Avocet Research Associates

Memorandum

October 4, 2007 (addendum added November 5, 2007)

RE: Albany Plateau Burrowing Owl Project: Scope and Budget—Year 1 (2nd revision)

Task #1. Plan, design, and consult with city during construction of a system of burrows.

Task #2. Assist the City in the preparation of a "Mitigation Monitoring and Management Plan."

Task #3. Conduct monitoring of the site to determine occupancy by burrowing owls.*

Task #4. Prepare annual report.

Task		Labor (hrs)	Rate	Cost	Subtotal
Task #1	Plan & design	4	$125	$500.00	
	Construction	6	$125	$750.00	$1250.00
Task #2	Monitoring (4 visits)	16	$125		$2000.00
Task #3	Report prep	8	$125	$1000.00	$1000.00
					$4250.00
Task #4	Admin OH (0.15)				$637.50
	travel	450 mi.	0.45/mi	$202.50	$202.50
Total cost					**$5090.00**

Jules Evens

Jules Evens, Principal

* See Attachment A. for monitoring protocols.

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Addendum (added November 5, 2007)

Budget for monitoring the site for occupancy by Burrowing owls: Years 2 thru 5.

Year 1 (2008) is covered in the Oct 4 memorandum, above.

As per the Burrowing Owl Survey Protocols (attached) the site will be visited 4 times per year to evaluate occupancy and use by owls. The visits will be distributed evenly through the nesting season, February through June (although the protocols say thru August, that is not the case for the San Francisco Bay area), at approximately one month intervals.

Cost*

Year 2 (2009): $2100.00

Year 3 (2010): $2205.00

Year 4 (2011): $2315.25

Year 5 (2012): $2431.00.

Cost includes report preparation, travel, and overhead. No additional costs will be charged to the City of Albany.

Jules Evens

JULES EVENS, PRINCIPAL

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Attachment A.

Source: Santa Cruz Predatory Bird Group web site.

SECTION 1 - BURROWING OWL SURVEY PROTOCOL

PHASE I: HABITAT ASSESSMENT

The first step in the survey process is to assess the presence of burrowing owl habitat on the project site including a 150-meter (approx. 500 ft.) buffer zone around the project boundary (Thomsen 1971, Martin 1973).

Burrowing Owl Habitat Description

Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974). Suitable owl habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat: both natural and artificial burrows provide protection, shelter, and nests for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also may use man-made structures, such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement.

Occupied Burrowing Owl Habitat

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Occupancy of suitable burrowing owl habitat can be verified at a site by an observation of at least one burrowing owl, or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance. Burrowing owls exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992). A site should be assumed occupied if at least one burrowing owl has been observed occupying a burrow there within the last three years (Rich 1984).
The Phase II burrow survey is required if burrowing owl habitat occurs on the site. If burrowing owl habitat is not present on the project site and buffer zone, the Phase II burrow survey is not necessary. A written report of the habitat assessment should be prepared (Phase IV), stating the reason(s) why the area is not burrowing owl habitat.

PHASE II: BURROW SURVEY

1. A survey for burrows and owls should be conducted by walking through suitable habitat over the entire project site and in areas within 150 meters (approx 500 ft.) of the project impact zone. This 150-meter buffer zone is included to account for adjacent burrows and foraging habitat outside the project area and impacts from factors such as noise and vibration due to heavy equipment which could impact resources outside the project area.

2. Pedestrian survey transects should be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines should be no more than 30 meters (approx. 100 ft.), and should be reduced to account for differences in terrain, vegetation density, and ground surface visibility. To efficiently survey projects larger than 100 acres, it is recommended that two or more surveyors conduct concurrent surveys. Surveyors should maintain a minimum distance of 50 meters (approx. 160 ft.) from any owls or occupied burrows. It is important to minimize disturbance near occupied burrows during all seasons.
3. If burrows or burrowing owls are recorded on the site, a map should be prepared of the burrow concentration areas. A breeding season survey and census (Phase III) of burrowing owls is the next step required.
4. Prepare a report (Phase IV) of the burrow survey stating whether or not burrows are present.
5. A preconstruction survey may be required by project-specific mitigations no more than 30 days prior to ground disturbing activity.

PHASE III: BURROWING OWL SURVEYS, CENSUS AND MAPPING

If the project site contains burrows that could be used by burrowing owls, then survey efforts should be directed towards determining owl presence on the site. Surveys in the breeding season are required to describe if, when, and how the site is used by burrowing owls. If no owls are observed using the site during the breeding season, a winter survey is required.

Survey Methodology

A complete burrowing owl survey consists of four site visits. During the initial site visit examine burrows for owl sign and map the locations of occupied burrows. Subsequent observations should be conducted from as many fixed points as necessary to provide visual coverage of the site using spotting scopes or binoculars. It is important to minimize disturbance near occupied burrows during all seasons. Site visits must be repeated on four separate days. Conduct these visits from two hours before sunset to one hour after or from one hour before to two hours after sunrise. Surveys should be conducted during weather that is conducive to observing owls outside their burrows. Avoid surveys during heavy rain, high winds (> 20 mph), or dense fog.

