Montgomery Hill Bridge Project
Riparian Mitigation Site

2010 Monitoring Report

Biotic Resources Group

Biotic Assessments ◆ Resource Management ◆ Permitting

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MONTGOMERY HILL BRIDGE PROJECT
RIPARIAN MITIGATION SITE

2010 MONITORING REPORT

INTRODUCTION

The Montgomery Hill Bridge Project is located along an unnamed tributary to Thompson Creek within Montgomery Hill Park within the City of San Jose. The site is adjacent to Fall Creek Drive; the location of the site is depicted on Figure 1.

In 2002, the City of San Jose proposed to construct a multi-use bridge across the creek to connect the residential area to Montgomery Hill Park. Although the bridge was designed to minimize impacts to the riparian resources associated with the creek, a small amount of riparian vegetation was removed (140 square feet of riparian scrub). These actions were outlined in the project's environmental document (*Montgomery Hill Bridge Project Mitigated Negative Declaration*, City of San Jose, 2003). Due to impacts to this sensitive resource, the City developed specific environmental mitigation measures for the project. These measures include riparian habitat replacement at a 3:1 replacement ratio and five-year maintenance and monitoring program. Specific mitigation actions required for the riparian corridor were outlined in a *Conceptual Revegetation* Plan, a component of the projects Biotic Assessment Study (Biotic Resources Group, July 2002). This plan identified the requirement to install 19 native trees and shrubs on the north and south sides of the creek (upstream of the multi-use bridge). A Streambed Alteration Agreement (SAA) from the California Department of Fish and Game (CDFG) also required implementation of the riparian revegetation.

In 2003, the City of San Jose prepared construction documents for the bridge project which included an *Erosion Control and Landscape/Irrigation Plan* (City of San Jose Department of Public Works, Parks and Recreation Facilities Division, 3/03). This plan provided construction-level details for erosion control seeding, plant installation, and irrigation.

Pursuant to a request by the City of San Jose Parks, Recreation and Neighborhood Services, the current condition (2010) of the riparian mitigation area, including plant survival, were monitored. The results of the monitoring are described in this report.

SUMMARY OF PROJECT PERMITS AND REQUIREMENTS BY AGENCY

The project's revegetation requirements are derived from the City of San Jose's and regulatory agencies permit conditions and the need to create self-sustaining natural habitat within the projects 5-year reporting schedule.

California Department of Fish and Game Agreement (CDFG)

The riparian habitat within the project area is under the jurisdiction of CDFG under 1602 of the California Fish and Game Code. The bridge construction project resulted in the removal of 140 square feet of riparian scrub. To mitigate these impacts, CDFG required implementation of the riparian mitigation (420 square feet), with monitoring and maintenance actions implemented for five years. All plants shall have minimum of 80% survival at the end of five years and shall attain 70% cover after three years and 75%

coverage after five years. An annual status report on the mitigation shall be provided to CDFG by December 31 of each year.

City of San Jose Mitigation Negative Declaration

As per the City's environmental documents for the project, the riparian mitigation shall be planted as per the *Conceptual Revegetation Plan*, with mitigation trees irrigated during the growing seasons of Years 1-2. Management and monitoring shall continue for three year, with 80% survival of plants installed. If this success rate is not obtained by Year 3, then plant replacement and monitoring shall continue until this goal is achieved. Monitoring reports shall be submitted annually to the satisfaction of the Director of Planning, Building and Code Enforcement.

