	Nests in colonies on banks or cliffs adjacent to streams, canals or lakes	Unlikely. No potential habitat for this species occurs in the project area, the species was not located during current and previous surveys.
Selasphorus sasin Allen's hummingbird (nesting)	FSC/--/--	Coastal chaparral, shrubland and forest. Breeds along coast from Southern Oregon to Southern California	Medium. The project area provides abundant foraging and nesting habitat for the species and the species has been observed at the site during previous surveys by John Stanley & Associates.
Invertebrates	**Status Federal/State/ CNPS**	**Habitat Associations**	**Potential to Occur**
Caecidotea tomalensis Tomales isopod	--/--/--	Inhabits localized fresh-water ponds and streams with still or slow-moving water in several bay area counties. Known from a pond near Skyline Blvd. south of Kings Drive	Low. Limited marginal habitat occurs in the project area.
Calicina minor Edgewood blind harvestman	FSC/--/--	Occupies locations under boulders or logs in serpentine areas. Known to occur at Edgewood County park and near a spring on County Road 14 north of Crystal Springs Dam.	Medium. Limited serpentine outcrops occur on the project area. Surveys for this species were not conducted.
Euphydryas editha bayensis Bay checkerspot butterfly	FT/--/--	Found in grasslands of the San Francisco Bay Area. Host plants include dwarf plantain (*Plantago erecta*) and owl's clover (*Castilleja densiflorus*). Range is restricted, occurs near Kirby Canyon Landfill Site	Low. Though grasslands and host plants for this species are present in portions of the project area, previous studies by Thomas Reid Associates determined too little habitat existed at the site to support a population of the species.
Hydrochara ricksecker Ricksecker's water	FSC/--/--	Aquatic habitats, such as lakes and ponds, in the San Francisco Bay Area. Range is	Unlikely. Habitat suitable for this species

scavenger beetle		restricted. Known historically from Pulgas Water Temple, Upper Crystal Springs Reservoir. Scattered occurrences throughout ponds in bay area counties.	does not occur in the project area.
Icaricia icariodes missionensis Mission blue butterfly	FE/--/--	Found in grasslands and coastal prairie of the San Francisco Bay Area. Host plants include silver bush lupine (*Lupinus albifrons*) lupine (*Lupinus formosus*) and varicolored lupine (*Lupinus variicolor*). Range is restricted. Known from San Bruno Mountain	Low. Though grasslands and host plants for this species are present in portions of the project area, previous studies by Thomas Reid Associates determined not enough habitat existed at the site to support a population of the species.
Mammals	**Status Federal/State/ CNPS**	**Habitat Associations**	**Potential to Occur**
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	--/CSC/--	Forages and nests in forests, coastal scrub and riparian habitats of the San Francisco Bay Area	Medium. Though no woodrat nests were observed during the survey, the project area provides abundant potential habitat for this species.
Reithrodontomys raviventris Saltmarsh harvest mouse	FE/CE/--	Found in saline emergent wetlands in the San Francisco Bay and associated tributaries. Also uses adjacent upland habitats.	Unlikely. No suitable habitat for this species occurs in the project area.
Sorex vagrans halicoetes Saltmarsh wandering shrew	FSC/CSC/--	Found in saline emergent wetlands in the San Francisco Bay and associated tributaries. Also uses adjacent upland habitats.	Unlikely. No suitable habitat for this species occurs in the project area.
Reptiles	**Status Federal/State/ CNPS**	**Habitat Associations**	**Potential to Occur**
Thamnophis sirtalis tetrataenia San Francisco garter snake	FE/CE/--	Occurs in freshwater ponds, ditches, streams and marshes, typically associated with emergent vegetation that is used for cover and foraging. Occurs on the San Francisco Peninsula.	Medium. Though suitable habitat for this species occurs in the project area along the wetlands adjacent to Polhemus Road/Ralston Avenue, the species was not located during current and previous surveys. The range of the species is highly restricted.
Natural Communities	**Status Federal/State/ CNPS**	**Habitat Associations**	**Potential to Occur**
Northern maritime chaparral	--/--/--	Coastal chaparral stands have become increasingly rare in the modern California landscape.	High. This community occurs within the project area and is largely included in the open space proposed on the property.
Valley needlegrass grassland	--/--/--	Once widespread through the California landscape, native needlegrasslands have become threatened by development, invasion from exotic annual grasses and changes in land management.	High. This community occurs within the project area and will be significantly impacted by the proposed development on the property.

