**La Sierra-Makabi Mitigation Plan**
**Mountains Restoration Trust**
**October 2013**

**Project requirement**

● Establishment of 28 (1-gal) coast live oaks and associate oak woodland species on 0.15 acre of native habitat.

**Project goals**

● To improve wildlife value to La Sierra Canyon through the establishment of 28 coast live oaks and associate oak woodland evergreen shrubs native to La Sierra Canyon.

.● To control non-native herbaceous species and replace with broadleaf perennials and grasses native to La Sierra Canyon.

● To establish native vegetation grown from seed, cuttings and divisions locally collected in the central Santa Monica Mountains

**Description of project areas**

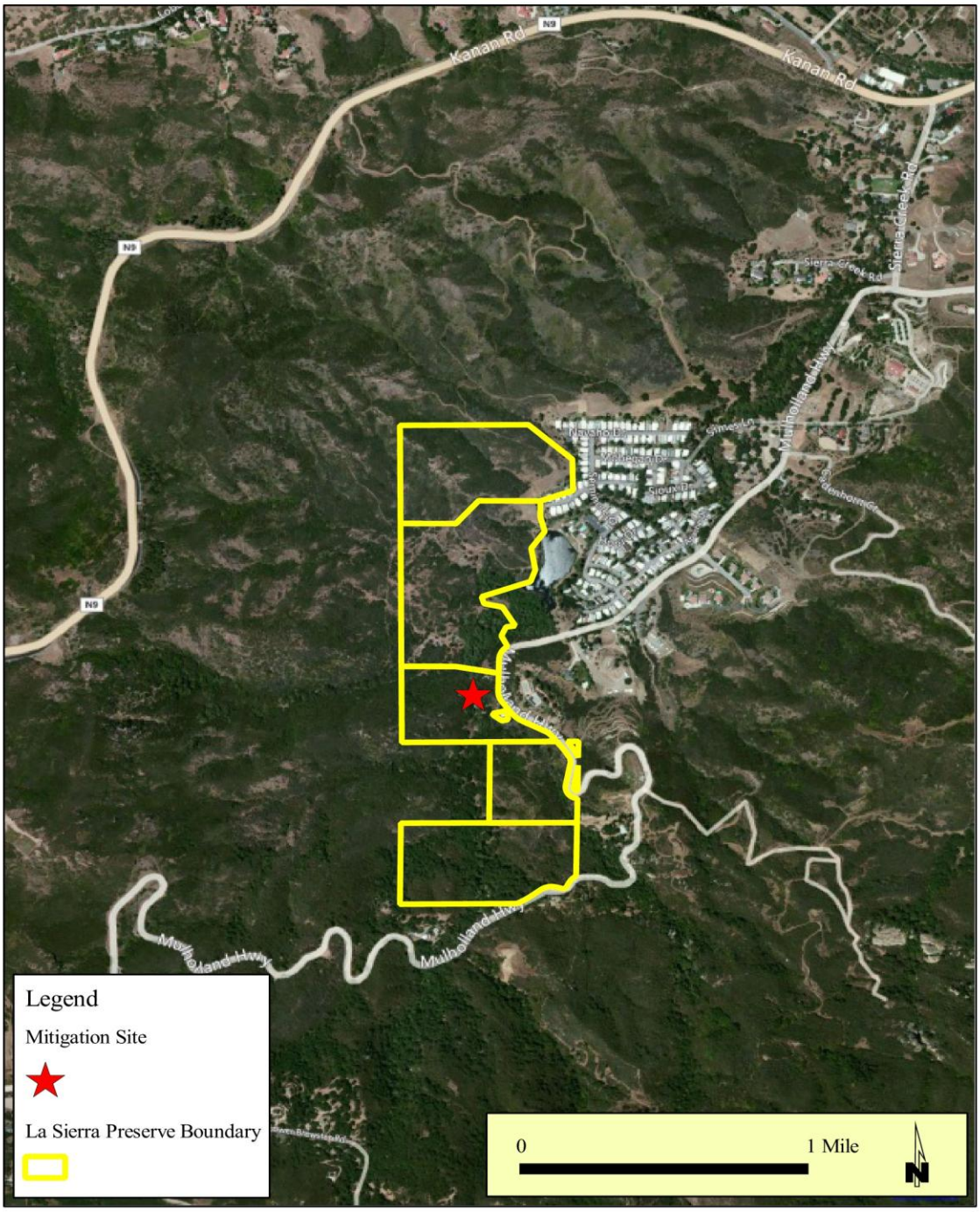
The proposed mitigation sites are located on mild slopes east of La Sierra Creek, a tributary to Triunfo Creek, which is a tributary to Malibu Creek. The regional location of the mitigation site is provided on **Figure 1**. The locations of Areas I, 2 and 3 are shown on **Figure 2.**

