Table Mountain Conservation and Mitigation Bank
Prospectus
Butte County, California

Prepared for:
The U.S. Army Corps of Engineers, Sacramento Regulatory Office,
U.S. Environmental Protection Agency, Region IX,
The U.S. Fish and Wildlife Service,
and
The California Department of Fish and Game

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September 30, 2009
Executive Summary

**Project Name**
Table Mountain Conservation and Mitigation Bank (TMCBM)

**Site Description**
The proposed 332-acre mitigation bank consists of two properties containing over 258 acres of California annual grassland, 28.6 acres of vernal pool/swale habitat supporting Vernal Pool Fairy Shrimp, 9.4 acres of Clayflat wetlands, and over 259 acres of Burrowing Owl and Swainson's Hawk habitat situated in central Butte County, California. *TMCMB Site 1 - Shauna Downs* encompasses 210.9 acres of land located approximately 7 miles southeast of the City of Chico, on the eastern side of Highway 99 and south of Falager Court and Durham-Pentz Road. *TMCMB Site 2 - Linkside Place* encompasses 121.1 acres and is located approximately 10 miles southeast of Shauna Downs and 3 miles west of the City of Oroville along Highway 162.

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**Project Description**
I G Properties Limited, LLC, proposes development of an entrepreneurial mitigation bank on two properties located in central Butte County. The purpose of Table Mountain Conservation and Mitigation Bank is to provide access to local mitigation credits for vernal pool and swale complexes, special-status plant resources including Greene's Tuctoria, and special-status wildlife resources including Vernal Pool Tadpole Shrimp, Vernal Pool Fairy Shrimp, and Burrowing Owls. Bank credits would be used to offset future, unavoidable impacts that could result from various development projects in the northern Sacramento Valley area.

The overall objective of the Bank is to preserve approximately 332 acres of land that support 28.6 acres of vernal pool/vernal swale complex, 3.6 acres of riparian woodland, 12.1 acres of seasonal wetlands (including Clayflat wetlands), and 2.8 miles of perennial and seasonal streams. Additionally, creation of approximately 7.6 acres of vernal pool/vernal swale complex and maintenance of 258 acres of surrounding uplands as foraging habitat for Swainson's Hawks and breeding and foraging habitat for Burrowing Owls is proposed.

Once available credits are sold, the parcels shall be dedicated as conservation easements managed by the Northern California Regional Land Trust (NCRLT), thus ensuring the preservation of the land in perpetuity.
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Attachments

Volume II: Technical Appendix - TMCMB Site 1, Shauna Downs

ATTACHMENT A  Biological Assessment Report for the Proposed Table Mountain Conservation and Mitigation Bank Site 1- Shauna Downs, Butte County, California

ATTACHMENT B  Pre-Verification Jurisdictional Waters Delineation Report Shauna Downs Property, Butte County, California, USACE ID# 200200475

ATTACHMENT C  Preliminary Title Report- TMCMB Site 1, Shauna Downs
Mineral Rights Report – Shauna Downs
Exceptions, Exclusions, and Easements

ATTACHMENT D  Cultural Resources Inventory of the Proposed Shanna Ranch Project, Butte County, California

ATTACHMENT E  Phase I Environmental Site Assessment of APN# 040-130-047-000, Chico, Butte County, California

Volume III: Technical Appendix - TMCMB Site 2, Linkside Place

ATTACHMENT F  Biological Assessment Report for the Proposed Table Mountain Conservation and Mitigation Bank Site 2 – Linkside Place, Butte County, California

ATTACHMENT G  Third Revised Wetland Delineation Report of Potentially Expanded Wetland Features, Following a Previously Verified Delineation, at Linkside Place Development, City of Oroville, Butte County, California

ATTACHMENT H  Preliminary Title Report – TMCMB Site 2, Linkside Place
Mineral Rights Report – Linkside Place
Exceptions, Exclusions, and Easements

ATTACHMENT I  Cultural Resources Study for the Linkside Place Development Project, Oroville, Butte County, California

ATTACHMENT J  Phase I Environmental Site Assessment of Linkside Place, APN #030-260,-018,-019 and -025, Oroville, Butte County, California
1 Banking Agreement

This agreement, entered into by I G Properties Limited, LLC, the US Environmental Protection Agency (USEPA); California Department of Fish and Game (CDFG); US Fish and Wildlife Service (USFWS); and the US Army Corps of Engineers (USACE), is for the purpose of establishing the Table Mountain Conservation and Mitigation Bank (TMCMB or “Bank”). The Bank will be used to mitigate unavoidable wetland impacts approved through USACE, the agency responsible for administering Section 404 of the Clean Water Act, and impacts to other special-status resources approved by USFWS and CDFG, agencies administering the Endangered Species Act, portions of the National Environmental Protection Act, and the California Environmental Quality Act. The creation, operation, and use of the Bank will be in accordance with the Table Mountain Conservation and Mitigation Bank Prospectus, attached to this agreement.

The objective of the Bank is to preserve approximately 28.6 acres of vernal pool/vernal swale complex, 3.6 acres of riparian woodland, 12.1 acres of seasonal wetlands, 2.8 miles of seasonal and perennial streams, create 7.6 acres of vernal pool/vernal swale complex, and maintain 258 acres of surrounding uplands as foraging habitat for Swainson’s Hawks and breeding/foraging habitat for Burrowing Owls.

The primary geographic service area for this bank will be portions of the lower Sacramento River watershed, including the lower portion of the Northeastern Sacramento Valley Vernal Pool Region, or portions of Tehama, Butte, Yuba, and Sutter Counties. At the discretion of the USACE, credits may be approved outside of the primary geographic service area.

IN WITNESS WHEREOF, the parties have executed this agreement on the date herein last written.

BY: _______________________ Date Signed:_______________
U.S. Environmental Protection Agency Region 9 Administrator

BY: _______________________ Date Signed:_______________
U.S. Fish and Wildlife Service

BY: _______________________ Date Signed:_______________
U.S. Army Corps of Engineers, Sacramento District Commander
1.1 Scope of Document

This document proposes and describes the establishment, use, operation and maintenance of a mitigation bank to offer credits for compensatory mitigation of wetland fill, take of rare and endangered species, and loss of critical habitat.

This prospectus was developed by I G Properties Limited, LLC, acting through the environmental consulting firm, Eco-Analysts, and presented to the U.S. Army Corps of Engineers and other stakeholding regulatory agencies, including the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the California Department of Fish and Game (CDFG), and other federal, State, or local stakeholders comprising the Interagency Review Team (IRT).

1.2 Document Organization

This mitigation bank prospectus (Prospectus) adheres to USACE guidance and requirements for mitigation banking and compensatory mitigation activities as defined by 33 CFR §332.1-8, under the authority of 33 U.S.C. 401 et seq., 33 U.S.C. 1344; and Pub. L. 108-136 (73 Federal Register19670, Apr. 10, 2008)

Organization of this document is intended to present the required prospectus elements in a clear, understandable manner that preserves the order of the required elements described in 33 CFR §332.8, Mitigation banks and in-lieu fee programs, as closely as possible.
2 Bank Location And Ownership

2.1 Project Description

I G Properties Limited, LLC, proposes development of an entrepreneurial mitigation bank on two properties located in central Butte County. The purpose of Table Mountain Conservation and Mitigation Bank (TMCMB) is to provide access to local mitigation credits for vernal pool and swale complexes, special-status plant resources including Greene’s Tuctoria and Hoover’s Spurge, and special-status wildlife resources including Vernal Pool Tadpole Shrimp, Vernal Pool Fairy Shrimp, and Burrowing Owls. Bank credits would be used to offset future, unavoidable impacts that could result from various development projects in the northern Sacramento Valley area.

The overall objective of the Bank is to preserve approximately 332 acres of land that support 28.6 acres of vernal pool/vernal swale complex, 3.6 acres of riparian woodland, 12.1 acres of seasonal wetlands, and 2.8 miles of perennial and seasonal streams. Additionally, creation of approximately 7.6 acres of vernal pool/vernal swale complex and maintenance of 258 acres of surrounding upland grasslands as foraging habitat for Swainson’s Hawks and breeding and foraging habitat for Burrowing Owls is proposed.

Once available credits are sold, the parcels shall be dedicated as conservation easements managed by the Northern California Regional Land Trust (NCRLT), thus ensuring the preservation of the land in perpetuity.

2.2 Location

The proposed mitigation bank, Table Mountain Conservation and Mitigation Bank (TMCMB or “Bank”) shall be established as an umbrella bank and consist initially of two properties, TMCMB Site 1 - Shauna Downs and TMCMB Site 2 - Linkside Place. The sites, which are located approximately 10.5 miles apart, both lie on the eastern edge of the Sacramento Valley within the transition zone between the Valley floor and the lower slopes of the foothills of the Sierra Nevada and Cascade Range boundary (Figure 1). These sites contain similar Northeastern California wetland habitat with strong ecological values and functions. An umbrella banking agreement is being proposed in anticipation of the future addition of similar parcels, such as portions of parcels adjoining TMCMB Site 1, under the same conditions and agreement.

