2013 Supplemental Monitoring Report
Village Creek Restoration Project
(University Village Albany Step 2, #12810A)
University of California, Berkeley

Prepared for:
University of California, Berkeley
Capital Projects
1936 University Ave 2nd Floor
Berkeley, CA 94704
Contact: Jim Horner
Campus Landscape Architect
Tel 510.642.7535

Prepared by:
May & Associates, Inc.
182 Seal Rock Drive
San Francisco, CA 94121
415-391-1000
Contact: Loran May

December 2013

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

This report documents supplemental performance monitoring conducted in 2013 for the University of California, Berkeley's Village Creek restoration project located in Albany, California. The initial performance monitoring was conducted from 2008 to 2012, at which time original plantings efforts were reported to have met success criteria. An additional 5 years of monitoring was initiated in 2010 and continues until 2014. Supplemental monitoring reports on the remedial plantings that were installed at the site in 2010 and 2011 of the project, which include 67 willow stakes and 151 rooted plants were installed in April and May 2010, and another 91 supplemental plants installed in October 2011 for a total of 309 supplemental plantings. This report presents the fourth year of supplemental monitoring:-the first three years (i.e. 2010-2012) were reported as part of the routine site monitoring reports that were previously submitted to the resource agencies.

The project is located near the University of California, Berkeley's University Village student housing complex located at 1125 Jackson Street in Albany California, bounded on the east by San Pablo Avenue, on the north by Buchanan Street, on the south by Harrison Street, and on the west by the Union Pacific Railroad tracks (Figure 1). The Creek Day-lighting project area encompasses 22,500 square feet of restored creek channel (approximately 0.52 acres).

The project is subject to the following environmental permits and agreements:

- California Regional Water Quality Control Board, Water Quality Certification (File No. 01-02-C0829);
- U.S. Army Corps of Engineers Section 404 Clean Water Act, Nationwide Permit 7 (File No. 29071S); and
- Department of Fish and Game, Lake and Streambed Alteration Agreement (Notification No. 1600-2004-0664-3).

The following performance criteria were established for the project:

> "All plantings shall have a minimum of 80% survival at the end of 5 years and shrubs shall attain 70% cover after 3 years and 75% cover after 5 years. If the… (*Sic* project is not attaining) …the stated percentage survival and/or cover requirements, the Applicant is responsible for replacement plantings, additional watering, weeding, invasive exotic eradication, or any other practice, to achieve these performance goals. Replacement plantings shall be monitored with the same percent survival and growth requirements for five years after planting as the original plantings."

Loran May, Senior Biologist with May & Associates, Inc. has performed all necessary performance monitoring to date. Supplemental montoring was performed on September 30, 2010, October 19, 2011, October 10, 2012, and October 3, 2013.

The following summarizes the results of the 2013 Supplemental Monitoring.

Plant Survivorship: Of supplemental plantings, total of 82 trees and 172 shrubs were live as of the October 2013 (Table 2), a survivorship rate of 82%. This result meets success criteria for the spplemental plantings for the project.

Vegetation Cover: Although difficult to the overall assess vegetation cover of supplemental plantings separate from the vegetation cover of the original plantings, in October 2013, the majority of supplemental plants assessed had increased in size (as determined by assessing the aerial extent of new growth of branches and leaves outward from the original planting). The overall vegetative cover of supplemental plantings is estimated to have increased between 10 and 50% from baseline conditions. This is within the acceptable range for the project.

Plant Height: The observed plant height of supplemental plantings has increased every year as compared with the 2011 (installation) plant height, and is within the acceptable range at this time for the project.

The following remedial actions are recommended for supplemental tree and shrub species to keep the project on track to meet Year 5 performance criteria, as described below in Section 5.0.

Remedial Action 1: Continue to Monitor Supplemental Plantings. As per project permit requirements, the replacement plantings installed in 2010 and 2011 will be monitored for a period of 5 years, beginning in 2010 and ending in 2014. **Starting in 2013, only replacement plantings will be monitored.**

Additional Recommendation: Continue to Monitor Invasive Plants. As part of remedial actions, invasive plants that are encountered during weeding and replanting efforts are to be treated. If herbicide application is selected, a qualified certified herbicide applicator is required to perform this activity. At this time, invasive plants are not interfering with planted material, so no supplemental control is recommended for 2013-2014 activities.

