WETLAND MITIGATION AND MONITORING PLAN

GRADY RANCH, MARIN COUNTY, CALIFORNIA

October 2009

Prepared for:

Skywalker Ranch Ltd.
5858 Lucas Valley Road
Nicasio, CA 94946

Prepared by:

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EXECUTIVE SUMMARY

Lucasfilm Ltd. submits this Wetland Mitigation and Monitoring Plan (Plan) in accordance with Condition of Approval No. 26 of the Marin County Approval of the Grady Ranch/Big Rock Ranch Master Plan (Master Plan), Mitigation Measure 5.3-7 of the Master Plan EIR (Nichols Berman 1996), and in response to item Number 28 in the May 29, 2009 Notice of Project Status letter from the County of Marin. The primary objectives of the Report are to (1) identify the stream and riparian resources in the Grady Ranch Project Area (Project Area) that will be included in habitat restoration plans, (2) describe details of plans to restore, enhance and create aquatic resources in the Project Area, and (3) outline monitoring protocols to ensure success of restoration efforts.

1.0 PROJECT DESCRIPTION

1.1 Location of Project

The Grady Ranch Property is located on Lucas Valley Road, approximately four miles west of U.S. Highway 101. The 109-acre Project Area represents approximately 46 percent of the larger Grady Ranch Property. The Project Area is bounded by Lucas Valley Road to the south, and the Grady Ranch Property boundary to the east. The Project Area boundaries to the north and west are located within the Grady Ranch Property, and do not represent the property boundary.

1.2 Summary of Overall Project

The proposed project will result in the construction of a Main Building within a 52-acre development area devoted to digital production and other uses. Other elements of the proposed Master Plan include restoration of Miller and Grady Creeks, and preservation of private (187 acres) open space (outside the designated development areas).

As part of the proposed project, approximately 0.12 acre of jurisdictional wetlands and other waters of the U.S. will be impacted, including 0.04 acre of wetlands and 1,264 linear feet (0.08 acre) of other waters. Impacted jurisdictional wetlands will be mitigated for at a minimum 2:1 ratio and impacted waters will be mitigated at a 1:1 ratio as is typical for U.S. Army Corps permit requirements. Therefore, at least 0.2 acre of jurisdictional features, including 0.08 acre of wetlands and 1,264 linear feet (at least 0.08 acre) of other waters will be enhanced, restored or created on-site. Proposed project impacts and compensatory mitigation are shown on Figure 1.

1.3 Responsible Parties

The permitee is:

Skywalker Ranch, Ltd
Attn: John Wynne
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Nicasio, California 94946

The permitee will be financially responsible for the long-term maintenance and management, as needed, of the wetland and stream restoration features described in this report.

The preparer of this report is:

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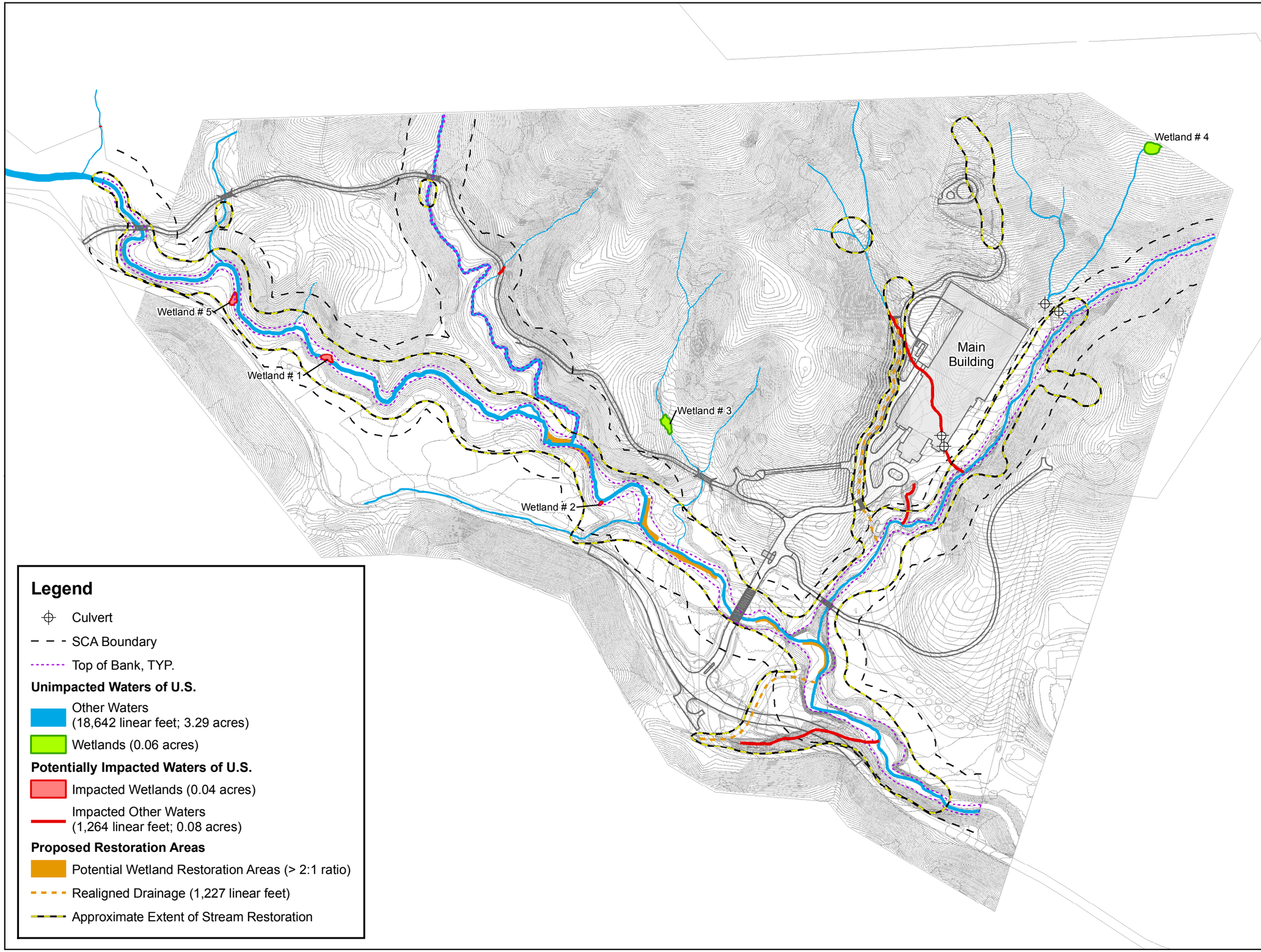
Grady Ranch