Nesting Season Survey. The burrowing owl nesting season begins as early as February 1 and continues through August 31 (Thomsen 1971, Zarn 1974). The timing of nesting activities may vary with latitude and climatic conditions. If possible, the nesting season survey should be conducted during the peak of the breeding season, between April 15 and July 15. Count and map all burrowing owl sightings, occupied burrows, and burrows with owl sign. Record numbers of pairs and juveniles, and behavior such as courtship and copulation. Map the approximate territory boundaries and foraging areas if known.

Survey for Winter Residents (non-breeding owls). Winter surveys should be conducted between December 1 and January 31, during the period when wintering owls are most likely to be present. Count and map all owl sightings, occupied burrows, and burrows with owl sign.

Surveys Outside the Winter and Nesting Seasons. Positive results (i.e., owl sightings) outside of the above survey periods would be adequate to determine presence of owls on site. However, results of these surveys may be inadequate for mitigation planning

because the numbers of owls and their pattern of distribution may change during winter and nesting seasons. Negative results during surveys outside the above periods are not conclusive proof that owls do not use the site.

Preconstruction Survey. A preconstruction survey may be required by project-specific mitigations and should be conducted no more than 30 days prior to ground disturbing activity.

PHASE IV: RESOURCE SUMMARY, WRITTEN REPORT

A report should be prepared for CDFG that gives the results of each Phase of the survey protocol, as outlined below.

Phase I: Habitat Assessment

1. Date and time of visit(s) including weather and visibility conditions; methods of survey.
2. Site description including the following information: location, size, topography, vegetation communities, and animals observed during visit(s).
3. An assessment of habitat suitability for burrowing owls and explanation.
4. A map of the site.

Phase II: Burrow Survey

1. Date and time of visits including weather and visibility conditions; survey methods including transect spacing.
2. A more detailed site description should be made during this phase of the survey protocol including a partial plant list of primary vegetation, location of nearest freshwater (on or within one mile of site), animals observed during transects.
3. Results of survey transects including a map showing the location of concentrations of burrow(s) (natural or artificial) and owl(s), if present.

Phase III: Burrowing Owl Surveys, Census and Mapping

1. Date and time of visits including weather and visibility conditions; survey methods including transect spacing.
2. Report and map the location of all burrowing owls and owl sign. Burrows occupied by owl(s) should be mapped indicating the number of owls at each burrow. Tracks, feathers, pellets, or other items (prey remains, animal scat) at burrows should also be reported.
3. Behavior of owls during the surveys should be carefully recorded (from a distance) and reported. Describe and map areas used by owls during the surveys. Although not required, all behavior is valuable to document including feeding, resting, courtship, alarm, territorial, parental, or juvenile behavior.
4. Both winter and nesting season surveys should be summarized. If possible include information regarding productivity of pairs, seasonal pattern of use, and include a map of the colony showing territorial boundaries and home ranges.
5. The historical presence of burrowing owls on site should be documented, as well as the source of such information (local bird club, Audubon society, other biologists, etc.).

SECTION 2 - BURROWING OWL MITIGATION GUIDELINES

The objective of these mitigation guidelines is to minimize impacts to burrowing owls and the resources that support viable owl populations. These guidelines are intended to provide a decision-making process that should be implemented wherever there is potential for an action or project to adversely affect burrowing owls or their resources. The process begins with a four-step survey protocol (see *Burrowing Owl Survey Protocol*) to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. When surveys confirm occupied habitat, the mitigation measures described below are followed to minimize impacts to burrowing owls, their burrows and foraging habitat on the site. These guidelines emphasize maintaining burrowing owls and their resources in place rather than minimizing impacts through displacement of owls to an alternate site.
Mitigation actions should be carried out prior to the burrowing owl breeding season, generally from February 1 through August 31 (Thomsen 1971, Zarn 1974). The timing of nesting activity may vary with latitude and climatic conditions. Project sites and buffer zones with suitable habitat should be resurveyed to ensure no burrowing owls have occupied them in the interim period between the initial surveys and ground disturbing activity. Repeat surveys should be conducted not more than 30 days prior to initial ground disturbing activity.

DEFINITION OF IMPACTS

1. Disturbance or harassment within 50 meters (approx. 160 ft.) of occupied burrows.
2. Destruction of burrows and burrow entrances. Burrows include structures such as culverts, concrete slabs and debris piles that provide shelter to burrowing owls.
3. Degradation of foraging habitat adjacent to occupied burrows.

GENERAL CONSIDERATIONS

1. Occupied burrows should not be disturbed during the nesting season, from February 1 through August 31, unless the Department of Fish and Game verifies that the birds have not begun egg-laying and incubation or that the juveniles from those burrows are foraging independently and capable of independent survival at an earlier date.
2. A minimum of 6.5 acres of foraging habitat, calculated on a 100-m (approx. 300 ft.) foraging radius around the natal burrow, should be maintained per pair (or unpaired resident single bird) contiguous with burrows occupied within the last three years (Rich 1984, Feeney 1992). Ideally, foraging habitat should be retained in a long-term conservation easement.
3. When destruction of occupied burrows is unavoidable, burrows should be enhanced (enlarged or cleared of debris) or created (by installing artificial burrows) in a ratio of 1:1

in adjacent suitable habitat that is contiguous with the foraging habitat of the affected owls.
4. If owls must be moved away from the disturbance area, passive relocation (see below) is preferable to trapping. A time period of at least one week is recommended to allow the owls to move and acclimate to alternate burrows.
5. The mitigation committee recommends monitoring the success of mitigation programs as required in Assembly Bill 3180. A monitoring plan should include mitigation success criteria and an annual report should be submitted to the California Department of Fish and Game.

