



**REGULAR MEETING  
GOLDEN RAIN FOUNDATION LANDSCAPE COMMITTEE**

**Wednesday, June 9, 2021 – 1:30 p.m.  
VIRTUAL MEETING  
Laguna Woods Village  
24351 El Toro Road, Laguna Woods, CA**

*Laguna Woods Village owners/residents are welcome to participate in all open committee meetings and submit comments or questions for virtual meetings using one of three options*

1. Join the Zoom meeting at <https://zoom.us/j/99225095454>. Please “Raise Your Hand” during the agenda item you would like to speak to. If you have an item that is NOT on the agenda, please “Raise Your Hand” during the Member Comments agenda item.

2 Via email to [meeting@vmsinc.org](mailto:meeting@vmsinc.org) any time before the meeting is scheduled to begin or during the meeting. Please use the name GRF Landscape Committee in the subject line of the email. Name and unit number must be included.

2. By calling (949) 268-2020 beginning one half hour before the meeting begins and throughout the remainder of the meeting. You must provide your name and unit number.

**AGENDA**

1. Call to Order
2. Acknowledgment of Media
3. Approval of the Agenda
4. Approval of Meeting Report for March 10, 2021
5. Chair Remarks
6. Department Head Update
  - a. Slides

**Consent:**

None

**Reports**

7. Update on the Creek

Items for Discussion and Consideration

8. Member Comments (Items Not on the Agenda)
9. Response to Member Comments

Concluding Business:

10. Committee Member Comments
11. Date of Next Meeting – Wednesday, September 8, 2021 at 1:30 p.m.
12. Adjournment

Yvonne Horton, Chair  
Kurt Wiemann, Staff Officer  
Eve Morton, Landscape Coordinator  
Telephone: 949-268-2565



**OPEN MEETING**

**REGULAR MEETING OF THE GOLDEN RAIN FOUNDATION  
LANDSCAPE COMMITTEE**

**Wednesday, March 10, 2021 – 1:30 P.M.  
VIRTUAL MEETING  
Laguna Woods Village Community Center  
24351 El Toro Road**

**COMMITTEE MEMBERS PRESENT:** Chair - Yvonne Horton, Maggie Blackwell, Lynn Jarrett, Reza Karimi, Manuel Armendariz, Andre Torng

**COMMITTEE MEMBERS ABSENT:**

**OTHERS PRESENT:** Bunny Carpenter

**ADVISORS PRESENT:** None

**STAFF PRESENT:** Kurt Wiemann, Eve Morton

**REPORT**

**1. Call to Order**

Chair Horton called the meeting to order at 1:30 p.m.

**2. Acknowledgement of Media**

No press was present.

**3. Approval of the Agenda**

Director Torng made a motion to approve the agenda. The committee was in unanimous support.

**4. Approval of Meeting Report of November 30, 2020**

Director Jarrett made a motion to approve the Meeting Report. The committee was in unanimous support.

**5. Committee Chair Remarks**

Chair Horton stated that she has been getting positive feedback on the creek and to keep up the good work. Thank you for the trees at the Equestrian Center.

**6. Department Head Update**

- Annuals at Gates
- Equestrian Center

There was an adjournment of the meeting from 1:45 to 2:00 p.m. as Mr. Wiemann encountered technical problems and could not re-join the meeting.

The meeting re-started at 2 p.m.

Mr. Wiemann reported: "We started annuals at the gates last fall. We will start it again in April at the gates which have room for annuals. We have been spending a lot of time at the gates, been putting down mulch and fertilizing there.

At the Equestrian Center, we planted nine trees and assorted shrubs. We have also been doing irrigation repairs out there.

In our Capital Plan this year, we have funds for new irrigation for the nursery. The contract is out for signatures. Will save a lot of man hours not having to hand water everything.

We have purchased a shade structure for use at the Nursery.

Power and communications will be put in at the Nursery. Now, things are all done by hand over there. This will approve efficiencies. In time, crews will be able to place orders from the field."

#### Consent:

*All matters listed under the Consent Calendar are considered routine and will be enacted by the Committee by one motion. In the event that an item is removed from the Consent Calendar by members of the Committee, such item(s) shall be the subject of further discussion and action by the Committee.*

None.

#### Reports

##### **7. Update on the Creek**

Mr. Wiemann reported that the creek is a natural habitat that must be preserved. A bone of contention for the residents is the cattails. We have been trying to find ways to open up the Creek more. We have found a way to accomplish some of the cattail clearing. We will go in with a biologist in advance to identify any nests and mark them. Then, we will clear 100 yards of cattails, leave 100 yards, and so on. The biologist will make sure we don't disturb nesting birds.

Sally Sunderhaus( 580-O) *"I thank all of you for your willingness to serve on the committee. I ask today's minutes include the comments I made during the November meeting as they still apply. The comments Mr. Wiemann just made about reducing the cat tails twice a year will be a big help.*

*In his Aliso Creek Update of today, Mr. Wiemann does not address what we would hope would be a third objective of his department – namely, restoring the area around the bridge to its prior state. It is an unsightly mess. How much longer must we wait until this area becomes a priority and our property values finally restored? Pilfering*



*our view is no different than taking a bedroom or garage from an owner without providing restitution.*

*I realize many areas of the creek are lovely and enjoyed by residents. But, for those of us opposite the bridge, we have no such enjoyment. Every day we look upon the corruption of our view.*

*I realize the current landscape department inherited a mess from the prior one. But, perhaps Mr. Wiemann would like to alter today's update and correct the latest issue of the Village Breeze to disclose that the need for and cost of continued monitoring is a result of the lack of compliance by the prior and current landscape departments. Otherwise, we might all think it is just about "several government agencies" and their rules.*

*In spite of Mr. Wiemann's denials at the November 2020 landscape meeting, there are actions that can be taken, which he discussed at previous meetings, including buying credits to permit moving the willows. While the willows may be required, their location could have been one that did not interfere with owner's views.*

*Finally, when the bridge was constructed, when a storm was predicted, the railings were removed and do not cross signs erected. This year the railings are not to be found, and instead, crime scene tape is crisscrossed over the bridge and makeshift sandwich boards placed in the middle. The hundreds of walkers who cross the bridge daily, just push these things aside and continued crossing. Eve Morton (who is always prompt and thorough with her answers) said this was not the responsibility of landscape and directed me to security. However, thus far security is also unaware of any railings. I'm hopeful someone on this committee can direct me to the proper department."*

Mr. Wiemann stated that buying credits would be millions of dollars.

He suggested that cattails are currently cleared once a year. We can trim them more often but there is a cost involved to pay for the biologist.