Marin County, California

Figure 1

Wetland and Stream Impacts and Mitigation



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Map Date: November 2009
Map By: Derek Chan
Base Source: Marin County, 2004
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2.0 EXISTING CONDITIONS

The Project Area is bound on the north and west by the larger Grady Ranch Property. Land use in this area is currently open space extending north towards Big Rock Ridge and the Grady Ranch Property boundary. Three unnamed USGS blue-line streams drain this steep south-facing slope into Miller Creek, which flows west to east at the floor of Lucas Valley. Two of these unnamed blue-line streams flow through the Project Area. Mixed oak/bay woodlands exist within shaded, incised drainageways, commonly referred to as Grady and Landmark Creeks, and non-native annual grassland with a native grassland component dominates the exposed ridgelines and open slopes. A number of maintained dirt roads exist within the Project Area. Similar topographical conditions and vegetation communities occur to the east and west of the Grady Ranch Property, along the south-facing slope of Big Rock Ridge. A small ranch and a low-density housing development are located east of the property boundary, and Big Rock Ranch is located to the west of the property boundary. Dense mixed oak/bay woodland dominates the area south of the Project Area, on the north-facing slope of Lucas Valley. Land use in this area consists of rural development, with few residences and ranchettes. Elevations range from approximately 230 to 530 feet NGVD.

2.1 Vegetation

Vegetation communities within upland portions of the Project Area consist primarily of mixed oak/bay woodland and non-native annual grassland with a native grassland component. Dominant vegetation in mixed oak/bay woodland areas includes California bay (*Umbellularia californica*), coast live oak (*Quercus agrifolia*), and poison oak (*Toxicodendron diversilobum*). Dominant vegetation in non-native annual grassland includes wild oat (*Avena* sp.) and rattlesnake grass (*Briza maxima*). Native perennial bunchgrasses including purple needlegrass (*Nassella pulchra*) occur in a number of stands within areas of non-native annual grassland. Detailed information regarding the vegetation communities present within the Project Area may be found in the Grady Ranch Biological Resources Assessment Report (WRA 2008). A list of plant species observed during late July and early August 2008 site visits to Grady Ranch is located in Appendix A.

Vegetation communities in wetlands and riparian corridors within the Project Area include riparian woodland, perennial freshwater emergent seep wetlands, and seasonal wetlands. Dominant vegetation in riparian woodland communities includes arroyo willow (*Salix lasiolepis*), California rose (*Rosa californica*), pink honeysuckle (*Lonicera hispidula*), and California blackberry (*Rubus ursinus*). Details of dominant vegetation in wetland habitats are described in Section 2.4.

2.2 Hydrology

Grady Ranch is located in the upper reaches of the 5,100-acre (eight-square mile) Miller Creek watershed. This creek is a major stream in Marin County and flows east through the Las Gallinas Valley for six miles to San Pablo Bay. Upstream (west) of the Wetsel Ranch bridge, the Miller Creek watershed drains 1,700 acres primarily north of Lucas Valley Road (the 1,039-acre Grady Ranch and 12-acre Wetsel Ranch) and a smaller sub-basin south of the road (650

acres). Natural hydrological sources for the Project Area include direct precipitation and surface run-off from adjacent lands.