REVEGETATION ACTIVITIES IMPLEMENTED

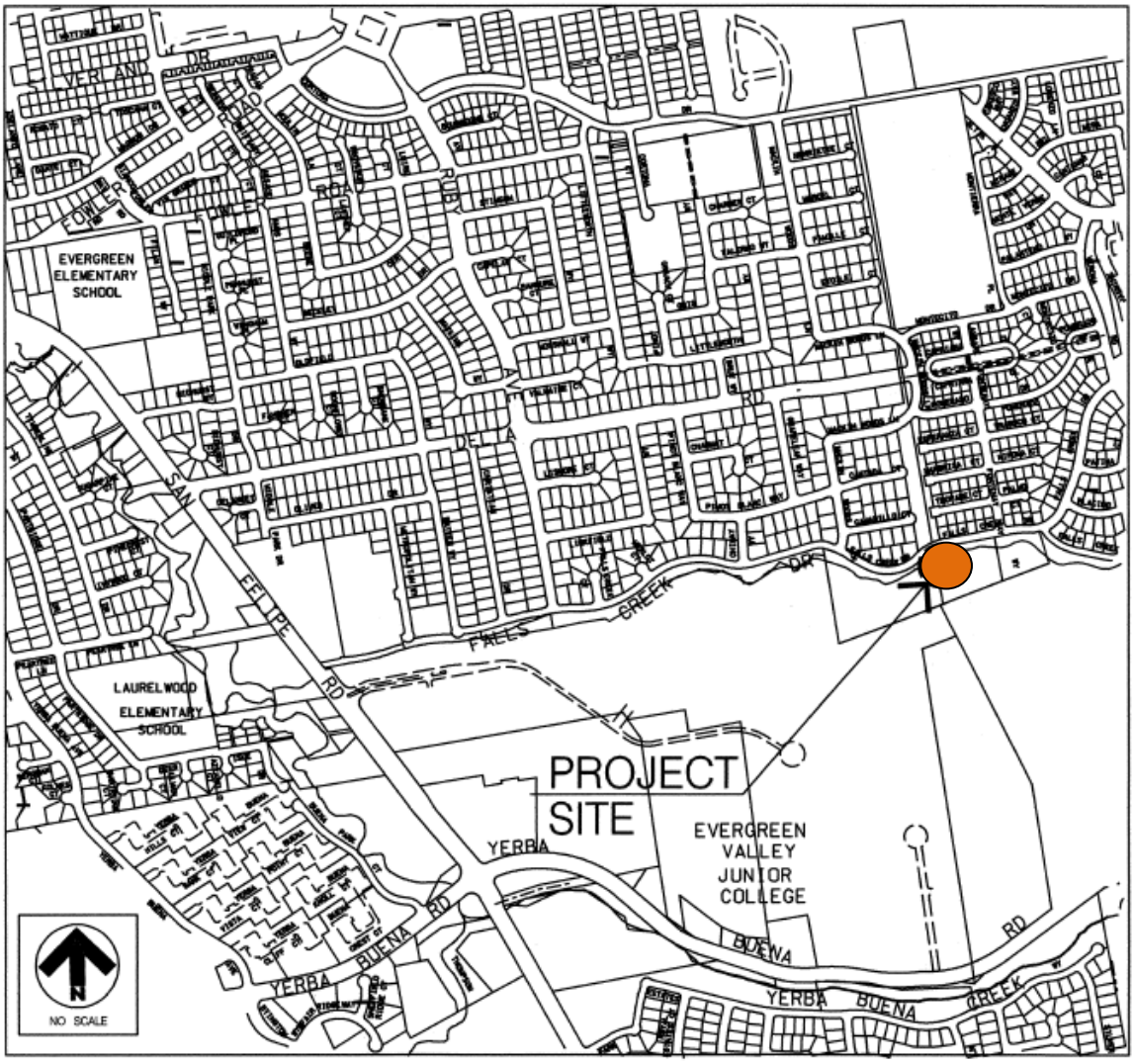
Native riparian plantings were installed within the designated mitigation area in 2003 or 2004 (Marybeth Harasz, City of San Jose, pers. comm., 2010). Although the City was only required to install 19 trees and shrubs (as per the MND and SSA), the City elected to overplant and specified the installation of 22 trees and shrubs. As depicted on the planting plan for the site (Figure 2), 22 trees and shrubs were specified along the north and south sides of the creek (upstream of the multi-use bridge). A list of the plants required per the MND and CDFG SAA and those depicted on the construction documents is presented in Table 1.