For the Willows; we are only allowed to trim out the bottom third. Tops need to be left for nesting birds.

Director Aremendarez made motion to approve the \$13K for the consulting fees to clear the cattails twice a year. Director Blackwell seconded. The committee was in unanimous support.

#### Items for Discussion and Consideration

#### **8. Member Comments (Items Not on the Agenda)**

None.

#### **9. Response to Member Comments**

None.

All Corporations' Landscape Cooperation

**10. Performance Improvements: Mulching Mowers Versus Bagging Mowers**

Mr. Wiemann stated that he brought this information to this committee so all the corporations can have an open discussion on where to go with landscaping over the next few years. We are starting to put together next year's budget. He will bring this topic to the respective committees next month to see whether each Mutual would want to spend this money or not for next year.

Discussion ensued.

**11. Performance Improvements: Increase Service Levels to Five Cycles**

Mr. Wiemann reviewed this informational report with the committee. This topic will also be discussed at April's United and Third Landscape committee meetings to determine if each Mutual would want to include the cost for this into next year's budget or not.

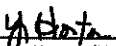
Concluding Business:

**12. Committee Member Comments**

None.

**13. Date of Next Meeting – Wednesday, June 9 at 1:30 p.m.**

**14. Adjournment at 3:05 p.m.**

  
\_\_\_\_\_  
Yvonne Horton (Mar 26, 2021 19:55 PDT)

Yvonne Horton, Chair



## STAFF REPORT

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**DATE: June 9, 2021**

**FOR: Landscape Committee**

**SUBJECT: Aliso Creek Update**

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### **RECOMMENDATION:**

Receive and File

### **BACKGROUND:**

In 2014, The Golden Rain Foundation of Laguna Woods (GRF) entered into a Streambed Alteration Agreement (Agreement) with the California Department of Fish and Wildlife (CDFW) due to the construction of the pedestrian bridge located in Aliso Park. The creek area is considered a natural riparian habitat and is subject to the regulations put forth by several government agencies, with CDFW being the lead agency. The agreement requires annual biological monitoring of the area directly downstream of the bridge.

The agreement stipulates that the monitoring shall continue for a minimum of five years and shall continue until GRF meets success criteria set forth in the agreement. This year is the seventh year of the monitoring. Once the criteria are met, the biologist monitoring is no longer required; the prescribed maintenance shall continue in perpetuity.

On March 10, 2021, the GRF Landscape Committee approved an unbudgeted operating expense of \$13,534 to perform additional cat tail clearing within the creek.

### **DISCUSSION:**

Each year, the Landscape Department has several main objectives in Aliso Creek; control weeds, both native and non-native, successfully meet the requirements of the mitigation area, and complete the annual survey of the mitigation area.

Guidelines are set by the regulating agencies governing as to when and how maintenance activities can take place within the limits of the entire creek bed. Staff can remove litter and invasive weeds by hand from the banks and adjacent areas year-round. Work within the creek bed, such as removing native growth such as cattails, can normally only occur outside of the typical native bird nesting season which occurs annually between February 1 and August 31. Working with wildlife biologists, staff can now remove the cattails two other occasions during the year. Prior to starting the additional work period, a biologist must first perform a thorough survey of the area, checking for nesting birds and other wildlife. If any wildlife or nests are observed, buffer zones are created in which no work can be performed. Staff can then proceed, under the guidance of biologists to ensure there is no disturbance of the wildlife.

The annual maintenance within the streambed consists of staff trimming cattails from the creek bed and trimming the branches on the lower third of the native trees along the bank. The cattails cannot be removed completely; cattail trimming is limited to cutting by hand without disturbing the stream bed and can only be cut one foot above the waterline. The use of herbicides and plant growth regulators is also prohibited on native plant material.

In the week of April 19, 2021, biologist surveyed the entire creek for southwest pond turtles and nesting wildlife. Several active nests were located and required buffer zones which were put into place. Beginning on April 27, 2021, under the watchful eye of the biologists, crews entered the creek and spent three days clearing cattails and other non-native plants from the creek bed (Attachment 2).

There is good news for the mitigation site this year. Within the requirements of the mitigation agreement, there are measurable standards that need to be reached to finalize the agreement. After falling short of the goals for non-native species and bare ground for 2019 and 2020, staff has now surpassed the standards (Exhibit 1) and is seeking concurrence from the regulatory agencies to end the mandatory annual monitoring of the mitigation area. This concurrence only relieves the Corporation from annual monitoring; the area must be maintained in its current condition for perpetuity.

Exhibit 1

Year		Native Species (%)		Non-Native Species (%)		Bare Ground (%)	
		Standard	Measured	Standard	Measured	Standard	Measured
One	2015	35	Not measured	<5	Not measured	65	Not measured
Two	2016	50	45*	< 5	75*	50	Not measured
Three	2017	70	83.6	< 5	9.2	30	24.8
Four	2018	75	74.4	< 5	48.0	25	16.4
Five	2019	80	117.6	< 5	7.6	20	7.2
Six	2020	80	102	< 5	8.8	20	27.2
Seven	2021	80	131.6	<5	0	20	11.6

\* Qualitative estimate, due to site conditions. Other values represent quantitative measurements.

## **FINANCIAL ANALYSIS:**

There are no funds involved in this report.

**Prepared By:** Kurt Wiemann, Director of Landscape Services

**Reviewed By:** Eve Morton, Landscape Coordinator

## **ATTACHMENT(S)**

**Attachment 1:** Aliso Creek 2021 Annual Report

**Attachment 2:** Photos of Cattail Trimming

## **ATTACHMENT 1**

### **2021 ANNUAL PERFORMANCE MONITORING REPORT FOR HABITAT RESTORATION AT THE ALISO CREEK TRAIL REPAIR PROJECT**

***Prepared for:***

**GOLDEN RAIN FOUNDATION OF LAGUNA WOODS**

P.O. BOX 2220  
Laguna Hills, CA 92654  
(949) 597-4617

***Prepared by:***

**CHAMBERS GROUP, INC.**

5 Hutton Centre Drive, Suite 750  
Santa Ana, CA 92707  
(949) 261-5414

**MAY 2021**

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## **SECTION 1.0 – INTRODUCTION**

### **1.1 PURPOSE OF THE ANNUAL REPORT**

Chambers Group, Inc. (Chambers Group) was retained by the Golden Rain Foundation of Laguna Woods (GRF) to document and assess the progress of the habitat restoration project at the Aliso Creek Trail Repair Project (Project) on an annual basis. The purpose of this annual monitoring report is to document the status of the restoration site to date. This report satisfies the requirements of the Final Habitat Mitigation and Monitoring Plan (HMMP, RBF 2014) as a component of the Regional Water Quality Control Board (RWQCB) Water Quality Certification Number 12C-038 WDID: 9000002461 and the California Department of Fish and Wildlife (CDFW) Streambed Alteration Agreement No. 1600-2012-0087-R5 to offset the unavoidable impacts associated with the Aliso Creek Trail Repair Project (RBF 2014). The California Rapid Assessment Method (CRAM) was completed following the third and fifth years of performance monitoring and the Summary Assessment Report was included in the 2020 Annual Report (Chambers Group 2020) per the requirements of Water Quality Certification Number 12C-038, Part VI. This annual report provides: (1) a summary of the Project background, (2) a summary of the HMMP goals to restore riparian scrub habitat, (3) a restoration site assessment for 2021 with quantitative measurements of vegetative cover, and (4) a request for acceptance from the resource agencies that all mitigation obligations have been met.