2.3 Soils

The USDA Soil Survey for Marin County (USDA 1985) indicates that the Project Area has four native soil types: Blucher-Cole complex, 2 to 5 percent slopes, Los Osos-Bonnydoon complex, 30 to 50 percent slopes, Saurin-Bonnydoon complex, 50 to 75 percent slopes, and Tocaloma-Saurin association, extremely steep. These soil types are described in detail below.

105–Blucher-Cole complex, 2 to 5 percent slopes. This map unit is in basins and on alluvial fans. The native vegetation is mainly annual grasses and forbs. This unit is 40 percent Blucher silt loam and 30 percent Cole clay loam. The Blucher soil is near drainageways, and the Cole soil is on basin rims and in depressional areas. This map unit is listed as Hydric on the Marin County hydric soils list (1986) and the National Hydric Soils List (NRCS 2008).

142–Los Osos-Bonnydoon complex, 30 to 50 percent slopes. This map unit is on uplands. The native vegetation is mainly annual grasses, forbs and shrubs. This unit is 60 percent Los Osos loam and 20 percent Bonnydoon gravelly loam. The Los Osos soils are mainly on concave to plane side slopes, and the Bonnydoon soils are mainly on convex side slopes and ridges.

164–Saurin-Bonnydoon complex, 50 to 75 percent slopes. This map unit is on uplands. The native vegetation is mainly annual grasses, forbs, and scattered shrubs. This unit is 50 percent Saurin clay loam and 40 percent Bonnydoon gravelly loam. The Saurin soil is on convex side slopes, and the Bonnydoon soil is on ridgetops.

185–Tocaloma-Saurin association, extremely steep. This map unit is on uplands. Slope is 50 to 75 percent. The native vegetation is mainly hardwoods on the Tocaloma soils and annual grasses and forbs on the Saurin soils. The unit is 40 percent Tocaloma loam and 30 percent Saurin clay loam. The Tocaloma soil is on north- and east-facing side slopes and in drainageways, and the Saurin soil is on ridgetops and side slopes.

2.4 Wetlands and Waters

Miller Creek is the main watercourse draining the Lucas Valley watershed. Miller Creek receives flows originating from higher elevations within Lucas Valley, to the west of the Project Area. Flows within Miller Creek are intermittent, with surface water generally present throughout the rainy season in the entire length of the creek. Surface water may remain present throughout the year in deeper, shaded portions of Miller Creek within the Project Area in some years. The gravelly substrate of Miller Creek may also allow flows to be transported below the surface during the dry season. Miller Creek flows into San Pablo Bay approximately six miles to the east without receiving flows from, or contributing flows to, any other major drainageway.

Within the Project Area, Miller Creek receives flows from two unnamed USGS blue-line streams, and multiple ephemeral watercourses that originate both on and off of the Project Area. Grady Creek, an additional blue-line stream, is located near the eastern edge of the Grady Ranch Property and converges with Miller Creek several yards downstream from Grady Bridge. Many

ephemeral watercourses tributary to Miller Creek drain the surrounding hillsides in the rainy season.

Small areas (less than 0.05 acre) of riparian, seasonal freshwater emergent, and perennial freshwater emergent wetlands were observed on gravel bars within the bed of Miller Creek. These wetlands generally had a dense overstory of either riparian woodland or mixed oak/bay woodland, and were dominated by woody and herbaceous species including arroyo willow, California blackberry, stinging nettle (*Urtica dioica*), horsetail (*Equisetum arvense*), and mugwort (*Artemisia douglasiana*). Seasonal wetlands in the Project Area were found in a vegetated depression that collects flows from an unnamed ephemeral drainage during the rainy season. Seasonal wetlands within the Project Area were dominated by iris-leaf rush (*Juncus xiphioides*) and rattlesnake grass. Perennial freshwater emergent, or seep wetlands, were dominated by sedge (*Carex* spp.), giant chainfern (*Woodwardia fimbriata*), seep monkeyflower (*Mimulus guttatus*), tall flatsedge (*Cyperus eragrostis*), and Douglas' iris (*Iris douglasiana*).

3.0 RESTORATION PLAN

3.1 Basis for Design

Miller Creek, Grady Creek, Landmark Creek, Loma Alta Creek and several smaller drainageways throughout Grady Ranch are steeply incised and show signs of heavy erosion along their banks. This process of down-cutting and erosion is likely due in part to logging and grazing activities in the watershed over the last century. Both activities can promote soil compaction, reduced vegetative cover and increased soil instability in upland areas, which in turn promote higher, more powerful flows through adjacent stream channels, stream bank slumping, and channel scouring. Streams affected by scouring and slumping provide poor habitat for aquatic and riparian vegetation and associated wildlife species such as salmonids and other fish species. Evidence of these erosive processes are most apparent in lower reaches of Grady Creek and just downstream of Grady Bridge in Miller Creek where the creek channel bed is 11 feet lower than the channel bed upstream of the bridge.