STATUS CODES:

FEDERAL: *U.S. Fish and Wildlife Service*

FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government
FPE = Proposed for Listing as Endangered
FPT = Proposed for Listing as Threatened
FC = Candidate for Federal listing
FSC = Federal Species of Special Concern

STATE: *California Department of Fish and Game*

CE=Listed as Endangered by the State of California
CT=Listed as Threatened by the State of California
CR=Listed as Rare by the State of California (plants only)
CSC=California species of special concern
CFP=Fully protected species
SCE=State candidate for listing as Endangered.

California Native Plant Society (CNPS)
List 1A = Plants believed extinct
List 1B = Plants rare, threatened, or endangered in California and elsewhere
List 2 = Plants rare, threatened, or endangered in California but more common elsewhere
List 3 = Plants about which more information is needed
List 4 = Plants of limited distribution
SOURCE: CDFG, 2002; USFWS; 2003; TRA, 2003, CNPS 2001.

Discussion

Due to the changes in the status of certain species, such as western leatherwood, which occur or have potential to occur on the site, it is recommended that revisions be made to the mitigation sections concerned with impacts to sensitive-status species. The direct impacts to western leatherwood within the proposed development would require mitigation. The locations of these plants have been mapped and are included in site plan drawings by BKF Engineers (Haga, R., pers. comm.). This mitigation may take the form of consultation with the California Department of Fish and Game in order to determine the optimal solution. Alternatives may include avoidance, on-site mitigation and off-site mitigation. Since transplanting of rare plants in California has traditionally met with a success rate of 15% or less (CNPS, 2001), transplanting these shrubs may not be the best solution. However, the shrub is known to be cultivated in the Tilden Botanical Garden in Berkeley and is a species that has been grown horticulturally from wild seed stock (J. Sawyer, pers. comm.). On-site mitigation could involve transplanting these shrubs to other coastal scrub habitats or riparian forests in the project site that will not be developed. All avenues should be explored to avoid direct impacts to these plants.

The project area provides suitable habitat for California Red-legged Frog (CRLF) and protocol-level surveys have not been conducted at the site. This habitat is in the form of intermittent drainages, with small pools and shrub, tree and herbaceous cover and emergent wetlands. These drainages were still flowing and contained habitat during this survey and may sustain flow late into the summer in wetter years. The region of the project area with the most extensive wetland habitat that will be affected by the proposed development is in the southern end of the project site near Ticonderoga Drive and Polhemus Road. A qualified wildlife biologist should conduct protocol level pre-construction surveys for CRLF.

Though the previous EIR states that no habitat for this species is present, in the form of permanently ponded areas, this habitat requirement can now be considered erroneous, as the species has been found in small intermittent and ephemeral drainages throughout the Coast Ranges of California. Taking into consideration new information and research now published in the U.S. Fish and Wildlife Services California Red-legged Frog Recovery Plan (USFWS, 2002), the project site contains limited potential breeding habitat for the species and abundant undisturbed foraging habitat in the form of drainages, emergent wetlands and forested uplands.

Due to the abundance of dense vegetation that occurs on the site in the form of trees, small trees and shrubs and the overall undisturbed condition of the property, it is determined that the property provides optimal nesting habitat for avian species such as Allen's hummingbirds, yellow warblers and raptors, such as the Cooper's hawk. As described in Mitigation 3.2.3-6 of the previous EIR, pre-construction surveys should be conducted for nesting birds by a qualified wildlife biologist.

References:

BKF. 2002. AutoCAD Site Plan Drawings for Highland Estates, San Mateo Site Plan. BKF Engineers/Surveyors/Planners, Redwood City, CA

California Department of Fish and Game. 2001. Rarefind 2 computer program. Natural Diversity Database Program. Sacramento, CA.

C.N.P.S. 2001. Inventory of rare and endangered plants of California (sixth edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society, Sacramento, CA.

EIP Associates. 1998. Highland Estates Residential Development Environmental Impact Report, April 1998, San Francisco, CA. State Clearinghouse # 91063010

Hickman, J.C., ed. 1996. The Jepson Manual: Higher Plants of California. University of California Press, Berkeley, CA.

Sawyer, J.O., Keeler-Wolf, T. 1995. A Manual of California Vegetation. California Native Plant Society Press. Sacramento, CA.

John Stanley & Associates. 1989. Biotic Resources Assessment – Bunker Hill Estates Property, San Mateo County, CA, April 4, 1989.

John Stanley & Associates. 1990. Spring Survey and Habitat Assessment of Rare, Threatened and Endangered Species, Highland Estates, San Mateo County, CA, July 16, 1990.