TMCMB Site 1 (Shauna Downs) is located approximately 7 miles southeast of the City of Chico, on the eastern side of Highway 99 at the Butte College turnoff, south of Falager Court and Durham-Pentz Road (Figures 2 and 3).
TMCMB Site 2 (Linkside Place) is located approximately 10.5 miles southeast of Site 1 and approximately 3 miles west of the City of Oroville along Highway 162, immediately west of the Table Mountain Golf Course and Oroville Municipal Airport (Figures 4 and 5). The City of Oroville currently manages a vernal pool mitigation site on Oroville Municipal Airport lands that is situated directly adjacent to the proposed bank.

2.3 Property Legal Description and Ownership

TMCMB Site 1 – Shauna Downs is a 210.9 acre property located within Section 36 of Township 21 North, Range 2 East, MDM, as depicted on the Hamlin Canyon 7.5’ topographic quadrangle map. The property is also known as Butte County Assessor’s Parcel Number (APN) 040-130-047-000.

TMCMB Site 2 – Linkside Place is a 121.1 acre property located within the northeastern quarter and southeastern quarter of Section 21 and the southeastern quarter of Section 16 of Township 19N, Range 3E, MDM, as depicted on the USGS Biggs, California, 7.5’ topographic quadrangle map. Butte County Assessor Parcel Numbers for the property are 030-260-018, -019, -025, and a ~4.25 acre portion of -000.

Both parcels are owned by I G Properties Limited, LLC (Attachment H), project sponsor.
Figure 1. Table Mountain Conservation and Mitigation Bank regional location map.
Figure 2. Location and property boundary map of TMCMB Site 1 - Shauna Downs.
Figure 3. Aerial photograph of TMCMB Site 1 - Shauna Downs.
Figure 4. Location and property boundary map of TMCMB Site 2 - Linkside Place.
Figure 5. Aerial photograph of TMCMB Site 2 – Linkside Place.
3 Bank Goals and Objectives

3.1 Purpose and Objectives

The purpose of the Table Mountain Conservation and Mitigation Bank is to create a multiple-user mitigation bank in Butte County’s lower Butte Creek and lower Feather River watersheds. Bank credits will be used to offset future, unavoidable impacts to vernal pools and wetland complexes, aquatic invertebrates, special-status plants, riparian woodland, Burrowing Owls and Swainson’s Hawks, resulting from various types of development within the northern Central Valley.

Objectives for the Bank include the preservation of ecologically important wetland habitat supporting special-status species, restoration and enhancement of existing wetlands and surrounding uplands in cases where degradation has occurred, and limited creation of additional wetlands in areas where they can be naturally maintained.

3.2 General Need for the Mitigation Bank

Vernal pool landscapes are a rapidly declining natural resource. Vernal pool habitats, which are heavily concentrated at lower foothill elevations, exist in areas with increasing development pressures and increasingly conflicting land uses. Throughout California, vernal pool habitat was reduced from 1,220,814 acres in 1990-1995 (Holland 1996) to 1,088,580 acres in 2005. This reduction constitutes a loss of more than 132,000 acres, or approximately 10.8% of remaining wetlands in the state (Holland and Hollander 2007). If this rate of loss, which is equivalent to an annual loss of about 1% per year, continues, almost no vernal pool habitat will remain intact by 2097. Since 1990, more than 16,996 acres of vernal pool habitat within the northern Central Valley have been destroyed. Contrary to the position taken by the State of California of “no net loss of wetlands” in the California Wetlands Conservation Policy of 1993, loss of vernal pool habitat appears to be accelerating.

Increasing development pressure within the northern Central Valley of California is affecting several other important habitats and protected species, particularly riparian corridors and grasslands and their associated fauna and flora. The Burrowing Owl and Swainson’s Hawk are two grassland species of concern in California for which the CDFG has developed specific mitigation requirements and protocol; however, very few mitigation banks for these birds exist north of Sacramento. Similarly, options for mitigating impacts to riparian habitats are limited in this region.
The establishment of mitigation banks is needed to compensate unavoidable impacts resulting from development projects in Butte, Tehama, Yuba, and Sutter Counties. At the time this prospectus was developed, local Butte County developers were required to purchase mitigation credits outside of the area or pay into an In-Lieu Fee program.

Establishment of the Table Mountain Conservation and Mitigation Bank will provide many ecological and economic benefits, including:

- Long-term preservation of vernal pools and swales and seasonal wetlands in central and southern Butte County, where the vast majority of vernal pool supporting lands are privately held and potentially subject to future disturbance;
- Preservation of sub-populations of *Branchinecta lynchi* (Vernal Pool Fairy Shrimp) at both TMCMB sites;
- Preservation of a sub-population of *Lepidurus packardi* (Vernal Pool Tadpole Shrimp) that is surrounded by USFWS designated critical habitat at TMCMB Site 1;
- Preservation of *Athene cunicularia* (Burrowing Owl) burrows and foraging habitat at TMCMB Site 1 and enhancement of foraging and breeding habitat at TMCMB Site 2;
- Preservation of a sub-population of *Tuctoria greenii* (Greene's Tuctoria) at TMCMB Site 1;
- Preservation of a 2.8-mile, or 23.8-acre, section of Little Dry Creek, its intermittent tributaries, and its riparian woodland habitat at TMCMB Site 1; and,
- Preservation of Swainson's Hawk foraging habitat in the grasslands at TMCMB Site 2.

### 3.3 Proposed Geographic Service Areas

The Table Mountain Conservation and Mitigation Bank will provide compensatory mitigation credits for vernal pool and vernal swale complex preservation, riparian forest habitat preservation, Burrowing Owl breeding and foraging and Swainson’s Hawk foraging habitat preservation, and seasonal wetland restoration and creation. Five different geographic service areas (Figures 6-10) are proposed for the different credit types (Table 1). All service areas lie within the Sacramento River watershed.
The proposed geographic service area for all vernal pool and vernal swale credits on both sites (Figure 6) corresponds to the Northeastern Sacramento Valley Vernal Pool Region as described by Todd Keeler-Wolf et al. (1998) in their *California Vernal Pool Assessment Preliminary Report*. This service area does not follow a particular watershed boundary because vernal pool and vernal swale complexes tend to be clustered in a north-south orientation along the foothills of the Cascade and Sierra Nevada Ranges (typically at elevations ranging from 150 ft to about 300 ft above mean sea level) rather than along the northeast-southwest alignment of watersheds in the area. The service area roughly corresponds to the northern half of the California Department of Water Resources East Sacramento watershed.

For Site 1 – Shauna Downs, the proposed geographic service area for seasonal wetland preservation and for Section 404 WOTUS / OWOTUS will correspond to the Lower Butte (HUC 18020105) watershed boundary (Figure 7).

For Site 2 – Linkside, the proposed geographic service area for seasonal wetland preservation will correspond to the Lower Feather (HUC 18020106) watershed boundary (Figure 8).

The proposed geographic service area for Burrowing Owl breeding and foraging habitat is based upon data currently being used to develop the Butte Regional Habitat Conservation Plan/Natural Community Conservation Plan (Butte Regional HCP/NCCP). It encompasses blue oak woodland and California annual grassland, which are the habitat types most frequently associated with Burrowing Owls on the eastern edge of the Sacramento Valley, and represents the extent of habitat within Butte County where Burrowing Owls have the potential to occur (Figure 9). The Butte Regional HCP/NCCP habitat model likely overestimates the extent of suitable habitat because the land cover types represent gross vegetation differences and likely include areas where vegetation is too tall or topography is unsuitable. Whether or not Burrowing Owls occupy a certain site within these areas will be determined by the presence of short, sparse vegetation, level or gently sloping topography, suitable burrows and prey.

The proposed geographic service area for foraging habitat for Swainson’s Hawks was based on current CDFG mitigation guidelines (CDFG 1994), which identify croplands, grasslands and wetlands within 10 miles of active Swainson’s Hawks nests as important foraging habitat. According to the guidelines, adverse impacts to these lands will trigger CEQA. The service area for Swainson’s Hawks was designed so that adverse impacts to similar types of foraging habitat can be mitigated through purchase of credits on Linkside property if: 1) the properties are located within a 10-mile radius of any active nest i.e., one used within the last 5 years, as defined by CDFG guidelines and 2) that nest falls within 10 miles of the Linkside property, and 3) are located within Butte County. These conditions equate to a circular service area with a 20-mile radius centered on the Linkside property; properties falling within the service area required to mitigate by the presence of nest that is within 10 miles of Linkside will qualify for
purchase from the Bank. The 20-mile circle was clipped at the Butte County boundary. The land cover types identified in the Butte Regional HCP/NCCP as foraging habitat for Swainson's Hawks (i.e., all irrigated cropland, irrigated pasture, grasslands, grassland with vernal swale complex, vernal pool, altered vernal pool and managed wetlands, located within 10 miles of known Swainson's Hawk nesting sites) and locations of known nests within and outside of a 10-mile radius of Linkside Place are overlain on the service area for information purposes (Figure 10).