**Area 1** – This area is located on a highly disturbed, low-gradient, west-facing slope. The site is triangular-shaped, and is bisected by a casual trail, referred to here as the La Sierra Creek Trail. The open area is surrounded by scrub oak woodland, with scattered coyote brush, toyon, chamise, sugarbush, black sage and purple sage and a few coast live oak saplings found on a slope above the site. Native species observed within the site were foothill penstemon, woolly aster, sticky monkeyflower, gum plant, chaparral yucca, purple needlegrass, foothill needlegrass, blue-eyed grass and slender tarweed. The disturbed open area contains several non-native species, including tocalote, hoary mustard and various annual grasses. This area has been estimated at 4,137 sq. ft (0.09 acre)

**Area 2** – This area is a slightly more moderate, west-trending slope located north of a Las Virgenes Municipal Water District pump station. This slope has been disturbed in the past, and the native vegetation is dominated by coyote brush, with a few coast live oak saplings and drought-deciduous native cover that includes foothill penstemon, golden yarrow, sacapellote, blue-eyed grass and bird's beak. Non-native cover includes tocalote and various annual grasses. Chaparral existing north and west of the site includes scrub oak and chamise. The dominant coyote brush is drought-stressed with many dead or browned canopies, and cutting back the shrubs to ground level will allow viable plants to re-sprout while reducing the fuel load in the area and create openings for enhancement plantings. This area has been estimated at 2,149 sq. ft (0.05 acre)

**Area 3** – This area is a highly-disturbed opening that is dissected by the La Sierra Creek Trail. The site is located on a shelf above the La Sierra Creek dam site. Sparse native cover includes western ragweed, snakeroot and common fiddleneck.