U.S. Fish and Wildlife Service. 2003. Species List - Federal Endangered and Threatened Species that may be Affected by Projects in the San Mateo 7.5 minute Quadrangle. Sacramento, CA.

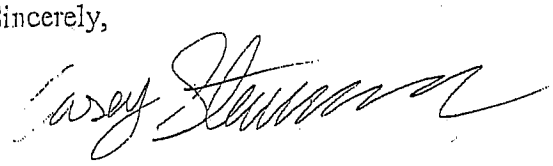
U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California Red-legged Frog (Rana aurora draytonii). U.S. Fish and Wildlife Service, Portland, Oregon. viiii + 173 pp.

Personal Communication:

Haga, Roland. 2003. Personal communication by phone on June 4, 2003. BKF Engineers/Surveyors/Planners, Redwood City, CA.

Sawyer, John. 2003. Personal communication by phone and e-mail on June 6, 2003. Arcata, CA.

Sincerely,



Casey J. Stewman M.A.
Associate Biologist
Thomas Reid Associates
650 Waverley St., Suite 201
Palo Alto, CA 94301
(650) 327-0429 x 94
(650) 327-4024 FAX

enclosures

APPENDIX A

VASCULAR PLANTS IDENTIFIED AT THE HIGHLAND ESTATES RESIDENTIAL DEVELOPMENT PROJECT, SAN MATEO COUNTY, CALIFORNIA

Family	Scientific Name	Common Name
Aizoaceae		
	Carpobrotus edulis	Ice plant
Anacardiaceae		
	Toxicodendron diversilobum	Poison-oak
Apiaceae (Umbelliferae)		
	Anthriscus caucalis	Bur-chevril
	Bowlesia incana	Bowlesia
	Conium maculatum	Poison hemlock
	Daucus pusillus	Wild carrot
	Foeniculum vulgare	Fennel
	Heracleum lanatum	Cows parsnip
	Lomatium sp.	Lomatium
	Osmorhiza chilensis	Sweet-cicely
	Sanicula bipinnatifida	Purple sanicle
	Sanicula crassicaulis	Pacific sanicle
	Torilis arvensis	Torilis
Araliaceae		
	Hedera helix	English ivy
Asclepiadaceae		
	Asclepias sp.	Milkweed
Asteraceae (Compositae)		
	Achillea millefolium	Yarrow
	Achyrachaena mollis	Blow-wives
	Agoseris sp.	Dandelion
	Artemisia californica	California sagebrush
	Artemisia douglasiana	Mugwort
	Aster chilensis	Aster
	Baccharis pilularis	Coyote brush
	Carduus pycnocephalus	Italian thistle
	Centaurea melitensis	Napa thistle
	Centaurea solstitialis	Yellow star-thistle
	Chamomilla sauveolens	Pineapple weed
	Cirsium vulgare	Bull thistle
	Cotula coronopifolia	Brass buttons
	Cynara cardunculus	Artichoke thistle
	Filago californica	Filago
	Gnaphalium californicum	California cudweed

	Grindelia camporum var. *camporum*	Gumplant
	Hemizonia kelloggii	Tarplant
	Hieracium albiflorum	Hawkweed
	Holocarpha heermannii	Tarplant
	Hypochaeris radicata	Rough cat's ear
	Lactuca serriola	Prickly lettuce
	Leontodon taraxacoides	Hawkbit
	Madia gracilis	Tarweed
	Micropus californicus var. *californicus*	Slender cottonweed
	Picris echioides	Ox-tongue daisy
	Psilocarphus sp.	Woolly marbles
	Senecio vulgaris	Common groundsel
	Silybum marianum	Milk thistle
	Sonchus oleraceus	Sow thistle
	Taraxacum officinale	Dandelion
	Tragopogon porrifolius	Salsify
	Uropapppus lindleyi	Silver puffs
	Wyethia angustifolia	Mule's ear
	Wyethia helenoides	Mule's ear
Azollaceae		
	Azolla filicoides	Mosquito fern
Boraginaceae		
	Amsinckia menziesii var. intermedia	Common fiddleneck
	Cynoglossum grande	Hound's tongue
	Myosotis discolor	Forget-me-not
Brassicaceae (Cruciferae)		
	Brassica nigra	Black mustard
	Cardamine oligosperma	Bittercress
	Hirschfeldia incana	Shortpod mustard
	Lepidium nitidum var. *nitidum*	Peppergrass
	Raphanus sativus	Wild radish
	Rorippa nasturtium ssp. *aquatica*	Water cress
Caprifoliaceae		
	Lonicera hispidula	Honeysuckle
	Sambucus mexicana	Blue elderberry
	Symphoricarpos mollis	Snow berry
Caryophyllaceae		
	Cerastium glomeratum	Mouse-eared chickweed
	Silene gallica	California silene
	Spergula arvensis	Spurrey
	Stellaria media	Chickweed
Convolvulaceae		
	Calystegia subacaulis	Morning glory
	Convolvulus arvensis	Bindweed
Cucurbitaceae		
	Marah fabaceus	Wild cucumber
Cyperaceae		
	Carex deweyana ssp. *leptopoda*	Sedge
	Cyperus eragrostis	Nutsedge
Dennstaedtiaceae		