2.0 INTRODUCTION

This report documents supplemental performance monitoring conducted in 2013 for the University of California, Berkeley's Village Creek restoration project located in Albany, California. The Creek Day-lighting project area encompasses approximately 750 linear feet of Village Creek that used to run through a culvert. The initial performance monitoring was conducted from 2008 to 2012, at which time original plantings efforts were reported to have met success criteria. An additional 5 years of monitoring was initiated in 2010 and continues until 2014.

2.1 Project Location

The project is located near the University of California, Berkeley's University Village student housing complex located at 1125 Jackson Street in Albany California, bounded on the east by San Pablo Avenue, on the north by Buchanan Street, on the south by Harrison Street, and on the west by the Union Pacific Railroad tracks (Figure 1).

2.2 Project Background

The creek restoration project is part of a larger housing construction project. The project goal is to replace student housing that has surpassed its design lifetime. The project has been designed to provide treatment of stormwater runoff and to improve the habitat value and flood conveyance capacity of Codornices and Village Creeks.

Step 1 of the University Village student housing project was completed in 1999 included restoration of the section of Village Creek between Jackson Street and 6th Street to an open channel. At the downstream end of the restored channel, a box culvert was installed to provide conveyance for Village Creek, and access for emergency equipment.

The Step 2 University Village student housing project encompassed about 19 acres and includes demolition of old housing units, and construction of apartments, streets and parking areas. Step 2 of the project also included day-lighting, and restoring approximately 750 linear feet of Village Creek that used to run through a culvert. The creek was constructed by removing the concrete culvert, and excavating a new channel consisting of a stepped floodplain (i.e. low flow and high flow creek channels sized for a 100-year flood event). Several outfall structures including rock energy dissipater structures were constructed in the restored creek channel. The low and high flow creek channels were revegetated with riparian vegetation, and biodegradable erosion control matting was placed in the steep banks to prevent erosion while plants are establishing, The restored creek channel, when completely restored, will create approximately 0.52 acre of riparian habitat.

The project is subject to the following environmental permits and agreements:

- California Regional Water Quality Control Board, Water Quality Certification (File No. 01-02-C0829);
- U.S. Army Corps of Engineers Section 404 Clean Water Act, Nationwide Permit 7 (File No. 29071S); and
- Department of Fish and Game, Lake and Streambed Alteration Agreement (Notification No. 1600-2004-0664-3).

These permits and agreements require UC Berkeley to conduct creek restoration activities, in conformance with Village Creek Planting Sheet L7.02, included in the construction design drawings prepared by J.R. Roberts Corporation dated September 9, 2004 (J.R. Roberts Corporation, 2004) (Figure 2). Approved creek restoration activities included tree and shrub planting and hydroseeding both the upper and lower creek banks. Plantings that were installed in the restored creek channel are presented in Table 1. The upper creek banks were required to be hydroseeded with 50 lbs per acre of an approved mixture of upland grasses and forbs, as shown in Table 1. The lower creek banks were to be hydroseeded with 49 lbs of a mixture of floodplain grass and forb species (Table 1). (J.R. Roberts Corporation. 2007).