The purchase of Bank credits may or may not represent “in kind” mitigation for all habitats identified as foraging habitat for Swainson’s Hawks in the Butte Regional Habitat Conservation Plan. Therefore, the lead agency will determine whether or not a developer may qualify to purchase credits from the TCMBM for as mitigation for impacts to Swainson’s Hawk foraging habitat.
Figure 6. Proposed geographic service area for vernal pool and vernal swale complex habitats.
Figure 7. Proposed geographic service area for Seasonal wetland preservation and Sec. 404 WOTUS / OWOTUS credits for Site 1 - Shauna Downs.
Figure 8. Proposed geographic service area for Seasonal wetland preservation for Site 2-Linkside Place.
Figure 9. Proposed geographic service area for Burrowing Owl breeding and foraging habitat for Site 1 - Shauna Downs.
Figure 10. Proposed geographic service area for Swainson’s Hawk foraging habitat for Site 2- Linkside Place (see Section 3.3 for a complete description).
3.4 Proposed Number and Kind of Credits within the Bank

The proposed numbers of credits available for purchase from TCMBM have been calculated based on acreages of available habitat or habitat types using verified wetland delineation maps. In the case of grassland raptors, credit acreages are considered equivalent to available upland grassland habitats within the sites. (Table 1; Figures 11 and 12).

Vernal pool / Swale creation is proposed for both Shauna Downs and Linkside Place. The areas suitable for creation occur in areas where past land uses have significantly degraded land which previously supported vernal pools, swales, and grassland. These areas are both generally flat and underlain by a shallow restrictive soil layer or layers.

The areas proposed for vernal pool / swale creation at Linkside Place have been modified by earth-moving, road construction, and other activities. Approximately 8.1 acres of disturbed land within Linkside Place is suitable for vernal pool /grassland complex creation, in which 2.0 acres of created vernal pools are proposed for creation within a surrounding matrix of restored/enhanced grassland (Table 1). The grassland surrounding created vernal pools will be restored to achieve a similar plant species composition similar to adjacent, relatively undisturbed grasslands on similar soils within the site or immediate vicinity. The restored grassland will be proposed as additional foraging habitat for Swainson’s Hawk (Table 1).

The areas proposed for vernal pool / swale creation at Shauna Downs have been modified by grading, intensive cattle grazing and vehicle crossing. Approximately 15.4 acres of disturbed land within Shauna Downs is suitable for vernal pool /grassland complex creation, in which 5.6 acres of created vernal pools are proposed within a surrounding matrix of restored/enhanced grassland (Table 1). The grassland surrounding created vernal pools will be restored to achieve a similar plant species composition similar to adjacent, relatively undisturbed grasslands on similar soils within the site or immediate vicinity. The restored grassland will be proposed as additional foraging and breeding habitat for Burrowing Owls (Table 1).
Table 1. Proposed Available Preservation Credits for Table Mountain Conservation and Mitigation Bank.

<table>
<thead>
<tr>
<th>Type of credit</th>
<th>Site 1 - Shauna Downs (acres - credits)</th>
<th>Site 2- Linkside Place (acres - credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vernal Pool / Swale Preservation (Vernal Pool Fairy Shrimp)</td>
<td>12.0 acres (credits)</td>
<td>13.2 acres (credits)</td>
</tr>
<tr>
<td>Vernal Pool / Swale Preservation (Vernal Pool Tadpole Shrimp)</td>
<td>3.4 acres (credits)</td>
<td>0</td>
</tr>
<tr>
<td>Seasonal Wetland Preservation</td>
<td>10.0 acres (credits)</td>
<td>2.1 acres (credits)</td>
</tr>
<tr>
<td>Sec. 404 WOTUS / OWOTUS</td>
<td>23.8 acres (credits)</td>
<td>0</td>
</tr>
<tr>
<td>(includes 3.6 acres of Riparian Woodland)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burrowing Owl Breeding and Foraging Habitat</td>
<td>156.1 acres (credits)</td>
<td>0</td>
</tr>
<tr>
<td>(includes 146.3 ac preservation, 9.8 ac restored)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swainson’s Hawk Foraging Habitat</td>
<td>0</td>
<td>102.7 acres (credits)</td>
</tr>
<tr>
<td>(96.6 ac preservation, 6.1 ac creation)</td>
<td></td>
<td>(96.6 ac preservation, 6.1 ac creation)</td>
</tr>
<tr>
<td>Vernal Pool / Swale Creation</td>
<td>5.6 acres (credits)</td>
<td>2.0 acres (credits)</td>
</tr>
<tr>
<td>TOTAL CREDIT ACREAGE</td>
<td>210.9 acres</td>
<td>120.0 acres*</td>
</tr>
</tbody>
</table>

* note that 1.1 acres of land is not proposed for credit release (1.1 acre Northern Detention Basin)
Figure 11. Map of proposed credit types within Site 1 - Shauna Downs.
Figure 12. Map of proposed credit types within Site 2 - Linkside Place.
3.5 Proposed Credit Release Schedule

Credits shall be available for purchase when the Bank Enabling Instrument has been approved, the appropriate financial and real estate assurances have been met, and the wetlands within the Mitigation Bank are functioning consistently with the established success criteria. Mitigation ratios shall be assigned according to the Sacramento District of the U.S. Army Corps of Engineers Regulatory Branch and other pertinent agencies participating on the Interagency Review Team.

All available vernal pool and vernal pool, fairy shrimp, and tadpole shrimp preservation credits are proposed for release immediately. Vernal pool and vernal pool complex creation credits and their associated restored grasslands are proposed for availability after all restoration and creation activities have occurred, which is projected for Fall 2012. All other credit types are proposed for immediate release.

3.6 Feasibility of the Mitigation Bank

The feasibility of preserving wetlands within TMCMB’s two sites is considered excellent for several reasons. The primary source of water for wetlands located within the proposed bank is precipitation falling within the pools or individual basins of the pools. Many basins are entirely contained within the Bank’s boundaries; thus, basin boundaries and existing drainage patterns will be conserved by establishment and protection of the Bank.

The feasibility of preserving the riparian corridor and Foothill Riparian Woodland habitat along Little Dry Creek in Shauna Downs is also considered excellent because this system is situated entirely within the parcel. The possibility of including adjacent parcels containing contiguous floodplain habitat within this umbrella bank further increases the feasibility and provides the opportunity for the potential expansion of this habitat onto lands where it may have historically occurred.

Long-term management and maintenance of the Bank by the Northern California Regional Land Trust will help preserve sensitive species and habitats within the Bank lands in perpetuity. The management of the Bank will limit anthropogenic disturbances that would degrade sensitive species and habitats on the Bank properties as well as ensure monitoring of conditions to identify and reduce challenges to maintenance.

The potential to create or enhance wetlands within both sites is excellent due relatively flat, yet gently rolling topography and the poor drainage characteristics of the soil. There are multiple locations with this combination of traits where swales can be modified to increase water retention and aquatic habitat without dramatically altering topography. Sites proposed for creation include approximately 15.4 acres of disturbed
land centrally located in Shauna Downs, and 8.1 acres of disturbed lands in Linkside Place including the southern detention basin and associated overburden piles (see Figures 11 and 12). Re-creation of the underlying restrictive layer at Linkside is feasible because stockpiles of the originally excavated soils remain on the site. In addition, the restrictive layer at Linkside Place is a somewhat porous claypan that can more easily be restored as compared to cemented, brittle hardpans such as the Tuscan formation.

The feasibility of preserving Burowwing Owl breeding and foraging habitat at Shauna Downs is excellent due to existing verified populations and extensive intact nesting sites. The feasibility of preserving Swainson's hawk foraging habitat at Linkside Place is excellent due to the several confirmed nests situated nearby and the high suitability of the existing grasslands as foraging habitat.

4 Mitigation Bank Establishment and Operation

The Table Mountain Conservation and Mitigation Bank shall be constructed pursuant to the aims and goals of the Federal Guidance for the establishment, use, and operation of mitigation banks (Fed. Reg. 1995) and modern USACE banking protocol as defined by the Sacramento District U.S. Army Corps of Engineers and modified by RGL 08-03 (October 10, 2008) and Public Notice Number 200500420 (May 9, 2008).

4.1 Bank Sponsor Qualifications

I G Properties Limited, LLC, shall be the Bank sponsor. I G Properties Limited, LLC, was formed in 2002 by William Isaac, a California General Contractor with over 50 years experience, and Albert Garland, Real Estate Developer with over 35 years experience, whose combined mission was to construct sustainable building parks and establish land preservation and conservation areas wherever possible. With the expertise of the Isaac Family and Bert Garland, in concert with the below listed support companies, the sponsor has the capability to provide the finest Wetland Mitigation and Conservation Bank development available, providing start-to-finish wetland conservation and mitigation banking.