	Pteridium aquilinum	Bracken fern
Dryopteridaceae		
	Athyrium filix-femina	Lady fern
	Dryopteris arguta	Wood fern
	Polystichum munitum	Sword fern
Ericaceae		
	Arbutus menziesii	Pacific madrone
Fabaceae (Leguminosae)		
	Genista monspessulana	Broom
	Lotus scoparius	California broom
	Lotus corniculatus	Bird's foot trefoil
	Lotus wrangelianus	Lotus
	Lupinus bicolor	Miniature lupine
	Lupinus formosus	Lupine
	Lupinus nanus	Lupine
	Lupinus succulentus	Arroyo lupine
	Lupinus variicolor	Varicolor lupine
	Medicago polymorpha	Bur-clover
	Melilotus indica	Yellow sweet-clover
	Trifolium dubium	Small hop-clover
	Trifolium hirtum	Rose clover
	Trifolium microcephalum	Small hop clover
	Trifolium pratense	Red clover
	Vicia benghalensis	Vetch
	Vicia sativa	Common vetch
Fagaceae		
	Quercus agrifolia	Coast live oak
	Quercus lobata	Valley oak
Garryaceae		
	Garrya elliptica	Silk tassel
Gentianaceae		
	Centaurium muhlenbergii	Centaury
Geraniaceae		
	Geranium dissectum	Cut-leaved geranium
	Geranium molle	
	Erodium botrys	Red filaree
	Erodium cicutarium	Filaree
	Erodium moschatum	Filaree
Grossulariaceae		
	Ribes californicum	California gooseberry
	Ribes malvaceum	Chaparral currant
	Ribes menziesii	Canyon gooseberry
	Ribes sp.	Gooseberry
Hippocastanaceae		
	Aesculus californica	California buckeye
Hydrophyllaceae		
	Phacelia ramosissima var. *ramosis.*	Stinging phacelia
	Phacelia sp.	Phacelia
Iridaceae		
	Iris douglasiana	Douglas iris

	Sisyrinchium bellum	Blue-eyed grass
Juncaceae		
	Juncus balticus	Baltic rush
	Juncus bufonius	Toad rush
	Juncus effusus	Common rush
	Luzula comosa	Hairy woodrush
Lamiaceae		
	Lamium amplexicaule	Henbit
	Lepichinia calycina	Pitchersage
	Marrubium vulgare	Horehound
	Mentha arvensis	Peppermint
	Monardellla sp.	Bee-balm
	Satureja douglasii	Yerba buena
	Stachys ajugoides var. *ajugoides*	Hedgenettle
	Stachys ajugoides var. *stricta*	Hedgenettle
Lauraceae		
	Umbellularia californica	California bay
Liliaceae		
	Allium sp.	Wild onion
	Brodiaea elegans	Harvest brodiaea
	Brodiaea terrestris	Earth brodiaea
	Calochortus albus	White mariposa lilly
	Chlorogalum pomeridianum var. pom.	Soap plant
	Dichelostemma capitatum ssp. *capi.*	Blue dicks
	Disporum smithii	Fairy bells
	Trillium albidum	Wake robin
	Triteleia hyacinthina	White triteleia
	Triteleia laxa	Ithuriel's spear
Lythraceae		
	Lythrum hyssopifolia	Loosestrife
Malvaceae		
	Malva bullata	Bull mallow
	Sidalcea sp.	Checker-mallow
Myrtaceae		
	Eucalyptus globulus	Blue gum
Oleaceae		
	Ligustrum sp.	Privet
Onagraceae		
	Camissonia ovata	Suncups
	Clarkia affinis	Clarkia
	Epilobium brachycarpum	Fireweed
	Epilobium ciliatum	Fireweed
Orchidaceae		
	Corallorhiza maculata	Spotted coralroot orchid
	Epipactis gigantea	Streamside orchid
Papaveraceae		
	Eschscholzia californica	California poppy
Pinaceae		
	Pinus radiata	Monterey pine
	Pseudotsuga menziesii	Douglas-fir
Plantaginaceae		