### **1.2 PROJECT LOCATION**

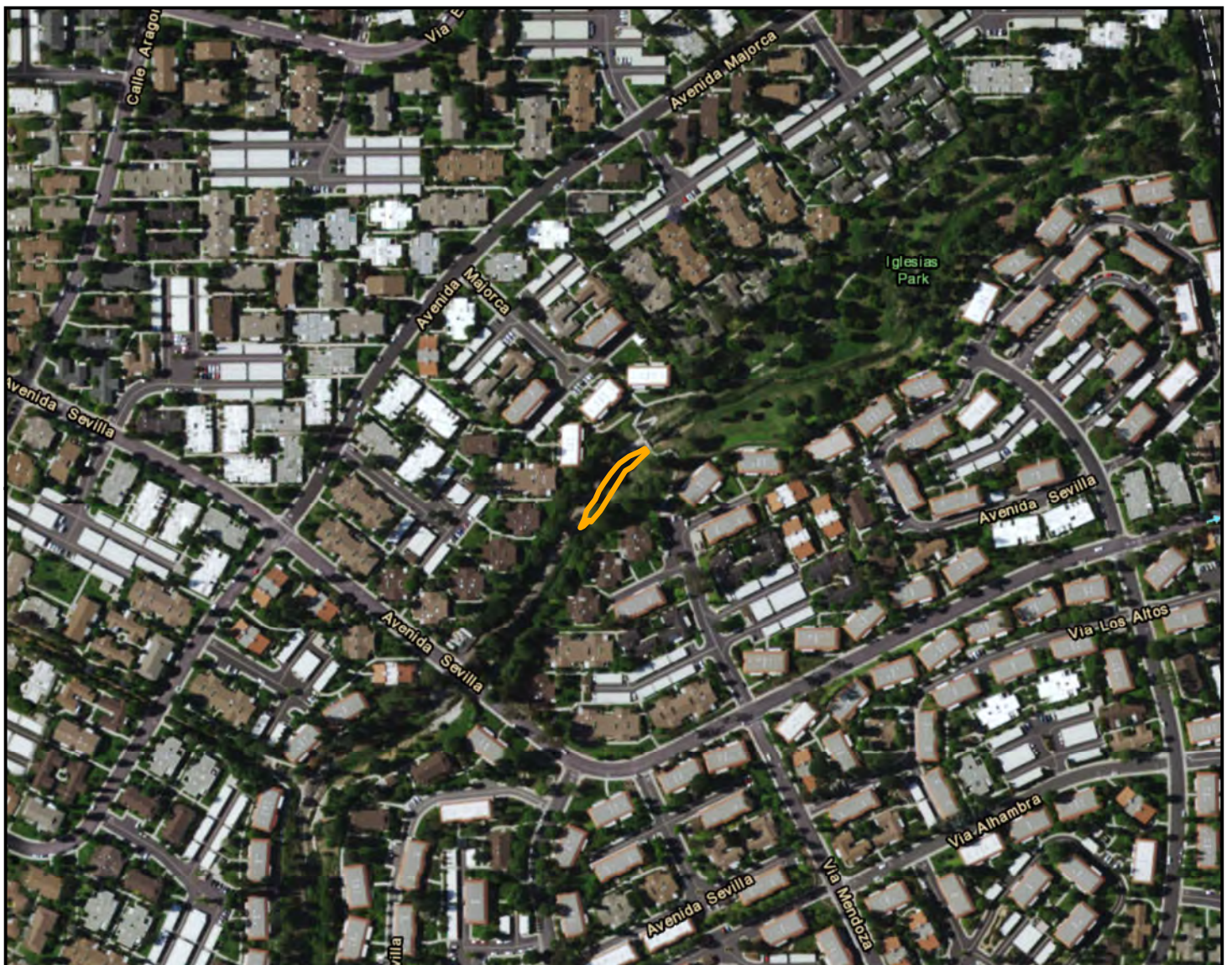
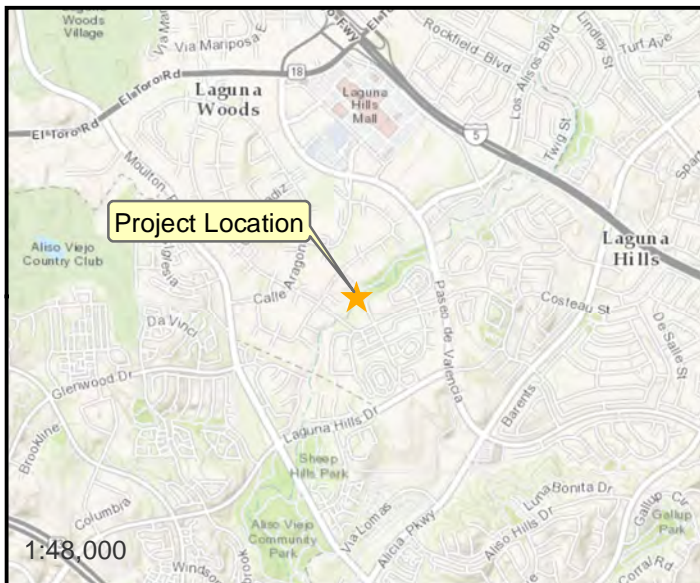
The Aliso Creek Trail Repair Project site is located within the Laguna Woods Village. The site is located along Aliso Creek upstream of the Avenida Sevilla road crossing, in the City of Laguna Woods, County of Orange, California. The site lies within the U. S. Geological Survey (USGS) San Juan Capistrano 7.5 minute quadrangle. The Public Land Survey System (PLSS) places the site at Township 6 South, Range 8 West, Section 34.