The following is a summary of the sponsor’s experience unique to environmentally sensitive projects:

- Site acquisition, funding, and 501 C3 Charity formations
- Team Coordination, to achieve governmental approvals
- Grading and drainage plans for construction and preservation of wetlands and sensitive areas
- Precise surveying and studying of existing and to-be-constructed wetland areas
• Construction Supervision of phases of preservation and creation of sensitive areas
• Calculation of exact acreage or square footage of environmentally sensitive areas
• Preparation of legal descriptions and plats for sensitive area easements
• Land divisions of property for dedication of environmentally sensitive areas

4.1.1 Sponsor Support Companies and Organizations

I G Properties Limited LLC has retained Eco-Analysts to assist in developing this prospectus as well as the Bank Enabling Instrument. Eco-Analysts has been performing environmental services in northern California for over three decades and has prepared comprehensive mitigation monitoring programs for a number of state, federal and local agencies. Mitigation monitoring services have been conducted over the past fifteen years by our firm for such public agencies as Glenn-Colusa Irrigation District, Santa Clara Water District, U.S. Army Corps of Engineers, Sacramento County, Butte County, Sutter County and the City of Chico. Our staff is experienced in conducting wetland delineations per U.S. Army Corps of Engineers Arid West protocol, and our biologists and botanist jointly have many hours of field expertise on fauna and flora associated with vernal pools and northern California landscapes. Eco-Analysts (or our subcontractors) conducted most of the specialized surveys that supplement this document. We have also been contracted by the client to coordinate development of the Table Mountain Conservation and Mitigation Bank with the necessary state, federal, and local agencies and we will be responsible for post-design monitoring.

The sponsor is currently working with the Northern California Regional Land Trust (NCRLT) to be the final recipient of the conservation easement and to serve as the long-term manager of the Bank closure. The NCRLT is a nationally accredited non-profit organization formed in 1989 dedicated to assisting landowners and public agencies in the protection of land and other natural resources. NCRLT currently maintains 14 conservation easements in Northern California, totaling close to 6,000 acres. NCRLT has provided expertise and assistance in the preparation, evaluation and implementation of mitigation projects and has provided guidance throughout the development of this proposal. NCRLT is working in conjunction with Eco-Analysts to develop the long-term management plan for the TMCMB and will be responsible for its implementation and much of the monitoring.

Design of restored lands and created features will be performed using the expertise of Land Image Landscape Architects and Planners with support from Eco-Analysts. Land Image has extensive experience in wetland and vernal pool development, stream and creek restoration, and other habitat restoration design. Installation of created features will be performed by a yet-to-be-selected grading contractor with experience in wetland restoration and verifiable long-term success with previous projects as verified through State or federal monitoring reports.
4.2 Design and Construction of the Mitigation Bank

I G Properties Limited, LLC, using Eco-Analysts as consultants, has designed the Bank and will prepare all required engineering plans for approval by the IRT. Eco-Analysts will sub-contract a qualified company approved by the IRT to perform specialized wetland construction and restoration activities within Bank properties and will monitor construction activities in the field to assure compliance with the design plans.

Table Mountain Conservation and Mitigation Bank is proposed as an umbrella bank because discussions are currently underway that may lead to the acquisition of lands or easements directly adjacent to TMCMB Site 1. These lands are believed to support special-status resources similar to those located on TMCMB Site 1. In order to qualify for inclusion in TMCMB, lands must be adjacent to either TMCMB Site 1 or Site 2 and be shown to support similar special-status resources and conform to such other requirements as imposed by the reviewing agencies.

The primary goal of the bank and the first phase of Bank development is preservation of the considerable existing resources. Preservation will be enhanced by reinforcing fencing to restrict public access, removing debris, and establishing of grazing prescriptions compatible with bank objectives.

Current grazing leases will be modified to a level optimal for maintenance of vernal pool habitats and raptor foraging. Site-specific grazing prescriptions shall be developed using the latest information, including publications from The Nature Conservancy’s Vina Plains Preserve, studies from the Consumnes River, and grazing optimization models currently employed by the Natural Resources Conservation Service. Provision of livestock watering locations will be designed in accordance with other proposed bank goals.

In the second phase of Bank construction partially degraded areas will be restored as closely as possible to pre-disturbance conditions. Modification of existing features is not proposed except in cases where previous disturbance, such as excavation, has changed the natural topography of the adjacent landscape or feature. Construction will reshape existing topography to reestablish hydrological connectivity in areas where road construction or vehicle disturbance has adversely modified the natural topography of the vernal pool complex. In several cases, road construction has interrupted flow between previously connected wetland features. Wetland features will be created in disturbed portions of both properties that show the capacity for natural maintenance of constructed features. Depressions will be created to support vernal pool flora and fauna in these areas. Vernal pool species will be introduced from surrounding features. Construction and any landscape modification will be done in accordance with the mitigation guidelines for Burrowing Owls when nest burrows or habitat will be affected. Enhancement of Burrowing Owl breeding sites by creating artificial burrows is also proposed during this stage.
4.4 **Short-term Functional Goals**

Initial bank establishment activities will focus primarily on debris removal and construction of appropriate fencing to limit unintended uses from adjacent landowners, pets, or vehicles. Development and introduction of site-specific grazing prescriptions is also a primary functional goal.

Secondary goals involve restoration of the characteristic vernal swale complex topography on soils where past land-use has altered the natural topography and interfered with normal drainage patterns. Specific actions will involve re-grading of tire ruts and leveled areas, as well as the re-contouring of swales intercepting the roads. Our goal is to provide the characteristic interception of precipitation and overland flow into vernal pools and swales that will help to ensure habitat diversity and ecosystem health.

The section of riparian vegetation adjacent to Little Dry Creek on TMCMB Site 1 will also be enhanced through the removal of noxious / invasive plant species, including mission fig and yellow star-thistle.

Specific measures to support short-term functional goals include the following actions:

**Debris Removal**
Metal debris currently found on TMCMB Site 1 shall be removed and discarded appropriately. TMCMB Site 2 shall have all surface debris, including orange fencing, flagging, and construction debris, removed and discarded appropriately.

**Infrastructure Removal**
In-ground infrastructure on TMCMB Site 2, including drainage infrastructure, shall be removed prior to topographic restoration activities. Percolation test equipment installed at TMCMB Site 1 shall be removed and any percolation test pits filled with appropriate materials.

**Grazing Prescription Development**
Specific grazing prescriptions shall be developed for both sites using the latest information and best management practices available.

**Topographic Restoration and Vernal Pool Creation**
For shallow disturbances, disturbed surfaces shall be restored to a natural topography through minimal re-grading of surface soils.

For deeper disturbances, such as the southern detention basin on TMCMB Site 2, subsurface restoration using existing soil stockpiles shall occur. Subsurface restoration activities shall include restoration of the underlying restrictive layer to conditions similar
to surrounding undisturbed lands. Any remaining overburden piles shall be removed from the bank lands.

For the central disturbed area on TMCMB Site 1 and the southern detention basin on TMCMB Site 2 creation of vernal pools shall occur in such a manner as to replicate the maximum density of pools found in surrounding undisturbed areas in each site.

Invasive Plant Removal
Invasive trees and shrubs shall be removed from Little Dry Creek.

Enhancement of Burrowing Owl Breeding Habitat
Artificial burrows (pipes and soil piles) shall be installed in various locations following accepted methods (see Rosenberg et al 1998) on both properties to enhance the potential for Burrowing Owls to breed within Bank lands. Burrowing Owl activity and use of burrows shall be monitored throughout the bank development phase.

4.5 Post-Construction Monitoring of the Mitigation Bank

The duration of post-construction monitoring will be five consecutive years. Eco-Analysts, in conjunction with Northern California Regional Land Trust, shall monitor the Bank’s vernal pool complexes during the first four growing seasons following construction using the California Rapid Assessment Method (v.5.0.2 Sept. 2008). Monitoring will include an inventory of plants and invertebrates inhabiting constructed pools and swales. Surveys following Burrowing Owl Consortium guidelines to ascertain use of artificial burrows by Burrowing Owls; camera traps (i.e., cameras equipped with motion-detecting or infrared sensor triggered to take a photograph when an animal passes by) may also be deployed at unobtrusive distances from burrow entrances to monitor burrow use with minimal disturbance to owls. The findings of monitoring activities will be documented in brief annual monitoring reports provided to the IRT. Following the 5th annual monitoring, the findings shall be documented in a more detailed 5-year monitoring report to be submitted to each agency represented on the IRT.

If, after review of the 5-year monitoring report, the IRT determines the Bank is functioning as intended, no further monitoring would be required. The IRT may suspend the need for monitoring at anytime during the five year monitoring period if the Bank is functioning and being properly managed and maintained. If annual monitoring reveals that all success criteria have been met for created features then those credits are proposed for release immediately upon documentation of success.
5 Long-term Management of the Mitigation Bank

5.1 Long-term Ownership

The current property owner will retain ownership of the Bank parcels until the available credits are exhausted. Following the sale of available credits, an easement shall be dedicated in perpetuity and held and managed by the Northern California Regional Land Trust.

5.2 Long-term Management Plan

Several goals for the long-term functioning of the Bank were identified and are outlined below. Long-term Management Plans for both sites are being developed in consultation with the NCRLT, with input from the IRT, to provide a set of strategies for the long-term management and monitoring of the Bank.