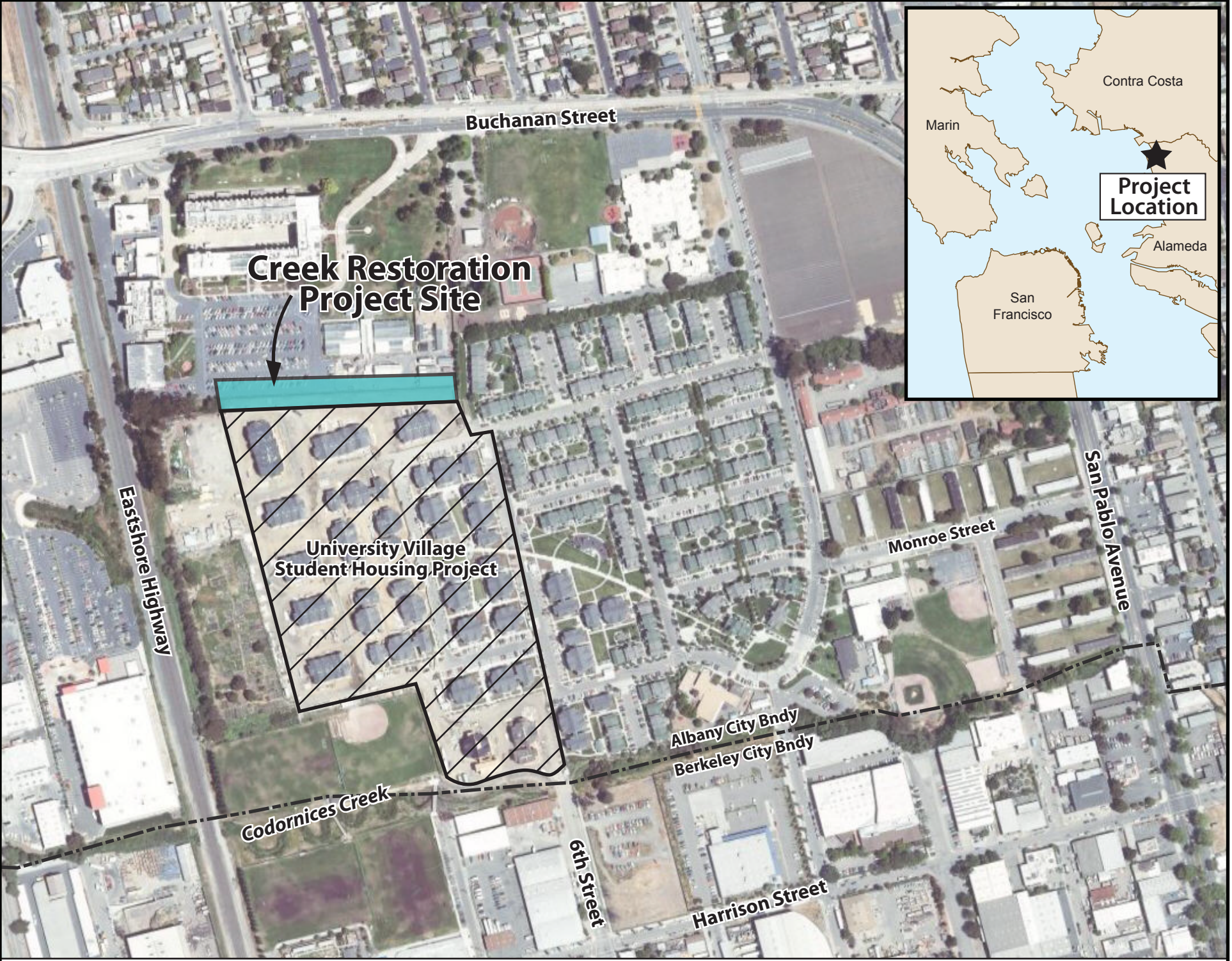
The creek restoration site was constructed in 2007 according to specifications (J.R. Roberts Corporation, 2004) (Figure 2). The site was prepared for planting in late September and early October 2007, and plant installation was completed by October 10, 2007 (T. Nowack, pers. comm.). The site was also hydroseeded in October 2007. In early 2008 following completion of baseline site assessment, replacement plantings were installed to replace diseased or damaged plants. A total of 51 replacement plantings were installed in early 2008. An additional 67 willow stakes and 151 rooted plants were installed in April and May 2010; and 91 replacement shrubs were installed in October 2011 to offset ongoing plant mortality (Table 1).