To address areas of degraded aquatic habitat on Grady Ranch and mitigate for project impacts, a creek and tributary restoration and stabilization effort is proposed as part of the Master Plan project. Restoration is designed to stabilize existing channels against severe erosion and bank failure, protect planned structures, and where appropriate, to reestablish more natural channel morphology. The restoration plan strives to achieve a balance between the risk of significant or catastrophic bank failure and the loss of riparian habitat. The general location of the proposed channel / gully restoration sites are shown on *Landscape Plan – Stormwater Control and SCA* (LA1.1) and referred to as the Restoration Area. It is proposed that the existing vertical 11 foot drop would be reconstructed in the form of a stepped boulder cascade. The cascade would be constructed with intervening resting pools to improve the prospects for fish passage.

3.2 Restoration Goals

The goals and targets for restoration and future management of the Project Area are to:

- Stabilize existing channels against severe erosion and bank failure,
- Mitigate for impacts to creeks and wetlands incurred from the proposed project,

- Restore a more natural stream morphology,
- Balance the risk of catastrophic bank failure and the loss of riparian habitat,
- Improve prospects for fish passage,
- Improve native species cover and diversity along the creek banks and surrounding upland slopes, and
- Remove man-made structures and other impediments to flow.

3.3 Restoration Components

Restoration efforts at Grady Ranch can be divided into three sections, each of which have different constructed features in and near the stream channel, unique topography, and vary in the extent and composition of restored vegetation. Elements of the stream restoration plan are shown on figures EN 7.1-7.5 (*SCA Restoration and Enhancement Plans* and *Longitudinal Profiles of Miller and Grady Creeks*) and LA 1.3 (*Stream Restoration Planting Details and Sections*).

<u>Lower Miller Creek</u>

Reaches of Miller Creek downstream of the existing Grady Bridge are significantly degraded by downcutting and incision of stream banks; therefore restoration efforts in this area will be more intensive than other parts of the Restoration Area. This lower portion of Miller Creek will focus on backfill of the stream bed with local, native substrate. This backfill will bring the streambed to a more natural grade and the stream banks will be laid back to approximately a 3:1 slope. Double boulder weirs will also be placed approximately every 100 feet to promote pool and run features in the streambed. Implementing these restoration techniques will increase the carrying capacity of the creek, allow space to create raised wetland benches corresponding to the two-year flood level, promote fish (steelhead) passage, increase available aquifer volume, and provide suitable conditions for wetland and riparian vegetation planting and establishment.

<u>Upper Miller Creek</u>

Scouring and downcutting of Miller Creek upstream of Grady Bridge is less extensive than in Lower Miller Creek and thus a less intensive restoration strategy will be employed in this area. Double boulder weirs will be placed less frequently than in Lower Miller Creek at approximately 200 foot intervals. Additionally, natural woody debris will be placed along the stream bank to promote development of pools and provide suitable refuge for aquatic species. Raised wetland benches may also be constructed along upper Miller Creek where suitable sites are present. Existing streamside trees will be retained when possible.

<u>Tributaries to Miller Creek</u>

Restoration efforts in the tributaries to Miller Creek, including Grady Creek, Landmark Creek, and Loma Alta Creek, will focus on backfilling of the stream channels and bank stabilization. Cement structures and other debris will be removed from Grady Creek; small boulder weirs will be placed approximately every 50 feet and the stream banks in some areas will be re-graded for improved stability. Natural woody debris will also be placed in Grady Creek to improve habitat for native aquatic species.

4.0 IMPLEMENTATION

The following sections describe specific elements of restoration implementation. The restoration implementation schedule will be concurrent with Project construction. A Stormwater Control Plan is being prepared by Balance Hydrologics to address water quality protection during- and post-construction. Standard best management practices such as grading during the dry season, using silt fencing, and educating construction personnel on proper erosion control practices will ensure that downstream water quality is protected.

4.1 Site Preparation and Plant Installation

Revegetation with native wetland, riparian, and upland species will enhance habitat quality and diversity on this segment of the creek and will help to stabilize the creek bank. Site preparation and plant installation shall be conducted in accordance with guidelines presented in the Stream Conservation Area Restoration and Enhancement Plan (Balance Hydrologics 2008). Creek restoration activities are designed to avoid existing mature native riparian species but will target non-native and invasive trees and shrubs for removal. A few mature ornamental trees will be retained as they are not invasive species; they provide shade and potential wildlife habitat and anchor the creek banks in some locations. Any trees and shrubs in or adjacent to the Project Area that are proposed for removal and that could be used as nesting sites by Loggerhead Shrike will be removed during the non-breeding season (September through February), or appropriate breeding bird surveys will be conducted prior to removal.

Following grading and prior to planting, the restoration areas designated in the planting plans will be cleared of invasive species and other weeds that may threaten native plant establishment. Mulch or other weed and erosion control materials are highly recommended. Following plant installation, cages to prevent deer browsing and a drip irrigation system for shrubs and trees will be installed; details on these features will be developed as part of landscaping specifications.