Table 1. Plant Installation Specifications within Riparian Mitigation Area

Scientific Name	Common Name	Specified in MND and CDFG SAA[1]	Depicted on Construction Documents [2]	Container Size
Quercus lobata	Valley Oak	1	2	Tree pot
Quercus agrifolia	Coast Live Oak	2	4	Tree pot
Sambucus mexicana	Blue Elderberry	2	2	1 gallon
Rosa californica	California Rose	7	7	1 gallon
Heteromeles arbutifolia	Toyon	7	7	1 gallon
Total		**19**	**22**	

[1] Conceptual Revegetation Plan, 2002
[2] Erosion Control and Landscape/Irrigation Plan, 2003

A below-ground irrigation system was installed for the container stock plantings**.** The project area was also seeded for erosion control. Herbaceous species used for erosion control were blue Wildrye (*Elymus glaucus)*, California brome (*Bromus carinatus)*, California poppy (*Eschscholzia californica)*, and checker bloom (*Sidalcea malvaeflora)*.

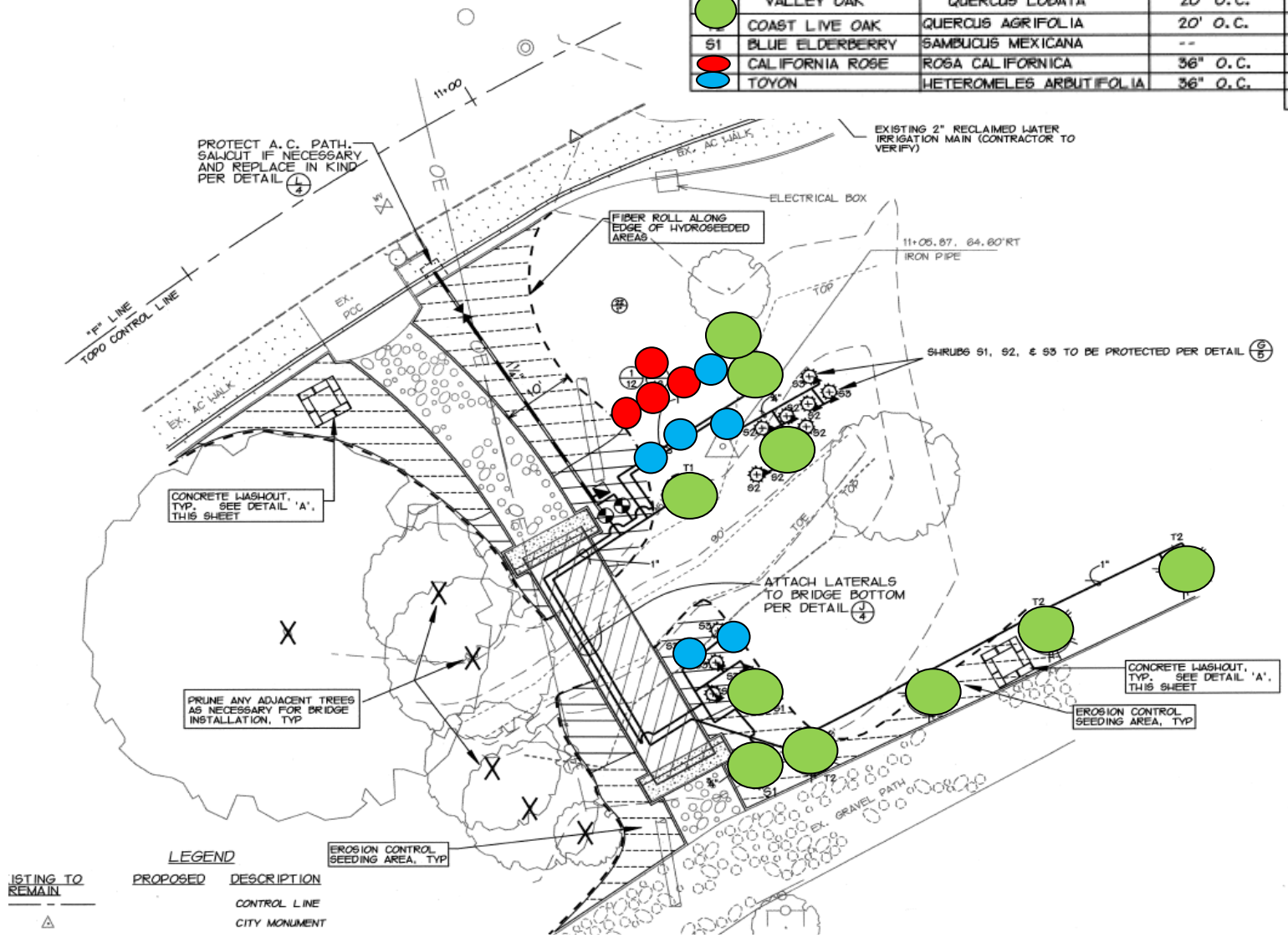


Base Map: City of San Jose Department of Public Works, Parks and Recreation Facilities Division, 3/03

Biotic Resources Group 2551 S. Rodeo Gulch Road #12 ♦ Soquel, CA 95073 (831) 476-4803 ♦ brg@cruzio.com	Montgomery Hill Bridge Riparian Mitigation Site Location Map	Figure 1 340-02 2/10

LANDSCAPING AREAS PLANT LIST (RIPARIAN REVEGETATION)

KEY	COMMON NAME	SCIENTIFIC NAME	MIN SPACING	QTY	SIZE
	VALLEY OAK	QUERCUS LOBATA	20' O.C.	2	TREE POT
	COAST LIVE OAK	QUERCUS AGRIFOLIA	20' O.C.	4	TREE POT
S1	BLUE ELDERBERRY	SAMBUCUS MEXICANA	--	2	1 GALLON
	CALIFORNIA ROSE	ROSA CALIFORNICA	36" O.C.	7	1 GALLON
	TOYON	HETEROMELES ARBUTIFOLIA	36" O.C.	7	1 GALLON
				22	



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Montgomery Hill Bridge Riparian Mitigation Site

Location of Installed Trees and Shrubs – February 2010

Figure 2

2/10

MONITORING RESULTS

Methodology

The riparian mitigation site was monitored on February 4, 2010 by Kathleen Lyons of the Biotic Resources Group. At the monitoring inspection, environmental features of the mitigation area were noted (i.e., human disturbances) as well as plant species performance. The riparian revegetation area was also evaluated for site maintenance and disturbances. Each installed plant was evaluated for survival, health and vigor (e.g., presence of chlorosis, limb dieback, or drought stress) and height. Plant cover within the mitigation area was visually assessed. The rating system used for plant health and vigor is listed on Table 2.