5.3 Long-term Functional Goals

Following the re-establishment of historic hydric conditions and the enhancement of vegetation, the goal of long-term management of the mitigation bank will focus on maintaining nearly natural hydrological and biological regimes. Specific long-term goals are:

- Improve the retention and release of overland flow through natural flow channels and pools,

- Preserve or increase the local population of *Branchinecta lynchi* as suitable aquatic habitat becomes available for re-colonization,

- Allow the development and maintenance of characteristic plant communities on site by re-establishing critical elements of hydrology and soil conditions,

- Maintain faunal food webs by perpetuating the availability of suitable foraging and breeding habitat on site for rodents and birds of prey,
• Preserve habitat functionality through limitation of off-site impacts, such as trash accumulation or unplanned land uses, and

• Maintain regional and landscape biodiversity by preserving populations of rare and endangered plant and animal species in southern Butte County in accordance with the goals of the Butte Regional Habitat Conservation Plan currently under development.

5.4 Long-term Sustainability of the Mitigation Bank Hydrology and Biota

The long-term sustainability of the wetlands within the Bank depends heavily upon winter and spring rains that inundate the pools and allow for the development of associated biota. Another factor affecting the long-term sustainability of the pools includes the avoidance of human induced disturbance to the landscape. The long-term management strategy of the proposed Bank will be designed to avoid these anthropogenic impacts through the use of fences, debris removal, and periodic monitoring.

The riparian vegetation within the site is dependent on seasonal precipitation and, to a lesser extent, on water usage on adjacent properties. Water usage on adjacent properties could alter the groundwater levels up-gradient, potentially reducing stream flow and resulting in potential degradation of the riparian vegetation. However, the upland properties are currently predominantly grazing and open lands and future water levels are anticipated to retain similar impact levels.

The long-term sustainability of the Bank to provide foraging for grassland raptors (Swainson’s Hawk and Burrowing Owls) depends on the maintenance of robust small mammal populations on Bank lands; protection of the site against pesticide use and other forms of anthropogenic disturbance should allow small mammal populations to thrive. The ability of the Bank to sustain long-term breeding habitat for Burrowing Owls depends primarily on the continued availability of burrows and the health of the Burrowing Owl populations in the surrounding area. Currently both Bank properties lie within a very large tract of contiguous nesting and foraging habitat and Burrowing Owls are present on the property or adjacent properties. Presence of Burrowing Owls at any particular site within this tract will be determined largely by the availability of suitable burrows and the quality of foraging habitat. Enhancement of breeding habitat, particularly at TMCMB Site 2, and preservation of existing habitat at Site 1 will contribute to the long-term ability of the Bank to support Burrowing Owls.
6 Site Condition Description

6.1 TMCMB Site 1 - Shauna Downs

Shauna Downs lies at an elevation of approximately 180 feet above mean sea level at the junction of the eastern edge of the northern Sacramento Valley and the foothills of the northern Sierra Nevada and southern Cascade Range boundary. The site's vegetation is primarily California annual grassland, in which vernal pools and swales form complexes throughout the site. Little Dry Creek and several ephemeral drainages cross the site. These drainages support several habitat types including valley riparian forest, perennial rock-bottomed pools and foothill riparian vegetation. The project vicinity experiences a Mediterranean climate with cool, wet winters and hot, dry summers. Annual precipitation averages between 26 and 28 inches. An in-depth discussion of biological and ecological resources can be found in the Biological Assessment Report for the proposed Table Mountain Conservation and Mitigation Bank Site 1 - Shauna Downs, Butte County, California, in Attachment A of this volume.

6.1.1 Previous Land Use

Shauna Downs has been used for cattle grazing and/or open space for its recorded history. Numerous cattle trails are apparent throughout the property, many of which connect to surrounding cattle ranches. A minor tributary of Little Dry Creek has been dammed to provide stock water. A pioneering era wagon road traverses the middle of the site from north to south.

6.1.2 Current Land Use

Currently, Shauna Downs is leased for cattle grazing. No buildings, paved roads, or other developments are present on the parcel. Firebreaks have been created along the boundaries of the parcel, and have been scraped annually for several decades. The ~2-acre pond provides stock water to the cattle. A Western Area Power Agency easement and power lines cross the parcel from approximately the northern center of the site toward the southeastern corner. A billboard is situated in the southwestern corner of the site along Highway 99. Extensive cattle grazing and, more recently, firebreak maintenance has caused some disturbance to the ground surface as well as many of the smaller vernal pools within the site. Road easements are situated along the western boundary for northbound Highway 99E and along the north boundary from north-northwest to south-southeast for Durham Pentz Road.

The site is within Butte County jurisdiction, and is designated as Grazing and Open Land (GOL) in the Butte County General Plan, and is zoned as Unclassified (U). The 2000 Butte County General Plan designates this area as.
6.1.3 Surrounding Land Use

Much of the surrounding land use is designated as Grazing and Open Land (GOL) under the Butte County General Plan and used for grazing and livestock production. Western lands are predominantly Agricultural Residential lots with an Orchard and Field Crop designation. Adjacent parcels are currently undeveloped annual grassland / rangeland to the north and east (Figure 13). Highway 99 runs along the southwestern boundary of the property. Land immediately south of Highway 99E is predominately under rice cultivation. A reduced-use fish farm is adjacent to the southeast.

Northern Boundary - Durham-Dayton Road

The larger portion of the northern border of Shauna Downs is shared with the portion of Durham-Dayton Road between Highway 99 and Butte College. This portion of the road conveys moderate to occasionally heavy Butte College traffic.

Lands north of Durham-Dayton Road belong to a section-sized parcel (APN 040-130-035-000, 623.71 acres) attached to the larger Horning Ranch. This land is zoned as Unclassified (U) and is designated as Grazing and Open Land (GOL) in the Butte County General Plan. This land is largely unused except for access to parcels further north.

Northwestern Boundary - Falager Court

The western third of the northern boundary of Shauna Downs lies along an arterial road to Durham-Dayton Road named Falager Court. This road is a dead-end cul-de-sac and carries very little traffic. The primary access to Shauna Downs lies along this road.

Twenty-five acres (APNs 040-490-018-000, 15.11 acres, and 040-130-036-000, 10.35 acres) of undeveloped land lie north of Falager Court in a triangular section bounded by Highway 99, Durham-Dayton Road, and Falager Court. This land is not currently being used, and no plans for development are currently on record with Butte County. These parcels are currently zoned Light Industrial (M1) and designated Industrial (I) by the Butte County General Plan.

Southwestern Boundary - Highway 99 and Agricultural Lands

The southwestern (or western) boundary of Shauna Downs is shared entirely with the northbound lane of Highway 99. Three culverts and a shallow roadside ditch serve to convey excess water off of this boundary to flow paths west of the highway corridor.

A large block of rice lands (APN 040-570-022-000, 531.5 acres) is west of Highway 99 and contiguous with more extensive agricultural lands in the Richvale and Durham areas. Book Family Farm (APN 040-570-017-000, 40.28 acres, and 040-570-018-000, 40.18 acres) is directly south of the rice lands. A 90-acre parcel (APN 040-570-019-000) surrounds Little Dry Creek west of Highway 99 between Book Family Farm and the rice fields. All four of these parcels are zoned AR-40 (Agricultural Residential, 40-acre
minimum) and designated as Orchard and Field Crops (OFC) in the current Butte County General Plan.

**Southeastern Boundary - Fish Farm**
A reduced-use fish farm is situated south-southeast of Shauna Downs on the eastern side of Highway 99. This 145 acre parcel (APN 040-130-048-000) shares portions of the Little Dry Creek floodplain with Shauna Downs and is ecologically connected through that riparian corridor. The site currently contains a residence, outbuildings, several abandoned ponds, one large maintained pond, and multiple levees and access roads. This land is zoned as Unclassified (U) and is designated as Grazing and Open Land (GOL) in the Butte County General Plan.

I G Properties Limited, LLC, and Eco-Analysts are currently working with owners of this parcel to negotiate an easement for special-status resources shared by both Shauna Downs and the Fish Farm parcel. The easement would potentially be included in the Bank under the umbrella banking agreement in the future. This parcel, in particular, is considered a good candidate for restoration and wetland creation.

**Eastern Boundary - Foster Ranch**
Lands associated with the Foster Ranch are located directly east of Shauna Downs and share a barbed-wire fence boundary. Several gates in this fence have historically provided access for this neighbor who has held the grazing lease on this land for over a decade. This parcel (APN 041-130-052-000) is zoned as Unclassified (U) and is designated as Grazing and Open Land (GOL) in the Butte County General Plan.

I G Properties Limited, LLC, and Eco-Analysts are currently working with owners of this parcel to negotiate toward easement for special-status resources shared by both Shauna Downs and the Foster Ranch parcel. The easement would potentially be included in the Bank in the future under the umbrella banking agreement. This parcel is considered a good candidate for future grazing partnerships and extension of easements for shared special-status resources, including the Little Dry Creek floodplain and associated resources.