### **1.3 PROJECT BACKGROUND**

The Project consisted of replacing a pedestrian bridge over Aliso Creek that was damaged as a result of storm events. The pedestrian bridge is utilized by seniors in the Laguna Woods residential development and connects users to the local park. A double 3-foot-high by 7-foot-wide reinforced concrete box replaced the damaged pedestrian bridge. The bridge acts as a grade stabilizer within Aliso Creek. This stabilizer supports the creek's grade and is important for the protection of an existing 24-inch storm drain located immediately downstream. The bridge has approximately the same flow capacity as the prior crossing. Larger storm events were able to overtop the previous crossing; however, the paths connecting to this new facility are protected from erosion by use of reinforced turf mats.

In addition, the 140-foot section of service road adjacent to the creek was repaired by removing the remaining portion of surfacing within the reach and constructing a new reach of 16-foot-wide road. The outside edge of the road remains the same as the existing condition. The repairs began downstream at the location along the creek where grouted rock riprap was previously constructed adjacent to the road within the creek to provide grade stabilization within the creek. The upstream end of the repairs was at the location where the road joins the existing concrete path. A 10-foot transition from the 16-foot road to the existing 8-foot concrete path was also constructed. Rock riprap was placed adjacent to the road at a 2:1 slope into the creek. The riprap extends 3 feet below the invert elevation of the creek. The rock





#### Legend

 Project Location



0 200 400 800  
Feet

**Figure 1**  
Project Vicinity Map

was buried by earthen fill and then revegetated with a native plant palette. The rock riprap is not visible post construction. Project construction occurred between May and August 2013.

#### 1.4 PROJECT HISTORY

In compliance with the RWQCB Water Quality Certification Number 12C-038 to offset the unavoidable impacts associated with the Project and to compensate for the temporal loss of 0.06 acre of vegetation, areas impacted by the construction of the new foot bridge were hydroseeded and planted with a native riparian scrub mix (Table 1). The mitigation program consists of the creation at a ratio of 1.32:1 for permanent impacts to 0.06 acre of waters of the United States/State, for a total of a 0.079 acre.

The site had no native plant cover following the completion of the construction of the new bridge and repairs to the road. The area to be planted consisted of rock riprap that was placed adjacent to the road at a 2:1 slope into the creek. The riprap extends 3 feet below the invert elevation of the creek. The rock was then buried by earthen fill and revegetated. The current restoration area being actively maintained and enhanced totals 0.16 acre.

**Table 1: Native Seed Mixture**

Species Name	Common Name	Amount Applied (Pounds) <sup>†</sup>
<i>Ambrosia psilostachya</i>	western ragweed	0.32
<i>Artemisia douglasiana</i>	mugwort	0.01
<i>Distichlis spicata</i>	saltgrass	1.52
<i>Festuca [Vulpia] microstachys</i>	small fescue	0.64
<b>Total</b>		<b>2.49</b>
<sup>†</sup> Coverage Area: 5,532.00 square feet (0.127 acre) per the HMMP.		

#### 1.5 SEED APPLICATION

The hydroseeding application process followed the HMMP guidelines. Seeding of native plant species along the creek banks was conducted on December 5, 2014; January 27, 2015; and October 26, 2015. The amount of seed applied per species per event is shown above (Table 1).

#### 1.6 RESPONSIBLE PARTIES

The GRF is responsible for overseeing the Landscape Contractor and ensuring success of the seeded and planted species within the site in compliance with the HMMP. The responsible parties, as outlined below (Table 2), include a qualified Landscape Contractor and a Restoration Specialist who are responsible for adhering to the guidelines specified in the HMMP.



**Table 2: Parties Responsible for Implementing the HMMP**

Responsibility	Organization	Contact
Prepare the HMMP, initial implementation and planting	RBF Consulting	Richard Beck 14725 Alton Parkway Irvine, California 92618 (949) 855-3687
Plant installation, seeding, and site maintenance	The Golden Rain Foundation of Laguna Woods	Kurt Wiemann, Director of Landscape Services P.O. Box 2220 Laguna Hills, California 92654 (949) 268-2316 Kurt.Wiemann@vmsinc.org
Post-construction maintenance monitoring and reporting; Agency coordination	Chambers Group, Inc.	Heather Clayton, Project Manager 5 Hutton Centre Drive, Suite 750 Santa Ana, California 92707 (949) 261-5414 ext. 7241 hclayton@chambersgroupinc.com

## 1.7 SITE MAINTENANCE AND MONITORING

The GRF has been responsible for maintaining the site since 2013. The Landscape Contractor or the GRF is responsible for the following tasks:

- remedial replanting if unforeseen site challenges occur
- irrigation and associated system maintenance
- weed control
- erosion control
- herbivore control
- access restriction
- trash removal

A five-year maintenance and monitoring program was created to direct the successful establishment of the native plant community. The GRF is responsible to provide onsite monitoring, which includes the following tasks:

- provide a qualitative and quantitative assessment of site conditions and performance;
- monitor site maintenance activities and identify necessary maintenance tasks to facilitate successful plant establishment; and
- document site conditions and produce an annual report consistent with agency requirements.

The monitoring schedule complies with the HMMP for the Aliso Creek Trail Repair Project developed by RBF (2014) and consists of monthly qualitative maintenance monitoring for the first six months after planting and quarterly qualitative maintenance monitoring for the remainder of the five-year Project.

Annual quantitative monitoring was carried out annually throughout the monitoring period, including this year (2021).

## 1.8 VEGETATION PERFORMANCE STANDARDS

The success criteria for the site are shown in Table 3. If, at any time the plants in the restoration site do not meet the performance standards set forth in the HMMP, GRF will be responsible for taking timely remedial actions to ensure compliance with the performance standards for the subsequent year.

**Table 3: Performance Standards by Year**

Year	Percent Cover of Native Species (%)	Percent Cover of Nonnative Species (%)	Maximum Percent Bare Ground (%)
1	35	< 5	65
2	50	< 5	50
3	70	< 5	30
4	75	< 5	25
5	80	< 5	20
6*	80	< 5	20
7*	80	< 5	20

\* Additional years of monitoring added to meet performance standards.

## SECTION 2.0 – METHODS

### 2.1 MONITORING INSPECTION

The sixth annual performance monitoring inspection was conducted on April 29, 2021, by biologists Heather Clayton and Joanna Kipper of Chambers Group. As stated in the HMMP, vegetative sampling will consist of quantitatively measuring vegetative cover of native and non-native plant species along permanent transects. Biologists sampled five transects (Table 4) to quantify vegetative cover in Year 7 (2021). Transects are sampled in the same general area each year but are re-randomized for statistical power. Plant nomenclature follows that of The Jepson Manual: Vascular Plants of California, Second Edition (Baldwin et al. 2012). Plant species observed on the restoration site were compiled (Appendix A).