The University of California, Berkeley Capital Project's Unit retained the service of May & Associates, Inc. to conduct an independent assessment of baseline site conditions and to perform 5 years of performance monitoring for the project, and the supplemental monitoring for the replacement plantings. This report documents the results of the 2013 supplemental planting performance monitoring that was conducted by May & Associates, Inc. on October 3, 2013

Table 1. Supplemental Planting List

Plant Species		Container Size	Quantity
Scientific Name	**Common Name**		
TREES			
Populus fremontii	Fremont's cottonwood	5 gal.	3
Quercus agrifolia	Coast live oak	1 gal	9
Salix sp.	Willlow	cuttings	67
SHRUBS			
Artemesia californica	Mugwort	1 gal	65
Diplacus aurantiacus	Sticky monkey flower	1 gal	40
Heteromeles arbutifolia	Toyon	1 gal, 5 gal quart	10
Rosa californica	California wild rose	1 gal	28
Rubus ursinus	California blackberry	1 quart	36
Scrophula californica	California bee plant	1 gal	50
Total Shrub And Tree Plantings			**309**

Figure 1. Project Location



May & Associates, Inc.
182 Seal Rock Drive ~ San Francisco, CA 94121
(415) 391-1000 ~ www.mayandassociatesinc.com
January 2008 ss_villcrk_fig01_01-08

0 250 500 ft
0 100 200 m

North

Figure 1. Project Site

Figure 2. Planting Plan and Permanent Photomonitoring Locations

Figure 2. Planting Plan & Photo Monitoring Locations

SHRUBS Number Scientific Name / *Common Name*

- B DOU 51 (Baccharis douglasii / *Marsh Bacc.)*
- B PIL 23 (Baccharis pilularis / *Coyote Bush)*
- B PIL PIL 26 (Baccharis pilularis ssp. pilularis / *Dwarf Coyote Bush)*
- D AUR 69 (DiplacusI aurantiacus / *Sticky Monkey Flower)*
- M GUT 50 (Mimulus guttatus / *Monkey Flower*)
- P KEL 46 (Perideridea kelloggii / *Keollogg's yampah*)
- R CAL 23 (Rosa californica / *California Wild Rose*)
- S COE 59 (Sambucus caerulea / *Elderberry*)

TREES Number Scientific Name / *Common Name*

- AM 7 (Acer Macrophyllum / *Big Leaf Maple)*
- AC 4 (Aesculus Californica / *California Buckeye*)
- PF 9 (Populus Fremontii / *Fremont's Cottonwood*)
- QA 12 (Quercus Agrifolia / *Coast Live Oak)*

STUDY AREA BOUNDARY

CREEK

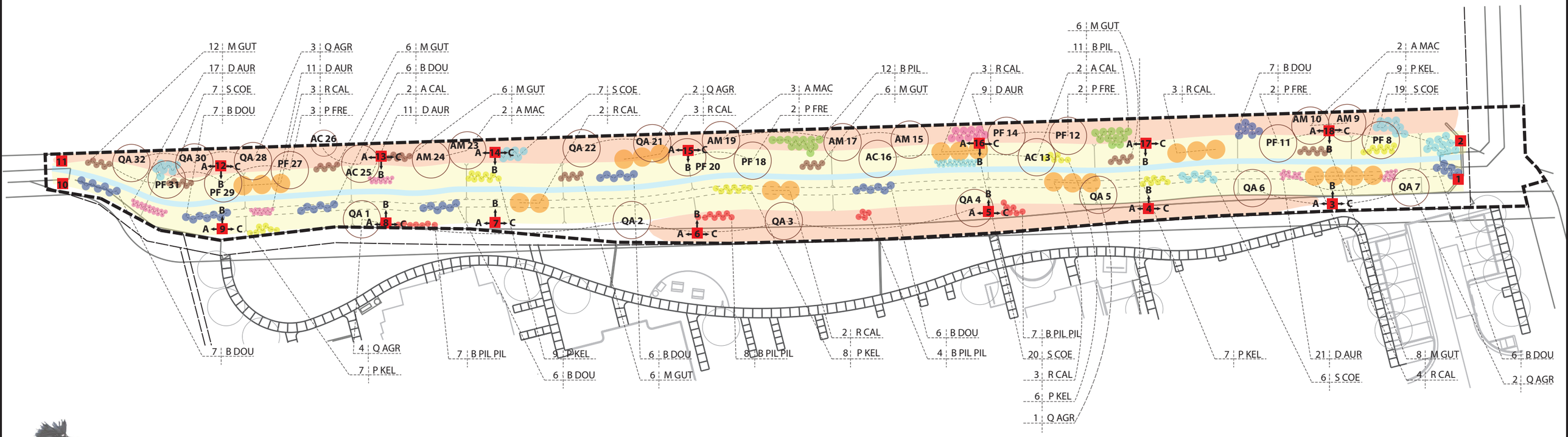
LOW CREEK CHANNEL

HIGH CREEK CHANNEL

(Point Number) A←13→C

(Direction of Shot) B

PHOTO POINT



May & Associates, Inc.
182 Seal Rock Drive ~ San Francisco, CA 94121
(415) 391-1000 ~ www.mayandassociatesinc.com