### 6.1.4 Anticipated Future Land Use

Changes to current land use surrounding Shauna Downs were inferred from both the Butte County General Plan, the 2030 update to the Butte County General Plan (Figure 13). Several currently undeveloped parcels bordering the site to the northeast are currently zoned as commercial/industrial and have the potential to become developed in the future, although current Butte County planning trends indicate approval of such development is unlikely due to problems with effluent disposal. The 2030 update to the Butte County General Plan will designate much of the land surrounding Shauna Downs as ‘Agricultural’. This land use designation would not change existing parcel sizes,
which are currently set to a 20-acre minimum. Residential uses would be limited to one single-family dwelling per legal parcel.
Figure 14. 2030 Butte County General Plan preferred land use alternatives surrounding Linkside Place.
6.1.5 Soil Conditions of Shauna Downs

According to the soil survey performed by the Natural Resource Conservation Service, the Tuscan-Fallager-Anita Gravelly Duripan Complex and the Carhart-Anita Taxadjunct Complex are the most common soils on site (NRCS 2008). The Clearhayes-Hamslough Complex soil series occurs in the alluvial floodplain of Little Dry Creek to the East, and the Lucksev-Butteside-Carhart Complex occurs in the alluvial floodplain of the unnamed drainage bisecting the north-south axis of the property.

Soils on most of the site are relatively undisturbed by development; there are small areas of disturbance associated with previous vehicular use and percolation testing activities. Soil surfaces show signs of heavy grazing, with dense hoofmarks penetrating to the pan in many areas, especially around wetland features. Additionally, a firebreak has been annually disc ed along the northern and western boundaries. Over time, this practice has distorted the shape of wetland features along these boundaries and homogenized the shallow soils in these areas. It is unclear whether or not discing has caused negative impacts to special-status plants and wildlife; pools impacted by firebreak construction continue to support Vernal Pool Tadpole Shrimp and other vernal pool endemic species.

6.1.6 Habitats and Plant Communities of Shauna Downs

Habitats within the project area were assessed in the field and vegetative communities and abiotic habitats classified according to the International Terrestrial Ecological Systems Classification (ITESC) system. Ecological systems are defined as a group of plant community types (associations) that tend to co-occur within landscapes with similar ecological processes, substrates, and/or environmental gradients (Comer et al. 2003). Moyle and Ellison's aquatic habitat classification system (1991) was also employed for some habitat types. Overall, eight ecological systems or habitat types were identified within the project area; they include California Central Valley and Southern Coastal Grassland, Northern California Claypan Vernal Pools, Northern California Volcanic Mudflow Vernal Pool, California Central Valley Riparian Woodland and Shrubland, ephemeral streams, seasonal streams, perennial creeks, and clayflat wetlands.

California Central Valley Grassland is found from 10-1200 m (30-3600 feet) elevation. This habitat type receives an average of 50 cm (range 25-100 cm) of precipitation per year, mainly as winter rain; its fine-textured soils remain moist to saturated in winter but become very dry in summer. Within the study area, grassland predominates, covering approximately 93 percent of the undeveloped land (Figure 11).

Approximately 187 northern California volcanic mudflow vernal pools covering approximately 12 acres occur throughout the site. These pools occur on terraces and uplands outside of seasonal floodplains and are associated with mound-swale
landscapes. Many of these vernal pools occur in very shallow soils with underlying Tuscan hardpan restrictive layers, found as either consolidated hardpan or cemented (silicaceous) cobble layers (which are themselves underlain by consolidated hardpan).

There are approximately 3.4 acres of Northern Claypan Vernal Pools within the site. Northern Claypan Vernal Pools are characterized by a clay hardpan that retains water throughout some portion of the spring, but typically dries down entirely during early summer months. Most of these pools form complexes with small pools interconnecting with vernal swales, although several isolated pools also occur (Figures 15, 16 and 17).

Vernal pools near or within clayflats, e.g., Pentz Pool (Figure 18), typically lack the highly compacted volcanic hardpan restrictive layer common throughout the site. These claypan pools are concentrated in the western third of the site where the western edge of the Sierra-Cascade foothills meets the Central Valley floor.

Several drainages course through the property through two bridges and several culverts under Durham-Pentz Road southward to State Highway 99. Little Dry Creek is the largest stream within the site and is permanent from below the pond to where it passes under State Highway 99 in the southern portion of the project site. The channel of Little Dry Creek is characterized by exposed, eroded Tuscan hardpan; it can carry high flows during the wet season and dry down to a series of persistent pools, exposed hardpan, and mudflats in the summer. While the exposed hardpan remains relatively devoid of vegetation throughout the year, fresh emergent wetland species grow around many of the pools under the riparian woodland canopy.

Central Valley Riparian Woodland and Shrubland is found along Little Dry Creek as it courses through the southern portion of the site (Figure 19). Deeper alluvial soils in this area and the nearly year-round availability of water support a mixed woodland with Fremont Cottonwood (*Populus fremontii*), Oregon Ash (*Fraxinus latifolia*), Gooding’s Willow (*Salix goodingii*), and Arroyo Willow (*Salix lasiolepis*) forming the dominant structural component of the woodland.

Several ephemeral and seasonal tributaries to Little Dry Creek cross the site in a generally northeastern to south-western direction. The largest seasonal drainages traverse the center and eastern portions of the site. Many of these tributaries support pools that persist late into summer (Figure 20).

Seasonal wetlands are found primarily near the center of the site in the floodplain of the unnamed seasonal stream. Seasonal wetlands also occur less densely in the eastern third of the assessment area. Many of these seasonal wetlands occur in depressions with relatively deep soils and are completely inundated during winter rains and dry by mid-spring.
Figure 15. An oblique aerial photograph of the central seasonal drainage and surrounding grassland and vernal swale complexes in late May.

Figure 16. Vernal pools and clayflat wetlands along Highway 99.
Figure 17. Vernal pools within a firebreak along the southern boundary of the site. Vernal Pool Tadpole Shrimp and other invertebrates occupy several of these pools.

Figure 18. Vernal pool vegetation on the edge of Pentz Pool in mid-March.
Figure 19. Little Dry Creek adjacent to reduced-use fish farm and an unnamed ephemeral drainage (lower right).

Figure 20. Seasonal pool in channel of seasonal drainage in central Shauna Downs.
6.1.7 Wildlife Resources of Shauna Downs

The habitats of Shauna Downs support a diverse assemblage of wildlife including several species designated as having special protection by the State of California and the federal government. Protected species observed on site include Western pond turtle (*Actinemys marmorata*), Burrowing Owl (*Athene cunicularia*; Figure 21), Vernal Pool Fairy Shrimp (*Branchinecta lynchii*), Vernal Pool Tadpole Shrimp (*Lepidurus packardi*; Figure 22), Northern Harrier (*Circus cyaneus*), and American Badger (*Taxidea taxus*). The site overlaps designated critical habitat for Central Valley Steelhead and lies within ~3 miles of critical habitat for Vernal Pool Tadpole Shrimp and Central Valley Spring-run Chinook (*Onchorhynchus tshawytscha*) and Central Valley Steelhead (*Oncorhynchus mykiss*), which is considered to have a moderate likelihood of utilizing habitat on site. Another dozen species with special status are considered to have a moderate to high likelihood of using habitats on site as well (see Attachment A).

Figure 21. A Burrowing Owl within TMCMB Site 1 - Shauna Downs.

Figure 22. A vernal pool tadpole shrimp (*Lepidurus packardi*) within TMCMB Site 1 - Shauna Downs.
6.1.8 Hydrology of Shauna Downs

Several streams occur within the project site. A 0.8 mile stretch of Little Dry Creek meanders through the southern portion of the project area. The creek changes markedly in flow and vegetation as it courses through the site. Toward the southern portion of the project site, the creek is relatively perennial and is bordered by dense riparian vegetation. Upstream, Little Dry Creek ceases to flow in the summer but contains pools that collect precipitation and support aquatic invertebrates and scattered cottonwood trees in several areas.

Two unnamed seasonal tributaries traverse the center and eastern portions of the site from north to south before merging with Little Dry Creek in the southern portions of the site. The central seasonal tributary originates from springs and seeps in the upper reaches of Hayes Canyon. This tributary does not support perennial flow but conveys water during large storm events. It has a cobble and hardpan lined channel and shows signs of periodic high flows, such as scouring. Several rain pools that support aquatic invertebrates occur throughout the channel.

The eastern seasonal tributary flows along the low terrace toward its confluence with Little Dry Creek. This tributary contains pools that persisted through the summer in 2008 and supported aquatic invertebrates. The vegetation bordering this feature is annual grassland with occasional cottonwood trees and willows around the deeper pools.

Vernal swale complexes occur over much of the Carhart-Anita and Tuscan-Fallager-Anita soils within the project site. Vernal pools within the Carhart-Anita soils tend to be moderate to large in size; the largest, “Pentz Pool,” reaches almost 2 acres. Small, shallow vernal pools are scattered throughout the Tuscan-Fallager-Anita soils in small depressions within vernal swale complexes.

Water flows off the site predominantly in an east to west direction through Little Dry Creek. Some vernal pools lying directly within drainage swales are considered to connect directly to one of the tributaries of Little Dry Creek during overflow events, while many of the pools (most notably, Pentz Pool) lie within isolated microbasins and do not have a normal outflow. Pools along the western boundary can overflow during high rainfall events and drain into one of three culverts passing under Highway 99 and into ditches west of the project area. Some waters flowing under the Highway converge with Butte Creek via Hamlin Slough.