4.2 Planting Plan

Plants included in the planting plan are listed in Table 1 below according to their appropriate habitats. Four types of planting areas are included in this restoration plan based upon different elevations in relation to the planned creek and bank grade. The schematic planting plan (LA1.3) also illustrates these communities of plants within these general habitat types.

Table 1. Native plant species included in the Grady Ranch Restoration Plan	
Scientific Name	**Common Name**
Floodplain Terrace - Lower Miller Creek and Grady Creek	
Artemisia douglasii	mugwort
Baccharis pilularis	coyote brush
Juncus effusus	bog rush
Juncus patens	common rush
Salix laevigata	red willow
Salix lasiolepis	arroyo willow
Riparian - Lower Miller and Grady Creek	
Aesculus californica	California buckeye
Baccharis piluaris	coyote brush
Heteromeles arbutifolia	toyon
Rosa californica	California rose
Quercus agrifolia	coast live oak
Quercus lobata	valley oak
Rhamnus californica	coffeberry
Sambucus mexicana	blue elderberry
Symphorocarpos albus	snowberry
Upper Miller Creek	
Aesculus californica	California buckeye
Baccharis piluaris	coyote brush
Heteromeles arbutifolia	toyon
Quercus agrifolia	coast live oak
Quercus lobata	valley oak
Rhamnus californica	coffeberry
Ribes californicum	California gooseberry
Native Seed Mix for Seasonal Wetlands	
Carex serratodens	two toothed sedge
Eleocharis macrostachya	creeping sikerush
Juncus xiphioides	iris-leaved rush
Mimulus guttatus	seep monkeyflower

Non-native plants shall not be planted in the Project Area. Invasive plants or any aggressive non-native species that can easily spread into the restoration area shall not be installed anywhere on the property as it would pose a risk to the native plantings.

The optimal time to plant native species is during the late fall after rains have begun and when more rain is predicted in the coming weeks and months. This allows the plants to establish

sufficient root systems and reduces the need for supplemental irrigation. Irrigation is still recommended immediately after planting, during any dry spells during the first few months, and approximately weekly during the first dry season. Native shrubs and trees will benefit from occasional (approximately bi-weekly) and deep dry season watering in the subsequent two to three years, and do not need to be continually irrigated once they appear to be established. Excessive watering of these drought-resistant species may encourage root rot, excessive above ground growth without deep roots, or competition from weeds near the irrigation source.

5.0 MAINTENANCE

Maintenance activities will include: 1) inspections of irrigation systems, plant protection devices, if used, followed by repair, replacement, or removal of malfunctioning items, 2) inspections of the creek channel and banks to ensure function and protection from erosion, and 3) inspections for colonization of the restoration areas by non-native plants and action to discourage them.

5.1 Site Inspection

The irrigation system will be inspected monthly during the dry season for the first three years and repaired as needed. Bent or fallen support structures, cages, and or fencing will be repaired as necessary by landscaping staff. Tree cages may be removed once the protected plants have attained heights where they are not significantly suppressed by deer browsing. Removal of temporary fencing and individual plant flagging or other identification should only occur when plants are sufficiently established to withstand foot traffic in the vicinity and the difference between native plantings and weeds can be easily determined by landscaping staff. Removal of protective structures or changes to the irrigation system or schedule may only occur when determined appropriate by consulting biologist.

Non-native plant inspections will be conducted during annual monitoring visits, and corrective actions taken as soon as is appropriate depending on the target species. Biologists will identify the extent of non-native plants on Cal-IPC's High, Moderate, or Limited invasive lists, as well as any other locally-invasive species that threaten the success of the installed native plants. If present, appropriate mechanical or biological controls will be implemented as described below to either eliminate or to control any invasive species so that it will not have a significant impact on the survival of installed plantings or the ecological function of the restored habitat.

5.2 Invasive Plant Control

Invasive plant removal and control shall be an integral part of site preparation, short-term monitoring, and long-term maintenance of the Project Area. As described above, weeds and invasive species will be cleared prior to planting the Project Area. Control methods for species that are present in significant numbers and currently pose the highest risk to restoration success are described in the Grady Ranch *Landscape and Vegetation Management Plan*. Monitoring for expansion or new invasion of the Project Area will occur as part of the annual site inspections described above.

6.0 MONITORING

For a minimum of five years following the completion of the entire construction project, a consulting biologist will supervise annual monitoring of the stream restoration. The purpose of the monitoring will be to verify that the specifications included within this report and success criteria summarized below have been completed. Fencing in restoration areas will be monitored to ensure it is installed and intact. The restoration area will be examined for signs of damage from foot traffic or any other uses besides the necessary management and monitoring outlined in this Plan. Photographs will be taken at a minimum of three to four permanent photopoints to document riparian habitat development during each monitoring year.