AVOIDANCE

Avoid Occupied Burrows

No disturbance should occur within 50 m (approx. 160 ft.) of occupied burrows during the non-breeding season of September 1 through January 31 or within 75 m (approx. 250 ft.) during the breeding season of February 1 through August 31. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls (with or without dependent young) or single unpaired resident bird.

MITIGATION FOR UNAVOIDABLE IMPACTS

On-site Mitigation

On-site passive relocation should be implemented if the above avoidance requirements cannot be met. Passive relocation is defined as encouraging owls to move from occupied burrows to alternate natural or artificial burrows that are beyond 50 m from the impact zone and that are within or contiguous to a minimum of 6.5 acres of foraging habitat for each pair of relocated owls (Figure 3). Relocation of owls should only be implemented during the non-breeding season. On-site habitat should be preserved in a conservation easement and managed to promote burrowing owl use of the site.
Owls should be excluded from burrows in the immediate impact zone and within a 50 m (approx. 160 ft.) buffer zone by installing one-way doors in burrow entrances. One-way doors should be left in place 48 hours to insure owls have left the burrow before excavation. One alternate natural or artificial burrow should be provided for each burrow that will be excavated in the project impact zone. The project area should be monitored daily for one week to confirm owl use of alternate burrows before excavating burrows in the immediate impact zone. Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bags should be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow.

Off-site Mitigation

If the project will reduce suitable habitat on-site below the threshold level of 6.5 acres per relocated pair or single bird, the habitat should be replaced off-site. Off-site habitat must be suitable burrowing owl habitat, as defined in the *Burrowing Owl Survey Protocol*, and the site approved by CDFG. Land should be purchased and/or placed in a conservation

easement in perpetuity and managed to maintain suitable habitat. Off-site mitigation should use one of the following ratios:

1. Replacement of occupied habitat with occupied habitat: 1.5 times 6.5 (9.75) acres per pair or single bird.
2. Replacement of occupied habitat with habitat contiguous to currently occupied habitat: 2 times 6.5 (13.0) acres per pair or single bird.
3. Replacement of occupied habitat with suitable unoccupied habitat: 3 times 6.5 (19.5) acres per pair or single bird.

SECTION 3 - LEGAL STATUS

The burrowing owl is a migratory bird species protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R. 21). Sections 3503, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (March 1 - August 15, annually). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) or the loss of habitat upon which the birds depend is considered "taking" and is potentially punishable by fines and/or imprisonment. Such taking would also violate federal law protecting migratory birds (e.g., MBTA).
The burrowing owl is a Species of Special Concern to California because of declines of suitable habitat and both localized and statewide population declines. Guidelines for the Implementation of the California Environmental Quality Act (CEQA) provide that a species be considered as endangered or "rare" regardless of appearance on a formal list for the purposes of the CEQA (Guidelines, Section 15380, subsections b and d). The CEQA requires a mandatory findings of significance if impacts to threatened or endangered species are likely to occur (Sections 21001{c}, 21083. Guidelines 15380, 15064, 15065). Avoidance or mitigation must be presented to reduce impacts to less than significant levels.

CEQA AND SUBDIVISION MAP ACT

CEQA Guidelines Section 15065 directs that a mandatory finding of significance is required for projects that have the potential to substantially degrade or reduce the habitat of, or restrict the range of a threatened or endangered species. CEQA requires agencies to implement feasible mitigation measures or feasible alternatives identified in EIR's for projects which will otherwise cause significant adverse impacts (Sections 21002, 21081, 21083; Guidelines, sections 15002, subd. (a)(3), 15021, subd. (a)(2), 15091, subd. (a).). To be legally adequate, mitigation measures must be capable of "avoiding the impact altogether by not taking a certain action or parts of an action"; "minimizing impacts by limiting the degree or magnitude of the action and its implementation"; "rectifying the impact by repairing, rehabilitating or restoring the impacted environment"; "or reducing

or eliminating the impact over time by preservation and maintenance operations during the life of the action." (Guidelines, Section 15370).
Section 66474 (e) of the Subdivision Map Act states "a legislative body of a city or county shall deny approval of a tentative map or parcel map for which a tentative map was not required, if it makes any of the following findings:...(e) that the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish and wildlife or their habitat". In recent court cases, the court upheld that Section 66474(e) provides for environmental impact review separate from and independent of the requirements of CEQA (Topanga Assn. for a Scenic Community v. County of Los Angeles, 263 Cal. Rptr. 214 (1989).). The finding in Section 66474 is in addition to the requirements for the preparation of an EIR or Negative Declaration.