	Plantago erecta	Plantain
	Plantago lanceolata	European plantain
	Plantago ovata	Broad-leaved plantain
Poaceae (Gramineae)		
	Aira caryophyllea	Silver European hairgrass
	Avena barbata	Wild oats
	Briza minor	Small rattlesnake grass
	Bromus carinatus var. *carinatus*	California brome
	Bromus diandrus	Ripgut
	Bromus hordeaceus	Soft chess
	Bromus madritensis ssp. *madritensis*	Foxtail chess
	Bromus madritensis ssp. *rubens*	Red brome
	Bromus sterilis	Sterile brome
	Cortaderia jubata	Pampas grass
	Dactylis glomerata	Orchard grass
	Danthonia californica var. *californica*	California oatgrass
	Elymus glaucus	Blue wildrye
	Festuca arundinacea	Giant fescue
	Glyceria occidentalis	Manna grass
	Hierochloe occidentalis	Vanilla sweetgrass
	Hordeum brachyantherum	Barley
	Hordeum jubatum	Foxtail barley
	Hordeum marinum var. gussoneanum	Barley
	Hordeum murinum	Barley
	Leymus triticoides	Creeping ryegrass
	Lolium multiflorum	Annual ryegrass
	Melica californica	California oatgrass
	Nassella cernua	Noddin needlegrass
	Nassella lepida	Needlegrass
	Nassella pulchra	Purple needlegrass
	Phalaris aquatica	Harding grass
	Piptatherum miliaceum	Smilo grass
	Poa annua	Annual bluegrass
	Polypogon interruptus	Rabbitsfoot grass
	Polypogon monspeliensis	Rabbitsfoot grass
	Taeniatherum caput-medusae	Medusa head
	Vulpia bromoides	Annual fescue
	Vulpia myuros	Annual fescue
Polygonaceae		
	Eriogonum nudum var. *nudum*	Naked buckwheat
	Polygonum aviculare	Smartweed
	Rumex acetosella	Sheep sorrel
	Rumex crispus	Curly dock
	Rumex pulcher	Dock
Polyodiaceae		
	Polypodium californicum	California polypody
Portulacaceae		
	Calandrinia ciliata	Red maids
	Claytonia exigua ssp. *exigua*	Claytonia
	Claytonia perfoliata	Miner's lettuce

Primulaceae		
	Anagallis arvensis	Scarlet pimpernel
Pteridaceae		
	Adiantum jordanii	Maidenhair fern
	Pellaea andromedaefolia	Coffee fern
	Pentagramma triangularis	Goldback fern
Ranunculaceae		
	Aquilegia formosa	Wild columbine
	Delphinium californicum ssp. *calif.*	Larkspur
	Ranunculus californicus	California buttercup
	Thalictrum fendleri	Meadow-rue
Rhamnaceae		
	Ceanothus thyrsiflorus	Blue blossom
	Rhamnus californica	California coffeeberry
Rosaceae		
	Cotoneaster pannosa	Cotoneaster
	Fragaria vesca	Woodland strawberry
	Heteromeles arbutifolia	Toyon
	Holodiscus discolor	Oceanspray
	Prunus sp.	Cherry
	Rosa gymnocarpa	Wood rose
	Rubus ursinus	California blackberry
Rubiaceae		
	Galium aparine	Goosegrass
	Galium porrigens	Climbing bedstraw
Salicaceae		
	Salix laevigata	Red willow
Saxifragaceae		
	Lithophragma heterophyllum	Woodland star
Scrophulariaceae		
	Bellardia trixago	Bellardia
	Castilleja attenuata	Valley tassels
	Castilleja exserta ssp. *exserta*	Purple owl's clover
	Castilleja densiflora	Owl's clover
	Mimulus aurantiacus	Sticky golden monkeyflower
	Pedicularis densiflora	Indian warrior
	Scrophularia californica	California beeplant
	Verbascum thapsus	Mullein
Solanaceae		
	Solanum americanum	Nightshade
	Solanum umbelliferum	Blue-witch
Thymelaeaceae		
	Dirca occidentalis	Western leatherwood
Typhaceae		
	Typha latifolia	Broadleaf cattail
Violaceae		
	Viola ocellata	Western heart's ease