January 2008 ss_villcrk_fig02_01-08

0 50 100 ft
0 15 30 m

North

3.0 MONITORING METHODS

Vegetation monitoring requirements are stated in the following project permits:

- California Regional Water Quality Control Board, Water Quality Certification (File No. 01-02-C0829);
- U.S. Army Corps of Engineers Section 404 Clean Water Act, Nationwide Permit 7 (File No. 29071S); and
- Department of Fish and Game, Lake and Streambed Alteration Agreement (Notification No. 1600-2004-0664-3).

Specifically, vegetation monitoring includes plant survivorship, vegetative cover, and plant height as three measures of success.

2013 Supplemental Monitoring was performed by Loran May, President and Senior Botanist with May & Associates on October 3, 2013. The entire site was investigated on foot, and a plant count of the entire planting area was conducted. Each supplemental plant that was installed in April and May 2010; and October 2011 were assessed for health and vigor, height, and its species recorded for use in assessing progress towards performance criteria (described below).

3.1. Plant Survival

The permit performance criteria for plant survival are as follows: **80% survival of all supplemental plantings at the end of five years.** Plant survival counts entail conducting a complete inventory of all plantings at the site. Each tree and shrub planting was identified by species, recorded as alive or dead. Survival and mortality of hydroseeded areas was visually estimated as a percentage of overall vegetative cover.

3.2 Vegetative Cover

Project permits include performance criteria for vegetative cover as follows: **70% cover at Year 3, and 75% at the end of 5 years**. Vegetative cover was visually estimated for the supplemental plantings.

3.3 Plant Height

The U.S. Army Corps of Engineers Nationwide Permit 7 and the California Department of Fish and Game Streambed Alteration Agreement also include a requirement to monitor plant height for trees and shrubs. No parameters were given for standards of performance; however, an increase in height in line with other planting sites in the region is the anticipated outcome of the project. Average height of living trees and shrubs were recorded to the nearest half of a foot using visual estimates and recorded on field data sheets.

3.4 General Site Observations

Prior to conducting plant survival counts, the site was thoroughly investigated on foot to record possible maintenance problems, trespass issues, weed problems, irrigation issues, or other factors that may have bearing on the site's overall habitat function or value.

4.0 MONITORING RESULTS

Refer to Table 2 for 2013 survivorship data (presented by species) and to Photos 1-6 for an illustration of 2013 site conditions.

4.1 Plant Survival

Refer to Table 2 below for an overview of 2013 supplemental survivorship monitoring results presented by species. The overall survivorship for supplemental plantings was 82%. Of the 80 supplemental trees that were installed as per the original restoration plan, 82 trees were still alive in 2013 (125% survivorship). This plant estimate includes 8 alders that have voluntarily established onsite. A total of 229 supplemental shrubs were planted onsite. As of 2013, 172 (75% survivorship) of planted shrubs was observed. Although this result is slightly below the 80% success criteria for the project, many of the supplemental shrub plantings are spreading from both the original and supplemental planting, and are expected to increase in number by the end of the monitoring period. Therefore, no remedial shrub plantings are recommended at this time.

4.2 Vegetation Cover

In October 2013, the majority of supplemental plants had increased in size (as determined by assessing the aerial extent of new growth of branches and leaves outward from the original planting). The overall vegetative cover of individual replacement plants was estimated to have increased between 50% and 80% from baseline conditions. When averaged over the site, this results in an estimated site-wide vegetative cover increase of approximately 65%. This is slightly below the 70% performance criteria, however, (based on similar results observed for the original plantings, plant growth is expected to accelerate in the next two years, therefore no remedial actions are recommended.

4.3 Plant Height

Baseline results were visually compared against each year's result to determine if there is an overall increase in plant height of supplemental plantings over time. The observed plant height of supplemental plantings has increased every year as compared with baseline plant height, and is within the acceptable range at this time for the project.