Monitoring will be conducted in the early summer of each year before leaf drop of early deciduous trees and shrubs such as California buckeye. Survival and health of all planted tree and shrub species within the restoration areas will be assessed. General size, growth rates, and canopy cover of various species should be noted and may guide any changes in the planting plan if replanting is necessary. No specific canopy cover targets are suggested due to the many slow-growing species chosen. The primary goal of this monitoring program is to ensure establishment of healthy native species throughout the restoration area. Spacing of planted tree and shrub species will facilitate development of a dense riparian canopy as plants mature. High value riparian canopy will eventually replace low-value treeless or exotic-dominated areas currently lining portions of Miller Creek.

If any year's survival goals are not achieved, the appropriate number of trees, shrubs, or herbaceous species will be replanted as part of a remedial planting during the subsequent fall or winter. The number and species to be replanted will be determined by the consulting biologist based upon available space, appropriate locations, and potential for competition with existing plantings. If growth of native plantings and canopy coverage is rapid and replacement planting is not deemed necessary towards the end of the monitoring period, the total numbers required in the success criteria may be modified accordingly.

Monitoring for invasive plants will be an important component of short- and long-term monitoring within the restoration areas. As described above, weeds and invasive species will be cleared prior to planting the Project Area. Monitoring for expansion or new invasion within the restoration areas will occur as part of the annual site inspections described above. Recommendations for removal and control of weeds will be developed by the consulting biologist to be implemented by the permitee or a landscape contractor as necessary. Landscaping staff will be instructed on identification and removal of typical invasives in the vicinity, to ensure ongoing monitoring throughout the project area after the end of the five-year monitoring period.

6.1 Success Criteria

Success of the riparian and wetland habitat restoration, and establishment of creek vegetation and erosion control, requires the prevention of extensive human disturbance and control of invasive species in planting areas. Therefore, the following criteria will be evaluated to ensure that protective measures and maintenance are being performed, and that native plants are established and likely to persist beyond the monitoring period:

YEAR 1

- Survival of planted trees and shrubs throughout the restoration area will exceed 90 percent of the total number planted.
- Native wetland herbaceous species cover in wetland terraces and/or the creek channel will exceed a total of 0.04 acre, representing 50 percent of the final (Year 5) success criteria of 0.08 acre of vegetative cover.
- Invasive plants on the California Invasive Plant Council (Cal-IPC) High or Moderate lists will not exceed five percent relative cover.

YEAR 3

- Survival of planted trees and shrubs will exceed 85 percent of the total number planted.
- Native wetland herbaceous species cover in wetland terraces and/or the creek channel will exceed a total of 0.06 acre, representing 75 percent of the final (Year 5) success criteria of 0.08 acre of vegetative cover.
- Invasive plants on the California Invasive Plant Council (Cal-IPC) High or Moderate lists will not exceed five percent relative cover.

YEAR 5

- Survival of planted trees and shrubs will exceed 80 percent of the total number planted.
- Native wetland herbaceous species cover in wetland terraces and/or the creek channel will reach or exceed a total of 0.08 acre, representing 100 percent of the final (Year 5) success criteria of 0.08 acre of vegetative cover.
- Invasive plants on the California Invasive Plant Council (Cal-IPC) High or Moderate lists will not exceed five percent relative cover.

6.2 Reporting

Annual monitoring reports shall include a general description of work performed over the previous year and an evaluation of the restoration area according to the success criteria. The numbers and condition of planted trees and shrubs and the cover of native herbaceous species planted and seeded should be described, as well as any observed threats to these plants or to native habitats. New invasions of non-native species and plans for their removal or control should be detailed, as necessary. The fifth year monitoring report should also evaluate whether the restoration area has become sufficiently self-sustaining or whether additional invasive species control work or other conservation activities or monitoring should be performed. Annual reports will be prepared by December 31 of each monitoring year.

7.0 RESTRICTIONS

The following restrictions on activities in the Restoration Area are intended to prevent disturbance of the creek banks, existing vegetation, and installed native plantings. Any substantial deviation from these restrictions requires approval from the County.

7.1 Construction and Material Storage

Solid materials, including wood, masonry/rock, glass, paper, or other materials shall not be stored anywhere in the restoration areas. Solid waste materials should be properly disposed of off-site. Construction and storage of materials within the restoration areas is limited to maintenance of exclusionary fencing, and other planned features as described in Section 4.0. Piles of plant debris may be produced during non-native species removal. These debris piles may only be left in the restoration areas on sites that are already covered in non-native plants or bare ground, and only if necessary to suppress regrowth of invasive plants or to prevent erosion. Otherwise, these piles should be removed from the restoration areas and composted when feasible. A layer of certified weed-free mulch such as rice straw or native grass straw may also be applied to larger areas of exposed soil to reduce the potential for erosion or re-invasion by non-native species.

