FINAL

RESTORATION PLAN FOR LOT 67 ON ELLWOOD MESA

August 2006

Prepared for:

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1.0 INTRODUCTION

This restoration plan is required by the California Department of Fish and Game (CDFG) as part of the conditions in the Streambed Alteration Agreement (May 8, 2006) for Lot 67 of the Bluffs at Sandpiper Project. The Bluffs at Sandpiper Project is a 62-unit residential development by Comstock Homes that resulted from a land swap of development rights from the Ellwood Mesa to a portion of Santa Barbara Shores Park, owned by the City of Goleta. The project site is located south of the 7600 block of Hollister Ave. in Goleta, California. A portion of a drainage call 'Drainage B' is within Lot 67 of the Bluffs at Sandpiper Project Site. See Figure 1 for a map of the project location.

As a result of the land swap, deed restrictions have been placed on the Ellwood Mesa to ensure that it remains to be protected open space. The 630 foot portion of Drainage B that is within this development footprint is located on Lot 67, which is an open space lot retained by (and owned by) the City of Goleta. The convergence of Drainage B with Devereux Creek occurs approximately 50 feet downstream from the southern edge of Lot 67. Drainage B is an ephemeral depression that is a tributary to Devereux Creek. It is not a blue line stream. The total length of Drainage B is approximately 680 feet. Devereux Creek is a CDFG-regulated watercourse including vegetated and unvegetated wetlands that are outside of the development footprint. Habitats within Lot 67 include coyote brush scrub, non-native grassland, native grassland, southern riparian scrub, and ornamental. Coyote brush scrub and non-native grassland are most prevalent in Drainage B.

The restoration project within Lot 67 includes vegetation clearing in some areas to allow grading and construction of storm drain outlets, and the creation of native riparian and grassland habitats. Vegetation clearing, grading, and debris removal was initiated along with plant and wildlife protection measures from the City of Goleta conditions of approval for Lot 67. Vegetation consisting mostly of coyote brush and non-native soaptree yucca *(Yucca elata*) was cleared along portions of Drainage B to allow for grading in order to install storm drain outlets. Surface water

runoff from the 62-unit residential development will flow into a filtered storm drain system, which will discharge into either a detention basin located on the east side of the development or into Drainage B. The storm drain system will include Abtech filters approved by California Coastal Commission (CCC). With the initial clearing and grading activities that occurred, several hundred tons of concrete rubble and trash debris were found lining the drainage. Pesticide drums were encountered during the debris removal, triggering site remediation under consultation with Santa Barbara Fire and California Department of Fish and Game. The drainage is currently cleared of the debris and contamination. Once the habitat restoration plan is implemented, Drainage B will have greater cover and diversity of native vegetation and will have converted a degraded drainage dominated by coyote brush scrub to native riparian and grassland habitat.

A revegetation plan for Drainage B was prepared by Van Atta Associates and approved by the City of Goleta on July 22, 2005, and the Coastal Commission on August 16, 2005. This restoration plan was submitted to the California Department of Fish and Game (CDFG) as part of the Application for a CDFG 1602 Streambed Alteration Agreement for Drainage B. CDFG is requiring the restoration plan prepared by Van Atta Associates be revised to include sticky monkey flower and sages (See Appendix A). In addition, CDFG is requiring Comstock Homes to provide a more detailed restoration plan that includes the following information:

- The time of year planting will occur
- A description of the irrigation methodology
- Measures to control exotic vegetation on the site
- Success criteria
- Detailed monitoring program
- Contingency measure should the criteria not be met

This restoration plan is described in further detail below.

Insert Figure 1

2.0 RESTORATION APPROACH

To offset losses to native vegetation in Lot 67 as a result of clearing and regrading and to minimize colonization by weedy species, Lot 67 will be revegetated with native riparian and upland species. Restoration of Lot 67 will include the following:

- Grow kill cycles to reduce the weed seed bank prior to revegetating. Removal methods will be a combination of cutting plants prior to seed set (for annual species), physically pulling or digging plants up, and if necessary, herbicide use.
- Installation of erosion control measures such as coconut netting or straw waddle certified to be weed free, on steep banks of the drainage prior to the rainy season to minimize erosion and sedimentation into the drainage.
- Seed collection from local seed stock within the coastal bluff area of the Devereux watershed to use for plant propagation and seeding Lot 67.
- Installation of a temporary irrigation system prior to plant installation and seeding.
- Planting 57 arroyo willows (*Salix lasiolepis*) in 15-gallon pots, 41 Mexican elderberry (*Sambucus mexicana*) in 15-gallon pots, and 57 coyote brush (*Baccharis pilularis* ssp. *consanguinea*) in 1-gallon pots.
- Seeding 1.27 acres (at 30 lbs per acre) with a mix of the following species: California poppies (*Eschscholzia californica 'maritima'*), California brome (*Bromus carinatus*), meadow barley (*Hordeum californicum*), deerweed (*Lotus scoparius*), lupine (*Lupinus succulentus*), purple needle grass (*Nassella pulchra*), blue-eyed grass (*Sisrynchium bellum*), sticky monkey flower (*Mimulus aurantiacus*), black sage (*Salvia mellifera*), and purple sage (*Salvia leucophylla*).
- Maintenance and monitoring of Lot 67 restoration site for a minimum of two years or until performance criteria are met.

3.0 RESTORATION INSTALLATION

3.1 Sources of Plant Materials

To preserve the integrity of local gene pools, ensure adaptation to site-specific conditions, and avoid inadvertent introduction of inappropriate species or pathogens, all seed of native species to be used for revegetation will be collected from the coastal bluff area in the Devereux watershed. Appropriate areas for collection of native plant materials within the Devereux watershed will be defined in the field, taking into account the following:

- Ecological similarity to the area to be reseeded
- Proximity to the project site
- Land ownership
- Accessibility
- Abundance and collectability of target species
- Need to ensure genetic diversity of source material (i.e., seed should be collected from a diverse sample of the parent plants within the collection zone).
- All California poppies shall be collected from the local "maritima" form.

Any replacement tree stock, which cannot be grown from cuttings or seeds, shall be obtained from a native plant nursery, be ant free and shall not be inoculated to prevent heart rot. A list of all materials, which must be obtained from other than onsite sources, shall be provided to CDFG.

3.2 Installation of Container Plants and Seeds

Coyote brush, arroyo willow, and Mexican elderberry container plants and California brome, California poppy, Meadow barley, deerweed, lupine, purple need grass, blue-eyed grass, sticky monkey flower, black sage, and purple sage seeds will be installed in mixes designed to provide habitat similar to native habitats in the vicinity of Ellwood Mesa. Installation of container

plantings and seeds will be scheduled to coincide with the onset of the rainy season (between October 1 and April 30). Precise plant layout, number of individuals of each species, and planting/seeding locations are defined in the Restoration Plan (revised August 2006). Seeds will be broadcasted and raked into pre-raked soils and followed immediately by regular irrigation to promote germination unless rainfall is sufficient.

3.3 Plant Protection

Individual container plantings will not have above ground protection such as wire cages. Above ground protection would be aesthetically unpleasing because the adjacent area is heavily used, and such protection is not necessary given that large herbivores are not generally present at the site. Signage and fencing should be placed around the restoration site to inform people to stay out of the restoration area to minimize trampling of native plants.

3.4 Irrigation

All container plantings and seeded areas will be irrigated at the time of installation and watered as needed thereafter depending on rainfall and site conditions for at least two years following plant/seed installation. A low precipitation overhead irrigation system with a timer will be used to provide water to plantings and seeds. Irrigation should be used regularly during the first several months after installation to ensure germination of seeds and establishment of container plants if rainfall is not sufficient. All plants should be weaned off the irrigation system toward the fall/winter of the second year unless severe conditions threaten the survival of plantings or replacement plants need irrigation to become established. All plants must survive and grow without supplemental irrigation for the restoration project to be acceptable to CDFG.

3.5 Weed Eradication

Reduction of invasive exotic species is an essential element of restoration of Lot 67. A minimum of two grow kill cycles should be performed prior to plant and seed installation. Annual species, such as mustards and thistles, will be hand pulled or cut prior to flowering to

reduce seed set. This will be necessary at least twice during the growing season. Perennial species, such as fennel (*Foeniculum vulgare*) and soaptree yucca (*Yucca elata*) will be removed by hand (including the roots). If hand removal is not feasible, perennial weed species will be treated with herbicides approved for use in close proximity to water. Herbicide application will be by trained personnel that can identify the species to be sprayed, and only individual plants will be treated. Perennial weed species will be removed whenever they colonize the site over the life of the project. See Table 1 for recommended weed control methods for perennial and invasive annual species that occur on the site or are considered likely to occur. Additional invasive exotic species (not included in Table 1) are likely appear at the site over time and will be treated similarly to the species listed in Table 1.