**Table 4: Transect Locations within the Restoration Area**

Transect Number	Easting	Northing*	Aspect
1	434377	3718050	174° south
2	434351	3718028	220° southwest
3	434326	3717995	23° north
4	434345	3718034	31° northeast
5	434366	3718052	216° southwest

\*UTM coordinates in meters, NAD83, Zone 11S.

### 2.2 CRAM SURVEY

A California Rapid Assessment Method (CRAM) survey was conducted using the standard protocols on June 24, 2020, by lead CRAM Practitioner Lisa Louie with assistance from Chambers Group biologists Heather Clayton and Joanna Kipper. As stated in Water Quality Certification Number 12C-038, Part VI.A, CRAM must be utilized to establish pre-project baseline conditions and following completion of the restoration site construction at Years 3 and 5 and continuing until success criteria have been met. The results of the CRAM assessment must be submitted each year with the Annual Monitoring Reports and data must be uploaded into eCRAM (<http://www.cramwetlands.org>).

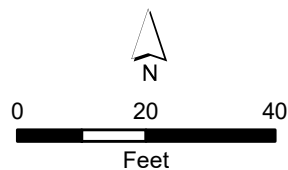
### 2.3 VEGETATIVE COVER

The point-intercept method was used to measure vegetative cover quantitatively (Sawyer and Keeler-Wolf 1995) along a series of five permanent transects. The starting point of each transect was recorded using a hand-held Global Positioning System (GPS) unit, and the direction of each transect was recorded using a compass. The transect locations are depicted in Figure 2.



#### Legend

- ▮ Project Area (0.31 acre)
- ▮ Restoration Area (0.16 acre)
- ↗ Photo Point (with direction)
- Transect Start Location
- Transect (25m)



**Figure 2**  
Transect & Photo Station Map

After each transect alignment was established, imaginary vertical lines were projected into the vegetation at 0.5-meter intervals along the transect length. Plant species touching the vertical line were recorded as “hits” and used to extrapolate the vegetative cover by species on each transect. The percent cover of vegetation is reported as absolute cover, which is calculated by totaling the number of hits for each species divided by the number of possible hits along the transect. Vegetative cover may be greater than 100 percent where multiple layers (i.e., shrubs and herbs) are present in the community, or where multiple species are encountered within a single layer at any given point along the transect. The ground cover under each plant “hit” was characterized as having either “rocks,” “litter” or “bare ground.”

The total hits for each vegetation type (e.g., native or non-native species) were averaged for all transects to determine the average absolute percent cover for the site. This is the measurement used in comparing site conditions to the performance standards set for the site in the beginning stages of the Project. Points along the transect lacking vegetation were recorded as “no plant” and used to calculate the amount of unvegetated surface or bare ground that was present within the restoration site.

## 2.4 PHOTOGRAPHIC DOCUMENTATION

To document the restoration progress, photographs were taken from five established locations (Appendix B). The directions and GPS coordinates of each of the five photo stations were recorded (Table 5) and are depicted in Figure 2.

**Table 5: Photo Stations within the Restoration Area**

Photo Station	Easting	Northing*	Direction
1	434325	3718008	northeast
2	434347	3718042	multiple
3	434377	3718053	southwest
4	434354	3718032	multiple
5	434336	3718009	multiple

\*UTM coordinates in meters, NAD83, Zone 11S.

## SECTION 3.0 – RESULTS

### 3.1 NATIVE PLANT COVER

The average cover of native vegetation was 131.6 percent (Table 6). Raw data collected along each transect are presented in Appendix C. The most common native species recorded on site included arroyo willow (*Salix lasiolepis*), mule fat (*Baccharis salicifolia* subsp. *salicifolia*), and red willow (*S. laevigata*). Other native species recorded in smaller densities were mugwort (*Artemisia douglasiana*), ragweed (*Ambrosia psilostachya*), and California wild rose (*Rosa californica*).

**Table 6: Vegetative Cover Summary**

Year		Native Species (%)		Non-Native Species (%)		Bare Ground (%)	
		Standard	Measured	Standard	Measured	Standard	Measured
One	2015	35	Not measured	<5	Not measured	65	Not measured
Two	2016	50	45*	< 5	75*	50	Not measured
Three	2017	70	83.6	< 5	9.2	30	24.8
Four	2018	75	74.4	< 5	48.0	25	16.4
Five	2019	80	117.6	< 5	7.6	20	7.2
Six	2020	80	102	< 5	8.8	20	27.2
Seven	2021	80	131.6	<5	0	20	11.6

\* Qualitative estimate, due to site conditions. Other values represent quantitative measurements.

TBD -- To Be Determined, data not yet collected.

### 3.2 NON-NATIVE PLANT COVER

The average non-native cover was 0 percent within the site as measured during the annual 2021 survey.

### 3.3 UNVEGETATED AREAS

The average areas with no plants present (“no plant”), or the percent of the site not occupied by any vegetation, was measured at 11.6 percent.

### 3.4 GROUND COVER

The average ground cover was measured as 14.8 percent for “rocks,” 73.2 percent for “litter,” and 12 percent for “bare ground” (Table 7).



**Table 7: Ground Cover Summary (2021)**

<b>Transect Number</b>	<b>Rocks (%)</b>	<b>Litter (%)</b>	<b>Bare Ground (%)</b>
1	14	68	18
2	2	94	4
3	2	80	18
4	22	58	20
5	34	66	0
<b>Average</b>	<b>14.8</b>	<b>73.2</b>	<b>12</b>

## SECTION 4.0 – DISCUSSION AND RECOMMENDATIONS

### 4.1 NATIVE AND NON-NATIVE VEGETATION

The restoration site along the creek banks was hydroseeded with the native plant mix as described in the HMMP three times during 2014 and 2015. Container planting also took place in 2014 and 2015 and along the upper buffer area of the north-facing bank in 2016. The site is weeded regularly by GRF maintenance staff and natural recruitment of native riparian species is encouraged. These continued maintenance efforts have allowed for the persistence of native vegetation and suppression of non-native vegetation within the restoration area. Vegetation cover within the site is annually reduced following winter storms and flooding events. However, qualitative surveys indicate the native plant species cover can quickly recover from flooding events.