7.2 Grading or Alteration of Hydrology

With the exception of restoration activities described in this report, no grading or other ground disturbance shall occur in the restoration areas except as shown on the Grady Ranch PDP drawings. Reasonable care shall be taken to avoid disturbing the existing grade and surrounding soils as much as possible when removing invasive plants or planting native species.

7.3 Planting Non-Native Species

No non-native plant species may be planted in the restoration areas. Species listed as invasive (“High”, “Moderate”, *and* “Limited”) on the California Invasive Plant Council’s California Invasive Plant Inventory (Cal-IPC 2006) shall not be planted anywhere on the property as it would pose a risk to the establishment and maintenance of native plantings. Locally-native plants are recommended for all exterior landscaping, since the site is surrounded by Open Space and the Master Plan construction plans are aimed at minimizing negative environmental impacts.

7.4 Tree Removal

If any of the riparian or upland trees in the restoration area become diseased or are a danger to public safety or property, removal will be allowed. This statement does not imply permission to undertake the removal of any tree without obtaining any appropriate tree removal permits, if applicable. In addition, removal will be consistent with California Department of Fish and Game regulations and may require a bird nesting survey or Streambed Alteration Permit consistent with applicable laws.

8.0 REFERENCES

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Native and Invasive Plant Identification and Management

For more information on special status plants, native plant nurseries, and local CNPS chapters:

California Native Plant Society (CNPS), 2707 K Street, Suite 1, Sacramento, CA 95816 Phone: (916) 447-2677 Email: cnps@cnps.org Website: www.cnps.org

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Appendix A – List of Observed Plant Species

Appendix A. List of plant species observed during July 31 and August 6, 2008 site visits to Grady Ranch.

Family	**Scientific Name**	**Common Name**
Aceraceae	*Acer macrophyllum*	big-leaf maple
Anacardiaceae	*Toxicodendron diversilobum*	poison oak
Apiaceae	*Anthriscus caucalis*	bur chervil
Apiaceae	*Conium maculatum*	poison-hemlock
Apiaceae	*Foeniculum vulgare*	sweet fennel
Apiaceae	*Osmorhiza berteroi*	sweet cicely
Apiaceae	*Perideridia sp.*	yampah
Apiaceae	*Sanicula crassicaulis*	pacific sanicle
Apiaceae	*Scandix pecten-veneris*	shepherd's needle
Apiaceae	*Torilis arvensis*	field hedge-parsley
Apocynaceae	*Nerium oleander*	oleander
Asteraceae	*Artemisia californica*	coast sagebrush
Asteraceae	*Artemisia douglasiana*	mugwort
Asteraceae	*Baccharis pilularis*	coyotebrush
Asteraceae	*Carduus pycnocephalus*	Italian thistle
Asteraceae	*Centaurea calcitrapa*	purple starthistle
Asteraceae	*Centaurea solstitialis*	yellow starthistle
Asteraceae	*Cirsium vulgare*	bull thistle
Asteraceae	*Conyza sp.*	asthmaweed
Asteraceae	*Filago gallica*	filago
Asteraceae	*Gnaphalium luteo-album*	everlasting cudweed
Asteraceae	*Gnaphalium sp.*	cudweed
Asteraceae	*Helenium puberulum*	rosilla
Asteraceae	*Hemizonia congesta ssp. congesta*	tarweed
Asteraceae	*Hypochaeris radicata*	rough cat's ear
Asteraceae	*Lactuca serriola*	prickly lettuce

Family	Scientific Name	Common Name
Asteraceae	*Madia sativa*	coast tarweed
Asteraceae	*Sonchus asper*	prickly sowthistle
Asteraceae	*Xanthium spinosum*	spiny cocklebur
Asteraceae	*Wyethia angustifolia*	narrow-leaf mule's ear
Boraginaceae	*Amsinckia sp.*	fiddleneck
Brassicaceae	*Brassica nigra*	black mustard
Brassicaceae	*Rorippa nasturtium-aquaticum*	watercress
Blechnaceae	*Woodwardia fimbriata*	giant chainfern
Caprifoliaceae	*Lonicera sp.*	honeysuckle
Caprifoliaceae	*Sambucus mexicana*	blue elderberry
Convolvulaceae	*Convolvulus arvensis*	field bindweed
Crassulaceae	*Dudleya cymosa*	canyon dudleya
Cucurbitaceae	*Marah fabaceous*	California manroot
Cyperaceae	*Cyperus eragrostis*	tall flatsedge
Cyperaceae	*Carex nebrascensis*	Nebraska sedge
Cyperaceae	*Carex praegracilis*	field sedge
Cyperaceae	*Carex subbracteata*	small bract sedge
Dryopteridaceae	*Dryopteris sp.*	shield fern
Equisetaceae	*Equisetum arvense*	common horsetail
Ericaceae	*Arbutus menziesii*	pacific madrone
Euphorbiaceae	*Eremocarpus setigerus*	turkey mullein
Euphorbiaceae	*Euphorbia oblongata*	eggleaf spurge
Fabaceae	*Lathyrus sp.*	pea
Fabaceae	*Lotus sp.*	lotus
Fabaceae	*Lupinus sp.*	lupine
Fabaceae	*Trifolium hirtum*	rose clover
Fabaceae	*Vicia sp.*	vetch
Fagaceae	*Quercus agrifolia*	coast live-oak