Baseline shrub height averaged 6 to 8 inches. By October 2013, these original shrub plantings were considerably taller, estimated at an average height of 12-18 inches. This represents a yearly increase in plant height for all monitoring years. Baseline height varied greatly for planted trees, ranging from 6 to 18 inches for planted stock and 30-48 inches for willow cuttings. By October 2013, overall tree height had substantially increased to 3-10 feet for planted trees, and up to 24 feet for willow cuttings.

Table 2. Replacement Plantings Survivorship (2013)

Plant Species		Remedial Plantings (Installed April-May 2010)	Remedial Plantings (Installed October 2011)	Subtotal Remedial Plantings	TOTAL Plants Live in 2011**	Percent Survivorship 2011	TOTAL Plants Live in 2012**	Percent Survivorship 2012	TOTAL Plants Live in 2013**	Percent Survivorship 2013
Scientific Name	**Common Name**									
TREES										
Populus fremontii	Fremont's cottonwood	3	0	3	3	100%	3	100%	3	100%
Quercus agrifolia	Coast live oak	9	0	9	9	100%	9	100%	9	100%
Alnus rhombifolia	White alder	1	0	1	1	100%	1	100%	8**	800%**
Salix sp.	Willow	67	0	67	64	95%	62	92%	62	92%
Subtotal Trees		**80**	**0**	**80**	**77**	**96%**	**75**	**93%**	**82****	**125%****
SHRUBS										
Diplacus aurantiacus	Sticky monkey flower	10	30	40	32	80%	28	70%	26	65%
Rosa californica	California wild rose	8	20	28	20	71%	21	75%	21	75%
Scrophularia californica	California bee plant	50	0	50	45	90%	42	84%	42	84%
Artemisia douglasiana	Mugwort	35	30	65	48	74%	50	77%	48	74%
Heteromeles arbutifolia	Toyon	10	0	10	9	90%	9	90%	9	90%
Rubus ursinus	California blackberry	25	11	36	28	78%	27	75%	26	72%
Subtotal Shrubs		**138**	**91**	**229**	**182**	**79%**	**177****	**77%**	**172**	**75%**
Total Shrub And Tree Plantings		**218**	**91**	**309**	**259**	**83%**	**252****	**81%**	**254**	**82%**

** Indicates an increase in overall plants onsite due to natural regeneration/new plants that were noted as spreading via seedlings or rhizomes from original plantings.

May & Associates, Inc.
182 Seal Rock Drive
San Francisco, CA 94121
(415) 391-1000

Photo 1a. (2013) Typical vegetation cover, upper and lower creek bank. Note willow growth in creek chann

Photo 1b. Comparison, Typical vegetation (2011) upper and lower creek banks immediately after supplemental v plantings

Photo 2a. Typical Tree height – Fremont's cottonwood (October 2013) site conditions. Note height increase, robust growth and excellent condition of cottonwood trees.

Photo 2b. Comparison photo-Typical tree height- Fremont's cottonwood (2011)

Photo 3a. Typical coast live oak planting (October 2013)

Photo 3b. Comparison Photo, typical coast live oak (2011) site conditions.

Photo 4. Replacement planting (marsh baccharis) showing natural regeneration (outward spread) from original planting site (2013)

Photo 5.
Photo depicting increase in height of shrubs (coyote bush) (2013)

Photo 6a. Substantial increase in number and size of alders in 2013 (compare with Photo 6b below).

Photo 6b. Comparison Photos- alders in 2011.

Photo 7a. 2013 Creek channel after treatment (removal) of some cattails in 2012
(Compare with Photo 7b below)

Photo 8. Typical channel conditions in 2011-excessive growth of cattails covering most of creek channel bottom
(requiring maintenance to allow for creek channel flow.

4.4 General Site Observations

In October 2013, there was no evidence of unusual erosion, trespass, litter, or other site problems or issues that would require attention.