Table 2. Plant Health and Vigor Rating System

Code	Rating	Health Characteristics	Vigor Characteristics
4	Excellent	75-100% healthy foliage	Vigorous new growth observed throughout plant
3	Good	50-74% healthy foliage	Vigorous new growth observed only at terminal bud
2	Fair	25-49% healthy foliage	No new growth evident
1	Poor	0-24% healthy foliage	Stem dieback observed

Monitoring data was compared to the projects performance standards. Table 3 lists the performance standards for the mitigation site. In Year 5 performance standards are specified for plant survival and cover provided by trees and shrubs.

Table 3. Year 5 Performance Standards

Plant Survival	Tree and Shrub Cover
80%	75%

Results

Plant Survival. At the February 2010 monitoring, 19 of the installed native trees and shrubs were alive, yielding an installed-to-survival rate of 86%. As the City elected to overplant the site with 22 plants, however; the trees and shrubs provide for 100% survival when compared to the requirements set forth in the MND and CDFG Streambed Alteration Agreement (SAA). One non-native rose was found within the mitigation area; since this individual is non-native the plant was not used in calculating the project survival rate. Table 4 lists the survival rate, health and vigor and average height of the surviving plants.

Table 4. Plant Survival, Health, and Height Data, February 2010

Plant Species	Number of Plants Required in MND and SAA	Number of Plants Alive (2/10)	Percent Survival	Average Vigor/Health	Average Height (Feet)
Valley Oak	1	3	100%+	4.0	8.7
Coast Live Oak	2	7	100%+	3.7	8.7
Blue Elderberry	2	0	-	-	-
California Rose	7	4	57%	3.3	2.6
Toyon	7	5	71%	3.6	3.0
Total	**19**	**19**	**100%[1]**		

[1] Survival rate compared to number of plants required in MND and CDFG SAA; mitigation site was overplanted to accommodate additional mortality.