Biologists quantified the native vegetative cover at 131.6 percent in April 2021, indicating the site has exceeded the required native plant cover performance standard. Average native cover has surpassed the 80 percent cover standard in 2017, 2019, 2020, and 2021. These reoccurring high values suggest that the native vegetation on site has a well-established root system and has the potential to regrow above-ground biomass each year following flood events. The most common native species recorded on site included arroyo willow, mule fat, and red willow. Other native species recorded in smaller densities were mugwort, ragweed, and California wild rose.

Non-native vegetative cover was measured in 2021 at 0 percent. Although uncommon, there remain scattered non-native species present in the area. The dominant non-native species observed immediately adjacent to the site within the residential landscaping and upstream areas included Bermuda grass (*Cynodon dactylon*), sweetclover (*Melilotus albus*), and Spanish sunflower (*Pulicaria paludosa*). The non-native value recorded this year is lower than the 8.8 and 7.6 percent measured in 2019 and 2020 and meets the non-native cover standard required in the HMMP of less than 5 percent. This decrease from past years indicates that the minimal site maintenance and weed control efforts each year are sufficient to adequately manage non-native vegetation on the site.

With continued maintenance by qualified by GRF maintenance staff knowledgeable in native and non-native plant identification, the cover of native vegetation is expected to continue surpassing the performance standard of 80 percent and non-native cover standards can be sufficiently maintained.

### 4.2 UNVEGETATED AREAS

Unvegetated areas indicated as “no plant” in Table 6, averaged 11.6 percent, which is below the maximum standard of 20 percent for the site. This indicates the restoration area is meeting the performance criteria for Year 5 as allowed by the HMMP. These unvegetated weed-free areas should be continually maintained to allow native seed germination and existing native plants to increase in size, thereby continuing to increase the overall cover of native species naturally with time.

### 4.3 GROUND COVER

The majority of ground cover is characterized as “litter” (73.2 percent) or “bare ground” (12 percent) substrate, and only 14.8 percent is “rock.” This indicates that most of the ground cover is available to allow native seed germination and expansion from growth of existing native plants.

#### 4.4 PERFORMANCE SUMMARY AND RESOURCE AGENCY ACCEPTANCE

Photographic documentation reveals dramatic native plant growth as evidenced through comparison photographs in Appendix B taken in 2015 and 2021. Since 2015, the restoration area has increased in species richness, species diversity, and native riparian plant cover. There are well-established canopy layers of native riparian trees, shrubs, sub-shrubs, and herbaceous species. Native vegetative cover exceeded the required fifth- year standards for the past three years (in 2019, 2020, and 2021). In 2021, non-native species cover was measured at 0 percent which is the less than 5 percent performance standard. Bare ground was measured below the performance standard in 2019, 2020, and 2021 as well. Minimal maintenance occurred within the restoration area in 2020 and 2021, which suggests that the site is self-sufficient and able to withstand non-native species invasions moving forward.

GRF maintenance crews oversee 21 acres of residential and natural landscape which includes the restoration area within Aliso Creek Park. As Aliso Creek Park is popular with residents, maintenance of the park and creek are a top priority for maintenance crews. The restoration site and adjacent areas are regularly inspected for trash and non-native plant species and treated as needed. GRF is well-funded, well-organized, and maintains senior-level staff familiar with ornamental and native vegetation. Crews are also familiar with the creek's unique requirements to maintain native habitat for western pond turtle (*Actinemys marmorata*) and other native wildlife and they are committed to continue their ecologically responsible creek maintenance activities in the future.

GRF is seeking written concurrence from the RWQCB and the California Department of Fish and Wildlife that mitigation obligations outlined in the Final 2014 Habitat Mitigation and Monitoring Plan, the RWQCB Water Quality Certification Number 12C-038, and the CDFW Streambed Alteration Agreement No. 1600-2012-0087-R5 have been sufficiently achieved.

## SECTION 5.0 – REFERENCES

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## **APPENDIX A – PLANT SPECIES OBSERVED**

## APPENDIX A – PLANT SPECIES OBSERVED

Scientific Name	Common Name	Observed					
		2016	2017	2018	2019	2020	2021
<b>MAGNOLIIDS</b>							
<b>SAURURACEA</b>	<b>LIZARD’S-TAIL FAMILY</b>						
<i>Anemopsis californica</i>	yerba mansa	X	X	X	X	X	X
<b>ANGIOSPERMS (EUDICOTS)</b>							
<b>APIACEAE</b>	<b>CARROT FAMILY</b>						
<i>Apium graveolens</i> *	celery	X	X	X	X	X	X
<i>Foeniculum vulgare</i> *	fennel	X					
<b>ASTERACEAE</b>	<b>SUNFLOWER FAMILY</b>						
<i>Ambrosia psilostachya</i>	western ragweed		X	X	X	X	X
<i>Artemisia californica</i>	California sagebrush	X	X	X	X		
<i>Artemisia douglasiana</i>	mugwort	X	X	X	X	X	X
<i>Baccharis pilularis</i>	coyote brush		X	X	X	X	X
<i>Baccharis salicifolia</i> subsp. <i>salicifolia</i>	mule fat	X	X	X	X	X	X
<i>Erigeron bonariensis</i> *	flax-leaved horseweed	X	X	X	X		
<i>Erigeron canadensis</i>	horseweed		X	X	X	X	
<i>Hedypnois cretica</i> *	Crete hedypnois		X		X		
<i>Lactuca serriola</i> *	prickly wild lettuce			X	X	X	
<i>Pluchea sericea</i>	arrow weed			X	X	X	X
<i>Pseudognaphalium luteoalbum</i>	cotton-batting plant	X	X	X	X	X	X
<i>Pulicaria paludosa</i> *	Spanish sunflower	X	X	X	X	X	X
<i>Sonchus asper</i> subsp. <i>asper</i> *	prickly sow thistle	X	X	X	X		
<i>Taraxacum officinale</i> *	common dandelion			X	X	X	
<i>Xanthium strumarium</i>	cocklebur	X	X	X	X	X	X
<b>BRASSICACEAE</b>	<b>MUSTARD FAMILY</b>						
<i>Cardamine californica</i>	milk maids				X		
<i>Hirschfeldia incana</i> *	shortpod mustard	X			X		
<i>Lepidium didymum</i> *	wart cress	X		X			
<i>Nasturtium officinale</i>	water-cress	X	X	X	X	X	
<i>Sisymbrium irio</i> *	London rocket	X			X		
<b>CAMPANULACEAE</b>	<b>BELLFLOWER FAMILY</b>						
<i>Lobelia erinus</i> *	midnight blue lobelia	X					
<b>CARYOPHYLLACEAE</b>	<b>PINK FAMILY</b>						
<i>Polycarpon tetraphyllum</i> var. <i>tetraphyllum</i> *	four-leaved allseed					X	
<b>CHENOPODIACEAE</b>	<b>GOOSEFOOT FAMILY</b>						
<i>Chenopodium album</i> *	lamb's quarters	X	X				