Figures 23, 24, and 25 show portions of the verified wetland delineation map for this site (Eco- Analysts 2009).
Figure 23. Map 1 of 3, Wetlands and Waters of the U.S. within TMCMB Site 1 - Shauna Downs.
Figure 24. Map 2 of 3, Wetlands and Waters of the U.S. within TMCMB Site 1 - Shauna Downs.
Figure 25. Map 3 of 3, Wetlands and Waters of the U.S. within TMCMB Site 1 - Shauna Downs.
6.1.9 Assurance of Water Rights for Shauna Downs

Sufficient water rights exist to support the long-term sustainability of the site. Water, critical to the sustainability of the various isolated wetland features throughout the site, arrives predominantly through precipitation. Water contained within the perennial stream enters the site from other rural parcels. Land use changes are not anticipated or currently planned for surrounding parcels contributing water to Little Dry Creek. No wells currently exist on site or are planned for Shauna Downs. The fee title report for the property (Attachment C) does not indicate that water rights have been sold or transferred.

6.1.10 Easements or Encumbrances on the Property

The preliminary title report for Shauna Downs (Attachment C) lists several easements, encumbrances, and exceptions to the title. Review of the conditions of these easements, encumbrances, and exceptions was undertaken in order to determine if a likelihood existed for currently allowed uses, activities, or land alterations that could be inconsistent with this project and the proposed preservation and conservation goals.

An easement exists on the property for the operation and maintenance of one double-circuit transmission line and includes the area within 50 ft. of either side of the center of the line. Placement of guys and anchors is allowed at greater distances from the center line where reasonably necessary to support the transmission line. The easement includes the right to enter the premises, survey, construct, maintain, operate and control the transmission line and to remove any objects interfering therewith. However, no trees or shrubs exist under the lines that may require future removal; rather, the majority of habitat under the lines is grassland. Additionally, existing facilities have already been constructed and has only need to be accessed for routine line maintenance. Accordingly, significant impacts to existing vegetation, wetlands, or topography due to rights granted in this easement are not anticipated.

Another easement, 125 feet wide strip of land for Transmission of Electric Energy and Communication and incidental purposes, was granted to allow access to the power line corridor from the fenced entrance to the property from the road and grants the right to cut down or clear away brush or trees considered hazardous to the facility. Removal of vegetation from this land has not been necessary because the grasses are low-growing. Impacts to wetlands falling within this easement are not anticipated. Potential future impacts due to power line upgrades (such as the recently proposed TANC project) are not anticipated to have an impact on this parcel because the main transmission line is situated approximately 1 mile east and does not cross the parcel.
An easement to Pacific Telephone and Telegraph Company grants the right to the construct, place, inspect, maintain, and replace communication facilities including underground conduits and associated infrastructure in the northerly portion of the property. No underground facilities exist or anticipated due to unfavorable soil conditions for trench excavation.

An easement for drainage and incidental purposes granted to Department of Transportation for installation of an iron drainage pipe for drainage under the freeway. These facilities have already been installed. No new impacts to habitat are anticipated from this easement.

Review of all existing easements, encumbrances, and exceptions to the title reveals no likelihood of significant impacts or conditions that are not consistent with the establishment of the Table Mountain Conservation and Mitigation Bank. No future land altering activities are anticipated to occur at any time in the future that might compromise the functionality of the proposed Bank.
6.1.11 Ecological Suitability of Shauna Downs

Shauna Downs is particularly suitable as a preservation site for several reasons. First, the site is rural and has not been subject to intensive land modification. Minor changes resulting from roads and vehicle movement across the site can be restored to their original configuration. Additionally, the topography and soils structure of the site are unlikely to experience significant change in the future and will continue to support the vernal pool/swale complexes and other special-status resources that contribute to its ecological value. Shauna Downs supports multiple plant and animal species that are not widely distributed and are recognized by the State of California and the federal government as in need of preservation or special management. Designated critical habitat for several species occurs in close proximity to site, increasing the suitability of this site for designation as a mitigation bank.

Sale of credits for Burrowing Owl foraging and breeding habitat has been proposed for this site because the site contains several burrows and approximately 156 acres of excellent foraging habitat utilized by one or more owls (see Burrowing Owl Survey Report for Site 1 - Shauna Downs of the proposed Table Mountain Conservation and Mitigation Bank, Butte County, California, included in Attachment A). Although home range sizes of Burrowing Owls vary widely, the draft Butte Regional HCP/NCCP supports preservation of larger patch sizes (400 acres) and habitats adjacent to existing habitat areas. Large properties (several hundreds of acres in size) surrounding Shauna Downs contain predominantly undeveloped grasslands that likely also contain suitable breeding burrows and/or support Burrowing Owl foraging. Finally, surrounding land use is predominantly open and grazing lands and not likely to be built out in the near future. A number of adjacent parcels are appropriate candidates for preservation as well.
6.2  **TMCBM Site 2 - Linkside Place**

Linkside Place, located approximately 3 miles west of the City of Oroville, is composed of fairly flat, somewhat rolling terrain, with elevations ranging from 180 feet above sea level in the northwestern corner to approximately 160 feet above sea level at the southern end of the property. The Oroville area experiences a Mediterranean climate with hot dry summers and cool wet winters. Average annual rainfall is 20 to 24 inches. There are typically 274 days to the growing season. A description of the site conditions is found in greater detail in the *Biological Assessment Report for Table Mountain Conservation and Mitigation Bank Site 2 - Linkside Place, Butte County, California* (Attachment F).

6.2.1  **Previous Land Use**

Linkside Place was vacant until 2003, and no known land-altering activities had occurred. Beginning in 1990, studies began on the parcel with development being considered. In 2003, construction of Phase I of the Linkside Place Development began on the northernmost 18 acres of the parcel. Phase II on 18 additional acres followed the next year. Installation of roads and residential infrastructure took place between 2003 and 2007; two detention basins were constructed, drainage infrastructure was installed, and a dirt road was extended into the southern portions of the property in anticipation of future development. In 2008, development of Phase III of Linkside Place was put on hold to explore the potential for preservation of the remaining 121 acres.

6.2.2  **Current Land Use**

The land within the boundary of the proposed TMCMB Site 2 - Linkside Place is currently vacant. It has not been grazed in the recent past, or used for agricultural activities or residential uses. The northern ~4.25 acre portion of the bank boundary is within a parcel (APN# 030-260-026-000) currently under the City of Oroville's jurisdiction and is zoned as Single Family Residential (R1). The land within the remainder of the parcel is currently being developed as a residential subdivision. Currently, the land has been graded, and gas, electric, wastewater, and other infrastructure are being installed. The remaining ~117-acres within the bank boundary are under County jurisdiction and are designated as AR – Agricultural Residential in the current Butte County General Plan. The northern two parcels (APN#: 030-260-025-000 and -019-000) are zoned as AR-5 – Agricultural Residential, 5- acre minimum. The
southern-most parcel (APN#: 030-260-018-000) is zoned as AR-10 – Agricultural Residential, 10- acre minimum.

6.2.3 Surrounding Land Use

Partially constructed Single-family residential development borders the northern boundary of the property. Lands to the south and west are agricultural residential lots. Table Mountain Municipal Golf Course is immediately east of the site, and the Oroville Municipal Airport and the City of Oroville Wetland Mitigation lands lie to the southeast. Some light industry is present east of the site in the vicinity of the airport. Figure 23 displays the Butte County General Plan land use (2004) surrounding Linkside Place.

Northern Boundary – Medium-Density Residential Development and Highway 162

Residential housing currently under construction borders the proposed bank lands to the north. Highway 162, a two-lane highway, runs along the northern boundary of the subdivision. The currently unoccupied subdivision is the densest development directly adjacent to the proposed bank. Approximately 110 homes will occupy 38 acres after build-out is complete. Residential infrastructures including roads, sewers, and water lines have been installed and lots have been prepared for construction.

Eastern Boundary – Table Mountain Municipal Golf Course

Table Mountain Municipal Golf Course (lots 030-260-035-000) has occupied this 116-acre site for over 50 years and is now an 18-hole full service golf course. Considerable drainage modification has been implemented on this lot over the years, primarily in an effort to control flooding from waters originating within the proposed bank lands. Although a short berm has been erected along the common boundary, breaches in this berm allow excess waters originating within Linkside Place to move onto the golf course and drain eastward toward the Feather River.

Eastern Boundary – Oroville Municipal Airport and Vernal Pool Mitigation Lands

Approximately 622 acres that border the southeastern boundary of the proposed bank are utilized by the Oroville Municipal Airport (APNs 030-260-034-000, -037-000, -038-000, -039-000, -041-000, -044-000, -046-000, and -050-000). Although most development within this area is clustered in the vicinity of Hwy 162 and Chuck Yeager Way (about 1 mile east of proposed bank lands), the southern extension of the runway lies within 100 feet of bank lands (southeastern corner). This area has very little pedestrian or vehicle traffic due to overflight safety regulations.