Valley oak and coast live oaks average 8.7 feet tall. Valley oaks have a height range of 7 to 12 feet. Coast live oaks have a height range of 5.5 to 13 feet. The character of a coast live oak planting on the south side of the creek is depicted in Figure 3.

Figure 3. Coast live oak planting on south side of creek, February 2010.

The shrubs, California rose and toyon, have average heights of 2.6 feet and 3.0 feet, respectively. The height of California roses ranges from 2 to 3.5 feet. The heights of toyon shrubs range from 1 to 5.5 feet. The roses and shorter toyon plants exhibit spindly growth, suggesting they were competing with weeds during a significant portion of their growing years. The character of the rose plantings (partially deciduous during winter) on the north side of the creek is depicted in Figure 4.

Figure 4. Spindly roses (partially deciduous) on north side of creek, February 2010.

Plant vigor and health ratings were good to excellent for the trees and shrubs (3-4). Some of the rose and toyon shrubs were ranked as good (vs. excellent) due to their spindly growth. In the absence of weeds within the next growing season, these shrubs should increase their cover. A few tree trunks and shrub

stems showed bark damage, probably from weed-whipping or other weeding techniques. These plants were ranked as only good to acknowledge this trunk damage. Some oak trees remain secured to wooden tree stakes.

Environmental Conditions and Plant Cover. The monitoring documented environmental features within the mitigation area. Human disturbances were minimal, however; the site had been recently weeded /weed-whipped. Figure 4 shows the weeded/weed-whipped condition on the north bank of the creek. Mulch had also been placed around the rose plantings.

Naturally recruited native species have established amid the planted trees and shrubs. Coyote brush (*Baccharis pilularis)* and poison oak (*Toxicodendron diversilobum)* shrubs, as well as young valley, coast live oak, and buckeye (*Aesculus californica)* trees were observed in the mitigation area.

The mitigation site (both banks) averages 45% cover by trees and 25% cover by shrubs, for a total woody cover of 70%. Woody cover (trees and shrubs) on the north bank is 50% (30% by trees, 20% by shrubs); cover on the south bank is 90% (60% trees, 30% shrubs).

Photo-Documentation

Two photo stations were established at the mitigation site to record the progress of the revegetation over time. The current condition of the mitigation site, with a comparison to site conditions in 2001 (prior to construction of the multi-use bridge), is depicted in Figures 5 and 6.

Figure 5a. View of bridge site, October 2001, prior to construction of new multi-use bridge.

Mitigation plantings

Figure 5b. View of new bridge and mitigation plantings, February 2010.

Figure 6a. View of south side of creek prior to new bridge and mitigation plantings, October 2001.

Figure 6b. View of riparian plantings on south side of creek, February 2010.

CONCLUSIONS AND RECOMMENDATIONS

According to the MND and SAA, the City is responsible for 80% survival of 19 container stock plantings, or 15 plants. As per the data collected in February 2010, the site supports 19 trees and shrubs with good to excellent health and vigor. The site meets (exceeds) the projects required plant survival criteria.

The City elected to overplant the site by installing 22 trees and shrubs. As 19 plants are surviving, these plantings have yielded an 86% survival rate. Plant cover along the north and south bank planting areas averages 70% woody plant cover. This value is below the required 75% 5-year performance standard. Recent weeding around the rose and toyon shrubs on the north bank is expected to improve growing conditions for these shrubs, such that cover provided by these species will increase.

Recommendations

- One non-native rose plant was observed on the north bank; new mulch was recently placed around the plant. As this planting is non-native, the plant should be removed.
- The native roses (California rose – *Rosa californica)* that grow on the north bank should be maintained and weeded. As these rose plants are spindly, this portion of the mitigation area

should be periodically weeded throughout 2010, such that plant cover increases. Mulch should be applied around the rose shrubs to suppress weeds, however; mulch application should not suppress the spread of rose suckers.

- If the area is weed-whipped, care should be taken to avoid stem and trunk damage to trees and shrubs.
- Support stakes on installed trees should be removed.

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