# Figure 1
# Regional Location of La Sierra-Makabi Mitigation Site

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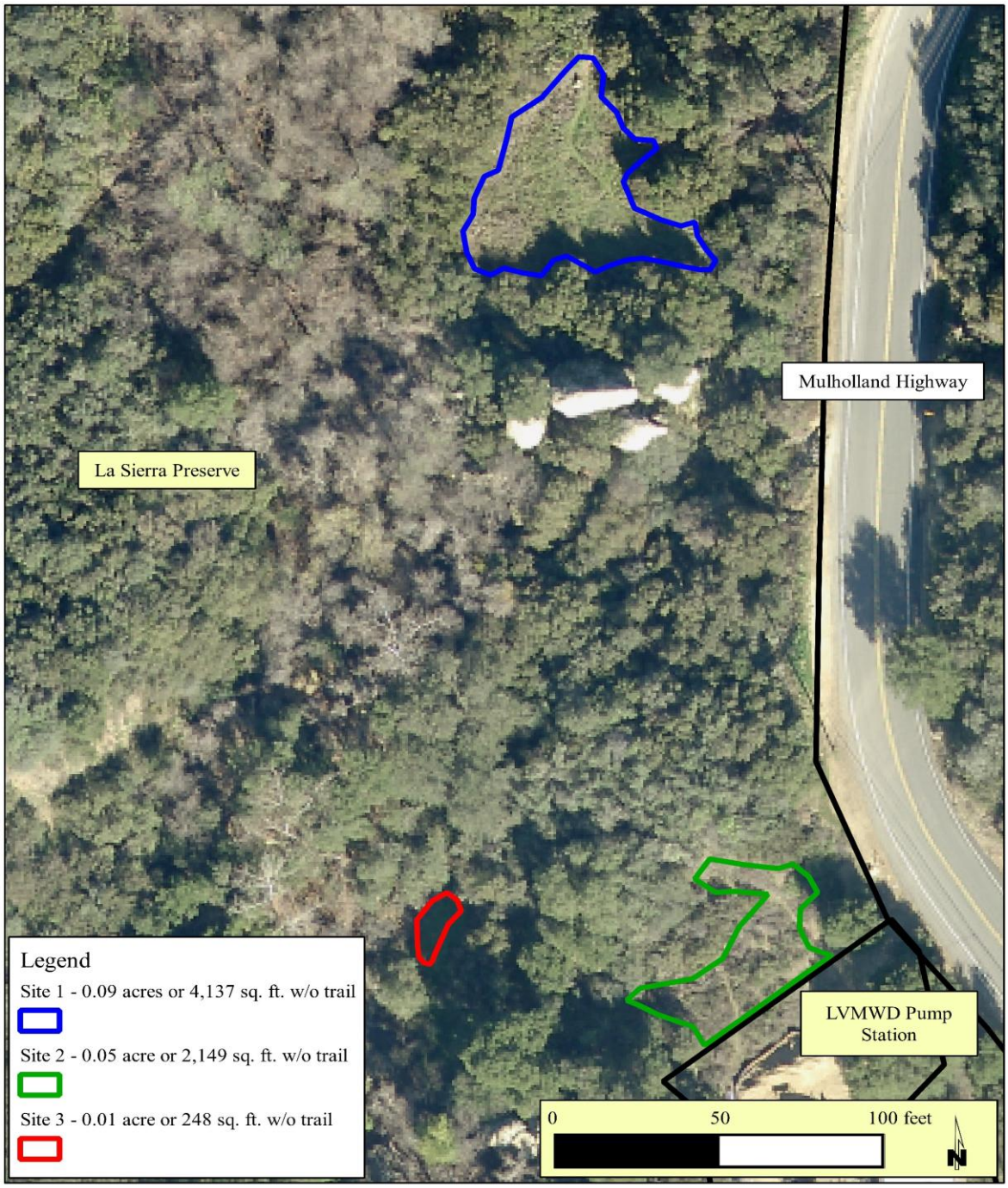
The map was prepared in a GIS program that compiles data and information from various city, state, federal and other agency sources. The map shown here is for illustrative and general planning purposes only. Mountains Restoration Trust is not responsible for the accuracy of the data presented herein.

**Figure 2**
**Site Location of La Sierra-Makabi Mitigation**

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Non-native herbaceous cover includes yellow star thistle, tocalote, hoary mustard and various and annual grasses. The chaparral that surrounds the site consists of scrub oak, buckbrush, coyote brush, California sagebrush, chaparral honeysuckle, toyon, and coast live oak. This area has been estimated at 248 sq. ft (0.01 acre)

**Planting Plan**

The conceptual plant palette is provided in **Table A**. All species are native to La Sierra Canyon. The plants will be grown from seed/cuttings/divisions that are collected optimally from La Sierra Canyon, if available, or the central Santa Monica Mountains.