Table 1. Recommended Weed Removal Methods

Common Name	***Scientific Name***	***Recommended Methods of Removal****
Mustards	*Brassica* spp. *Hirschfeldia incana*	• Cut prior to flowering or hand remove
Italian thistle	*Carduus pychnocephalus*	• Cut prior to flowering or hand remove
Bull thistle	*Cirsium vulgare*	• Cut prior to flowering or hand remove • Spray with an approved herbicide
Nutsedge	*Cyperus* sp.	• Dig up entire plants • Spray with an approved herbicide
Blue Gum	*Eucalyptus globulus*	• Dig up entire plant and dispose off site
Fennel	*Foeniculum vulgare*	• Dig up entire plant and dispose off site • Spray with an approved herbicide
Tree tobacco	*Nicotiana glauca*	• Dig up entire plants and dispose off-site • Cut plants and spray with an approved herbicide a few weeks later (when resprouting)
Castor bean	*Ricinus communis*	• Dig up entire plants and dispose off-site • Cut plants and spray with an approved herbicide a few weeks later (when resprouting)
Milk thistle	*Silybum marianum*	• Cut prior to flowering
Soaptree yucca	*Yucca elata*	• Dig up entire plants • Cut near ground and dispose of cut material off site
• Herbicide use is only recommended when mechanical measures fail to control a species or when digging up many plants would damage the bank structure. • Annual weeds should only be cut using a weed whacker if there are too many annual weeds to maintain by hand removal. If a weed whacker is used, care will be taken to avoid cutting native plants.		

3.6 Schedule

The restoration schedule is described in Table 2 below. Since the seeds must be from a local seed source, revegetation is likely to begin in Fall 2007 in order to be able to collect local seeds in Spring/Summer 2007. It is unlikely due to the limited amount of available seeds and plants propagated from the Devereux watershed, but if any container plants or seeds from the Devereux watershed can be obtained in time for Fall/Winter 2006 planting, some plants/seeds could be installed in 2006 and the remaining in 2007/2008.

Table 2. Restoration Schedule

Timing	*Task*
Fall 2006	Install erosion control, start propagating native trees
Spring/Summer 2007	Perform a minimum of two grow kill cycles
Late Spring/Summer 2007	Collect native seeds and propagate container plants for coyote brush
Late Summer/Fall 2007	Set up photopoints (resample throughout the monitoring period); install irrigation system
Late Fall/Winter 2007/2008	Install container plants and broadcast and rake native seed into the soil
Immediately following plant/seed installation through Fall 2009 or until performance criteria are met	Conduct regular site maintenance including weeding, watering, and replacement planting; conduct regular site monitoring including taking photos at established photopoints
Fall 2007, Fall 2008, Fall 2009	Post installation report and annual reports for a minimum of two years
Fall 2009	Performance assessment; release of Comstock Homes from mitigation requirement, if performance criteria have been met
Note: End of monitoring is whenever performance criteria are met – assumed to be approximately Fall 2009	

4.0 MONITORING AND MAINTENANCE

4.1 Permit Conditions

Conditions in the CDFG Streambed Alteration Agreement require monitoring of Lot 67 restoration (see Appendix C). Approval of the restoration plan by the California Coastal Commission and the City of Goleta was required and obtained, but no additional conditions were included in those approvals.

4.2 Performance Criteria

The overall goals of the restoration are (1) to reduce the establishment and colonization by non-native invasive species; (2) to reduce erosion and sedimentation from the banks into the drainage channel; (3) to provide native habitat for wildlife; and (4) to provide a buffer between the drainage channel and developed uplands (e.g., parking lots) to enhance wildlife habitat values and reduce contaminant runoff into the drainage channel. The following performance criteria as specified in the CDFG streambed alteration agreement (numbers 9-11) will be a gauge against which success will be measured at the end of the program:

- All planting shall have a minimum of 80% survival the first year and 100% survival thereafter and/or shall attain 75% cover after 3 years and 90% cover after 5 years for the life of the project.
- No single species shall constitute more than 50% of the vegetative cover, no woody invasive species shall be present, and herbaceous invasive species shall not exceed 5% cover.
- Prior to determining the restoration successful, the native plants shall have survived entirely without any supplemental irrigation for a minimum of 2 years.