In 1993, 5.29 acres of wetlands and waters of the United States were designed and installed by Jones & Stokes Associates, Inc., on approximately 103 acres of airport land adjacent to the proposed bank. Sixty-four vernal pools, 11 interconnecting swales, and one large channel marsh were constructed and monitored for five years. These successfully installed wetlands are managed by the City of Oroville and are considered an excellent adjacent land use for the proposed bank.
Southern Boundary – Agricultural Residential Lots
A series of parcels zoned AR-10 (Agricultural Residential 10-acre minimum), three of which are directly adjacent to the proposed park boundary (APNs 030-290-041-000, -064(-065)-000, and -039-000), lie along the southern parcel boundary. Two rural homes occur on these three lots, which have airport overflight safety land use restrictions. These lots are currently hold a Butte County General Plan designation of Agricultural Residential (AR) and Grazing and Open Land (GOL), although no evidence of grazing currently exists. Poor fencing along this boundary allows pets to access the proposed bank lands, and one of the southern neighbors has been observed driving his ATV on the property.

Western Boundary – Par Four (Afterbay) Drive Agricultural Residential Lots
Seven parcels (APNs 030-510-004-000 through -010-000) ranging between 5.01 and 14.05 acres are situated along the western boundary of the proposed bank lands. These lots have Par Four Drive addresses, although some maps identify this road as Afterbay Drive. These lots are zoned AR-5 (Agricultural Residential 5-acre minimum), AR-5/AR-10, or AR-10, and are designated Agricultural Residential by the Butte County General Plan. Approximately half of these lots have been built out within the last 20 years; there is an incomplete barbed-wire fence separating these parcels from the proposed bank.

6.2.4 Anticipated Future Land Use
The 2030 update to the Butte County General Plan is anticipated to change much of the land surrounding Linkside place from ‘Agricultural Residential’ to ‘Rural Residential,’ which allows up to 2 dwelling units per acre (Figures 26 and 27). The northern half of the property will be designated ‘Rural Residential.’ The land immediately to the north of Highway 162 will be designated ‘Public;’ it will be within the Airport Land Use Compatibility Zones and subject to additional restrictions under the Airport Land Use Compatibility Plan. The southern half of the property is not designated for any specific land use by the 2030 General Plan update.

I G Properties Limited, LLC, is currently developing a 32-acre property immediately north of Linkside Place into a residential subdivision. Currently, the subdivision contains several single-family homes. Approximately 50 additional homes may be developed in the near future. Roads, electrical, drainage, and other site developments are partially completed at the present.
Figure 26. Butte County General Plan land use surrounding Linkside Place.
Figure 27. 2030 Butte County General Plan preferred land use alternatives surrounding Linkside Place.
6.2.5 Soil Conditions of Linkside Place

Four soil series occur within the project site; the Oroville, Thermalito, Fernandez, and Thompsonflat series form a complex within the immediate vicinity. There were apparent inclusions of several of these series throughout the sampling sites.

NRCS soil series information is appended to Attachment G of this prospectus. Soils within the site are characterized by shallow pans ranging in depth between 2-10 inches; minimum depths occur toward the center of the site where the shallowest slopes are located.

6.2.6 Habitats and Plant Communities of Linkside Place

Overall, two ecological systems, or habitat types, were identified within the parcel. California Central Valley and Southern Coastal Grassland covers about 80% of the site and is dominated largely by non-native annual grasses and a mix of forbs. Northern California Claypan Vernal Pools (Figure 28) also occur throughout the site. In addition, two stormwater detention ponds provide approximately 4 acres of manmade aquatic habitat.

Figure 28. A vernal pool within the surrounding annual grassland.
6.2.7 Wildlife Resources of Linkside Place

Several rare or endangered wildlife species, including vernal pool fairy shrimp, California linderiella (*Linderiella occidentalis*), Golden Eagle (*Aquila chrysaetos*; Figure 29) and Northern Harrier, have been observed in the vernal pool complexes and grassland on the Linkside Place property. In addition, Swainson’s Hawks, Burrowing Owls, Vernal Pool Tadpole Shrimp, Western Spadefoots (*Spea hammondii*) and Pallid Bats (*Antrozous pallidus*) are considered to have moderate to high potential to utilize habitats on site during some stage of their life cycle (see Attachment F, *Biological Assessment Report for the Proposed Table Mountain Conservation and Mitigation Bank, Site 2 – Linkside Place, Butte County, California*).

![Figure 29. A Golden Eagle hunting a black-tailed hare in TMCMB Site 2 - Linkside Place.](image)

6.2.8 Hydrology of Linkside Place

Site hydrological characteristics, flow, and connectivity were determined in 2007 during a wetland delineation following USACE standard protocol (Figures 30, 31, and 32). The
hydrology of the site was evaluated using evidence of ponding or saturation, hydrologic signatures on aerial photographs, topographic and orographic characteristics, and presence of field indicators such as surface scour marks, vegetation and debris drift lines, sediment deposits, and/or watermarks. Aerial photographs were examined for signs of ponding, channelization, and routes of connectivity to surrounding features.

Surface hydrology within the project area is characterized by a combination of isolated basins, seasonal swales directing overflow within and off of the parcel, and unchannelized overland flow. Dominant features within the parcel are vernal pools, microbasins, meandering seasonal swales, and upland mounds (Figure 33).

Linkside Place lies within the Feather River watershed, approximately 2 miles north and west of the river, and falls within the Lower Feather Hydrological Unit (HUC-8 18020106). The Thermalito Afterbay lies approximately 1 mile to the southwest. A number of natural and artificial ponds exist between the site and the Feather River. Natural flow for the vicinity has been altered by roads, channelization, land use alterations by the adjacent golf course and airport, and other surface alterations (Eco-Analysts 2007).

Surface water leaving the Linkside Place parcel can exit in one of four ways and potentially arrives at one of four destinations: a palustrine lake within the Oroville Wildlife Area, a basin north of Rabe Road, vernal pools north of the airport runway extension, or the Thermalito Afterbay.

In summary, direct surface water connectivity between this site and the Feather River is only established during significant rainfall periods when water overflows from the northern portion of the site onto the adjacent golf course lands. When such overflow occurs, golf course drainage ditches will entrain most excess flow toward a large palustrine lake adjacent to the Feather River within the Oroville Wildlife Area.
Figure 30. Northern section of the 2007 wetland delineation map.
Figure 31. Central Section of the 2007 Linkside Place wetland delineation map.
Figure 32. Southern Section of the 2007 Linkside Place wetland delineation map.
6.2.9 Assurance of Water Rights for Linkside Place

Sufficient water rights exist to support the long-term sustainability of the site. Water critical to the sustainability of the various isolated wetland features throughout the site arrives predominantly through direct precipitation. Surrounding land has been developed to the extent that no new impacts to water currently reaching Linkside Place are anticipated. No wells currently exist on site or are planned for Linkside Place. The preliminary fee title report for the property (Attachment H) does not indicate that water rights have been sold or transferred.

6.2.10 Easements or Encumbrances on the Property

Review of the conditions of easements, encumbrances, and exceptions for Linkside Place was undertaken in order to determine if a likelihood existed for currently allowed uses, activities, or land alterations that could be inconsistent with this project and the proposed preservation and conservation goals.
The preliminary title report for Linkside Place (Attachment H) lists a single easement on the property. This easement for road purposes is for installation and maintenance of gas, water, and sewerage mains and other public utility purposes and incidental purposes. This easement is not within the proposed boundary of TMCMB Site 1 - Linkside Place, and is not anticipated to affect the habitat value or operation of the bank.

6.2.11 Ecological Suitability of Linkside Place

Linkside Place supports wetlands that are part of a contiguous larger area wetland complex adjacent and flowing to the Feather River. Organisms that make use of both riparian corridors and pooled upland areas, including migratory birds, directly connect Linkside Place and the Feather River. Also, organisms limited to isolated wetlands, including special-status branchiopods, can travel between adjacent features through wind dispersal of cysts. Adjacency to protected vernal pool habitat to the southeast (Oroville Municipal Airport mitigation site) allows for strong ecological connectivity with Linkside Place. As it is unlikely that intensive future development will occur in immediately surrounding parcels due to existing development, future anthropogenic impacts to the ecology of Linkside Place will be limited to levels that currently exist.

Sale of foraging habitat credits on the Linkside property of the Bank for Swainson’s Hawk is proposed because the property lies within 5 miles of an active nest and constitutes good grassland foraging habitat. While Swainson’s Hawks have not been documented on site, it would be difficult to detect their use of the site with the sporadic wildlife surveys that have been undertaken. Observations of a hunting Golden Eagle, Red-tailed Hawks (Figure 34) and a pair of Northern Harriers on the property, as well as indications of an abundant rodent community, suggest this site has an adequate prey base for these raptors. Surrounding land use on the south, north and west is a matrix of rural residential land, public open space, grazing open lands, orchard and field crops, and the Thermalito Afterbay, while commercial and industrial areas of Oroville lie to the east. Swainson’s Hawk nesting habitat occurs 2-3 miles away on the southeast along the Feather River Oroville State Wildlife Area and near the Thermalito Forebay to the northeast (see Figure 10). Swainson’s Hawks nesting in these areas would be expected to forage in the surrounding croplands and grasslands along Highways 70 and 162. Development of land east and south of Oroville would impact potential foraging habitat for pairs nesting in these areas and would require mitigation under CEQA.
Figure 34. Red-tailed Hawk at Linkside Place.
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