4.4.1 Invasive Plants. UC Berkeley has conducted invasive plant control in 2010, 2011, and again in 2012, resulting in a substantial reduction of several invasive species that were identified as problematic in the Year 2 (2009) report, including French broom, fennel, sweet clover, cattails, and Himalayan blackberry. Some of these species were still detected as present in 2013 (French broom, fennel, Himalayan blackberry), but in very small numbers. These species should be continued to be monitored in future years to prevent re-infestation if the site.

Several invasive plant species still remain at the site, including the following that were recorded as present in 2013:

- Acacia *(Acacia melanoxylon);*
- Blue gum eucalyptus *(Eucalyptus globulus);*
- Burr clover *(Medicago polymorpha;*
- Canary reed grass *(Phalaris* sp.);
- Cattails (*Typha* spp.);
- Duckweed *(Lemna* sp.*);*
- English plantain *(Plantago lanceolata);*
- Fennel *(Foeniculum vulgare);*
- Fireweed *(Epilobium sp.);*
- French broom *(Genista monspessulana);*
- Himalayan blackberry *(Rubus discolor= Rubus armeniacus)*;
- Pampas grass *(Cortaderia* sp.);
- Prickly ox tongue *(Picris echioides);*
- Sweet clover *(Melilotus indicus);*
- Umbrella sedge *(Cyperus* sp.); and
- White clover *(Trifolium* sp.).

A few of these species were reported in past monitoring years, and continue to be problematic at the site in 2013 (i.e. prickly ox tongue, canary reed grass). These species are of concern because they are known to be problematic at similar riparian habitats in the area, however, their presence does not seem to be affecting supplemental plantings at this time. No remedial invasive plant control is recommended at this time. Ongoing invasive plant monitoring is recommended.

5.0 CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the Village Creek site was planted in accordance with approved permits and planting specifications. Refer to Tables 3 and 4 for a summary of 2013 performance as compared to overall project performance standards. The following summarizes the results of the 2013 Supplemental Monitoring.

Plant Survivorship: Of supplemental plantings, total of 82 trees and 172 shrubs were live as of the October 2013 (Table 2), a survivorship rate of 82%. This result meets success criteria for the spplemental plantings for the project.

Vegetation Cover: Although difficult to assess the overall vegetation cover of supplemental plantings separate from the vegetation cover of the original plantings, in October 2013, the majority of supplemental plants assessed had increased in size (as determined by assessing the aerial extent of new growth of branches and leaves outward from the original planting). The overall vegetative cover of supplemental plantings is estimated to have increased between 10 and 50% from baseline conditions. This is within the acceptable range for the project.

Plant Height: The observed plant height of supplemental plantings has increased every year as compared with the 2011 (installation) plant height, and is within the acceptable range at this time for the project.

The following remedial actions are recommended for supplemental tree and shrub species to keep the project on track to meet Year 5 performance criteria, as described below in Section 5.0.

Remedial Action 1: Continue to Monitor Supplemental Plantings. As per project permit requirements, the replacement plantings installed in 2010 and 2011 will be monitored for a period of 5 years, beginning in 2010 and ending in 2014. **Starting in 2013, only replacement plantings will be monitored.**

Additional Recommendation: Continue to Monitor Invasive Plants. As part of remedial actions, invasive plants that are encountered during weeding and replanting efforts are to be treated. If herbicide application is selected, a qualified certified herbicide applicator is required to perform this activity. At this time, invasive plants are not interfering with planted material, so no supplemental invasive plant control is recommended for 2013.

Table 3. Summary of 2013 Supplemental Planting Performance

Monitoring Parameter	Project Performance Standard	Observed Baseline Remedial Planting Conditions	Observed 2011 Site Conditions	Observed 2012 Site Conditions	Observed 2013 Site Conditions	Performance Standard Met? Y/N
Plant Survivorship	80% survival of all plantings by Year 5	100% Survivorship Trees, 49% Survivorship Shrubs	75% Survivorship Trees, 39% Survivorship Shrubs	110% Survivorship Trees (include replacement plantings), 96% Survivorship Shrubs (including replacement plantings and excluding volunteer plants)	82% Combined Survivorship (125% Survivorship Trees, 75% Survivorship Shrubs)	**Y**
Vegetative Cover	70% vegetative cover by Year 3 75% vegetative cover by Year 5	90% Upper Creek Bank, 95% lower creek bank	90-95% Upper Creek Bank, 95% lower creek bank	90-95% Upper Creek Bank, 95% lower creek bank	Estimated 10-50% increase over baseline conditions 90-95% Upper Creek Bank, 95% lower creek bank	**Y**
Plant Height	Overall Increase by Year 5	Baseline: Tall Trees, 6-18 inches Willow cuttings, 30-48 inches. Shrubs 6-8 inches	Increase over baseline. Tall Trees, 2-3.5 feet, Willow cuttings 3-8 feet, Shrubs 8-12 inches	Increase over baseline. Tall trees 5-12 feet, Willow cuttings 5-18 feet, Shrubs 10-13 inches	Increase over baseline. Tall Trees 8-17 feet, Willow cuttings 12-24 feet, Shrubs 12-18 inches	**Y**