**Table A**
**Conceptual Plant Palette - La Sierra-Makabi Mitigation Project**

| **botanic name** | **common name** | **propagation method** |
|---|---|---|
| **trees** | | |
| *Quercus agrifolia* | coast live oak | seed/treepots |
| *Umbellularia californica* | California bay laurel | seed/treepots |
| **shrubs** | | |
| *Eriogonum cinereum* | ashy-leaf buckwheat | seed/1-gals |
| *Eriogonum fasciculatum* | California buckwheat | seed/cuttings/1-gals |
| *Fraxinus dipetala* | chaparral ash | seed/1-gals |
| *Heteromeles arbutifolia* | toyon | seed/1-gals |
| *Rhamnus californica* | coffeeberry | seed/1-gals |
| *Rhamnus ilicifolia* | hollyleaf redberry | seed/1-gals |
| *Rhus ovata* | sugarbush | seed/1-gals |
| **broadleaf perennials** | | |
| *Corethrogyne filaginifolia* | woolly aster | seed/1-gals |
| *Epilobium canum* | California fuchsia | seed/cuttings/1-gals |
| *Keckiella cordifolia* | heartleaf penstemon | seed/1-gals |
| *Mimulus aurantiacus* | sticky monkeyflower | seed/cuttings/1-gals |
| *Phacelia ramosissima* | branching phacelia | seed/1-gals |
| *Sanicula crassicaulis* | snakeroot | seed/1-gals |
| *Salvia spathacea* | crimson-flowered pitcher sage | seed/cuttings/1-gals |
| *Solanum xanti* | purple nightshade | seed/cuttings/1-gals |
| *Venegasia carpesioides* | canyon sunflower | seed/cuttings/1-gals |
| **grasses** | | |
| *Leymus condensatus* | giant wildrye | seed/1-gals |
| *Melica imperfecta* | coast melic | seed/1-gals |
| *Stipa pulchra* | purple needlegrass | seed/1-gals |

**Timeline**
1-Conceptual plan/County approval
November 2013

2-Irrigation construction
November/December 2013 (1 day)

3-Plant installation (Phase I)
November 2013-March 2014 (~3 days)

3-Weed maintenance
Beginning in November 2013, ongoing as needed

4-Plant installation (Phase II)
November 2014-March 2015 (~2 days)

5-Seven years of qualitative monitoring
April 2014-April 2020

**Irrigation**
A temporary irrigation system consisting of above-ground UVR (Ultra Violet Resistant) PVC piping will be used to supply water to the remote mitigation sites. An existing UVR irrigation line runs ~2,000 feet to supply water for the La Sierra Hilton mitigation site. This mainline runs through Area 1, and a tee would be cut into the line for a hose connection to water these plantings. Area 2 is located directly below the fire hydrant used for our water supply and the plantings here would be hand-watered directly with a hose connected to the hydrant. For Area 3, a ¾-inch UVR irrigation line would be run from Area 2 through chaparral habitat to supply water for hand-watering this area.

There will be no sprinklers installed. MRT will hook-up garden hoses to hose fittings controlled by ball valves teed-off the mainline piping. The pipeline will only be pressurized while being used by MRT staff to hand-water the plantings. The irrigation pipeline will be temporary, to be dismantled following the successful completion of the Project. The plantings will need to be watered every 1-2 weeks following installation in periods without rainfall, and 1-2 times per month during the dry season (April-November). Watering frequency can be lengthened as plantings become established at the project site.

**Enhancement Plantings**
Native plants will be established from container plants, with some hand-seeding also anticipated. Plantings will occur over a two or three-year time period, planted between November and March, during the rainy season. Replacement plantings will be installed during the same season or in following years.

If gopher predation is determined to be a threat to the new plantings, cages constructed from poultry netting may be needed for protection. The cages would be installed approximately 10-inches in the ground and extend ten inches above ground. The above-ground portion of the cages would be cut-off at ground level when the plants have become established and no longer require protection from rodents,

weed-whacking equipment and incidental foot traffic. Above-ground cages may also be required to prevent heavy browsing be deer. Wood chip mulch or oak/willow leaves collected from on-site sources may be applied to cover the disturbed ground surrounding the new plantings.

Container plants will be supplied from the MRT Nursery Complex, grown from seed, cuttings and divisions collected locally (La Sierra Canyon) or from the central Santa Monica Mountains.

**Watering/Weed Maintenance**

Following plant installation, site visits will be required 1-4 times per month by MRT staff, in periods without rainfall, to water, spread mulch, and continue weed maintenance to increase plant survivability and effectively control weeds.

**Site Monitoring**

A minimum of 28 coast live oaks will be established at the project site. For associate native species, plantings will be deemed successful is after seven years there is 75% survivorship of plantings or if restoration areas become indistinguishable from adjacent habitat. The field work for Years 1-7 will be completed in the late spring, and monitoring reports will be filed with Los Angeles County for seven years, beginning in 2014. The monitoring reports will include qualitative analysis of the enhancement sites and photographs to document the existing conditions.