Family	Scientific Name	Common Name
Fagaceae	*Quercus douglasii*	blue oak
Fagaceae	*Quercus garryana*	Oregon white oak
Fagaceae	*Quercus lobata*	valley oak
Gentianaceae	*Centaurium muehlenbergii*	Monterey centaury
Geraniaceae	*Erodium botrys*	broadleaf filaree
Grossulariaceae	*Ribes californicum*	California gooseberry
Hippocastanaceae	*Aesculus californica*	California buckeye
Iridaceae	*Iris douglasiana*	Douglas iris
Iridaceae	*Iris macrosiphon*	ground iris
Iridaceae	*Sisyrinchium bellum*	blue-eyed grass
Juncaceae	*Juncus effusus*	soft rush
Juncaceae	*Juncus patens*	spreading rush
Juncaceae	*Juncus phaeocephalus*	brown-head rush
Juncaceae	*Juncus xiphioides*	iris-leaf rush
Lamiaceae	*Mentha pulegium*	pennyroyal
Lamiaceae	*Stachys sp.*	hedge nettle
Lauraceae	*Umbellularia californica*	bay laurel
Liliaceae	*Calochortus sp.*	lily
Liliaceae	*Chlorogalum pomeridianum*	soap plant
Liliaceae	*Dichelostemma congestum*	ookow
Onagraceae	*Epilobium brachycarpum*	willow-herb
Onagraceae	*Epilobium canum*	California fuchsia
Papaveraceae	*Eschscholzia californica*	California poppy
Pinaceae	*Pinus radiata*	Monterey pine
Pinaceae	*Pseudotsuga menziesii var. menziesii*	Douglas fir
Plantaginaceae	*Plantago lanceolata*	English plantain
Poaceae	*Avena barbata*	slender wild oats
Poaceae	*Avena fatua*	wild oats

Family	Scientific Name	Common Name
Poaceae	*Briza maxima*	rattlesnake grass
Poaceae	*Bromus diandrus*	rip-gut brome
Poaceae	*Bromos hordeaceus*	soft chess
Poaceae	*Cynodon dactylon*	Bermuda grass
Poaceae	*Cynosurus echinatus*	hedgehog dogtail
Poaceae	*Danthonia californica*	California oatgrass
Poaceae	*Elymus elymoides*	squirreltail
Poaceae	*Elymus glaucus*	blue wild-rye
Poaceae	*Festuca occidentalis*	western fescue
Poaceae	*Gastridium ventricosum*	nit grass
Poaceae	*Holcus lanatus*	velvet grass
Poaceae	*Hordeum marinum*	Mediterranean barley
Poaceae	*Hordeum murinum*	foxtail barley
Poaceae	*Leymus triticoides*	creeping wild-rye
Poaceae	*Lolium multiflorum*	Italian ryegrass
Poaceae	*Nassella pulchra*	purple needlegrass
Poaceae	*Phalaris aquatica*	Harding grass
Poaceae	*Polypogon monspeliensis*	rabbitsfoot grass
Polygonaceae	*Eriogonum nudum*	nude buckwheat
Polygonaceae	*Rumex acetosella*	sheep sorrel
Polygonaceae	*Rumex crispus*	curly dock
Polygonaceae	*Rumex pulcher*	fiddle dock
Primulaceae	*Anagallis arvensis*	scarlet pimpernel
Pteridaceae	*Adiantum jordanii*	maidenhair fern
Pteridaceae	*Pelleae andromedifolia*	coffee fern
Pteridaceae	*Pentagramma triangularis*	goldenback fern
Rosaceae	*Fragaria vesca*	wood strawberry
Rosaceae	*Holodiscus discolor*	oceanspray

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Rosaceae	*Prunus cerasifera*	cherry plum (cultivar)
Rosaceae	*Rosa californica*	California rose
Rosaceae	*Rubus discolor*	Himalayan blackberry
Rosaceae	*Rubus leucodermis*	western raspberry
Rosaceae	*Rubus ursinus*	California blackberry
Rubiaceae	*Galium porrigens*	climbing bedstraw
Salicaceae	*Salix lasiolepis*	arroyo willow
Scrophulariaceae	*Mimulus aurantiacus*	bush monkeyflower
Scrophulariaceae	*Mimulus cardinalis*	scarlet monkeyflower
Scrophulariaceae	*Mimulus guttatus*	seep monkeyflower
Scrophulariaceae	*Scrophularia californica*	beeplant
Solanaceae	*Solanum nigrum*	black nightshade
Taxodiaceae	*Sequoia sempervirens*	coast redwood
Urticaceae	*Urtica dioica*	stinging nettle