6.0 REFERENCES

6.1 Printed References

J.R. Roberts Corporation. 2004. Village Creek Planting Sheet L7.02 dated September 9, 2004.

J.R. Roberts Corporation. 2007. Village Creek Seed Mix for Village Creek (Submittal Package No 122-02920-01-006).

California Department of Fish and Game Streambed Alteration Agreement, Notification No. 1600-2004-0664-3 dated December 13, 2004.

California Regional Water Quality Control Board, Water Quality Certification No. 2198.11, Site No 01-02-C0829 Dated December 14, 2004.

U.S. Army Corps of Engineers, Section 404.Natonwide Permit No. 7 File # 29071S Dated December 11, 2004.

6.2 Personal Communications

Nowak, Tom. Project Coordinator, University Village, Albany, Step 2. Personal communication via email on 1-07-2008. tnowak@cp.berkeley.edu (510) 643-3303.

Pree, Stephen. University Village, Albany, Step 2. Personal communication regarding cessation of irrigation in 2009 during field meeting on September 24, 2009. stephenp@berkeley.edu

APPENDIX A. SITE PHOTOGRAPHS

Photo Point 5A- Supplemental Planting Site 2010 (Baseline)

Photo Point 5A - Supplemental Planting Site 2011

Photo Point 5A - Supplemental Planting Site 2012

Photo Point 5A - Supplemental Planting Site 2013

Photo Point 5B - Supplemental Planting Site 2010 (Baseline)

Photo Point 5B - Supplemental Planting Site 2011

Photo Point 5B - Supplemental Planting Site 2012

Photo Point 5B - Supplemental Planting Site 2013

Photo Point 5C - Supplemental Planting Site 2010 (Baseline)

Photo Point 5C - Supplemental Planting Site 2011

MISSING

Photo Point 5C - Supplemental Planting Site 2012

Photo Point 5C - Supplemental Planting Site 2013

Photo Point 6A - Supplemental Planting Site 2010 (Baseline)

Photo Point 6A - Supplemental Planting Site 2011

Photo Point 6A - Supplemental Planting Site 2012

Photo Point 6A - Supplemental Planting Site 2013 (Note additional alder trees

Photo Point 6B -- Supplemental Planting Site 2010 (Baseline)

Photo Point 6B - Supplemental Planting Site 2011

Photo Point 6B -- Supplemental Planting Site 2012

Photo Point 6B -- Supplemental Planting Site 2013

Photo Point 6C - Supplemental Planting Site 2010 (Baseline)

Photo Point 6C - Supplemental Planting Site 2011

Photo Point 6C - Supplemental Planting Site 2012

Photo Point 6C - Supplemental Planting Site 2013

Photo Point 9A - Supplemental Planting Site 2010 (Baseline)

Photo Point 9A - Supplemental Planting Site 2011

Photo Point 9A - Supplemental Planting Site 2012

Photo Point 9A - Supplemental Planting Site 2013

Photo Point 9B - Supplemental Planting Site 2010 (Baseline)

Photo Point 9B - Supplemental Planting Site 2011

Photo Point 9B - Supplemental Planting Site 2012

Photo Point 9B - Supplemental Planting Site 2013

Photo Point 9C- Supplemental Planting Site 2010 (Baseline)

Photo Point 9C - Supplemental Planting Site 2011

Photo Point 9C - Supplemental Planting Site 2012

Photo Point 9C- Supplemental Planting Site 2013