Scientific Name	Common Name	Observed					
		2016	2017	2018	2019	2020	2021
<b>CONVOLVULACEAE</b>	<b>MORNING-GLORY FAMILY</b>						
<i>Convolvulus arvensis</i> *	bindweed	X	X	X	X	X	
<i>Dichondra micrantha</i> *	Asian ponyfoot	X					
<b>EUPHORBIACEAE</b>	<b>SPURGE FAMILY</b>						
<i>Chamaesyce maculata</i> *	spotted spurge		X	X	X	X	X
<i>Euphorbia albomarginata</i>	rattlesnake weed		X	X	X		
<i>Euphorbia peplus</i> *	petty spurge			X			
<i>Euphorbia serpyllifolia</i> subsp. <i>hirtula</i>	hairy thyme-leaved spurge					X	
<b>FABACEAE</b>	<b>LEGUME FAMILY</b>						
<i>Acmispon americanus</i> var. <i>americanus</i>	Spanish clover	X					
<i>Medicago polymorpha</i> *	bur clover	X	X	X	X	X	X
<i>Melilotus albus</i> *	white sweetclover	X	X	X	X	X	X
<i>Melilotus indicus</i> *	yellow sweetclover			X			
<b>GERANIACEAE</b>	<b>GERANIUM FAMILY</b>						
<i>Geranium carolinianum</i>	Carolina Geranium						X
<b>MALVACEAE</b>	<b>MALLOW FAMILY</b>						
<i>Malva parviflora</i> *	cheeseweed	X					
<b>MYRSINACEAE</b>	<b>MYRSINE FAMILY</b>						
<i>Lysimachia arvensis</i> *	scarlet pimpernel	X		X	X	X	
<b>OLEACEAE</b>	<b>OLIVE FAMILY</b>						
<i>Fraxinus</i> sp. *	ornamental ash		X	X	X	X	X
<b>OXALIDACEAE</b>	<b>OXALIS FAMILY</b>						
<i>Oxalis pes-caprae</i> *	Bermuda buttercup	X					
<b>PHRYMACEAE</b>	<b>LOPSEED FAMILY</b>						
<i>Mimulus guttatus</i>	common monkey-flower	X		X			
<b>PLANTAGINACEAE</b>	<b>PLANTAIN FAMILY</b>						
<i>Bacopa monnieri</i> *	herb of grace				X	X	X
<i>Kickxia elatine</i> *	fluellin	X	X	X	X	X	
<i>Plantago lanceolata</i> *	English plantain	X			X		
<i>Plantago major</i> *	common plantain		X	X	X	X	X
<i>Veronica anagallis-aquatica</i> *	water speedwell	X		X			
<b>PLATANACEAE</b>	<b>SYCAMORE FAMILY</b>						
<i>Platanus racemosa</i>	western sycamore	X	X	X	X	X	X
<i>Plantanus acerifolia</i> *	London plane tree	X	X	X			
<b>POLYGONACEAE</b>	<b>BUCKWHEAT FAMILY</b>						
<i>Persicaria lapathifolia</i>	water pepper	X	X	X	X	X	

Scientific Name	Common Name	Observed					
		2016	2017	2018	2019	2020	2021
<b>PORTULACACEAE</b>	<b>PURSLANE FAMILY</b>						
<i>Portulaca oleracea</i> *	common purslane	X	X	X			
<b>ROSACEAE</b>	<b>ROSE FAMILY</b>						
<i>Rosa californica</i>	California wild rose		X	X	X	X	X
<b>SALICACEAE</b>	<b>WILLOW FAMILY</b>						
<i>Salix gooddingii</i>	black willow	X	X	X	X	X	X
<i>Salix laevigata</i>	red willow	X	X	X	X	X	X
<i>Salix lasiolepis</i>	arroyo willow	X	X	X	X	X	X
<b>ANGIOSPERMS (MONOCOTS)</b>							
<b>ARECAEAE</b>	<b>PALM FAMILY</b>						
<i>Washingtonia robusta</i> *	Mexican fan palm		X	X	X	X	X
<b>ASPHODELACEAE</b>	<b>ASPHODEL FAMILY</b>						
<i>Aloe</i> sp.*	aloe		X				
<b>CYPERACEAE</b>	<b>SEDGE FAMILY</b>						
<i>Cyperus eragrostis</i>	tall cyperus		X	X	X	X	X
<i>Cyperus esculentus</i>	yellow nut-grass		X	X	X	X	
<i>Cyperus involucratus</i> *	umbrella-plant		X	X		X	
<i>Eleocharis macrostachya</i>	common spikerush			X	X	X	X
<b>JUNCACEAE</b>	<b>RUSH FAMILY</b>						
<i>Juncus bufonius</i>	toad rush		X	X			
<i>Juncus patens</i>	spreading rush		X	X	X	X	X
<b>POACEAE</b>	<b>GRASS FAMILY</b>						
<i>Agrostis stolonifera</i> *	redtop	X	X	X	X	X	X
<i>Bromus diandrus</i> *	ripgut grass	X		X			
<i>Bromus japonicus</i> *	Japanese brome	X		X			
<i>Bromus madritensis</i> *	foxtail chess			X	X		
<i>Cynodon dactylon</i> *	Bermuda grass	X	X	X	X	X	X
<i>Distichlis spicata</i>	saltgrass		X	X	X		
<i>Echinochloa crus-galli</i> *	barnyard grass	X			X	X	
<i>Festuca microstachys</i>	small fescue			X			
<i>Festuca perennis</i> *	Italian ryegrass	X			X		
<i>Hordeum murinum</i> *	glaucous foxtail barley	X		X			
<i>Leptochloa fusca</i> subsp. <i>uninervia</i>	Mexican sprangletop		X	X	X		
<i>Melica imperfecta</i>	coast range melic		X		X		
<i>Polypogon monspeliensis</i> *	annual beard grass		X	X	X	X	
<i>Stipa miliacea</i> *	smilo grass			X	X		X



Scientific Name	Common Name	Observed					
		2016	2017	2018	2019	2020	2021
<b>TYPHACEAE</b>	<b>CATTAIL FAMILY</b>						
<i>Typha domingensis</i>	slender cattail		X	X	X	X	X
*Non-Native Species							