Replacement planting is required if these measures are not met. Replacement plants shall be monitored with the same survival and growth requirements for 5 years after planting. Additional

measures such as more aggressive weed control may need to be undertaken in order to meet the performance criteria. Monitoring will be continued until the performance criteria are met. Removal or destruction of plantings due to maintenance of drainage facilities shall be replaced at a ratio of 1:1 by the Homeowners Association.

4.3 Monitoring

Monitoring will be conducted at regular intervals as needed for compliance with project permits (see Appendix C) to ensure that restoration is successful. A monthly monitoring schedule is recommended for a minimum of two years or until the performance criteria are met in order to ensure that all weeds are being addressed before they become a problem and to ensure that native plants are growing well and are healthy.

Monitoring of Lot 67 restoration will consist of a general walk-through of the site by a restoration biologist to look for establishment of planted species, invasive weeds, and effectiveness of irrigation. Approximate cover by native and non-native species will be visually estimated and recorded in different portions of the restoration area during each visit. Establishment of invasive exotic species will be recorded as well. Problems noted during monitoring will be reported to Comstock Homes for correction.

A minimum of six photopoints will be established at vantage points to document the condition of Lot 67 prior to restoration. Photopoints will be resampled after initial planting and twice annually in April/May and November/December thereafter.

In addition, vegetation transect monitoring using the point intercept method will be conducted once a year in the spring during the peak flowering period to determine if the performance criteria measures are being met. Vegetation transects will be established and marked during the spring following restoration installation and will be surveyed once a year for the minimum two year maintenance and monitoring period or until the performance criteria are met.

4.4 Maintenance

Maintenance will be conducted on a regular basis for a minimum of two years or until performance criteria are achieved. Maintenance services would include weed control utilizing a variety of methods described below. A restoration biologist would provide field oversight and direction to maintenance field crews. The maintenance schedule and crew size will be adjusted based on the abundance of weeds on site and the effort it takes to remove them before going to seed; however, much of the effort would be focused during the peak growing season. Specific maintenance requirements are listed below:

- ***Watering.*** Plants shall be watered on an as-needed basis to ensure proper establishment and good health. Watering shall be applied to encourage deep rooting. No irrigation runoff is allowed. The irrigation system shall be inspected on at least a weekly basis. Maintenance crews shall repair and replace parts as needed.

- ***Weed Control.*** Weed cover shall not exceed 5 percent of the total area at any time. Maintenance personnel must be trained to distinguish between native and non-native plants and seedlings. Weed removal at the base of individual plants, or within 10 inches, shall be done by hand or mechanical methods. When possible, maintenance throughout the site should also be conducted by hand or tools; however if herbicides are needed, Roundup or Aquamaster (to be approved by the Restoration Specialist) are the only herbicides that will be used on the site to control weeds. Herbicides will be applied using a narrow spray to minimize drift and accidental spraying of non-target species. If herbicides must be used, signs announcing the herbicide to be used must be posted around the restoration site at least 24 hours prior to application and remain in place 48 hours after application as described previously.

- ***Coyote Brush Control.*** Coyote brush tends to grow readily and may begin to dominate the project site, so although this is a native species, it should be kept under control until

the herbaceous and native grass species are well established, otherwise these areas could be crowded out by coyote brush.

- ***Replacement Plantings.*** The Restoration Specialist will determine overall plant mortality and decide whether replacement plants are needed and where they will be planted.

4.5 Reporting

Reporting will be completed annually to comply with permit conditions. A post-project report will be prepared after three months of plant/seed installation documenting plant health, species types, and percentage coverage of seeded areas. Reports for permit compliance will be prepared annually for a minimum of two years or until performance criteria are met.

Annual restoration monitoring reports will describe the monitoring conducted, any weed control or other maintenance (e.g., watering) performed, problems noted and how resolved, and progress towards meeting the performance criteria. All reports will include photographs from the designated photopoints. Once the performance criteria are met, no further reporting will be necessary.

APPENDIX A

RESTORATION PLAN BY VAN ATTA ASSOCIATES (REVISED AUGUST 2006)

APPENDIX B

SITE PHOTOGRAPHS

APPENDIX C

STREAMBED ALTERNATION AGREEMENT (MAY 8, 2006)