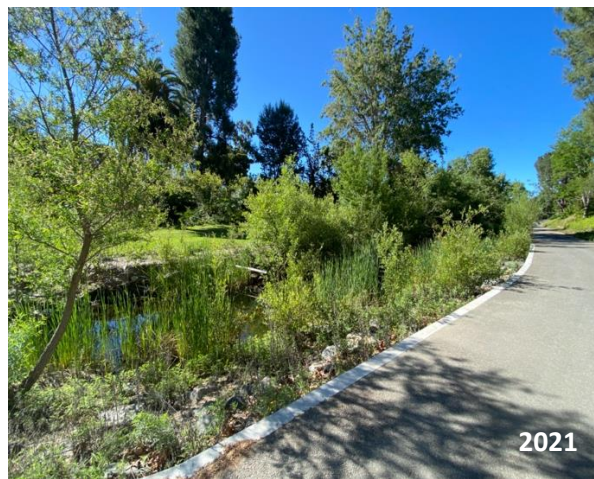
## **APPENDIX B – SITE PHOTOGRAPHS**

## APPENDIX B – SITE PHOTOGRAPHS APRIL 2021



### Photo 1.

Photo Station 1. Photo depicts the north side of the Creek facing northeast (upstream). Photograph on left taken January 2015. Photograph on right taken April 2021.



### Photo 2.

Photo Station 2a. Photographs depicts the north side of the Creek facing southwest (downstream). Photograph on left taken January 2015. Photograph on right taken April 2021.





**Photo 3.**

Photo Station 2b. Photographs depicts the north side of the Creek facing southeast, across the creek. Photograph on left taken January 2015. Photograph on right taken April 2021.



**Photo 4.**

Photo Station 2c. Photographs depicts the north side of the Creek facing northeast (upstream) towards bridge. Photograph on left taken January 2015. Photograph on right taken April 2021.





**Photo 5.**

Photo Station 3. Photographs taken on the bridge facing southwest (downstream). Photograph on left taken January 2015. Photograph on right taken April 2021.



**Photo 6.**

Photo Station 4a (across the creek from Photo Station 2). Photographs depicts the south side of the Creek facing northeast (upstream). Photograph on left taken January 2015. Photograph on right taken April 2021.





**Photo 7.**

Photo Station 4b (across the creek from Photo Station 2). Photographs depicts the south side of the Creek facing north, across the stream. Photograph on left taken January 2015. Photograph on right taken April 2021.



**Photo 8.**

Photo Station 4c (across the creek from Photo Station 2). Photographs depicts the south side of the Creek facing southwest (downstream). Photograph on left taken January 2015. Photograph on right taken April 2021.





**Photo 9.**

Photo Station 5a. Photo depicts the westernmost edge of the restoration site facing south west (across and slightly down stream). Photograph on left taken January 2015. Photograph on right taken April 2021.



**Photo 10.**

Photo Station 5b. Photo depicts the westernmost edge of the restoration site. Photograph faces north side of creek, upstream and across the creek. Photograph on left taken January 2015. Photograph on right taken April 2021.



**Photo 11.**

Photo Station 5c. Photo depicts the south side of the Creek at the westernmost edge of the restoration site facing northeast (upstream). Photograph on left taken January 2015. Photograph on right taken April 2021.

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## **APPENDIX C – TRANSECT DATA**

## APPENDIX C – TRANSECT DATA

Appendix C Vegetative Cover Field Data	Transect Number										
	1		2		3		4		5		Average Cover
	Hits	Cov	Hits	Cov	Hits	Cov	Hits	Cov	Hits	Cov	
		(%)		(%)		(%)		(%)		(%)	
RAW DATA											
Native Species											
Ambrosia psilostachya	0	0.0	3	6.0	0	0.0	0	0.0	16	32.0	7.6
Acmispon glaber	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Anemopsis californica	2	4.0	0	0.0	0	0.0	3	6.0	4	8.0	3.6
Artemisia douglasiana	4	8.0	22	44.0	11	22.0	0	0.0	2	4.0	15.6
Baccharis pilularis	0	0.0	7	14.0	0	0.0	0	0.0	0	0.0	2.8
Baccharis salicifolia	20	40.0	4	8.0	4	8.0	6	12.0	6	12.0	16.0
Cyperus eragrostis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Eleocharus nucristachys	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Eleocharis macrostachya	7	14.0	0	0.0	0	0.0	0	0.0	0	0.0	2.8
Juncus patens	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Platanus racemosa	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Rosa californica	3	6.0	5	10.0	2	4.0	2	4.0	6	12.0	7.2
Salix gooddingii	6	12.0	0	0.0	6	12.0	3	6.0	10	20.0	10.0
Salix laevigata	19	38.0	12	24.0	9	18.0	10	20.0	13	26.0	25.2
Salix lasiolepis	9	18.0	20	40.0	42	84.0	20	40.0	7	14.0	39.2
Typha domingensis	0	0.0	0	0.0	0	0.0	4	8.0	0	0.0	1.6
Non-Native Species											
Agrostis stolonifera*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Bacopa monnieri*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Cynodon dactylon*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Lactuca serriola*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Melilotus albus*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Melilotus sp.*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Plantago lanceolata*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Pulicaria paludosa*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Schinus terebinthifolius*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
No Plant	5	10.0	6	12.0	0	0.0	13	26.0	5	10.0	11.6
Ground Cover											
Rocks	7	14.0	1	2.0	1	2.0	11	22.0	17	34.0	14.8
Litter	34	68.0	47	94.0	40	80.0	29	58.0	33	66.0	73.2
Bare Ground	9	18.0	2	4.0	9	18.0	10	20.0	0	0.0	12.0
CALCUALTIONS											
Absolute Coverage											
Native Plant Cover	70	140.0	73	146.0	74	148.0	48	96.0	64	128.0	131.6
Non-Native Plant Cover	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
No Plant Cover	5	10.0	6	12.0	0	0.0	13	26.0	5	10.0	11.6
Ground Cover											
Rocks	7	14.0	1	2.0	1	2.0	11	22.0	17	34.0	14.8
Litter	34	68.0	47	94.0	40	80.0	29	58.0	33	66.0	73.2
Bare Ground	9	18.0	2	4.0	9	18.0	10	20.0	0	0.0	12.0
Total Vegetative Cover		150.0		158.0		148.0		122.0		138.0	143.2
Cov = Coverage, Ave = Average											
* Non-native plant species											

## ATTACHMENT 2



Cattails in the Creek (before)





Cattails in the Creek (pond where Western Pond Turtle was originally found)





Cattails in the Creek (during crews cutting cattails)





Cattails in the Creek (after)